Plan and Opelation & Project Achievement Chart

Activities in Plan of Operation				2001	2002	2003	2004	05	Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items									Present status of implementation	Issued to be addressed			
1. Assessment of technical capacity and setting of technical level	1-1. Collect data	Conduct general survey of existing conditions (construction work, operation and maintenance of facilities by the Cambodian side and international cooperation organizations)							collected data (PRASAC, KOMPING PUOY, etc.) Visited irrigation projects and interviewed personnel concerned		Systematic collection of documents has not been done Maintenance system has not been established	100%	
		1-1-2 Conduct general survey of existing conditions (construction work, operation and maintenance of facilities by international cooperation organizations)									merge with the above row		
	1-2. Assess present technical capacity in the field of survey	Assess present technical capacity of survey							Conducted interviews with staff of MOWRAM, ITC, and other institutes about staff training and contents of education		Recruitment test and certifying examination for survey and other fields do not exist Education focuses on basic fields and lack theoretical understanding	100%	
		1-2-2 Assess present technical capacity of hydrology and meteorology									merge with the above row		
	1-3 Assess present technical capacity in the field of planning	Assess present technical capacity of irrigation planning							Conducted interviews with staff of MOWRAM, PBSWRAM, and others		No irrigation planning based on water requirement Projects are implemented without planning	100%	
		1-3-2 Assess present technical capacity of design water requirement and drainage discharge									merge with the above row		
	1-4 Assess present technical capacity in the field of design	1-4-1 Collect design documents							Collected documents from related departments of MOWRAM			100%	
		1-4-2 Study cases of existing structures							Conducted studies of related project areas			100%	

Activities in Plan of Operation				2001	2002	2003	2004	05	Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items									Present status of implementation	Issued to be addressed			
	1-5 Assess present technical capacity in the field of construction management	1-5-1 Assess present technical capacity of construction planning and preparation of design documents							Collected documents of construction management Conducted interviews with C/Ps and others Conducted site surveys of construction site		No clear standard for construction management Operators have basic skills but difference in ability among operators is significant	100%	
		1-5-2 Assess present knowledge of construction control							Conducted evaluation of operators of construction machinery by a short-term expert			100%	
	1-6 Assess present technical capacity in the field of water management	1-6-1 Collect manuals of water management as case studies							Studied water users associations in Kompong Speu, Battambang, Kompong Cham and other		No manual except MOWRAM's policy on water users association Canal density is low, and plot-to-plot irrigation is common	100%	
		1-6-2 Evaluate present water management techniques through case studies							Same as the above			100%	
	1-7 Set the level of skills to be transferred in each field	1-7-1 Set the level of skill in survey/planning							Set the target to improve overall technical skills with the focus on basic fields		Has not reached the level of technical expert except some parts of surveying Technology transfer will focus on irrigation planning	100%	Level of agricultural high school, assistant surveyor
		1-7-2 Set the level of skill in design/water management							Set the target to transfer basic skills necessary for irrigation engineers and technicians		Design: textbooks of agricultural high school are appropriate Water management: plot-to-plot irrigation, earth canal	100%	
		1-7-3 Set the level of skill in construction management							Set the target based on evaluation of present techniques and experience of C/Ps		C/Ps have little experience of construction Technology transfer will focus on basic fields, and aim at implementation of construction works	100%	
2. Transfer of technology through OJT	2-1 Transfer survey technique through OJT	2-1-1 Conduct general survey of existing conditions (social, farm system, water use, etc.)	2-1-1-A Farmers survey						Conducted base-line survey		Completed survey necessary for planning	100%	Understand items and methods necessary for planning Become capable of planning on
			2-1-1-B Confirmation of existing structures						Conducted study around the model site		No structure to evaluate	100%	
			2-1-1-C Topographic survey						Collected topographic maps		merge with topographic mapping		

