

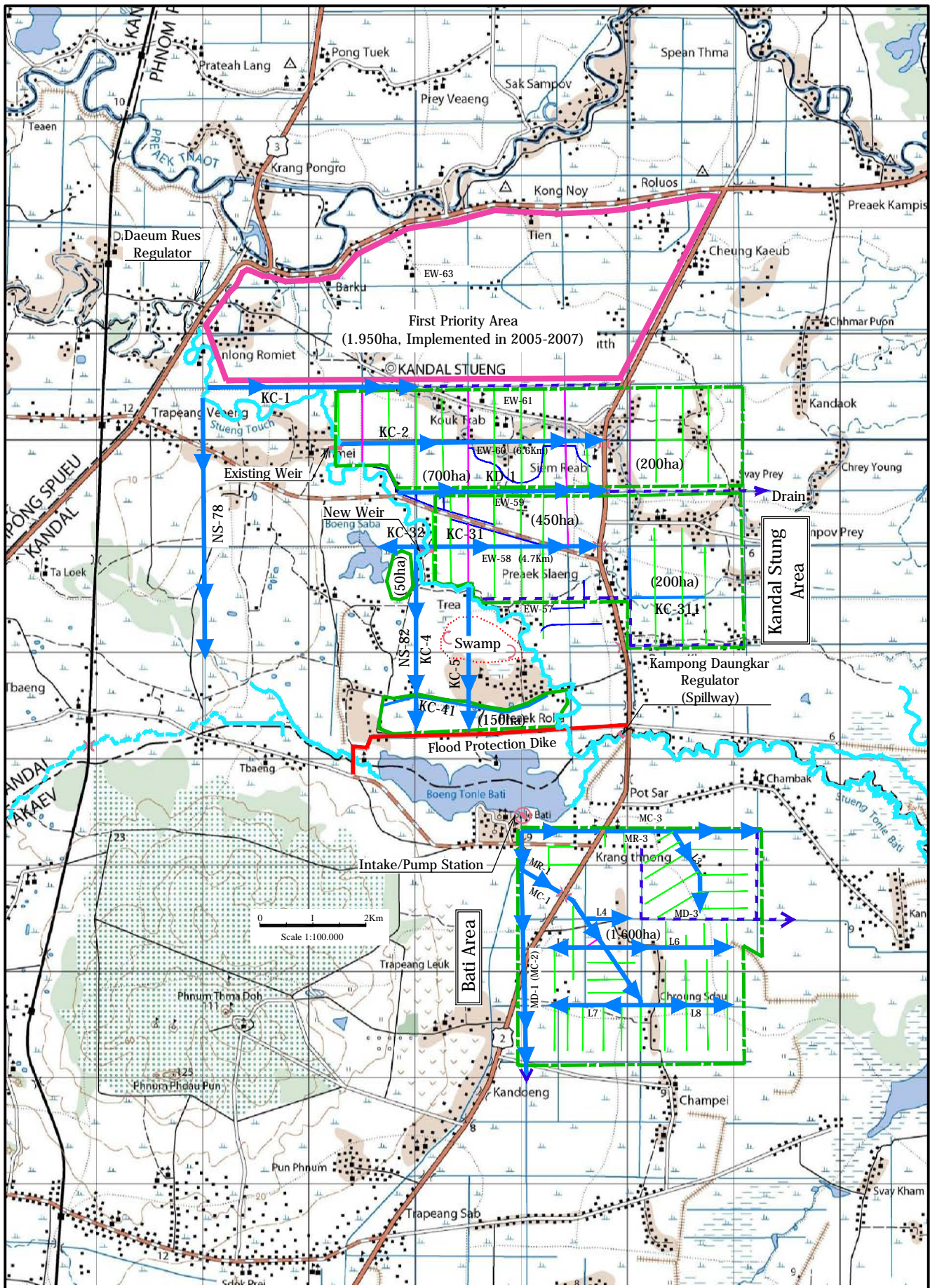
# ***ANNEX D***

## ***Attachment 5***

*Results of Inventory Survey for Irrigation and Drainage*

*Facilities in Kandal Stung – Bati Irrigation System*

*Rehabilitation Sub-project*



<p>PREPARATORY SURVEY FOR IRRIGATION AND DRAINAGE SYSTEM REHABILITATION AND IMPROVEMENT PROJECT IN THE KINGDOM OF CAMBODIA</p>	<p>Title of Drawing <b>Name of Canal Route for Inventory Survey (Kandal Stung and Bati Areas)</b></p>	<p>Date: Mar. 2012</p>
<p>Japan International Cooperation Agency (JICA)</p>		<p>DWG. No. KSB-01</p>

**Summary of Nos. of Structures and Houses Identified by Inventory Survey**

(Unit: nos.)

Canals	Survey length (m)	Off-take	Regulator incl. Culvert with grooves*	Public bridge/culvert	Private bridge/culvert	Huts and houses within ROW**	Total
<b>A. Kandal Stung Extension Area (Roung Kou and Saba areas)</b>							
1. Pol Pot Canals							0
KC-1	4,850	2	1	3	3	0	9
KC-2	4,530	5	6	9	8	0	28
KC-3-1	3,400	3	3	3	1	0	10
KC-3-2	800	0	0	0	0	0	0
KC-4 (NS82)	3,500	1	1	4	0	0	6
KC-5 (NS83)	3,000	1	2	2	1	0	6
KD-1	4,250	1	0	5	3	0	9
NS-78	4,800	1	0	3	0	0	4
Sub-total	29,130	14	13	29	16	0	72
2. Flood Protection dike (Northern part of Tonle Bati Lake)							
	6,000	0	0	6	0	0	6
3. Total (A)	35,130	14	13	35	16	0	78
<b>B. Tonle Bati Area (First Priority Area specified by JICA-F/S)</b>							
1. Main canals							
MC-1	6,370	0	2	10	1	5	18
MC-2	3,810	1	0	4	0	8	13
MC-3	5,700	10	4	7	7	0	28
Sub-total	15,880	11	6	21	8	13	59
2. Laterals							
L3	2,050	0	0	0	4	0	4
L4	640	0	1	0	0	0	1
L5	1,110	0	0	1	3	0	4
L6	2,010	0	0	1	10	0	11
L7&L8	2,200	0	0	2	5	0	7
Sub-total	8,010	0	1	4	22	0	27
3. Total (B)	23,890	11	7	25	30	13	86
<b>C. Total (A+B)</b>	<b>59,020</b>	<b>25</b>	<b>20</b>	<b>60</b>	<b>46</b>	<b>13</b>	<b>164</b>

\*: Grooves are provided at inlet of culverts to place planks, but no gate is placed

\*\* : Nos of house/hut located within the objective area of 1,600 ha

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

**Canal name: KC-1**

Surveyed in January, 2012 by JICA Survey Team




Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	478161	1260992	Intake for KC-1	No gate is equipped (lost long time ago, used as bridge)	C	Bridge (W=4m, L=5.7m)
770	478718	1261001	Wooden Bridge (Private)	Abandoned bridge, no slab plate	D	
1,500	479318	1260994	Foot path bridge (Broken)	Submerged food bridge, Abandoned	D	
1,710	479521	1261000	Bridge with groove	Commune road bridge	B	W=5m, L=3m
2,280	480025	1260997	Bamboo made check	Temporary check mainly for fish catching	-	
2,390	480109	1261003	Pipe Culvert, Double (Private)	Temporary made, just install pipes and filled by earth on pipes	C	L=2.8m, W=1.5 m, dia=0.5m
2,450	480161	1261012	Bamboo made check	Temporary check mainly for fish catching	-	
2,650	480358	1261015	Canal Section	Slope of canal is covered by thick grass and trees, no maintenance is made for long time	C	Width of water surface is 4-5m
2,790	480743	1261015	Turn Out	Turn out was broken and location is higher than rice field	C	PDOWRAM staff said function in wet season
3,000	480597	1261003	Canal Section	Slope of canal is covered by thick grass and trees, no maintenance is made for long time	C	
3,020	480628	1261003	Turn Out (Broken)	Turnout was broken and location is higher than rice field	D	Pipe dia=0.3m
3,420	480994	1261005	Regulator	New structure and functioned well	A	Constructed by TSC, MOWRAM in Dec. 2010 (Financial Assistance of JICA)
4,020	480994	1261005	Drain Inlet W=4m, dia=1m	New structure and functioned well	A	Constructed by TSC, MOWRAM in Dec. 2010 (Financial Assistance of JICA)
4,060	481506	1261011	Drain Inlet W=4m, dia=1m	New structure and functioned well	A	Constructed by TSC, MOWRAM in Dec. 2010 (Financial Assistance of JICA)
4,180	: 481612	1261008	Pipe Culvert on commune road	New structure and functioned well	A	Constructed by TSC, MOWRAM in Dec. 2010 (Financial Assistance of JICA) (Double) W=4m, dia=1m
4,850	481943	1261011	E.P, Pipe Culvert on provincial road	New structure and functioned well	A	Constructed by TSC, MOWRAM in Dec. 2010 (Financial Assistance of JICA) (Double) W=6m, dia=1.5m




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	1	A	1	2	
Bridges/ Culvert	6	B		1	
Public	3	C		1	
Concrete	3	D		2	
Wooden	0	Total	1	6	0
Private	3				
Concrete	0				
Wooden	3				
Total	0				




- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function




#### Evaluation of Canal and structures




1. Many canal sections and slops are covered by grass and trees, and eroded and deteriorated.
2. The dike is accessible only by foot and/or motor cycle from St. 0.8- 3.2km.
3. Many structures were broken, and been abandoned.
4. From St.3.4to 4.8 km was rehabilitated as main drain by MOWRAM in 2010




Canal No.: KC-1	Kind of structure(s): Intake	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1260992 Easting: 478161	Intake from Stung Touch
		
Up Stream View	Down Stream View	B.P.



Canal No.: KC-1	Kind of structure(s): Wooden bridge	Remarks:
Station: 0.00+770	Coordinate< Northing: 1261001 Easting: 478718	Temporary
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Foot path bridge	Remarks:
Station: 1.00+500	Coordinate< Northing: 1260994 Easting: 479318	Broken
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Bridge	Remarks:
Station: 1.00+710	Coordinate< Northing: 1261000 Easting: 479521	Bridge with groove
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Check structure	Remarks:
Station: 2.00+280	Coordinate< Northing: 1260997 Easting: 480025	Check structure cum fish net by bamboo barrage (Temporary)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Pip culvert	Remarks:
Station: 2.00+390	Coordinate< Northing: 1261003 Easting: 480109	Pip culvert (Double)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Check structure	Remarks:
Station: 2.00+450	Coordinate< Northing: 1261012 Easting: 480161	Check structure by bamboo net (Temporary)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Canal section	Remarks:
Station: 2.00+650	Coordinate< Northing: 1261015 Easting: 480358	
		
Up Stream View	Down Stream View	Side View



Canal No.: KC-1	Kind of structure(s): Turn Out	Remarks:
Station: 2.00+790	Coordinate< Northing: 1261015 Easting: 480743	Abandoned (use in wet season)
		
Up Stream View	Down Stream View	Side View







Canal No.: KC-1	Kind of structure(s): Canal Section	Remarks:
Station: 3.00+000	Coordinate< Northing: 1261003 Easting: 480597	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-1	Kind of structure(s): Turn out	Remarks:
Station: 3.00+020	Coordinate< Northing: 1261003 Easting: 480628	Broken
		
Up Stream View	Down Stream View	Side View


Canal No.: KC-1	Kind of structure(s): Regulator	Remarks:
Station: 3.00+420	Coordinate< Northing: 1261005 Easting: 480994	Regulator on commune road with 3 gates
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Regulator	Remarks:
Station: 3.00+420	Coordinate< Northing: 1261005 Easting: 480994	Regulator with 2 gates
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Drain Inlet	Remarks:
Station: 4.00+020	Coordinate< Northing: 1261005 Easting: 480994	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Drain Inlet	Remarks:
Station: 4.00+060	Coordinate< Northing: 1261011 Easting: 481506	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 4.00+180	Coordinate< Northing: 1261008 Easting: 481612	Double Culverts
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 4.00+850 (E.P)	Coordinate< Northing: 1261011 Easting: 481943	Double Culverts on Provincial Road
		
Up Stream View	Down Stream View	Side View

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

**Canal name: KC-2**

Surveyed in January, 2012 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	480212	1260282	B.P. Intake for KC-2 with bridge (public)	Existing weir exists about 100 m downstream, no gate is equipped	C	Bridge; W=4.8m, L=3.2m,
200	480345	1260284	Drain Inlet,	Pipe and wing wall is still in good condition	B	W=4m, L=1,2m, dia=0.6m
400	480597	1260289	Bridge on commune road	Bridge is stil functioned	C	W=6.5m, L=3m
400	480597	1260289	Regulator	2 nos. of slide gates without lifting spindle and gear	C	W=3m, L=3m
500	480699	1260292	Canal Section	-	-	
800	4800960	1260299	Turnout	Outlet wall has been deteriorated	C	(Private), dia=0.3m
900	481101	1260298	Turnout dia=0.3 m	Outlet wall has been deteriorated	C	(Private), dia=0.3m
1,000	481211	1260302	Canal Section	Section is still remained, but covered by grass and trees	C	
1,400	481611	1260312	Drain Inlet	Broken	D	dia=0.3m
1,500	481682	1260310	Box Culvert with groove (public)	Structures looks new, not jeevable but for motor cycles	B	W=1.3m, L=1.5m
			Drain inlet	Temporality installed pipe	C	W=1.3m, L=1m, dia=0.3m
2,000	482075	1260316	Bridge on commune toad	Reconstructed bridge but rather damaged	C	W=2.5m, L=4.8m
			Drain Inlet	Temporality installed pipe	C	dia=0.6m
2,350	482476	1260324	Bridge (Private),	House access	C	W=2.5m, L=2.5m
2,400	482530	1260328	Wooden Bridge (Private),	House access	C	W=0.5m, L=5m
2,430	482583	1260329	Turnout	with Box Culvert with groove	C	W=4.5m, L=3.5m
			Bridge with groove Commune road	Surface of bridge is damaged lot	C	W=4 m, L=3.5m
2,450	482612	1260323	Pipe Culvert Private	Canal section is blocked by dike and small pipe is clogged	C	L=6m, dia=0.6m
2,500	482688	1260327	Wooden Bridge (Private)	Temporary bamboo bridge	-	W=0.5m, L=6 m
2,950	4883105	1260334	Canal Section	Section is still remained though eroded, and covered by grass	C	
3,000	483158	1260343	Pipe Culvert (Double), on village road	Rather in good condition	B	W=2.5m, L=2.5m, dia=1m
3,200	483372	1260347	Bridge with groove on commune road	Broken handrail	B	W=4.5m, L=4.5m




3,400	483619	1260347	Pipe Culvert (Double) on village road	Recently repaired	B	W=4m, L=5m, dia=1m
3,500	483693	1260341	Turnout	Burried by earth, not functioned	D	Pipe portion: W=4m, L=1m, dia=1m
3,700	483910	1260344	Turnout	Burried by earth, not functioned		Pipe portion: W=5m, L=1.2m, dia=0.6
3,800	483984	1260345	Wooden Bridge (Private)	House access	C	W=1.2m, L=6m
4,000	484211	1260347	Canal Section	Many water plants obstructs water flow	C	
4,150	484424	1260350	Check Structure	Check wall with groove, but no use at present	C	, W=2m, L=0.8m
			Bridge on village road	Good condtion	B	W=4m, L=8m
4,400	484605	1260354	Pipe Culvert (private; house access)	Good condtion	B	W=5m, L=4m, dia=0.8m (Double)
4,430	484635	1260356	Wooden Bridge (Private),	village area	C	W=2.5m, L=5m
4,500	484731	1260350	Canal Section	Section is covered by thick grass and trees	D	No use as canal at present
4,530	484772	1260354	E.P. Pipe Culvert (Private)	Access to School "Siem Reap	C	W=5m, L=3m, D=0.6m (3 culverts)




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	6	A		1	
Bridges/ Culvert	17	B	3	18	
Public	9	C	3	5	
Concrete	9	D		1	
Wooden	0	Total	6	25	0
Private	8				
Concrete	4				
Wooden	4				
Total					




- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function




#### Evaluation of Canal and structures




1. It seems that no gravity irrigation has practiced in dry season; mobile pumping machine lifted remain water in the canal for rice fields. Canal sections have been eroded and widened.
2. Most of the culverts and bridges are still functioning




Canal No.: KC-2	Kind of structure(s): Bridge with groove	Remarks: No gate on the Intake
Station: 0.00 (B.P.)	Coordinate< Northing: 1260282 Easting: 480212	
		
Up Stream View	Down Stream View	B.P.




Canal No.: KC-2	Kind of structure(s): Drain Inlet	Remarks:
Station: 0.00+200	Coordinate< Northing: 1260284 Easting: 480345	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Bridge & Regulator	Remarks: On commune road
Station: 0.00+400	Coordinate< Northing: 1260289 Easting: 480597	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Turn-out (Off-take)	Remarks:
Station: 0.00+400	Coordinate< Northing: 1260289 Easting: 480597	No lifting gear, though gates were installed
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Canal Section	Remarks:
Station: 0.00+500	Coordinate< Northing: 1260292 Easting: 480699	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Turnout	Remarks:
Station: 0.00+800	Coordinate< Northing: 1260299 Easting: 4800960	(Private)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Turnout	Remarks: (Private)
Station: 0.00+900	Coordinate< Northing: 1260298 Easting: 481101	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+000	Coordinate< Northing: 1260302 Easting: 481211	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Drain Inlet	Remarks: (Broken)
Station: 1.00+400	Coordinate< Northing: 1260312 Easting: 481611	
		
Up Stream View	Down Stream View	Side View









Canal No.: KC-2	Kind of structure(s): Box Culvert	Remarks:
Station: 1.00+500	Coordinate< Northing: 1260310 Easting: 481682	Box Culvert with groove
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Drain Inlet	Remarks:
Station: 1.00+500	Coordinate< Northing: 1260310 Easting: 481682	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Bridge	Remarks:
Station: 2.00+000	Coordinate< Northing: 1260316 Easting: 482075	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Drain Inlet	Remarks:
Station: 2.00+000	Coordinate< Northing: 1260316 Easting: 482075	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Bridge	Remarks: (Private)
Station: 2.00+350	Coordinate< Northing: 1260324 Easting: 482476	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Wooden Bridge	Remarks: Foot path bridge (Private)
Station: 2.00+400	Coordinate< Northing: 1260328 Easting: 482530	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Box Culvert	Remarks: Box Culvert with groove
Station: 2.00+430	Coordinate< Northing: 1260329 Easting: 482583	
		

Up Stream View

Down Stream View




Side View

Canal No.: KC-2	Kind of structure(s): Turn Out	Remarks:
Station: 2.00+430	Coordinate< Northing: 1260329 Easting: 482583	
		

Up Stream View

Down Stream View




Side View




Canal No.: KC-2	Kind of structure(s): Pipe Culvert	Remarks:
Station: 2.00+450	Coordinate< Northing: 1260323 Easting: 482612	
		




Up Stream View




Down Stream View




Side View




Canal No.: KC-2	Kind of structure(s): Wooden Bridge	Remarks: (Private)
Station: 2.00+500	Coordinate< Northing: 1260327 Easting: 482688	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Canal section	Remarks:
Station: 2.00+950	Coordinate< Northing: 1260334 Easting: 4883105	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Pipe Culvert	Remarks: Double culverts
Station: 3.00+000	Coordinate< Northing: 1260343 Easting: 483158	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Bridge	Remarks:
Station: 3.00+200	Coordinate< Northing: 1260347 Easting: 483372	Bridge with groove
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Pipe Culvert	Remarks:
Station: 3.00+400	Coordinate< Northing: 1260347 Easting: 483619	Double Pipe Culvert
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Turnout	Remarks:
Station: 3.00+500	Coordinate< Northing: 1260341 Easting: 483693	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Turnout	Remarks:
Station: 3.00+700	Coordinate< Northing: 1260344 Easting: 483910	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Wooden Bridge	Remarks: (Private)
Station: 3.00+800	Coordinate< Northing: 1260345 Easting: 483984	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Canal Section	Remarks:
Station: 4.00+000	Coordinate< Northing: 1260347 Easting: 484211	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-2	Kind of structure(s): Check Structure	Remarks:
Station: 4.00+150	Coordinate< Northing: 1260350 Easting: 484424	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Bridge on village road	Remarks:
Station: 4.00+150	Coordinate< Northing: 1260350 Easting: 484424	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Pipe Culvert (Private)	Remarks: Double culverts
Station: 4.00+400	Coordinate< Northing: 1260354 Easting: 484605	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Wooden Bridge	Remarks: (Private)
Station: 4.00+430	Coordinate< Northing: 1260356 Easting: 484635	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Canal Section	Remarks:
Station: 4.00+500	Coordinate< Northing: 1260350 Easting: 484731	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-2	Kind of structure(s): Pipe Culvert	Remarks: 3 culverts and road connected to School
Station: 4.00+530 (E.P)	Coordinate< Northing: 1260354 Easting: 484772	
		
Up Stream View	Down Stream View	Side View



**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: KC-3-1

Surveyed in January, 2012 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	4841835	1258313	B.P. Intake gate with 3 gates	Gates are functioned, though one spindle is bended	B	No substantial rehabilitation would be needed
			Bridge on Commune road	In good condition	B	W=5.5m, L=4.2m
400	482077	1258306	Turnout	Brick made	C	L=5.2m, dia=0.6m
500	482250	1258310	Canal Section	No obstruction is found, though some trees grow on canal slope and banks	C	
800	482473	1258309	Check Structure,	No gate is equiped	C	w=1.6m, L=3.5m
900	482590	1258308	Wooden Bridge on commune road	Cross points of two Pol Pot canals, only temporary wooded foot bridge is provided by farmers	D	only one log to pass
1,000	482723	1258310	Canal Section	No obstruction is found, though some trees grow on canal slope and banks	C	
1,500	483183	1258312	Bamboo check Private	For fishing only,	-	
2,000	483675	1258319	Turnout	Broken and clogged	D	dia=0.4m
2,200	483893	1258320	Check Structure,	Wing wall for check made by sand bags are damaged, no function due to too narrow flow area, no gate	D	W=2m, L=3.5m
2,300	483954	1258319	Turnout	Broken and clogged	D	dia=0.4m
2,500	484153	1258320	Canal Section	No obstruction is found, though some trees grow on canal slope and banks	C	
2,900	484449	1258321	Box Culvert with groove,	Across canal 85 (local name), No R&L banks, road is completely eroded	D	w=3m, L=1.5m
3,000	484577	1258339	Canal Section	No obstruction is found, though some trees grow on canal slope and banks	C	
3,200	484815	1258340	Pipe Culvert Private	Road connected to house	B	W=2m, L=7.5m, dia=1m (3 culverts)
3,400	485043	1258323	E.P. Bridge on NR-2	Good condition	A	W=6m, L=8m, (3 spans =1.8m),




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	3	A			
Bridges/ Culvert	4	B	1	2	
Public	3	C			
Concrete	3	D	2	2	
Wooden	0	Total	3	4	
Private	1				
Concrete	1				




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Wooden	0				
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function




Evaluation of Canal and structures




1. Canal sections have been eroded and widened.
2. Some farmers pump up water for their rice farming from the canal fed by Stung Toch
3. Nos. of structures is few and some were broken, and no gate equipped.




Canal No.: KC-3-1	Kind of structure(s): Intake on Stung Touch River	Remarks: 3 gates
Station: 0.00 (B.P)	Coordinate< Northing: 1258313 Easting: 4841835	
		
Up Stream View	Down Stream View	B.P.




Canal No.: KC-3-1	Kind of structure(s): Turnout	Remarks:
Station: 0.00+400	Coordinate< Northing: 1258306 Easting: 482077	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Canal Section	Remarks:
Station: 0.00+500	Coordinate< Northing: 1258310 Easting: 482250	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Regulator	Remarks:
Station: 0.00+800	Coordinate< Northing: 1258309 Easting: 482473	No slab floor and stop log (abandoned)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Wooden Bridge	Remarks:
Station: 0.00+900	Coordinate< Northing: 1258308 Easting: 482590	On commune road
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Wooden Bridge	Remarks:
Station: 0.00+900	Coordinate< Northing: 1258308 Easting: 482590	This bridge is connected to another canal (Canal 83, (local name)).
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+000	Coordinate< Northing: 1258310 Easting: 482723	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Canal Section	Remarks: Bamboo Barrage Private
Station: 1.00+500	Coordinate< Northing: 1258312 Easting: 483183	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Turnout	Remarks: Broken
Station: 2.00+000	Coordinate< Northing: 1258319 Easting: 483675	
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Check Structure	Remarks:
Station: 2.00+200	Coordinate< Northing: 1258320 Easting: 483893	Check Structure with groove No slab floor (Abandoned)
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-3-1	Kind of structure(s): Turnout	Remarks:
Station: 2.00+300	Coordinate< Northing: 1258319 Easting: 483954	Broken
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-1	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+500	Coordinate< Northing: 1258320 Easting: 484153	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-1	Kind of structure(s): Box Culvert	Remarks:
Station: 2.00+900	Coordinate< Northing: 1258321 Easting: 484449	Box Culvert with groove (abandoned)
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-1	Kind of structure(s): Canal Section	Remarks:
Station: 3.00+000	Coordinate< Northing: 1258339 Easting: 484577	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 3.00+200	Coordinate< Northing: 1258340 Easting: 484815	3 culverts (road connected to house)
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-1	Kind of structure(s): Bridge	Remarks:
Station: 3.00+400 (E.P)	Coordinate< Northing: 1258323 Easting: 485043	Bridge on NR2
		
Up Stream View	Down Stream View	Side View



**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: **KC-3-2**

Surveyed in January, 2012 by JICA Survey Team




Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	481773	1258310	Receiving structure	Water intaked on left bank conveyed to this structure on right bank thru the concrete pipe laid on Stung Toch river bed	D	L=50m, dia=0.6m (single) The pipe is passing the village road
500	481417	1258308	Canal section	Canal route was flooded about 0.8-1.2m	D	
800	481069	1258397		E.P. Canal route was flooded about 0.8-1.2m	D	




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	0	A			
Bridges/ Culvert	0	B			
Public	0	C			
Concrete	0	D			
Wooden	0	Total	0	0	0
Private	0				
Concrete	0				
Wooden	0				
Total	0				


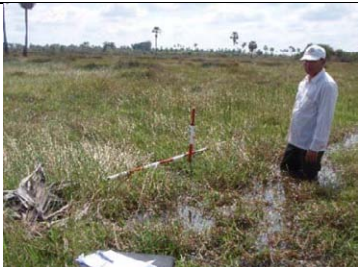

- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function

Evaluation of Canal and structures

1. All sections were flooded about 0.8-1.2m.

Canal No.: KC-3-2	Kind of structure(s): Receiving structure	Remarks: (Water is supplied through underground pipe)
Station: 0.00 (B.P)	Coordinate< Northing: 1258310 Easting: 481773	
		
Up Stream View	Down Stream View	B.P.

