

Annex 20 水路改修の構造物一覧

		2,010 (2010.Jan-Dec)		2,011 (2011.Jan-Dec)		2,012 (2012.Jan-Dec)		2,013 (2013.Jan-Dec)		2,014 (2014.Jan-Jul)		Total	
		TSC	Company	TSC	Company	TSC	Company	TSC	Company	TSC	Company		
Por Canal 2011.2.14-7.6	Canal (m)	SC		0	1,473							1,473	
		TC(Earth)		1,548	3,156								4,704
		DC		6,048									6,048
	Road	Laterite pavement			1,548	4,629							6,177
		TOTAL			49	16	15						80
	Structure (n)	In				3							3
		CS				7							7
		DB			2	2							4
		TO			23	4							27
		P			23		6						29
		OS <50\$			1		8						9
OS >50\$						1						1	
Area(ha)												125	
Damnak Anpil 2012.1.3-6.22	Canal	SC					1,000					1,000	
		TC(Earth)					2,700					2,700	
		DC					6,200					6,200	
	Road	Laterite pavement						4,300					4,300
		TOTAL					30	19					49
	Structure (n)	In						6					6
		CS						6					6
		DB											0
		TO					18	7					25
		P					12						12
		OS <50\$											0
OS >50\$												0	
Area(ha)												100	
Threang Maom 2011.2.14-6.10 2012.1.9-6.29 2013.1.17-6.1 2014.2.3-7.12	Canal	SC										0	
		TC(Brick)			4,749.5		5,054		1,067			1,067	
		DC							4,160		11,802		25,766
	Road	Laterite pavement									1,715		1,715
		TOTAL			69		85		44		109		307
	Structure (n)	In							2				2
		CS			1				5				6
		DB			2		1		0		2		5
		TO			15		21		8		29		73
		P			2		56		27		41		126
		OS <50\$			49		7		2		37		95
OS >50\$								0				0	
Area(ha)			300		450		250	-50	268			1,218	
Lum Hach 2013.2.25-7.9 2014.1.13-7.3	Canal	SC						1,500				1,500	
		TC						2,038		4,165		6,203	
		TC(Earth)									4,165		4,165
		TC(Brick)										2,038	2,038
	Road	DC(Earth)							2,567		1,841		4,408
		Laterite pavement									1,930		1,930
	Structure (n)	TOTAL							67		79		146
		In							3		0		3
		CS							12		13		25
		DB							2		1		3
		TO							15		13		28
P								24		51		75	
OS <50\$												0	
OS >50\$							11		1		12		
Area(ha)							52		109			161	
Roleang Chrey 2012.1.26-7.7 2012.1.10-7.29	Canal	SC					1,533					1,533	
		TC				1,292	4,506	1,927	2,377			10,102	
		TC(Earth)				650	3,776	1,927	2,377			8,730	
		TC(Concrete)					730					730	
	Road	TC(Brick)				642						642	
		DC				5,000			4,120			9,120	
	Structure (n)	Laterite pavement							650	5,309	1,507	2,377	9,843
		TOTAL							10	43	33	32	118
		In							2	2			4
		CS							4	2			6
		DB					1	4	4	4			13
TO						4	17	10	14			45	
P						2	10	6	4			22	
OS <50\$											0		
OS >50\$					3	6	9	10			28		
Area(ha)												210	
Kandal Stang 2012.4.18-7.22 2013.2.5-5.18 2014.2.18-3.7	Canal	SC										0	
		DC(with Road)				5,656		7,350		3,900		16,906	
		DC				9,495		4,550		4,700		18,745	
	Structure (n)	TOTAL							63		33		112
		In							7		7		22
CS											22		
DB							10		12			22	
Area(ha)												0	

*50ha are overlap in 2013

	(n)	TO				30		14		8		52
		P				16						16
		OS <50\$										0
		OS >50\$										0
		Area(ha)					415.5		495.0		95.0	
Upper Slakou 2012.3.6-5.18 2013.1.22-6.22	Canal	SC				1,039		1,726				2,765
		TC(Earth)				511		2,627				3,138
		DC				3,940		5,500				9,440
	Road	Laterite pavement				1,550		4,353				5,903
	Structure (n)	TOTAL				25		51				76
		In										0
		CS				2		7				9
		DB				8		5				13
		TO				7		24				31
		P				1						1
OS <50\$											0	
OS >50\$				7		15				22		
Area(ha)											120	
Thomney 2011.4.25-7.6 2012.4.23-7.16 2013.5.13-7.22 2014.4.21-7.19	Canal	Brick Wall front of gate No4				37		32				69
		Rehabilitation slope of Dam	604									604
		Dam Bank(laterite)	110									110
		SC(Earth)							2,866			2,866
		TC	913		2,473		2,302		2,380			8,068
		TC(Concrete)	24		20		95					139
	TC(Brick)	889		2,453		2,207					5,549	
	Earth							2,380			2,380	
	DC										0	
	TOTAL	7		30		28					73	
	Structure (n)	CS	4		22		14		2			42
		In	2		4		7		2			15
		DB										0
TO											0	
P		1		4		7		4			16	
OS <50\$											0	
OS >50\$											0	
Area(ha)						201		166			367	

Canal

SC=Secondary Canal, TC=Tertiary Canal, DC=Delivery Canal

Structure

In= Intake, CS=Check Structure, DB=Distribution Box, TO=Torn Out, P=Passing,

OS <50\$ =Other structure which price under 50\$, OS >50\$ =Other structure which price over 50\$

SC			0	1,473	1,039	2,533	3,226	0	2,866	0	11,137
TC			2,461	3,156	4,276	7,206	9,961	2,377	6,545	0	35,982
DC			10,798	0	35,345	0	28,247	0	22,243	0	96,633
Oth			714	0	37	0	32	0	0	0	783
Canal			13,973	4,629	40,697	9,739	41,466	2,377	31,654	0	144,535
Road											29,868
St											961
Area											3,306.5

添付資料 21:モデルサイトにおける水利組合の状況

Name of model irrigation system	Name of FWUC	Name of FWUG	Covered area (ha)	Number of members (household)	Formulated year	Registered year	Statute year	Number of groups (FWUG)	Number of sub-groups	Remark	
										model site	Interview
Por Canal		1 - Brolay Thmmey Bei phum Khum Talous	125	113	2010		2011		3	○	Sub-group (Chong Prolay)
		Reference [model site]	[125]	[113]							
			-	-	-	-	-	-	-	-	
Damnak Ampil		1 - Kandeung Meas	100	86	2010		2011		3	○	
		Reference [model site]	[100]	[86]							
			-	-	-	-	-	-	-	-	
Thlea Maom	Thlea Maom		1,855	2,279	2010	2011	2010	4	13	△	SC1 FWUG (Kandol Sor)
		1 - SC1	#	287					2	△	
		2 - SC2	#	591					4		
		3 - SC3	#	1,236					4		
		4 - SC4	#	165					3		
		Reference [model site]	[1,218]	[1,023]							
Lum Hach		1 - Kum Ru Pich Chorong Va	161	164	2012		2013		3	○	
		Reference [model site]	[161]	[164]							
			-	-	-	-	-	-	-	-	
Roleang Chrey	Ou Veang *		211.68 (668.22)	333 (1,279)	2001		2003	5	-	○	Ou Veang FWUG
		1 - (TC1, TC11, TC12, TC13) Kahaeng, Kork Runlech, Roleang Chrey	#	#							
		2 - (TC2) Ou Veang	#	#							
		3 - (TC3, TC8, TC9, TC10)	#	#							
		4 - (TC4, TC5) Bos Taney	#	#							
		5 - (TC6) Sre Thnal	#	#							
		Reference [model site]	[211.68]	[333]							
Kandal Stung	Kandal Stung		1,735	2,805	2011	2011	2011	7	25	△	Bakou FWUG
		1 - Anlong Romeat	139	24					2	-	
		2 - Kork Trob	235.5	#					4	○	
		3 - Preash Puth	390	#					5	○	
		4 - Sangkat Tien	198	280					2	○	
		5 - Roluos	153.5	352					3	○	

Name of model irrigation system	Name of FWUC	Name of FWUG	Covered area (ha)	Number of members (household)	Formulated year	Registered year	Statute year	Number of groups (FWUG)	Number of sub-groups	Remark		
										model site	Interview	
		6 - Kong Noy	239	393					4	○		
		7 - Bakou	380	961					5	○		
		Reference [model site]	[1005.5]	#								
Upper Slakou	Tumnuh Khpob Trabek**		800 (1,682)	1,943 (3,338)	2005	-	2005	16 (33)	-	△	Thnaot Chum FWUG	
		1 - Trapaing Dang To Village	#	57								○
		2 - Stoeung Village	#	61								
		3 - Thnaot Chum Village	#	34								
		4 - 16 Other FWUGs	680	1,791								
		Reference [model site]	[120]	[152]								
Thormney	Thormney		367	514	2004	2004	2004	2	10	○	Lum Chang FWUG (Tuol Trea)	
		1 - Lum Chang Commune	#									○
		2 - Soengh Commune	#									
		Reference [model site]	[367]	[514]								

Note: #: No data

△: A part of FWUC/FWUG covered area includes area of model site.

(): Covered area and Number of members is at the point of formulated year.

Name of FWUG is a tentative name except Por canal, Damnak Ampil and Lum Hack. Because there is no name of FWUG in case FWUG is not established.

*: Ou Veang FWUC was formulated in 2001 but it was split up into two FWUCs (Rung FWUC, Ou Veang FWUC) in 2006.

** : Covered area and number of members of Tumnuh Khpob Trabek FWUC was reduced because the reservoir could not store much water and farmers have not abstracted water to cultivate.

別添22 モデルサイトで実施したワークショップ一覧

JFY 2010

No	Name of Workshop	Period	Number of Participant	Contents	Remarks
1	Workshop on Designing and Drawing	5-30-Jul-10	7	OJT at TSC3 for PDWRAM C/Ps (Takeo 2, Pursat 1, Battambang 2, Kampong Speu 2)	
2	Workshop 2 (Upper Slakou)	3-Sep-10	7	Confirmation of Canal Construction with famers	
3	Workshop on Designing and Drawing	20-23-Sep-10	5	OJT at TSC3 for PDWRAM C/Ps (Takeo 2, Pursat 3)	
4	Workshop 1 (Damnak Ampil)	22,23-Sep-10	7	Discussion about the problem in target area	
5	Workshop 2 (Por Canal)	27,28-Sep-10	7	Discussion about the problem in target area	
6	Farmers to Farmers OJT (Kampong Thom)	10-12-Nov	31	Discussion with advanced FWUC about activity from each model sites (Por Canal, Damnak Ampil)	
7	Workshop 2 (Damnak Ampil)	18,19-Nov	8	Key farmers explained study result	
8	Workshop 2 (Por Canal)	25-26-Nov	8	Key farmers explained study result	
9	Workshop 1 (Thlear Maom)	23-Dec-10	22	Discussion about the problem in target area	
10	Workshop 1 (Rolean Chrey)	28-Dec-10	21	Discuss the problem in target area	
11	Workshop 3 (Damnak Ampil)	25,26-Jan-11	13	Key farmers confirmed the construction plan	
12	Work Shop 3 (Por Canal)	3,4-Feb-11	15	Finally, farmers confirmed the construction plan	
13	Workshop 2,3 (Thlear Maom)	10,11-Feb-11	17	Finally, farmers confirmed the construction plan	
14	Workshop 1 (Thomney)	24-Mar-11	18	Discuss the problem in target area	
		Total	186		

JFY 2011

No	Name of Workshop	Period	Number of Participant	Contents	Remarks
1	Workshop 2 (Thomney)	14-Jun-11	16	Key farmers explained study result	
2	Workshop on Preparation for Training in Japan (Takeo, Kandal, Prey Veng, Kratie, Phnom)	22-24-Jun-11	6	Preparation for Group Training in Japan	
3	Workshop 3 (Por Canal)	18-20-Jul-11	13	Key farmers explain the trouble & solution map to farmers and group leaders integrate the construction, rehabilitation plan with schedule	
4	Workshop 3 (Damnak Ampil)	24-Aug-11	11	Key farmers explain the trouble & solution map to farmers and group leaders integrate the construction, rehabilitation plan with schedule	
5	Workshop 3 (Damnak Ampil)	15-Sep-11	8	Confirmation with land owners	
6	Workshop 3 (Roleang Chrey)	20-Sep-11	12	Key farmers explain the trouble & solution map to farmers and group leaders integrate the construction, rehabilitation plan with Shedule.	
7	Workshop 1 (Thlear Maorm)	22-Sep-11	15	Discussion about the problem in target area	
8	Workshop on Finalization for Training in Japan (Takeo, Kandal, Prey Veng, Kratie, Phnom)	22,23-Sep-11	6	Finalization of Training in Japan	
9	Workshop on Finalization of Training in Japan (Thlear Maom, Pursat)	27-Oct-11	37	Finalization of Training in Japan	
10	Workshop 1 (Upper Slakou)	27,28-Oct-11	10	Key farmers explain the trouble & solution map to farmers and group leaders integrate the construction, rehabilitation plan with shedule.	
11	Workshop on Finalization of Training in Japan (Phnom Penh)	8-Nov-11	23	Finalization of Training in Japan	
12	Farmers to Farmers OJT (Takeo, Sihanouk Ville)	22-24-Nov-11	45	Discussion with advanced FWUC about activity from each model sites (Upper Slakou, Thomney, Roleang Chrey)	
13	Workshop on Finalization of Training in Japan (Phnom Penh)	23-Nov-11	30	Finalization of Training in Japan	
14	Workshop on Finalization of Training in Japan (Takeo)	24,25-Nov-11	40	Finalization of Training in Japan	
15	Workshop on Finalization of Training in Japan (Kratie)	29-Nov-11	39	Finalization of Training in Japan	

