

添 付 資 料

1. 調査団員・氏名

2. 調査工程

3. 関係者(面会者)リスト

4. 当該国の社会経済状況

1. 調査団氏名・所属

インセプション・レポート説明調査団及現地調査実施調査団 (2002年11月10日～2002年12月23日)

(1) 調査団長	中川 和夫	国際協力事業団 農業開発協力部 部長
(2) 技術顧問	田中 進	農林水産省 農村振興局 整備部 設計課 海外土地改良室 海外技術調査係長
(3) 計画管理	若林 基治	国際協力事業団 無償資金協力部 業務第四課
(4) 業務主任 / 灌漑施設設計 画 / 設計	岡田 恒司	日本工営株式会社
(5) 河川 / 水文	澤田 英敏	日本工営株式会社
(6) 営農計画 / 水管理計画 / 維持管理計画	栗田 絶学	日本工営株式会社
(7) 自然条件調査	新川 豊	日本工営株式会社
(8) 積算 / 調達 施工計画	加茂 元	日本工営株式会社

第二次現地調査実施調査団

(2003年2月10日～2003年2月19日)

(1) 河川 / 水文	澤田 英敏	日本工営株式会社
(2) 営農計画 / 水管理計画 / 維持管理計画	栗田 絶学	日本工営株式会社
(3) 自然条件調査	新川 豊	日本工営株式会社

基本設計概要説明調査団
(2003年3月12日～2003年3月18日)

(1)	調査団長 / 計画管理	若林 基治	国際協力事業団 無償資金協力部 業務第四課
(2)	業務主任 / 灌漑施設計画 / 設計	岡田 恒司	日本工営株式会社
(3)	営農計画 / 水管理計画 / 維持管理計画	栗田 絶学	日本工営株式会社

第三次現地調査実施調査団
(2003年6月23日～2003年7月18日)

(1)	調査団長	力石 寿郎	国際協力事業団 カンボジア事務所長
(2)	計画管理	武市 次郎	国際協力事業団 カンボジア事務所
(3)	業務主任/ 灌漑施設計画/設計	岡田 恒司	日本工営株式会社
(4)	水門/機械	山口 新	日本工営株式会社
(5)	自然条件調査	新川 豊	日本工営株式会社
(6)	積算 / 調達 施工計画	加茂 元	日本工営株式会社

第四次現地調査実施調査団
(2004年9月2日～2004年9月11日)

(1)	調査団長	三次 啓都	国際協力機構 カンボジア事務所次長
(2)	業務主任/ 灌漑施設計画/設計	神原 利和	日本工営株式会社
(3)	河川・水文	定村 寛文	日本工営株式会社
(4)	積算 / 調達 施工計画	新川 豊	日本工営株式会社

代替比較結果説明
(2004年10月4日～2004年10月8日)

(1)	業務主任/ 灌漑施設計画/設計	神原 利和	日本工営株式会社
(2)	積算 / 調達 施工計画	新川 豊	日本工営株式会社

基本設計概要説明調査団
(2004年11月16日)

(1)	調査団長	力石 寿郎	国際協力機構 カンボジア事務所所長
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2. 調査行程

インセプション・レポート説明調査団及現地調査実施調査団 (2002年11月10日～2002年12月23日)

日順	日	(曜日)	官団員		コンサルタント団員	
			作業内容	宿泊地	作業内容	宿泊地
1	11月10日	日	移動(東京-バンコク-プノンペン)	プノンペン	移動(東京-バンコク-プノンペン).(業務主任/灌漑施設計画/設計)	プノンペン
2	11月11日	月	現地調査、JICAカンボディア事務所、日本大使館表敬	プノンペン	官団員に同行	プノンペン
3	11月12日	火	水資源気象省表敬。水資源気象省との協議。水資源気象省、プロ技「灌漑技術センター計画」専門家との協議、現地調査	プノンペン	官団員に同行	プノンペン
4	11月13日	水	水資源気象省と協議	プノンペン	官団員に同行	プノンペン
5	11月14日	木	水資源気象省と協議、現地調査	プノンペン	官団員に同行第2陣到着(河川・水文、営農計画/水管理計画/維持管理計画、自然条件調査)	プノンペン
6	11月15日	金	協議議事録サイン日本大使館、JICAカンボディア事務所に結果報告移動(プノンペン-バンコク-成田)	機中	官団員に同行プノンペンにてデータ収集現地再委託契約準備	プノンペン
7	11月16日	土	成田着		現地調査現地再委託契約準備	プノンペン
8	11月17日	日			事務所設営現地再委託契約準備	プノンペン
9	11月18日	月			現地調査現地再委託契約準備	プノンペン
10	11月19日	火			現地調査	プノンペン
11	11月20日	水			現地調査	プノンペン
12	11月21日	木			現地調査	プノンペン
13	11月22日	金			現地調査	プノンペン
14	11月23日	土			現地調査	プノンペン
15	11月24日	日			現地調査	プノンペン
16	11月25日	月			現地調査	プノンペン
17	11月26日	火			現地調査	プノンペン
18	11月27日	水			現地調査	プノンペン
19	11月28日	木			現地調査	プノンペン
20	11月29日	金			現地調査	プノンペン
21	11月30日	土			現地調査積算/調達/施工計画団員到着	プノンペン
22	12月1日	日			現地調査	プノンペン
23	12月2日	月			現地調査	プノンペン
24	12月3日	火			現地調査	プノンペン
25	12月4日	水			現地調査	プノンペン
26	12月5日	木			現地調査	プノンペン
27	12月6日	金			現地調査	プノンペン
28	12月7日	土			現地調査	プノンペン
29	12月8日	日			現地調査	プノンペン
30	12月9日	月			現地調査	プノンペン
31	12月10日	火			現地調査	プノンペン
32	12月11日	水			現地調査	プノンペン
33	12月12日	木			現地調査	プノンペン
34	12月13日	金			現地調査	プノンペン
35	12月14日	土			現地調査	プノンペン
36	12月15日	日			現地調査	プノンペン
37	12月16日	月			現地調査	プノンペン
38	12月17日	火			現地調査、営農計画/水管理計画/維持管理計画団員出発	プノンペン
39	12月18日	水			水資源気象省に調査結果報告	プノンペン
40	12月19日	木			現地調査	プノンペン
41	12月20日	金			日本大使館、JICAカンボディア事務所に調査結果報告	プノンペン
42	12月21日	土			資料整理	プノンペン
43	12月22日	日			移動(プノンペン-バンコク-成田)	機中
44	12月23日	月			成田到着	

第二次現地調査実施調査団
(2003年2月10日～2003年2月19日)

日順	日	(曜日)	作業内容	自然条件調査	営農計画/水管理計画 /維持管理計画
			河川・水文		
1	2月10日	月	移動(東京→プノンペン)	同左	
2	2月11日	月	JICAカンボディア事務所へ報告、MOWRAMとの協議、現地調査	同左	移動(東京→プノンペン)
3	2月12日	火	現地調査	同左	同左
4	2月13日	水	現地調査	同左	同左
5	2月14日	木	現地調査	同左	同左
6	2月15日	金	現地調査現地調査	同左	同左
7	2月16日	土	現地調査	同左	同左
8	2月17日	日	現地調査	同左	同左
9	2月18日	月	水資源気象省に調査結果報告、JICA等報告、移動(プノンペン→)	同左	同左
10	2月19日	火	成田着	同左	同左

基本設計概要説明調査団
(2003年3月12日～2003年3月18日)

日順	日	(曜日)	官団員		コンサルタント団員	
			作業内容	宿泊地	作業内容	宿泊地
1	3月12日	水	移動(東京→バンコク→プノンペン)	プノンペン	移動(東京→バンコク→プノンペン)	プノンペン
2	3月13日	木	JICA現地事務所及び水資源気象省・プロ技「灌漑技術センター計画」専門家と対処方針等協議。水資源気象省表敬。水資源気象省へレポート提出後、議事録内容について協議。	プノンペン	官団員に同行	プノンペン
3	3月14日	金	大使館にて二次・三次水路整備資金の手当てについての情報確認。水資源気象省へDraft Reportを説明。協議議事録調印。	プノンペン	官団員に同行	プノンペン
4	3月15日	土	コルマタージュ及びカンダルスタン地区踏査	プノンペン	カンダルスタン地区状況踏査(TSCによる水路建設状況、河川状況等)	プノンペン
5	3月16日	日	現地中間報告書準備、団内打合せ	プノンペン	説明調査報告書(案)準備、団内打合せ	プノンペン
6	3月17日	月	JICAカンボディア事務所、日本大使館に調査結果報告。移動(プノンペン→バンコク→成田)	機中	官団員に同行	機中
7	3月18日	火	成田着		成田着	

第三次現地調査実施調査団
(2003年6月23日～2003年7月18日)

日順	日	(曜日)	作業内容			
			業務主任/灌漑施設設計 画/設計	水門・機械	自然条件調査	積算/調達/施工計 画
1	6月23日	月	移動(東京ープノンペン)			
2	6月24日	火	JICAカンボディア事務所へ報告、MOWRAMとの協議、現地調査			
3	6月25日	水	現地調査			
4	6月26日	木	現地調査			
5	6月27日	金	現地調査			
6	6月28日	土	現地調査現地調査	移動(東京ープノンペン)	移動(東京ープノンペン)	
7	6月29日	日	現地調査	現地調査	現地調査	
8	6月30日	月	現地調査	現地調査	現地調査	
9	7月1日	火	現地調査	現地調査	現地調査	
10	7月2日	水	現地調査	現地調査	現地調査	
11	7月3日	木	移動(プノンペンー東京)	移動(プノンペンー東	現地調査	
12	7月4日	金	成田着	成田着	現地調査	
13	7月5日	土			現地調査	
14	7月6日	日			現地調査	
15	7月7日	月			現地調査	
16	7月8日	火			現地調査	移動(東京ープノンペン)
17	7月9日	水			現地調査	現地調査
18	7月10日	木			現地調査	現地調査
19	7月11日	金			現地調査	現地調査
20	7月12日	土			現地調査	現地調査
21	7月13日	日			現地調査	現地調査
22	7月14日	月			現地調査	現地調査
23	7月15日	火			現地調査	現地調査
24	7月16日	水			現地調査	現地調査
25	7月17日	木			水資源気象省、JICA等帰国挨拶、移動(プノンペンー東京)	水資源気象省、JICA等帰国挨拶、移動(プノンペンー東京)
26	7月18日	金			成田着	成田着

第四次現地調査実施調査団

(2004年9月2日～2004年9月11日)

日順	日	時間	業務主任/灌漑施設計画/設計	積算/調達/施工計画	河川・水文	
1	9月2日 (木)		移動 (東京-バンコク-プノンペン)			
2	9月3日 (金)	8:00	水資源気象省表敬			
		9:30	JICAカンボジア事務所にて打ち合わせ			
		11:00	日本大使館表敬			
3	9月4日 (土)	午後	現場踏査、作業工程計画の確認			
		午前	JICA専門家と技術的内容についての協議			
4	9月5日 (日)	午後	ステアリングコミッティーとの協議の準備			
		終日	航空写真現場確認	測量業務結果の現場確認	洪水期河川流況調査	
5	9月6日 (月)	9:00	ステアリング・コミッティーでの頭首代替案比較、設計方針等に関する協議打ち合わせ			
		午後	ステアリング・コミッティー協議議事録等作成/地質調査 (現地再委託業務) 準備			
		夜	ステアリング・コミッティー協議議事録等作成	移動 (プノンペン発)		
6	9月7日 (火)	終日	ステアリング・コミッティーとの継続協議	建設資機材単価調査	移動 (東京着)	
		午前	新規の堰建設予定地の土地所有状況調査			
7	9月8日 (水)	午後	調査結果の取りまとめ	頭首工上流構造防御堤インベントリー調査	X	
		午前	ステアリング・コミッティーとの協議事項の取りまとめ	建設資機材単価調査		
8	9月9日 (木)	午後	ステアリング・コミッティーとの代替案比較の方針、設計方針、設計条件に関する協議事項の確認			
		18:00	日本大使館に報告			
		午前中	協議議事録、Technical Discussion Recordの最終調整			
9	9月10日 (金)	15:30	協議議事録、Technical Discussion Record署名			
		夜	移動 (プノンペン発)			
10	9月11日 (土)		移動 (東京着)			

代替比較結果説明

(2004年10月4日～2004年10月8日)

日順	日	(曜日)	作業内容	
			業務主任/灌漑施設計画/設計	積算 / 調達 施工計画
1	10月4日	月	移動(東京-プノンペン)	同左
2	10月5日	火	JICAカンボディア事務所へ報告、水資源気象省との協議、現地調査	同左
3	10月6日	水	ステアリングコミッティー / 議事録等作成	同左
4	10月7日	木	議事録署名、JICA等報告、移動(プノンペン-東京)	同左
5	10月8日	金	成田着	同左

基本設計概要説明調査団

(2004年11月16日)

日順	日	(曜日)	作業内容
1	11月16日	火	基本設計概要説明、議事録作成・署名

3. 関係者（面会者）リスト

- A. 水資源気象省 (Ministry of Water Resources and Meteorology)
1. Lim Kean Hor Minister (大臣)
Secretary of State/
 2. Veng Sakhon Under Secretary of State (次官補)
(第三次現地調査まで)
 3. Bun Hean Director Genral of Technique
 4. Pich Veasna Director, PICD
 5. Theng Tara Director, Water Resources Management and
Conservation Dept.
 6. Ngoun Pich Dy. Director, Eng. Dept
 7. Lim Theng Dy. Director, Eng. Dept
 8. Klok Sam Ang Head International Cooperation Office
 9. Chun Pene Long Dirctor, SPWRAM Kandal
 10. Te Auvkim Director, DID
 11. Hun Sochara Dy. Director, Kandal Province Water
Resources Office
 12. Leng Saseh Dy. Chief, Kandal Stung District Resources
Office Water Supply and Sanitation Division
- B. 公共事業省 (Ministry of Public Work and Transport)
1. Chhin Kong Hean Director General of Public Works
 2. Tauch Chankosal First Deputy Director General of Public Works
 3. Yit Bunna Director of Public Works Research Center
 4. Lim Sidenine Director of Road Infrastructure
 5. Chreung Sok Tharath Pjt. M'ger of Flood Emergency Reh. Pjt.
- C. 計画省 国家統計局 (National Institute of Statistics, Ministry of Planning)
1. Khin Song Deputy Director of General Statistics Departme
- D. カンダル郡事務所
1. Prak San Chief of District Office

E. 在カンボディア日本国大使館

1. 小川 郷太郎
2. 高橋 文明
3. 篠原 勝弘
4. 地神 一美
5. 植田 康成
6. 高久 竜太郎
7. 後藤 文雄

大使(第三次調査団まで)
大使(第四次調査団以降)
公使
参事官
一等書記官
二等書記官
二等書記官

F. JICAカンボディア事務所

1. 力石 寿郎
2. 原 智佐
3. 三次 啓都
4. 小泉 幸弘
5. 武市 二郎
6. 堀米 昇士朗

所長
次長(第三次調査団まで)
次長(第四次調査団以降)
所員
企画調査員
専門員

(専門家:水資源気象省)

1. 小林 隆信

Advisor

(専門家:灌漑開発センター)

1. 宮崎 旦
2. 安田 憲司
3. 海老原 洋司
4. 井原 陽一
5. 山崎 三佳代

Chief Advisor (Team Leader)
Survey/ Planning
Design / Water Management
Construciton Management
Project Coordinator

4. 当該国の社会経済状況

カンボジア国
Kingdom of Kampuchea

一般指標					
政体	立憲君主制	*1	首都	プノンペン (Phnom Penh)	*2
元首	国王/ノロドム・シハモニー (Norodom SIHAMONI)	*1,3	主要都市名	シアヌークビル、バタンバン、シエムレア	*3
			労働力総計	6,297 千人 (2000 年)	*6
独立年月日	1953 年 11 月 9 日	*3,4	義務教育年数	年間 (年)	*13
独立民族/部族名	クメール人 93%、中国人 3%、ヴィエトナム人 3%	*1,3	初等教育就学率	119.3% (1998 年)	*6
主要言語	カンボディア語 (クメール語)	*1,3	中等教育就学率	22.3% (1998 年)	*6
宗教	仏教 (小乗仏教) 95%、イスラム教 3%	*1,3	成人非識字率	32.2% (2000 年)	*13
国連加盟年	1955 年 12 月 14 日	*12	人口密度	68.10 人/K m ² (2000 年)	*6
世銀加盟年	1970 年 7 月 22 日	*7	人口増加率	2.8% (1980-2000 年)	*6
IMF 加盟年	1969 年 12 月 31 日	*7	平均寿命	平均 56.40 男 54.10 女 58.60	*10
国土面積	181.00 千 K m ²	*1,6	5 歳児未満死亡率	120/1000 (2000 年)	*6
総人口	12,021 千人 (2000 年)	*6	カロリー供給量	2,069.9cal/日/人 (2000 年)	*17

経済指標					
通貨単位	リエル (Riel)	*3	貿易量	(2000 年)	
為替レート	1US\$ = 3,815.80 (2002 年 12 月)	*8	商品輸出	1,327.1 百万ドル	*15
会計年度	Dec.31	*6	商品輸入	-1,525.1 百万ドル	*15
国家予算	(年)		輸入カバー率	3.3 (月) (2000 年)	*14
歳入総額		*9	主要輸出品目	縫製品、木材、ゴム、魚海類、農作物	*1
歳出総額		*9	主要輸入品目	石油製品、タバコ、金、建設資材、自動車	*1
総合収支	107 百万ドル (2001 年)	*15	日本への輸出	66.3 百万ドル (2001 年)	*16
ODA 受取額	398.5 百万ドル (2000 年)	*18	日本からの輸入	50.7 百万ドル (2001 年)	*16
国内総生産 (GDP)	4,005 百万ドル (2002 年)	*6			
一人当たりの GNI	300 ドル (2002 年)	*6	総国際準備	501.7 百万ドル (2000 年)	*6
分野別 GDP	農業 35.6% (2002 年)	*6	対外債務残高	2,357.0 百万ドル (2000 年)	*6
	鉱工業 28.0% (2002 年)	*6	対外債務返済率 (DSR)	2.0% (2000 年)	*6
	サービス業 36.4% (2002 年)	*6	インフレ率	6.3% (1990-2000 年)	*6
産業別雇用	農業 男 % 女 % (1998-2000 年)	*6	(消費者価格物価上昇率)		
	鉱工業 % (1998-2000 年)	*6			
	サービス業 % (1998-2000 年)	*6	国家開発計画	第 2 次社会経済開発計画:2001-2005	*11
実質 GDP 成長率	5.5%(2001-2002 年)	*6			

気象 (年～ 年平均) 観測地: プノンペン (北緯 11 度 35 分、東経 104 度 55 分)														*4,5
月	1	2	3	4	5	6	7	8	9	10	11	12	平均/計	
降水量	9.0	8.0	28.0	73.0	146.0	129.0	129.0	147.0	231.0	250.0	134.0	36.0	1,320mm	
平均気温	26.1	27.5	28.9	29.4	28.8	28.1	27.6	27.7	27.3	27.2	26.7	25.4	27.6℃	