Canal No.: KC-3-2	Kind of structure(s): Canal Section	Remarks: Canal route was flooded
Station: 0.00+500	Coordinate< Northing: 1258308 Easting: 481417	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-3-2	Kind of structure(s): Canal	Remarks: Canal route was flooded about 0.8-1.2m
Station: 0.00+800 (E.P)	Coordinate< Northing: 1258397 Easting: 481069	
		
Up Stream View	Down Stream View	Side View

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: KC-4

Surveyed in January, 2012 by JICA Survey Team


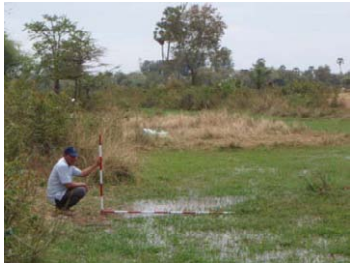

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	481618	1258142	B.P. Intake on Stung Toch	No structure is found and canal is clogged by debris and trees/grass	D	
500	481601	1257614	Canal Section	Canal is filled by earth for commune road	D	Across commune road
600	481594	1257535	Pipe Culvert on Commune road	Functioned as culvert	C	W=6m, L=6.5m, dia=1m
1,000	481593	1256931	Canal Section	No obstruction is found, though some grass grow on canal slope and banks	B	
1,500	481598	1256443	Canal Section	No obstruction is found, though some grass grow on canal slope and banks	B	
1,700	481593	1256175	Pipe Culvert, on village road	Broken	D	L=8m, dia=0.6m
2,000	481590	1255814	Canal Section	Upland and covering by trees and many sediment on the canal bed	D	
2,500	481598	1255543	Box culvert with groove under commune road	Sand bags are used for checking up the water level and storing water	C	W=5m, L=1.3m, H=2m
2,700	481601	1255380	Turnout	No outlet wall is provided; just temporary placing for drain and inlet the water	C	L=6m, dia=0.3m (Double)
3,100	481595	1254976	Canal Section	Canal section is checked by earth dike for rain storing water	D	
3,500	481593	1254742	E.P. Box Culvert on commune road (flood kike)	Structurally in good condition, but no gate is provided	C	W=4.9m, L=1.4m, H=2m




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	1	A			
Bridges/ Culvert	4	B			
Public	4	C	1	3	
Concrete	4	D		1	
Wooden	0	Total	1	4	0
Private	0				
Concrete	0				
Wooden	0				
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function



Evaluation of Canal and structures



1. Canal section is dry from B.P. due to commune road blocked at St. 500m
2. From St. 2+0 to 2+700 is upland part of the canal KC-4.
3. Farmer constructed a embankment to divert water to rice fields.




Canal No.: KC-4	Kind of structure(s): Intake	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1258142 Easting: 481618	Intake from Stung Touch
		
Up Stream View	Down Stream View	B.P.



Canal No.: KC-4	Kind of structure(s): Canal Section	Remarks:
Station: 0.00+500	Coordinate< Northing: 1257614 Easting: 481601	Canal Section and commune road across canal
		
Up Stream View	Down Stream View	Canal section




Canal No.: KC-4	Kind of structure(s): Pipe Culvert	Remarks:
Station: 0.00+600	Coordinate< Northing: 1257535 Easting: 481594	Pipe Culvert under commune road
		
Up Stream View	Down Stream View	Side View




Canal No.: KC-4	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+000	Coordinate< Northing: 1256931 Easting: 481593	
		
Up Stream View		Down Stream View



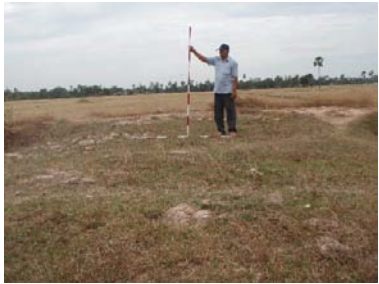
Canal No.: KC-4	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+500	Coordinate< Northing: 1256443 Easting: 481598	
		
Up Stream View		Down Stream View




Canal No.: KC-4	Kind of structure(s): Pipe Culvert (Broken)	Remarks: Village road across canal
Station: 1.00+700	Coordinate< Northing: 1256175 Easting: 481593	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-4	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+000	Coordinate< Northing: 1255814 Easting: 481590	Routine survey (every 500m) Up land & Covering by trees
 		
Up Stream View		Down Stream View

Canal No.: KC-4	Kind of structure(s): Box Culvert with groove	Remarks:
Station: 2.00+500	Coordinate< Northing: 1255543 Easting: 481598	Box culvert on commune road
  		
Up Stream View		Down Stream View
Side View		

Canal No.: KC-4	Kind of structure(s): Pipe Culvert	Remarks:
Station: 2.00+700	Coordinate< Northing: 1255380 Easting: 481601	
  		
Up Stream View		Down Stream View
Side View		

Canal No.: KC-4	Kind of structure(s): Canal Section	Remarks: Village road across canal in order to divert water to rice field.
Station: 3.00+100	Coordinate< Northing: 1254976 Easting: 481595	
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-4	Kind of structure(s): Box Culvert	Remarks: Box culvert with groove under commune road.
Station: 3.00+500 (E.P.)	Coordinate< Northing: 1254742 Easting: 481593	
		
Up Stream View	Down Stream View	Side View



**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: KC-5

Surveyed in January, 2012 by JICA Survey Team




Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	482573	1257519	B.P. Stung Toch	The canal section was filled and used as house access in the village: the canal has not used for long time	D	Houses accesses in the village
300	482570	1257430	Pipe Culvert, Private	Temporary installation of pipe to house access	D	L=3m, dia=0.5m
500	482578	1257310	Box Culvert with groove on village road	Wooden planks are installed and functioned as check	B	W=3.5m, L=2m
800	482578	1257092	Turnout (private)	Temporary installation of pipe to divert water from the canal	C	Pipe: L=3m, dia=0.5m
1,000	482585	1256639	Canal Section	Bath banks of the canal is swamp, and right bank of the canal was lost	D	No canal shape remains, but road section only remained
1,500	482593	1256133	Canal Section	do.	D	do.
2,000	482597	1255597	Canal Section	Some canal section remains and used as pond	C	Making road across canal near canal section.
2,500	482598	1255131	Canal Section	do.	D	do.
3,000	482585	1254769	E.P. Box Culvert with groove, on commune road	The culvert is still functioning, but old	B	W=5.3m, L=2.5m and Drain Inlet with W=2m, L=1m




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	2	A			
Bridges/ Culvert	3	B	2	2	
Public	2	C			
Concrete	2	D		1	
Wooden	0	Total	2	3	0
Private	1				
Concrete	1				
Wooden					
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function

Evaluation of Canal and structures



1. From St. 1.00 to 1.00+500 is covered by lake/ swamp with grass.
2. Only two box culverts with grooves are functioning.



Canal No.: KC-5	Kind of structure(s): Intake on Stung Touch	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1257519 Easting: 482573	The canal was filled as used as house access in the village
		
Up Stream View	Down Stream View	B.P.




Canal No.: KC-5	Kind of structure(s): Pipe culvert	Remarks:
Station: 0.00+300	Coordinate< Northing: 1257430 Easting: 482570	Private
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-5	Kind of structure(s): Box Culvert	Remarks:
Station: 0.00+500	Coordinate< Northing: 1257310 Easting: 482578	Box Culvert with groove Village road
		
Up Stream View	Down Stream View	Side View

Canal No.: KC-5	Kind of structure(s): Pipe Culvert	Remarks:
Station: 0.00+800	Coordinate< Northing: 1257092 Easting: 482578	Private
		
Up Stream View	Down Stream View	Side View
Canal No.: KC-5	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+000	Coordinate< Northing: 1256639 Easting: 482585	L&R banks is swamp
		
Up Stream View	Down Stream View	
Canal No.: KC-5	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+500	Coordinate< Northing: 1256133 Easting: 482593	L&R banks is swamp
		
Up Stream View	Down Stream View	

Canal No.: KC-5	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+000	Coordinate< Northing: 1255597 Easting: 482597	Making road across canal near canal section
		
Up Stream View		Down Stream View

Canal No.: KC-5	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+500	Coordinate< Northing: 1255131 Easting: 482598	Making road across canal near canal section
		
Up Stream View		Down Stream View

Canal No.: KC-5	Kind of structure(s): Bok Culvert	Remarks:
Station: 3.00+000 (E.P)	Coordinate< Northing: 1254769 Easting: 482585	Box Culvert with groove & Drain Inlet
		
Up Stream View		Down Stream View
		
Side View		

Canal No.: KC-5	Kind of structure(s): Box Culvert	Remarks:
Station: 3.00+000	Coordinate< Northing: 1254769 Easting: 482585	Box Culvert with groove & Drain Inlet



Up Stream View



Down Stream View



Side View

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: **KD-1 (EW-59)**

Surveyed in January, 2012 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	481106	1259314	B.P Stung Toch	No structure, use as drainage canal	-	Existing canal in the village
250	481288	1259325	Pipe Culvert Private	Canal was filled and the pipe was installed, and <u>primary school building</u> was constructed	D	L=100m, dia=0.5m
550	481607	1259316	Canal Section	Canal section remains and rather in good condition, water is supplied from KC-2	B	Crossing points with canal 82 (local name), O&M cost was provided by Commune Fund
1,050	482063	1259324	Canal Section	do.	B	do.
1,550	442585	1259330	Bridge, On commune road	Crossing with canal 83 (local name), O&M was made by Commune Fund	B	W=3m, L=5m
1,750	442727	1259337	Canal Section	Canal section become small and covered by bush and growing trees	C	
2,050	482994	1259332	Pipe Culvert Farm access (private)	Across to rice field, Private	C	W=2.7m, L=3m, dia=0.6m (Double),
2,250	483238	1259327	Pipe Culvert, Commune road	Condition is rather in good condition, but not used so frequently	B	W=5.6m, L=2m, dia=1m
2,350	483363	1259333	Wooden Bridge, Private	House access	B	W=4m, L=1.2m
2,750	483659	1259334	Box Culvert, Commune road	Old culvert, but still functioned	B	Across canal 84 (local name), W=4m, L=1.2m
3,250	484127	1259337	Pipe Culvert, on commune road	The culvert was constructed by commune fund recently	B	W=1.5m, L=6.3m, dia=1m
3,550	484428	1259336	Turnout	Broken, hollow brick made structure	D	Near crossing point with canal 85 (local name)
3,750	484641	1259338	Canal Section	Section is obstructed by water plants and bush	D	Canal section with grass & bush
4,250	485154	1259346	E.P. Bridge, on NR-2	Flow section of the bridge is enough for flowing	B	W=12m, L=6m



Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	0	A		0	
Bridges/ Culvert	8	B		6	
Public	5	C		1	
Concrete	5	D		1	
Wooden	0	Total	0	8	1
Private	3				
Concrete	2				
Wooden	1				
Total	0				




A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well




D: Completely damaged, and does not function

Evaluation of Canal and structures




1. Long length of pipe culvert of 100m receiving water from Stung Toch in wet season.
2. Most of the culverts are functioning, excepted one was broken




Canal No.: KD-1	Kind of structure(s): Intake	Remarks: Connected from Stung Toch
Station: 0.00 (B.P)	Coordinate< Northing: 1259314 Easting: 481106	
 		
<p>Up Stream View</p> <p>Down Stream View (B.P.)</p>		




Canal No.: KD-1	Kind of structure(s): Pipe Culvert	Remarks: Pipe culvert under school building
Station: 0.00+250	Coordinate< Northing: 1259325 Easting: 481288	
  		
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>		




Canal No.: KD-1	Kind of structure(s): Canal Section	Remarks: Across canal 83 (local name)
Station: 0.00+550	Coordinate< Northing: 1259316 Easting: 481607	
  		
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>		









Canal No.: KD-1	Kind of structure(s): Canal Section	Remarks:
Station: 1.00+050	Coordinate< Northing: 1259324 Easting: 482063	
		
Up Stream View	Down Stream View	Side View




Canal No.: KD-1	Kind of structure(s): Bridge	Remarks: Commune Fund
Station: 1.00+550	Coordinate< Northing: 1259330 Easting: 442585	
		
Up Stream View	Down Stream View	Side View




Canal No.: KD-1	Kind of structure(s): Canal section	Remarks:
Station: 1.00+750	Coordinate< Northing: 1259337 Easting: 442727	
		
Up Stream View	Down Stream View	Side View




Canal No.: KD-1	Kind of structure(s): Pipe Culvert	Remarks: Across to rice field, Private
Station: 2.00+050	Coordinate< Northing: 1259332 Easting: 482994	
		
Up Stream View	Down Stream View	Side View




Canal No.: KD-1	Kind of structure(s): Pipe Culvert	Remarks: Commune road
Station: 2.00+250	Coordinate< Northing: 1259327 Easting: 483238	
		
Up Stream View	Down Stream View	Side View



Canal No.: KD-1	Kind of structure(s): Wooden Bridge	Remarks: Private
Station: 2.00+350	Coordinate< Northing: 1259333 Easting: 483363	
		
Up Stream View	Down Stream View	Side View

Canal No.: KD-1	Kind of structure(s): Box Culvert	Remarks:
Station: 2.00+750	Coordinate< Northing: 1259334 Easting: 483659	Commune road
		
Up Stream View	Down Stream View	Side View

Canal No.: KD-1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 3.00+250	Coordinate< Northing: 1259337 Easting: 484127	Commune Fund
		
Up Stream View	Down Stream View	Side View

Canal No.: KD-1	Kind of structure(s): Off-take	Remarks:
Station: 3.00+550	Coordinate< Northing: 1259336 Easting: 484428	Across canal 85 (local name) Broken
		
Up Stream View	Down Stream View	Side View

Canal No.: KD-1	Kind of structure(s): Canal section	Remarks:
Station: 3.00+750	Coordinate< Northing: 1259338 Easting: 484641	Canal section with grass & bush
		
Up Stream View	Down Stream View	Side View

Canal No.: KD-1	Kind of structure(s): Bridge	Remarks:
Station: 4.00+250 (E.P)	Coordinate< Northing: 1259346 Easting: 485154	Bridge on NR.2
		
Up Stream View	Side View	

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

Canal name: Connection Canal (NS78)

Surveyed in January, 2012 by JICA Survey Team




Sta.	E	N	Structure	Condition	Eval uatio n	Remarks
0	477997	1261020	B.P.	Intake of NS-78 constructed in Pol Pot Regime, no function as intake due to no construction of diversion weir on the Stung Toch	D	
			Bridge with groove, Commune road	Function as road bridge for the commune	C	W=4m, L=4.5m
500	478012	1260313	Box Culvert, Commune road	Function as road bridge for the commune	B	W=5.6m, L=2mm
900	478024	1259880	Culvert Provincial road	The culvert is not functioned due to sediment (pipes are mostly covered by soils)	D	W=7m, L=9.8m, d=1m (3 culverts)
1,500	478054	1259287	Canal Section	Section has been eroded heavily and many sediments on the canal bed	D	
1,800	478041	1258995	Drain Inlet,	Structure is in good and functioned as drain inlet	B	L=9.2m, dia= 1.0 m
2,000	478044	1258787	Canal Section	Section has been eroded heavily and many sediments on the canal bed Section area is very wide	D	
2,500	478047	1258292	Canal Section	Do. Some water remains in the canal bottom	D	
2,800	478041	1257988	Drain Inlet	Structure is in good and functioned as drain inlet	B	L=6 m, dia= 1.0 m
3,000	478059	1257764	Canal Section	Some water remains in the canal bottom due to checking the canal about 800 m downstream	C	
3,500	478028	1257322	Canal Section	Do.	C	
3,800	478043	1257008	Earth bund and Turnout	The <u>canal section was checked by earth bund</u> and constructed turnout with help of Word Vision, 2004	C	L=18m, dia=0.5m
4,000	478043	1256867	Canal Section	Section is covered by grass and bush and no water exists	D	
4,500	478018	1256440	Canal Section	Canal slope has been eroded heavily and sediments on the bed	D	
4,800	478030	1256090	E.P.	Canal slope has been eroded heavily and sediments on the bed	C	Close to Tonle Bati river




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators		A			
Bridges/ Culvert	3	B		1	
Public	3	C		1	
Concrete	3	D		1	
Wooden	0	Total	0	3	0
Private	0				
Concrete	0				
Wooden	0				
Total	0				




- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function

Evaluation of Canal and structures




1. Canal sections from st.1+500 to 3+800 have become big caused by heavy erosion.
2. Some waters remains in the canal caused by rain




Canal No.:	Connection Canal	Kind of structure(s): Bridge	Remarks: Bridge with groove
Station: 0.00 (B.P)	Coordinate<	Northing: 1261020 Easting: 477997	Commune road
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>B.P.</p>			

Canal No.:	Connection Canal	Kind of structure(s): Box Culvert	Remarks: Commune road
Station: 0.00+500	Coordinate<	Northing: 1260313 Easting: 478012	
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>			



Canal No.:	Connection Canal	Kind of structure(s): Bridge (3 culverts)	Remarks: Bridge on provincial road
Station: 0.00+900	Coordinate<	Northing: 1259880 Easting: 478024	
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>			




Canal No.:	Connection Canal	Kind of structure(s): Canal Section	Remarks: Long width section cause by erosion
Station: 1.00+500	Coordinate<	Northing: 1259287 Easting: 478054	
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>			

Canal No.:	Connection Canal	Kind of structure(s): Drain Inlet	Remarks: Structure is good, but no water drain from rice field
Station: 1.00+800	Coordinate<	Northing: 1258995 Easting: 478041	
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>			



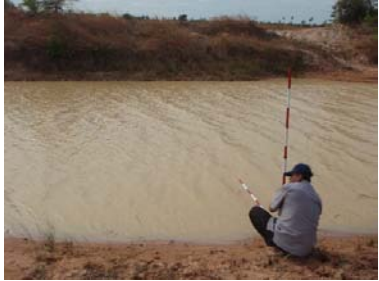
Canal No.:	Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+000	Coordinate<	Northing: 1258787 Easting: 478044	
  			
<p>Up Stream View</p> <p>Down Stream View</p> <p>Side View</p>			









Canal No.:	Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 2.00+500	Coordinate<	Northing: 1258292 Easting: 478047	
  			
<p style="text-align: center;">Up Stream View                      Down Stream View                      Side View</p>			



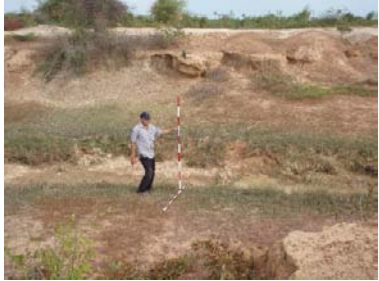
Canal No.:	Connection Canal	Kind of structure(s): Drain Inlet	Remarks:
Station: 2.00+800	Coordinate<	Northing: 1257988 Easting: 478041	
  			
<p style="text-align: center;">Up Stream View                      Down Stream View                      Side View</p>			



Canal No.:	Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 3.00+000	Coordinate<	Northing: 1257764 Easting: 478059	
  			
<p style="text-align: center;">Up Stream View                      Down Stream View                      Side View</p>			

Canal No.: Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 3.00+500	Coordinate< Northing: 1257322 Easting: 478028	
		
Up Stream View	Down Stream View	Side View

Canal No.: Connection Canal	Kind of structure(s): Earth bund and turnout	Remarks:
Station: 3.00+800	Coordinate< Northing: 1257008 Easting: 478043	Turnout was constructed by Word Vision in 2004
		
Up Stream View	Down Stream View	Side View

Canal No.: Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 4.00+000	Coordinate< Northing: 1256867 Easting: 478043	
		
Up Stream View	Down Stream View	Side View

Canal No.: Connection Canal	Kind of structure(s): Canal Section	Remarks:
Station: 4.00+500	Coordinate< Northing: 1256440 Easting: 478018	
		
Up Stream View	Down Stream View	Side View

Canal No.: Connection Canal	Kind of structure(s): Canal Section	Remarks: Near Tonle Bati river
Station: 4.00+800 (E.P)	Coordinate< Northing: 1256090 Easting: 478030	
		
Up Stream View	Down Stream View	Side View

**Inventory Survey of Existing Canals and Structures**  
**(Kandal Stung Area)**

**Canal name: Flood Protection Dike**

Surveyed in January, 2012 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	4780409	1254005	B.P. Dike/ Road	Dike/ Road surface is paved by laterite	A	Junction between Provincial road and dike/road
400	480396	1254393	Bridge, Commune road	Bridge is still in good condition, but submerged in 2010 flood	B	W=3.5, L=17m
500	480415	1254553	Dike/ Road Section	Gravel and sand pavement remain and surface is smooth	A	Junction to pagoda
800	480670	1254511	Dike/ Road Section	do.	A	Pagoda (Koh Sokroam)
1,000	480736	1254719	Dike/ Road Section	do.	A	
1,500	481199	1254737	Dike/ Road Section	do.	A	
2,000	481591	1254745	Box Culvert with groove	Occasionally used as drain outlet Need to improve (widening)	B	Outlet of KC-4 W=5m, L=2.5m
2,500	482084	1254756	Dike/ Road Section	Gravel and sand pavement remain and surface is smooth	A	
3,000	482585	1254770	Box Culvert with groove,	Culvert is in good condition	B	Outlet of KC-5 W=5.3m, L=2m, H=1.7 m
			Drain Inlet	Section is clogged by soils and grass	C	W=2m, L=1m
3,500	483144	1254794	Dike/ Road Section	Gravel and sand pavement remain and surface is smooth	A	
4,000	483670	1254821	Dike/ Road Section	do.	A	
4,500	484155	1254857	Dike/ Road Section	do.	A	
5,000	484549	1254846	Bridge with regulator (2 gates)	Bridge is still in good condition	B	Outlet of Stung Toch river W=5.3m, L=2m, H=1.7 m
5,300	484832	1254905	Pipe Culvert	do.	B	W=5.3m, L=4m, dia=0.8m (3 pipes)
5,330	484873	1254908	Pipe Culvert,	do.	B	W=5.3m, L=1.2m, dia=1m
5,500	485108	1254922	Dike/ Road Section	Gravel and sand pavement remain and surface is smooth	A	
6,000	485600	1254958	E.P.	do.	A	NR.2




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	1	A			
Bridges/ Culvert	6	B		6	
Public	6	C			
Concrete	6	D			
Wooden	0	Total	0	6	0




Private	0				
Concrete	0				
Wooden	0				
Total	0				




- A: Fully functioning
- B: Partly deteriorated but function is maintained
- C: Deteriorated, and does not function well
- D: Completely damaged, and does not function




Evaluation of Canal and structures




1. All dike/ road sections are in good condition with laterite soil pavement from B.P to E.P (NR).
2. Some structures were constructed in Pot Pot regime, but still functioning.