Activities in Plan of Operation					Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items				2001 2002 2003 2004 05	Present status of implementation	Issued to be addressed			
			2-1-1-C Topographic map		Produced topographic maps (1/1,000, 1/2,500) and land inventory		Useful for project planning	100%	their own
			2-1-1-D Hydrology and meteorology survey		Set up meteorological station and collected meteorological data Conducted study with Meteorology Department, MOWRAM	Data arrangement Set up of additional stations	Low awareness of importance of basic survey	60%	
		2-1-2 Conduct discharge survey	2-1-2-A Water level measurement		Arranged measurement methods Set up observation sites Produced a H-Q curve	Continuous observation and data collection Practical skills	Low understanding about necessity of basic survey	70%	
			2-1-2-B Discharge measurement						
		2-1-3 Transfer survey techniques	2-1-3-A Basic survey skill		Conducted training of leveling, distance and plane-table survey in office compound and model site	Traversing survey Use of total station Understanding of survey theory	Reached to the level of basic survey	80%	Transfer technology at the level of assistant surveyor
			2-1-3-B Practical survey techniques for the model site		Conducted route survey along the main canal and tertiary canals in the model site	Construction survey Improved accuracy	Low accuracy Lack in understanding about coordination with design and construction	70%	
			2-1-3-C Application of the above techniques to the model site		Conducted detailed survey and drawings necessary for design	Accuracy Efficiency	Low accuracy	60%	
	2-2 Transfer planning techniques through OJT	2-2-1 Transfer techniques of unit water requirement survey	Water requirement rate		Arranged survey apparatus set up in model farms conducted observation of water level, water requirement, rainfall, evapo-transpiration, and others Conducted survey with Meteorology Department	Continued survey Application to other areas	Understand process of survey Lack applicability	70%	

Activities in Plan of Operation										Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items				2001	2002	2003	2004	05		Present status of implementation	Issued to be addressed			
			2-2-2-B Water requirement rate at *the ordinary* irrigation period									merge with the above row		
		2-2-2 Produce an irrigation plan for the model site								Confirm irrigation planning at model site with assistance of short-term expert	Examination of present plan based on water requirement survey	Lack in understanding about necessity and importance of irrigation planning	50%	
		2-2-3 Produce economic evaluation										Omit from activities due to lower priority than other activities		
	2-3 Transfer design techniques through OJT	Transfer design techniques of irrigation and drainage canals and related structures through OJT	basis design techniques for model site							Transferred basics of hydraulic, hydrology, soil mechanic, structural engineering	Continued technology transfer	*Improved understanding* bout process of design work and design standard	30%	*Design* tertiary canals and related structures in the model site on their own
			Practical design *techniques for* irrigation and drainage canals in the model site							Transferred technology on design *of tertiary canals in the model* site	Hydraulic *calculation* with consideration of head loss			
			Practical design techniques for related structures in the model site							Transferred technology on design of related structures in the model site	Hydraulic, soil pressure, structural calculation through actual design work			
	2-4 *Transfer* construction management techniques through OJT	2-4-1 *Prepare for* construction (road repair, etc.)								*Repair road as training of* machinery operation and construction		*Repair completed* Level of operators and supervisors understood	*100%*	*Plan* and implement construction of tertiary canals and

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Activities in Plan of Operation					Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items				2001 2002 2003 2004 05	Present status of implementation	Issued to be addressed			
		2-4-2 Train operators of construction machinery	2-4-2-A Operation		Conducted training of operation and maintenance of construction machinery		Low operation skills Experience of construction work	100%	related structures based on design documents
			2-4-2-B Maintenance		Conducted training of operation and maintenance of construction machinery C/P does regular maintenance of machinery with MOWRAM staff		Good regular maintenance of provided equipment Complicated repair cannot be done in MOWRAM		
		2-4-3 Produce construction planning and design documents	2-4-3-A Construction procedure		Conducted OJT on construction procedure of earthworks and concrete structures during construction work in 2002	Continued OJT on procedure in construction works	Understand the flow of works in canal construction Unable to take appropriate measures in actual site due to lack of experience	30%	
			2-4-3-B Design documents		Conducted OJT on preparation of design documents including contraction plan for the construction work in 2002	Continued OJT to understand intentional construction, and to produce construction plan	C/Ps cannot produce construction plan		
		2-4-4 Construct facilities	2-4-4-A Irrigation canals		Constructed a canal of 850m	Construct a canal (7.1km) and related structures	Low annual construction capacity due to low technical capacity of supervisors and machinery operators Drainage has no experience/plan of construction, and will be excluded from activities	20%	
			2-4-4-B Drainage canals						
			2-4-4-C Other facilities		Constructed an intake, an offtake, a distribution box and other structures belonging to the 850m canal				