16	Workshop on Finalization of Training in Japan (Prey Veng)	8-Dec-11	47	Finalization of Training in Japan	
17	Workshop 2,3 (Upper Slakou)	8,9-Dec-11	10	Key farmers explained the result of FWUC and FWUG activities at advanced areas	
18	Workshop 2 (Thlear Maorm)	5-Jan-12	16	Check the trouble area , making the situation map	
19	Workshop 2,3 (Roleang Chrey)	11,12-Jan-12	14	Key farmers explained the result of FWUC and FWUG activities at advanced areas	
20	Workshop 3 (Por Canal)	20-Jan-12	10	Decided the location of Canal with Key farmers	
21	O&M (Por Canal)	25-Jan-12	26	O&M and Water Distribution	
22	Finalization of Training in Japan and Farmers to Farmers OJT (Takeo)	26,27-Jan-12	44	Discussion with advanced FWUC about activity from each model sites (Pursat, Kratie, Prey Veng, Kandal, Phnom Penh)	
23	O&M (Thomney)	3-Feb-12	8	Explanation about distribution plan,O&M of Irrigation system	
24	Workshop 3 (Kandal Stung)	14-Mar-12	11	Decided the location of Canal with Key farmers	
		Total	497		

JFY 2012

No	Name of Workshop	Period	Number of Participant	Contents	Remarks
1	Water Distribution (Damnak Ampil)	6-Jul-12	85	Explanation of Water Distribution Plan, showing of upstream Irrigation System	
2	O&M (Damnak Ampil)	6-Jul-12	85	Workshop for Gate Maintenance and Cleaning the Canal	
3	Workshop1(Lum Hach)	16-Jul-12	54	Explanation about FWUG Activities, and Discussion the problem in target area.	
4	O&M (Roleang Chrey)	20-Jul-12	106	Explanation of Water Distribution Plan, showing of upstream Irrigation System	
5	O&M (Upper Slakou)	3-Aug-12	108	Explanation of Water Distribution Plan, and O&M	
6	O&M (Por Canal)	17-Aug-12	84	Explanation of Water Distribution Plan, and O&M	

7	Farmer to Farmer OJT (Pursat, Battambang)	29,30-Aug-12	43	Key farmers (Thomney and Lum Hach) study advanced FWUG activities through visiting Developed areas.	
8	A&A (Upper Slakou)	13-Sep-12	24	Discussion with FWUC about A&A and Workshop on O&M.	
9	A&A (Thomney)	14-Sep-12	93	Discussion with FWUC about A&A and Workshop on O&M.	
10	O&M (Kandal Stung)	27,28-Sep-12	144	Explain about destribution plan,O&M of Irrigation system	
11	Workshop2 (Lum Hach)	2-Oct-12	64	Explanation of Study Result of FWUG Activities to Farmers	
12	O&M (Thlear Maorm)	4-Oct-12	86	O&M of Irrigation Facilities	
13	A&A (Thlear Maorm)	5-Oct-12	26	Annual Plan & Accounting	
14	A&A (Thomney)	12-Oct-12	28	Annual Plan & Accounting	
15	A&A (Kandal Stung)	30-Oct-12	49	Discussion and Instruction with FWUC, make an annual plan	
16	Establishment of FWUG (Lum Hach)	2-Nov-12	86	Election of FWUG Chief and Officilas.	
17	A&A (Por Canal)	15-Nov-12	30	Annual Plan & Accounting	
18	Workshop on Finalization of Training in Japan (Por Canal)	22-Nov-12	40	Finalization of Training in Japan	
19	Workshop on Finalization of Training in Japan (Kandal Stung)	26-Nov-12	40	Finalization of Training in Japan	
20	Workshop on Finalization of Training in Japan (Pursat)	4-Dec-12	44	Finalization of Training in Japan	
21	Workshop on Finalization of Training in Japan (Kampong Thom)	13-Dec-12	43	Finalization of Training in Japan	
22	Workshop on Finalization of Training in Japan (Kampong Speu)	18-Dec-12	55	Finalization of Training in Japan	
23	Establishment of FWUG (Lum Hach)	20-Dec-12	31	Election of FWUG Chief and Officilas.	
24	A&A (Roleang Chrey)	26-Dec-12	28	Annual Plan & Accounting	

25	Workshop3 (Lum Hach)	13-Feb-13	82	Key farmers explain the trouble & solution map to farmers and group leaders integrate the construction, rehabilitation plan with Shedule.	
		Total	1,558		

JFY 2013

No	Name of Workshop	Period	Number of Participant	Contents	Remarks
1	Water Management (Damnak Ampil)	5-Jun-13	11	Water Management	
2	Water Distribution (Roleang Chrey)	14-Jun-13	25	Information of water distribution method	
3	Water Management (Damnak Ampil)	20-Jun-13	26	Water Management	
4	Water Distribution (Roleang Chrey)	2-Jul-13	15	Information of water distribution method	
5	O&M (Thomney)	3-Jul-13	20	Introduction of water manegement activities	
6	Water Distribution (Thomney)	3-Jul-13	20	Information of water distribution method	
7	Water Distribution (Upper Slakou)	4-Jul-13	21	Information of water distribution method	
8	O&M (Damnak Ampil)	9-Jul-13	36	Introduction of water manegement activities, cutting grass and painting gate	
9	Water Distribution (Roleang Chrey)	18-Jul-13	31	Information of water distribution method	
10	O&M (Thomney)	8-Aug-13	8	Workshop for Gate Maintenance and Cleaning the Canal	
11	O&M (Lum Hach)	14-Aug-13	61	Workshop for Gate Maintenance and Cleaning the Canal	
12	O&M (Upper Slakou)	15-Aug-13	32	Workshop for Gate Maintenance and Cleaning the Canal	

13	O&M (Thlear Maorm)	22-Aug-13	51	Workshop for Gate Maintenance and Cleaning the Canal	
14	O&M (Por Canal)	22-Aug-13	26	Workshop for Gate Maintenance and Cleaning the Canal	
15	O&M (Roleang Chrey)	29-Aug-13	36	Workshop for Gate Maintenance and Cleaning the Canal	
16	O&M (Kandal Stung)	29-Aug-13	27	Workshop for Gate Maintenance and Cleaning the Canal	
17	Farmers to Farmers OJT (Banteay Meanchey, Siem Reap)	18,19-Sep-13	42	Discussion with advanced FWUC about activity from each model sites (Ream Kun, Wat Chre, Wat Loung)	
18	Farmers to Farmers OJT (Kandal Stung)	9-Oct-13	32	Discussion about Sustainable Water Management with advanced FWUCs (Ponley and West Baray).	
19	Farmers to Farmers OJT (Roleang Chrey)	9-Oct-13	32	Discussion about Sustainable Water Management with advanced FWUCs (Ponley and West Baray).	
20	Farmers to Farmers OJT (Upper Slakou)	10-Oct-13	32	Discussion about Sustainable Water Management with advanced FWUCs (Ponley and West Baray).	
21	Farmers to Farmers OJT (Thmney)	11-Oct-13	32	Discussion about Sustainable Water Management with advanced FWUCs (Ponley and West Baray).	
22	O&M (Upper Slakou)	4,5-Nov-13	15	Workshop for Gate Maintenance and Cleaning the Canal	
23	Water Distribution (Thlear Maom)	28-Nov-13	20	Information of water distribution method	
24	Workshop2(Wat Loung)	12-Dec-13	60	Check the trouble area , making the situation map	
25	A&A (Por Canal)	24-Dec-13	3	Annual Plan & Accounting	
26	Water Distribution (Thomney)	20-Dec-13	15	Information of water distribution method	
27	A&A (Damnak Ampil)	25-Dec-13	15	Annual Plan & Accounting	
		Total	744		

JFY 2014

No	Name of Training course	period	Number of participants	Contents	Remarks
1	Workshop2(Wat Chre)	3-Jan-14	60	Check the trouble area , making the situation map	
2	Workshop2(Ream Kon)	3-Jan-14	40	Check the trouble area , making the situation map	
3	A&A (Thlear Maom)	10-Jan-14	15	Annual Plan & Accounting	
4	A&A (Upper Slakou)	15-Jan-14	15	Annual Plan & Accounting	
5	A&A (Roleang Chrey)	22-Jan-14	15	Annual Plan & Accounting	
6	A&A (Kandal Stung)	25-Feb-14	20	Annual Plan & Accounting	
7	O&M (Roleang Chrey)	6-May-14	25	Workshop for Gate Maintenance and Cleaning the Canal	
8	A&A (Thomney)	7-Mar-14	15	Annual Plan & Accounting	
9	A&A (Kandal Stung)	20-Mar-14	10	Annual Plan & Accounting	
10	O&M (Upper Slakou)	21-May-14	20	Workshop for Gate Maintenance and Cleaning the Canal	
11	O&M (Thlear Maom)	9-Apr-14	30	Workshop for Gate Maintenance and Cleaning the Canal	
12	A&A (Lum Hach)	30-Apr-14	15	Annual Plan & Accounting	
13	O&M (Por Canal)	30-Apr-14	20	Workshop for Gate Maintenance and Cleaning the Canal	
14	O&M (Thomney)	9-May-14	20	Workshop for Gate Maintenance and Cleaning the Canal	
15	O&M (Kandal Stung)	22-May-14	25	Workshop for Gate Maintenance and Cleaning the Canal	
16	O&M (Damnak Ampil)	28-May-14	64	Workshop for Gate Maintenance and Cleaning the Canal	

17	Water Distribution (Kandal Stung)	10-Jun-14	20	Information of water distribution method	
18	Water Distribution (Por Canal)	12-Jun-14	14	Information of water distribution method	
19	O&M (Lum Hach)	10-Jul-14	25	Workshop for Gate Maintenance and Cleaning the Canal	
20	Farmer to Farmer OJT (Prey Nup)	28,29,30-Jul-14	26	Key farmers (Damnak Ampil, Thlear Maom, Lum Hach and Por Canal) study advanced FWUG activities through visiting Developed areas.	
21	Farmer to Farmer OJT (Prey Nup)	05,06-Aug-14	24	Key farmers (Kandal Stung, Thomney, Upper Slakou and Roleang Chrey) study advanced FWUG activities through visiting Developed areas.	
		Total	1,242		

別添23 TSC3プロジェクト支援事業実績リスト

◆草の根・人間の安全保障無償資金協力申請案件(平成26年度:4件申請準備中)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目(予定)
26	スバイリエン州トローク・コンボット灌漑施設改修計画	スバイリエン州水資源気象局	US\$102,063	一次水路改修費(620mと950m)、手動の流出口設置費、外部監査費
26	タケオ州ダウム・トゥコー灌漑施設改修計画	タケオ州水資源気象局	US\$101,355	堤防改修費(360m)、一次水路改修費(1,290m)、洪水吐建設費(15m)、手動の流出口建設費、手動の流入口建設費、外部監査費
26	コンボンチャム州トロペアン・カンダール灌漑施設改修計画	コンボンチャム州水資源気象局	US\$103,024	一次水路改修費(3,000m)、調整堰改修費、調整堰建設費(2)、手動の流入口建設費(2)、外部監査費
26	コンボンチュナン州バン・トム灌漑施設改修計画	コンボンチュナン州水資源気象局	US\$99,500	堤防改修費(1,350m)、外部監査費

◆草の根・人間の安全保障無償資金協力申請案件(平成25年度:4件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目
25	コンボンチャム州ドーン灌漑施設改修計画	コンボンチャム州水資源気象局	US\$94,891	堤体(750m)改修費、流入口改修費、流出口改修費、流入口建設費、流出口(2)建設費、外部監査費
25	ポーサット州コンペイン灌漑施設改修計画(フェーズ2)	ポーサット州水資源気象局	US\$110,008	二次水路(2,550m)改修費、流入口改修費、水位調整堰(2)建設費、分水工(4)建設費、横断工建設費、外部監査費
25	シアマリアップ州SC7灌漑用水路改修計画	シアマリアップ州水資源気象局	US\$121,578	二次水路(3,700m)改修費、コンクリート橋建設費、護岸工建設費、カルバート(10)
25	バタンバン州モック・ブーオン灌漑用水路改修計画	バタンバン州水資源気象局	US\$114,268	二次水路(850m)改修費、三次水路(1,050m)建設費、流入口(3)建設費、外部監査費

◆草の根・人間の安全保障無償資金協力申請案件(平成24年度:4件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目
24	コンボンチュナン州タバノ灌漑施設改修計画	コンボンチュナン州水資源気象局	US\$92,550	堤体(700m)改修費、二次水路(300m)改修費、流出口(2)改修費、外部監査費
24	プレイベーン州プレイ・クルール灌漑施設改修計画	プレイベーン州水資源気象局	US\$97,596	堤体(2,100m)改修費、吐水口改修費、吐水口建設費、流出口建設費、外部監査費
24	タケオ州No.38灌漑用水路改修計画	タケオ州水資源気象局	US\$103,550	一次水路(2,100m)改修費、横断工(2基)改修費、流出口(1)建設費、外部監査費
24	プレアビヒア州プラサート・ニアブオ灌漑施設改修計画	プレアビヒア州水資源気象局	US\$100,100	堤体(900m)改修費、二次水路(800m)改修費、流出口建設費、調整堰建設費、洪水吐(10m)建設費、外部監査費