Canal No.: Flood dike	Kind of structure(s): Provincial road	Remarks:
Station: 0.00 (B.P)	Coordinate< Northing: 1254005 Easting: 4780409	Junction between Provincial and flood dike/ road
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Bridge	Remarks:
Station: 0.00+400	Coordinate< Northing: 1254393 Easting: 480396	On the Tonle Bati river
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 0.00+500	Coordinate< Northing: 1254553 Easting: 480415	Junction to road to pagoda
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Pagoda	Remarks:
Station: 0.00+800	Coordinate< Northing: 1254511 Easting: 480670	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 1.00+000	Coordinate< Northing: 1254719 Easting: 480736	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 1.00+500	Coordinate< Northing: 1254737 Easting: 481199	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Box Culvert	Remarks:
Station: 2.00+000	Coordinate< Northing: 1254745 Easting: 481591	Box Culvert with groove On KC-4
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 2.00+500	Coordinate< Northing: 1254756 Easting: 482084	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Box Culvert	Remarks:
Station: 3.00+000	Coordinate< Northing: 1254770 Easting: 482585	Box Culvert with groove & Drain Inlet on KC-5
		
Up Stream View	Down Stream View	Side View









Canal No.: Flood dike	Kind of structure(s): Drain Inlet	Remarks: Box Culvert with groove & Drain Inlet
Station: 3.00+000	Coordinate< Northing: 1254770 Easting: 482585	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 3.00+500	Coordinate< Northing: 1254794 Easting: 483144	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 4.00+000	Coordinate< Northing: 1254821 Easting: 483670	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 4.00+500	Coordinate< Northing: 1254857 Easting: 484155	
		
Up Stream View	Down Stream View	Side View




Canal No.: Flood dike	Kind of structure(s): Regulator	Remarks: Regulator with 2 gates & Check Structure on Stung Toch river
Station: 5.00+000	Coordinate< Northing: 1254846 Easting: 484549	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s): Check Structure	Remarks:
Station: 5.00+000	Coordinate< Northing: 1254846 Easting: 484549	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s): Pipe Culvert	Remarks:
Station: 5.00+300	Coordinate< Northing: 1254905 Easting: 484832	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s): Pipe Culvert	Remarks:
Station: 5.00+330	Coordinate< Northing: 1254908 Easting: 484873	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s): Road Section	Remarks:
Station: 5.00+550	Coordinate< Northing: 1254922 Easting: 485108	
		
Up Stream View	Down Stream View	Side View

Canal No.: Flood dike	Kind of structure(s):	Remarks:
Station: 6.00+000 (E.P)	Coordinate< Northing: 1254958 Easting: 485600	Junction with NR.2
		
Up Stream View	Down Stream View	Side View

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: MC-1 (MR-1)**

Surveyed in June to July, 2011 by JICA Survey Team

Sta.	E	N	Structure	Condition	Eval uatio n	Remarks
0	0484026	1252808	Intake and Pumping Station, 3 pumps	One diesel engine was renewed in 2011. Gates are old, but still functioned	B	2 nos, of Gate (H=2.7m-3.2m, L=5.25m, W=3m)
200	0484028	1252644	Turning Point	No diversion structure for MC-3 was provided	-	Most flow from intake entered to MC-3
630	0484016	1252412	Bridge (Krang Knong Commune,	Steel girder made is still in good condition	A	L=15m, W=5m, Span=2.9m, Built 25-05-2006)
730	0484023	1252309	Houses (5 nos)	Temporary houses for farming	-	
850	0484022	1252190	Regulator with groove	Presently used as house access by placing plates and logs	D	(4 Span, @1.2m Canal Width= 12m
1,090	0484026	1251977	Canal section	Canal is wide and shallow, canal bed is covered by grasses	C	
1,160	0484028	1251913	Diversion Point	No diversion structure for MC-2 was provided	-	Most of water flow into MC-1 due to higher bed level of MC-2
1,230	0484087	1251876	1000m, Canal Depth=0.7m	Canal section was re-shaped recently but many grasses on the canal bed	B	
1,580	0484361	1251712	Private Wooden Bridge	Motor cycle is passable	D	(Span=2m, L=10.2m, W=2.1m)
1,620	0484390	1251696	Private Pump	Pumped water is used for small scale factory	-	
1,770	0484496	1251631	Canal section	Canal section was re-shaped recently but many grasses on the canal bed	B	
2,170	0484795	1251437	Bridge across National Road N° 2,	The bridge is under repairing (Jan/2012)	A	W(outside)=6.2m, W(inside)=4m, L(outside)=5.9m, L(inside)=3.8m, H=2.3m
2,280	0484862	1251387	Canal section	Canal section was re-shaped recently	B	
2,780	0485172	1251024	Canal section	Canal section has been eroded heavily and many sediments on canal bed	C	
2,960	0485276	1250874	Bridge (on Village road)	3 span bridge is still new and flow area is secured	A	built on 26-03-1999, Span=3m, W=3m, L=12.3m, H=2m)
3,320	0485465	1250596	Canal section	Canal section has been eroded heavily and many sediments on canal bed	C	Canal section is wider than 30 m
3,520	0485572	1250445	Bridge (on Village road)		B	H=1.8m, W=5.5m, L=5m, Triple Pipe Culvert (dia=1m)




3,820	0485742	1250186	Canal section	Canal section has been eroded heavily and many sediments on canal bed	C	Canal section is wider than 30 m
4,230	0485966	1249873	Pipe Culvert	Farm access, but not many traffic	C	W=3.3m, dia=1m, built in April-2005), Canal Depth=1m
4,320	0486018	1249782	Canal section	Canal section has been eroded heavily and many sediments on canal bed	C	Canal section is wider than 30 m
4,850	0486248	1249359	Bridge with gates (Commune & Village, W=3.7m)	Structure is new and functioned as check	B	Two gates (W=1.1m, H=1m each)
5,190	0486253	1249026	Pipe Culvert	Pipe is cloged	C	(dia=0.8m, W=4.6m) built by World Vision of Cambodia in Sep-2003
5,360	0486255	1248853	Canal section	Canal section has been eroded but not so serious as one in upstream sections	C	
5,600	0486251	1248618	Pipe Culvert on village road	Brick made wall has been damaged	C	(dia=0.8m, W=5.6m) built on 02-06-2006, Canal Depth= 0.2m
5,860	0486246	1248358	Canal section	Canal section remains due to no flow has reached to the section	B	
5,930	0486239	1248298	Pipe Culvert	The canal is obstructed by earth mede bund to store water, and small	D	(W=3.2m, dia=0.4m), Diversion Point
6,370	0486240	1247888	EP of Stage-1, Pipe Culvert (Commune road)	Stone masonry made	B	W=5.5m, dia=1m, by World Vision




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	2	A		2	
Bridges/ Culvert	11	B	1	2	
Public	10-	C		5	
Concrete	10 (one is steel)	D	1	2	
Wooden	0	Total	2	11	5
Private	1				
Concrete	0				
Wooden	1				
Total	0				




- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function




#### Evaluation of Canal and structures




1. Sta. 1+200 to 2+300 has been reshaped by MOWRAM, but remaining sections have been eroded and canal sections become wide and shallow.
2. Some structures were rehabilitated by assistance of NGO (World vision)
3. No structures for dividing water to other canals are found




Canal No.: MC1	Kind of structure(s): Pumping Station No. 22-23 , Gate & Bridge	Remarks: Village Road
Station: 0.00(B.P.)	Coordinate< Northing: 1252808 Easting: 0484026	Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC1	Kind of structure(s): Canal	Remarks: Turning Point
Station: 0.00+200	Coordinate< Northing: 1252644 Easting: 0484028	Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Pipe Culvert(Private)	Remarks: Double Pipe Culvert
Station: 0.00+300	Coordinate< Northing: 1252631 Easting: 0484103	Commune Road
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Bridge	Remarks:
Station: 0.00+630	Coordinate< Northing: 1252412 Easting: 0484016	Krang Knong Commune Bridge Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Houses(Temporary)	Remarks:
Station: 0.00+730	Coordinate< Northing: 1252309 Easting: 0484023	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Bridge(Wooden)	Remarks:
Station: 0.00+850	Coordinate< Northing: 1252190 Easting: 0484022	House Access Bridge with Concrete Wall
		
Up Stream View	Down Stream View	Structure/Side View









Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 1.00+90	Coordinate< Northing: 1251977 Easting: 0484026	Measurement Point
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 1.00+160	Coordinate< Northing: 1251913 Easting: 0484028	Diversion Point of Canal L4 Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 1.00+230	Coordinate< Northing: 1251876 Easting: 0484087	Routine Survey Length: 1000m
		
Up Stream View	Down Stream View	

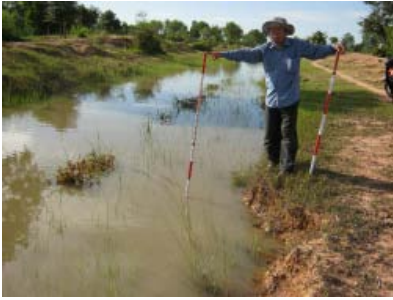
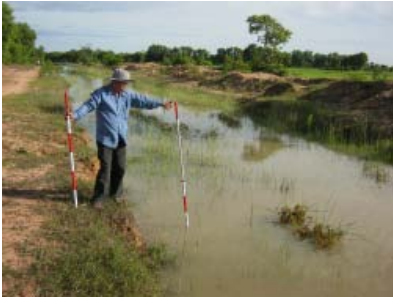
Canal No.: MC1	Kind of structure(s): Bridge (Private Wooden)	Remarks: Farm Access
Station: 1.00+580	Coordinate< Northing: 1251712 Easting: 0484361	Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Canal	Remarks: Private Pump to Farm Use
Station: 1.00+620	Coordinate< Northing: 1251696 Easting: 0484390	Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks: Routine Survey
Station: 1.00+770	Coordinate< Northing: 1251631 Easting: 0484496	Length: 1500m
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Bridge (Concrete)	Remarks:
Station: 2.00+170	Coordinate< Northing: 1251437 Easting: 0484795	Bridge across National Road N° 2 Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 2.00+280	Coordinate< Northing: 1251387 Easting: 0484862	Routine Survey Length: 2000m
		
Up Stream View	Down Stream View	




Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 2.00+780	Coordinate< Northing: 1251024 Easting: 0485172	Routine Survey Length: 2500m
		
Up Stream View	Down Stream View	



Canal No.: MC1	Kind of structure(s): Bridge (Village)	Remarks:
Station: 2.00+960	Coordinate< Northing: 1250874 Easting: 0485276	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 3.00+320	Coordinate< Northing: 1250596 Easting: 0485465	Routine Survey Length: 3000m
		
Up Stream View	Down Stream View	




Canal No.: MC1	Kind of structure(s): Bridge (Village)	Remarks:
Station: 3.00+520	Coordinate< Northing: 1250445 Easting: 0485572	There are Triple Pipe Culvert Village Road
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 3.00+820	Coordinate< Northing: 1250186 Easting: 0485742	Routine Survey Length: 3500m
		
Up Stream View		Down Stream View




Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 4.00+230	Coordinate< Northing: 1249873 Easting: 0485966	Farm Access Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 4.00+320	Coordinate< Northing: 1249782 Easting: 0486018	Routine Survey Length: 4000m
		
Up Stream View		Down Stream View




Canal No.: MC1	Kind of structure(s): Gate Structure	Remarks:
Station: 4.00+850	Coordinate< Northing: 1249359 Easting: 0486248	Village Road Length: 4500m
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 5.00+190	Coordinate< Northing: 1249026 Easting: 0486253	Built by World Vision of Cambodia Farm Access
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 5.00+360	Coordinate< Northing: 1248853 Easting: 0486255	Routine Survey Length: 5000m
		
Up Stream View	Down Stream View	




Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 5.00+600	Coordinate< Northing: 1248618 Easting: 0486251	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 5.00+860	Coordinate< Northing: 1248358 Easting: 0486246	Private Pump Length: 5500m
		
Up Stream View	Down Stream View	



Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 5.00+930	Coordinate< Northing: 1248298 Easting: 0486239	Diversion Point Private Pump
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 6.00+370	Coordinate< Northing: 1247888 Easting: 0486240	Commune Road by World Vision Length: 6000m
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 6.00+870	Coordinate< Northing: 1247378 Easting: 0486230	Routine Survey Length: 6500m
		
Up Stream View	Down Stream View	




Canal No.: MC1	Kind of structure(s): Pipe Culvert	Remarks:
Station: 7.00+100	Coordinate< Northing: 1247165 Easting: 0486231	Commune Road Diversion Point
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 7.00+380	Coordinate< Northing: 1246890 Easting: 0486232	Routine Survey Length: 7000m
		
Up Stream View		Down Stream View

Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 7.00+880	Coordinate< Northing: 1246376 Easting: 0486231	Routine Survey Length: 7500m
		
Up Stream View		Down Stream View

Canal No.: MC1	Kind of structure(s): Canal	Remarks:
Station: 8.00+380	Coordinate< Northing: 1245938 Easting: 0486221	Routine Survey Length: 8000m
		
Up Stream View		Down Stream View

Canal No.: MC1	Kind of structure(s): Houses	Remarks: Rice fields are the downstream side across the rural road, and the house is on the upstream. This house owners has encroached the public property by filling land into the canal in order to make their own uses such as digging small pond and making their house wall surrounded by the thorny bamboo trees at the back of their house.
Station: 8.00+670(EP)	Coordinate< Northing: 1245729 Easting: 0486217	
		
Up Stream View	Structure/Side View	Pond

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: MC-2 (M-1)**

Surveyed in June to July, 2011 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0484029	125189 7	B.P.	The canal is branched off from MC-1, but no division structure exists	-	Canal bed is higher than one of MC-1, so less water enter to MC-2
510	0484027	125142 4	Canal section, 500 m	The sections shallow and covered by grasses	C	
1,010	0484029	125093 9	Canal section, 1,000 m	Do.	C	
1,360	0484043	125059 4	Houses=2	Two (2) houses on the canal bank,	-	Roof and walls are made by galvanized steel plates
1,510	0484045	125044 9	Turnout Gate	Culvert portion was eroded and damaged	C	W=0.8m, H=0.5m), Width of both side=8m, Canal Width=10m, Canal Depth=0.8m, (1,500m)
1,640	0484022	125030 9	Turning Point to private pond	Water is diverted to private pond without structure (breach of the canal bank)	C	
1,810	0484018	125013 7	Bridge (Commune)	Flow area seems be enough and well maintained	B	W=5.5m, L=4.4m, H=1.7m)
2,010	0484030	124999 7	Bridge across National Road N° 2	Steel truss bridge is in good condition	A	L=13.5m, W=7.6m, Span =3.1m, H=2.2m
2,310	0484047	124972 0	Temporary hut for farming	One nos. made by bamboo and vinyl sheets	-	
2,550	0484037	124948 6	Bridge (Commune road)	Up and downstream of the bridge is widely inundated as a pond Lateral canal branched off from this point	C	W=4.1m, H=0.8m, L=5m, Span=1.82m), Canal Depth=1.2m, (2,500m)
2,900	0484045	124913 3	Houses (7 nos) on the canal bank	Temporary huts and houses of seven (7) nos. in total exist on the canal bank	-	
3,060	0484040	124898 7	Canal section, 3,000 m	Canal section is wide and shallow	C	
3,560	0484039	124851 1	Canal section, 3,500 m	Do.	C	
3,810	0484034	124829 1	Bridge (Commune road) EP of Stage-1	Condition of bridge is still in good condition	C	L(inside)=4.3m, L(outside) =10.7m, W=5.4m, Span=2.1m, H=1m, Canal Depth=1.1m)




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	0	A		1	
Bridges/ Culvert	4	B		1	
Public	4	C		2	
Concrete	4	D			
Wooden	0	Total	0	4	8
Private	0				



Concrete	0				
Wooden	0				
Total	0				

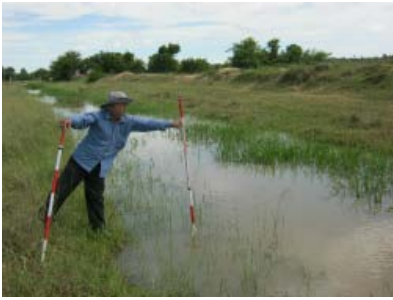

- A: Fully functioning
- B: Partly deteriorated but function is maintained
- C: Deteriorated, and does not function well
- D: Completely damaged, and does not function




Evaluation of Canal and structures




1. Very few structures on the canal, but no regulator on it because of drainage use.
2. Canal sections are eroded and widened due to no maintenance for long time (more than 30 years)
3. Huts and temporary houses of 8 nos. in total exist on the canal bank near crossing points with NR-2




Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1251897 Easting: 0484029	Diversion Point of MC1 with MC2 Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 0.00+510	Coordinate< Northing: 1251424 Easting: 0484027	Routine Survey Length: 500m
		
Up Stream View	Down Stream View	




Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 1.00+10	Coordinate< Northing: 1250939 Easting: 0484029	Routine Survey Length: 1000m
		
Up Stream View	Down Stream View	




Canal No.: MC2	Kind of structure(s): Houses	Remarks:
Station: 1.00+360	Coordinate< Northing: 1250594 Easting: 0484043	Routine Survey There are two houses.
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC2	Kind of structure(s): Gate Structure	Remarks:
Station: 1.00+510	Coordinate< Northing: 1250449 Easting: 0484045	Diversion Point to Secondary Canal Length: 1500m Gate structure is on the left hand side of the Canal.
		
Secondary Canal View	Up Stream View	Down Stream View




Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 1.00+640	Coordinate< Northing: 1250309 Easting: 0484022	Turning Point to Private Pond Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC2	Kind of structure(s): Bridge (Commune)	Remarks:
Station: 1.00+810	Coordinate< Northing: 1250137 Easting: 0484018	Commune Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC2	Kind of structure(s): Bridge	Remarks:
Station: 2.00+10	Coordinate< Northing: 1249997 Easting: 0484030	Bridge across National Road N° 2 Length: 2000m
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC2	Kind of structure(s): House(Temporary)	Remarks:
Station: 2.00+310	Coordinate< Northing: 1249720 Easting: 0484047	Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC2	Kind of structure(s): Bridge (Commune)	Remarks:
Station: 2.00+550	Coordinate< Northing: 1249486 Easting: 0484037	Commune Road Length: 2500m
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC2	Kind of structure(s): Houses	Remarks:
Station: 2.00+900	Coordinate< Northing: 1249133 Easting: 0484045	There are 7 houses. Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 3.00+60	Coordinate< Northing: 1248987 Easting: 0484040	Routine Survey Length: 3000m
		
Up Stream View	Down Stream View	






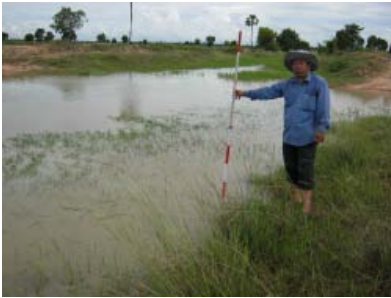
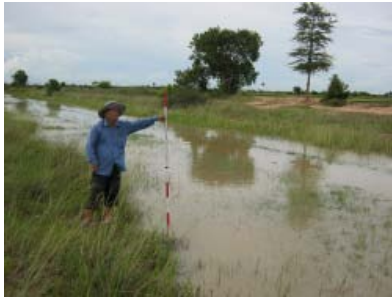
Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 3.00+560	Coordinate< Northing: 1248511 Easting: 0484039	Routine Survey Length: 3500m
		
Up Stream View		Down Stream View




Canal No.: MC2	Kind of structure(s): Bridge (Commune)	Remarks:
Station: 3.00+810	Coordinate< Northing: 1248291 Easting: 0484034	Commune Road Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		



Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 4.00+60	Coordinate< Northing: 1248041 Easting: 0484028	Routine Survey Length: 4000m
		
Up Stream View		Down Stream View



Up Stream View	Down Stream View
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Canal No.: MC2	Kind of structure(s): Canal	Remarks: Crossing Point of Sub-Canal Routine Survey
Station: 4.00+400	Coordinate< Northing: 1247695 Easting: 0484029	
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC2	Kind of structure(s): Canal	Remarks: Routine Survey Length: 4500m
Station: 4.00+580	Coordinate< Northing: 1247507 Easting: 0484027	
		
Up Stream View	Down Stream View	




Canal No.: MC2	Kind of structure(s): Bridge (Commune)	Remarks: Commune Road Routine Survey
Station: 4.00+930	Coordinate< Northing: 1247171 Easting: 0484034	
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC2	Kind of structure(s): Canal	Remarks: Routine Survey Length: 5000m
Station: 5.00+90	Coordinate< Northing: 1247021 East ing: 0484028	
		
Up Stream View		Down Stream View




Canal No.: MC2	Kind of structure(s): Canal	Remarks: Routine Survey Length: 5500m
Station: 5.00+600	Coordinate< Northing: 1246524 East ing: 0484032	
		
Up Stream View		Down Stream View

Canal No.: MC2	Kind of structure(s): Water Obstruction Structure	Remarks: Routine Survey The Water Obstruction Structure was constructed in Pol Pot Regime and now broken. It is on the right hand side of Canal.
Station: 6.00+40	Coordinate< Northing: 1246149 East ing: 0484036	
		
Structure/Side View		Canal View

Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 6.00+110	Coordinate< Northing: 1246088 Easting: 0484035	Routine Survey Length: 6000m
		
Up Stream View		Down Stream View

Canal No.: MC2	Kind of structure(s): Bridge (Commune)	Remarks:
Station: 6.00+570	Coordinate< Northing: 1245631 Easting: 0484034	Commune Road Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		

Canal No.: MC2	Kind of structure(s): Canal	Remarks:
Station: 6.00+610	Coordinate< Northing: 1245588 Easting: 0484040	Routine Survey Length: 6500m
		
Up Stream View		Down Stream View

Canal No.: MC2	Kind of structure(s): Bridge	Remarks: Provincial Road (Kandal to Takeo), Krang Ompel Village
Station: 6.00+870(EP)	Coordinate< Northing: 1245343 Easting: 0484049	
		
Up Stream View	Down Stream View	Structure/Side View

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

Canal name: MC-3

Surveyed in June to July, 2011 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks	
0	0484103	1252631	Pipe Culvert (Double)	Road surface is damaged but culvert is functional	B	L=10.8m, W=4.5m, dia=1m	
250	0484332	1252629	Private Wooden Bridge (Broken)	Abandoned one canal section is covered by thick trees and grass	D		
360	0484442	1252631	Private Bridge	Piers are only remained (no slab plate), abandoned bridge	D		
510	0484579	1252630	Diversion Point, 500m	To lateral canal by pump	D	Lateral canal is higher than water level of MC3	
990	0485008	1252638	Pipe Culvert (Village Road)	Culvert is covered by thick grass	B	dia=1m, W=4m, built in May-2008)	
1,200	0485218	1252623	Optical Cable Line Point				
1,290	0485294	1252634	Small Private Bridge	Wooden house access	C	W=0.5 m	
1,340	0485339	1252630	Small Private Bridge	do.	C	W=0.5 m	
1,460	0485364	1252650	Turnout point to lateral canal	Turnout has no gate but groove; bridge on the lateral canal	C	Bridge & Groove (W=3.7m, L=2m)	
1,530	0485437	1252649	Canal Section at 1,500 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	C		
1,650	0485536	1252638	Bridge across National Road N° 2	The culvert seems old but still functioned	C	(Span=1.4m, L=5.1m, H=1.5m, W(inside)=6.9m, W(outside)=8m), Canal Depth=2m	
2,050	0485934	1252629	Canal Section at 2,000 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	Dumped materials will return to canal soon	
2,510	0486379	1252630	Private Bridge	Steel made truss bridge to private farm, flow area is good enough	A	(L=15.4m, W=3.84m, Span=1.5m, H=1.3m)	
2,570	0486431	1252627	Canal Section at 2,500 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B		
2,700	0486549	1252636	Check Gate N° 1	The structure was constructed by fund of CPP	B	Two Gates, W=1.2m, H=2.8m), Bridge of Gate (W=4.7m) built on 09-03-2011	
3,020	0486857	1252628	Diversion Point, (3,000m)	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	To Lateral no L3	
3,060	0486881	1252607	Intake Canal L3	Gates are installed but no lifting gears  <EP of Stage-1>	C	Two Gates(H=1.5m, W=1m), Water Depth=0.8m), Width of Bridge=4.2m, Width of Canal=8.3m, Canal	




						Depth=1.2m
3,540	0487328	1252629	Canal Section at 3,500 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	
3,600	0487384	1252638	Gate N° 2	The structure was constructed by fund of CPP; downstream is eroded due to no protection	B	Two Gates, W=1.2m, H=2.8m), Width of Bridge=4.5m
4,040	0487802	1252636	Canal Section at 4,000 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	
4,170	0487915	1252642	Private Pipe Culvert	This structure is obstructing canal flow	D	dia=1m, W=3.6m, Width of Canal=7.5m, Canal Depth=1.8m
4,550	0488264	1252637	Canal Section at 4,500 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	
4,750	0488449	1252641	Gate N° 3	The structure was constructed by fund of CPP; downstream is eroded due to no protection	C	W=1.2m, H=2.8m, Pipe Culvert (W=4.1m, dia=1m) Built on 26-06-2007
5,050	0488750	1252646	Canal Section at 5,000 m	The section was dredged in June 2011 by MOWRAM, but dredged materials are dumped on both side of canal	B	
5,320	0489003	1252639	Pipe Culvert Private	Temporary access and rough construction by farmers	C	(W=3.8m, dia=1m)
5,450	0489130	1252644	Houses (11 nos)	Eleven (11) Nippa huts exist on the canal bank	-	No removal would be required for rehab.
5,700	0489374	1252633	Gate N° 4	The structure was constructed by fund of CPP; downstream is eroded due to no protection	B	W=1.2m, H=2m, Width of Bridge=7m & E.P.




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	4	A		1	
Bridges/ Culvert	14	B	4	5	
Public	7	C		5	
Concrete	7	D		3	
Wooden	0	Total	4	14	11
Private	7				
Concrete	3				
Wooden	4				
Total	0				


- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function

#### Evaluation of Canal and structures




1. Most of canal section of 4 km out of 5.7 km was dredged in 2011 by MOWRAM, but upstream part from NR-2 did not any work yet
2. Four (4) regulators were constructed by NGO (CPP: Political Party) contribution
3. 11 houses (temporary houses made by nipper) exist at the end of canal, but no need to move under Stage 1




Canal No.: MC3	Kind of structure(s): Pipe Culvert(Double)	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1252631 Easting: 0484103	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Bridge (Private Wooden)	Remarks:
Station: 0.00+250	Coordinate< Northing: 1252629 Easting: 0484332	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Bridge (Private)	Remarks:
Station: 0.00+360	Coordinate< Northing: 1252631 Easting: 0484442	Routine Survey
		
Structure/Side View		









Canal No.: MC3	Kind of structure(s): Canal	Remarks:
Station: 0.00+510	Coordinate< Northing:1252630 Easting:0484579	Diversion Point Length: 500m
		
Up Stream View	Down Stream View	Secondary Canal



Canal No.: MC3	Kind of structure(s): Pipe Culvert (Village)	Remarks:
Station: 0.00+990	Coordinate< Northing: 1252638 Easting: 0485008	Village Road Length: 1000m
		
Up Stream View	Down Stream View	Road along Canal




Canal No.: MC3	Kind of structure(s): Canal (Village Road)	Remarks:
Station: 1.00+200	Coordinate< Northing: 1252623 Easting: 0485218	Optical Cable Line Point (Until Vietnam Border)
		
Up Stream View	Down Stream View	Road along Canal




Canal No.: MC3	Kind of structure(s): Bridge(Small Private)	Remarks:
Station: 1.00+290	Coordinate< Northing: 1252634 Easting: 0485294	Made by wood for House Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Bridge(Small Private)	Remarks:
Station: 1.00+340	Coordinate< Northing: 1252630 Easting: 0485339	Made by wood for House Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC3	Kind of structure(s): Bridge & Groove	Remarks:
Station: 1.00+460	Coordinate< Northing: 1252650 Easting: 0485364	Village Road Bridge is on the left Bank of Canal.
		