- | | |
|--|--|
| *1 各国概況 (外務省) | *10 Human Development Report 2002 (UNDP) |
| *2 世界の国々一覧表 (外務省) | *11 Country Profile (EIU), 外務省資料等 |
| *3 世界年鑑 2000 (共同通信社) | *12 United Nations Member States |
| *4 最新世界各国要覧 10 訂版 (東京書籍) | *13 Statistical Yearbook 1999 (UNESCO) |
| *5 理科年表 2000 (国立天文台編) | *14 Global Development Finance 2002 (WB) |
| *6 World Development Indicators 2002 (WB) | *15 International Financial Statistics Yearbook 2002 (IMF) |
| *7 BRD Membership List (WB) | *16 世界各国経済情報ファイル 2002 (世界経済情報サービス) |
| IMF Members' Financial Data by Country (IMF) | *17 FAO Food Balance Sheets 2002 年 6 月 FAO Home Page |
| *8 Universal Currency Converter | 注: 商品輸入については複式簿記の計上方式を採用しているため支払額はマイナス表記になる |
| *9 Government Financial Statistics Yearbook 2001 (IMF) | |

	カンボディア国
	Kingdom of Kampuchea

項目 \ 年度	1996	1997	1998	1999	2000
技術協力	23.66	27.08	18.50	23.31	30.61
無償資金協力	71.78	41.84	78.23	86.03	79.14
有償資金協力	8.03			41.42	
総額	103.47	68.92	96.73	150.76	109.75

項目 \ 暦度	1996	1997	1998	1999	2000
技術協力	20.12	25.52	23.05	23.25	32.35
無償資金協力	55.40	36.11	58.35	27.62	65.32
有償資金協力	-4.18				1.53
総額	71.33	61.63	81.40	50.87	99.21

	贈与 (1) (無償資金協力・技術居力)	有償資金協力 (2)	政府開発援助 (ODA) (1)+(2)=(3)	その他政府資金及び民間資金 (4)	経済協力総額 (3)+(4)
二国間援助 (主要供与国)	248.2	-0.2	248.0	4.8	252.8
1. Japan	97.7	1.5	99.2	0.7	99.9
2. Australia	25.7	0.0	25.7	0.2	25.9
3. France	21.5	0.0	21.5	4.1	25.6
3. United States	23.7	-2.2	21.5	0.0	21.5
多国間援助 (主要機関)	54.2	95.6	149.8	0.0	149.8
1. AsDB			50.8	0.0	50.8
2. IDA			36.6	0.0	36.6
その他	0.8	0.0	0.8	3.3	4.1
合計	303.1	95.4	398.5	8.1	406.6

技術協力：カンボディア開発評議会 (C. D. C)
無償：カンボディア開発評議会 (C. D. C)
協力隊：カンボディア開発評議会 (C. D. C)

*18 我が国の政府開発援助 2001 (国際協力推進協会)

*19 International Development Statistics (CD-ROM)2002 OECD

*20 JICA 資料

5. 討議議事録(M/D)

添付資料 - 1

協議議事録(インセプションレポート説明時、2002年11月)

**MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON THE PROJECT FOR
REHABILITATION OF
KANDAL STUNG IRRIGATION SYSTEM
IN
THE KINGDOM OF CAMBODIA**

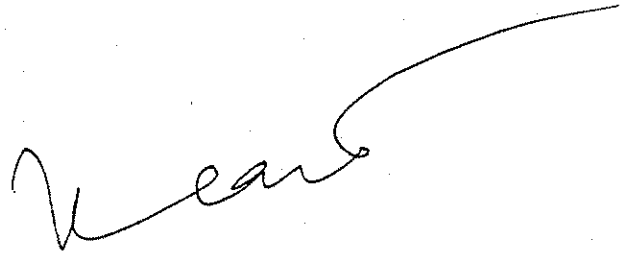
In response to a request from the Government of the Kingdom of Cambodia, the Government of Japan decided to conduct a Basic Design Study on the Project for Rehabilitation of Kandal Stung Irrigation System (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Cambodia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Kazuo NAKAGAWA, Managing Director, Agricultural Development Cooperation Department, JICA, and is scheduled to stay in the country from 10 November to 23 December, 2002.

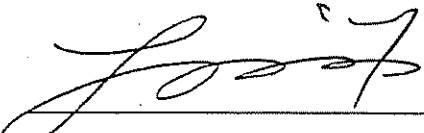
The Team held discussions with the officials concerned of the Government of Cambodia and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Phnom Penh, 15 November, 2002



H.E. Y KY HEANG
Secretary of State
Ministry of Water Resources and Meteorology



Mr. Kazuo NAKAGAWA
Leader
Basic Design Study Team
Japan International Cooperation Agency

ATTACHMENT

1. Objective of the Project

The objective of the Project is to secure the water supply for irrigation and promote the production of agricultural products in the Project area through the rehabilitation of the existing irrigation facilities, which had been constructed by the Cambodian side.

2. Project site

The site of the Project is located in Kandal Stung District in Kandal Province, as shown in Annex-1.

3. Responsible and Implementing Agency

The responsible and implementing agency is Ministry of Water Resources and Meteorology (MOWRAM) as shown in Annex.2.

4. Items requested by the Government of Cambodia

After discussion with the Team, the items described in Annex-3 were finally requested by the Cambodian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

- 5-1. The Cambodian side has understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-4.
- 5-2. The Cambodian side will undertake the necessary measures, as described in Annex-5, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Study

- 6-1. Consultants will proceed to further studies in the Cambodia until 22 December, 2002.
- 6-2. JICA will dispatch consultant team again in order to survey for the river conditions in dry season around February, 2003.
- 6-3. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around March, 2003.

6-4. In case that the contents of the report is accepted in principle by the Government of the Cambodia, JICA will complete the final report and send it to the Government of the Cambodia by July, 2003.

7. Other relevant issues

7-1. The Cambodian side requested to include the study on the spillway as well as Tuk Thla and Kompong Tuol regulators since the spillway was a component of head-works. Both sides confirmed that these facilities were examined from the viewpoint of the utilization of the river water for irrigation with maintaining the existing flood flow capacity.

7-2. MOWRAM recognized the importance of establishment of the National Steering Committee (NSC) for the smooth implementation of the Project. For the time being, the Joint Coordination Committee of "The Technical Service Center for Irrigation System Project (TSC)" will play a role as the NSC. The NSC will be organized officially after "Exchange of Note (E/N)". Both sides confirmed expected functions and members of the NSC as shown in Annex 6.

7-3. Both sides confirmed that the target of irrigation was to secure the supplemental water supply to the Project area in wet season.

7-4. Both sides confirmed that the construction of secondary and tertiary canals be implemented by the Cambodian side shall be the minimum condition for implementing the Project. The Cambodian side shall formulate the construction plan for secondary and tertiary canals, and send first version to the Japanese side until middle December 2002, second version at the time of secondary survey by consultant team in February 2003, and final version at the time of the Explanation of Draft Final Report in March 2003. The construction of secondary and tertiary canals will be implemented by the Cambodian side by their own responsibility according to the planned schedule with utilizing know-how and experience obtained through the activities of TSC.

7-5. The Japanese side expressed that the appropriate operation and maintenance for the facilities by MOWRAM shall be also the minimum condition for implementing the Project. The Cambodian side confirmed to formulate the operation and maintenance plan based on the draft final report

prepared by the Japanese side, and implement it with utilizing know-how and experience obtained through the activities of TSC.

7-6. The Cambodian side shall secure the necessary budget and personnel to operate and maintain the facilities of the Project.

7-7. The irrigation area of the Project will be determined in the course of the flow chart as shown in Annex 7.

7-8. The requested items described in Annex-3 will be further examined and determined in the course of the study by the Team in consideration of following criteria.

i) Farming Plan in Kandal Stung Area

ii) Natural conditions, especially for possible flood

iii) Managerial, technical and administrative viability

iv) Maintenance and running cost

v) Cost and Benefit

vi) Budgetary allocation of Japanese side

vii) Financial viability

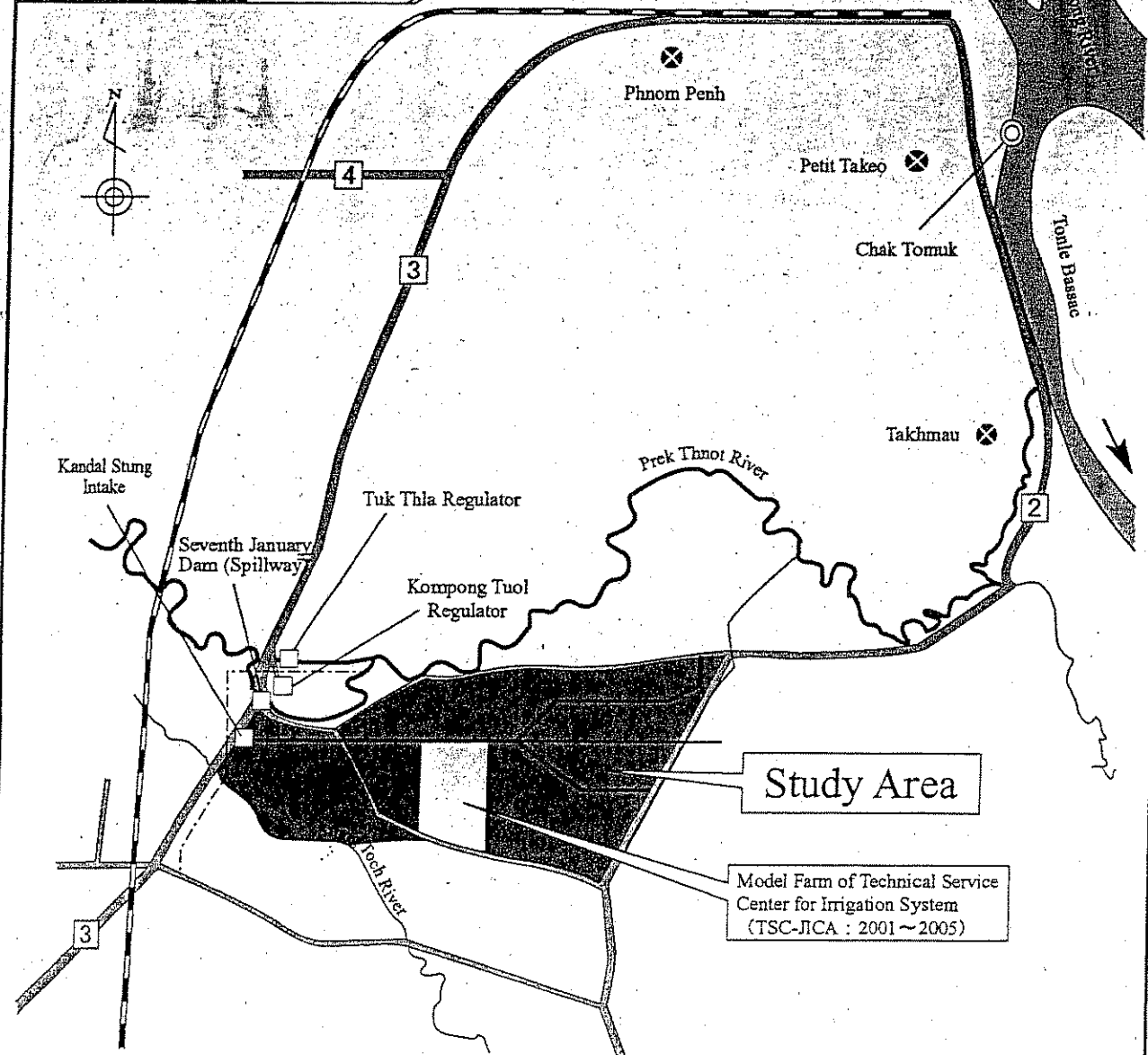
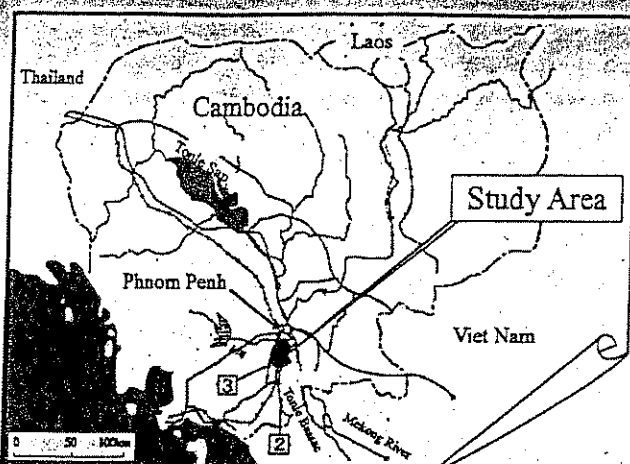
viii) No duplication of similar support by the Government of the Cambodia and other donors

7-9. Both sides understood that it was essential to secure the land for the improvement of the canals and roads including temporary office and storage yards etc. The Cambodian side promised that this matter shall be executed by the Cambodian side prior to the implementation of the Project.

7-10. Both sides confirmed that the necessary collaboration between the Project and TSC would enhance the effect and sustainability of the Project. Both sides will take necessary measures to collaborate among them especially for the construction of secondary and tertiary canals, and the operation and maintenance of the Project.

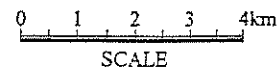
7-11. The Cambodian side confirmed that there would be no influence to the Project by implementing the newly approved irrigation project by the Government of Cambodia, which named as the "Integrated Development Project in the Western Side of Phnom Penh Municipality" at the upstream side of Tuk Thla regulator.

7-12. Both sides confirmed that the agricultural products in the Project area would not be for the export for Japan and be domestic supply for the poverty reduction in the Project area.



LEGEND

	Study Area
	National Road
	Other Road
	Rail Way
	River
	Lake
	Existing Facility
	Canals
	Rainfall Station
	Water Level Gaging Station



The Royal Government of Cambodia

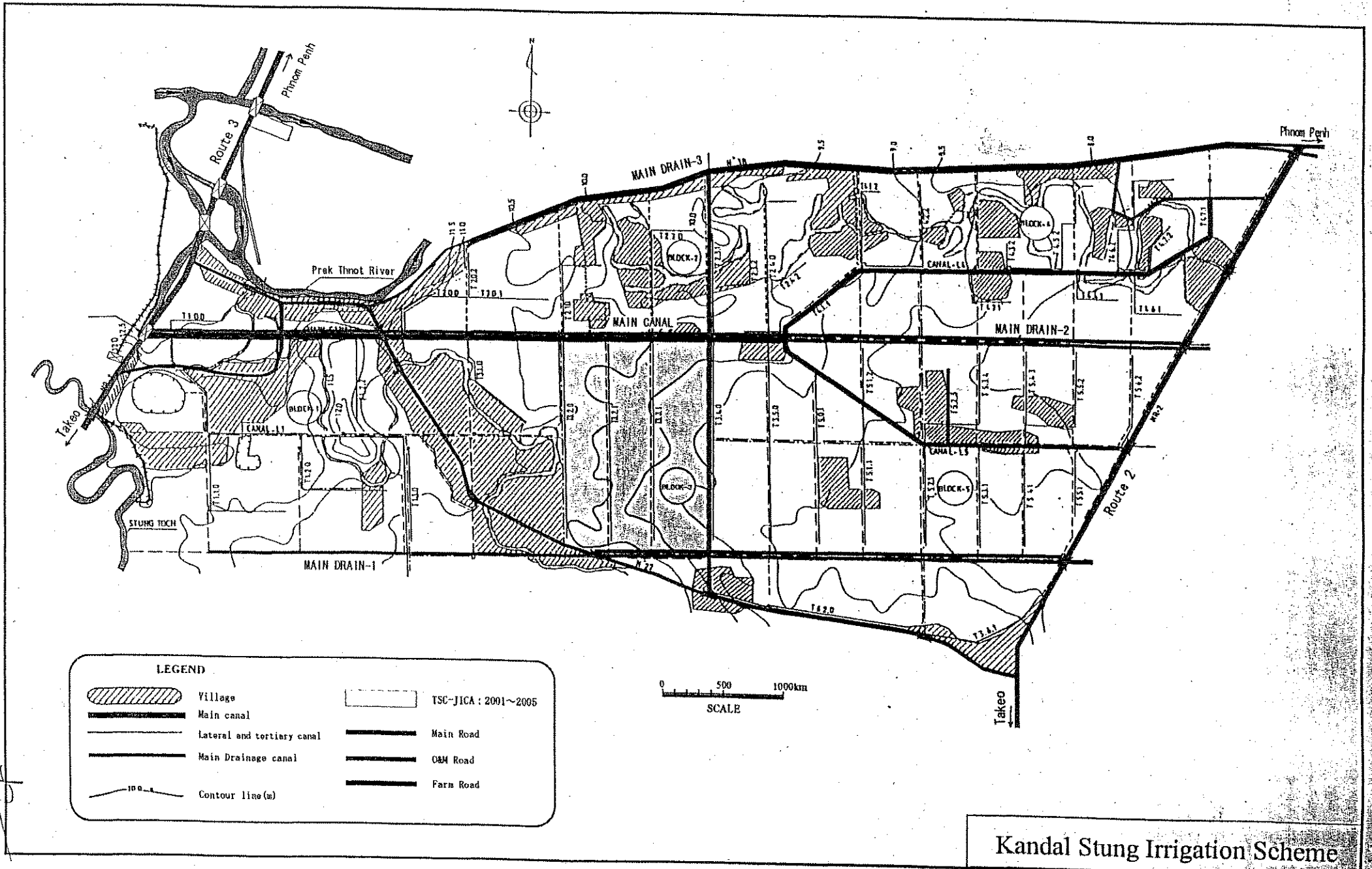
Rehabilitation of the Kandal Stung Irrigation System in the Lower Prek Thnot Basin

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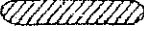
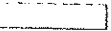






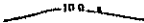
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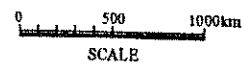
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A1-6



LEGEND

	Village		TSC-JICA : 2001~2005
	Main canal		Main Road
	Lateral and tertiary canal		O&M Road
	Main Drainage canal		Farm Road
	Contour line (m)		



Kandal Stung Irrigation Scheme

Amre



Organizational Structure of the Ministry of Water Resources and Meteorology

Minister
H.E. Mr. Lim Kean Hor
Secretaries of State (2)
H.E. Mr. Y Ky Heang
H.E. Mr. Ngo Phen

Under Secretaries of State (5)
H.E. Mr. Veng Sakhon
H.E. Mr. Phang Sareth
H.E. Mr. Som Sarith
H.E. Mr. Tom Bun Noeun
H.E. Mr. Oeur Hun Ly

Cabinet and Advisors

General Inspector
H.E. Mr. Nei Lon
Deputy General Inspector
Mr. Prum Sarueun

Director General of Administration Affaires
H.E. Mr. Ly Chana
Deputy Director General of Administration Affaires
Mr. Mei Li Houth

Director General of Technical Affaires
H.E. Mr. Bun Hean
Deputy Director General of Technical Affaires
Mr. Chun Bithol

Administration and Human Resources Department
Mr. Sin Vuthy

Planning and International Cooperation Department
Mr. Pich Veasna

Finance Department
Mr. Chong Seng Im

Water Resources Management and Conservation Department
Dr. Teng Tara

Hydrology and River Works Department
Mr. Te Navuth

Meteorology Department
Ms. Seth Vanna Reth

Water Quality Control Department
Mr. Te Auvkim

Water Pollution Control Department
Mr. Pang Peng

Energy and Environment Department
Mr. Em Bunthoeun
Mr. Ngoun Pich

Provincial Services of Water Resources and Meteorology

Administration Offices

Irrigation and Drainage Offices

Water Resources Management and Conservation Offices

Water Supply Offices

Public Meteorology Offices

District Water Resources Office

AI-7

Annex.3

Items Requested by Government of Cambodia (GOC)

The components of the Project requested by GOC are to rehabilitate the Kandar Stung Irrigation System. Requested facilities to be rehabilitated are as follows:

- 1) Regulators : - located on the Prek Thnot River
- two places (Tuk Thla Regulator and Kompong Tuol Regulator)
- 2) Intake Structure : - located at right bank of the Prek Thnot river,
- one place
- 3) Main Irrigation Canal : - concrete lined canal with 5.4km length,
- one canal
- 4) Drainage Canal : - unlined earth canal with 18.0km length,
- three canals
- 5) O&M Roads : - laterite paved road with 28.0km length
- 6) Farm Roads : - laterite paved road with 8.0km length,
- three roads
- 7) Spillway : - located on the Prek Thnot River
(Seventh January Dam)

Annex 4 : JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedure

1) Japan's Grant Aid Program is executed through the following procedures.