◆草の根・人間の安全保障無償資金協力申請案件(平成23年度:3件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目
23	ポーサット州コンペイン灌漑施設改修計画	ポーサット州水資源気象局	US\$99,221	二次水路(2,100m)改修費、水位調整堰建設費、分水工(4)建設費、新規二次水路整備費(1,050m)、外部監査費
23	バタンバン州トマボン灌漑施設改修計画	バタンバン州水資源気象局	US\$93,700	三次水路(3,050m)改修費、落差工建設費、外部監査費
23	コンポントム州チブペアアップ灌漑施設改修計画	コンポントム州水資源気象局	US\$99,382	堤防(400m)改修費、一次水路改修費(2,200m)、水路調整堰改修費、外部監査費

◆草の根・人間の安全保障無償資金協力申請案件(平成22年度:6件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目
22	ケップ州オードン灌漑施設改修計画	ケップ州水資源気象局	US\$96,306	堤防(903m)改修費、調整水門(1)建設費、取水口(2)建設費、外部監査費
22	プレイベーン州オンクロン灌漑施設改修計画	プレイベーン州水資源気象局	US\$95,609	堤防(1,000m)改修費、流入口改修費(1)、流出口改修費(2)、カルバート建設費(1)、二次水路(250m×2)建設費(2)、外部監査費
22	モンドルキリ州スレプレア灌漑施設改修計画	モンドルキリ州水資源気象局	US\$94,077	堤防(325m)・一次水路(375m)改修費、洪水吐建設費(1)、流入口建設費(2)、流出口建設費(1)、外部監査費
22	クラチェ州クバルチュウ灌漑施設改修計画	クラチェ州水資源気象局	US\$82,820	堤防改修費(592m)、カルバート改修費(2)、調整水門建設費(1)、外部監査費
22	バンテアイミアンチェイ州タメン灌漑施設改修計画	バンテアイミアンチェイ州水資源気象局	US\$99,917	堤防改修費(520m)、取水口改修費(6)、コンクリート橋建設費(1)、外部監査費
22	バタンバン州オタキ灌漑施設改修計画	バタンバン州水資源気象局	US\$92,350	三次水路建設(1,100m×2)、取水工建設(2)、外部監査費

◆草の根・人間の安全保障無償資金協力申請案件(平成21年度:3件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目
21	ポーサット州市場アクセス改善のための堤防道路及び精米施設整備計画	ポーサット州水資源気象局	US\$95,761	堤防(3,000m)改修費、カルバート(3)建設費、精米所建設費、精米機購入及び設置費、外部監査費
21	タケオ州ポタワ灌漑施設改修計画	タケオ州水資源気象局	US\$90,348	堤防(465m)改修費、洪水吐(10m)建設費、横断管渠工建設費、外部監査費
21	コンポンチャム州バンヴィーム灌漑施設改修計画	コンポンチャム州水資源気象局	US\$96,419	堤防改修費(1,996m)、調整水門改修費、外部監査費

◆ノンプロジェクト見返り無償資金協力申請案件(平成24年度:1件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目/計画概要
24	プルサット州テレア・モーム灌漑施設改修計画(フェーズ2)	水資源気象省	US\$2,930,900	幹線水路改修、二次水路改修、付帯施設設置(チェックゲート等)

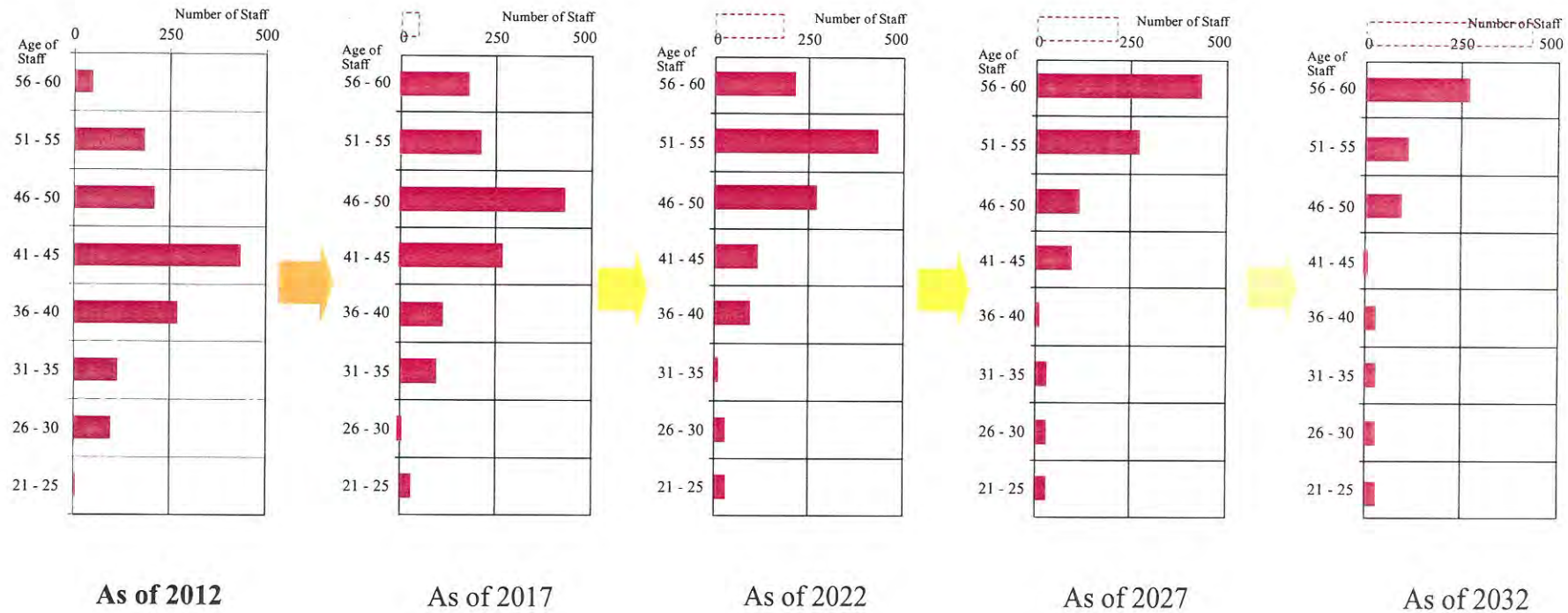
◆ノンプロジェクト見返り無償資金協力申請案件(平成22年度:3件)

要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目/計画概要
22	シエムリアップ州マカク灌漑施設水路改修計画	水資源気象省	US\$2,964,976.5	水路改修(幹線水路17.0km、支線水路7.4km、3次水路2.0km、管理棟)
22	プルサット州カムパン灌漑施設改修計画	水資源気象省	US\$2,216,759.23	水路改修(幹線水路3.9km、支線水路14.8km、付帯施設、管理棟)
22	コンポンチャム州ルセイプレア灌漑施設改修計画	水資源気象省	US\$851,488.14	貯水池堤防改修2.0km、水路改修(幹線水路1.5km、支線水路1.8km、付帯施設、管理棟)

◆ノンプロジェクト見返り無償資金協力申請案件(平成21年度:3件)

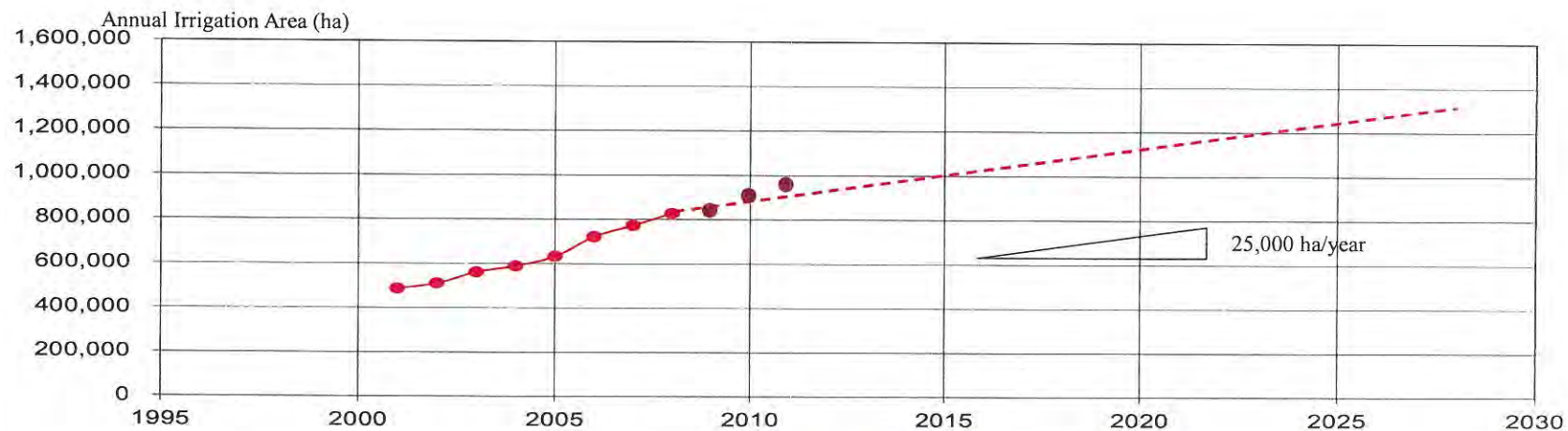
要請年度	案件名	申請団体	申請/承認額(US\$)	供与品目/計画概要
21	カンダル州カンダルスタン灌漑施設改修計画	水資源気象省	US\$2,593,286	水路改修(二次水路=35km、三次水路=26km)、取水施設の改修、水位調整施設
21	タケオ州トムネイ灌漑施設改修計画	水資源気象省	US\$423,260.58	水路改修=5.0km
21	プルサット州テレア・モーム灌漑施設改修計画	水資源気象省	US\$2,779,102.27	水路改修(幹線水路6.6km、二次水路=10.1km)、取水工

水資源気象省職員構成の将来見通し



The age distribution of MOWRAM's staff is not sound. If recruiting young staff annually at the current low level of about 30 persons per year, a critical future will be realized as shown above.

水資源気象省職員の将来の必要人数



Source: Brochure of MOWRAM

Year	2008	2010	2015	2020	2025	2030
Irrigated Area (ha)	827,373	877,373	1,002,373	1,127,373	1,252,373	1,377,373
Minimum Required Number of Staffs	1,384	1,468	1,677	1,886	2,095	2,304
Expected No. of Staffs (0/year)	1,384	1,353	1,234	1,042	746	382
Expected No. of Staffs (30/year)	1,384	1,413	1,444	1,402	1,256	1,042
Expected No. of Staffs (50/year)	1,384	1,453	1,584	1,642	1,596	1,482
Expected No. of Staffs (75/year)	1,384	1,503	1,759	1,942	2,021	2,032
Expected No. of Staffs (90/year)	1,384	1,533	1,864	2,122	2,276	2,362

* : “Irrigation Area” is projected so as to realize the increment of 25,000ha/year that is the MOWRAM’s target on the MOWRAM’s Action Plan (2009-2013)

** : “Minimum Required Number of Staffs” is the necessary number of staffs of MOWRAM and PDWRAM, if the same duty of staff (ha/person) with the year of 2008 should be kept up.

***: If MOWRAM doesn’t recruit new staff at all, the number of staffs shall decrease like the case of (0 person/year) taking the actual age-distribution of staffs into consideration. When adopting the case of recruiting at 90 persons per year, the expected number of staffs could be satisfied with the requirement in the long-run.

In order to avoid such critical situation, a certain number of freshmen must be recruited in every year constantly. **Annex 25** is the analysis to estimate how many freshmen should be recruited annually in order to avoid such crisis. The analysis of **Annex 25** was made under the following assumptions:

- The Present number of MOWRAM staff is about 1,380. However, the number of staff is still insufficient in feature because the more number of staffs is required as increasing responsible irrigation command area.
- MOWRAM envisions promoting irrigation development on 25,000 hectares of irrigation area increases per year in the Political Action Plan (2009 – 2013). Following the target of irrigation development, irrigated area managed by MOWRAM will become 1,377,373 hectares in 2030.
- The work load per staff of MOWRAM should keep at the equal or less than the current level.
- Irrigated area and number of MOWRAM staffs are 827,373 hectares and 1,384 persons, respectively. As increasing irrigated area at the rate of the target, required number of staffs of MOWRAM will become 2,304 persons in 2030.
- On the contrary, number of MOWRAM staff is going to decrease year by year as retiring the staffs aged 60 years old shown in the downward of **Annex 25**. Within the same columns, expected number of MOWRAM staffs is shown in the cases of recruiting freshmen at (0 persons per year), (30 persons per year), (50 persons per year) and so on.