Up Stream View	Down Stream View	Structure/Side View


Canal No.: MC3	Kind of structure(s): Canal	Remarks:
Station: 1.00+530	Coordinate< Northing: 1252649 East ing: 0485437	Routine Survey Length: 1500m
		
Up Stream View		Down Stream View




Canal No.: MC3	Kind of structure(s): Bridge	Remarks:
Station: 1.00+650	Coordinate< Northing: 1252638 East ing: 0485536	Bridge across National Road N° 2 Made by Concrete
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Canal	Remarks:
Station: 2.00+50	Coordinate< Northing: 1252629 East ing: 0485934	Routine Survey Length: 2000m
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC3	Kind of structure(s): Bridge (Private)	Remarks:
Station: 2.00+510	Coordinate< Northing: 1252630 Easting: 0486379	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Canal	Remarks:
Station: 2.00+570	Coordinate< Northing: 1252627 Easting: 0486431	Routine Survey Length: 2500m Dredged soils are dumped on the ridge of canal in June 2011 by MOWRAM. Dredging was done for 4Km by MOWRAM.
		
Up Stream View	Down Stream View	



Canal No.: MC3	Kind of structure(s): Check Gate N° 1 & Bridge	Remarks:
Station: 2.00+700	Coordinate< Northing: 1252636 Easting: 0486549	Village Road The Structure was constructed by fund of CPP, but not PDOWRAM / MOWRAM.
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Canal	Remarks: Diversion Point
Station: 3.00+20	Coordinate< Northing: 1252628 Easting: 0486857	Length: 3000m Dredged soils are dumped on canal ridge.
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: MC3	Kind of structure(s): Intake for Canal L3	Remarks:
Station: 3.00+60	Coordinate< Northing: 1252607 Easting: 0486881	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC3	Kind of structure(s): Canal	Remarks:
Station: 3.00+540	Coordinate< Northing: 1252629 Easting: 0487328	Routine Survey Length: 3500m
		
Up Stream View	Down Stream View	



Canal No.: MC3	Kind of structure(s): Check Gate N° 2 & Bridge	Remarks: Village Road The Structure was constructed by fund of CPP, but not PDOWRAM / MOWRAM.
Station: 3.00+600	Coordinate< Northing: 1252638 Easting: 0487384	
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Canal	Remarks: Routine Survey Length: 4000m
Station: 4.00+40	Coordinate< Northing: 1252636 Easting: 0487802	
		
Up Stream View	Down Stream View	




Canal No.: MC3	Kind of structure(s): Pipe Culvert(Private)	Remarks: Farm Access Routine Survey The Structure was constructed by fund of CPP, but not PDOWRAM / MOWRAM.
Station: 4.00+170	Coordinate< Northing: 1252642 Easting: 0487915	
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: MC3	Kind of structure(s): Canal	Remarks: Routine Survey Length: 4500m Dredged soils are dumped on the ridge of canal in June 2011 by MOWRAM. Dredging was done for 4Km by MOWRAM.
Station: 4.00+550	Coordinate< Northing: 1252637 Easting: 0488264	
		
Up Stream View		Down Stream View

Canal No.: MC3	Kind of structure(s): Check Gate N° 3	Remarks: There is a Pipe Culvert Village Road The Structure was constructed by fund of CPP, but not PDOWRAM / MOWRAM.
Station: 4.00+750	Coordinate< Northing: 1252641 Easting: 0488449	
		
Up Stream View		Down Stream View
		
Structure/Side View		

Canal No.: MC3	Kind of structure(s): Canal	Remarks: Routine Survey Length: 5000m Dredged soils are dumped on the ridge of canal in June 2011 by MOWRAM. Dredging was done for 4Km by MOWRAM.
Station: 5.00+50	Coordinate< Northing: 1252646 Easting: 0488750	
		
Up Stream View		Down Stream View

Canal No.: MC3	Kind of structure(s): Pipe Culvert (Private)	Remarks:
Station: 5.00+320	Coordinate< Northing: 1252639 Easting: 0489003	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC3	Kind of structure(s): Houses	Remarks:
Station: 5.00+450	Coordinate< Northing: 1252644 Easting: 0489130	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: MC3	Kind of structure(s): Check Gate No 4 & Bridge	Remarks:
Station: 5.00+700	Coordinate< Northing: 1252633 Easting: 0489374	Commune Road Routine Survey The Structure was constructed by fund of CPP, but not PDOWRAM / MOWRAM.
		
Up Stream View	Down Stream View	Structure/Side View



**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: L-3**

Surveyed in June to July, 2011 by JICA Survey Team




Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0486883	1252604	B.P, Intake with Gate	Gate frame and lifting gear were lost; gate is not functioned Canal section is well remained as designed	D	(H=1.5m, W=1m), Water Depth=0.8m), Width of Bridge =4.2m, Width of Canal=8.3m, Canal Depth =1.2m
520	0487152	1252173	Private Pipe Culvert	Farm access; function remain	C	(W=4.3m, dia=0.8m)
890	0487347	1251865	Private Pipe Culvert	Do.	C	(W=4m, dia=0.5m)
1,030	0487377	1251733	Canal section at 1,000 m	No erosion, slope is covered by grasses; well maintenance	B	
1,240	0487375	1251524	Private Pipe Culvert	No damage and well maintained	B	(dia=0.5m, W=4.7m, Built on 23-03-2008)
1,550	0487376	1251226	Canal section at 1,500 m	No erosion, slope is covered by grasses; well maintenance	B	
1,780	0487371	1250994	Private Pipe Culvert	No damage and well maintained	B	(dia=0.6m, W=3.8m)
2,050	0487115	1250994	Canal section at 2,000 m	Canal section become wide and shallow	C	




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	0	A			
Bridges/ Culvert	4	B		2	
Public	0	C		2	
Concrete	0	D			
Wooden	0	Total	0	4	0
Private	4				
Concrete	4				
Wooden					
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function



Evaluation of Canal and structures




1. Canal sections are rather well maintained because of water supply to the canal
2. No regulator (check) is provided



Canal No.: L3	Kind of structure(s): Gate Structure	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1252604 Easting: 0486883	Along the Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L3	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+520	Coordinate< Northing: 1252173 Easting: 0487152	Farm Access Length: 500m
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L3	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+890	Coordinate< Northing: 1251865 Easting: 0487347	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L3	Kind of structure(s): Canal	Remarks:
Station: 1.00+30	Coordinate< Northing: 1251733 Easting: 0487377	Routine Survey Length: 1000m
		
Up Stream View		Down Stream View

Canal No.: L3	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+240	Coordinate< Northing: 1251524 Easting: 0487375	Farm Access Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		

Canal No.: L3	Kind of structure(s): Canal	Remarks:
Station: 1.00+550	Coordinate< Northing: 1251226 Easting: 0487376	Routine Survey Length: 1500m
		
Up Stream View		Down Stream View

Canal No.: L3	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+780	Coordinate< Northing: 1250994 Easting: 0487371	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L3	Kind of structure(s): Canal	Remarks:
Station: 2.00+50(EP)	Coordinate< Northing: 1250994 Easting: 0487115	Routine Survey Length: 2000m
		
Up Stream View	Down Stream View	

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: L-4**

Surveyed in June to July, 2011 by JICA Survey Team



Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0485215	1250990	B.P, Diversion Point of MC1	No structure at the diversion point Canal has been deteriorated (become shallow and widened)	-	
560	0485737	1250995	Canal section at 500m	Canal section is maintained in Village area	-	
640	0485807	1250992	Regulator with two Gates	Good condition	B	W=1m, H=1m
			Bridge	Good condition	B	(L(inside)=4.7m, L(outside)=5.6m, W=2.8m) & Pipe Culvert (Double, dia=0.8m) & E.P.



Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	1	A			
Bridges/ Culvert	0	B			
Public	0	C			
Concrete	0	D	1		
Wooden	0	Total	1	0	0
Private	0				
Concrete	0				
Wooden	0				
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function

Evaluation of Canal and structures

1. Canal section of the first 500 m has been deteriorated and many grasses on the canal bed
2. Only one structure combined of regulator and bridge exists on the canal

Canal No.: L4	Kind of structure(s): Canal	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1250990 Easting: 0485215	Diversion Point of MC1
		
Up Stream View		Down Stream View

Canal No.: L4	Kind of structure(s): Canal	Remarks:
Station: 0.00+560	Coordinate< Northing: 1250995 Easting: 0485737	Routine Survey
		
Up Stream View		Down Stream View

Canal No.: L4	Kind of structure(s): Gate Structure	Remarks:
Station: 0.00+640 (EP)	Coordinate< Northing: 1250992 Easting: 0485807	There are Bridge and Pipe Culvert
		
Up Stream View		Down Stream View
		
Structure/Side View		

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: L-5**

Surveyed in June to July, 2011 by JICA Survey Team



Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0485546	1250442	B.P. Diversion point from MC-1	Canal has been eroded and no sufficient flow has reached	-	
150	0485412	1250442	Private Pipe Culvert	Pipe has mostly clogged by soils Farm access	C	dia=0.5m, L=4.1m
350	0485207	1250442	Private Pipe Culvert	Pipe dia seems to be too small for conveying water Farm access	C	dia=0.4m, L=3.1m
500	0485066	1250442	Canal section at 500 m	The section has been eroded and become flat; many sediments on the bed	-	
710	0484870	1250446	Pipe Culvert on village road	Pipe has mostly clogged by soils	C	dia=0.8m, W=6m
1,000	0484562	1250450	Canal section at 1,000 m	The section has been eroded and become flat; many sediments on the bed	-	
1,110	0484442	1250449	Private Pipe Culvert & E.P.		C	dia=0.8m, W=5.2m




Structure	Nos.	Evaluation	Regulators	Culvert/ bridge	Buildings within ROW
Regulators	0	A			
Bridges/ Culvert	4	B			
Public		C		4	
Concrete	1	D			
Wooden	0	Total	0	4	0
Private	3				
Concrete	3				
Wooden					
Total	0				




- A: Fully functioning  
 B: Partly deteriorated but function is maintained  
 C: Deteriorated, and does not function well  
 D: Completely damaged, and does not function

Evaluation of Canal and structures



1. Canal sections are heavily deteriorated due to erosion and no maintenance work for long period
2. Structures are also not in good condition




Canal No.: L5	Kind of structure(s): Canal	Remarks: Along the Commune Road Routine Survey
Station: 0.00(B.P.)	Coordinate< Northing: 1250442 Easting: 0485546	
		
Up Stream View		Down Stream View



Canal No.: L5	Kind of structure(s): Pipe Culvert(Private)	Remarks: Farm Access Routine Survey
Station: 0.00+150	Coordinate< Northing: 1250442 Easting: 0485412	
		
Up Stream View		Down Stream View
		
Structure/Side View		




Canal No.: L5	Kind of structure(s): Pipe Culvert(Private)	Remarks: Farm Access Routine Survey
Station: 0.00+350	Coordinate< Northing: 1250442 Easting: 0485207	
		
Up Stream View		Down Stream View
		
Structure/Side View		



Canal No.: L5	Kind of structure(s): Canal	Remarks:
Station: 0.00+500	Coordinate< Northing: 1250442 Easting: 0485066	Routine Survey
		
Up Stream View		Down Stream View

Canal No.: L5	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+710	Coordinate< Northing: 1250446 Easting: 0484870	Along Village Road Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		

Canal No.: L5	Kind of structure(s): Canal	Remarks:
Station: 1.00	Coordinate< Northing: 1250450 Easting: 0484562	Routine Survey
		
Up Stream View		Down Stream View

Canal No.: L5	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+110(EP)	Coordinate< Northing: 1250449 Easting: 0484442	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

Canal name: L-6

Surveyed in June to July, 2011 by JICA Survey Team




Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0485978	1249877	B.P, Pipe Culvert Private	Inlet of the canal is considerably narrowed by this culvert To be removed	D	dia=0.5m, W=4.6m, Farm access
300	0486265	1249875	Pipe Culvert (Private)	Pipe might be clogged and no protection of embankment is done	D	dia=0.6m, W=4m Farm access
500	0486462	1249873	Pipe Culvert (Private)	Pipe is submerged by soils	D	dia=0.5m, W=4m
510	0486477	1249871	Pipe Culvert (Private)	House access	C	dia=0.4m, W=6m
660	0486627	1249874	Pipe Culvert Village road	Condition of road and protection of embankment is rather good	C	Double, , dia=0.4m & 0.5m, W=5.5m
760	0486731	1249869	Private Pipe Culvert	Farm access	C	dia=0.5m, W=3m
870	0486856	1249868	Pipe Culvert (Private)	Diversion Point	C	dia=0.5m, W=4m,
1,010	0487003	1249866	Canal section at 1,000 m	No shape of canal remained; canal become narrow and shallow considerably	-	
1,070	0487064	1249868	Pipe Culvert (Private)	Temporary farm access	C	dia=0.4m, W=1.9m
1,210	0487208	1249862	Pipe Culvert (Private)	Farm access	C	dia=0.6m, W=4m
1,380	0487366	1249861	Diversion Point	No structure is found	-	
1,450	0487436	1249857	Pipe Culvert (Private)	Farm access	C	dia=0.3m, W=2m
1,510	0487491	1249857	Canal section at 1,500 m	Canal section remained, but less maintenance	-	
1,840	0487807	1249852	Pipe Culvert (Private)	Farm access	C	dia=0.4m, W=1m
1,920	0487879	1249853	Embankment	Canal is blocked by embankment	-	No moral to use the canal
2,010	0487966	1249852	2,000m & E.P.	Canal section is used as pond and rice field	-	




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	0	A			
Bridges/ Culvert	11	B			
Public	1	C		8	
Concrete	1	D		3	
Wooden	0	Total	0	11	0
Private	10				
Concrete	10				
Wooden	0				
Total	0				




- A: Fully functioning
- B: Partly deteriorated but function is maintained
- C: Deteriorated, and does not function well
- D: Completely damaged, and does not function




Evaluation of Canal and structures



1. Canal section has been deteriorated due to no maintenance for long period
2. Canal is privately obstructed by installing pipes for farm access
3. Soil characteristics for embankment is clay and silt




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1249877 Easting: 0485978	Along the Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+300	Coordinate< Northing: 1249875 Easting: 0486265	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+500	Coordinate< Northing: 1249873 Easting: 0486462	Farm Access Length: 500m
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+510	Coordinate< Northing: 1249871 Easting: 0486477	House Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Double Pipe Culvert (Village)	Remarks:
Station: 0.00+660	Coordinate< Northing: 1249874 Easting: 0486627	Village Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+760	Coordinate< Northing: 1249869 Easting: 0486731	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+870	Coordinate< Northing: 1249868 Easting: 0486856	There is a Diversion Point Farm Access
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L6	Kind of structure(s): Canal	Remarks:
Station: 1.00+10	Coordinate< Northing: 1249866 Easting: 0487003	Routine Survey Length: 1000m
		
Up Stream View	Down Stream View	



Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+70	Coordinate< Northing: 1249868 Easting: 0487064	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+210	Coordinate< Northing: 1249862 Easting: 0487208	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L6	Kind of structure(s): Canal	Remarks:
Station: 1.00+380	Coordinate< Northing: 1249861 Easting: 0487366	Diversion Point Village Road
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+450	Coordinate< Northing: 1249857 Easting: 0487436	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L6	Kind of structure(s): Canal	Remarks:
Station: 1.00+510	Coordinate< Northing:1249857 Easting: 0487491	Routine Survey Length: 1500m
		
Up Stream View		Down Stream View

Canal No.: L6	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+840	Coordinate< Northing: 1249852 Easting: 0487807	Farm Access Routine Survey
		
Up Stream View		Down Stream View
		
Structure/Side View		

Canal No.: L6	Kind of structure(s): Embankment	Remarks:
Station: 1.00+920	Coordinate< Northing: 1249853 Easting: 0487879	Farm Access Routine Survey
		
Up Stream View		Down Stream View

Canal No.: L6	Kind of structure(s): Canal	Remarks:
Station: 2.00+10(EP)	Coordinate< Northing: 1249852 Easting: 0487966	Routine Survey Length: 2000m
 <p data-bbox="443 741 624 775">Up Stream View</p>		 <p data-bbox="1034 741 1246 775">Down Stream View</p>

**Inventory Survey of Existing Canals and Structures  
(Tonle Bati Area)**

**Canal name: L-7 & 8**

Surveyed in June to July, 2011 by JICA Survey Team

Sta.	E	N	Structure	Condition	Evaluation	Remarks
0	0486846	1247164	Canal N° L8 Pipe Culvert Commune road	Stone masonry wall and pipe are in good condition	B	EP of L8 (Triple pipes, dia=1m, W=4.6m), Bridge (H=2.1m, L(inside)=5.1m, L(outside)=5.7m, W=4.6m)
100	0486753	1247165	Bridge (Village road)	Wall for embankment is deteriorated and canal is covered by thick grasses	C	Pipe Culvert (Private, dia=0.4m, W=5m)
190	0486671	1247165	Pipe Culvert (Private)	House access, pipe dia is too small to flow the irrigation and drain	C	(dia=0.4m, W=4m), Bridge (L=5m, W=4m)
260	0486617	1247164	Pipe Culvert (Private)	Do.	C	dia=0.4m, W=4m
310	0486571	1247168	Pipe Culvert (Private)	Do.	C	dia=0.4m, W=3.5m
500	0486380	1247166	Canal section at 500 m	Canal section remains though some erosion has been occurred	-	
650	0486234	1247164	Diversion Point	No structure is provided to divert the flow	-	
700	0486179	1247167	Pipe Culvert (Private)	House access, pipe dia might be enough flow section	B	Double pipes, dia=1m, W=4.7m
1,000	0485884	1247169	Canal section at BP of L7 and L8, (1,000m from EP of L8)	Canal section remains, and some grass on the canal bed due to small discharge from MC-1	-	BP of L7 & L8
1,170	0485721	1247171	Embankment	Culvert is under construction (pipes are at site)	B	Future Pipe Culvert (dia=0.8m, W=5m)
1,180	0485702	1247172	Embankment	Do.	B	Future Pipe Culvert (dia=0.8m, W=5m)
1,510	0485383	1247170	Canal section at 500 m from BP of L7	Canal section remains, and rather in good condition, though some sediments on the canal bed	-	
1,700	0485201	1247169	Pipe Culvert (Private)	Farm access	C	W=3m, dia=0.5m
2,010	0484899	1247174	Canal section at 1,000 m from BP of L7	No water reached to this point, canal section remains without serious erosion	-	
2,200	0484693	1247172	Canal section at 1,200 m from BP of L7	Canal section is slightly eroded and covered by grass	-	EP of L7




Structure	Nos.	Evaluation	Regulators	Culvert/bridge	Buildings within ROW
Regulators	0	A			
Bridges/ Culvert	7	B		2	
Public	2	C		5	




	Concrete	2	D			
	Wooden	0	Total	0	7	0
Private		5				
	Concrete	5				
	Wooden					
Total		0				




- A: Fully functioning  
B: Partly deteriorated but function is maintained  
C: Deteriorated, and does not function well  
D: Completely damaged, and does not function




Evaluation of Canal and structures




1. Canal sections are rather maintained, but some are deteriorated due to lack of maintenance work
2. Many private culvert with small pipes exist due to no control of the canal



Canal No.: L8	Kind of structure(s): Pipe Culvert(Triple)	Remarks:
Station: 0.00(B.P.)	Coordinate< Northing: 1247164 Easting: 0486846	Commune Road Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L8	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+100	Coordinate< Northing: 1247165 Easting: 0486753	House Access Village Road
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L8	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+190	Coordinate< Northing: 1247165 Easting: 0486671	House Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L8	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+260	Coordinate< Northing: 1247164 Easting: 0486617	House Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L8	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 0.00+310	Coordinate< Northing: 1247168 Easting: 0486571	
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L8	Kind of structure(s): Canal	Remarks:
Station: 0.00+500	Coordinate< Northing: 1247166 Easting: 0486380	Routine Survey Length: 500m
		
Up Stream View	Down Stream View	



Canal No.: L8	Kind of structure(s): Canal	Remarks:
Station: 0.00+650	Coordinate< Northing: 1247164 Easting: 0486234	Diversion Point Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L8	Kind of structure(s): Pipe Culvert (Double Private)	Remarks:
Station: 0.00+700	Coordinate< Northing: 1247167 Easting: 0486179	Land Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View




Canal No.: L7	Kind of structure(s): Canal	Remarks:
Station: 1.00	Coordinate< Northing: 1247169 Easting: 0485884	EP of Canal L8 and BP of Canal L7 Length: 1000m
		
Up Stream View	Down Stream View	



Canal No.: L7	Kind of structure(s): Embankment	Remarks:
Station: 1.00+170	Coordinate< Northing: 1247171 Easting: 0485721	Future Pipe Culvert Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View



Canal No.: L7	Kind of structure(s): Embankment	Remarks:
Station: 1.00+180	Coordinate< Northing: 1247172 Easting: 0485702	Future Pipe Culvert Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L7	Kind of structure(s): Canal	Remarks:
Station: 1.00+510	Coordinate< Northing: 1247170 Easting: 0485383	Routine Survey Length: 1500m
		
Up Stream View	Down Stream View	



Canal No.: L7	Kind of structure(s): Pipe Culvert(Private)	Remarks:
Station: 1.00+700	Coordinate< Northing: 1247169 Easting: 0485201	Farm Access Routine Survey
		
Up Stream View	Down Stream View	Structure/Side View

Canal No.: L7	Kind of structure(s): Canal	Remarks:
Station: 2.00+10	Coordinate< Northing: 1247174 Easting: 0484899	Routine Survey Length: 2000m
		
Up Stream View	Down Stream View	




Canal No.: L7	Kind of structure(s): Canal	Remarks:
Station: 2.00+200 (EP)	Coordinate< Northing: 1247172 Easting: 0484693	Routine Survey
		
Up Stream View	Down Stream View	




# ***ANNEX D***




## ***Attachment 6***

*Results of Inventory Survey for Irrigation and Drainage  
Facilities in Main Canal 35 Rehabilitation Sub-project*




**Result of Inventory Survey of Main Canal 35 Irrigation System (1/20)**




Canal No.: MC	Kind of structure: Intake KPOB KROUS Reservoir	Remarks:
Station:	Coordinate< Northing: 1238652 Easting: 443411	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side but no structure.
Station:	Coordinate< Northing: 1238320 Easting: 443790	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Along the Main Canal
Station:	Coordinate< Northing: 1238128 Easting: 443812	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




## Result of Inventory Survey of Main Canal 35 Irrigation System (2/20)




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side has pipe culvert
Station:	Coordinate< Northing: 1237926 Easting: 443838	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side but no structure.
Station:	Coordinate< Northing: 1237949 Easting: 444362	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road	Remarks: Crossing the Main Canal; has pipe culvert.
Station:	Coordinate< Northing: 1237960 Easting: 444851	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (3/20)**




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the Main Canal but no structure.
Station:	Coordinate< Northing: 1237968 Easting: 445233	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Crossing main canal but no structure.
Station:	Coordinate< Northing: 1237973 Easting: 445509	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Main turn right	Remarks:
Station:	Coordinate< Northing: 1237986 Easting: 446006	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (4/20)**




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1237832 Easting: 446021	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal
Station:	Coordinate< Northing: 1237506 Easting: 446050	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal
Station:	Coordinate< Northing: 1237290 Easting: 4466081	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (5/20)**




Canal No.: MC	Kind of structure: Main Canal	Remarks: It curves to the left side.
Station:	Coordinate< Northing: 1237248 Easting: 446077	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal.
Station:	Coordinate< Northing: 1236773 Easting: 446107	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal.
Station:	Coordinate< Northing: 1326182 Easting: 446157	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

**Result of Inventory Survey of Main Canal 35 Irrigation System (6/20)**




Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal.
Station:	Coordinate< Northing: 1236171 Easting: 446158	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal.
Station:	Coordinate< Northing: 1236015 Easting: 446173	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Garden house	Remarks: Based on the main canal.
Station:	Coordinate< Northing: 1235889 Easting: 446182	
		
Photo View from Upstream	Photo View from Downstream	Photo Details






**Result of Inventory Survey of Main Canal 35 Irrigation System (7/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Crossing main canal, have structure.
Station:	Coordinate< Northing: 1235674 Easting: 446195	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Road	Remarks: Crossing main canal.
Station:	Coordinate< Northing: 1235665 Easting: 446197	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: At the right side
Station:	Coordinate< Northing: 1235357 Easting: 446225	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (8/20)**




Canal No.: MC	Kind of structure: Secondary canal	Remarks: At the right side, has pipe culvert.
Station:	Coordinate< Northing: 1235300 Easting: 446799	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary canal	Remarks: Secondary canal (Right), Drain (Left), has pipe culvert.
Station:	Coordinate< Northing: 1235269 Easting: 447288	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary canal	Remarks: Crossing main canal, has box culvert.
Station:	Coordinate< Northing: 1235177 Easting: 448337	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (9/20)**




Canal No.: MC	Kind of structure: Secondary canal	Remarks: Crossing main canal; has box culvert.
Station:	Coordinate< Northing: 1235177 Easting: 448337	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Road	Remarks: Crossing main canal; has pipe culvert.
Station:	Coordinate< Northing: 1235169 Easting: 448523	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235160 Easting: 448636	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (10/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Secondary canal (Right), Drain (Left), has two structures.
Station:	Coordinate< Northing: 1235021 Easting: 449351	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side.
Station:	Coordinate< Northing: 1235223 Easting: 449896	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Secondary canal (Right), Drain (Left), has double pipes.
Station:	Coordinate< Northing: 1235287 Easting: 450355	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (11/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side.
Station:	Coordinate< Northing: 1235418 Easting: 451002	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal but no structure.
Station:	Coordinate< Northing: 1235579 Easting: 451395	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side.
Station:	Coordinate< Northing: 1235684 Easting: 451679	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (12/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side.
Station:	Coordinate< Northing: 1235750 Easting: 451852	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side.
Station:	Coordinate< Northing: 1235820 Easting: 452037	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road DONG DOUNG	Remarks: Under construction
Station:	Coordinate< Northing: 1235979 Easting: 452604	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (13/20)**