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Activities in Plan of Operation					Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items				2001 2002 2003 2004 05	Present status of implementation	Issued to be addressed			
		2-4-5 Take construction control	2-4-5-A Schedule control		Conducted OJT on schedule management, but schedule chart was unused due to delay in construction work caused by unexploded shells and lack of construction management capacity	Continued OJT on schedule management through construction works	Construction and arrangement of machinery/labor are ill planned and inefficient due to lack of awareness about cost and construction period Need for improved capacity of supervisors and machine operators, and construction based on construction schedule	30%	
			2-4-5-B Quality control (soil test, concrete test)		Quality control including concrete tests have not been implemented due to delay in construction schedule and lack of technical capacity	Need for conducting tests at appropriate timing	Understand necessity of quality control and control of finished work quality for better construction work		
			2-4-5-C Control of finished work quality		Control of finished work quality has not been conducted due to delay in construction schedule Conducted survey of finished work quality upon completion of construction work	Need for conducting survey of finished work quality at appropriate timing			
	2-5 Transfer water management techniques through OJT with participation of farmers	2-5-1 Promote participation of farmers at the model site	2-5-1-A Participatory activities		Conducted survey with 39 farmers using the tertiary canal on the present water use Constructed small-scale crossings as part of participatory activities	Need for continued survey and other participatory activities	Need for similar activities with cost sharing by beneficiaries	60%	
			2-5-1-B Farmers meetings		Conducted 3 interviews about impact of construction work and change in water supply	Identification of problems and strategies for group formation	Need for small-scale (about 20 people) farmers meetings	30%	

Activities in Plan of Operation				2001	2002	2003	2004	05	Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items									Present status of implementation	Issued to be addressed			
		2-5-2 Produce a water management plan with participation of farmers for the model site	2-5-2-A Study visit to existing water users associations						Has not been conducted	Identification of appropriate water users associations	Need for exchange of opinions among farmers	0%	
			2-5-2-B Collection of documents on water management planning						Prepared a plan for collection of manuals and documents used in Cambodia and other countries	Continued collection		20%	
3. Production of manuals	3-1 Produce manuals on survey technique	3-1-1 Produce a manual on farmers survey							Produced a manual		Some manuals produced	100%	Production of manuals suitable for the condition of Cambodia
		3-1-2 Produce a manual on survey	Level, distance, plane-table, traversing						Produced manuals on level, distance, plane-table, and traverse survey	Revision and translation to Khmer language		70%	
		3-1-3 Produce a manual on hydrology and meteorology survey	Hydrology, meteorology						Manuals being prepared	Revision and translation to Khmer language		30%	
		3-1-4 Produce a manual on discharge measurement	Discharge measurement, H-Q curve						Produced manuals on discharge survey and H-Q curve			80%	
	3-2 Produce manuals on planning technique	3-2-1 Produce a manual on design water requirement and drainage discharge	Water requirement rate, irrigation planning method						Produced a manual on water requirement survey			50%	
		3-2-2 Produce a manual on irrigation system									merge with the above row		
		3-2-3 Produce a manual on economic evaluation								Omit due to lower priority than other activities			
	3-3 Produce design standard and manuals on design techniques and project evaluation	3-3-1 Produce design manuals	3-3-1-A Open canals						Preparing draft manuals on: A: basic hydraulic B: basic design of facilities C: design of small-scale canals and related structures D: supplementary manual	High need for manuals listed on the left	Low need for a project evaluation manual More realistic to produce design manuals instead of design standards	30%	Manuals which can be used as textbook for introductory level engineers and technicians
			3-3-1-B Related structures										