Annex 26. 成果品一覧(プロジェクト印刷物、マニュアル、調査文書等)

No.	Item	Purpose	Date	Contents	Language	Distributed to
F.Y. 2009						
1	JICA/KOICA Joint Program : Application documents to register the Reang Thom FWUG to MOWRAM FWUC Department	Others	2009.11	Application documents to register the Reang Thom FWUG that TSC established in JICA/KOICA Joint Program to MOWRAM FWUC Department	Khmer	KOICA TSC CP
2	JICA/KOICA Joint Program : Evaluation and completion report	Others	2009.12	Summary of Result on JICA/KOICA Joint Program for Rehabilitation of Irrigation System and Rural Community Development in Cambodia	English	KOICA TSC CP
3	Explanation materials for farmer on workshop	Work Shop	2010.1	Making of materials to explain to farmer on each workshop	English and Khmer	Famer
4	Irrigation planning by GIS	Training	2010.02	Training Materials on making an irrigation planning by using GIS,GPS and Remote Sensing etc. include ALOS.	English	TSC CP
5	Materials for PR of activity of TSC etc. on Battambang agricultural festival	PR	2010.02	Making of materials (Panel etc.) to introduce the activity of TSC, method to make a irrigation planning by GIS etc.	English	Cambodia People
6	JICA/KOICA Joint Program : Rehabilitation of dike of Reang Thom reservoir	others	2010.03	Rehabilitation of dike of Reang Thom reservoir (around 1,100m) that is target area of JICA/KOICA Joint Program on March 2010	English	KOICA TSC CP
F.Y. 2010						
7	Report of Baseline and Inventory Survey	Others	2010.05	Baseline survey of 11 model site in 6 Province that were established in TSC Phase 3 Project and inventory survey of new 5 model site	English	TSC CP
8	Damnak Ampil model site (Pursat Province)	Survey	2010.05	Topographic survey : around 100ha、 Route and cross section survey of canal : around 8,000m	English	CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
9	Upper Slakou model site (Takeo Province)	Survey	2010.05	Topographic survey : around 120ha、 Route and cross section survey of canal : around 6,000m	English	CP
10	Por Canal model site (Battambang Province)	Survey	2010.06	Topographic survey : around 100ha、 Route and cross section survey of canal : around 5,200 m	English	CP
11	Irrigation Management	Training	2010.6	Introduce about a River Basin Management and Plan of each step about a River Basin management and Development.	English	TSC CP
12	Introduction of TSC3 Project activity on "Mail Magazine" of National Institute of Rural Engineering	PR	2010.06	Introduction of TSC3 Project activity on Agricultural River Basin Management in Cambodia on "Mail Magazine" of National Institute of Rural Engineering	Japanese	Japanese People
13	Hydraulic design for irrigation canal and canal structure	Training	2010.06	Training materials on hydraulic design for small scale irrigation canal and facilities	English Khmer(Partial)	TSC CP
14	Thomney model site (Takeo Province)	Survey	2010.07	Route and cross section survey of canal : around 2,400m	English	CP
15	Participation of farmer for sustainable irrigation system management	Training	2010.07	Training materials on construction and management of irrigation facilities, and establishment and management of Farmer Water Users Community (FWUC) etc. by farmer's participatory.	English Khmer(Partial)	TSC CP
16	Thlea Maorm model site (Pursat Province)	Survey	2010.08	Route and cross section survey of delivery canal : around 4,300m	English	CP
17	General information about a opening Home Page	PR	2010.08	Introduction about a TSC3 Project HP	Japanese	Japanese People

No.	Item	Purpose	Date	Contents	Language	Distributed to
18	Introduction of 2th JCC meeting	PR	2010.10	Introduction about a JCC meeting discussion and result	Japanese	Japanese People
19	Accurate data collection methodology appropriate for agricultural river basin planning by using remote sensing & GIS technology	Training	2010.11	Training materials on accurate data collection methodology for agricultural river basin planning by using remote sensing, GIS & GPS technology	English Khmer(Partial)	TSC CP
20	Construction management	Training	2010.11	Training materials on construction management of construction site	English Khmer(Partial)	TSC CP
21	Calculation of Water Balance for Agricultural River Basin Development and Management	Training	2010.12	Training materials on meteorology, hydrology analysis and Water balance calculation which is necessary for Agricultural River Basin Management	English	TSC CP
22	Water balance model planning in Prek Thnot river basin	Training	2010.12	Making of water balance model in Prek Thnot river basin which is model river for Agricultural River Basin Management	English and Japanese	TSC CP
23	Cost estimation of irrigation facilities and Schedule management	Training	2010.12	Training materials on estimation of cost which is necessary for construction of irrigation facilities and schedule management of construction	English	TSC CP
24	Frow Chart and check List on irrigation canal designing	Training	2010.12	Flow Chart and check List on irrigation canal designing	English	TSC CP
25	Complete set of a Tender Document as reference	Training	2010.12	Tender Document sample	English	TSC CP
26	Dispatch of Design, Construction Management Exp. & Analysis of Hydrology, Meteorology Exp.	PR	2010.12	Introduction about a Design, Construction Management Exp. & Analysis of Hydrology, Meteorology Exp.	Japanese	Japanese People

No.	Item	Purpose	Date	Contents	Language	Distributed to
27	Por Canal mode site	Design	2010.12	Design of secondary canal (around 1,470m), tertiary canal (around 3,780m) and check gate (7 places) etc.	English	CP
28	Tender Document(Por Canal Model Site)	Tender Doc.	2011.1	Tender document to order the construction of irrigation facilities at Por Canal model site to private construction company	English	JICA Cambodia Office Company TSC CP
29	Irrigation planning by GIS(Revise)	Training	2011.2	Training Materials on making an irrigation planning by using GIS,GPS and Remote Sensing etc.	English	TSC CP
30	Kandal Stang Main Canal Survey and emergency rehabilitation	others	2011.2	Some parts of Kandal Stung main canal that was constructed by Grant aid project by 2008 broke by heavy rain in rainy season in 2010. TSC surveyed the collapsed part and conducted emergency rehabilitation, because it is necessary to rehabilitate immediately to avoid expansion of damage to the surrounding area.	English	CP
31	Seminar of River Basin Management	PR	2011.2	Introduction about a River Basin Management Seminar	Japanese	Japanese People
32	Presentation materials for the seminar on Agricultural River Basin Management and Development	Seminar	2011.2	Presentation materials to introduce the current condition in Cambodia and the future development direction of Agriculture River Basin Management that TSC will try to deal with etc.	English	TSC CP
33	River Basin Hydrology and Modeling	Training	2011.3	Each process approach for Agri. River Basin Development & Management	English	TSC CP
34	Thlea Maorm model site	Design	2011.03	Check structure (1 place)	English	CP
35	Thomney model site	Design	2011.03	Design of concrete secondary canal (24m), brick tertiary canal (around 890m) etc.	English	CP

F.Y. 2011

No.	Item	Purpose	Date	Contents	Language	Distributed to
36	Construction supervision	Training	2011.4	Training materials on construction supervision of construction site	English Khmer(Partial)	TSC CP
37	Contribution of the thesis to the journal of the society	PR	2011.4	Contribution of thesis on the following theme to the journal of the Japanese Society of Irrigation, Drainage and Rural Engineering	Japanese	Japanese People
38	Basin-Wide irrigation planning	Training	2011.7	Training materials to introduce the Basin-Wide irrigation planning plainly	English	TSC CP
39	Dispatch of Discharge analysis system Exp. and River Basin Management training	PR	2011.7	Introduction about a Short term Exp. of Discharge analysis system and River Basin Irrigation Planning training	Japanese	Japanese People
40	Roleang Chrey model site (Kompong Speu Province)	Survey	2011.07	Topographic survey : around 210ha, Route and cross section survey of canal : around 10,800m	English	CP
41	Hydrology, meteorology, water requirement and Irrigation planning	Training	2011.8	Training materials of hydrology, meteorology, water requirement and irrigation planning	English	TSC CP
42	Thlea Maorm model site (Pursat Province)	Survey	2011.08	Route and cross section survey of tertiary canal : around 1,045m	English	
43	Explanation materials for farmer on Farmer to Farmer OJT	Work Shop	2011.8	Revise of materials to explain to farmer on Farmer to Farmer OJT (Stung Chinit FWUC, Tum Lop FWUC)	English and Khmer	Farmer
44	Tender Document(Damnak Ampil Model Site)	Tender Doc.	2011.11	Tender document to order the construction of irrigation facilities at Damnak Ampil model site to private construction company	English	JICA Cambodia Office Company TSC CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
45	Design of Canals and Related Structures	Training	2011.11	Training materials of Design of Irrigation Canal and Related Facilities	English	TSC CP
46	Design Report (Damnak Ampil, Upper Slakou, Roleang Chrey)	Design	2011.11	Draft Report for Confirmation of Design Criteria	English	TSC CP
47	Damnak Ampil model site (Pursat Province)	Design	2011.11	Design of secondary canal (around 1,000m), tertiary canal (around 2,700m) and check gate (6 places) etc.	English	CP
48	Upper Slakou model site (Takeo Province)	Design	2011.11	Design of secondary canal (around 2,520m), tertiary canal (around 3,140m) and check gate (8 places) etc.	English	CP
49	Roleang Chrey model site (Kompong Speu Province)	Design	2011.12	Design of secondary canal (around 1,530m), tertiary canal (around 5,170m) and check gate (3 places) etc.	English	CP
50	Por Canal model site FWUC Statute	Others	2011.12	Establishment of FWUG and making of the tentative statute	English and Khmer	TSC CP Farmer
51	Damnak Ampil model site FWUC Statute	Others	2011.12	Establishment of FWUG and making of the tentative statute	English and Khmer	TSC CP Farmer
52	Tender Document(Roleang Chrey Model Site)	Tender Doc.	2012.1	Tender document to order the construction of irrigation facilities at Roleang Chrey model site to private construction company	English	JICA Cambodia Office Company TSC CP
53	Irrigation and Water Management	Work Shop	2012.2	Study on Water Distribution Plan and, Guidance for the Water distribution plan(Thornney, Por Canal model site)	English	TSC CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
54	Topographic Survey for Drawing of Plane	Training	2012.3	Training materials on Topographic Survey for Drawing of Plane	English	TSC CP
55	Completion Report about a Long time Exp. Mr. Watanabe and awarded a gold medal	PR	2012.3	Introduction about a Completion Report of Long term Exp. Mr. Watanabe and awarded a gold medal	Japanese	Japanese People
56	Survey of TSC3 Model site by Dr.Ieko Kakuta (Univ. Asia)	PR	2012.3	Introduction about a FWUC/G Survey and analysis of TSC3 Model site	Japanese	Japanese People
F.Y. 2012						
57	Construction Management and Supervision	Training	2012.5	Training materials on Construction Management and Supervision	English	TSC CP
58	Dispatch of Remote sensing Exp.	PR	2012.5	Introduction about a activity of Remote sensing Exp.	Japanese	Japanese People
59	Dispatch of Construction Management Exp.	PR	2012.6	Introduction about a activity of Remote sensing Exp.	Japanese	Japanese People
60	Textbook on River Basin Management and Planning	Training	2012.6	Metrological date collection, Distributed water circulation model,water allocation and management model etc.	English	TSC CP
61	TSC institutionalization and human resource development	Others	2012.7	Proposed plan of TSC institutionalization and human resource development	English Japanese	TSC CP
62	Explanation materials for Operation & Maintenance	Work Shop	2012.7	materials to explain about a Operation & Maintenance by farmers	English(Partial) Khmer	Famer

No.	Item	Purpose	Date	Contents	Language	Distributed to
63	Project site Activity "Damnak Ampil"	PR	2012.7	Introduction about a Model Site activity of Damnak Ampil	Japanese	Japanese People
64	Explanation materials for farmer on Farmer to Farmer OJT	Work Shop	2012.8	materials to explain to farmer on Farmer to Farmer OJT (Komping Puoy FWUC, Por canal FWUC, Thlear Maorm FWUC)	English and Khmer	Famer
65	Lum Hack model site (Kompong Chnnang)	Survey	2012.8	Topographic survey : around 160ha、 Route and cross section survey of canal : around 8,200m	English	CP
66	Project site Activity "Por Canal"	PR	2012.9	Introduction about a Model Site activity of Por Canal	Japanese	Japanese People
67	Explanation materials for Annual Plan & Account	Work Shop	2012.9	materials to explain about a FWUC/FWUG Annual Plan & Account	English Khmer	Famer
68	Discharge Measurement	Training	2012.10	Training materials of Discharge Measurement (Analysis & Monitoring of WB for ARBM&D)	English	TSC CP
69	Training of Rice Cultivation Technology for Promotion of Agricultural Productivity	PR	2012.11	Introduction about a Training of Rice Cultivation Technology for Promotion of Agricultural Productivity	Japanese	Japanese People
70	Thlea Maorm model site (Pursat Province)	Design	2012.11	Design of tertiary canal (around 1,050m) and Intake(1 places) etc.	English	CP
71	TSC3 Project was Introduced by Radio in Cambodia	PR	2012.11	Introduction about a TSC3 Project was Introduced by Radio in Cambodia	Japanese	Japanese People

No.	Item	Purpose	Date	Contents	Language	Distributed to
72	Project site Activity "Lum Hack"	PR	2012.12	Introduction about a Model Site activity of Lum Hack	Japanese	Japanese People
73	Basin wide Irrigation planning(revise)	Training	2012.12	Training materials of hydrology, meteorology, water requirement and irrigation planning	English	TSC CP
74	Thomney model site (Takeo Province)	Design	2012.12	Design of brick tertiary canal (around 2,230m) etc.	English	CP
75	Hydrology, meteorology, water requirement and Irrigation planning(revise)	Training	2012.12	Training materials of hydrology, meteorology, water requirement and irrigation planning	English	TSC CP
76	Tender Document(Roleang Chrey Model Site)	Tender Doc.	2012.12	Tender document to order the construction of irrigation facilities at Roleang Chrey model site to private construction company	English	JICA Cambodia Office Company TSC CP
77	Enhancement of Agricultural Extension Service in Collaborate with APPP	Training	2012.12	Training materials of Enhancement of Agricultural Extension Service in Collaborate with APPP	Khmer	TSC CP
78	Training Program for Newly Recruited Staffs of Mowram	Training	2012.12	Training Target, Training curriculum, training Goal and Syllabus of training for Newly Recruited Staffs of Mowram	English	TSC CP
79	Roleang Chrey model site (Kompong Speu Province)	Design	2012.12	Design of tertiary canal (around 4,580m) and Intake(2 places) etc.	English	CP
80	Small Scale reservoir	Training	2013.1	Training materials of Small Scale reservoir	English	TSC CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
81	Project site Activity "Upper Slakou"	PR	2013.2	Introduction about a Model Site activity of Upper Slakou	Japanese	Japanese People
82	Lum Hack model site (Kompong Chnnang)	Design	2013.2	Design of secondary canal (around 1,700m), tertiary canal (around 6,580m) and Intake (1 places) etc.	English	CP
83	Accurate Date Collection Methodology for ARB planning by remote sensing & GIS 1(Revise)	Training	2013.3	Training materials of Accurate Date Collection Methodology for ARB planning by remote sensing & GIS 2	English	TSC CP
84	Accurate Date Collection Methodology for ARB planning by remote sensing & GIS 2(Revise)	Training	2013.3	Training materials of Accurate Date Collection Methodology for ARB planning by remote sensing & GIS 2	English	TSC CP
85	Finding from the Baseline survey on 8 FWUCs/FWUGs assisted by TSC3 Project	Other	2013.3	General view of "Organizational Strength" of each FWUC/FWUG, Some suggestion, etc..	English	TSC CP
86	Construction and Rehabilitation of Irrigation System	Training	2013.3	Training materials of Participation of Famers for Sustainable Irrigation System Management	English	TSC CP
87	Operation and Maintenance	Training	2013.3	Training materials of Operation and Maintenance	English	TSC CP
88	Organizational Management of FWUC/FWUG	Training	2013.3	Training materials of Participation of Famers for Sustainable Irrigation System Management	English	TSC CP
89	Technical Exchange training in Indonesia	PR	2013.3	Introduction about a Technical Exchange training in Indonesia	Japanese	Japanese People