Canal No.: MC	Kind of structure: Secondary canal	Remarks: At the right side.
Station:	Coordinate< Northing: 1236056 Easting: 453251	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure:	Remarks: Check Structure
Station:	Coordinate< Northing: 1236049 Easting: 453267	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235998 Easting: 453773	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

**Result of Inventory Survey of Main Canal 35 Irrigation System (14/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235970 Easting: 454236	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235964 Easting: 454302	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side
Station:	Coordinate< Northing: 1235955 Easting: 454516	
		
Photo View from Upstream	Photo View from Downstream	Photo Details






**Result of Inventory Survey of Main Canal 35 Irrigation System (15/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side
Station:	Coordinate< Northing: 1235959 Easting: 454701	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the left side
Station:	Coordinate< Northing: 1235935 Easting: 454847	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: To the field at the right side
Station:	Coordinate< Northing: 1235866 Easting: 455299	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (16/20)**




Canal No.: MC	Kind of structure: Old structure	Remarks: Has broken
Station:	Coordinate< Northing: 1235848 Easting: 455644	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235834 Easting: 455730	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235803 Easting: 457065	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (17/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235794 Easting: 457999	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235796 Easting: 458018	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235775 Easting: 459628	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (18/20)**




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235755 Easting: 460233	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure:	Remarks: Check structure is under construction.
Station:	Coordinate< Northing: 1235756 Easting: 460277	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235620 Easting: 460948	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (19/20)**




Canal No.: MC	Kind of structure: Road (24)	Remarks: Crossing the main canal
Station:	Coordinate< Northing: 1235530 Easting: 461397	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1235319 Easting: 461934	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Secondary Canal	Remarks: At the right side
Station:	Coordinate< Northing: 1234957 Easting: 463677	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (20/20)




Canal No.: MC	Kind of structure: Road	Remarks: Crossing the main canal but has bridge.
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1234900</span> <span>Easting: 464113</span> </div>	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Photo View from Upstream</p> </div> <div style="text-align: center;">  <p>Photo View from Downstream</p> </div> <div style="text-align: center;">  <p>Photo Details</p> </div> </div>		


Canal No.: MC	Kind of structure: Secondary Canal	Remarks: Crossing the main canal but has double pipes at the right.
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1234518</span> <span>Easting: 465434</span> </div>	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Photo View from Upstream</p> </div> <div style="text-align: center;">  <p>Photo View from Downstream</p> </div> <div style="text-align: center;">  <p>Photo Details</p> </div> </div>		




Canal No.: MC	Kind of structure: Bridge number 12	Remarks: Based on National road number 3
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1234513</span> <span>Easting: 465648</span> </div>	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Photo View from Upstream</p> </div> <div style="text-align: center;">  <p>Photo View from Downstream</p> </div> <div style="text-align: center;">  <p>Photo Details</p> </div> </div>		

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (1/18)




### Secondary Canal No.3




Canal No.: SC-3	Kind of structure: Pipe Culvert	Remarks: B.P. of SC-3 at Main Canal 35
Station:	Coordinate< Northing: 1237748 Easting: 444883	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-3	Kind of structure: Wooden Bridge	Remarks: Wooden Bridge for entrance
Station:	Coordinate< Northing: 1237630 Easting: 444901	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-3	Kind of structure: Wooden Bridge	Remarks: Wooden bridge for entrance
Station:	Coordinate< Northing: 1237491 Easting: 444920	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (2/18)




Canal No.: SC-3	Kind of structure: Wooden Bridge	Remarks: Wooden bridge for entrance
Station:	Coordinate< Northing: 1237434 Easting: 444927	
 Photo View from Upstream	 Photo View from Downstream	 Photo Details




Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe culvert (turnout) to the right tertiary canal
Station:	Coordinate< Northing: 1237423 Easting: 444927	
 Photo View from Upstream	 Photo View from Downstream	 Photo Details




Canal No.: SC-3	Kind of structure: Wooden Bridge	Remarks: Wooden bridge for entrance
Station:	Coordinate< Northing: 1237307 Easting: 444948	
 Photo View from Upstream	 Photo View from Downstream	 Photo Details






### Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (3/18)




Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe culvert (turnout) to the right tertiary canal (L = 300m)
Station:	Coordinate< Northing: 1237210 Easting: 444955	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe Culvert (turnout) to the right tertiary canal (L = 1000m)
Station:	Coordinate< Northing: 1236881 Easting: 444993	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-3	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 1236868 Easting: 444999	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




### Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (4/18)




Canal No.: SC-3	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 1236655 Easting: 445028	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-3	Kind of structure: Box Culvert	Remarks: Box Bridge crossing secondary canal
Station:	Coordinate< Northing: 1236338 Easting: 445071	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe Culvert (turnout) to the right tertiary canal (L = 1000m)
Station:	Coordinate< Northing: 1236234 Easting: 445083	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (5/18)**




Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe Culvert (turnout) to the right tertiary canal
Station:	Coordinate< Northing: 1235812 Easting: 445145	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-3	Kind of structure: Turnout	Remarks: Pipe Culvert (turnout) to the right tertiary canal
Station:	Coordinate< Northing: 1235713 Easting: 445163	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-3	Kind of structure: Turnout (no structure)	Remarks: Tertiary canal crossing without structure
Station:	Coordinate< Northing: 1235607 Easting: 445179	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (6/18)




Canal No.: SC-3	Kind of structure: Turnout (no structure)	Remarks: Tertiary canal crossing without structure
Station:	Coordinate< Northing: 1235505 Easting: 445199	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-3	Kind of structure: Canal	Remarks: Canal width becomes narrow.
Station:	Coordinate< Northing: 1235453 Easting: 445201	
		
Photo View from Upstream	Photo View from Downstream	Photo Details


Canal No.: SC-3	Kind of structure: Canal	Remarks: E.P. of SC-3
Station:	Coordinate< Northing: 1235453 Easting: 445201	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (7/18)




### Secondary Canal No.5




Canal No.: SC-5	Kind of structure: Road	Remarks: B.P. of Secondary Canal No.5
Station:	Coordinate< Northing: 1237765 Easting: 447649	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-5	Kind of structure: Entrance	Remarks: Entrance without structure
Station:	Coordinate< Northing: 1237237 Easting: 447562	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-5	Kind of structure: Entrance	Remarks: Entrance without structure
Station:	Coordinate< Northing: 1237237 Easting: 447525	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




### Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (8/18)




Canal No.: SC-5	Kind of structure: Pipe culvert	Remarks: Entrance with pipe culvert
Station:	Coordinate< Northing: 1236906 Easting: 447523	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-5	Kind of structure: Pipe culvert	Remarks: Entrance with pipe culvert
Station:	Coordinate< Northing: 1236657 Easting: 447497	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-5	Kind of structure: Pipe culvert	Remarks: Road Crossing with pipe culvert
Station:	Coordinate< Northing: 1226638 Easting: 447494	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

**Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (9/18)**




Canal No.: SC-5	Kind of structure: Pipe culvert	Remarks: Entrance with pipe culvert
Station:	Coordinate< Northing: 1236627 Easting: 447492	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-5	Kind of structure: Pipe culvert	Remarks: Entrance with pipe culvert
Station:	Coordinate< Northing: 1236608 Easting: 447490	
		
Photo View from Upstream	Photo View from Downstream	Photo Details




Canal No.: SC-5	Kind of structure: Pipe culvert(E.P.)	Remarks: E.P. of Secondary Canal No.5 with double pipe culvert
Station:	Coordinate< Northing: 1236608 Easting: 447490	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (10/18)

### Secondary Canal No.7




Canal No.: SC-7	Kind of structure: Pipe Culvert	Remarks: B.P. of Secondary Canal No.7 Pipe culvert along canal(D=1m)
Station:	Coordinate< <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>Northing: 1235672</span> <span>Easting: 446194</span> </div>	
 <p>Photo View from Upstream</p>	 <p>Photo View from Downstream</p>	 <p>Photo Details</p>




Canal No.: SC-7	Kind of structure: Pipe Culvert	Remarks: Road crossing with pipe culvert
Station:	Coordinate< <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>Northing: 1234941</span> <span>Easting: 446274</span> </div>	
 <p>Photo View from Upstream</p>	 <p>Photo View from Downstream</p>	 <p>Photo Details</p>

Canal No.: SC-7	Kind of structure: Turnout	Remarks: Pipe culvert (turnout) to the right tertiary canal
Station:	Coordinate< <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <span>Northing: 1234808</span> <span>Easting: 446291</span> </div>	
 <p>Photo View from Upstream</p>	 <p>Photo View from Downstream</p>	 <p>Photo Details</p>




**Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (11/18)**




Canal No.: SC-7	Kind of structure: Garden	Remarks: Private garden on Secondary Canal without structure
Station:	Coordinate< Northing: 1234298 Easting: 446363	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: SC-7	Kind of structure: E.P.	Remarks: E.P. of Secondary Canal No.7 without structure
Station:	Coordinate< Northing: 1233979 Easting: 446393	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (12/18)




### Secondary Canal No.8




Canal No.: SC-8	Kind of structure: B.P.	Remarks: B.P. of Secondary Canal No.8 without structure
Station:	Coordinate< Northing: 1236105 Easting: 447209	
		
<p>Photo View from Upstream</p>		




Canal No.: SC-8	Kind of structure: Pipe Culvert	Remarks: E.P. of Secondary Canal No.8
Station:	Coordinate< Northing: 1235272 Easting: 447289	
		
<p>Photo View from Upstream</p>	<p>Photo View from Upstream</p>	<p>Photo Details</p>

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (13/18)




### Secondary Canal No.9




Canal No.: SC-9	Kind of structure: B.P.(Box Culvert)	Remarks: B.P. of Secondary Canal No.9 with box culvert
Station:	Coordinate< Northing: 1235179 Easting: 448338	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details




Canal No.: SC-9	Kind of structure: Pipe Culvert (Double)	Remarks: Road Crossing with double pipe culverts.
Station:	Coordinate< Northing: 1234865 Easting: 444838	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details

Canal No.: SC-9	Kind of structure: Pipe Culvert	Remarks: Road crossing above pipe culvert
Station:	Coordinate< Northing: 1234537 Easting: 448338	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details




## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (14/18)

Canal No.: SC-9	Kind of structure: Canal crossing	Remarks: Tertiary canal crossing without structure
Station:	Coordinate< Northing: 1234233 Easting: 448340	
		
Photo View from Upstream	Photo View from Upstream	Photo Details

Canal No.: SC-9	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 12333107 Easting: 448357	
		
Photo View from Upstream	Photo View from Upstream	Photo Details




Canal No.: SC-9	Kind of structure: Turnout (Drain Inlet)	Remarks: Canal crossing with both-side pipe culverts.
Station:	Coordinate< Northing: 1233019 Easting: 448357	
		
Photo View from Upstream	Photo View from Upstream	Photo Details




**Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (15/18)**




Canal No.: SC-9	Kind of structure: Turnout (Drain Inlet)	Remarks:
Station:	Coordinate< Northing: 1233019 Easting: 448357	E.P. of Secondary Canal No.9 Double pipe culvert under major road
		
<p style="text-align: center;">Photo View from Upstream</p>	<p style="text-align: center;">Photo View from Upstream</p>	<p style="text-align: center;">Photo Details</p>

## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (16/18)




### Secondary Canal No.11




Canal No.: SC-11	Kind of structure: B.P. (Double Pipe Culvert)	Remarks: B.P. of Secondary Canal No.11
Station:	Coordinate< Northing: 1235192 Easting: 449349	Double culvert Turnout from Main Canal 35
		
Photo View from Upstream	Photo View from Upstream	Photo Details




Canal No.: SC-11	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 1234920 Easting: 449350	
		
Photo View from Upstream	Photo View from Upstream	Photo Details

Canal No.: SC-11	Kind of structure: Pipe Culvert (Double)	Remarks: Double pipe culvert under major road
Station:	Coordinate< Northing: 1234747 Easting: 449352	
		
Photo View from Upstream	Photo View from Upstream	Photo Details




## Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (17/18)

Canal No.: SC-11	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 1234607 Easting: 449352	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details

Canal No.: SC-11	Kind of structure: Pipe Culvert	Remarks: Pipe culvert for entrance
Station:	Coordinate< Northing: 1233991 Easting: 449361	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details

Canal No.: SC-11	Kind of structure: Entrance	Remarks: Entrance without structure
Station:	Coordinate< Northing: 1233957 Easting: 449363	
 Photo View from Upstream	 Photo View from Upstream	 Photo Details

**Result of Inventory Survey of Main Canal 35 Irrigation System (Secondary Canals) (18/18)**

Canal No.: SC-11	Kind of structure: Pipe Culvert (Double)	Remarks:
Station:	Coordinate< Northing: 1233730 Easting: 449370	E.P. of Secondary Canal No.11
		
<p style="text-align: center;">Photo View from Upstream</p>	<p style="text-align: center;">Photo View from Upstream</p>	<p style="text-align: center;">Photo Details</p>



# ***ANNEX D***

## ***Attachment 7***

*Results of Inventory Survey for Irrigation and Drainage*

*Facilities in Srass Prambai Water Recession*

*Rehabilitation Sub-project*

**Inventory Survey Form**

**Date 28.01.2012**

**No.1**

Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 509438	Name of structure(s)	Intake pipe culvert at the north reservoir embankment
	Y = 1238367	Diameter culvert 1.2m (1 row)	

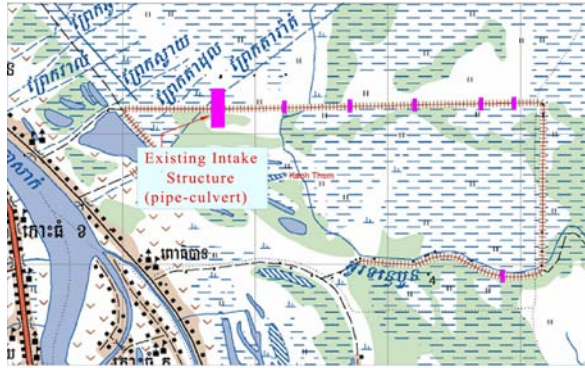


Photo  
View from Upstream

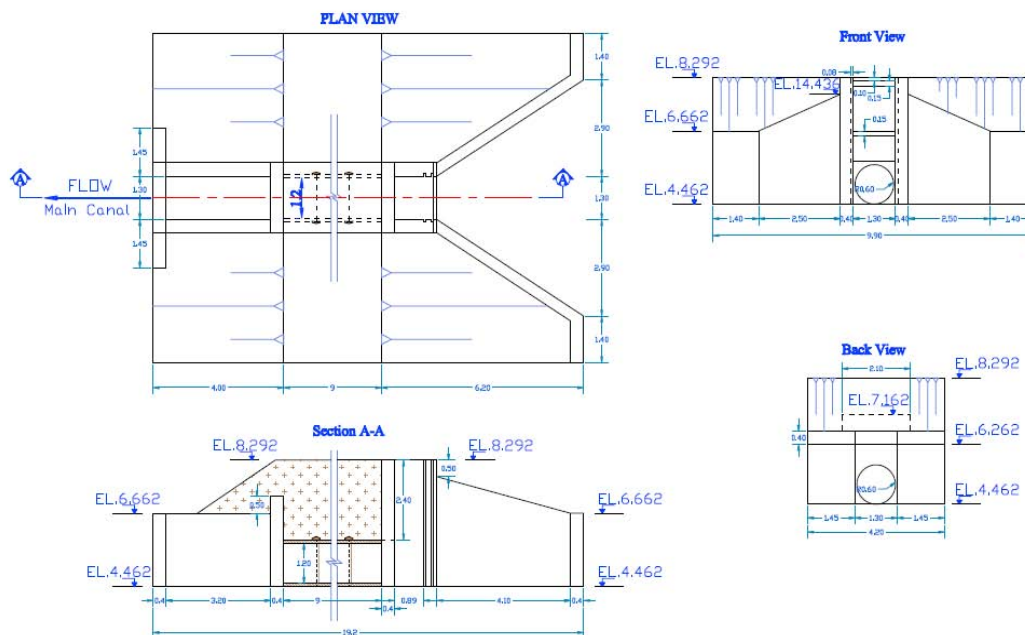
Photo  
View from Downstream






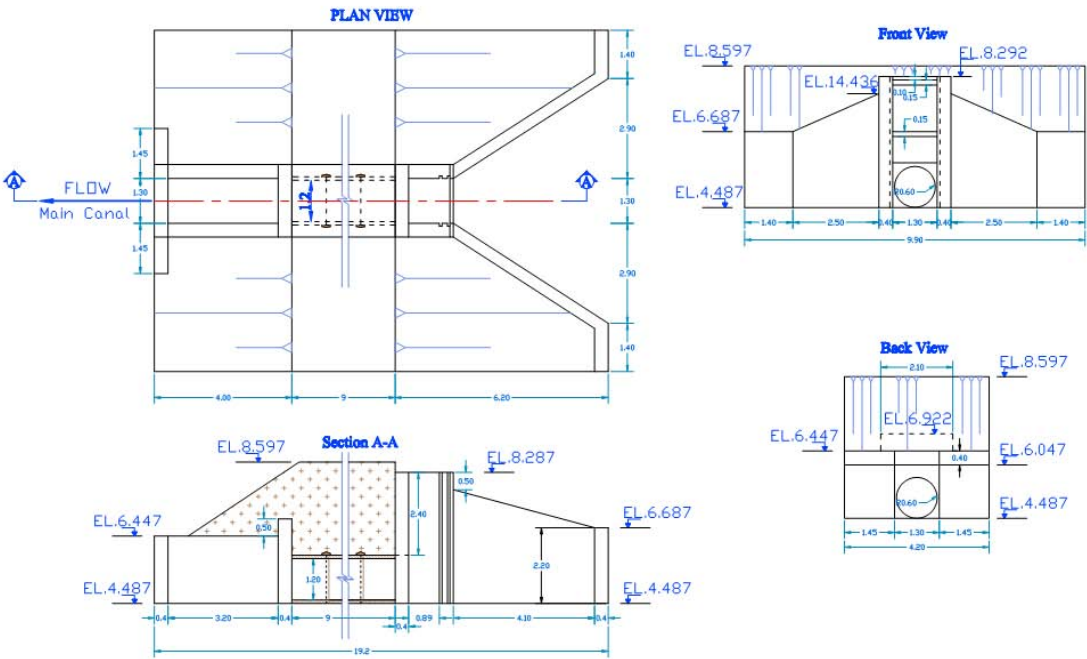
Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:



Inventory Survey Form		Date 28.01.2012	No.2
Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 510437	Name of structure(s)	Intake pipe culvert at the north reservoir embankment Diameter culvert 1.2m (1 row)
	Y = 1238385		
 			
			
Photo View from Upstream		Photo View from Downstream	
			
Photo Details			
Condition / Problem: The structure is possible used and constructed in Pol Pot time.			
Dimensions & Sketches:			
			

Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 511426	Name of structure(s)	Intake pipe culvert at the north reservoir embankment
	Y = 1238406	Diameter culvert 1.2m (1 row)	

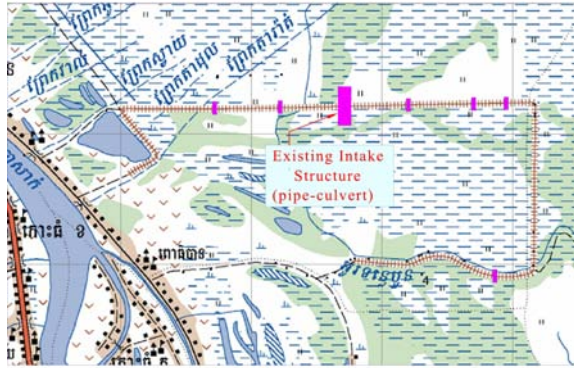


Photo  
View from Upstream



Photo  
View from Downstream

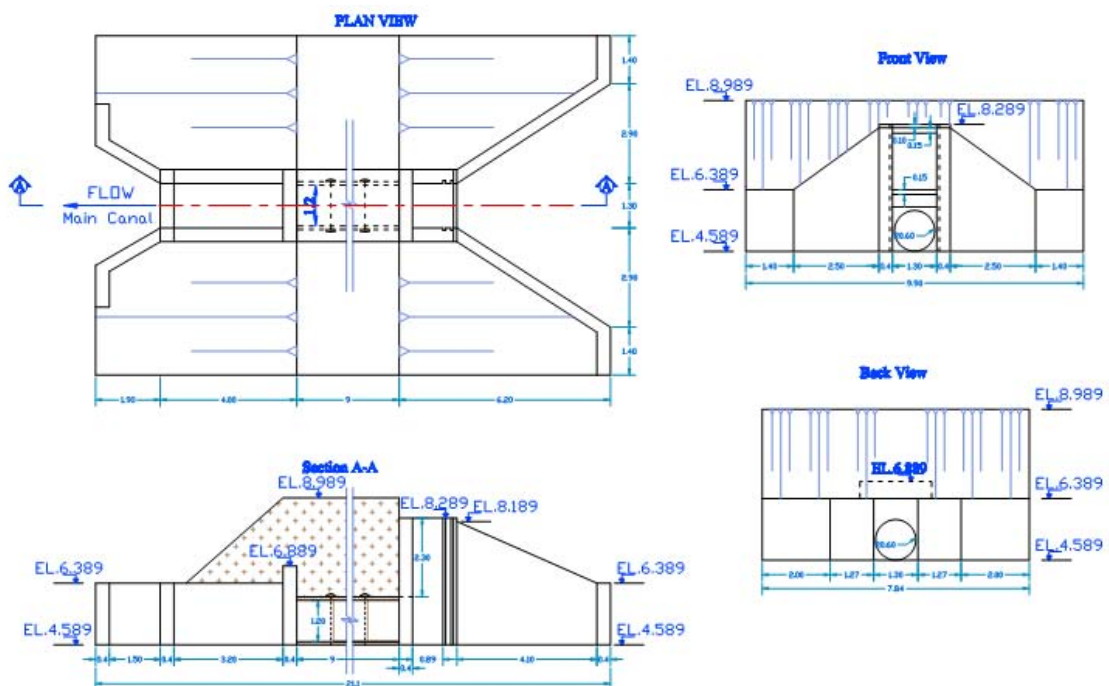


Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:



<b>Inventory Survey Form</b>		<b>Date 28.01.2012</b>	<b>No.4</b>
Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 512409	Name of structure(s)	Intake pipe culvert at the north reservoir embankment
	Y = 1238426	Diameter culvert 1.2m (1 row)	

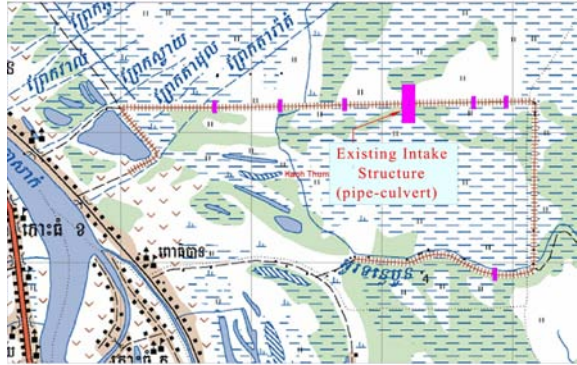


Photo  
View from Upstream



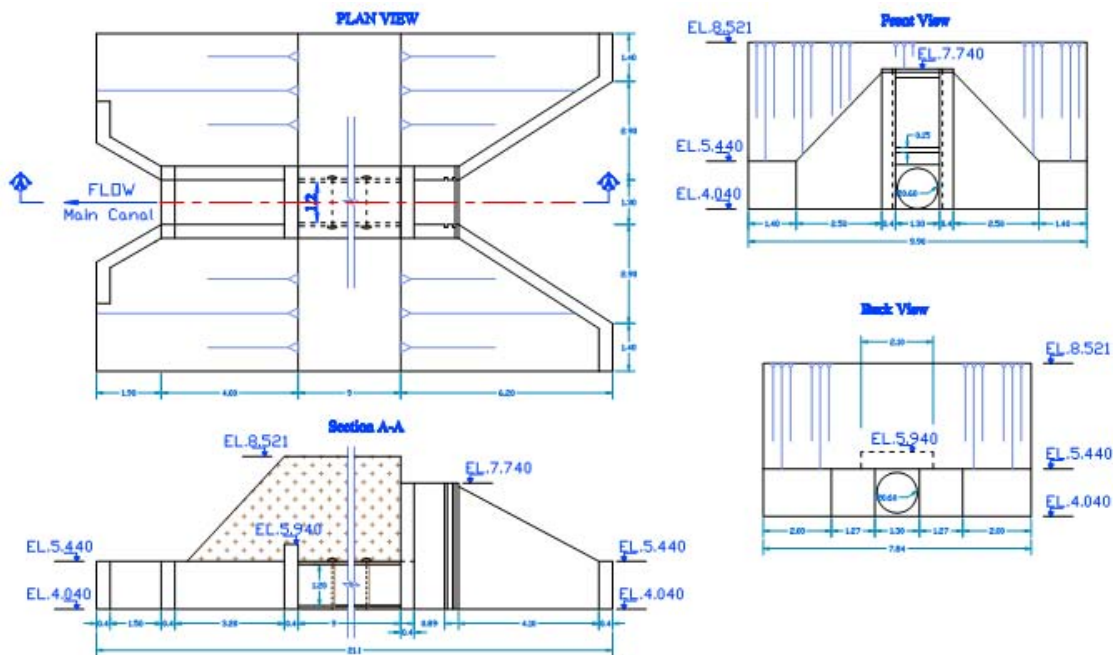
Photo  
View from Downstream

Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:



Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 513404	Name of structure(s)	Intake pipe culvert at the north reservoir embankment
	Y = 1238444	Diameter culvert 0.6m (2 rows)	

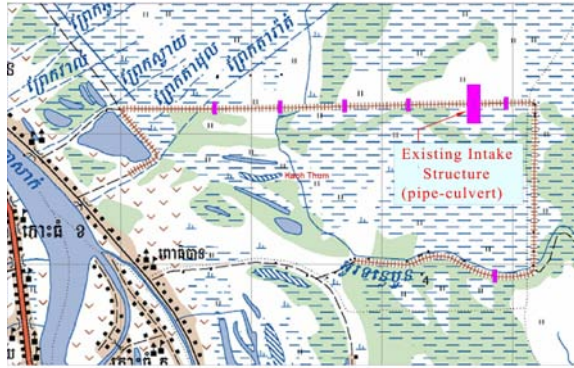


Photo  
View from Upstream



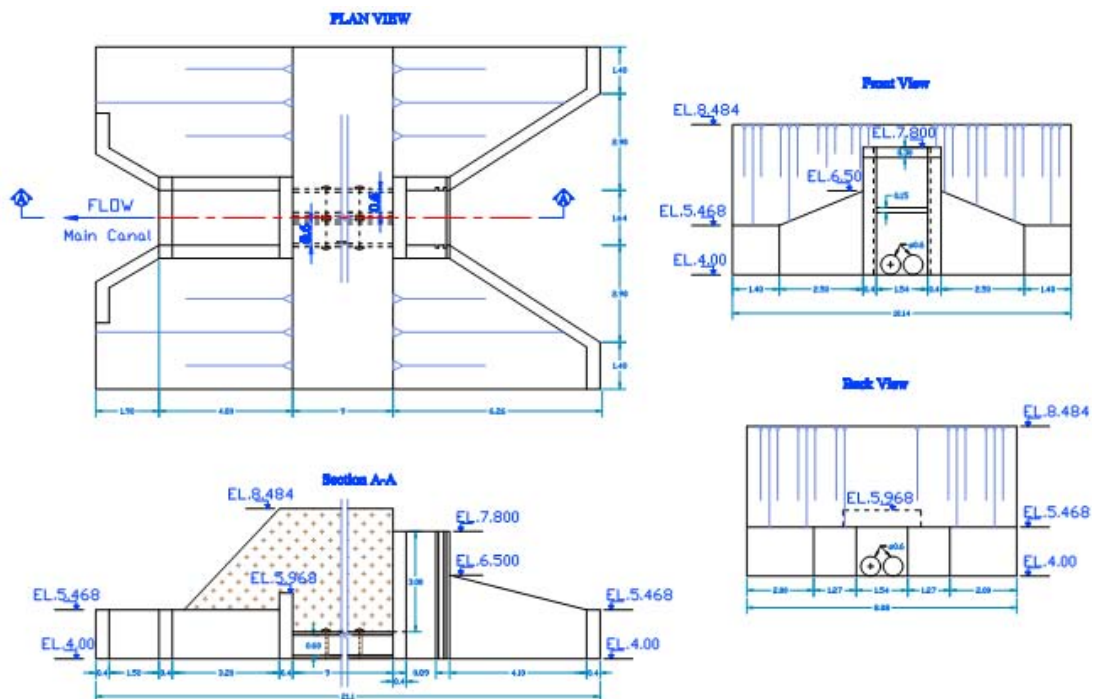
Photo  
View from Downstream

Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:



Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 513906	Name of structure(s)	Intake pipe culvert at the north reservoir embankment
	Y = 1238453	Diameter culvert 0.6m (2 rows)	

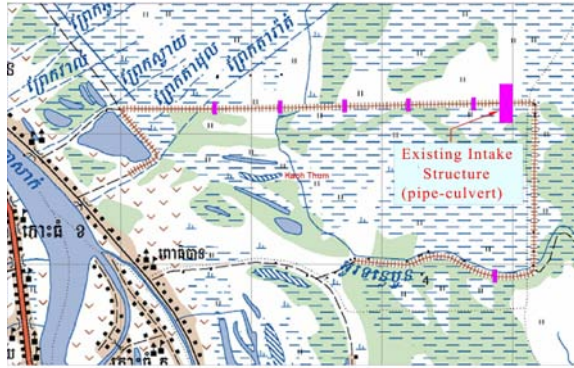


Photo  
View from Upstream



Photo  
View from Downstream

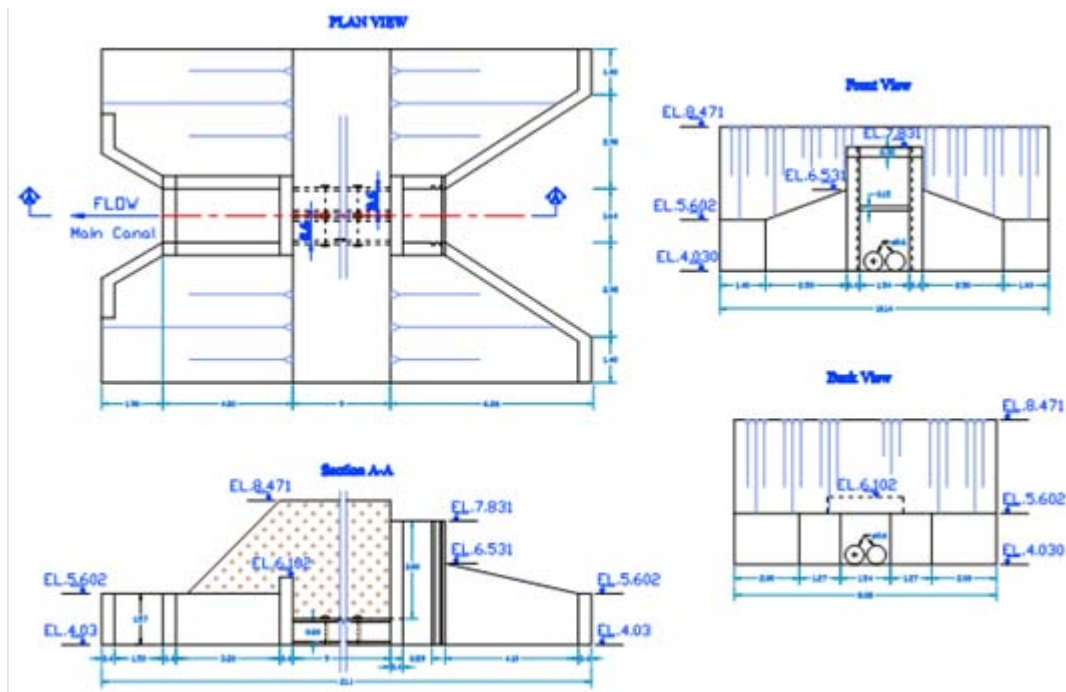


Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:



Station No.		Reservoir Name	Srass Pram Bei
Coordinate:	X = 514329	Name of structure(s)	Intake box culvert at the south reservoir embankment
	Y = 1236959	Box width 1m ( row)	

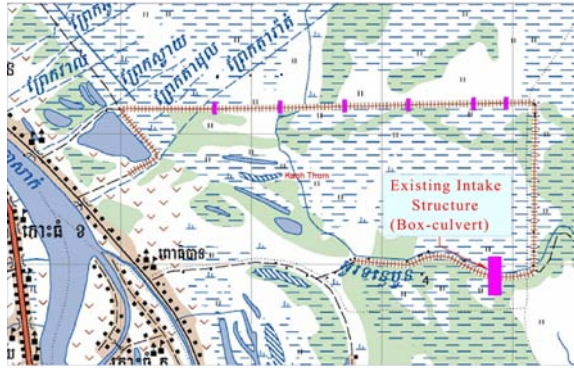


Photo  
View from Upstream



Photo  
View from Downstream

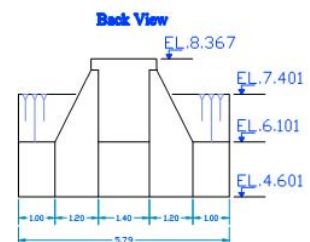
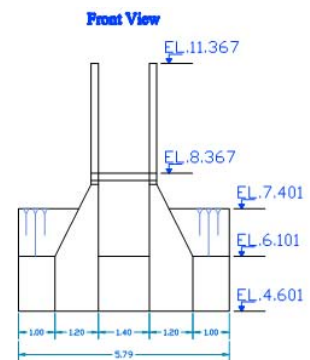
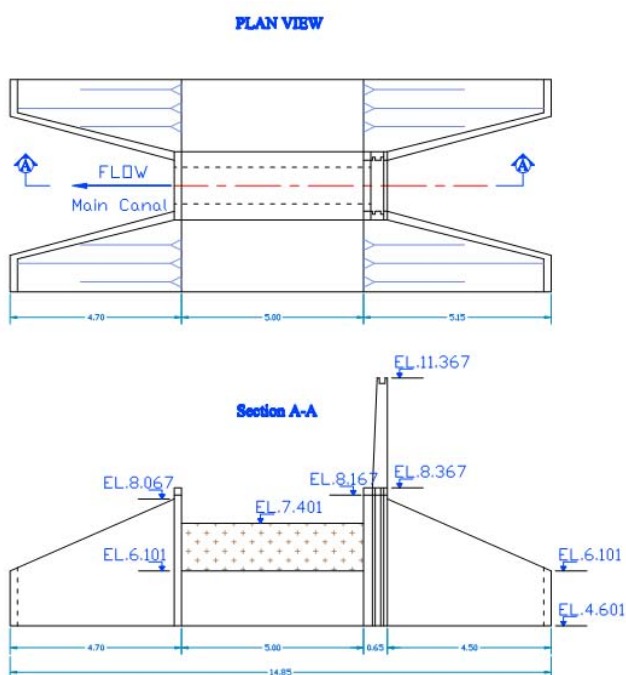


Photo  
Details

Condition / Problem:

The structure is possible used and constructed in Pol Pot time.

Dimensions & Sketches:












## ***ANNEX D***




### ***Attachment 8***

*Results of Inventory Survey for Irrigation and Drainage  
Facilities in Daun Pue Irrigation System  
Rehabilitation Sub-project*



**Result of Inventory Survey of Daun Pue Irrigation System (1/25)**




Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing canal to beurg stang village Dimension Culvert 0.8m (1row)
Station:	Coordinate< Northing: 1330076 Easting: 440804	
 <p align="center">Photo View from Upstream</p>		 <p align="center">Photo View from Downstream</p>




Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the Main Canal Dimension Culvert 0.8m (2row)
Station:	Coordinate< Northing: 1329602 Easting: 437254	
 <p align="center">Photo View from Upstream</p>	 <p align="center">Photo View from Downstream</p>	 <p align="center">Photo Details</p>

Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Bridge crossing the Main canal on road to Trapang Khlong Village.
Station:	Coordinate< Northing: 1330320 Easting: 440919	
 <p align="center">Photo View from Upstream</p>	 <p align="center">Photo View from Downstream</p>	 <p align="center">Photo Details</p>




**Result of Inventory Survey of Daun Pue Irrigation System (2/25)**




Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the canal to Beung Steng Village Dimension: Culvert 0.6m(3row)
Station:	Coordinate< Northing: 1330496 Easting: 441498	
 <p align="center">Photo View from Upstream</p>		 <p align="center">Photo View from Downstream</p>


Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert to Wat village Dimension: Culvert 0.5m (2row)
Station:	Coordinate< Northing: 1330626 Easting: 442129	
 <p align="center">Photo View from Upstream</p>	 <p align="center">Photo View from Downstream</p>	 <p align="center">Photo Details</p>

Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the canal to Beung Steng Village Dimension: Culvert 0.8m(1row)
Station:	Coordinate< Northing: 1330521 Easting: 441626	
 <p align="center">Photo View from Upstream</p>	 <p align="center">Photo View from Downstream</p>	 <p align="center">Photo Details</p>

**Result of Inventory Survey of Daun Pue Irrigation System (3/25)**



Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert to Wat village Dimension: Culvert 0.5m (2row)
Station:	Coordinate< Northing: 1330639 Easting: 442198	
		
Photo View from Upstream	Photo View from Downstream	Photo Details



Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the canal on the asphalt road. Dimension: Culvert 1m (1row)
Station:	Coordinate< Northing: 1330788 Easting: 442390	
		
Photo View from Upstream	Photo View from Downstream	Photo Details

Canal No.: MC	Kind of structure: Road	Remarks: The road crossing the Main canal to Beung Steng Village but without structure.
Station:	Coordinate< Northing: 1330535 Easting: 441720	
		
Photo View from Upstream		


### Result of Inventory Survey of Daun Pue Irrigation System (4/25)


Canal No.: MC	Kind of structure: Road	Remarks: This rood crossing the canal to Wat Village.
Station:	Coordinate< Northing: 1330567 Easting: 441853	
		
Photo View from Upstream		


Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood bridge crossing the canal to Wat village
Station:	Coordinate< Northing: 1330580 Easting: 441924	
		
Photo View from Upstream		
		
Photo View from Downstream		

Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert on the access road crossing Main Canal. Diameter culvert 0,8m x2 (2 rows)
Station:	Coordinate< Northing: 1330833 Easting: 443228	
		
Photo View from Upstream		
		
Photo View from Downstream		


**Result of Inventory Survey of Daun Pue Irrigation System (5/25)**


Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert on the access road crossing Main Canal. Diameter culvert 0.6m (1 row)
Station:	Coordinate< Northing: 1330852 Easting: 443277	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert on crossing Main Canal. Diameter culvert 0.6m (1 row)
Station:	Coordinate< Northing: 1330854 Easting: 443307	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert on crossing Main Canal. Diameter culvert 0.6m (1 row)
Station:	Coordinate< Northing: 1330858 Easting: 443356	
 <p>Photo View from Upstream</p>		

## Result of Inventory Survey of Daun Pue Irrigation System (6/25)


Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert on crossing Main Canal. Diameter culvert 0,6m (1 row)
Station:	Coordinate< Northing: 1330860 Easting: 443375	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m x 2 (2 rows)
Station:	Coordinate< Northing: 1330870 Easting: 443446	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,7m (1row)
Station:	Coordinate< Northing: 1330873 Easting: 443461	
		
<p>Photo View from Upstream</p>		




### Result of Inventory Survey of Daun Pue Irrigation System (7/25)


Canal No.: MC	Kind of structure: Access road	Remarks: Access road crossing the Main Canal
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1330870</span> <span>Easting: 443446</span> </div>	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Wood bridge	Remarks: Wood bright crossing the main canal
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1330879</span> <span>Easting: 443509</span> </div>	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,5m (1row)
Station:	Coordinate< <div style="display: flex; flex-direction: column; margin-left: 10px;"> <span>Northing: 1330878</span> <span>Easting: 443520</span> </div>	
		
<p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (8/25)


Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m (1row)
Station:	Coordinate< Northing: 1330881 Easting: 443550	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe Culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,5m, 0.7 x 2 (2 rows)
Station:	Coordinate< Northing: 1330887 Easting: 443550	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood Bright crossing the Main Canal.
Station:	Coordinate< Northing: 1330889 Easting: 443597	
		
<p>Photo View from Upstream</p>		


## Result of Inventory Survey of Daun Pue Irrigation System (9/25)


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m (1row)
Station:	Coordinate< Northing: 1330891 Easting: 443622	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m
Station:	Coordinate< Northing: 1330895 Easting: 443634	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m
Station:	Coordinate< Northing: 1330898 Easting: 443645	
		
<p>Photo View from Upstream</p>		


**Result of Inventory Survey of Daun Pue Irrigation System (10/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,5m
Station:	Coordinate< Northing: 1330897 Easting: 443669	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,5m
Station:	Coordinate< Northing: 1330899 Easting: 443671	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Road filling	Remarks: Road filling crossing the Main Canal. Diameter 3m x 6m
Station:	Coordinate< Northing: 13309003 Easting: 443693	
 <p>Photo View from Upstream</p>		


**Result of Inventory Survey of Daun Pue Irrigation System (11/25)**


Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood right crossing the Main Canal. Diameter culvert 0,8m
Station:	Coordinate< Northing: 1330906 Easting: 443716	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,6m
Station:	Coordinate< Northing: 1330912 Easting: 443776	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Box-culvert	Remarks: Box- culvert crossing the Main Canal. Diameter culvert 1.7mx1.0m
Station:	Coordinate< Northing: 1330928 Easting: 443909	
 <p>Photo View from Upstream</p>		


**Result of Inventory Survey of Daun Pue Irrigation System (12/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,6m
Station:	Coordinate< Northing: 1330931 Easting: 443931	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,5m
Station:	Coordinate< Northing: 1330935 Easting: 443957	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,6m
Station:	Coordinate< Northing: 1330943 Easting: 444001	
 <p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (13/25)


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,8m x2 (2row)
Station:	Coordinate< <div style="display: flex; flex-direction: column; gap: 5px;"> <span>Northing: 1330941</span> <span>Easting: 444030</span> </div>	
		
Photo View from Upstream		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,7m
Station:	Coordinate< <div style="display: flex; flex-direction: column; gap: 5px;"> <span>Northing: 1330947</span> <span>Easting: 444035</span> </div>	
		
Photo View from Upstream		

Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood bright crossing the Main Canal. Diameter 4mx6m
Station:	Coordinate< <div style="display: flex; flex-direction: column; gap: 5px;"> <span>Northing: 1330948</span> <span>Easting: 444068</span> </div>	
		
Photo View from Upstream		

**Result of Inventory Survey of Daun Pue Irrigation System (14/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.7m
Station:	Coordinate< Northing: 1330953 Easting: 444095	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood bridge crossing the Main Canal. Diameter 4m x 6m
Station:	Coordinate< Northing: 1330931 Easting: 443931	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0,7m
Station:	Coordinate< Northing: 1330959 Easting: 444124	
 <p>Photo View from Upstream</p>		




**Result of Inventory Survey of Daun Pue Irrigation System (15/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6 m
Station:	Coordinate< Northing: 1330960 Easting: 444139	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood bright put the soil of the crossing the Main Canal. Diameter 6m x 4m
Station:	Coordinate< Northing: 1330966 Easting: 444188	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe Culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1330970 Easting: 444218	
 <p>Photo View from Upstream</p>		


**Result of Inventory Survey of Daun Pue Irrigation System (16/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe Culvert crossing the Main Canal. Diameter Culvert 0.5m
Station:	Coordinate< Northing: 1330966 Easting: 444188	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.8m
Station:	Coordinate< Northing: 1330991 Easting: 444400	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1330997 Easting: 444451	
 <p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (17/25)



Canal No.: MC	Kind of structure: Box- culvert	Remarks: Box- culvert crossing the Main Canal. Diameter box-covert 1.5m x 0.8m
Station:	Coordinate< Northing: 1331003 Easting: 444483	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1331015 Easting: 444600	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1331022 Easting: 444650	
		
<p>Photo View from Upstream</p>		


**Result of Inventory Survey of Daun Pue Irrigation System (18/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1331024 Easting: 444671	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Wood Bridge	Remarks: Wood bright crossing the Main Canal. Diameter 5m x 3m
Station:	Coordinate< Northing: 1331043 Easting: 444808	
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Photo View from Upstream</p> </div> <div style="text-align: center;">  <p>Photo Details</p> </div> </div>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.5m
Station:	Coordinate< Northing: 1331043 Easting: 444831	
 <p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (19/25)


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.5 m
Station:	Coordinate< Northing: 1331047 Easting: 444880	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Box-culvert	Remarks: Box-culvert crossing the Main Canal. Diameter box-culvert 0.5m x 0.5m
Station:	Coordinate< Northing: 1331050 Easting: 444892	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.6m
Station:	Coordinate< Northing: 1331053 Easting: 444931	
		
<p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (20/25)

Canal No.: MC	Kind of structure: Secondary canal-7	Remarks: Secondary canal-7 crossing the Main Canal. Diameter b=2.0 m
Station:	Coordinate< Northing: 1331055 Easting: 444937	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.7m
Station:	Coordinate< Northing: 1331058 Easting: 444954	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Secondary canal-6	Remarks: Secondary Canal-6 crossing the Main Canal. Diameter b=1.5m
Station:	Coordinate< Northing: 1330966 Easting: 444188	
		
<p>Photo View from Upstream</p>		


### Result of Inventory Survey of Daun Pue Irrigation System (21/25)


Canal No.: MC	Kind of structure: Road cow	Remarks: Road cow crossing the Main Canal. Diameter b=4 m
Station:	Coordinate< Northing: 1331161 Easting: 445834	
		
<p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Secondary canal-5	Remarks: Secondary canal-5 crossing the Main Canal. Diameter
Station:	Coordinate< Northing: 1331178 Easting: 445973	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Secondary Canal-4	Remarks: Secondary canal-4 crossing the Main Canal. Diameter b=3m
Station:	Coordinate< Northing: 1331237 Easting: 446481	
		
<p>Photo View from Upstream</p>		

**Result of Inventory Survey of Daun Pue Irrigation System (22/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.9m x 2 (2row)
Station:	Coordinate< Northing: 1331301 Easting: 446998	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.8m x 2 (2row)
Station:	Coordinate< Northing: 1331313 Easting: 447106	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.8 m
Station:	Coordinate< Northing: 1331339 Easting: 447310	
 <p>Photo View from Upstream</p>		




**Result of Inventory Survey of Daun Pue Irrigation System (23/25)**


Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.8m x 2 (2row)
Station:	Coordinate< Northing: 1331344 Easting: 447377	
 <p>Photo View from Upstream</p>		


Canal No.: MC	Kind of structure: Secondary canal-3	Remarks: Secondary canal-3 crossing the Main Canal. Diameter b=2.5 m
Station:	Coordinate< Northing: 1331360 Easting: 447509	
 <p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Pipe culvert	Remarks: Pipe culvert crossing the Main Canal. Diameter culvert 0.8m x 2 (2row)
Station:	Coordinate< Northing: 1331388 Easting: 447767	
 <p>Photo View from Upstream</p>		




### Result of Inventory Survey of Daun Pue Irrigation System (24/25)

Canal No.: MC	Kind of structure: Secondary canal-2	Remarks: Secondary canal-2 crossing the Main Canal. Diameter b=2 m
Station:	Coordinate< Northing: 1330494 Easting: 442836	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Secondary canal-1	Remarks: Secondary canal -1crossing the Main Canal. Diameter b=1 m
Station:	Coordinate< Northing: 1329755 Easting: 441228	
		
<p>Photo View from Upstream</p>		

Canal No.: MC	Kind of structure: Secondary canal-1	Remarks: Star point the Main Canal. Diameter b=1 m
Station:	Coordinate< Northing: 1329755 Easting: 441228	
		
<p>Photo View from Upstream</p>		

**Result of Inventory Survey of Daun Pue Irrigation System (25/25)**

Canal No.: MC	Kind of structure: Secondary canal-1	Remarks: By people check crossing Daun Pue Strea
Station:	Coordinate< Northing: 1329755 Easting: 441228	
 <p align="center">View from Upstream</p>	 <p align="center">View from Downstream</p>	 <p align="center">Details</p>

# ***ANNEX D***

## ***Attachment 9***

*Project Profile Sheet of Small Scale Irrigation*

*Rehabilitation Projects in Short List*

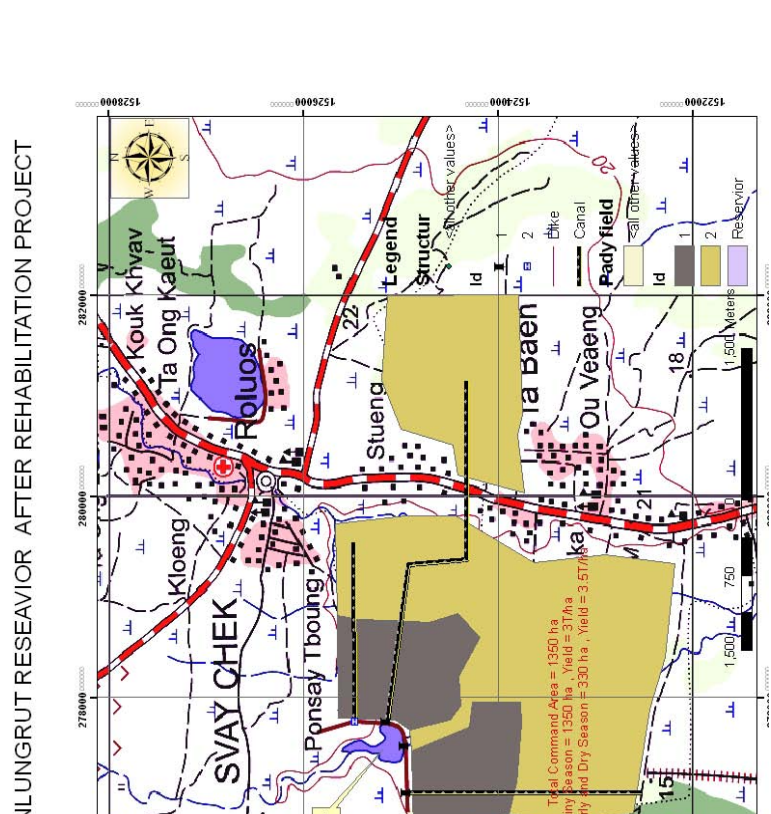
<b>Province</b>	Banteay Meanchey	<b>Target Area</b>	1,116 ha
<b>District</b>	Mongkul Borey	<b>Basin Priority</b>	1st Priority
<b>History of Project / Background</b>			
<p>Current situation and problems in the area under the jurisdiction of the application Canal Mongkolborey Rehabilitation Project is located in Bontey Neang Commune, Mongkolborey District, Banteay Meanchey Province, which is approximately 15km from Banteay Meanchey Province. Canal Mongkolborey completed rehabilitation since 1995 by Department of Water Resources and Meteorology. Currently the situation of this Canal eroded, 03 intakes and need laterite pavement 6 km on the Dams canal. In order to make it sustainability the local people have requested continuously rehabilitation of canal and maintain it for ever.</p>			
<b>Major Project Works</b>			
Description	Quantity	Cost	
Regulator	3		
New Rehabilitation of embankment canal	9,000 m		
New Spillway	60 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment work		US\$ 522,565.00	
1.1 Earth work, laterite =			
(2) Intake Structure Rehabilitation		US\$ 375,000.00	
2.1 Concrete Work =			
Contingency (10%) of Sub-total			
Total		US\$ 897,565.00	
<b>Internal rate of Return 14.29 %</b>			
<b>Project Layout after Rehabilitation</b>			
<p>Command Area of Mongkul Borey Main Canal After Rehabilitation Project</p> <p>Command Area for only Rainy Season Total = 277 ha - Field = 50.7 ha</p> <p>Command Area for Dry and Rainy Season Total = 345 ha - Field = 35.7 ha</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Bontey Neang, Ta lom		
Concerned Village(s)	10 Villages		
Nos. of Beneficiary Households	559 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2009		
Latest Rehabilitation (year)	Fund	Seila Program, ADB	
Water Source	Mongkolborey River		
Reservoir	Trapeang Thmar Reservoir & Punlei Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	1,116 ha	1,116 ha	
Dry season paddy	0 ha	345 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	1,116 ha	1,461 ha	
Crop Intensity	100 %	131 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	2 ton/ha	3 ton/ha	
Dry season paddy	0 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	
Rainy season paddy	2,232 ton	3,348 ton	1,116 ton
Dry season paddy	ton	1,208 ton	1,208 ton
Rainfed rainy season paddy	ton	ton	
Total			2,324 ton