Application (Request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval (Appraisal by the Government of Japan and Approval by Cabinet)

Determination of Implementation (The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request. If necessary, JICA send a Preliminary Study Team to the recipient country to confirm the contents of the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic

document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- a) confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- b) evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;
- c) confirmation of items agreed on by both parties concerning the basic concept of the Project;
- d) preparation of a basic design of the Project; and
- e) estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participates the Study and prepares a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Project, JICA recommends the same consulting firm which participated in the Study to the recipient country, in order to maintain the technical consistency between the Basic Design and Detailed Design as well as to avoid any undue delay caused by the selection of a new consulting firm.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

- 6) Undertakings required to the Government of the recipient country
- a) to secure a lot of land necessary for the construction of the Project and to clear the site;
 - b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities outside the site;
 - c) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid;
 - d) to exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;
 - e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
 - f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Project; and
 - g) to bear all the expenses, other than those covered by the Grant Aid, necessary for the Project.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.

- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

ANNEX-5: UNDERTAKINGS BY THE GOVERNMENT OF THE RECIPIENT COUNTRY

1. To secure a lot of land necessary for the Project;
2. To clear and level the site for the Project prior to the commencement of the construction;
3. To provide a proper access road to the Project site;
4. To provide facilities for distribution of electricity, water supply, telephone trunk line and drainage and other incidental facilities outside the site;
5. To undertake incidental outdoor works, such as gardening, fencing, exterior lighting, and other incidental facilities in and around the Project site, if necessary;
6. To ensure prompt unloading and customs clearance of the products purchased under the Japan's Grant Aid at ports of disembarkation in the Recipient Country;
7. To exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in THE RECIPIENT COUNTRY with respect to the supply of the products and services under the verified contracts;
8. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into THE RECIPIENT COUNTRY and stay therein for the performance of their work;
9. To bear commissions, namely advising commissions of an Authorization to Pay (A/P) and payment commissions, to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement (B/A);
10. To provide necessary permissions, licenses, and other authorization for implementing the Project, if necessary;
11. To ensure that the facilities constructed and equipment purchased under the Japan's Grant Aid be maintained and used properly and effectively for the Project; and
12. To bear all the expenses, other than those covered by the Japan's Grant Aid, necessary for the Project.

Major Undertaking to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1.	To secure land		●
2.	To clear, level and reclaim the site when needed		●
3.	To construct access roads		
	1) Within the site when required	●	
	2) Outside the site		●
4.	To rehabilitate main irrigation canal and its related structures		
	1) Rehabilitation of Regulators and Spillway (if required)	●	
	2) Construction of intake structure	●	
	3) Rehabilitation of main irrigation canal and its related structures	●	
	4) Rehabilitation of O&M Roads	●	
	5) Construction of secondary and tertiary irrigation canal and its related structures		●
	6) On-farm Works		●
5.	To rehabilitate drainage facilities		
	1) Rehabilitation of main drainage canals and its related structures	●	
	2) Secondary and tertiary drainage canals and its related structures		●
6.	To construct farm roads		
	1) Construction of farm roads	●	
	2) Rehabilitation of related structures	●	
7.	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A (Banking Arrangement)		
	1) Advising commission of A/P (Authorization to Pay)		●
	2) Payment commission		●
8.	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site		●
9.	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		●
8.	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.		●
9.	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant.		●
10.	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment.		●

(Draft)

National Steering Committee for The Project for Rehabilitation of Kandal Stung Irrigation System in The Kingdom of Cambodia

1. Functions

A National Steering Committee which consists of personnel from both the Japanese and Cambodian sides will meet at least XX a year and when necessary for the following objectives:

- i. To provide the overall coordination of the project within the MOWRAM and will provide formal liaison with senior MOWRAM officials and with other involved Ministries and Department relevant,
- ii. To review the overall progress of the project formulation and implementation,
- iii. To review and exchange opinions on important issues in relation to the project,
- iv. To provide advice to the project team for the better implementation and management of the project,

2. Composition of the committee

The National Steering Committee is composed of the following members:

- i. Chairperson of the Committee, Under Secretary of State of MOWRAM
- ii. Members:
 - Project Director, Director General of Technical Affairs of MOWRAM
 - Director of Planning and International Cooperation Dept., MOWRAM
 - Director of Engineering Dept., MOWRAM
 - Director of Irrigated Agriculture Dept., MOWRAM

- Director of Water Resource Management and Conservation Dept., MOWRAM
- Deputy Director of Engineering Dept., MOWRAM
- Director of Kandal Provincial Bureau of Water Resources and Meteorology
- CDC representative
- MAFF representative
- Resident Representative of the JICA office in the Kingdom of Cambodia
- JICA expert for MOWRAM
- Chief Advisor of TSC

3. Observers:

Officials of the Embassy of Japan in the Kingdom of Cambodia may attend the National Steering Committee meetings as observers.

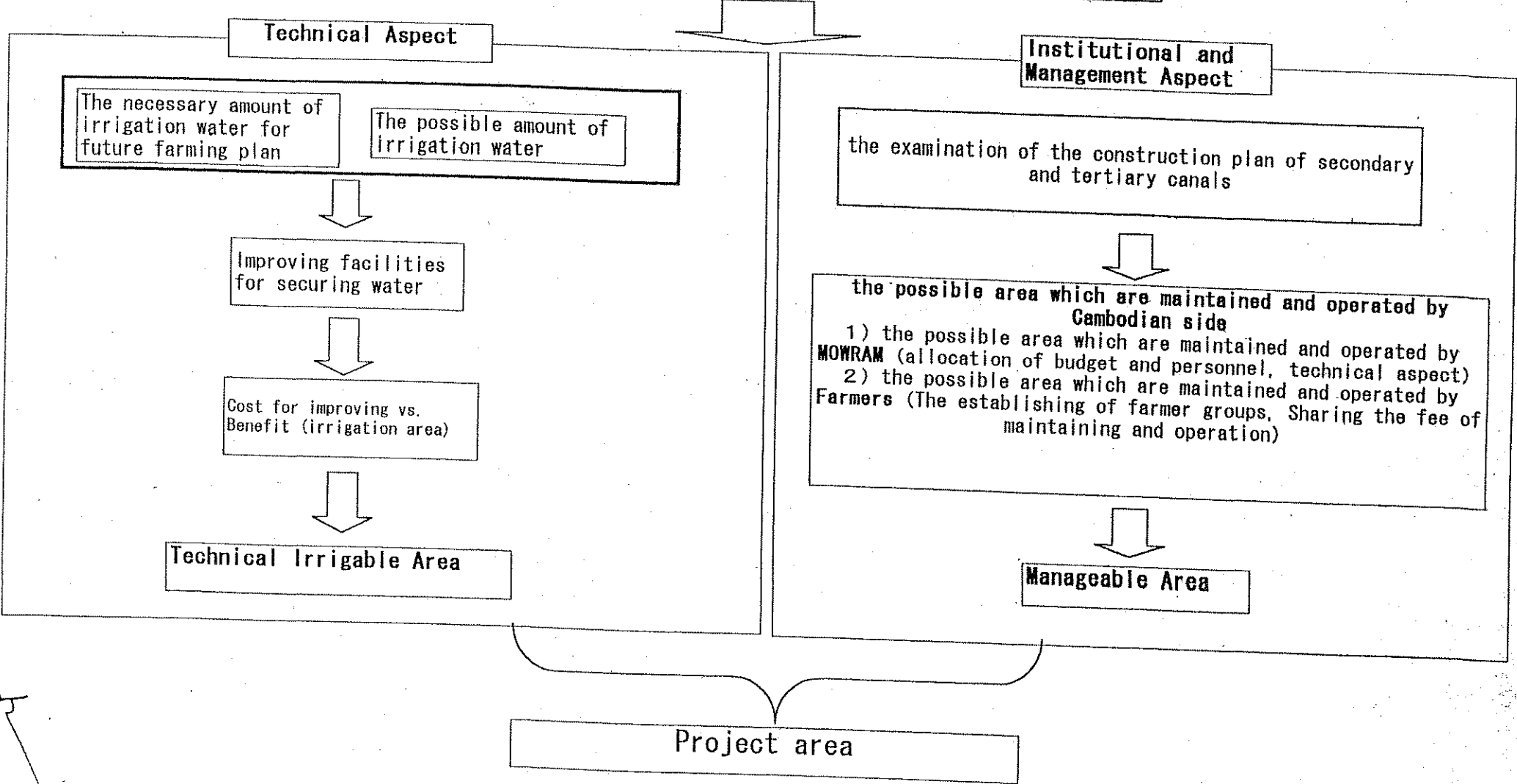
Persons who are nominated by the Chairperson may also attend the National Steering Committee meeting.

15

h

The procedure of the determination of the Project area

Requested area (1,950ha)



AI-18



添付資料 - 2

農道に関する議事録

Minutes of Discussions

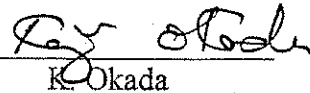
1. Subject: Conditions of Three Farm Roads in the Kandal Stung Irrigation System
2. Date and Place: 21 November 2002, Office of the Under Secretary of State, MOWRAM
3. Attendance: H.E. Mr. Veng Sakhon: Under Secretary of State, MOWRAM
K. Okada: Chief Consultant for Basic Design
Y. Niikawa: Physical Conditions Surveyor of the

4. Discussions:

- (1) The Consultant Team explained the present conditions of three farm roads that were proposed to be rehabilitated under the Project, based on the reconnaissance report prepared and submitted by the Team as per attached.
- (2) The Consultant Team expressed his opinion that the conditions of three farm roads were in satisfactory level as a rural road. The Team recommended MOWRAM to conduct further survey on this matter by himself, if necessary.
- (3) MOWRAM accepted the results of the survey by the Team and to exclude three roads from his request under the Project, since it was confirmed that three roads have been rehabilitated and in satisfactory conditions as a rural road.



H.E. Veng Sakhon
Under Secretary of State
MOWRAM



K. Okada
Chief Consultant
Nippon Koei Co., Ltd.

22/Nov/02

添付資料 - 3

「カ」国環境省よりのレター（英訳付き）

KINGDOM OF CAMBODIA
NATION RELIGION KING

រាជរដ្ឋាភិបាល

COUNCIL MINISTER
Ministry of Environment
រដ្ឋមន្ត្រីបរិស្ថាន

No. 258 S>S β SCN

Phnom Penh, 31 December 2002

To : Ministry of Water Resources and Meteorology

Subject : The case of recommendation and suggestion on the Kandal Stung Rehabilitation Project

Reference : Letter of Ministry of Water Resources and Meteorology No. 1796 fT] dated 27 November 2002

Referring to the above subject and reference, I have the honor to inform Your Excellency Minister that : Ministry of Environment **accepted in principle** on the **Kandal Stung Irrigation Rehabilitation Project** that was requested by Ministry of Water Resources and Meteorology (MOWRAM) for recommendation and suggestion. According to the Sub-decree on Environmental Impact Assessment (EIA), the size of the mentioned project is less than the requirement in the annex of the Sub-decree. So, this project can be processed without the report of EIA.

However, this project is not connected with the annex of Ministry of Environment's Sub-decree, but MOE understand that during the implementation of this project it can be impacted to the Environment. So, MOE would like to recommend some point as follows:

During the implementation of this project, the owner should considered as follows:

- to keep natural water way in the region for using by people at down stream .
- to be assured no flooding in the village, road, camps and rice field of the people.
- to increase possibility of fish migration, bird and other animal in the case of seeing that it is necessary.
- to conduct the appropriated measure and efficiency to reduce the damage of irrigation system by flood.

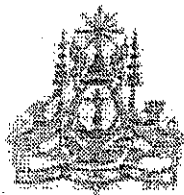
Generally, the owner of the project has to assure the sustainable environment of both social and natural.

Please keep you informed on the above recommendation and suggestion.

Yours sincerely,

MOK MARET
Minister

CC: - General Directorate of Technical
- Chronicle - file



ព្រះរាជាណាចក្រកម្ពុជា
 ជាតិ សាសនា ព្រះមហាក្សត្រ
 ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ
 អគ្គនាយកដ្ឋានសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ
 លេខ ២៩៩ អង្គ គ/ក/១៣

ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ
 ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ

កម្រិតប្រាក់បញ្ញើ ថ្ងៃទី ៣១ ខែ ២០០២

គោលដៅ

បកប្រែប្រែប្រួលទ្រឹស្តីស្តង់ដារនៃស្តង់ដារ និងទុនស៊ីមេន

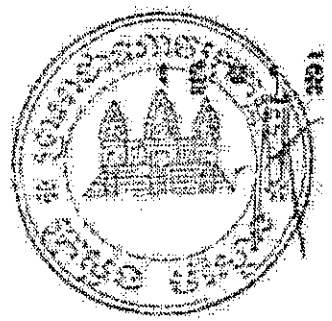
Handwritten notes:
 ១២/៣/១៣
 ១៣/៣/១៣

កម្មវត្ថុ: ការពិនិត្យ និង ផ្តល់យោបល់លើគំរោងស្តង់ដារឡើងវិញប្រព័ន្ធប្រកាសប្រកាសស្តង់ដារ ។
ឈោទ: លេខ ១៧៩៦ អង្គ គ/ក/១៣ ថ្ងៃទី ២៧ ខែ វិច្ឆិកា ឆ្នាំ ២០០២ របស់ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ ។
 ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ និងយោងទៅលើ ខ្លឹមសារកិច្ចព្រមព្រៀងស្តីពីការប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
 ឯកភាពជាគោលការណ៍ លើគំរោងស្តង់ដារឡើងវិញប្រព័ន្ធប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
 ធ្វើការប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។ យោងទៅលើកិច្ចព្រមព្រៀងស្តីពីការប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
 គំរោងស្តង់ដារឡើងវិញប្រព័ន្ធប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន គឺស្តង់ដារក្រុមហ៊ុន ដែលបានកំណត់ក្នុងបទប្បញ្ញត្តិ និងបទប្បញ្ញត្តិ ។
 គំរោងនេះអាចដំណើរការបាន ដោយគ្មានការប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។

ដោយឡែក ធ្វើការពិនិត្យគំរោងនេះដល់ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ និងការប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
 ផ្តល់នូវ ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ មួយដំបូងដូចខាងក្រោម៖
 ក្នុងគោលដៅដំណើរការស្តង់ដារឡើងវិញ និងប្រតិបត្តិការ គ្នាស្តង់ដារក្រៅ៖

- រក្សាប្រកបដ្ឋានទឹកធម្មជាតិ ក្នុងគំរោងគំរោងប្រជាជនដែលរស់នៅខាងក្រោមទន្លេទឹក (down stream) ប្រើប្រាស់ ។
 - ធានាឱ្យមានការរង់ចាំភូមិភាគ ផ្លូវ ធុរកិច្ច និងប្រកាសប្រកាសស្តង់ដារ ។
 - បង្កើតលទ្ធភាពវិនិយោគរបស់ពលរដ្ឋ ពពួកសេដ្ឋកិច្ច និងទុនស៊ីមេន ក្នុងការពិនិត្យឃើញមានការរង់ចាំ ។
 - លើកកម្ពស់ការឱ្យមានសម្រេច និងមានប្រសិទ្ធភាព ដើម្បីកាត់បន្ថយការខូចខាតដល់ប្រព័ន្ធប្រកាសប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
- ជំរុញ ភាគីម្ចាស់គំរោងប្រកាសស្តង់ដារឡើងវិញ ឱ្យបាននូវទិសដៅវិនិយោគទាំងសង្គម និងធម្មជាតិ ។
 លេខក្តីផ្តល់ដល់ការប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។
 ស្តង់ដារក្រុមហ៊ុនឱ្យមានការប្រកាសស្តង់ដារ និងទុនស៊ីមេន ។

ជំនាញ
 - អគ្គនាយកដ្ឋានសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ
 - ប៉ារ៉ាស



ប៊ុន ហ៊ុន សែន
 ប្រធានាធិបតី

添付資料 - 4

水資源気象省による二次・三次用水路整備予算申請書



ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ
 ២០០៩ * ២០០៩

ឧបនាយករដ្ឋមន្ត្រី និង ឧបនាយករដ្ឋមន្ត្រី

រាជធានីភ្នំពេញ, ថ្ងៃទី 16 ខែ 11 ឆ្នាំ ២០០៩

លេខ 094 ចន

រដ្ឋមន្ត្រីក្រសួងឧបនាយករដ្ឋមន្ត្រី និង ឧបនាយករដ្ឋមន្ត្រី
សូមគោរពជូន

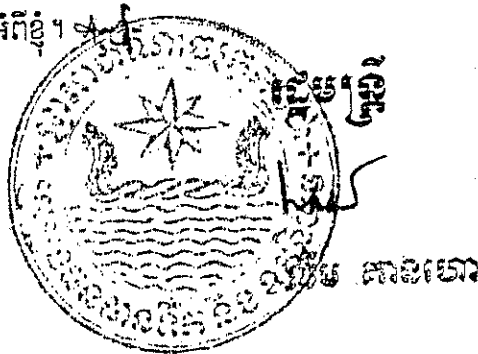
ឯកឧត្តមទេសរដ្ឋមន្ត្រី រដ្ឋមន្ត្រីក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ

កម្មវត្ថុ: សំណើសុំថវិកាបដិភាគចំនួន ៧៦៧.៤៩៥.០០ ដុល្លារអាមេរិក (ប្រាំពីររយហុកសិបប្រាំពីរពាន់បួនរយកោសិបប្រាំដុល្លា
 អាមេរិកសំរាប់ស្ថាប័នប្រព័ន្ធស្រោចស្រពកណ្តាលស្ទឹង ស្ថិតក្នុងស្រុកកណ្តាលស្ទឹង ខេត្តកណ្តាល

យោង: Minutes of Discussions on the Basic Design Study on the Project for Rehabilitation of Kandal Stung Irrigation System in the Kingdom of Cambodia dated on 15th November, 2002
ជូនគ្រាប់: Kandal Stung Irrigation Project in Kandal Province

សេចក្តីដូចមានចែងក្នុងកម្មវត្ថុ យោង និងភ្ជាប់ខាងលើនេះ ខ្ញុំសូមជំរាបជូនឯកឧត្តមទេសរដ្ឋមន្ត្រីមេត្តាជ្រាបថា រដ្ឋាភិបាលនៃប្រទេសជប៉ុនបានសន្យាផ្តល់ហិរញ្ញប្បទានសំរាប់សិក្សាគ្រោងប្លង់ និងសាងសង់ប្រឡាយមេ ក្នុងប្រព័ន្ធស្រោចស្រពកណ្តាលស្ទឹងស្ថិតក្នុងស្រុកកណ្តាលស្ទឹងខេត្តកណ្តាល ។ ចំណែកឯប្រព័ន្ធស្រោចស្រពជាបន្តបន្ទាប់សំរាប់រាជរដ្ឋាភិបាលកម្ពុជា ។ តំរោងការនេះនៅពេលស្តាររួចវានឹងអាចកាត់បន្ថយជំនន់ស្ទឹងព្រែកត្នោត ធានាដល់ការងារស្រោចស្រពស្រូវរដូវវស្សាចំនួន ១៩៥០ ហិកត និងស្រោចស្រពស្រូវប្រាំងចំនួន ៣០០ ហិកត ដែលទទួលបានស្រូវអាចនឹងកើនឡើងដល់ ៣.៥ តោន/ហិកត ផ្គត់ផ្គង់ត្រីសំរាប់ប្រជាជនបរិភោគនិងជាផ្នែកមន្ត្រីកម្មវិធីផងដែរ ដែលជាកត្តារួមចំណែកយ៉ាងធំធេង ក្នុងការកាត់បន្ថយភាពក្រីក្ររបស់ប្រជាជននៅតំបន់ខាងលើ ចំនួន ២៨០០ គ្រួសារដែលរស់នៅក្នុងឃុំចំនួន ៧ ក្នុងស្រុកកណ្តាលស្ទឹង ខេត្តកណ្តាល ។

អាស្រ័យហេតុនេះ សូមឯកឧត្តមទេសរដ្ឋមន្ត្រីមេត្តាពិនិត្យនិងសំរេចតាមការគួរ ។
 សូមឯកឧត្តមទេសរដ្ឋមន្ត្រីមេត្តាទទួលនូវការគោរពដ៏ខ្ពង់ខ្ពស់អំពីខ្ញុំ ។



- ចំលងជូន**
- អង្គការ JICA
 - អង្គការ PMO
 - "ដើម្បីមុខការ"
 - ឯកសារ-កាលប្បវត្តិ

添付資料 - 5

協議議事録(第二次現地調査結果説明時、2003年2月)

MINUTES OF MEETING

1. **Date:** February 18, 2003
2. **Place:** Conference Room of MOWRAM
3. **Subject:** Result of Second Field Survey for the Basic Design Study on the Project for Rehabilitation of Kandal Stung Irrigation System in the Lower Prek Thnot Basin

4. Discussion

At the end of the second survey, senior officials of MOWRAM and the Study Team as well as concerned agencies held a meeting based on the survey results conducted by the Study Team. The meeting was chaired by H.E. Mr. Veng Sakhon, Under Secretary of State, Ministry of Water Resource and Meteorology. The list of participants in the meeting is attached as ANNEX-1. Based on the explanation of survey results and findings, various discussions were made between the parties. The major points of discussions and agreed upon both parties are as follows:

1) Findings of the Second Field Survey by the Study Team

- a) MOWRAM basically agreed with the findings reported by the JICA Study Team.
- b) Both sides confirmed that leakage problem was observed in both Tuk Thla and Kompong Tuol regulators, of which effect on stability of the regulators shall be examined at home office work of the Study Team in Japan.