No.	Item	Purpose	Date	Contents	Language	Distributed to
90	Project site Activity "Roleang Chrey"	PR	2013.3	Introduction about a Model Site activity of Roleang chrey	Japanese	Japanese People
F.Y. 2013						
91	Manual on Soil / Concrete Test and Analysis	Training	2013.4	Training materials of Participation of Soil / Concrete Test and Analysis	English	TSC CP
92	Soil Cement Manual for Canals	Training	2013.4	Out line of soil cement, Mix design, Construction Method	English	TSC CP
93	Dispatch of Soil & Concrete Analysis Exp.	PR	2013.4	Introduction about a activity of Soil & Concrete Analysis Exp.	Japanese	Japanese People
94	Project site Activity "Thlear Maorm"	PR	2013.5	Introduction about a Model Site activity of Thlear Maorm	Japanese	Japanese People
95	Project site Activity "Thomney"	PR	2013.6	Introduction about a Model Site activity of Thomney	Japanese	Japanese People
96	Thomney Model Site Workshop Document	Work Shop	2013.7	Irrigation Block, Method of Water Distribution, Discharge calculation by Gate operation, etc.	English Japanese	TSC CP
97	Rotation Irrigation Method	Work Shop	2013.7	Manual of method of Rotation Irrigation	English Japanese	TSC CP
98	Operation and Maintenance Activity by Farmer Participation	Work Shop	2013.7	Manual of irrigation Facilities maintenance by farmer	English Japanese	TSC CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
99	Check List (Canal and Gate)	Work Shop	2013.7	Check List of inspection about a Gate and Canal for maintenance	English Japanese	TSC CP
100	Operation and Maintenance of Irrigation Facilities Text(Revise)	Training	2013.7	Training materials of Operation and Maintenance	English	TSC CP
101	Technical Manual on River Basin Irrigation Planning(Revise)	Training	2013.7	Training materials of River Basin Irrigation Planning	English	TSC CP
102	Practice of Rice Cultivation Technology for Promotion of Agricultural Productivity	PR	2013.7	Introduction about a Practice of Rice Cultivation Technology for Promotion of Agricultural Productivity in TSC3 Model Site	Japanese	Japanese People
103	Training for skill up of Water Distribute Management	PR	2013.8	Introduction about a Training of Rice Cultivation Technology for Promotion of Agricultural Productivity	Japanese	Japanese People
104	Explanation materials for Operation & Maintenance(Revise)	Work Shop	2013.8	materials to explain about a Operation & Maintenance by farmers	English(Partial) Khmer	Farmer
105	Explanation materials for farmer on Farmer to Farmer OJT	Work Shop	2013.9	materials to explain to farmer on Farmer to Farmer OJT (Ponley FWUC, West Baray FWUC)	English and Khmer	Farmer
106	Introduction of JCC meeting	PR	2013.9	introduction about a 5th JCC meeting Summary of contents and result	Japanese	Japanese People
107	Lum Hack model site FWUC Statute	Other	2013.10	Making of the tentative statute	English and Khmer	TSC CP Farmer

No.	Item	Purpose	Date	Contents	Language	Distributed to
108	Dispatch of River Basin management Exp.	PR	2013.10	Introduction about a activity of River Basin management Exp.	Japanese	Japanese People
109	Project site Activity "Kandal Stung"	PR	2013.11	Introduction about a Model Site activity of Kandal Stung	Japanese	Japanese People
110	Explanation materials for Annual Plan & Account	Work Shop	2013.12	materials to explain about a FWUC/FWUG Annual Plan & Account(Revise)	English Khmer	Famer
111	Introduction of Micro-Hydroelectric power generation	PR	2013.12	Introduction of Micro-Hydroelectric power generation trial on Model site	Japanese	Japanese People
112	Manual of Basin Wide Irrigation Planning	Training	2013.12	Training materials of Basin Wide Irrigation Planning(Revise)	English	CP

No.	Item	Purpose	Date	Contents	Language	Distributed to
F.Y. 2014						
113	Project site Activity on strengthen of FWUC/G	PR	2014.1	Introduction about a 3 Model Site (Ream Kun, Wat Loung, Wat chrey) activity for strengthen of future organization of FWUC/G	Japanese	Japanese People
114	Lum Hack model site (Kompong Chunnang Province)	Design	2014.1	Design of tertiary canal (around 4,165m) and Check Gate(11 places) etc.	English	CP
115	Introduction of Terminal Evaluation	PR	2014.2	introduction about a summary of Terminal Evaluation	Japanese	Japanese People
116	Manual of Design of major Irrigation and Drainage Facilities	Training	2014.3	Training materials a part of Canal Works	English	CP
117	Manual of Plan,Design and Construction Control of Headworks	Training	2014.3	Training materials of Headworks	English	CP
118	Manual of Soil Cement for Canals	Training	2014.3	Training materials a part of Soil and Concrete Tests and Analysis	English	CP
119	Manual of Soil and Concrete Tests and Analysis	Training	2014.3	Training materials of Soil and Concrete Tests and Analysis	English	CP
120	Endline Survey Report for The TSC3 Project in Cambodia	Survey	2014.3	Result of Endline Survey for The TSC3 Project in Cambodia	English	JICA Cambodia Office TSC CP
121	Project site Activity "Lum hack" No.2	PR	2014.4	Introduction about a Model Site activity of Lum hack No.2	Japanese	Japanese People

No.	Item	Purpose	Date	Contents	Language	Distributed to
122	Dispatch of Head Works Exp for Plan, Design and construction management.	PR	2014.4	Introduction about a activity of Head works Exp for Plan, Design and construction management.	Japanese	Japanese People
123	Document for Technical Exchange with Laos Team	Others	2014.4	PIMD, General Information, Damnakampil, Lumhack, WestBarai document for technical Exchange eith Laos Team	English	Laos Delegation Team
124	Perfomed of training course about construction management and supervision	PR	2014.5	Introduction about a Training activity of construction management and supervision	Japanese	Japanese People
125	Support for the Grass Roots-Human Security Project	PR	2014.6	Introduction about a technical Support for the Grass Roots-Human Security Project	Japanese	Japanese People
126	Technical Manual on River Basin Irrigation Planning(Revise)	Training	2013.7	Training materials of River Basin Irrigation Planning	English	TSC CP
127	Activity for sustainable development of FWUC/G	PR	2014.7	Introduction about a O&M and A&A workshop for sustainable development of FWUC/G	Japanese	Japanese People
128	Explanation materials for farmer on Farmer to Farmer OJT	Work Shop	2014.7	materials to explain to farmer on Farmer to Farmer OJT (Prey Nup FWUC)	English and Khmer	Famer



Kingdom of Cambodia

Nation Religion King

Ministry of Water Resources And Meteorology

Report

of

Basic policy and Revision of the 2014 annual plan in TSC

Prepared by

Technical Service Center for Irrigation and Meteorology

MOWRAM

August, 2014

CONTENTS

- I. **Basic policy of activities in TSC**
 1. **Expected Activities**
 2. **Points of attention for Activity**
 - 2-1 **Institutional and Financial aspect**
 - 2-2 **In-house training including training newly recruited staff**
 3. **Temporary measure to compensate for the lack of National Budget**
 4. **Prioritization of activities**
 5. **TSC activity plan from medium- and long-term standpoint**
 - 5-1 **Activities by National Budget**
 - 5-2 **RBWRU Project**
 - 5-3 **Japanese Grant Assistance for Grass Roots Project**
 - 5-4 **Non-Project Counterpart Fund**
 - 5-5 **Yen loan Project**

- II. **Revision of the 2014 TSC annual budget plan**
 1. **National Budget in 2014**
 - 1-1 **Amount of National Budget**
 - 1-2 **Prioritization of Activities by National Budget**
 2. **Counterpart Fund in 2014**
 - 2-1 **Amount of Counterpart Fund**
 - 2-2 **Activities by Counterpart Fund**
 3. **Other Budgets for Activity**

- III. **Revision of the 2014 TSC annual activity plan**
 1. **Technical Training Course**
 - 1-1 **Training Course by National Budget**
 - 1-2 **Training Course by Counterpart Fund**
 - 1-3 **Training Course as part of Technical Support**
 2. **Technical Support of PDWRAM and MOWRAM excluding Training Course**
 - 2-1 **RBWRU Project**
 - 2-2 **Japanese Grant Assistance for Grass Roots Project**
 - 2-3 **West Tonle Sap Irrigation Rehabilitation and Improvement Project (CP-P11)**
 - 2-4 **Technical support with the department of irrigated agriculture and the department of FWUC in MOWRAM to FWUC/G in the model irrigation projects**

- IV. **Number and Specialization of staff required**

- V. **Assignment of TSC staff to RBWRU Project**

1. Assignment of staff to RBWRU Project
2. Countermeasure if TSC staff shortage occurs
 - 2-1 New recruited staff
 - 2-2 Cultivating ability of training for new TSC staff
 - 2-3. List of TSC member

LIST OF ANNEXES

- ANNEX 1:** Schedule of Technical Training Course in TSC
- ANNEX 2:** Technical Support of PDWRAMs in 2014
- ANNEX 3:** List of RBWRU Project member
- ANNEX 4:** List of TSC member
- ANNEX 5:** FWUC/Gs Annual Plan of 2014 in the model irrigation projects
- Prolay Thmey Bei phum Khum Talous FWUG Annual Plan (Por Canal)
 - Kandeung Meas FWUG Annual Plan (Damnak Ampil)
 - Thlear Maom FWUC Annual Plan
 - Kum Ru Pich Chorng Va FWUG Annual Plan (Lum Hach)
 - Ou Veang FWUC Annual Plan (Roleang Chrey)
 - Kandal Stung FWUC Annual Plan
 - Along Romiet FWUG Annual Plan
 - Kork Trab FWUG Annual Plan
 - Prea Putth FWUG Annual Plan
 - Tien FWUG Annual Plan
 - Roluos FWUG Annual Plan
 - Kong Noy FWUG Annual Plan
 - Barku FWUG Annual Plan
 - Tumnub Khpob Trabek FWUC Annual Plan (Upper Slakou)
 - Thomney FWUC Annual Plan

I Basic policy of activities in TSC

1. Expected Activities

1) Ensuring sustainability of the technology related to the agricultural river basin management and development

Through this long-term technical cooperation under JICA, at individual level, MOWRAM/PDWRAM staffs as well as TSC counterparts have acquired the techniques and knowledge in the field of the agricultural river basin management and development.

And they become sufficient capacity such as planning, survey, design, construction management and also supervising to other staff and private construction companies.

In particular, TSC C/Ps enhanced their capacities for supervising construction management and contractor through model site works.

And also, PDWRAM staff is expected to do planning, designing, construction, management/supervision, water management by themselves for the projects.

So, TSC continues to provide Technical Training Courses to PDWRAM staff and Technical Support to ensure sustainability of the technology related to the agricultural river basin management and development above.

2) Ensuring sustainability of the technical support system of TSC to promote implementation of irrigation projects by PDWRAM

Technical support system of TSC is functioning and being highly appreciated by PDWRAM. Through the strong technical support by TSC, PDWRAMs became to design map and make proper proposal on small scale irrigation projects.

PDWRAM continue to formulate and submit any irrigation projects for not only donors but also NGO and national government through the technical support by TSC.

So, TSC continues to provide Technical support to PDWRAM to ensure sustainability of the technical support system of TSC.

3) Contribution of human resources development and Implementation of any other project

TSC staff as core persons will not only contribute to human resources development for in their own offices but also implement any other projects related to the agricultural river basin management and development, which are schemed by national government budget, Yen loan project, grant assistance for the Grass Roots and other donors, by themselves.

MOWRAM/TSC/PDWRAM needs to apply the output of the Project to other irrigation projects implemented in the near future, such as national budget projects, Japanese ODA projects (the Grant Assistance for Grass Roots (Kusanone) projects, the Yen loan projects) and other donors' projects.

4) Change the role of FWUC/G in the model irrigation projects from "FWUG for promoting construction works" to "FWUG for promoting O&M works"

After construction works done, the FWUC/Gs' role should be changed from promoting construction works to promoting Operation & Maintenance (O&M) works including water fee collection.

Therefore, PDWRAMs work for FWUC/Gs with support from MOWRAM like the department of irrigated agriculture and the department of FWUC with technical support from TSC.