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Activities in Plan of Operation										Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items				2001	2002	2003	2004	05		Present status of implementation	Issued to be addressed			
	3-4 Produce manuals on construction management techniques	3-4-1 Produce specifications for construction	3-4-1-A General Specification							Produced specifications for construction work in 2002	Use of specifications in OJT, and revision as necessary	Lack of understanding about specifications Construction not implemented according to specifications	30%	Focus on documents on process of construction work as a reference for Cambodian engineers and technicians to implement construction work on their own
			3-4-1-B Construction process (fixed ruler, banking, concrete structures)							Preparing a manual on fixed ruler	Production of manuals on banking and concrete structures though OJT in construction work	Conducted OJT on process of construction work Manuals have not been produced		
			3-4-1-B Special specification									Special specifications have little importance for direct management of construction works under similar conditions		
		3-4-2 Produce manuals on construction management techniques	3-4-2-A Schedule control							Produced a draft construction management manual	Verification of the manual and revision as necessary	The draft manual produced based on Japanese manual does not meet the technical level of Cambodia	30%	
			3-4-2-B Quality control (soil test, concrete test)											
			3-4-2-C Control of finished work											
		3-4-3 Produce manuals on cost estimates	3-4-3-A Unit price									Difficult to set requirement per unit work due to different technical capacity among operators and farmers hired as workers Not enough time and personnel to conduct unit price survey		
			3-4-3-B Requirement per unit work											
			3-4-4-C Others											
	3-5 Produce manuals on water management techniques	3-5-1 Produce a manual on operation and maintenance of irrigation structures on farm level								Collected documents	Contents suitable for the scale of the model site		20%	

Activities in Plan of Operation				2001	2002	2003	2004	05	Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items									Present status of implementation	Issued to be addressed			
		3-5-2 Produce a manual on water management techniques on farm level							Collected documents				
4. Training	4-1 Conduct training on survey	4-1-1 Conduct training on farmers survey									Consider including this item to other training subjects		C/Ps learn technical skills necessary for trainers
		4-1-2 Conduct training on survey							Training has not been conducted Conducted training among C/Ps	Basic survey techniques	No systematic, comprehensive training conducted	0%	
		4-1-3 Conduct training on hydrology and meteorology survey							Training has not been conducted Conducted survey with Meteorology Department	Coordination with Meteorology Department		10%	
		4-1-4 Conduct training on discharge measurement							Training has not been conducted	Training focused on measurement on site		0%	
	4-2 Conduct training on planning	4-2-1 Training on planning of irrigation system								Conduct with water requirement survey			
		Training on design water requirement and drainage discharge	Water requirement rate, irrigation planning method						Training has not been conducted Conducted survey with Meteorology Department Conducted training with Mekong River Commission	Basic training on water requirement survey and irrigation planning	No systematic, comprehensive training conducted	10%	
	4-3 Conduct training on design techniques	4-3-1 Conduct training on design of open canal							Training has not been conducted	Preparation of textbooks and training of C/Ps		30%	
		4-3-2 Conduct training on design of related structures											
	4-4 Conduct training on construction management techniques	4-4-1 Conduct training on construction planning and design documents	4-4-1-A Construction process						Training has not been conducted	Preparation of textbooks and training of C/Ps		0%	C/Ps learn technical skills necessary for trainers
			4-4-1-B Construction planning						Training has not been conducted	Preparation of textbooks and training of C/Ps			