2) Rehabilitation Project Plan for the Secondary/Tertiary Canals

- a) Both sides confirmed importance of the implementation of the Rehabilitation Project for the Secondary / Tertiary Canals of the Project area in order to make its efficiency full as whole Kandal Stung Irrigation System.
- b) The Study Team confirmed that MOWRAM has submitted the latest plan of the Rehabilitation Project of the Secondary / Tertiary Canals with a budgetary request letter to Ministry of Economy and Finance (hereinafter referred to MEF).
- c) The Study Team confirmed that MOWRAM has already explained to MEF about the plan of the Rehabilitation Project of the Secondary / Tertiary Canals, and MEF has understood the project should be conducted in collaboration with the rehabilitation of the main irrigation system and Japanese technical cooperation project, and recognized

the importance of the project.

- d) Both sides confirmed Royal Government of Cambodia (hereinafter referred to RGC) has put a priority on irrigation sector especially improvement of the existing irrigation systems mentioned in "The Implementation of Economic and Financial Reforms : Report for 1999-2003) and the discussion made between MEF and MOWRAM. The Study Team confirmed that MOWRAM would have discussions with MEF to put the priority on the project including the allocation of the Japanese counterpart fund soon
- e) MOWRAM agreed to prioritize the Rehabilitation Project of the Secondary / Tertiary Canals as one of the top prioritized projects and make continuous efforts to secure the implementation of the project by conducting close discussion with MEF.

3) Land Acquisition related to Rehabilitation of Main Irrigation System

Both sides confirmed that MOWRAM would provide a letter designated to Japanese Minister of Foreign Affairs, referring to assure that MOWRAM and Inter-Ministerial Resettlement Committee would take the whole responsibility to carry out land acquisition work under the agreement with the concerned beneficiaries prior to March 12, 2003 at the explanation of the Study Team Results to the RGC and Discussion.

4) The Project O&M Framework

- a) Both sides confirmed that MOWRAM explained that the proposed O&M Plan (ANNEX-2) by the Study Team had some difficulty to harmonize with the policy of Statue No 306 in terms of the ISF use, and the Project O&M framework shall be further examined later.
- b) Both sides confirmed that MOWRAM takes responsibility of the whole O&M work for the main irrigation facilities and of establishing the Project O&M Office and of organizing and strengthening the FWUC for the Project by assigning the required staff to the Project O&M Office.

5) The Integrated Development Project in the Western Side of Phnom Pen Municipality

The Cambodian side confirmed that the newly approved project have already been finalized and completed to rehabilitate the 20 km of the main canal including 1km new construction, out of the projected 70 km length, and would be no influence to the Kandal Stung Irrigation

Project.

6) Arrangement of Necessary Formality to Investigate & Remove UXO by MOWRAM

Both sides confirmed that MOWRAM committed to proceed with official formality of investigating and removing the UXO in the Kandal Stung Irrigation Project area by her own budget after the E/N, especially 5.4 km length of the main canals with 15 m width in both sides and other site as required.

7) Purpose of the Project

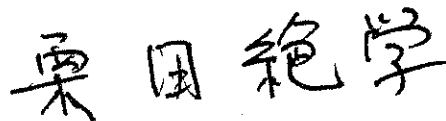
Both sides confirmed that the purpose of rehabilitating the Kandal Stung Irrigation System in the Lower Prek Thnot Basin was aimed at crystallizing a new farming system by introducing rice double cropping system in order to reduce rural poverty.

8) Custom Clearance/Banking Cost

According to the Inception Meeting Minutes, i.e, Annex 5, both sides confirmed that MOWRAM bore the cost generated from custom clearance and banking arrangement associated with implementation of the construction work.



H.E. Mr. Veng Sakhon
Under Secretary of State,
Ministry of Water Resources and Meteorology
Royal Government of Cambodia



for Mr. K. Okada
Chief Consultant for the Study Team
Japan International Cooperation Agency
(Nippon Koei Co., Ltd)

25

List of Attendance

Date: February 18, 2003

Time: From 9:00 am

Place: Office of Under Secretary of State, MOWRAM

Subject: Explanation of Field Survey Results

No	Name	Designation	Signature
1	Ueng Sakhon	Under Secretary of State	Ueng Sakhon
2	THENG PARRA	Director Dept of W. Resources	Theng PARRA
3	TE AUV. KIM	Director Dept Irrigated Agriculture	Te AUV. KIM
4	Ngoun Pich	Deputy Dept of engineering	Ngoun Pich
5	PRUM KANTHA	IRRIGATION AND DRAINAGE DEP.	Prum KANTHA T.S.C
6	MEAS. SAVOEN		Meas. SAVOEN T.S.C
7	TEAV. VUTHA		Teav. VUTHA T.S.C
8	YOL SOTHA		Yol SOTHA T.S.C
9	HAY BUNTHOEN		Hay BUNTHOEN T.S.C
10	Kenji Yasuda	TSC expert.	宇田 憲司
11	Takanobu Kobayashi	JICA Advisor	小林 隆信
12	Jiro Takeichi	JICA Cambodia office	武部 一郎
13	Yasunori Ueda	Japanese Embassy	宇田 憲司
14	Hidetoshi Sawada	JICA Study Team	澤田 英典
15	Zetsugaku KURITA	JICA Study Team	栗田 節生
16	Yutaka NiiKawa	JICA Study Team	新川 豊
17			
18			
19			
20			

*Basic Design Study
On
Rehabilitation
Of
The Kandal Stung Irrigation System
In
The Lower Prek Thnot Basin
In
The Royal Government of Cambodia*

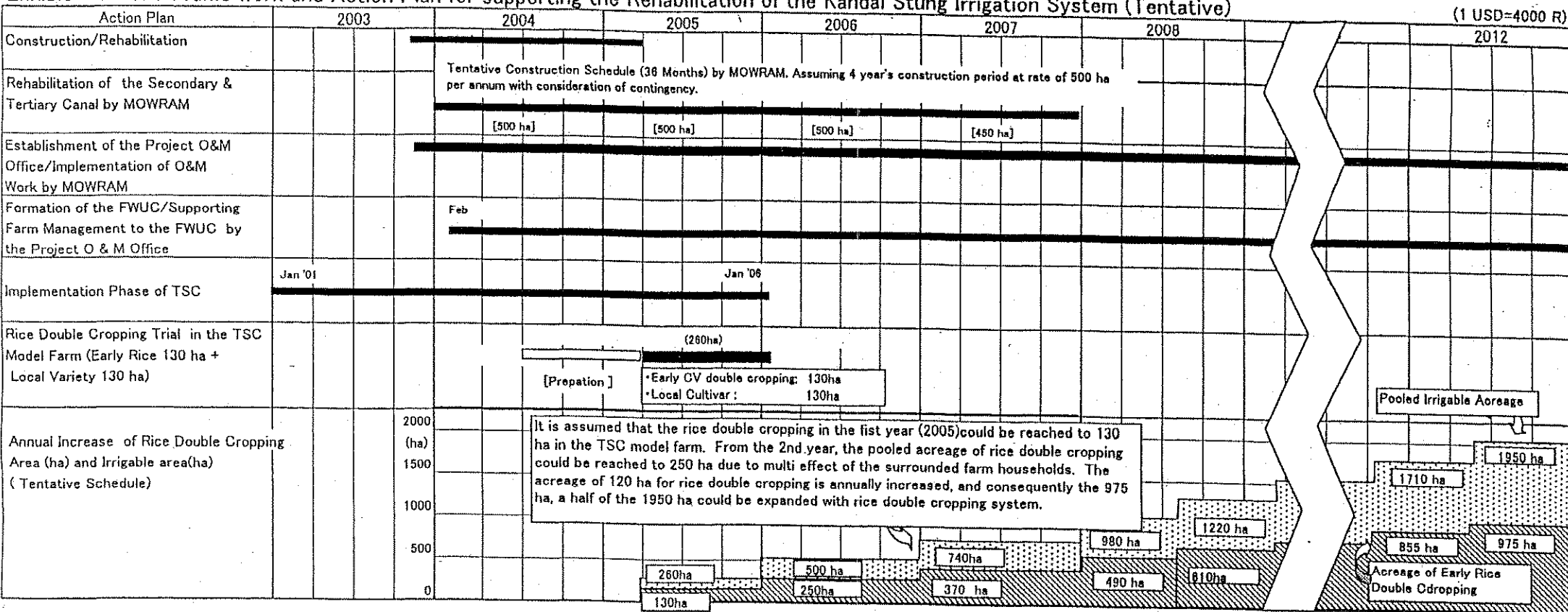
Operation and Maintenance Plan
(Draft)

Table of Contents

- Exhibit - 1 The Frame work and Action Plan for supporting the Rehabilitation of the Kandal Stung Irrigation System
- Exhibit - 2 The O & M Frame work for the Kandal Stung Irrigation Project
- Exhibit - 3 Organization for O&M Activities for the Kandal Stung Irrigation Project
- Exhibit - 4 Implementing Organs and its Role for the Kandal Stung Irrigation Project
- Exhibit - 5 TOR of the Staff assigned to the Project O&M Office
- Exhibit - 6 Annual Cost of the Project O&M Office financed by MOWRAM
- Exhibit - 7 Expense for Establishment of the Kandal Stung Irrigation Project O&M Office
- Exhibit - 8 Annual Subsidy to the Project O&M Office by MOWRAM

Exhibit - 1 The Frame work and Action Plan for supporting the Rehabilitation of the Kandal Stung Irrigation System (Tentative)

(1 USD=4000 R)



Assigned Staff to the Project O & M Office

Staff	Person
Chief Irrigation Engineer	1
• Technician	1
• Assistant	1
Senior Agriculture Extension Officer	1
• Technician	1
• Assistant	1
Senior Irrigation Community Organizer	1
• Vice ICO	1
• Assistant	1
Chief Accountant	1
• Assistant	1
Total	11

ISF can be applied to the O & M cost for the Project.

Annual ISF per hectare is;

Annual O & M cost 24527 USD /1950 ha = 12.6 USD/ha

Since rice double cropping is scheduled, so

12.6 USD /2 times = 6.3 USD/ha/season

This rate of ISF is well bearable by the beneficiaries.

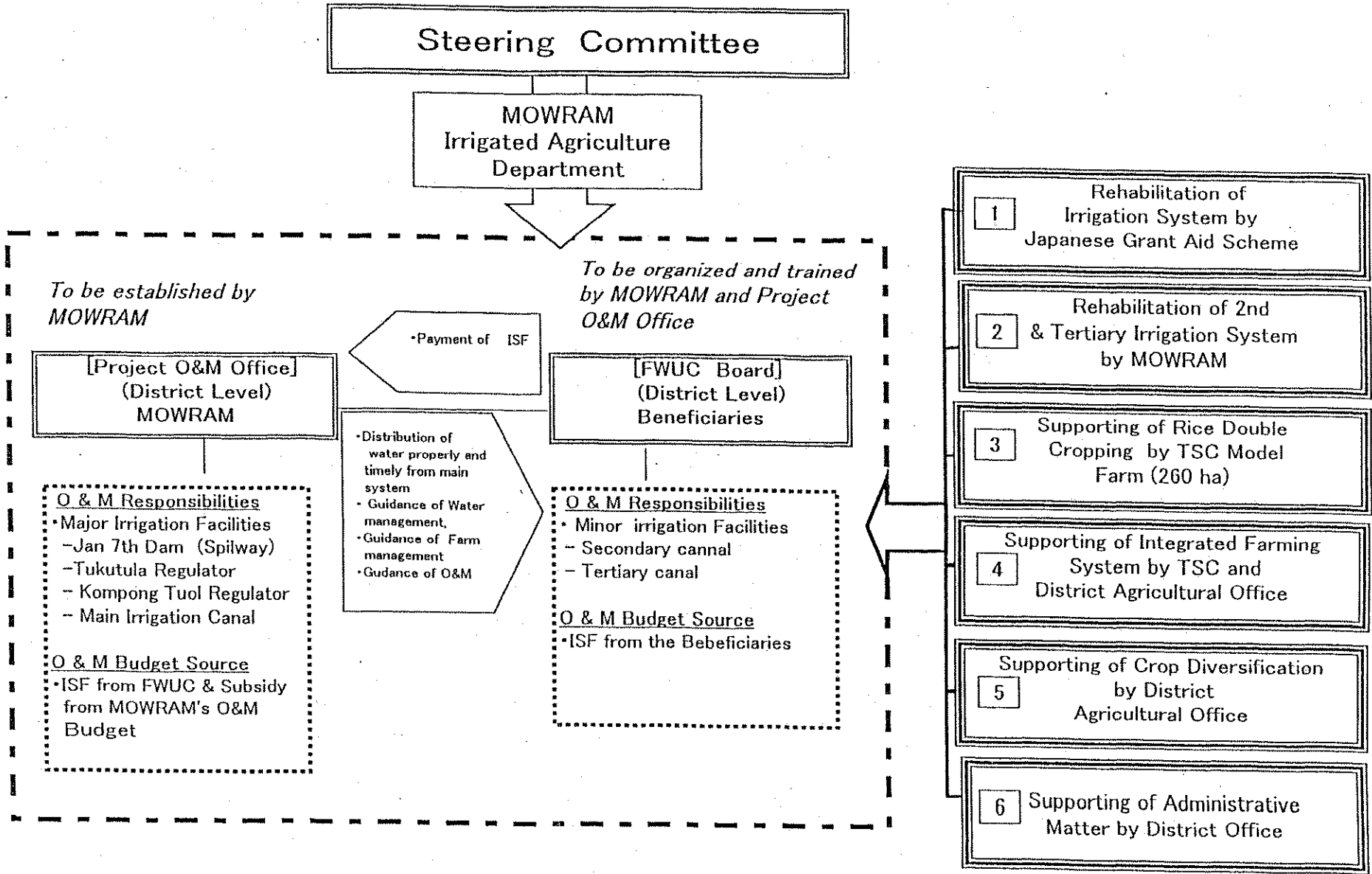
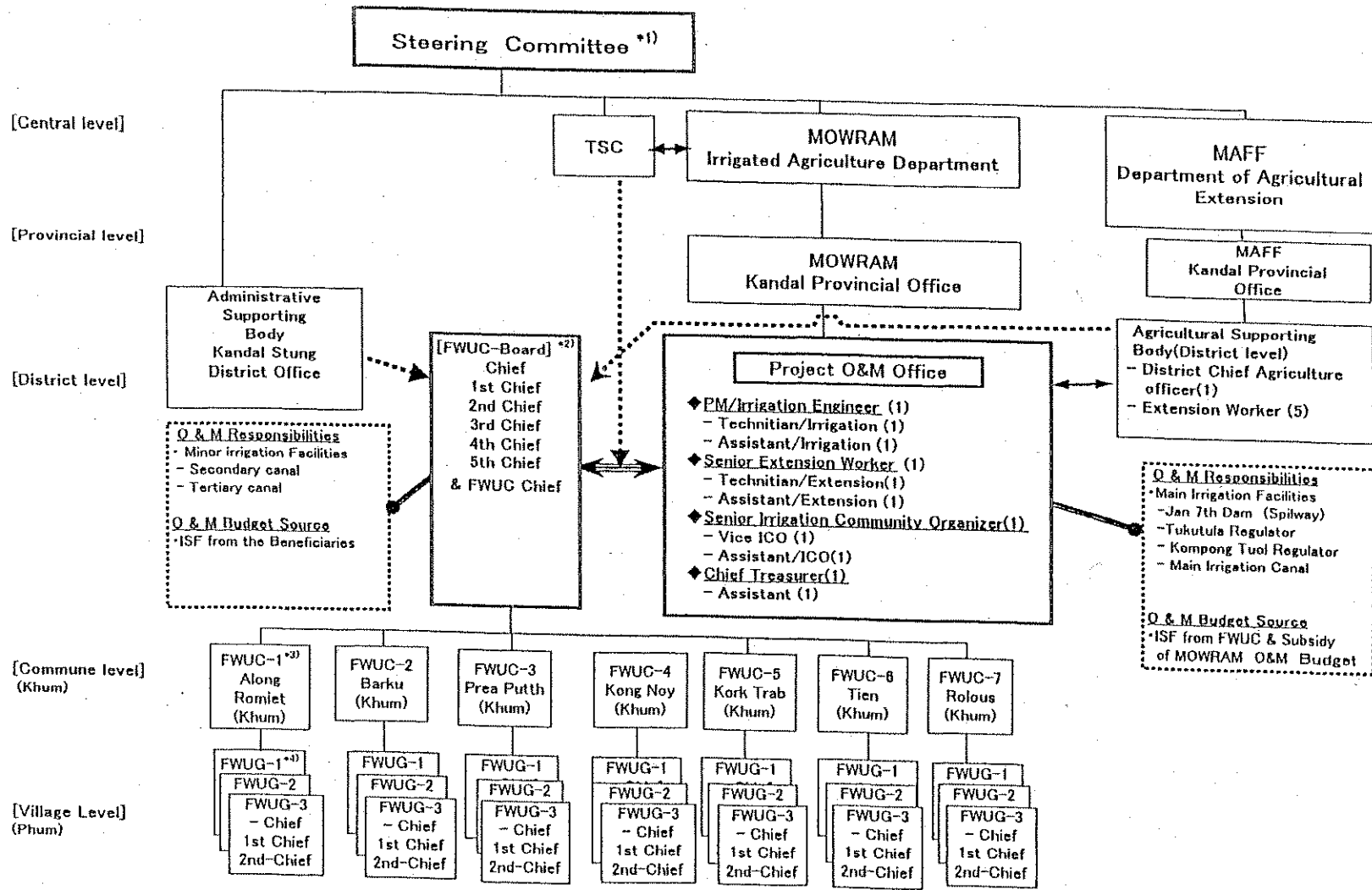


Exhibit - 2 : The O & M Frame Work for the Kandal Stung Irrigation Project



Remark: A FWUG is proposed to be organized based on every 50 ha irrigation block in each commune.