PDWRAMs provide the FWUC/Gs with the necessary knowledge and experiences, through workshops, and promote O&M activity like rehabilitation of small scale canals.

And also, PDWRAMs support FWUC/Gs to start water fee collection to utilize and maintain the construction.

So, TSC continues to provide Technical Training Courses to PDWRAM staff and Technical Support with support from MOWRAM like the department of irrigated agriculture and the department of FWUC to change the role of FWUC/G in the model irrigation projects above.

2. Points of attention for Activity

2-1 Institutional and Financial aspect

The budgetary condition of Cambodian government has been limited so far and it will inevitably be hard to secure financial sustainability at this stage. Therefore, MOWRAM will take necessary measures to secure the budget for the TSC activities.

2-2 In-house training including training newly recruited staff

Number of young generation (21-35 years old) of MOWRAM is extremely small compared with the middle generation. Thus, ensuring sustainability, sound management of MOWRAM in the future recruiting young staff is essential. Those predict that MOWRAM continue to recruit many new staff per year, especially engineers and technicians, because MOWRAM/PDWRAM have to maintain and operate important infrastructure like dams and head works, and do proper water management of main river basins in the country.

So, TSC provides in-house training to newly recruited staff as much as possible to ensure sustainability of the technology.

3. Temporary measure to compensate for the lack of National Budget

To compensate for the lack of National Budget, TSC will provide Training Courses and Technical Support such as Workshop, OJT and Study tour by Budget of "River Basin Water Resources Utilization (RBWRU)" project and Soft component fund of Yen loan project (CP-P11, CP-P14) etc.

4. Prioritization of activities

TSC prioritizes the activities based on approved National Budget every year as below, because the budgetary condition of Cambodian government has been limited so far,

1) Technical Training Courses to maintain technical capacity of whole MOWRAM's technical staffs in mid and long term viewpoint.

In case MOWRAM continues to recruit many new staff per year, TSC needs to provide Technical Training Courses for obtainment of Basic knowledge and skill to raise understandability of the basic subjects such as the Basic Courses of Category of TSC Training Courses which are important to fulfill practical duties.

Especially, the Basic Courses which RBWRU project cannot provide is important.

For example,

- Topographic survey (Basic plain survey, route survey etc, by Auto level, Total Station etc.)
- Hydric Design of irrigation System
- Construction Management & Supervision

2) Technical Training Courses without support from Budget of projects in case TSC needs to

provide Technical Training Courses under national budget projects and Japanese ODA projects (the Grant Assistance for Grass Roots projects, the Yen loan projects) to apply the output of the TSC project to other irrigation projects implemented in the near future

3) Technical Training Courses to PDWRAM staff and Technical Support with support from MOWRAM like the department of irrigated agriculture and the department of FWUC to change the role of FWUC/G in the model irrigation projects

Especially, West Tonle Sap Irrigation Rehabilitation and Improvement Project (CP-P11) cannot provide the Budget to conduct Technical Training Courses and Technical Support for Kampong Speu, Kandal and Takeo PDWRAMs.

5. TSC activity plan from medium- and long-term standpoint

5-1 Activities by National Budget

TSC has requested to increase the amount of the National budget to MEF to conduct required activities according to Basic policy and Prioritization of activities in TSC every year.

5-2 RBWRU Project

TSC will contribute the effective and efficient implementation of the RBWRU Project by offering technologies and knowledge such as Basin Wide Irrigation Planning and Management that have been accumulated, particularly TSC is expected to provide technical assistance and guidance for supporting the establishment of FWUCs.

Duration: May 2014 until May 2019

Recipients: Battambang, Pursat, Kampong Chhnang, Kampong Speu, Kandal and Takeo

Budget: N/A

TSC provides Training Courses as part of Technical Support according to RBWRU annual plan.

Some TSC staffs to provide Technical Support hold the position as RBWRU staff.

5-3 Japanese Grant Assistance for Grass Roots Project

Grass Roots project plans are formulated every fiscal year.

TSC has provided Technical Support of Planning, Designing, Construction Management and Supervision according to the following process schedule of Grass Roots project every year.

- Submission of application form (2 times per year)
- Preliminary Project Design Survey before adoption
- Interim monitoring during construction period
- Completion monitoring after construction
- 2 years follow-up monitoring (2 years after submission of job completion report)

5-4 Non-Project Counterpart Fund

In case of implementation of Non-Project Counterpart Fund, TSC has provided Technical Support of Planning, Designing, Construction Management and Supervision.

5-5 Yen loan Project

5-5-1 West Tonle Sap Irrigation Rehabilitation and Improvement Project (CP-P11)

1) Technical Support of Establishment and Strengthening of FWUC/Gs

Duration: November 2014 until July 2017

Recipients: Battambang, Pursat and Kampong Chnang PDWRAMs.

Budget: Soft component fund

2) Technical Support of Construction Management and Supervision for Tertiary canals

Duration: November 2014 until January 2017

Recipients: Battambang, Pursat and Kampong Chnang PDWRAMs

Budget: Counterpart Fund other than Japan

[Note]

In case JICA grants a subsidy of 70% of MOWRAM Advisor Budget, TSC will conduct additional Training courses such as Construction Management & Supervision for CP-P11 and Grass Roots Project.

5-5-2 Southwest Phnom Penh Irrigation Rehabilitation and Improvement Project (CP-P14)

1) Technical Support of Establishment and Strengthening of FWUC/Gs

Duration: November 2016 until July 2021

Recipients: Kampong Speu, Kandal and Takeo PDWRAMs.

Budget: Counterpart Fund

2) Technical Support of Planning, Designing, Construction Management and Supervision for Tertiary canals

Duration: November 2018 until July 2019

Recipients: Kampong Speu, Kandal and Takeo PDWRAMs.

Budget: Counterpart Fund

II Revision of the 2014 TSC annual budget plan

1. National Budget in 2014

1-1 Amount of National Budget

TSC requested the budget to MEF, based on the TSC's annual plan. The budget amount which was requested to MEF was approx. 1,372 million Riel (US\$343 thousand; exchange rate, US\$ 1 = Riel 4,000); however MEF approved only 66 million Riel (US\$16.5 thousand; exchange rate, US\$ 1 = Riel 4,000) in 9th May 2014.

TSC has requested the supplementary budget in 2014 to MEF which amount is approx. 60 million Riel (US\$15.0 thousand; exchange rate, US\$ 1 = Riel 4,000).

1-2 Prioritization of Activities by National Budget

Based on approved National Budget, TSC prioritized the activities as below.

1) Preparing technical document

No budget to support this activity.

2) Training Course

Two Training Courses will be conducted after TSC3. If MEF approves 60 million Riel of the supplementary budget in 2014, another one Training Courses such as Topographic and Route Survey will be conducted.

Training Courses will be prioritized to be useful for the establishment of FWUC/G and collection of water fee.

3) On the Job training

No budget to support this activity.

4) Visit for exchange study

No budget to support this activity.

As to providing training to newly recruited MOWRAM, we have plan for some newly recruited staffs to join the Technical Trainings by TSC3 project Budget, National Budget and Counterpart Fund.

2. Counterpart Fund in 2014

2-1 Amount of Counterpart Fund

TSC requested the budget to MEF, however MEF approved US\$60 thousand in 25 February 2014.

Counterpart Fund is used for Training Courses of TSC3 project.

2-2 Activities by Counterpart Fund

Based on the remains of Counterpart Fund after TSC3, TSC will conduct Two Training courses.

3. Other Budgets for Activity

To compensate for the lack of National Budget, TSC will provide Training Courses and Technical Support such as Workshop, OJT and Study tour by Budget of RBWR project and Soft component fund of Yen loan project (CP-P11).

[Note]

Example of Activity and Budget

- Technical Support of the establishment of FWUC/G and collection of water fee (Soft component fund, Budget of RBWRU, etc.)
- Technical Support of the Yen loan project (Soft component fund, Budget of Yen loan, etc.)
- Technical Support of TSC3 model site, especially strengthen FWUC/FWUG (Soft component fund, Budget of BRWRU)
- Technical Support of PDWRAM for formulation of Grass Roots project (National Budget, etc.)

III Revision of the 2014 TSC annual activity plan

1. Technical Training Course

Schedule of Technical Training Course in TSC is shown in ANNEX 1.

1-1 Training Course by National Budget

1) Irrigation Management Planning by GIS

Duration: From 01st September 2014 to 16th September 2014 (12days)

Number of participants: 20 persons

Budget: 33,000,000 Riels

2) Operation and Maintenance of Irrigation System

Duration: From 6th October 2014 to 22nd October 2014 (12days)

Number of participants: 20 persons

Budget: 33,000,000 Riels

1-2 Training Course by Counterpart Fund

1) Hydraulic Design for Irrigation Canal and Canal Structure

Duration: From 01st December 2014 to 5th December 2014 (5days)

Number of participants: 20 persons

Budget: 12,544,000 Riels

2) Hydrology, Meteorology & Crop Water Requirement Survey and Irrigation planning

Duration: From 15th December 2014 to 26th December 2014 (10days)

Number of participants: 20 persons

Budget: 17,107,000 Riels

1-3 Training Course as part of Technical Support

1) Training Course by Budget for RBWRU

RBWRU project has tentative plan to conduct training in 2014 based on "Tentative Plan of Operation (PO)" as below.

- Awareness raising of water resources coordination for the members of tentative "River Basin Management Committee (RBMC)" from October to December 2014
- Coordinating water resources for representatives of FWUCs and commune chiefs in December 2014

2) Training Course by Soft component fund of Yen loan Project (CP-P11)

CP-P11 does not have plan of Training Courses by Soft component fund in 2014.

But, CP-P11 has plan of Training Courses by Soft component fund in 2015 with technical support from TSC for Establishment and Strengthening of FWUC/Gs as below.

- Training of FWUC Statute drafting committee and draft FWUC Statute by Subcommittee
- Basic administrative training for FWUC committee
- Conflict resolution training for FWUC committee
- Water distribution training for FWUC committee

2. Technical Support of PDWRAM and MOWRAM excluding Training Course

Schedule of Technical Support of PDWRAM and MOWRAM in 2014 excluding Technical Training Course is shown in ANNEX 2.

2-1 RBWRU Project

RBWRU project has tentative plan in 2014 based on "Tentative Plan of Operation (PO)" with technical support from TSC as below.

- Operation and Maintenance system of the equipment and data processing/analyzing in December 2014
- Support of establishing FWUCs in 2014
- Development of River basin run-off and water balance calculation models such as collection of necessary data and information, and on the job training for formulating run-off and water balance model

2-2 Japanese Grant Assistance for Grass Roots Project

2-2-1 Plan of Japanese Grant Assistance for Grass Roots Project for fiscal 2014

1) Thlork Kambot Irrigation Rehabilitation Project

Application Date: 30th May 2014

Content: Technical Support of Planning, Designing, Construction Management and Supervision

Recipient: Svay Rieng PDWRAM

Budget of Project: 102,063 US\$

2) Derm Thkov Irrigation Rehabilitation Project

Application Date: 3rd June 2014

Content: Technical Support of Planning, Designing, Construction Management and Supervision

Recipient: Takeo PDWRAM

Budget of Project: 101,355 US\$

3) Boeung Thom Irrigation Rehabilitation Project

Application Date: 10th June 2014

Content: Technical Support of Planning, Designing, Construction Management and Supervision

Recipient: Kampong Chnang PDWRAM

Budget of Project: 99,500 US\$

4) Trapang Kandal Irrigation Rehabilitation Project

Application Date: 19th June 2014

Content: Technical Support of Planning, Designing, Construction Management and

Supervision

Recipient: Kampong Cham PDWRAM

Budget of Project: 103,024 US\$

2-2-2 Activity plan in 2014

TSC provides Technical support of Designing, Construction Management and Supervision after TSC3 by National Budget as below.

- Modification of application form of fiscal 2014 project based on the result of preliminary project design survey before adoption
- Completion monitoring after construction of fiscal 2013 project in September
- Interim monitoring during construction period of fiscal 2014 project in December

2-3 West Tonle Sap Irrigation Rehabilitation and Improvement Project (CP-P11)

CP-P11 has plan in 2014 by Soft component fund with technical support from TSC as below.

- Public Meeting to make clear that the irrigation system will be managed by farmer in November 2014
- Meeting to confirm for FWUC formulation and register landowner in project area in December 2014

2-4 Technical support with the department of irrigated agriculture and the department of FWUC in MOWRAM to FWUC/G in the model irrigation projects

FWUC/Gs carry out various activities such as regular group meeting, making Annual Plan, O & M activities, water fee collection for utilization and maintenance of construction and Accounting according to Annual Plan.

FWUC/Gs Annual Plan of 2014 in the model irrigation projects is shown in Annex 5.

PDWRAMs provide FWUC/Gs with the necessary knowledge and experiences for FWUC/Gs activities through workshop etc. and promote O&M activity and support FWUC/Gs for water fee collection in the model irrigation projects depending on FWUC/Gs needs and development.

TSC provides Technical Support timely to PDWRAMs with support from the department of irrigated agriculture and the department of FWUC in MOWRAM above.

IV Number and Specialization of staff required

1) Planning & Survey

Full-time staff: 1 people

Staff member holding the RBWRU posts: 4 people

New recruited staff: 4 people

2) Design

Full-time staff: 2 people

Staff member holding the RBWRU posts: 0 people

New recruited staff: 3 people

3) Construction:

Staff member holding the RBWRU posts: 2 people

New recruited staff: 3 people

4) Water management

Full-time staff : 2 people
Staff member holding the RBWRU posts: 1 people
New recruited staff: 3 people

5) Administration:

Full-time staff : 3 people
Staff member holding the RBWRU posts: 4 people
New recruited staff: 3 people

V Assignment of TSC staff to RBWRU Project

1. Assignment of staff to RBWRU Project

The list of RBWRU Project member is shown in ANNEX 3.