Source : MOWRAM

<b>Province</b>	Banteay Meanchey	<b>Target Area</b>	1,350 ha
<b>District</b>	Svay chek	<b>Basin Priority</b>	1st Priority
<b>History of Project / Background</b>			
Anlongrut Reservoir Rehabilitation Project is located in Svay chek commune , Svay chek district , Banteay Meanchey Province , which is approximately 23km from Banteay Meanchey Province . This reservoir has rehabilitation a little since 2003 by the CPP (Cambodian People Party) . Currently the situation of this reservoir eroded all of dikes, 04 intakes ,01 Bride with Spillway ,09Check structure,38 piece culvert and need laetrite pavement on the reservoir dike and all the canal. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield .So local authority & farmers requested to Banteay Meanchey PDWRAM to find financial support for the rehabilitation work.			
<b>Major Project Works</b>			
Description	Quantity	Cost	
1. Regulator	New 3		
2. Check structure	New 9		
3. Box culvert	New 1		
4. Pipes culvert	New 32		
5. Spillway with Bridge	New 1		
6. Rehabilitation of embankment dike	2,355 m		
7. Rehabilitation of embankment canal No.1	7,650 m		
8. Rehabilitation of embankment canal No.2	2,450 m		
9. Rehabilitation of embankment canal No.3	4,650 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment work		US\$1,148,119.86	
1.1 Earth work, laterite =			
(2) Intake Structure Rehabilitation		US\$ 584,000.00	
Contingency (10%) of Sub-total			
<b>Total</b>		<b>US\$ 1,732,119.86</b>	
<b>Internal rate of Return 13.56 %</b>			
<b>Project Layout after Rehabilitation</b>			

<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Svay Chek, Ta Ben, Slor Kram		
Concerned Village(s)	8 Villages		
Nos. of Beneficiary Households	654 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)			
Latest Rehabilitation (year)	2009	Fund	Seila Program, ADB
Water Source	Anlongrut Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	150 ha	
Rainy season paddy	1,350 ha	1,350 ha	
Dry season paddy	36 ha	180 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
<b>Total</b>	<b>1,386 ha</b>	<b>1,680 ha</b>	
Crop Intensity	103 %	124 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	3.5 ton/ha	
Rainy season paddy	1.5 ton/ha	3 ton/ha	
Dry season paddy	2.5 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	0 ton	525 ton	2,025 ton
Rainy season paddy	2,025 ton	4,050 ton	540 ton
Dry season paddy	90 ton	630 ton	
Rainfed rainy season paddy	ton	ton	
<b>Total</b>			<b>2,565 ton</b>

Source : MOWRAM



COMMANDED AREA OF ANLUNGRUT RESEAVIOR AFTER REHABILITATION PROJECT

<b>Province</b>	Kampong Chhnang	<b>Target Area</b>	450 ha
<b>District</b>	Chul Kiri	<b>Basin Priority</b>	2nd Priority
<b>History of Project / Background</b>			
<p>Khla Krap Reservoir Rehabilitation Project is located in Koh Thkov commune, Chul Kiri district, Kampong Chhnang Province, which is approximately 35km from Kampong Chhnang Town. This reservoir built since 1964 by farmers in Tamul village, Koh Thkov commune. This reservoir can store water for irrigation in command area 450 ha when the Mekong flood go down in dry season. Currently the situation of this reservoir eroded some places of dikes, No intakes and Outlets . Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield . So local authority &amp; farmers requested to Kampong Chhnang PDOWRAM to find financial support for the rehabilitation work</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Koh Thkov, Taches, Chhouk sar		
Concerned Village(s)	6 Villages		
Nos. of Beneficiary Households	194 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2008		
Latest Rehabilitation (year)	2009 Fund (CEDAC) NGO		
Water Source	Khla Krap Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	ha	ha	
Dry season paddy	250 ha	450 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	250 ha	450 ha	
Crop Intensity	56 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	ton/ha	ton/ha	
Dry season paddy	3 ton/ha	4.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	
Rainy season paddy	ton	ton	
Dry season paddy	750 ton	2,025 ton	1,275 ton
Rainfed rainy season paddy	ton	ton	
Total			1,275 ton
Source : MOWRAM			
<b>Major Project Works</b>			
Description	Quantity	Cost	
Construction of New Outlet structure	4 Places		
Rehabilitation of embankment	5,250 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment Rehabilitation		US\$ 541,222.50	
1.1 Earth work =			
(2) New Outlet Structure		US\$ 158,725.00	
2.1 Concrete Work =			
Contingency (10%) of Sub-total			
Total		US\$ 699,947.50	
<b>Internal rate of Return 14.34 %</b>			
<b>Project Layout after Rehabilitation</b>			
Commanded Area and Agricultural Production Map After Rehabilitation of Khla Krap Irrigation Project			
<b>Evaluation Conditions</b>			
1. Activities of FWUC	No establishment and no activities of FWUC		
2. Status of FWUC	No preparation work for establishment of		
3. If no FWUC	Local Government (District, Commune and Village) agreed and will cooperate to establish		
4. Land Mine	No Land Mine (Already cleaning full area)		
5. Who request and eager to realize this project	PDWRAM		
6. How many % of farmers and villagers agreed and will cooperate this project	100%		
7. If we conduct this project, who will complain or protest to this project?	Not sure		
8. Land for rehabilitation project	All land for rehabilitation project is inside of government land and no trouble with farmers and villagers		

Province	Kampong Chhnang	Target Area	1,046 ha
District	Teuk Phos	Basin Priority	1st Priority
<b>History of Project / Background</b>			
<p>Canal Steung Sdach Rehabilitation Project is located in Tang Krasang commune, Teuk Phos district, Kampong Chhnang Province, which is approximately 25km from Kampong Chhnang Town. This Canal built in 2005 by WFP for conveying water from Svay Chek Stream to irrigated the command area 1,300ha in Tang Krasang, Cheung Kriev, Teuk Hot and Seb Commune. Currently the situation of this Canal scheme eroded and shallow some places of canal, No Check structure and Outlets. Every year, farmers in this project area face with lack of water for their agriculture and domestic use which bring the low rice yield. So local authority &amp; farmers requested to Kampong Chhnang PDOWRAM to find financial support for the rehabilitation project. In 2009, this project was surveyed and designed by Kampong Chhnang PDOWRAM cooperate with a Local Non Government Organization (SOFDEC).</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Aphivath, Tang Krasang, Cheung Kriev, Teuk Hot, Seb		
Concerned Village(s)	11 Villages		
Nos. of Beneficiary Households	1,393 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2008		
Latest Rehabilitation (year)	2009 / Fund (CEDAC) NGO		
Water Source	Svay Chek Stream		
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	125 ha	1,046 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	921 ha	ha	
Fallow	ha	ha	
Total	1,046 ha	1,046 ha	
Crop Intensity	100 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1.2 ton/ha	2.6 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	0.8 ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	0 ton	ton	
Rainy season paddy	150 ton	2,720 ton	2,570 ton
Dry season paddy	ton	ton	0 ton
Rainfed rainy season paddy	737 ton	ton	-737 ton
Total			1,833 ton
Source : MOWRAM			
<b>Major Project Works</b>			
Description	Quantity	Cost	
Rehabilitation of Canal	10,200 m		
Construction New of Check Structure	6 Places		
Construction New of Culvert Structure	1 Place		
<b>Direct Construction Cost (US\$)</b>			
(1) Canal Rehabilitation		US\$ 587,210.00	
1.1 Earth work =			
(2) New Check Structures		US\$ 250,932.00	
2.1 Concrete Work =			
(3) New Culvert Structure		US\$ 23,370.00	
3.1 Concrete Work =			
Contingency (10% of Sub-total		US\$ 861,512.00	
Total			
<b>Internal rate of Return 13.96 %</b>			
<b>Project Layout after Rehabilitation</b>			



Province	Takeo	Target Area	1,756 ha
District	Kirivong	Basin Priority	1st Priority
<b>History of Project / Background</b>			
<p>Portasu Irrigation Rehabilitation Project is located in Kampeng Commune, Kirivong District, Takeo Province, which is approximately 28 km at the southwest of District Town and about 57 km from Takeo Town. The farmers in the project area have suffered from shortage of water in both seasons, dry and wet season for their agricultural cultivation. The irrigation facilities in this scheme are deteriorated and almost loosed their functions which lead to poor water management and impacted on crop yield. In recent year, an active effort made by commune council and with the farmer participation, some canals have been rehabilitated but this irrigation system is still incomplete and urgently requires the rehabilitation of Access road, Canal and construction of related structures such as box culvert in order to increase water storage capacity and release water during the need of water.</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Kampaeng		
Concerned Village(s)	7 Villages		
Nos. of Beneficiary Households	815 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2007		
Latest Rehabilitation (year)	2009 Fund Japan Embassy, Bridge Holland Organization		
Water Source	Portasu Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	760 ha	
Rainy season paddy	1,756 ha	1,756 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	1,756 ha	2,516 ha	
Crop Intensity	100 %	143 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	2.8 ton/ha	
Rainy season paddy	2 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	2,128 ton	2,128 ton
Rainy season paddy	3,512 ton	4,390 ton	878 ton
Dry season paddy	ton	ton	ton
Rainfed rainy season paddy	ton	ton	ton
Total			3,006 ton

<b>Major Project Works</b>		Quantity	Cost
Description			
1. Rehabilitation of Access Road		1,050 m	
2. Rehabilitation of Box culvert		24 Places	
3. Rehabilitation of Secondary Canal 1		2,985 m	
4. Rehabilitation of Secondary Canal2		2,567 m	
<b>Direct Construction Cost (US\$)</b>			
(1) Earth work			US\$ 30,441.97
1.1 Access Road work =			US\$ 189,864.35
1.2 Canal Rehabilitation =			
(2) Concrete Work			US\$ 240,124.80
2.1 Box Culvert =			US\$ 46,043.11
Contingency (10%) of Sub-total			US\$ 506,474.23
Total			
<b>Internal rate of Return</b>		19.3 %	
<b>Project Layout after Rehabilitation</b>			

**Command Area of Portasu Irrigation Project After Rehabilitation**

1:30,000

Total Command Area=1,756ha  
 1) Early Rainy Season Rice 760 ha, Yield = 2.8T/ha  
 2) Rainy Season Rice 1756 ha, Yield = 2.5T/ha

**Legend**

- Dike
- Access Road
- Canal Proposal
- Existing Canal
- Existing Spillway
- Existing Box Culvert
- Proposal Box Culvert
- Portasu Reservoir
- Command After Project
- Double Crop
- Single Crop

**Command Area of Portasu Irrigation Project After Rehabilitation**

1:30,000

**Internal rate of Return** 19.3 %

**Project Layout after Rehabilitation**

Source : MOWRAM

Province	Pursat	Target Area	550 ha
District	Bakan	Basin Priority	1st Priority
History of Project / Background			
<p>Kab Kralanh Canal Rehabilitation Project was constructed in 1977 during Pol Pot regime. The main facilities and head works of this canal system were deteriorated due to long lasted civil war and lack of maintenance.</p> <p>This Project has been rehabilitated since 2008 by OKNHA VENN HOUR and in 2009 this canal rehabilitated by the Provincial Department of Water Resources and Meteorology through Ministry of Water Resources and Meteorology but not completed. Currently the situation of this Project need to Construction the Head structure, Check structures, culverts, repair embankment with laterite pavement, rehabilitated main canal and secondary canal. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield -So local authority &amp; farmers requested to Pursat PDWRAM to find financial support for the rehabilitation work.</p>			
Major Project Works			
Description	Quantity	Cost	Evaluation Conditions
1. Rehabilitation of New	8,000 m		1. Activities of FWUC
2. Rehabilitation of Secondary Canal (SC, 4 ltr)	4,000 m		2. Status of FWUC
3. Construction of New	1 Place		3. If no FWUC
4. Construction Check structure of Main Canal	5 Places		4. Land Mine
5. Construction Head structure of Secondary Canal	4 Places		5. Who request and eager to realize this project
6. Construction Check structure of Secondary Canal	4 Places		6. How many % of farmers and villagers agreed and will cooperate this project
7. Construction Culverts irrigated to paddy field	8 Places		7. If we conduct this project, who will complain or protest to this project?
Direct Construction Cost (US\$)			
(1) Embankment work		US\$ 344,990.00	8. Land for rehabilitation project
Earth work =			
(2) Intake Structure Rehabilitation		US\$ 306,000.00	
Concrete Work =			
(3) Others 10%		US\$ 65,099.00	
Contingency (10%) of Sub-total			
Total		US\$ 716,089.00	
Internal rate of Return 14 %			
Project Layout after Rehabilitation			
Socio-economic Conditions			
Concerned Commune(s)	Trapeang Chhorm		
Concerned Village(s)	5 Villages		
Nos. of Beneficiary Households	959 HH		
Main Features of Existing Irrigation System			
Construction (Completed year)	2004		
Latest Rehabilitation (year)	2008 Fund PDWRAM		
Water Source	Stung Cham Bot River		
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
Cropping Pattern			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	50 ha	550 ha	
Dry season paddy	ha	50 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	50 ha	600 ha	
Crop Intensity	9 %	109 %	
Yield of Paddy			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1.5 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
Incremental Production			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	
Rainy season paddy	75 ton	1,375 ton	1,300 ton
Dry season paddy	ton	175 ton	175 ton
Rainfed rainy season paddy	ton	ton	
Total			1,475 ton

Source : MOWRAM



Province	Pursat	Target Area	350 ha
District	Krator	Basin Priority	2nd Priority
<b>History of Project / Background</b>			
Tram Canal Rehabilitation Project was constructed in 1989 during State of Cambodia regime. The main facilities and head works of this canal system were deteriorated due to long lasted civil war and lack of maintenance.			
This Project has been rehabilitated since 1990 by Irrigation Meteorology and Hydraulic office through Provincial Department of Agriculture Forestry and Fishery installed the pumping in head canal until 1991 it was destroyed and removed. In 2008 this canal rehabilitated by the commune fund but not completed. Currently the situation of this Project need to rehabilitate the Head structure, Check structures, repair the embankment with laterite pavement, rehabilitate the main canal and secondary canal. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield. So local authority & farmers requested to Pursat PDOWRAM to find financial support for the rehabilitation work			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Tnuot Chum		
Concerned Village(s)	4 Villages		
Nos. of Beneficiary Households	565 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2004		
Latest Rehabilitation (year)	2008 Fund PDOWRAM		
Water Source	Boeung Katout stream		
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	50 ha	350 ha	
Dry season paddy	ha	50 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	50 ha	400 ha	
Crop Intensity	14 %	114 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1.5 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	75 ton	875 ton	800 ton
Dry season paddy	ton	175 ton	175 ton
Rainfed rainy season paddy	ton	ton	ton
Total			975 ton
Source : MOWRAM			
<b>Major Project Works</b>			
Description	Quantity	Cost	
Rehabilitation of Main Canal with laterite paved	2,000 m		
Construction of Secondary Canal (SC, 6 lines)	4,500 m		
Construction Head structures of Main Canal	1 Place		
Construction Check structure of Main Canal	2 Place		
Construction Head structure of Secondary Canal	6 Place		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment work		US\$ 128,300.00	
Earth work =			
(2) Intake Structure Rehabilitation		US\$ 71,000.00	
Concrete Work =			
(3) Others 10% =		US\$ 19,930.00	
Contingency (10%) of Sub-total			
Total		US\$ 219,230.00	
<b>Internal rate of Return 21.54 %</b>			
<b>Project Layout after Rehabilitation</b>			
<p><b>Evaluation Conditions</b></p> <ol style="list-style-type: none"> <li>1. Activities of FWUC</li> <li>2. Status of FWUC</li> <li>3. If no FWUC</li> <li>4. Land Mine</li> <li>5. Who request and eager to realize this project</li> <li>6. How many % of farmers and villagers agreed and will cooperate this project</li> <li>7. If we conduct this project, who will complain or protest to this project?</li> <li>8. Land for rehabilitation project</li> </ol>			
<p>FWUC is not work well No preparation work for registration of FWUC and No preparation work for establishment of FWUC PDWRAM will establish the FWUC in cooperate with local government and farmers, Local Government (District, Commune and Village) agreed and will cooperate to establish the FWUC, and Villager and farmers agreed and will participate to establish the FWUC. No Land Mine (Already cleaning full area) PDWRAM 100% No complain All land for rehabilitation project is inside of government land and no trouble with farmers and villagers, and some land for rehabilitation project is inside of government land, but some farmers cultivated illegal. If these illegal farmers could get some money (compensation), they will agreed to back the land</p>			

<b>Province</b>	Kandal	<b>Target Area</b>	247 ha
<b>District</b>	Ang Snoul	<b>Basin Priority</b>	1st Priority
<b>History of Project / Background</b>			
<p>Torn Or reservoir rehabilitation Project is located in Tra Peng Andong Village of Sam rong Leu Commune, and in Ang Sleng.,Prek Ta Pok,Don Rath Villages of Auv Lok Commune, Ang Snoul District, Kandal Province , which is approximately 25km from capital district and at the earth of Mekong river . This reservoirs completed construction since POL, POT regime. Currently the situation of their reservoirs eroded many places of dikes. Every year, farmers in this project area with shortage of water for their agriculture and domestic use which bring the low rice yield. So local authority &amp; farmers requested to Kandal PDWRAM to find financial support for the rehabilitation work</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Torn Or, Auv Lok		
Concerned Village(s)	4 Villages		
Nos. of Beneficiary Households	344 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2009 / Fund / Government-Japan budget		
Latest Rehabilitation (year)			
Water Source	Torn Or Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	ha	ha	
Dry season paddy	123 ha	247 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	123 ha	247 ha	
Crop Intensity	50 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	ton/ha	ton/ha	
Dry season paddy	4.2 ton/ha	4.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	ton	ton	ton
Dry season paddy	517 ton	1,112 ton	595 ton
Rainfed rainy season paddy	ton	ton	ton
Total			595 ton

<b>Major Project Works</b>	<b>Description</b>	<b>Quantity</b>	<b>Cost</b>
Rehabilitation of embankment Torn Or dike Rehabilitation Leaflet of sluice gate		1,700 m	
		2 places	
<b>Direct Construction Cost</b> (US\$)	(1) Embankment work		US\$ 216,857.00
	(2) Two (2) of Culverts construction		US\$ 5,000.00
	2.1 Concrete Work =		
	Contingency (10%) of Sub-total		US\$ 221,857.00
	Total		
<b>Internal rate of Return</b>		14.98 %	
<b>Project Layout after Rehabilitation</b>			

<b>Major Project Works</b>	<b>Description</b>	<b>Quantity</b>	<b>Cost</b>
Rehabilitation of embankment Torn Or dike Rehabilitation Leaflet of sluice gate		1,700 m	
		2 places	
<b>Direct Construction Cost</b> (US\$)	(1) Embankment work		US\$ 216,857.00
	(2) Two (2) of Culverts construction		US\$ 5,000.00
	2.1 Concrete Work =		
	Contingency (10%) of Sub-total		US\$ 221,857.00
	Total		
<b>Internal rate of Return</b>		14.98 %	
<b>Project Layout after Rehabilitation</b>			

Source : MOWRAM



<b>Province</b>	Keap	<b>Target Area</b>	75 ha
<b>District</b>	Damnak Chang Eur	<b>Basin Priority</b>	1st Priority
<b>History of Project / Background</b>			
<p>Prek Tanen Sea Dam Protection Irrigation System was constructed in 1977 during Pol Pot regime. The main facilities and headworks of this irrigation system were deteriorated due to long lasted civil war and lack of maintenance.</p> <p>This irrigation system not was rehabilitated . Currently, some parts of the embankment were eroded. Structure were not well functioning due to some parts of them damaged and laterite pavement on the embankment is urgently needed. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield. So, local authority &amp; farmers requested to Kep PDWRAM to find financial support for the rehabilitation work of above mentioned project</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Pong Teuk, Ang Kol		
Concerned Village(s)	2 Villages		
Nos. of Beneficiary Households	202 HH		
<b>Main Features of Existing Irrigation System</b>			
Latest Rehabilitation (year)	2007		
Water Source	2009 Fund Seila Program		
Catchement Area (km2)	Prek Tanen Reservoir		
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	40 ha	
Rainy season paddy	75 ha	75 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	75 ha	115 ha	
Crop Intensity	100 %	153 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	3.3 ton/ha	
Rainy season paddy	1.5 ton/ha	3 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	132 ton	132 ton
Rainy season paddy	113 ton	225 ton	112 ton
Dry season paddy	ton	ton	ton
Rainfed rainy season paddy	ton	ton	ton
Total			244 ton

<b>Major Project Works</b>			
Description	Quantity	Cost	
Constructed of New Regulator Structure	1 Place		
Rehabilitation of embankment	380 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment work		US\$ 40,199.45	
1.1 Earth work			
(2) New Regulator		US\$ 52,873.25	
2.1 Concrete Work			
Contingency (10%) of Sub-total		US\$ 9,3072.7	
Total		US\$ 102,379.97	
<b>Internal rate of Return 16.75 %</b>			
<b>Project Layout after Rehabilitation</b>			

Source : MOWRAM

Province	Target Area	621 ha																																													
District	Basin Priority	1st Priority																																													
History of Project / Background																																															
<p>Rones Irrigation System was constructed in 1973 and finished in 1975 during Pol Pot regime. The main facilities and headworks of this irrigation system were deteriorated due to long lasted civil war and lack of maintenance.</p> <p>This irrigation system was rehabilitated in 2001 by Ministry of Water Resources and Meteorology. Currently, some parts of the embankment were eroded, 2 Structure and 2 culverts were not well functioning due to some parts of them damaged and laterite pavement on the embankment is urgently needed. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield. So, local authority &amp; farmers requested to Kep PDWRAM to find financial support for the rehabilitation work of above mentioned project.</p>																																															
<p><b>Socio-economic Conditions</b></p> <p>Concerned Commune(s) Pong Teuk, Ang Kol</p> <p>Concerned Village(s) 7 Villages</p> <p>Nos. of Beneficiary Households 639 HH</p>																																															
<p><b>Main Features of Existing Irrigation System</b></p> <p>Construction (Completed year) 2007</p> <p>Latest Rehabilitation (year) 2009 Fund Seila Program</p> <p>Water Source Rones Reservoir</p> <p>Catchment Area (km<sup>2</sup>)</p> <p>Main Canal</p> <p>Secondary Canals</p>																																															
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<b>Province</b>	Keo	Target Area	375 ha
<b>District</b>	Damnak Chang Eur	Basin Priority	1st Priority
<b>History of Project / Background</b>			
<p>Veal Vong Irrigation System was constructed in 1977 during Pol Pot regime. The main facilities and headworks of this irrigation system were deteriorated due to long lasted civil war and lack of maintenance.</p> <p>This irrigation system was rehabilitated in 2001 by Ministry of Water Resources and Meteorology. Currently, some parts of the embankment were eroded, 1 Structure and 1 culverts were not well functioning due to some parts of them damaged and laterite pavement on the embankment is urgently needed. Every year, farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield. So, local authority &amp; farmers requested to keep PDOWRAM to find financial support for the rehabilitation work of above mentioned project</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Pong Teuk, Ang Kol		
Concerned Village(s)	2 Villages		
Nos. of Beneficiary Households	300 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2007		
Latest Rehabilitation (year)	2009 Fund Seila Program		
Water Source	Veal Vong		
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	80 ha	
Rainy season paddy	100 ha	375 ha	
Dry season paddy	22 ha	40 ha	
Rainfed rainy season paddy	233 ha	ha	
Fallow	ha	ha	
Total	355 ha	495 ha	
Crop Intensity	95 %	132 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	2.5 ton/ha	
Rainy season paddy	2 ton/ha	2.5 ton/ha	
Dry season paddy	2.5 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	1.5 ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	200 ton	200 ton
Rainy season paddy	200 ton	938 ton	738 ton
Dry season paddy	55 ton	140 ton	85 ton
Rainfed rainy season paddy	350 ton	ton	-350 ton
Total			673 ton
Source : MOWRAM			
<b>Major Project Works</b>			
Description	Quantity	Cost	
Constructed of New Regulator Structure	1 Place		
Constructed of New Culverts	1 Place		
Rehabilitation of embankment	900 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Embankment work		US\$ 86,198.28	
1.1 Earth work =			
(2) New Regulator		US\$ 52,222.30	
2.1 Concrete Work =			
(3) New Culvert		US\$ 15,282.05	
3.1 Concrete Work =			
Contingency (10%) of Sub-total			
Total			
<b>Internal rate of Return 21.03 %</b>			
<b>Project Layout after Rehabilitation</b>			
<p><b>Commanded Area of Veal Vong Irrigation After Rehabilitation project</b></p> <p>Commanded Area Total = 375 ha          1) Rainy Season Rice (375 ha), Yield = 2 T/ha          2) Dry Season Rice (40ha), Yield = 3.5 T/ha          3) Upland Crop (60ha) = 2.5T/ha          4) Early Season Rice (80ha), Yield = 2.5 T/ha</p>			
<b>Evaluation Conditions</b>			
1. Activities of FWUC	No establishment and no activities of FWUC		
2. Status of FWUC	Approved by Provincial Government (Governor) for establishment of FWUC		
3. If no FWUC	Local Government (District, Commune, Village) agreed will cooperate to establish the		
4. Land Mine	No Land Mine (Already cleaning full area)		
5. Who request and eager to realize this project	Villagers & Farmers		
6. How many % of farmers and villagers agreed and will cooperate this project	100%		
7. If we conduct this project, who will complain or protest to this project?	No complain		
8. Land for rehabilitation project	All land for rehabilitation project is inside of government land and no trouble with farmers and villagers		