*1) Remark

Chairperson of the S/C, Under Secretary of State of MOWRAM
 Director General of Technical Affairs of MOWRAM
 Director of Planning and International Cooperation Dept, MOWRAM
 Director of Irrigated Agriculture Dept, MOWRAM
 Director of Water Resource Management and Conservation Dept.,
 Deputy Director of Engineering Dept
 Director of Kandal Provincial Bureau of MOWRAM
 CDC Representative
 MAFF Representative
 Res Rep of the JICA Cambodia Office
 JICA Expert of MOWRAM
 Chief Advisor of TSC
 Representative of Kandal Stung District Office
 Representative of FWUC-Board
 Project Manager of the Project O&M Office

*2) Remark

Chief Supervise overall matter
 1st Chief Planning of Operation & Maintenance
 2nd Chief Water Distribution
 3rd Chief Farm management
 4th Chief Treasurer
 5th Chief Secretary
 FWUC Head

*3) Remark

Chief Supervise overall matter
 1st Chief Planning of Operation & Maintenance
 2nd Chief Water Distribution
 3rd Chief Farm management
 4th Chief Treasurer
 5th Chief Secretary

*4) Remark

Chief Farmer's Group Leader
 1st Chief Water Distribution and Maintenance
 2nd Chief Treasurer

Exhibit - 3 : Organization for O & M Activities for the Kandal Stung Irrigation Project

Exhibit – 4 Implementing Organs and its Role for the Kandal Stung Irrigation Project

	Implementing Organs	Function	Member
1	Steering Committee	<p>The steering committee is scheduled to set up followed by E/N and shoulders the following role.</p> <ul style="list-style-type: none"> ● Coordination work of inter-ministerial matter related to construction work of the Project ● Monitoring the construction work and progress of the Project implementation, and administering/guiding the Project when it is necessary. 	<ul style="list-style-type: none"> • Chairman : Under Secretary of State of MOWRAM • Concerned Directors/Deputy Director of MOWRAM and Director of Kandal Provincial MOWRAM Office • CDC Representative • MAFF Representative • Res., Rep., of JICA Cambodia Office • JICA Expert/MOWRAM • JICA TSC Chief Advisor • Project Manager of Construction of Secondary/Tertiary Canals • Project Manager of the O&M Office <p>In accordance with necessity, Representatives of Kandal Stung District Office and the FWUC are convened.</p>
2	MOWRAM	<ul style="list-style-type: none"> ● Overall managerial work of the grant aid project and construction of the secondary/tertiary canal ● Land acquisition and compensation for construction work ● Arrangement about closing the water canal during the dry season for construction work ● Guide the Project O&M Office to organize the FWUCs ● Design/construction of the secondary/tertiary canals 	<ul style="list-style-type: none"> • Irrigated Agriculture Dept., • Engineering Dept., • Project Manager of O & M Office • Project Manager of Construction of Secondary/Tertiary Canals
3	Technical Service Center for Irrigation System (TSC)	<ul style="list-style-type: none"> ● Give guidance/recommendation to the staff assigned to the Project O&M Office ● Supporting formation of the FWUC ● Establishing a demonstration farm about a rice double cropping trial in the JICA TSC Model Farm 	<ul style="list-style-type: none"> • JICA Experts Team • Counterparts
4	Farmers Water User Community(FWUC)	<ul style="list-style-type: none"> ● Collection of ISF from the FWUC members ● Implementation of regular O&M work for the 2nd/tertiary canals ● Carry out the necessary support of technical advice/farm management to the FWUC members ● Mediation of disagreement among the FWUGs 	<ul style="list-style-type: none"> • FWUC Committee member • Beneficiary
5	Project Operation & Maintenance Office	<ul style="list-style-type: none"> ● Comprehensive O&M work for the main facility (water intake work, main canal) ● Give guidance of water management to the FWUC ● Give guidance of farm management to the FWUC ● Give guidance of O&M to the FWUC 	<ul style="list-style-type: none"> • Project Manager/Chief Irrigation Engineer • Senior Agriculture Extension Officer • Senior Irrigation Community Organizer • Chief Treasurer <p>And technicians / assistants amounted to 11 members</p>

	Position/Qualification	Terms of Reference
1	<p>◆ Project Manager/Chief Irrigation Engineer (CIE)</p> <ul style="list-style-type: none"> • Engineer • 15 years experience • English communication skill 	<ul style="list-style-type: none"> ■ In charge of overall responsibility for the Project O & M and take the duty of water management and O & M work for the main irrigation facility ● Formulate an annual O & M Plan facilities, and supervise the routine inspection and O&M work ● Formulate water distribution plan based on the cropping area and water demand ● Carry out farmer's training to ensure irrigation practice efficiently in collaboration with the SAEW and SICO ● Monitor and evaluate the FWUC activity based on the formulated Monitoring & Evaluation System (M&E) in collaboration with SAEO and SICO, and direct necessary supervision to the FWUC ● Update and revise a manual of water management for the Project ● Establish a partnership with the concerned agricultural supporting organizations such as District Agriculture Office, AQIP, CARDI, etc.
	◆ Technician	● Give guidance of O&M and water management to the beneficiaries in the field under instructed by the CIE
	◆ Assistant • Qualified staff	● Assist SIE and Technician
2	<p>◆ Senior Agricultural Extension Officer (SAEO)</p> <ul style="list-style-type: none"> • Engineer • 15 Years Experience • English Communication Skill 	<ul style="list-style-type: none"> ■ Carry out agriculture extension work focusing on the Kandal Stung Irrigation Project as a command area, and formulate an annual extension plan with guidance for the beneficiaries in the proposed cropping plan. ● Grasp the agronomic environment (natural and socio-economic environment) of the command area ● Formulate a best-fit extension plan for the Kandal Stung command area ● Guide and train the beneficiaries about farming practice of IR cultivars ● Guide a second crop to the rice ● Formulate a crop guideline for the major crops ● Plan and conduct study tour for the beneficiaries in collaboration with the CIE and SICO ● Establish a partnership with the concerned agricultural supporting organs such as District Agriculture Office, AQIP, CARDI, etc.
	◆ Technician	● Give guidance to the beneficiaries in the field under instruction made by the SAEO
	◆ Assistant • Qualified	● Assist SAEO and Technician
3	<p>◆ Senior Irrigation Community Organizer (SICO)</p> <ul style="list-style-type: none"> • Engineer • 15 Year experience • English communication Skill 	<ul style="list-style-type: none"> ■ Organize the beneficiaries in the command area into the FWUC ● Grasp the village social-structure, farming system and water management in the command area ● Organize the FWUC based on the area-basis 7 communes involved in the command area in collaboration with CIE and SAEO ● Formulate a cadastral map and registered land for the FWUCs and the FWUC members ● Formulate a rational ISF (cash, rice and labor) to the FWUCs with collecting ISF system
	◆ Vice ICO • Technician	● Organize the FWUC under instruction made by SICO
	◆ Assistant • Qualified	● Assist SICO and Vice ICO

4	◆ Chief Treasurer(CT) • Engineer • 10 Years experience	■ Take a responsibility for collecting ISF from the FWUC and financial management of the Project O&M Office. ● Collect the ISF from each community-based FWUC ● Formulate a system to store and sell in kind ISF under assumption of ISF payment such as cash, paddy and labor. ● Prepare the financial statement of the Project O& M Office to MOWRAM and the FWUC ● Proceed a formality to apply subsidy for the Project O&M Office to MOWRAM ● Guidance for the treasures of the FWUCs
	◆ Assistant accountant • Qualified	● Assist CT

Exhibit - 6 Annual Cost of the Project O&M Office of MOWRAM

Item of Expense		Unit	Quantity		Unit Price		Total		Remark
			Total	M/M	(Riel)	(USD)	(Riel)	(USD)	
O&M Staff	•Project Manager/Irrigation Engineer	Person	1	12	800,000	200.00	9,600,000	2,400.0	Recruited from MOWRAM including base salary
	•Technician	Person	1	12	400,000	100.00	4,800,000	1,200.0	
	•Assistant	Person	1	12	200,000	50.00	2,400,000	600.0	
	•Senior Agriculture Extension Officer	Person	1	12	800,000	200.00	9,600,000	2,400.0	
	•Technician	Person	1	12	400,000	100.00	4,800,000	1,200.0	
	•Assistant	Person	1	12	200,000	50.00	2,400,000	600.0	
	•Senior Irrigation Community Organizer	Person	1	12	800,000	200.00	9,600,000	2,400.0	
	•Vice ICO	Person	1	12	400,000	100.00	4,800,000	1,200.0	
	•Assistant	Person	1	12	200,000	50.00	2,400,000	600.0	
	•Chief Treasurer	Person	1	12	800,000	200.00	9,600,000	2,400.0	
•Assistant	Person	1	12	200,000	50.00	2,400,000	600.0	Recruited from MOWRAM including base salary	
Sub Total			11	132	5,200,000	1,300	62,400,000	15,600.0	(1)
O&M Expense for the Project O&M Office	Office Supply	lot/M	12		60,000	15.00	720,000	180.0	3 hrs/day * 270 days/year for telephone 10 Lt/daily consumption 5 % of the body price/year 1 % of the body price Monthly meeting with 7 FWUC
	Consumable goods	lot/M	12		40,000	10.00	480,000	120.0	
	Communication	hour/Day	810		80	0.02	64,800	16.2	
	O&M for Generator Fuel (Disesel)	Lit/Day	2700		1,440	0.36	3,888,000	972.0	
	Spareparts	5%/year					520,000	130.0	
	O&M for Copy Machine	1%/year						26.3	
Regular meeting with FWUC	Person	84		8,000	2.00	672,000	168.0		
Sub Total				0				1,612.5	(2)
Annual O&M cost	O&M cost for vehicles								5 Lt /day * 270 days/year 4.5 % of the body price 2 Lt/day * 270 days/year * 10 units 4.5 % of the body price * 8 units 50 % of personnel costs is counted but first 5 year is 20 % only due to new facility.
	Fuel for Pick-up and its spareparts	Lit/Day	1350		1,440	0.36	1,944,000	486.0	
	Fuel for motorcycle and its spareparts	4.5%/Year	1				3,600,000	900.0	
		Lit/Day	4320		2,200	0.55	9,504,000	2,376.0	
		4.5%/Year	8				1,728,000	432.0	
Regular O&M expense (main facility, road)							3,120.0		
Sub total				0				16,776,000.0	7,314.0 (3)

(1)+(2) + (3)
O&M expense/ha/year

24526.5 USD
12.6 USD

Feb., 3, 2003

AS-12

Exhibit - 7 Expense for Establishment of the Kandal Stung Irrigation Project O&M Office (To be financed by MOV)

5-Feb-03

Item of Expense	Unit	Quantity		Unit Price		Total		Remark	
		Number	M/M	(Riel)	(USD)	(Riel)	(USD)		
Project O&M Office	O&M Office (140m2)	m ²			0	0.00	0	0.0	Hiring a vacant office in the Kandal Stung District Office compound
and Office Items	Personal Computer	set	1		0	0.00	0	0.0	Transferring PC to the Project O&M office followed by phased-out of TSC
	Printer	set	1		0	0.00	0	0.0	ditto
	Copy machine	set	1		0	0.00	0	0.0	ditto
	Desk & Chair for staff	set	11		1,128,000	282.00	12,408,000	3,102.0	
	Table for meeting	set	1		764,000	191.00	764,000	191.0	For 8 persons
	and chair	set	8		104,000	26.00	832,000	208.0	
	Cabinet	set	2		616,000	154.00	1,232,000	308.0	
	Table Telephone	set	1		1,400,000	350.00	1,400,000	350.0	Wireless type telephone
	White board	set	1		452,000	113.00	452,000	113.0	
	Office Stationary (One lot)	lot	1		0		0	0.0	
	Water supply system	lot	1		9,988,000	2497.00	9,988,000	2,497.0	Drilling up to 50 m depth + submergible pump
	Diesel Generator	set	1		10,400,000	2600.00	10,400,000	2,600.0	Supplying electricity to the Office
							0	0.0	
Vehicle for O&M Work	Pick up truck(4WD)	set	1		0	0.00	0	0.0	Transferring vehicle to the Project O&M office followed by phased-out of TSC for the project manager use.
	Motor cycle (50 cc)	set	8		4,800,000	1200.00	38,400,000	9,600.0	for AEO, ICO and CT
	Sub total			0	29,652,000	7,413	75,876,000	18,969.0	

Remark: AEO: Agriculture Extension Officer, ICO: Irrigation Community Organizer, CT: Chief Treasurer

(1 USD = 4000 R)

A5-13

Exhibit - 8 Annual Subsidy to the Project O&M Office by MOWRAM

(unit: USD)

Item of Expense	Target Year							
	2005	2006	2007	2008	2009	2010	2011	2012
1 Annual O&M Cost (est.)	24,527	24,527	24,527	24,527	24,527	29,207	29,207	29,207
2 Cumulative Irrigable Area (ha)	260	500	740	980	1,220	1,460	1,710	1,950
3 Cumulative Irrigable Area(%)	13.3	25.6	37.9	50.3	62.6	74.9	87.7	100.0
4 ISF/ha/Year	12.6	12.6	12.6	12.6	12.6	15	15	15
5 ISF Collected (= 4 * 2)	3,276	6,300	9,324	12,348	15,372	21,900	25,650	29,250
6 Subsidy by MOWRAM (= 1- 5)	21,251	18,227	15,203	12,179	9,155	7,307	3,557	0

Remark: The first 5 year's O&M cost is estimated based on 20 % of the perssonel expense and 50 % from the 6th year.

添付資料 - 6

土地収用に関する「カ」国水資源気象省よりのレター



ព្រះរាជាណាចក្រកម្ពុជា
Kingdom of Cambodia
ជាតិ សាសនា ព្រះមហាក្សត្រ
Nation Religion King

ក្រសួងធនធានទឹក និងឧតុនិយម
Ministry of Water Resources
and Meteorology

N° ១៨៦ MOWRAM

Phnom Penh, February 27, 2003

Letter of Assurance on Land Acquisition at Kandal Stung Irrigation Rehabilitation Project

The Ministry of Water Resources and Meteorology (MOWRAM) has the honor to inform that all issues related to the resettlement or land acquisition in the Project Area of Kandal Stung, in cooperation with Inter-ministerial Resettlement Committee (IRC), will be arranged after signing of the Exchange of Notes by the two parties, the Royal Government of Cambodia and the Government of Japan.

MOWRAM and IRC will take all efforts to assure that this activity will be completed within three months after signing of the Exchange of Notes according to the Land Law and the Government Guideline on Land Acquisition. **ក ង**



LIM KEAN HOR
Minister of Water Resources and Meteorology

添付資料 - 7

協議議事録(基本設計概要説明時、2003年3月)

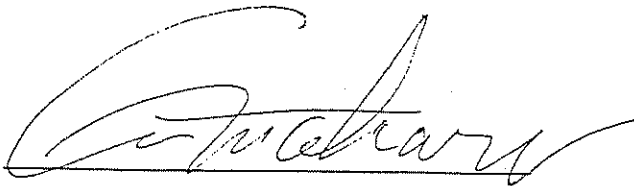
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON THE PROJECT FOR
REHABILITATION OF
KANDAL STUNG IRRIGATION SYSTEM
IN
THE KINGDOM OF CAMBODIA
(EXPLANATION ON DRAFT REPORT)

In November 2002, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Rehabilitation of Kandal Stung Irrigation System (hereinafter referred to as "the Project"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the Study.

In order to explain and to consult the Cambodian side on the components of the draft report, JICA sent to the Cambodia the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Motoharu Wakabayashi, Forth Project Management Division, Grant Aid Management Department, JICA, from 12 March to 17 March 2003.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Phnom Penh, 14 March, 2003



Mr. Motoharu WAKABAYASHI
Team leader
Draft Report Explanation Team
Japan International Cooperation Agency



H.E. Veng Sakhon
Under Secretary of State
Ministry of Water Resources and
Meteorology

ATTACHMENT

1. Components of the Draft Report

The government of Cambodia (hereinafter referred to as "Cambodian side") was explained about the draft report by the Team. The Cambodian side will send their comments on the draft report to JICA-Cambodia office by 4 April, 2003. The government of Japan will re-examine the feasibility of the Project based on the comments of the Cambodian side.

2. Reconfirmation of the previous Minutes of Discussions

Both sides reconfirmed validity of all the contents in the previous Minutes of Discussions signed on 15 November during the Basic Design Study.

3. Japan's Grant Aid Scheme

The Cambodian side understood the Japan's Grant Aid Scheme explained by the team and will take the necessary measures, described in the Annex-4 and 5 of the Minutes of Discussions signed on 15 November 2002.

4. Other Relevant Issues

4-1. Both sides confirmed the feasibility of construction plan of secondary and tertiary canals of the Project area shown in Annex.1. The Cambodian side reconfirmed to construct these canals by their own responsibility according to the planned schedule with utilizing know-how and experience obtained through the activities of "The Technical Service Center for Irrigation System Project (hereinafter referred to as "TSC")".

4-2. The Team confirmed that Ministry of Economy and Finance allocated the counterpart fund for the Project from its 2003 budget. Both sides confirmed that the Cambodian side allocated the budget for the construction of these canals as the top priority project.

4-3. On condition that the Grant Aid by the Government of Japan is extended the Project, the Cambodian side shall take necessary measures as follows,

- (1) to secure sufficient personnel and budget necessary for operating and maintaining the facilities of the Project,
- (2) to secure the safety of the concerned personnel during the implementation of the Project,
- (3) and to remove all UXOs and mines in Kandal Stung Irrigation Project area by her own budget prior to the commencement of construction work in accordance with the results of official formality of investigation of UXOs.

4-4. MOWRAM committed to take whole responsibility to carry out land acquisition work for the improvement of the canals, roads, temporary office and storage yards etc by effective coordination with Inter-Ministerial Resettlement Committee under the agreement with

concerned beneficiaries prior to implementation of the Project referred to the letter of Minister of MOWRAM shown in Annex.2.