10 members of TSC3 staffs (including 2 Deputy Director) were assigned in 16 May as bellow.

- Planning & Survey section 4, Construction section 2, Water management 1, Administration 3

2. Countermeasure if TSC staff shortage occurs

2-1 New recruited staff

MOWRAM recruited 31 new staff in 2012, 47 new staff in 2013 and will recruit 100 new staff in 2014.

TSC recruited 16 university graduates in 16th May 2014 who consist of 5 official staffs (recruitment in 2012 by MOWRAM) and 11 internships.

**** Internship program**

MOWRAM recruits new graduates as Internship during 1.5 – 2.0 years to get practical experience of work. After internship, MOWRAM induct them as official staff in general.

2-2 Cultivating ability of training for new TSC staff

MOWRAM will adopt the following measures to cultivate ability of new TSC staff who can work as an instructor in case of increasing training course

1) Support of Capable staff holding the RBWRU Project posts

Staff member holding the RBWRU Project posts participate in the TSC activity without impairing the activity of RBWRU Project.

2) Special care for making the training plan according to cultivating ability of Training for RBWRU Project staff from medium- and long-term standpoint

2-3. List of TSC member

The list of TSC member is shown in ANNEX 4.

ANNEX1: Schedule of Technical Training Course in TSC

Achievement & Schedule of Technical Training in TSC (as of Aug 11, 2014)

		Number of Participants	2014								
1.Training Title	Budget		April	May	June	July	August	September	October	November	December
B-1.Topographic and Route Survey	JICA/CPF										
B-2.Hydrology, Meteorology & Crop Water Requirement Survey and Irrigation planning	CPF	20									5days(Dec15-26)
B-3.GIS for Irrigation Planning	JICA/CPF	18		2w(May 19-30)							
	National	20					12days(Sep 1-16)				
B-4-a.Hydraulic Design for Irrigation Canal and Canal Structure	CPF	20									5days(Dec1-5)
B-4-b.Drawing and Cost Estimation of Irrigation Facilities by Excel and AutoCAD	JICA/CPF										
B-5.Construction Management & Supervision	JICA/CPF	19	1W(Apr 21-25)								
B-6-a.Participation of Farmers for Sustainable Irrigation System Management	JICA/CPF	29			1w(Jun 23-27)						
B-6-b.Operation and Maintenance of Irrigation Facilities	JICA/CPF										
	National	20						12days(Oct 6-22)			
R-1-a.Accurate Data Collection Methodology for ARB Planning by Remote Sensing & GIS I	JICA/CPF										
R-1-b.Accurate Data Collection Methodology for ARB Planning by Remote Sensing & GIS II	JICA/CPF										
R-2.Basin Wide Irrigation Planning	JICA/CPF	30				2w(Jun30-11)					
R-2.Discharge Measurement	JICA/CPF										
R-4.Enhancement of Agricultural Extension Service with rice cultivation technology	JICA/CPF	20		1W(May 5-9)							
A-1.Advanced Design for Irrigation Canal & Related Facilities	JICA/CPF										
A-2.Advanced Design for Reservoir	JICA/CPF										
A-3.Advanced Design for Head Works	JICA/CPF										
A-4.Soil and Concrete	JICA/CPF	28			2w(Jun 3-13)						

Technical Support of PDWRAMs in 2014

No.	Activity	Budget	September	October	November	December
<i>River Basin Water Resources Utilization Technical Cooperation Project (RBWRU)</i>						
1	1-1 Conduct training for operation and maintenance system of the equipment and data processing/analysing	RBRWU				←→
	1-2 Support for establishing FWUCs		←→			
	1-3 Conduct on-the-job training for formulating run-off and water balance model and application for river basin planing		←→			
2	Japanese Grant Assistance for Grass Roots Project	National	Modification of application form of fiscal 2014 ←→ Completion monitoring after construction FY2013 ★			Interim monitoring ★
<i>West Tonle Sap Irrigation Rehabilitation and Improvement Project (CP-P11)</i>						
3	3-1 Public meeting to launch the program and inform farmer in detail of future activities and make clear that the irrigation system will be managed by farmers (village and commune level)	Soft component fund of CP-P11			←→	
	3-2 Meeting to confirm for FWUC formulation and register landowner in project area					←
4	Technical Support to FWUC/G in the model irrigation projects	National	←-----→			-----→

តារាងឈ្មោះមន្ត្រី
នៅអង្គការគ្រប់គ្រងគម្រោងការប្រើប្រាស់ធនធានទឹកនៅតាមអាងស្ទឹង
 Establishment of Project Management Unit on the River Basin Water Resources Utilization

No	Name in Khmer	Name in English	Sex	Position	Skill	Date of Birth	Date of Employment	TSC3 Section
1	ប៊ុន ហ៊ាន	Bun Hean	M	Secretary of State				
2	ពេជ្រ វាសនា	Pich Veasna	M	Deputy General Secretary of Tone Le Sap Authority/ Deputy Director General of Administration Affairs and TSC Director	Irrigation Engineer/ Master (MBA)	01-05-1967	15-12-1990	
3	ថេង តារា	Theng Tara	M	Deputy General Director of Technical Affairs/ Director Water Resource Management and Conservation				
4	ហ្វុង ស៊ុនថាន	Huong Sunthan	M	Deputy Director of Water Resource Management and Conservation				
5	ម៉ៅ ហាក់	Mou Huk	M	Deputy General Director of Technical Affairs/ Director Department of Hydrology and River Work				
6	ឡឹក សុផាច័ន្ទនី	Leng Sothea channy	M	Deputy General Director of Technical Affairs/ Director Department of Irrigated Agriculture				

110

7	ចាន់ ស៊ីណាត	Chan Sinath	M	Deputy General Director of Technical Affairs/ Director Department of Farmer Water User Community				
8	ឈា ប៊ុនរិទ្ធ	Chea Bunrith	M	Director of Human Resource Department				
9	ជា ឈុនតៀត	Chea Chhunkeat	M	Director of Planning and International Cooperation				
10	លឹម វីរក្ស	Lim Virak	M	Director of Engineering Department				
11	អ៊ុំ រីណា	Oum Ryna	M	Director of Meteorology Department				
12	អ៊ុច ហ៊ឹង	Uch Hing	M	Deputy Director of Technical Service Center	Irrigation Technician Civil Engineer/ Master Civil Engineer	06-03-1973	10-07-1995	Survey
13	ស៊ុយ សុវណ្ណ	Suy Sovann	M	Deputy Director of Department of Hydrology and River Work	Graduated Engineer for ITC	15-11-1973		
14	សូអ៊ឹម មណីជាតិ	So Im Monichoth	M	Deputy Director of Meteorology	Master of Programme/ Science in Engineering	18-05-1969		
15	យូ សុត្តា	You Sotha	M	Deputy Director of Technical Service Center	Irrigation Engineer	01-02-1972	01-04-1996	Planning
16	វេង សិទ្ធី	Veng Sithy	M	Staff of Hydrology and River Work	Bachelor of Accounting & Finance	30-09-1982	02-07-2009	
17	មាស សារ៉ឺន	Meas Savoeun	M	Vice-Chief of Technical Service Center	Irrigation Technician/ Civil Engineer/ Master of IMARD	05-09-1972	01-08-1994	Planning
18	ខឹម ប៊ុនហាក់	Khim Bunhak	M	Staff of Meteorology Department	Bachelor of IT/Master of Management	05-06-1984	20-02-2013	
19	ជាមុនី វិសិដ្ឋ	Chea Monyvycet	M	Deputy Director of Water Resource Management and Conservation	Bachelor of Science Engineer	02-03-1970	28-01-1992	

20	ម៉ែន ធួប័បុណ្យ	Men Mlobbonn	M	Deputy Director of Farmer water user Community	Irrigation Engineer	03-04-1967		
21	នង គាមនី	Nong Keamony	M	Staff of Water Resource Management and Conservation	Poly Technology of Tasken/ Irrigation Engineer	09-11-1972	28-05-1997	
22	សៅ អេណា	Sao Ena	M	Vice-Chief of Technical Service Center	Bachelor Architecture	13-01-1977	20-01-2004	Construction
23	ថាន សត្យា	Than Sattya	M	Vice-Chief of Planning and International Cooperation	Bachelor of Business	13-10-1983	02-07-2009	
24	សៀង សុថា	Soeung Sotha	M	Chief of Technical Service Center	Irrigation Technician/ Civil Engineer	14-05-1969	10-06-1990	Water management
25	អ៊ឹម ឡៃ	Im Lay	M	Staff of Hydrology and River Work	Bachelor of Management	02-02-1982	02-07-2009	
26	ទួន សុផាន់ណា	Tuon Sophanna	M	Chief of Water Resource Management and Conservation	Bachelor of Civil Engineering Master Business Administration	14-03-1961	28-01-1985	
27	ម៉ាន សេង	Mean Seng	M	Vice-Chief of Technical Service Center	Irrigation Technician/ Civil Engineer/ Master of IMARD	04-06-1975	22-10-1999	Survey
28	ហ៊ឹង កែវអូន	Heang KeoAun	M	Vice-Chief of Planning and International Cooperation	Bachelor/Master of Management	16-02-1984	02-07-2009	
29	ស្រេង វិទូ	Sreng Vitou	M	Chief Office of Pumping Station management	Technology of Cambodia Faculty of Hydrology	19-03-1969	16-01-1995	
30	នួន ចំណាប់	Nuon Chamnap	M	Deputy Director of Irrigated Agriculture Department	Technology of Cambodia Faculty of Hydrology	20-12-1959		
31	តាំង សុផាត	Tang Sophath	M	Chief of Planning and International Cooperation				

112

32	នួន វណ្ណារិទ្ធ	Noun Vannarith	M	Vice-Chief Technical Service Center	Irrigation Technician/Agriculture Bachelor/ Master of IMARD	02-09-1963	15-12-1989	Construction
33	តាន់ ណារ៉េន	Tan Naren	M	Chief of Farmer Water User Community	Irrigation Technician/ Agriculture Bachelor	07-01-1971	01-08-1994	
34	សុខ សំសេរី	Sok Samserey	M	Staff of Engineering Department	Bachelor/Master of Civil Engineering	23-11-1983	06-04-2007	
35	ពេជ ម៉ាលី	Pich Maly	F	Chief of Technical Service Center	Irrigation Technician/English Bachelor/Master of MBA	01-10-1969	10-06-1990	Administration
36	សួស ចិន្តា	Sous Chenda	F	Vice-Chief of Technical Service Center	Irrigation Technician/Agriculture Bachelor	03-03-1973	01-08-1994	Administration
37	ចឺក ទ្រី	Chek Try	M	Vice-Chief of Technical Service Center	Qualification/Bachelor of Economic	01-12-1971	15-09-1990	Administration
38	ឆឹម សុធារី	Chhem Sotheavy	F	Staff of Technical Service Center	Bachelor Accountant	13-01-1987	02-07-2009	

តារាងឈ្មោះមន្ត្រី
មជ្ឈមណ្ឌលសេវាបច្ចេកទេសប្រព័ន្ធធារាសាស្ត្រ ឧតុនិយម
TSC Staff Information

No	Name in Khmer	Name in English	Sex	Position	Skill	Date of Birth	Date of Employment	Remarks
1	ឯកឧត្តម ពេជ្រ វាសនា	HE Pich Veasna	M	Director	Irrigation Engineer/ Master (MBA)	01-05-1967	15-12-1990	RBWRU Project
2	លោក អ៊ុច ហ៊ីង	Mr. Uch Hing	M	Deputy Director	Irrigation Technician/ Civil Engineer/Master Civil Engineering	06-03-1973	10-07-1995	SurveyTSC3/ RBWRU Project
3	លោក យូ សុត្តា	Mr. You Sotha	M	Deputy Director	Irrigation Engineer	01-02-1972	01-04-1996	Planning TSC3/ RBWRU Project
១. ការិយាល័យរដ្ឋបាល (Administration Office)								
4	លោកស្រី ពេជ ម៉ាលី	Ms.Pich Maly	F	Chief	Irrigation Technician/English Bachelor/Master (MBA)	01-10- 1969	10-06-1990	AdminTSC3/ RBWRU Project
5	លោកស្រី សួស ចិន្តា	Ms. Sous Chenda	F	Vice-Chief	Irrigation Technician/Agriculture Bachelor	03-03-1973	01-08-1994	AdminTSC3/ RBWRU Project
6	លោក តេង តុងហេង	Mr.Teng Tongheng	M	Vice-Chief	Irrigation Technician/ Civil Engineer Master of IAMRD	30-01-1971	01-08-1994	Admin
7	លោក ចឺក ត្រី	Mr. Chek Try	M	Vice-Chief	Qulification/ Bachelor of Economic	01-12-1971	15-09-1990	Admin TSC3/ RBWRU Project
8	លោក គង់ សុភា	Mr. Kong Sophea	F	Staff	English	17-06-1981	20-06-2007	Admin
9	លោក ឆឹម សុតាវី	Ms. Chhem Sotheavy	F	Staff	Accountant	13-01-1987	2-07-2009	Admin / RBWRU Project
10	លោក ជាម សែននី	Ms.Cheam Senny	F	Staff	Infor- Technology	28-09-1982	20-06-2007	Survey TSC3
11	លោក ជា រ៉ឺនី	Mr. Chea Rady	M	កម្មសិក្សាករី	Civil Engineer	18-06-88	14-06-2013	Design