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Activities in Plan of Operation				Implementation		Achievement and evaluation	Achievement rate (%)	Final target
Items			2001 2002 2003 2004 05	Present status of implementation	Issued to be addressed			
		4-4-2 Conduct training on construction management		Training has not been conducted	Preparation of textbooks and training of C/Ps		0%	
	4-5 Conduct training on water *management* techniques with participation of farmers	4-5-1 Conduct training on water management on *farm level*		Conducted a small meeting with farmers to transfer equipment of *irrigation structures*	Selection of core farmers	Problem identification at farmers meetings is important	30%	Capacity building for creation of water users association
		4-5-2 Conduct training on operation and maintenance of irrigation structure on farm level		Training has not been conducted				
備考:		Items added to Annual Plan of Operation (APO)						
		Items deleted from APO						
		Items revised from APO						
		Change in timing of activities						

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ANNEX 4

Assiginment of Japanese Experts

Name	Expertise	Duration	Organization
Mamoru Ishikawa	Chief Advisor	1 February 2001 ~ 31 March 2002	MAFF
Akira Miyazaki	Chief Advisor	2 June 2002 ~ 1 June 2004	MAFF
Mikayo Yamazaki	Coordinator / Farmers Survey･Training	10 January 2001 ~ 9 January 2004	JICA
Kenji Yasuda	Survey / Planning	1 April 2001 ~ 31 March 2004	MAFF
Yoji Ebihara	Design / Water Management	10 January 2001 ~ 9 January 2004	R.D.I
Yoichi Ihara	Construction Management	10 January 2001 ~ 31 May 2003	Hokkaido Prefectural Government
Kenji Sekijima	Construction Management	26 May 2003 ~ 25 May 2005	MAFF
Satoru Nishio	Topographical Survey / Topographical Mapping	15 November 2001 ~ 12 December 2001	Kokusai Kogyo Co.,LDT.
Kazuhiko Kamachi	Operation and Maintenance of Construction Machinery	13 February 2002 ~ 12 April 2002	Construction Project Consultants, INC.
Kiyoji Asai	Planning Theory	30 March 2002 ~ 13 April 2002	Tokyo Agriculture University
Kiyoji Asai	Planning Theory	5 September 2002 ~ 24 September 2002	Tokyo Agriculture University
Yasushi Osato	Design on Small Scale Canals and Related Structures	30 September 2002 ~ 16 November 2002	Taiyo Consultants
Yoichi Hayashida	Construction Material Test	25 November 2002 ~ 21 December 2002	National Institute for Rural Engineering
Norihumi Shinmura	Operation and Maintenance of Construction Machinery	16 March 2003 ~ 13 April 2003	
Yasushi Osato	Design on Small Scale Irrigation Structures	1 July 2003 ~ 31 August 2003	Taiyo Consultants
Yukihiro Yamamoto	Participatory Water Management	1 September 2003 ~ 4 October 2003	Japan Green Resources Corporation

ANNEX 5

Acceptance of Cambodian Counterparts for Training in Japan

Name	Field	Title of Training	Duration	Venue	Remarks
H.E. Veng Sakhon	Project Director	Capacity Building for Irrigation Engineers	10 December 2000 ~ 16 December 2000	JICA TBIC	
Te Ouv Kim	Project Sub-Manager	Capacity Building for Irrigation Engineers	14 May 2001 ~ 25 May 2001	JICA TBIC	
Ngoun Pich	Project Sub-Manager	Capacity Building for Irrigation Engineers	14 May 2001 ~ 25 May 2001	JICA TBIC	
Prum Kanthel	Water Management / Farmers Survey	Irrigation and Drainage	30 July 2001 ~ 17 October 2001	JICA TBIC	
Mao Rath	Survey	Irrigation, Drainage and Rural Development	14 April 2002 ~ 13 July 2002	JICA TBIC	
Ung Kotaro	Construction Management	Irrigation, Drainage and Water Management Irrigation, Drainage and Rural Development	16 May 2002 ~ 17 August 2002	JICA TBIC	
Huot Chandararith	Water Management / Farmers Survey	Operation and Management of Irrigation Canal System	15 July 2002 ~ 24 October 2002	JICA TBIC	
Uch Hing	Survey	Irrigation, Drainage and Rural Development	13 June 2003 ~ 23 September 2003	JICA TBIC	
Theng Tara	JCC Member	Water Resources Management	31 August 2002 ~ 13 September 2002	JICA TBIC	
Em Bunthoeun	JCC Member	Management Methods for Irrigation System Projects	31 August 2002 ~ 13 September 2002	JICA TBIC	