- 4-5. The Cambodian side expressed that there was no influence to the Project by implementing the newly approved irrigation project by the Government of Cambodia, which named as the "Integrated Development Project in the Western Side of Phnom Penh Municipality" at the upstream side of Tuk Thla regulator. Both sides confirmed that the Cambodian side would monitor the influence of above-mentioned project periodically and take necessary measures to protect the Project from its adverse effects whenever necessary arises.
- 4-6. Both sides confirmed the feasibility of the proposed operation and maintenance (hereinafter referred to as "O&M") plan for implementing the Project effectively as shown in the draft report, and that MOWRAM took responsibility of whole O&M work for the main irrigation facilities and of establishing the Project O&M Office with budgetary allocation and assigning the required staff, who had know-how and experience obtained through the activities of TSC. MOWRAM took responsibility of organizing and strengthening the Farmers' Water Users Committees for the Project under the activities of the Project O&M Office with utilizing know-how and experience obtained through the activities of TSC.
- 4-7. Both sides confirmed that MOWRAM, with utilizing know-how and experience obtained through the activities of TSC, shall take responsibility to extend a new farming system by introducing rice double cropping system by the demonstration farming in TSC's model site under the collaboration of related agencies.
- 4-8. The Cambodian side strongly requested to provide two (2) vehicles (pick-up truck type) and one office space (appx 140m²) for O&M and construction supervision of the secondary and tertiary canals.



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Ministry of Water Resources
and Meteorology

N° ១៨៦ MOWRAM

Phnom Penh, February 21, 2003

Letter of Assurance on Land Acquisition at Kandal Stung Irrigation Rehabilitation Project

The Ministry of Water Resources and Meteorology (MOWRAM) has the honor to inform that all issues related to the resettlement or land acquisition in the Project Area of Kandal Stung, in cooperation with Inter-ministerial Resettlement Committee (IRC), will be arranged after signing of the Exchange of Notes by the two parties, the Royal Government of Cambodia and the Government of Japan.

MOWRAM and IRC will take all efforts to assure that this activity will be completed within three months after signing of the Exchange of Notes according to the Land Law and the Government Guideline on Land Acquisition. *V. H.*



LIM KEAN HOR
Minister of Water Resources and Meteorology

添付資料 - 8

協議議事録(第三次現地調査開始時、2003年6月)

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON THE PROJECT FOR
REHABILITATION OF
KANDAL STUNG IRRIGATION SYSTEM
IN
THE KINGDOM OF CAMBODIA

In response to a request from the Royal Government of Cambodia, the Government of Japan decided to conduct a Basic Design Study on the Project for Rehabilitation of Kandal Stung Irrigation System (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Cambodia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Juro CHIKARAISHI, Resident Representative of JICA Cambodia Office.

The Team held discussions with the officials concerned of the Royal Government of Cambodia and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Phnom Penh, June 27, 2003



Mr. Juro CHIKARAISHI

Leader

Basic Design Study Team

Japan International Cooperation Agency



H.E. Lim KEAN HOR

Minister

Ministry of Water Resources and

Meteorology

ATTACHMENT

1. Reconfirmation of the previous Minutes of Discussions

Both sides reconfirmed validity of all the contents in the previous Minutes of Discussions signed on 15 November 2002 during the Basic Design Study and the previous Minutes of Discussions signed on 14 March 2003 during the Basic Design Study for Draft Report Explanation.

2. Japan's Grant Aid Scheme

The Cambodian side understood the Japan's Grant Aid Scheme explained by the Team and will take the necessary measures, described in the Annex-4 and 5 of the Minutes of Discussions signed on 15 November 2002.

3. Schedule of the Study

JICA implements the additional study until July 18, 2003 to discuss alternatives and complete the final report in accordance with the confirmed items and send it to the Royal Government of Cambodia on October 2003.

4. Other relevant issues

4-1. Cambodian side explained that though they recognized that technical reliability of the draft basic design, they requested Japanese side to replace Kampong Tuol regulator based on the reasons as shown in Annex of this Minutes.

Japanese side explained that additional study will be conducted by the Team in response to aforementioned request, taking into consideration the following items:

- i) Rationality of replacing the Kampong Tuol regulator;
- ii) The results of past studies;
- iii) Collaboration among concerned organizations notably TSC;
- iv) Viable operation and maintenance;
- v) Cost and Benefit; and
- vi) Financial viability.

4-2. Cambodian side will provide Japanese side with a document that shows ADB has no objection to the replacement of the Kampong Tourl regulator that has renovated in 2001 with ADB's assistance.

4-3. Both sides confirmed that the purpose of partial renovation of Tuk Thla regulator is not for the improvement of flood flow capacity but for the stable irrigation water supply in the Project.



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Ministry of Water Resources
and Meteorology

N° *****
510 MOWRAM

Phnom Penh, April 4, 2003

To : Mr. Juro Chikaraishi,
Representative of JICA
Phnom Penh, Cambodia

Subject: Draft Basic Design Study of Kandal Stung Irrigation Rehabilitation
Project

Dear Mr. Juro Chikaraishi,

With reference to the meeting held on March 14, 2003 in MOWRAM's meeting room, discussed on the Draft Basic Design Study of Kandal Stung Irrigation Rehabilitation Project prepared by Nippon Koei Co., Ltd. the Ministry of Water Resources and Meteorology would like to inform that in order to minimize the number of structures along the National Road No. 3, the Kampong Tourl Regulator should be replaced by the new proposed spillway.

The new proposed spillway should be much considered and taken into account the compensation for the discharge of water to downstream due to the demolition of Kampong Tourl Regulator.

I strongly hope that you would accept and consider on this matter. *h*



HEAN HOR
Minister of Water Resources and Meteorology

CC: - Takanobu KOBAYASHI, JICA Advisor to MOWRAM
- Akira MIYAZAKI, Chief Advisor of TSC



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Ministry of Water Resources
and Meteorology

N° 551 MOWRAM

Phnom Penh, April 22, 2003

To : Mr. Juro Chikaraishi,
Representative of JICA
Phnom Penh, Cambodia

Subject: Draft Basic Design Study of Kandal Stung Irrigation Rehabilitation Project

Dear Mr. Juro Chikaraishi,

With reference to the letter JC15 dated April 8, 2003, the Ministry of Water Resources and Meteorology (MOWRAM) would like to express sincere appreciation of all the efforts of Ministry of Foreign Affairs, JICA and the B/D team that have been done so far on this project. MOWRAM is satisfied indeed with most of the design and report, and process for making design. MOWRAM strongly expect that this Kandal Stung Irrigation System Rehabilitation Project (hereinafter referred to the Project) would play a most important role in order to develop modernized model irrigation system of Cambodia including main to on-farm level development.

MOWRAM also convince that TSC project and the Study on the on-farm development by JIID could contribute very much to realize the model irrigation system and believe that the draft basic design has no defect in terms of technical reliability.

However, MOWRAM has a perspective on the Kampong Tourl regulator, and thus, recommended and requested to remove the aforementioned structure based on the following reasons:

- a) The foundation of Kampong Tourl Regulator, the gates and the quality of construction seem to be very poor and considerable leakage has been detected as shown in the draft report. From these viewpoint, MOWRAM is very concerned about the stability of this structure.
- b) The National Road No.3 will be upgraded in the next few years, and then, an old and narrow structures like the Kampong Tourl regulator will have to be removed and reconstructed. Taking this condition into consideration, the functions of the new spillway and the Kampong Tourl regulator should be integrated into one structure that will be newly constructed in the

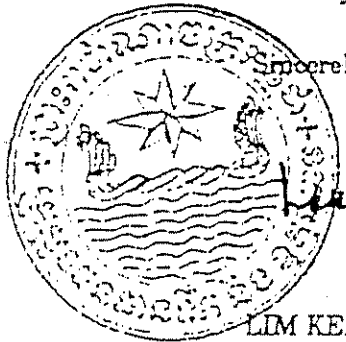
Japan's Grand Aid scheme from the viewpoint of efficient mid-and long-term public investment and operation/maintenance.

- c) The Kampong Touri Regulator is one of the structures constructed in the Pol Pot regime, and it could be said to be a symbol of negative legacy left by Pol Pot. MOWRAM strongly believes that the Project, with assistance from Japan, will provide us a very precious occasion to replace the Pol Pot structure to new one and reduce negative social impact arisen from the aforementioned structure.
- d) The view of the three successive structures within the only about 200 m of section along the National Road might be confusing for people, and might cause some anxiety about flood and malevolent allegation towards the structures. Thus, MOWRAM is very concerned about this matter since these structures will be seen by many people passing through on the National Road as well as those living in the area.

Finally, I strongly hope again that Ministry of Foreign Affairs, JICA and the B/D team will give high consideration to the request of my previous letter with the reasons above, and find the best solution or design for Cambodian people in cooperation with my officials concerned.

Thank you very much for your continuous assistance. *kh*

Sincerely Yours,



LIM KEAN HOR
Minister of Water Resources and Meteorology

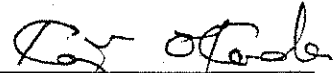
CC: - Mr. Takanobu KOBAYASHI, JICA Advisor to MOWRAM.
- Mr. Akira MIYAZAKI, Chief Advisor of TSC

Japanese Grant Aid considering smooth work sequence and possible delay in budget arrangement in the country. This matter should be discussed officially at the final stage.

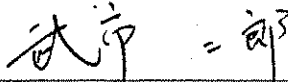
03 July, 2003



H.E. Veng Sakhon
Under Secretary of State
MOWRAM



Koji Okada
Chief Consultant
Nippon Koei Co., Ltd.



Jiro TAKEICHI
Cambodia Office
JICA
(Witness)

添付資料 - 9

協議議事録(第三次現地調査結果説明時、2003年7月)

Minutes of Discussions

1. Subject: Additional Basic Design Study on Rehabilitation of Kandal Stung Irrigation System
2. Date and Place: 02 July 2003, Office of the Under Secretary of State, MOWRAM
3. Attendance: See attached list
4. Discussions:

(1) Alternative plans of headwork

The Consultant Team and officials of Cambodia side (MOWRAM) discussed alternative plans of headwork and its design concept, which were explained based on the attached sheets on 24 June 2003. MOWRAM side presented his internal discussion results that Alternative-1 (new regulator with steel gates of 500 m³/s capacity), which is the similar structure to the Roleng Chrey regulator, is the best selection for the site from the following reasons:

- ① Same type of structure (new spillway) would not be located near the existing spillway
- ② An attractive structure to the public is desired for the site where NR-3 runs alongside
- ③ Experience in operation and maintenance obtained from Roleng Chrey regulator could be utilized fully for new gated structure
- ④ No significant problem from the technical views could be recognized at present for all proposed alternative plans

The Study Team took note and promised to convey the above opinion of MOWRAM.

The Study Team stated that the additional study would be continued as scheduled.

(2) Consent of ADB to remove the existing gates

MOWRAM side stated that he has already sent a letter to ADB on June 27 to obtain the consent of ADB for removal of gates on the Kompong Tuol regulator, which was replaced by using ADB's fund in 2001 (refer to the attachment). MOWRAM informed that the letter of consent from ADB would be sent to JICA Cambodia office as soon as they receive it.

(3) Removal cost of the existing regulator

The Consultant informed basic consideration of Japanese side about cost sharing for a removal cost of the Kompong Tuol Regulator, namely there would be some possibility that the Japanese side would request the Cambodia side to share the removal cost according to the results of additional study. Although MOWRAM basically agreed to share the cost, he proposed implementing the work by one project under the

BASIC CONCEPT OF THE REHABILITATION PLAN

1. Goal of the Project:

- ✓ To realize the double cropping of paddy through rehabilitation of the existing irrigation infrastructure, such as the existing headwork, irrigation canals and roads

2. Basic concept for rehabilitation of the headwork:

- ✓ To sustain the flood flow capacity of the existing headwork
- ✓ To be similar the financial and organizational burdens to the present O&M works by MOWRAM,
- ✓ To minimize the change of environmental conditions of the river and reverine areas as pointed out by Ministry of Environment
- ✓ To introduce fail-safe design concept and be economical

3. Required conditions for formulating new alternatives:

- ✓ ADB accepts to remove the newly installed gates on the Kompong Tuol regulator by his loan in 2001: written evidence is to be provided by MOWRAM
- ✓ Although both Kompong Tuol and Tuk Thla regulators have similar historical and social background, the additional study on the headwork will be focused on the rehabilitation of the Kompong Tuol regulator, but not on the Tuk Thla regulator. The overall rehabilitation work for the Tuk Thla regulator would be planned and implemented after finalizing basin-wide flood control plan with other fund source
- ✓ Alternative plans will be formulated freely based on the basic concept and conditions mentioned above.
- ✓ MOWRAM will bear the cost for removal of the existing Kompong Tuol regulator

4. Alternative plans to evacuate the flood flows

Compensatory discharge due to raising the existing spillway:	390 m ³ /sec
Flood flow capacity of the existing Kompong Tuol regulator:	110 m ³ /sec
Total	500 m ³ /se

- ✓ Alternative 1: Gated structure with 500 m³/sec capacity only
- ✓ Alternative 2: Spillway with 500 m³/sec capacity (proposed plan by MOWRAM) only
- ✓ Alternative 3 &4: Conjunctive plan of the gated structure and spillway with total capacity of 500 m³/sec

Refer to the comparison table and sketches of the alternative plans attached

Reference:

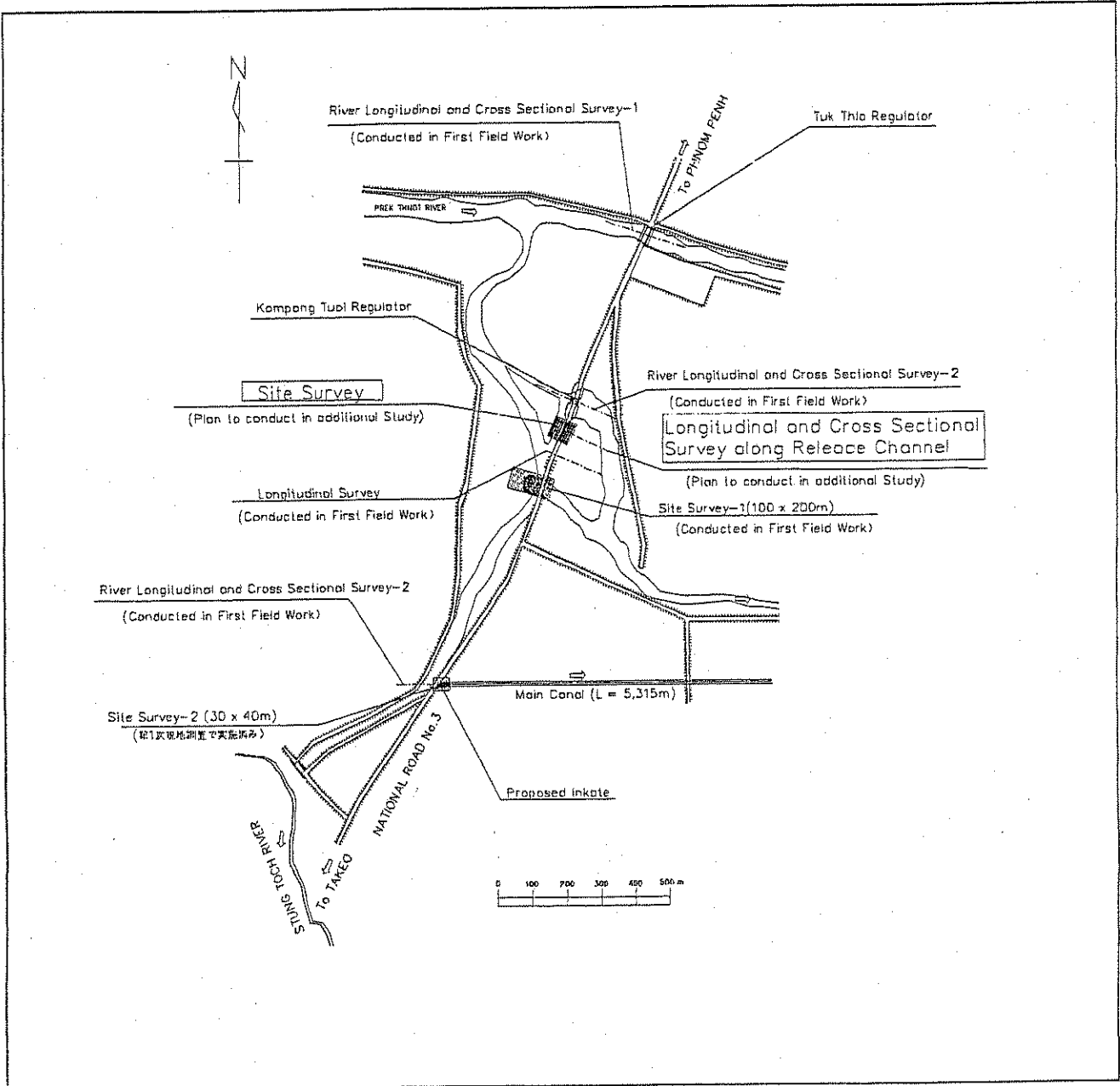
FLOOD FLOW CAPACITY OF THE STRUCTURES ON HEADWORK

Structure	Present		After raising		Balance Q2 - Q1
	Q1 (m ³ /s)	(%)	Q2 (m ³ /s)	(%)	
Spillway (7/Jan dam)	910	(69 %)	520	(39 %)	-390
Regulator-1(Tuk Thla)	260	(20 %)	260	(20 %)	0
Regulator-2(Kompong Tuol)	110	(8 %)	110	(8 %)	0
Diam Rus	40	(3 %)	40	(3 %)	0
New structure	-	-	390	(30 %)	390
Total	1,320	(100 %)	1,320	(100 %)	0

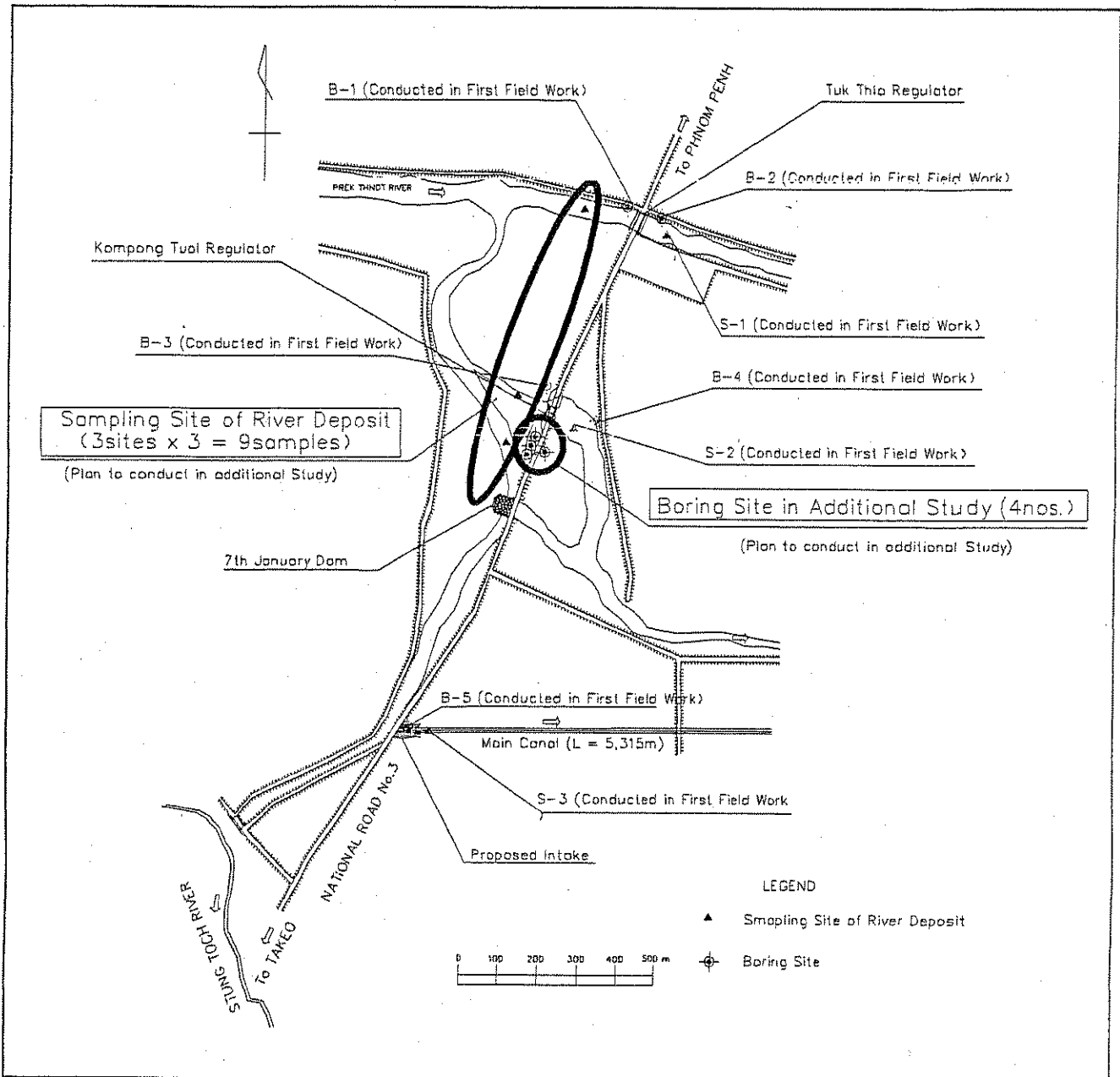
- 1 After rising the existing spillway, the share the spillway will be reduced to 39 % only, though nearly 70 % at the present.
- 2 Share of new structure would be 30 % of the total capacity: the fail-safe design of the structure is needed.
- 3 Capacity of the Kompong Tuol regulator should be kept at it is at least for securing the environmental condition of the river including release of water to the downstream stream.