Province	Siem Reap	Target Area	1,085 ha
District	Kralanh	Basin Priority	2nd Priority
<b>History of Project / Background</b>			
<p>The canal was repaired by local people in 1987. It has been deteriorated from year to year since there is no fund to rehabilitate; most parts are so shallow that the water cannot be drained to the paddy fields. In shorts, the canal has recently not fully been in function due to shallowness and damages of its parts.</p>			
<b>Major Project Works</b>		Quantity	Cost
Description			
Rehabilitation of Main Canal		3,295 m	
Rehabilitation of Secondary Canals		5,205 m	
Construction of Check Structures		4 units	
Pipe Culverts Installation		6 units	
<b>Direct Construction Cost (US\$)</b>			
(1) Earth work =		US\$ 141,794.50	
(2) Concrete Work =		US\$ 119,580.90	
(3) FWUC Establishment (2%) =		US\$ 5,227.51	
(4) Project Supervision (3%) =		US\$ 7,841.26	
Contingency (10%) of Sub-total		US\$ 26,137.54	
Total		US\$ 300,581.71	
<b>Internal rate of Return</b>		18.11 %	
<b>Project Layout after Rehabilitation</b>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Ta An		
Concerned Village(s)	5 Villages		
Nos. of Beneficiary Households	450 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2003		
Latest Rehabilitation (year)	2009 Fund		
Water Source	Royal Government of Cambodia		
Reservoir	Spean Sreng Reservoir		
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	572 ha	1,085 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	513 ha	ha	
Fallow	ha	ha	
Total	1,085 ha	1,085 ha	
Crop Intensity	100 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	0.8 ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	
Rainy season paddy	572 ton	2,713 ton	2,141 ton
Dry season paddy	ton	ton	
Rainfed rainy season paddy	410 ton	ton	-410 ton
Total			1,730 ton

Source : MOWRAM

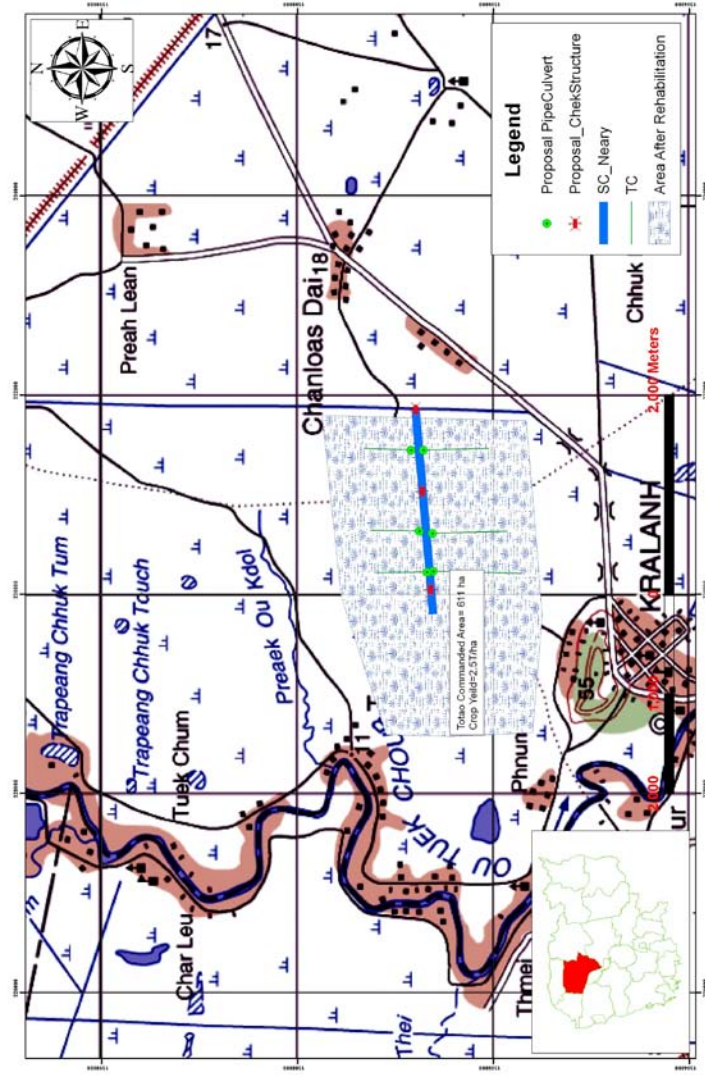
<b>Province</b>	Stiem Reapp	<b>Target Area</b>	611 ha
<b>District</b>	Kralanh	<b>Basin Priority</b>	2nd Priority
<b>History of Project / Background</b>			
<p>The canal was built by the local people in 1983. It has been deteriorated from year to year since there is no fund to rehabilitate; most parts are so shallow that the water cannot be drained to the paddy fields. In short, the canal has recently not been in function due to shallowness and damages of its parts</p>			
<b>Major Project Works</b>		<b>Quantity</b>	<b>Cost</b>
Description			
Rehabilitation of Canal		2,020 m	
Construction of Cheek Structure		3 units	
Pipe Culverts		6 units	
<b>Direct Construction Cost (US\$)</b>			
(1) Earth work			US\$ 94,320.92
(2) Concrete Work			US\$ 97,699.20
(3) FWUC Establishment (2%) =			US\$ 3,840.40
(4) Project Supervision (3%) =			US\$ 5,760.60
Contingency (10%) of Sub-total			US\$ 19,202.01
Total			US\$ 220,823.14
<b>Internal rate of Return</b>		14.91 %	

<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Kampong Thkov, Ta An		
Concerned Village(s)	5 Villages		
Nos. of Beneficiary Households	478 HH		
<b>Main Features of Existing Irrigation System</b>			
Latest Rehabilitation (year)	2003	Royal Government of Cambodia	
Water Source	2009 Fund	O Ambel MC	
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	611 ha	611 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	611 ha	611 ha	
Crop Intensity	100 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	611 ton	1,528 ton	917 ton
Dry season paddy	ton	ton	ton
Rainfed rainy season paddy	ton	ton	ton
Total			917 ton

Source : MOWRAM

Commanded Area of Neary Irrigation Project After Rehabilitation

Scale 1:30 000



Province	Siem Reap	Target Area	1,300 ha
District	Sothnikum	Basin Priority	2nd Priority
History of Project / Background			
<p>The canal was built during the Pol Pot regime. It has been deteriorated from year to year since there is no fund to rehabilitate; most parts are so shallow that the water cannot be drained to the paddy fields. In shorts, the canal has recently not been in function due to shallowness and damages of its parts</p>			
Major Project Works		Quantity	Cost
Description		4,794 m	
Rehabilitation of Canal		3 units	
Construction of Check Structures (1.2m)		6 units	
Construction of Check Structure(0.5m)		21 units	
Pipe Culverts Installation			
Direct Construction Cost (US\$)			
(1) Earth work		US\$ 85,764.50	
(2) Concrete Work =		US\$ 209,888.55	
(3) FWUC Establishment (2%) =		US\$ 5,913.06	
(4) Project Supervision (3%) =		US\$ 8,669.59	
Contingency (10%) of Sub-total		US\$ 29,565.31	
Total		US\$ 340,001.01	
<b>Internal rate of Return</b>		13.35 %	
Evaluation Conditions			
1. Activities of FWUC		No establishment and no activities of FWUC	
2. Status of FWUC		No preparation work for establishment of	
3. If no FWUC		PDWRAM will establish the FWUC in cooperate with local government and farmers	
4. Land Mine		No Land Mine (Already cleaning full area)	
5. Who request and eager to realize this project		PDWRAM, Commune Chief or Council, and Villagers & Farmers	
6. How many % of farmers and villagers agreed and will cooperate this project		100%	
7. If we conduct this project, who will complain or protest to this project?		No complain	
8. Land for rehabilitation project		All land for rehabilitation project is inside of government land and no trouble with farmers and villagers	
Project Layout after Rehabilitation			
<p>Commanded Area of Trabek Irrigation Project After Rehabilitation Scale 1:40,000</p>			
Socio-economic Conditions			
Concerned Commune(s)	Dumdek		
Concerned Village(s)	5 Villages		
Nos. of Beneficiary Households	766 HH		
Main Features of Existing Irrigation System			
Construction (Completed year)	2003	Fund	Royal Government of Cambodia
Latest Rehabilitation (year)	2009		
Water Source			
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
Cropping Pattern			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	814 ha	1,300 ha	
Dry season paddy	ha	ha	
Rainfed rainy season paddy	486 ha	ha	
Fallow	ha	ha	
Total	1,300 ha	1,300 ha	
Crop Intensity	100 %	100 %	
Yield of Paddy			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	1.5 ton/ha	2.5 ton/ha	
Dry season paddy	ton/ha	ton/ha	
Rainfed rainy season paddy	1 ton/ha	ton/ha	
Incremental Production			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	
Rainy season paddy	1,221 ton	3,250 ton	2,029 ton
Dry season paddy	ton	ton	
Rainfed rainy season paddy	486 ton	ton	-486 ton
Total			1,543 ton

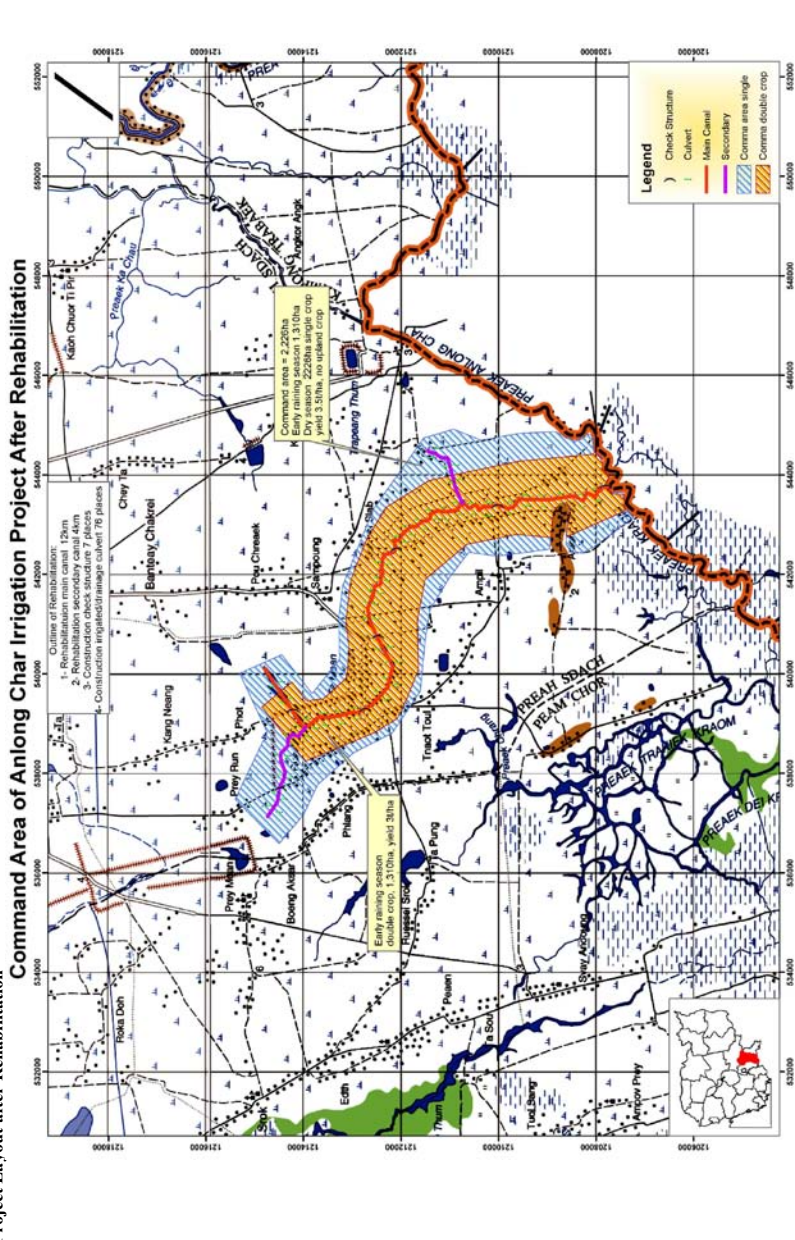
Source : MOWRAM

Province	Kampong Cham	Target Area	894 ha
District	Srey sathor	Basin Priority	1st Priority
<b>History of Project / Background</b>			
<p>Baydei dam Rehabilitation Project is located in Baray commune , Srey santhor district , Kampong Cham Province , which is approximately 43 km from Kampong Cham province . This dam build 1959 by Tamao and Tanguom and other grandfater.1995 Excellency Lok nheap cooperate world food programme for Earth work on Baydei dam .Baydei dam is the east of Srey santhor district about 15 km from Srey santhor District. Currently the situation of this dam eroded that make the people worry about safety the land of rice production. Every year farmers in this project area face with shortage of water for their agriculture and domestic use which bring the low rice yield. So local authority &amp; farmers requested to Kampong Cham Province Department of Water Resources and Meteorology (PDOWRAM)</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Srey sathor		
Concerned Village(s)	3 Villages		
Nos. of Beneficiary Households	1,263 HH		
<b>Main Features of Existing Irrigation System</b>			
Latest Rehabilitation (year)	2009	Fund	IMF, Embassy of Japan
Water Source	Baydei Reservoir		
Catchement Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	ha	ha	
Dry season paddy	220 ha	894 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	220 ha	894 ha	
Crop Intensity	25 %	100 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	ton/ha	ton/ha	
Dry season paddy	1.4 ton/ha	3.2 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	ton	ton	0 ton
Dry season paddy	308 ton	2,861 ton	2,553 ton
Rainfed rainy season paddy	ton	ton	ton
Total			2,553 ton
Source : MOWRAM			
<b>Major Project Works</b>			
Description	Quantity	Cost	
1. Rehabilitation of dam	4,350 m		no information
2. Construction of secondary dam	4,350 m		no information
3. Access road	1750 m		no information
4. Literate	6100 m		no information
5. Grow the grass on both side	30,450 m2		no information
6. Construction of repaired old water	1 place		no information
7. Construction of new water gate			no information
8. Construction 12 new pipe culverts			no information
<b>Direct Construction Cost (US\$)</b>			
(1) Earth works			
1.1 Embankment work rehabilitation =		US\$ 611,297.66	
1.2 Access Road rehabilitation =		US\$ 112,743.10	
1.3 Secondary Dam rehabilitation =		US\$ 96,549.63	
Sub Total =		US\$ 820,590.39	
(2) Concrete works			
2.1 New water gate =		US\$ 30,824.00	
2.2 Repaired old water gate =		US\$ 10,864.00	
2.4 14 new pipe culverts =		US\$ 130,477.20	
Sub Total =		US\$ 172,165.20	
Contingency (10% of Sub-total			
Total		US\$ 992,755.59	
<b>Internal rate of Return 16.47 %</b>			
<b>Project Layout after Rehabilitation</b>			

Province	Prey Veng	Target Area	2,226 ha
District	Prah Sdach	Basin Priority	1st Priority
History of Project / Background	Anlong Cha Canal is the natural stream which connected from tributary of Mekong river between border of Viet Nam and Cambodia. The stream was excavated in 2003 by generous people. Due to the long last civil war and lack of maintenance, the main canal is shallow not enough structure for conveying to paddy field, which led to poor water management. Currently, Every year farmers in project area face with shortage of water for their agriculture, which lead on low yield. Therefore, farmers and local authorities requested to the PDWRAM Prey Veng province to rehabilitate this scheme.		

<b>Major Project Works</b>		Quantity	Cost
Description			
1. Main canal		12 km	
2. Secondary Canal		4 km	
3. Check Structure		7 places	
4. Drainage/Irrigate structure		76 places	
<b>Direct Construction Cost</b>			(US\$)
(1) Earth Work:			
1.1 Main Canal 12 km			US\$ 1,021,000.00
1.2 Secondary Canal 4 km			US\$ 198,000.00
(2) Concrete Work:			
2.1 Check Structure (7 places)			US\$ 280,000.00
2.2 Drainage/Irrigated culvert (76 places)			US\$ 288,000.00
Contingency (10%) of Sub-total			
Total			US\$ 1,787,000
<b>Internal rate of Return</b>			1.39 %

**Project Layout after Rehabilitation**



<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Banteay Chakrey, Prah Sdach		
Concerned Village(s)	10 Villages		
Nos. of Beneficiary Households	2,135 HH		
<b>Main Features of Existing Irrigation System</b>		2004	
Construction (Completed year)	2008 Fund		
Latest Rehabilitation (year)	NCDD, MCC/CDA, RGC		
Water Source	Anlong Cha Stream		
Reservoir			
Catchment Area (km2)			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>		Present	With Project
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	1,310 ha	
Dry season paddy (Rainfed)	567 ha	ha	
Dry season paddy (Irrigated)	1,659 ha	2,226 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	2,226 ha	3,536 ha	
Crop Intensity	100 %	159 %	
<b>Yield of Paddy</b>		Present	With Project
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	3 ton/ha	
Dry season paddy (Rainfed)	1.8 ton/ha	ton/ha	
Dry season paddy (Irrigated)	3.5 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>		Present	With Project
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	3,930 ton	3,930 ton
Rainy season paddy	1,021 ton	ton	-1,021 ton
Dry season paddy	5,807 ton	7,791 ton	1,985 ton
Rainfed rainy season paddy	ton	ton	ton
Total			964 ton

Source : MOWRAM

Province	Svay Rieng	Target Area	650 ha
District	Kampong Ro	Basin Priority	1st Priority
History of Project / Background			
<p>Sopha Irrigation System is located in Banteay Kraing commune, Kampong Ro District, Svay Rieng Province, which is about 35km at the south of Svay Rieng Town. Most of farmers in this area make their money by producing wet and dry season rice and relying on the Sopha Irrigation System. Water source for this Irrigation System is coming from Long Khut canal (Vietnam). This Irrigation System has been established since 1986 by Ministry of Water Resources and Meteorology.</p> <p>At the present, an active effort made by commune chief, village chief and farmers urgently require construction of related structures such as pumping station, crossing culverts, irrigated culverts, outlet plastic tubes, and concrete channel in order to increase water flow capacity and release water during the need of water</p>			
Socio-economic Conditions			
Concerned Commune(s)	Banteay Kraing		
Concerned Village(s)	3 Villages		
Nos. of Beneficiary Households	431 HH		
Main Features of Existing Irrigation System			
Latest Rehabilitation (year)	1986		
Water Source	Fund	Long Khut Canal (VN)	
Reservoir			
Catchement Area (km2)			
Main Canal			
Secondary Canals			
Cropping Pattern			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	120 ha	220 ha	
Dry season paddy	530 ha	650 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	650 ha	870 ha	
Crop Intensity	100 %	134 %	
Yield of Paddy			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	0.8 ton/ha	2 ton/ha	
Dry season paddy	2 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
Incremental Production			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	96 ton	440 ton	344 ton
Dry season paddy	1,060 ton	2,275 ton	1,215 ton
Rainfed rainy season paddy	ton	ton	ton
Total			1,559 ton
Source : MOWRAM			
Major Project Works			
Description	Quantity	Cost	
1. Construction of pumping station	3 places		
2. Construction of crossing culverts	5 places		
3. Construction of irrigated culverts	24 places		
4. Construction of outlet plastic tube	2,100 m		
5. Construction of concrete channel (Line 1)	480 m		
6. Construction of concrete channel (Line 2)			
Direct Construction Cost (US\$)			
(1) Pumping Station	US\$ 138,720.00		
(2) Crossing Culvert	US\$ 127,023.00		
(3) Irrigated Culvert	US\$ 113,560.00		
(4) Outlet plastic tube	US\$ 11,616.00		
(5) Concrete Channel	US\$ 404,498.00		
(6) Concrete Channel	US\$ 99,366.50		
Contingency (10%) of Sub-total	US\$ 89,478.35		
Total	US\$ 984,261.85		
Internal rate of Return 12.13 %			
Project Layout after Rehabilitation			
No Map Available			
Evaluation Conditions			
1. Activities of FWUC	No establishment and no activities of FWUC for establishment of FWUC		
2. Status of FWUC	Approved by Provincial Government (Governor)		
3. If no FWUC	PDWRAM will establish the FWUC in cooperate with local government and farmers, Local Government (District, Commune and Village) agreed and will cooperate to establish the FWUC, and Villager and farmers agreed and will participate to establish the FWUC.		
4. Land Mine	Not sure		
5. Who request and eager to realize this project	Commune Chief or Council, Village Chief, and Villagers & Farmers		
6. How many % of farmers and villagers agreed and will cooperate this project	100%		
7. If we conduct this project, who will complain or protest to this project?	Upstream fisher man		
8. Land for rehabilitation project	Some land for rehabilitation project is inside of private land, but land owner agreed to provide the land for rehabilitation without money.		

Province	Svay Rieng	Target Area	350 ha
District	Chantrea	Basin Priority	1st Priority
<b>History of Project / Background</b>			
<p>Svay Yea Irrigation System is located in Samrong and Chres commune, Chantrea District, Svay Rieng Province, which is about 40km at the South-East of Svay Rieng Town. Most of farmers in this area make their money by producing wet and dry season rice and relying on the Svay Yea Irrigation System. Water source for this system is coming from Svay Yea Reservoir (water volume is 2 millions meter cube) which is taking water from Dun Toy reservoir (water volume is 17.50 million meter cube). This irrigation system had been established by PRASAC in 1997-1998, and in 2003 Spillway had been constructed by Ministry of Water Resources and Meteorology.</p> <p>At the present, an active effort made by commune chief, village chief and farmers urgently require the rehabilitation of dam and construction of related structures such as three main canals, spillway, water gate, and outlet plastic tubes in order to increase water flow capacity and release water during the need of water.</p>			
<b>Socio-economic Conditions</b>			
Concerned Commune(s)	Samrong, Chres		
Concerned Village(s)	3 Villages		
Nos. of Beneficiary Households	562 HH		
<b>Main Features of Existing Irrigation System</b>			
Construction (Completed year)	2003		
Latest Rehabilitation (year)	Fund		
Water Source	Svay Yea Reservoir		
Reservoir			
Main Canal			
Secondary Canals			
<b>Cropping Pattern</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ha	ha	
Rainy season paddy	50 ha	245 ha	
Dry season paddy	300 ha	350 ha	
Rainfed rainy season paddy	ha	ha	
Fallow	ha	ha	
Total	350 ha	595 ha	
Crop Intensity	100 %	170 %	
<b>Yield of Paddy</b>			
Crop	Present	With Project	Remarks
Early rainy season paddy	ton/ha	ton/ha	
Rainy season paddy	0.8 ton/ha	2 ton/ha	
Dry season paddy	1.5 ton/ha	3.5 ton/ha	
Rainfed rainy season paddy	ton/ha	ton/ha	
<b>Incremental Production</b>			
Crop	Present	With Project	Incremental
Early rainy season paddy	ton	ton	ton
Rainy season paddy	40 ton	490 ton	450 ton
Dry season paddy	450 ton	1,225 ton	775 ton
Rainfed rainy season paddy	ton	ton	ton
Total			1,225 ton
<b>Source : MOWRAM</b>			
<b>Major Project Works</b>			
Description	Quantity	Cost	Evaluation Conditions
1. Rehabilitation of spillway	4 places		1. Activities of FWUC
2. Construction of water gate	4 places		2. Status of FWUC
3. Construction of outlet plastic tube	42 places		3. If no FWUC
4. Construction of Svay Yea dam	2,500 m		
5. Construction of main canal No. 1	1,713 m		
6. Construction of secondary canal No. 1	2,000 m		
7. Construction of secondary canal No. 2	2,000 m		
<b>Direct Construction Cost (US\$)</b>			
(1) Concrete Work =	US\$ 218,826.00		No establishment and no activities of FWUC for establishment of FWUC
(2) Earth work =	US\$ 573,175.50		Approved by Provincial Government (Governor)
Contingency (10%) of Sub-total	US\$ 79,200.50		PDWRAM will establish the FWUC in cooperate with local government and farmers. Local Government (District, Commune and Village) agreed and will cooperate to establish the FWUC, and Villager and farmers agreed and will participate to establish the FWUC.
Total	US\$ 871,202.50		Not sure
<b>Internal rate of Return 12.29 %</b>			
<b>Project Layout after Rehabilitation</b>			
No Map Available			