114

115

12	កញ្ញា រ៉ាត អាលីដា	Mr. Rath Alida	F	កម្មសិក្សាការី	Bachelor Public Administration	24-03-90	14-06-2013	Survey
13	លោកស្រី លីម ថាវ៉េន	Ms.Lim Thavooun	F	កម្មសិក្សាការី	Finance and Banking	12-04-87	14-06-2013	W/M
14	លោក គង់ សំអឿន	Mr. Kong Samoeun	M	Official	Driver	09-12-70	08-04-1994	Admin TSC3

២ . ការិយាល័យបច្ចេកទេសនាវាសាស្ត្រ និងគ្រប់គ្រងការសោសដំ (Construction Management and Technical Irrigation Office)

15	លោក ហៃ ប៊ុនធឿន	Mr. Hay Bunthoeun	M	Chief	Irrigation Technician/ Civil Engineer/ Master Civil Engineering	06-04-1970	10-06-1990	Design TSC3
16	លោក មាស សាវ៉េន	Mr. Meas Savoeun	M	Vice-Chief	Irrigation Technician/ Civil Engineer/ Master of IAMRD	05-09-1972	01-08-1994	Planning TSC3/ RBWRU Project
17	លោក មាន សេង	Mr. Mean Seng	M	Vice-Chief	Irrigation Technician/ Civil Engineer/ Master of IAMRD	04-06-1975	22-10-1999	Survey TSC3/ RBWRU Project
18	លោក ទៀវ វុត្តា	Mr. Teav Vutha	M	Official	Irrigation Technician/ Civil Engineer/ Master Civil Engineering	12-01-1972	01-08-1994	Design TSC3
19	លោក ទួច សុវណ្ណ	Mr. Touch Sovann	M	Official	បរិវេទនាសាស្ត្រសេដ្ឋកិច្ច	01-01-89	24-10-2012	Admin
20	ឯមធឿន វណ្ណនា	Em Thoeun Vatana	F	Official	Infor- Technology	27-09-88	24-10-2012	Design
21	លោកស្រី ហាម ពុទ្ធារី	Ms.Ham Puheavy	F	Official	បរិសេដ្ឋកិច្ចកសិកម្ម	05-10-89	24-10-2012	Admin
22	លោក ហេង សាលតិស័ត្ត	Mr.Heng Salpisak	M	កម្មសិក្សាការី	Rural Engineering	07-06-87	14-06-2013	Design
23	លោក គឹម ម៉េងស្រាង	Mr.Kim Mengsreang	M	កម្មសិក្សាការី	Rural Engineering	10-06-1989	14-06-2013	Construction
24	លោក គង់ ចាន់សុភក្រ្ត	Kang Chansophak	M	កម្មសិក្សាការី	Civil Engineering	10-04-1983	15-06-2013	Admin
25	លោក ញឹក រតនៈសីលា	Mr.Nhek Rantanakseila	M	កម្មសិក្សាការី	Civil Engineering	05-11-1985	16-06-2013	Construction
26	លោក ថៃ វណ្ណា	Mr. Chey Vanna	M	កម្មសិក្សាការី	Rural Engineering	02-06-1990	17-06-2013	Construction

៣ ការិយាល័យគ្រប់គ្រងទឹក ស្រាវជ្រាវ និងគ្រប់គ្រងព័ត៌មាន (Water Management, Research and Information Management)

27	លោក សៀង សុថា	Mr. Soeung Sotha	M	Chief	Irrigation Technician/ Civil Engineer	14-05-1969	10-06-1990	W/M TSC3/ RBWRU Project
28	លោក នួន វណ្ណារិទ្ធ	Mr.Noun Vannarith	M	Vice-Chief	Irrigation Technician/Agriculture Bachelor/ Master of IAMRD	02-09-1963	15-12-1989	Construction TSC3 / RBWRU Project
29	លោក សៅ អេណា	Mr. Sao Ena	M	Vice-Chief	Architecture	13-01-1977	20-01-2004	Construction TSC3/

								RBWRU Project
30	លោក ព្រំ កន្ទែល	Mr.Prum Kanthel	M	Vice-Chief	Irrigation Engineer	13-04-1966	20-02-1994	W/M TSC3
31	លោក សុខ គាន់	Mr. Sok Korn	M	Official	Irrigation Technician/ Civil Engineer/ Master of IAMRD	28-08-1973	03-07-1995	W/M TSC3
32	កញ្ញា នេត សូនី	Ms.Net Sony	F	Official	Bachelor Accountant	18-02-1990	24-10-2012	Planning
33	លោកស្រី លឹម ហាវ៉ៃ	Ms.Lim Havay	F	Official	Bachelor Accountant	11-10-1990	24-10-2012	W/M
34	លោកស្រី ចាប តុលា	Ms. Chab Tola	F	កម្មសិក្សាការី	Finance and Banking	16-10-87	14-06-2013	W/M
35	លោក ស៊ុន រដ្ឋា	Mr. Sun Ratha	M	កម្មសិក្សាការី	Finance and Banking	05-10-86	14-06-2013	Planning
36	លោក តូ ចាន់ដារ៉ាវិទូ	Mr.To Chandararith	M	កម្មសិក្សាការី	Bachelor Accounting	10-07-83	14-06-2013	Planning

Prolay Thmey Bei phum Khum Talous FWUG Annual Plan (Por Canal)

2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season	IR 504 →		← Senkroop →						← IR 504 →				
Area	98ha										98ha		
Water supply	← Start 15th April to 30th July →												
General meeting				Cropping calendar ★				Water distribution planing ★				Water fee collection ★	Evaluate Agr. Pro. ★
Maintenance													
Canal cleanning	2-Feb ★								10-Jun ★				
Gate paint	Feb ★								Aug ★				
Gate grease	Feb ★												
Reparing Canal, Structures & Gates	Feb ★												

117

Kandeung Meas FWUG Annual Plan (Damnak Ampil)

2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season		Senkraob			><	Somaly&Paka Rumdol						>	Senkraob
Area		60ha				50ha + 50ha							60ha
Water supply		→			<	→							→
General meeting		3-Mar ★ Cropping calendar Water fee collection											★ 12-Dec Maintenance Water fee collection
Maintenance													
Canal cleanning		2-Feb ★						8-Aug ★				20-Dec ★	
Gate paint		2-Feb ★											
Gate grease		2-Feb ★						8-Aug ★				20-Dec ★	
Reparing Canal, Structures & Gates			15-Mar ★									↔	

Thlear Maom Annual Plan FWUC

January 10 2014

Item	Mon	1	2	3	4	5	6	7	8	9	10	11	12
Rice season									← Phka Rumdol Kha 9 →				
Area							112ha Phka Rumdol		510ha Kha9				
Water supply							← Start 15th May		→ 15-Nov				
General meeting			★ 20-Feb	Cropping calendar Maintenance									★ 20-Dec Water fee collection
Maintenance													
Canal cleanning		★ 1-Feb											
Gate paint						★ 1-May							
Gate grease					★ 2-May								★ 2-Dec
Reparing Dike & Gate								★ June or July					

119

Kum Ru Pich Chorng va FWUG Annual Plan (Lum Hach)

April 30 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12
Rice season	← IR →				← Paka Rumdoul →							
Area	60 ha				100 ha							
Water supply	← Jan 1-Mar 15 →				← May 1-Oct 10 →							
General meeting	1-Jan ★	Cropping calendar Maintenance		25-Apr ★	Water fee collection							
Maintenance												
Canal cleanning	2-Jan ★				1-May ★							
Gate paint	2-Jan ★				1-May ★							
Gate grease	2-Jan ★				1-May ★							
Reparing Dike												

120

Ou Veang FWUC Annual Plan (Roleang Chrey)

January 22 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12
Rice season				← IR 66 Senpido →			← Kpo dong, Neang Menh, Dok Keo →					
Area	67ha						224ha					
Water supply	← Start 1st March to 13th June →						← Start 1st May to 15th October →					
General meeting	★ 1-Feb		Croppingcalendar									★ 1-Dec
	★		Maintenance									Water fee collection
			Water distribution									Evaluate Agr.Pro
Maintenance												
Canal cleanning	★ 25-Feb								★ 10-Jun			
Gate paint	★ 27-Feb											
Gate grease	★ 29 Feb						★ 19-Jul					
Reparing Canal, Structures & Gates	← →									← →		

Along Romiet FWUG Annual Plan(Kandal Stung)

Feb. 25 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12
Rice season	← IR 504 →						← Rang Chey →					
Area	6ha						38ha					
Water supply	← Start 1st Mar. to 15th June →						← 15th July to 30 November →					
General meeting		15-Feb ★	Cropping calendar Canal Maintenance Water distribution				15-Jul ★	Water fee collection Canal Maintenance				
Maintenance												
Canal cleaning			15-Mar ★				10-Jul ★					
Gate paint	15-Jan ★	Feb ★							Aug ★			
Gate grease	16-Jan ★	Feb ★					18-Jul ★					
Repairing Canal, Structures & Gates	←-----→											

122

Kork Trab FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12		
Rice season	← IR 504 →						← Rang Chey →							
Area	36ha						217ha							
Water supply	← Start 1st Mar. to 15th June →						← 1st July to 30 November →							
General meeting	Cropping calendar 15-Mar			12-Jun Water fee collection										
	Canal Maintenance			★ Canal Maintenance										
	Water distribution ★													
Maintenance														
Canal cleaning					20-Apr ★								12-Jul ★	
Gate paint				29-Mar ★								Aug ★		
Gate grease				29-Mar ★								18-Jul ★		
Reparing Canal, Structures & Gates	←-----→													

123

Prea Putth FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

124

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12
Rice season						← IR66 →			← Paka Khnney →			
Area						120ha			320ha			
Water supply						← Apr-Jun →			← Jun-Dec →			
General meeting			Mar. ★ Cropping calendar	Apr. ★ Canal Clining				Jun. ★ Water Distribution				
Maintenance												
	Canal cleanning			Mar. ★				Jun ★				
	Gate paint			Mar. ★								
	Gate grease			Mar. ★								

Tien FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season					IR 66			Paka Khey Srav sar					
Area	95ha						198ha						
Water supply	Start 1st Apr. to 20th June						15 July to 15 November						
General meeting				15-Mar ★	Cropping calendar Canal Maintenance Water distribution				Water fee collection		30-Dec ★		
Maintenance													
Canal cleanning				20-Apr ★					12-Jul ★				
Gate paint	1-Jan ★												
Gate grease	15-Jan ★							20-Jul ★					
Reparing Canal, Structures & Gates	←-----→												

125

Roluos FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season					← IR 66 →			← Paka Khney, Sar →					
Area	71ha						82.5ha						
Water supply	← Start 6th Mar. to 5th July →						← 12th July to 15th November →						
General meeting	Cropping calendar		12-Mar									28-Dec	
	Canal Maintenance											Water fee collection	
	Water distribution		★									Canal Maintenance ★	
Maintenance													
	Canal cleaning				20-Apr			12-Jul					
					★			★					
	Gate grease			12-Mar				27-Jul					
				★				★					
Gate paint	★	5-Jan					18-Jul						
							★						
Repairing Canal, Structures & Gates			12-Mar										
			★										

126

Kong Noy FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season		← IR →					← Paka Malis →						
Area		57ha						240ha					
Water supply		← Start 1st Feb. to 20th Apr. →					← 15 June to 15 November →						
General meeting			Cropping calendar 20 Mar. ★	Water Distribution ★ Apr.						Water fee collection		30-Dec ★	
Maintenance													
Canal cleaning			30-Mar. ★								20-Nov ★		
Gate paint		Feb.15 ★											
Gate grease		Feb.15 ★											
Reparing Canal, Structures & Gates													

Barku FWUG Annual Plan (Kandal Stung)

Feb. 25 2014

Item	Mon	2	3	4	5	6	7	8	9	10	11	12
Rice season					IR, Sempidor				Raing Chey, Neag Khon & Pakamalis			
Area					110ha				469ha			
Water supply					Start 15th Apr.				15 Aug.			
General meeting	Cropping calendar		★ 15-Mar		★ 1-May	Canal Maintenance					Water fee collection	30-Dec
				★	Water Fee col.	28-Apr					Canal Maintenance	★
Maintenance	December until March											
Canal cleanning		★	15-16Feb									
Gate paint		★	Feb.2									
Gate grease		★	Feb.9					★	9-Jul			
Reparing Canal, Structures & Gates												

128

Tumnub Khpob Trabek FWUC Annual Plan (Upper SlaKou)

January 15 2014

Item \ Month	1	2	3	4	5	6	7	8	9	10	11	12	
Rice season				← Sempido →				← Kha 9 Long term variety →					
Area	112ha						624ha						
Water supply	← Start 1st April to 1st June →						← Start 1st July to 15th October →						
General meeting				10-Mar ★ Cropping calendar				25-Jun ★ Water fee collection					
				Maintenance									
Maintenance													
Canal cleanning			1-Mar ★										
Gate paint			2-Mar ★										
Gate grease			2-Mar ★										
Reparing Dike & Gate					May or June ★								

Thomney FWUC Annual Plan

Mar 7 2014

Item \ Month	11	12	1	2	3	4	5	6	7	8	9	10	
Rice season	← IR					← IR							
Area	185 ha					20 ha							
Water supply	← Dec 1- Mar 15					Mar 15-May 30 →							
General meeting	★ 11-Dec Cropping calendar				★ 2-Feb Maintenance			★ 25-Apr Water fee collection					
Maintenance													
Canal cleanning	★ 16-Nov												
Gate paint	★ 16-Nov									★ 7-Jul			
Gate grease	★ 16-Nov									★ 7-Jul			
Reparing Dike, gate, canal, FWUC office													

130