TENTATIVE WORK SCHEDULE

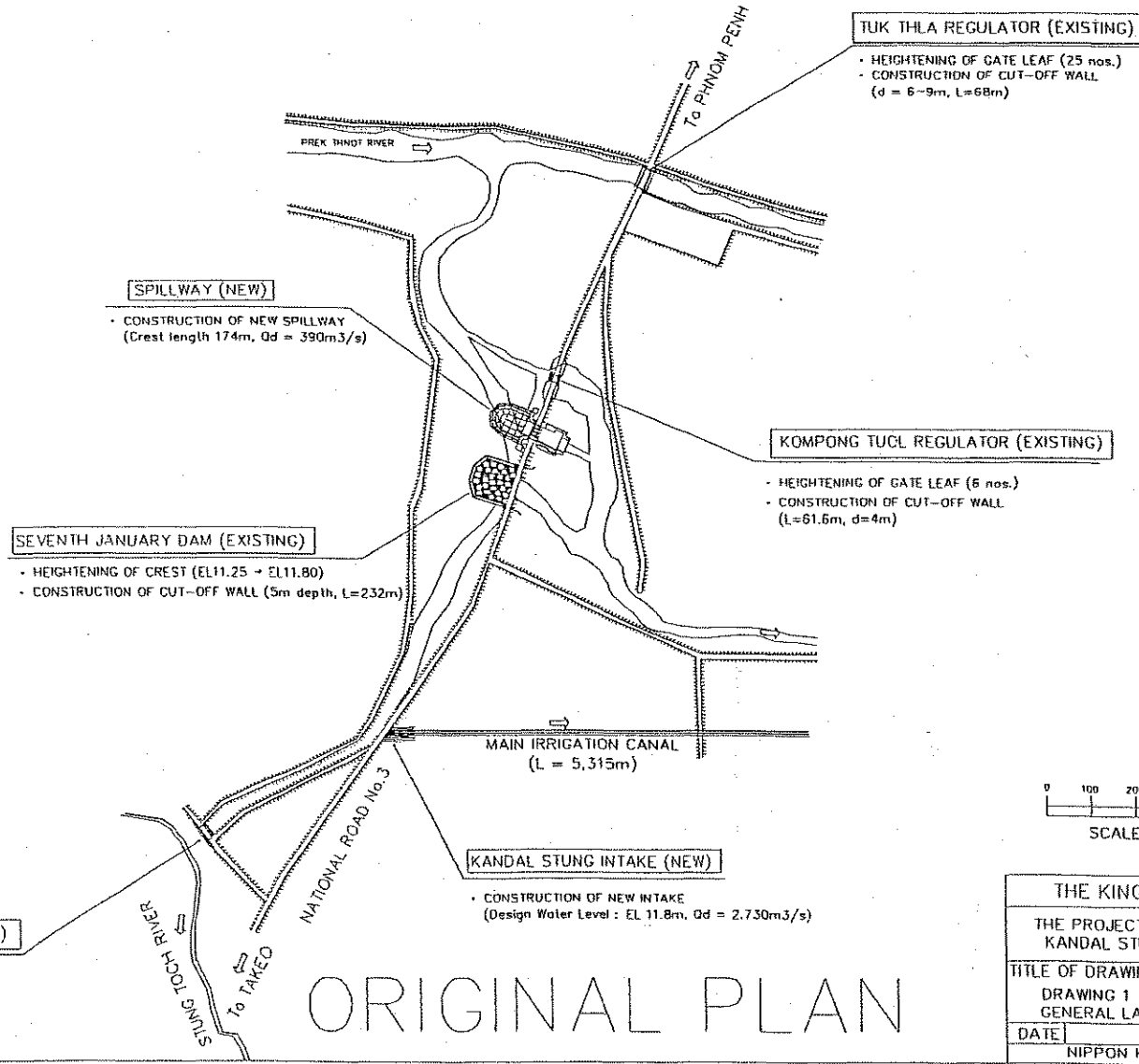
Item	June	July	August	September
1 Field survey in Cambodia	■			
2 Preparation of Draft Report in Japan	23	18	□	
3 Explanation of Draft Report in Cambodia			■	△Draft Report
4 Finalization of the Report in Japan				□ Final Report △



Location of Topographic Survey Site



Location of Geological and Soil Mechanical Investigation Site



TUK THLA REGULATOR (EXISTING)

- HEIGHTENING OF GATE LEAF (25 nos.)
- CONSTRUCTION OF CUT-OFF WALL (d = 6-9m, L=68m)

SPILLWAY (NEW)

- CONSTRUCTION OF NEW SPILLWAY (Crest length 174m, Qd = 390m³/s)

SEVENTH JANUARY DAM (EXISTING)

- HEIGHTENING OF CREST (EL11.25 → EL11.80)
- CONSTRUCTION OF CUT-OFF WALL (5m depth, L=232m)

KOMPONG TUCL REGULATOR (EXISTING)

- HEIGHTENING OF GATE LEAF (6 nos.)
- CONSTRUCTION OF CUT-OFF WALL (L=61.6m, d=4m)

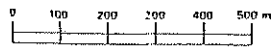
MAIN IRRIGATION CANAL (L = 5,315m)

KANDAL STUNG INTAKE (NEW)

- CONSTRUCTION OF NEW INTAKE (Design Water Level : EL 11.8m, Qd = 2.730m³/s)

DEUM RUSS REGULATOR (EXISTING)

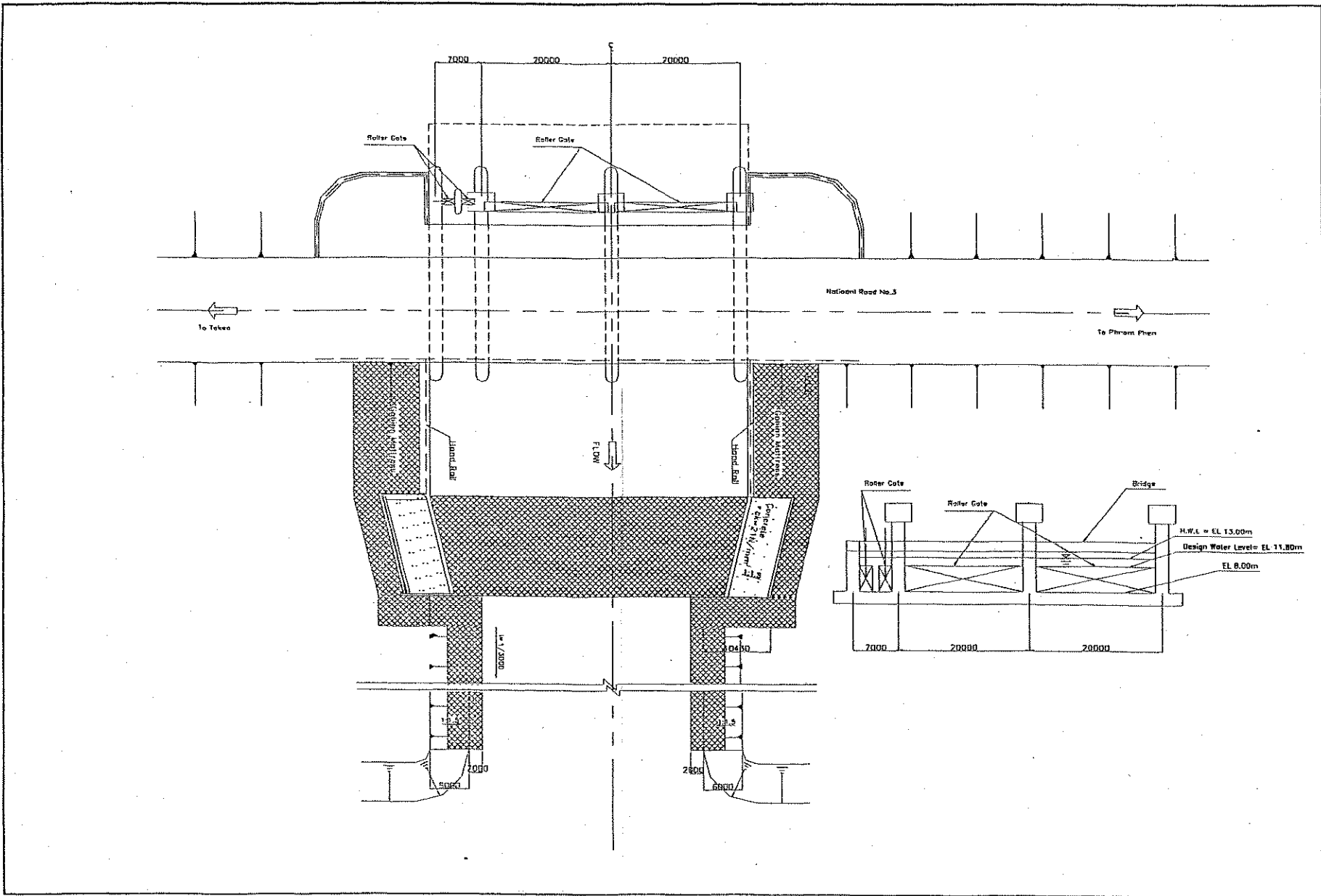
- HEIGHTENING OF GATE LEAF (3 nos.)



SCALE : 1/10,000

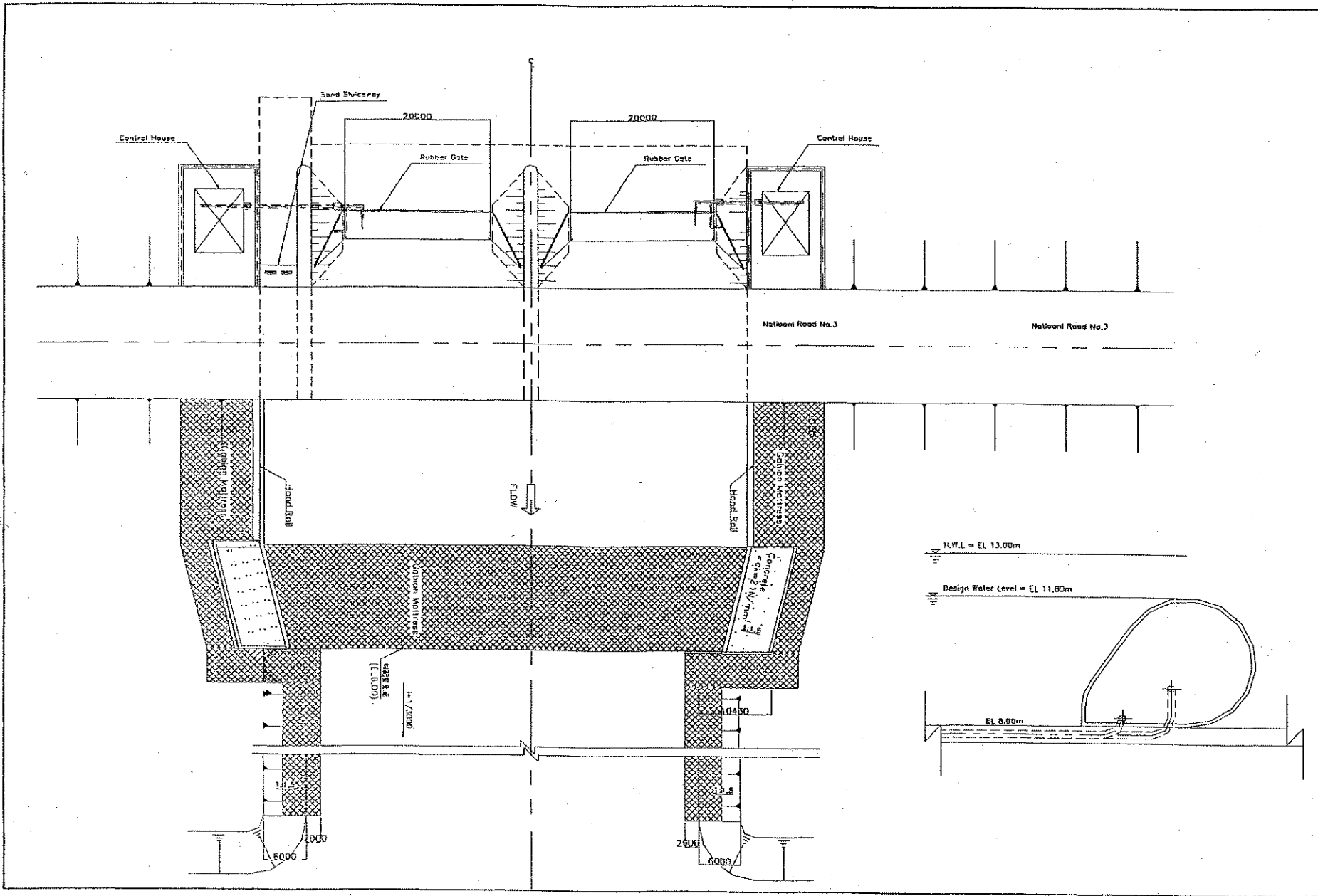
ORIGINAL PLAN

THE KINGDOM OF CAMBODIA	
THE PROJECT FOR REHABILITATION OF KANDAL STUNG IRRIGATION SYSTEM	
TITLE OF DRAWING	
DRAWING 1	
GENERAL LAYOUT OF INTAKE SYSTEM	
DATE	DRAWING NO.
NIPPON KOEI CO., LTD., JAPAN	

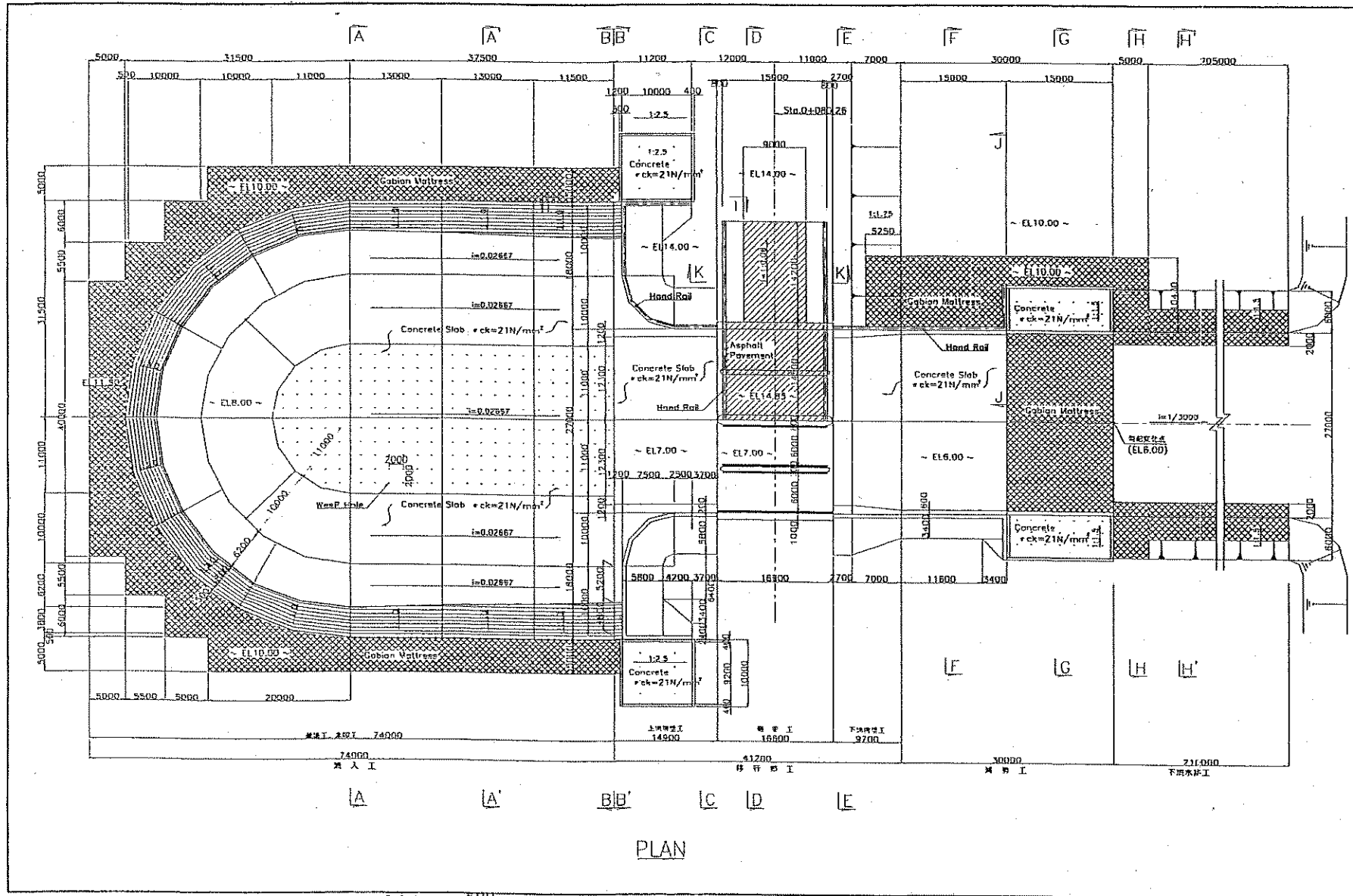


Alt-1_1 New Regulator⁵⁰⁰ (Roller Gate)+ Removal of Kompong Tuol Reg.

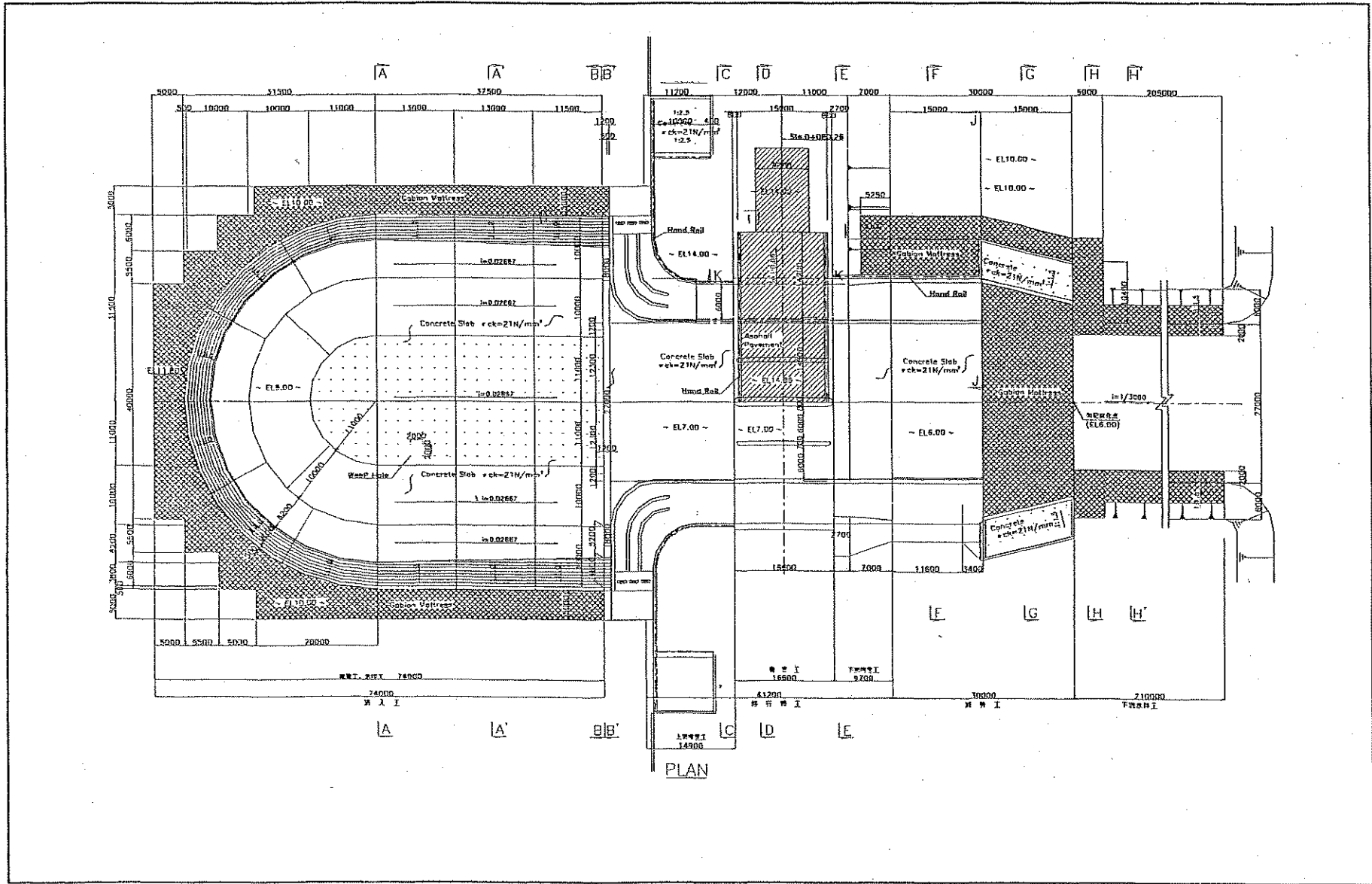
A9-9



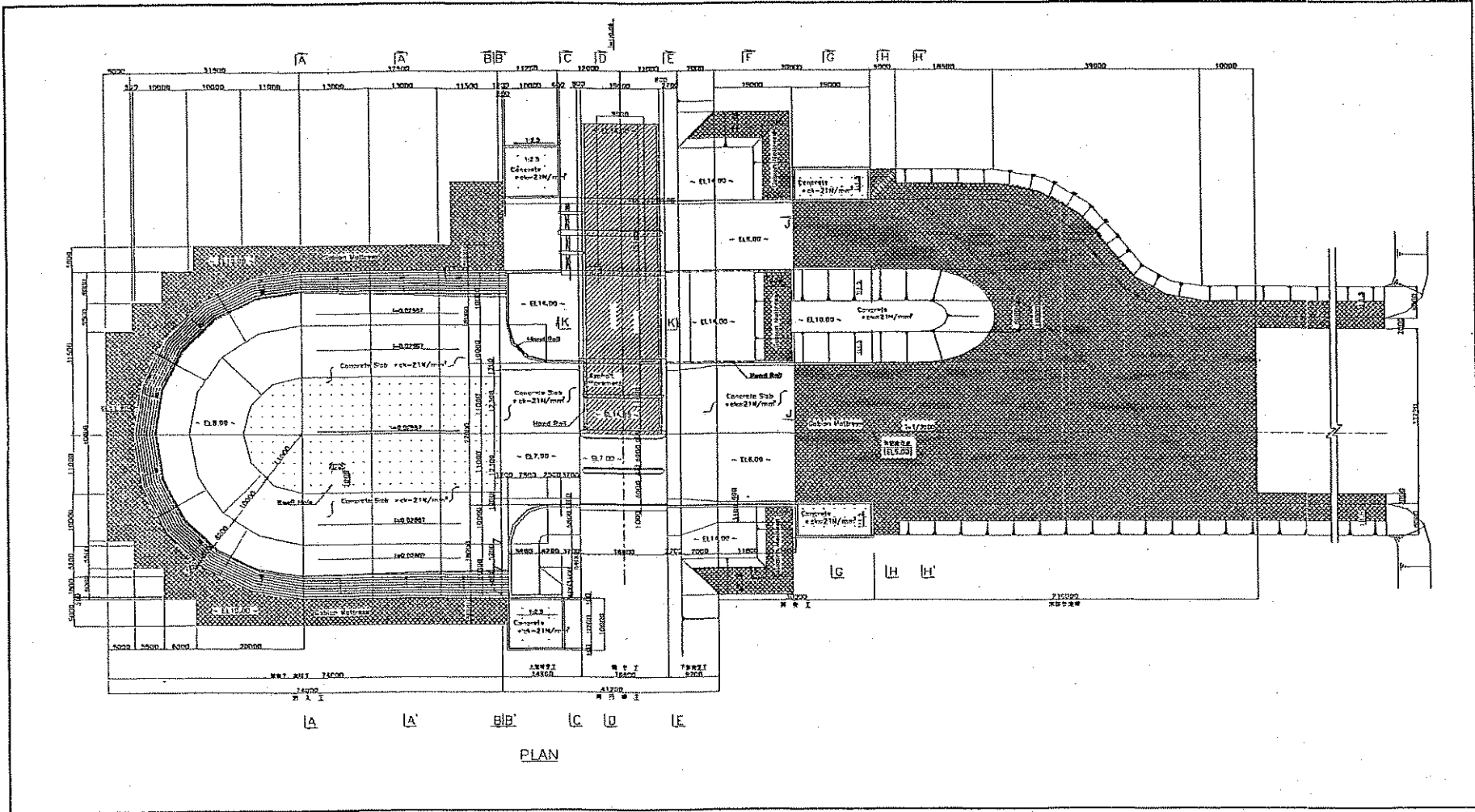
Alt-1_2 New Regulator ⁵⁰⁰ (Rubber Gate) + Removal of Kompong Tuol Reg.



Alt-2 New Spillway⁵⁰⁰ + Removal of Kompong Tuol Reg.



Alt-3 New Spillway⁵⁰⁰ + Scouring Sluive⁰ + Removal of Kompong Tuol Reg.



Alt-4 New Spillway³⁹⁰ + New Scouring Sluice¹¹⁰ + Removal of Kompong Tuol Reg.

COMPARISON OF ALTERNATIVE PLANS FOR HEADWORK

Alternative Item	Original Plan (New Spillway ³⁹⁰ +Repair of regulator ¹¹⁰)	Alt-1 (New Regulator ⁵⁰⁰ +Removal of Kompong Tuol Reg)	Alt-2 (New Spillway ⁵⁰⁰ +Removal of Kompong Tuol Reg)	Alt-3 (New Spillway ⁵⁰⁰ +Scouring sluice ⁰ +Removal of Kompong Tuol Reg.)	Alt-4 (New Spillway ³⁹⁰ +New scouring sluice ¹¹⁰ +Removal of Kompong Tuol Reg)
Reference	Proposed in DFR(Mar/2003)	Proposed by MOWRAM at the explanation meeting in March/03	Proposed by MOWRAM by his letter in April/03	Adding the scouring gates with no flood control share to the Alternative Plan -2	Similar to the Original plan, but the existing Regulator is replaced (simplified plan of gated portion of Alt-3)
Environmental impact to downstream area	No change of impact	No change of impact	Big impact is expected due to closing the original river channel by removal and filling.	No change of impact	No change of impact
Operation and maintenance	No increase of organizational and economic burden	Increase of organizational and economic burden	Decrease of burdens due to no O&M work	No increase of organizational and economic burden	No increase of organizational and economic burden
Construction cost	Relatively cheap	Relatively cheap	relatively high	More expensive than Alt-2	Relatively high
Operation at the floods	No change from the present operation	Much increase the volume of operation with high technique	No operation is required at all	No operation is needed at all	No change from the present operation
Securing the water way (treatment of sediment load)	No change of the present condition	Much increase of the scouring capability	Impossible and danger to the environment (The project would not be approved by MOE)	No change of the present condition	No change of the present condition
Utilization of the existing structure	Highly utilized	Low: No use of the existing structure	Low: No use of the existing structure	Low: No use of the existing structure	Low: No use of the existing structure
Consent of ADB for the removal of the gates	No need (No removal of gates installed by ADB loan)	Written consent is required	Written consent is required	Written consent is required	Written consent is required
Fail-safe design	Safety: 70 % of flood discharge can flow the spillway crest which is no need of operation and maintenance	Risky: 60 % of the total flood should pass the gated structure: Should remember the breach of NR-3 due to difficulty to open the gates in 1990's	Safety: 80 % of flood discharge can flow the spillway crest which is no need of operation and maintenance	Safety: 80 % of flood discharge can flow the spillway crest which is no need of operation and maintenance	Safety: 70 % of flood discharge can flow the spillway crest which is no need of operation and maintenance
Comments of the parties concerned	MOWRAM did not accept the proposed plan from the social and historical views and present the counter proposal of Alt-2	GOJ side worries about O&M of large scale gates and risk against flood from the fail-safe design concept	Since adverse impacts to the environment due to cancellation of gated structure is expected, the plan is not recommended by GOJ	GOJ side considers that the plan is expensive and doubtful about scouring capability due to complicated layout.	GOJ side feels the plan is natural and applicable from the view of O&M burdens and fail-safe concept
Overall evaluation (Tentative)		Proper provision of O&M set-up in terms of organization and budgeting would be required. The plan may against the basic concept of MOWRAM(structures should be maintenance & operation free as far as possible). The plan is risky against the flood control of the headwork comparing with other alternatives.	Adverse impacts to the environment due to cancellation of gated structure are expected. The plan should not be accepted. The gated structure to maintain the environmental condition such as scouring the river loads and release of water to the downstream is required.	Due to the layout of the sluices on 2 places and a right-angled turn of the water flow, the scouring capacity would be lower and more complicated than others. The construction cost would be the most expensive. Hydraulic design of the gate portion is complicated and may need model test.	The plan is conjunctive structure of spillway and scouring sluice as one structure, though the layout is similar to the Original Plan. The cost would be relatively expensive than the Original Plan due to replacement of the existing regulator. No increase of O&M burden and no decrease of fail-safe degree is expected.
Sketch					

"New Spillway390+Repair of regulator110" means construction of new spillway of 390 m³/s capacity and repair of the existing regulator of 110 m³/s capacity



ព្រះរាជាណាចក្រកម្ពុជា
Kingdom of Cambodia
ជាតិ សាសនា ព្រះមហាក្សត្រ
Nation Religion King

ក្រសួងធនធានទឹក និងខ្យល់ច្របូកច្របល់
Ministry of Water Resources
and Meteorology

N° *****
899 MOWRAM

Phnom Penh, 27.6, 2003

To : Mr. C R Rajendran
Director, Mekong Region Agriculture,
Environment and Natural Resources (MKAE)
Asian Development Bank
P O Box 789, 0980 Manila, Philippines,
+001-632-636 2444

Subject: Removal of Kampong Toul Regulator

Dear Mr. Rajendran,

In 1998, Ministry of Water Resources and Meteorology (MOWRAM) had requested to Japanese Government for Grant Aid Assistance to rehabilitate the Kandal Stung Irrigation System which consists of Tuk Thla Regulator, Kampong Toul Regulator and 7th January Spillway, Intake Gate and the Main Canal.

Following the flood of 2000, many irrigation systems have been collapsed and loss their original function and led to insufficient water storage capacity for agricultural production. In that time the Government of Japan had not accepted yet to the MOWRAM's request and MOWRAM decided to request to the Asian Development Bank assistance.

Amongst of some projects, Kampong Toul and Toek Thla head Regulator is one of the subprojects, under the ADB - Emergency Flood Rehabilitation Project/Flood Control and Irrigation Component, has been repaired and put it in a normal operation with a cost of USD 100,000.

In 2002, the Government of Japan decided and dispatched the Basic Design Team to conduct the basic design of the aforementioned project.

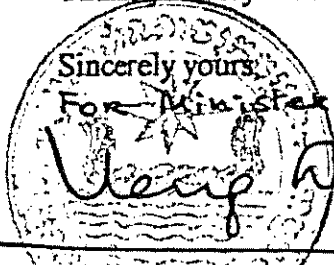
MOWRAM has requested for long term development to JICA to consider removing the Kampong Toul Regulator as it was old and constructed in Pol Pot regime. The seepage under the foundation of the structure has been occurred and was in a difficult condition to be recovered. JICA understood the background of MOWRAM's request and accepted it.

So, in order to allow the JICA to continue to do their detail design to the above mentioned project, MOWRAM would like to seek your comment on this matter.

It would be highly appreciated so much for your kind early response.

Please find in the attached files, the letter of JICA and ADB Consultant.

Thank you very much for your continuous assistance. *du h*



Veng Sakhon

VENG SAKHON,
Under-Secretary of State, MOWRAM

- CC: - ADB Residence Mission in Cambodia
- JICA Office in Cambodia
- File

JC15-159

May 23, 2003

To: H.E. Lim Kean Hor,
Minister of Water Resources and Meteorology

Subject: Draft of Basic Design on the Rehabilitation of Kandal Stung Irrigation System

Your Excellency,

With reference to the letter No.551 MOWRAM dated April 22, 2003, I would like to inform you that JICA headquarter plans to conduct the additional study under the condition of removing of Kampong Tourl regulator. Before starting off the further study, I would like to make sure items below:

Handwritten notes in Khmer:
ក្រុមការងារ V.ក្រុម
ក្រុមការងារ ក្រុមការងារ
ខេត្ត ADB ឧបត្ថម្ភ
JK
20/05/03

ADB understands removal and displace of the Kampong Tourl regulator that has renovated in 2001 with assistance from ADB.

The purpose of renovation of Tuk Thla regulator is not for the improvement of flood flow capacity but for the stable irrigation water supply in this grant aid cooperation project.

Considering your request, draft basic design will be determined after comparison of alternative designs.

It would be appreciated if you could provide us a written response.

Sincerely yours,



Juro CHIRARAISHI
Resident Representative
JICA Cambodia Office

C.C.

- H.E. Veng Sakhon, Under Secretary of State, MOWRAM
- H.E. Ly Chana, Director General of Administration Affaires, MOWRAM
- H.E. Bun Hean, Director General of Technical Affairs, MOWRAM
- Mr. Pich Veasna, Director of Planning and International Cooperation
Department, MOWRAM
- Mr. KOBAYASHI Takano, JICA Expert to MOWRAM
- Mr. MIYAZAKI Akira, Chief Advisor of TSC Project

Our ref: 61782/1/50/429
61782/2/340/429
Your ref:

**Mott
MacDonald**

Under Secretary of State
Ministry of Water Resources and Meteorology
47 Norodom Boulevard
Phnom Penh
Cambodia

Emergency Flood Rehabilitation Project
Ministry of Water Resources and Meteorology
47 Norodom Boulevard
Phnom Penh
Cambodia
Tel/Fax: +855 23 219 577/210 362
Email: mottmac@bigpond.com.kh

Attention: H.E. Veng Sakhon

4 June 2003

Your Excellency,

**Emergency Flood Rehabilitation Project: 1824-CAM (SF)
Kandal Stung Irrigation System: Basic Design and Kampong Toul Complex**

Thank you for copies of correspondence between yourselves and JICA in April and May on the above subject.

The ADB-assisted EFRP focussed upon urgent repairs to works damaged by the devastating floods of September 2000 and putting them into an operable condition. Funds were not generally available to carry out planning and detailed studies for new works.

Such urgent rehabilitation works were carried out at two of the three regulating structures that make up the Kampong Toul Complex, namely the 24 gate Tuk Thla barrage and the 6 gate Kampong Toul regulator. The total cost of the works relating to the Kampong Toul regulator was about \$100,000.

In preparing the rehabilitation contract, the Master Plan for the Rural Development in the Suburbs of Phnom Penh, prepared for JICA in 1995 was studied. This plan included for works both to improve the performance of the Kampong Toul complex and to upgrade the Kandal Stung Irrigation Project. The estimated cost was given as \$7.4 million. (see extract of Prek Thnot Flood Dike Rehabilitation: Design Review Report, April 2001)

We are aware that the Kampong Toul regulator leaks and we agree that the number of river regulating structures should be kept to the minimum. Hence, a new structure incorporating a fixed weir and scour sluices would be the best long-term option, allowing the Kampong Toul regulator to be removed. Such a new structure should be designed to allow for the upgrading of RN 3.

Yours sincerely,
For Mott MacDonald



Martin Gillham
Acting Team Leader

cc Chhon Bitoul

LIST OF ATTENDANCE

Date: July 02, 2003

Time: from 3:00 p.m.

Place: Office of Under Secretary of State, MOWRAM

Subject: **Additional Survey for Alternative Plans**

No.	Name	Designation	Signature
1	UENG SAKHON	Under Secretary of State, MOWRAM	<i>Ueng Sakhon</i>
2	Ngoun Pich	D / Director of Engineering	<i>Ngoun Pich</i>
3	THENG TARA.	Director Dept. of Water Resources.	<i>Theng Tara</i>
4	EM BUN THOEN	Director Dept. of Engineering	<i>Em Bun Thoen</i>
5	TE AUV. KIM	Director of Dept of Irrigation and Agriculture	<i>Te Auv. Kim</i>
6	PIEH - VEASNA	Director of PICD	<i>Pieh - Veasna</i>
7	Akira Miyazaki	Chief Advisor of TSC, JICA	<i>宮崎 旦</i>
8	Takanobu Kobayashi	JICA Advisor to MOWRAM	<i>小林 隆信</i>
9	Arata Yamaguchi	Nippon Koei	<i>山岡 暲</i>
10	Jiro Takeichi	JICA Cambodia office	<i>滝内 次郎</i>
11	Koji OKADA	JICA Study Team	<i>岡田 浩司</i>
12	Yutaka Niikawa	JICA Study Team	<i>新川 豊</i>
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