List of Equipment Provided by the Government of Japan

ANNEX 6

B/L (budget line): E (budget for equipment), J (budget for Japanese experts), L (budget for local activities), T (equipment transferred from other projects)

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2000	E	001	4WD Vehicle	Toyota/Land Cruiser Station Wagon	US$38,500.00	O		
2000	E	002	Pickup Truck	Toyota/Hi-Lux 4WD	US$22,500.00	O		
2000	E	003	Pickup Truck	Toyota/Hi-Lux 4WD	US$22,500.00	O		
2000	E	004	Copy Machine	Canon/Copier NP-7210	US$5,054.00	O		
2000	E	005	Laser Printer	Canon/LBP-800	US$360.00	O		
2000	E	006	Laser Printer	Canon/LBP-800	US$360.00	O		
2000	E	007	Desktop Computer	IBM/300GL	US$1,519.00	O		
2000	E	008	Desktop Computer	IBM/300GL	US$1,519.00	O		
2000	E	009	Desktop Computer	IBM/300GL	US$1,519.00	O		
2000	E	010	Desktop Computer	IBM/300GL	US$1,519.00	O		
2000	E	011	Desktop Computer	IBM/300GL	US$1,519.00	O		
2000	E	012	Wireless Telephone	MOTOROLA/GP68 UHF	US$180.00	O		
2000	E	013	Wireless Telephone	MOTOROLA/GP69 UHF	US$180.00	O		
2000	E	014	Wireless Telephone	MOTOROLA/GM950i	US$350.00	O		
2000	E	015	Wireless Telephone	MOTOROLA/GM951i	US$350.00	O		
2000	E	016	Wireless Telephone	MOTOROLA/GM952i	US$350.00	O		
2000	E	017	Wireless Telephone	MOTOROLA/GM953i	US$350.00	O		
2000	E	018	Auto Level	Topukon/AT-M3	US$1,325.00	O		
2000	E	019	Theodolite	Topukon/TL-20G	US$4,017.00	O		
2000	E	020	Plate Table Set	Tamaya/TPT-SET Tamura	US$292.00	O		
2000	E	021	Planimeter	Tamaya/PLANIX7	US$671.00	O		
2000	E	022	Planimeter	Tamaya/PLANIX7	US$671.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2000	E	023	Cone Penetrometer	Marui/MIS-243-1-01	US$3,250.00	○		
2000	E	024	Motorized Direct Shear Test	Marui/MIS-233-1-02	US$13,458.00	○		
2000	E	025	Compaction Set	Marui/MIS-217-1-01	US$2,392.00	○		
2000	E	026	Falling-Head Permeameter	Marui/MIS-227-1-03	US$6,578.00	○		
2000	E	027	Drafting Machine	MAX/MD-3000, PM-912SR	US$2,407.00	○		
2000	E	028	Drafting Machine	MAX/MD-3000, PM-913SR	US$2,407.00	○		
2000	J	001	Paddy Field Receded Tester	Daiki/DIK-4300	US$1,875.00	○		
2000	J	002	Laptop Computer	IBM/ThinkPad I Series 1800	US$2,408.00	×	since May 2003, broken	
2000	J	003	Laptop Computer	IBM/ThinkPad I Series 1800	US$2,408.00	○		
2000	J	004	Color Printer	Canon/BJ-F6600	US$307.00	○		
2000	J	005	Color Scanner	Canon/CanoScan N1220U	US$140.00	○		
2000	J	006	Wireless Print Server	BUFFALO/AirP's LPV-WL11	US$192.00	×	since May 2001, broken	
2000	J	007	Wireless Lan Station	BUFFALO/AirStation WLAR-L11-M	US$275.00	×	since April 2003, wire LAN network installed	
2000	J	008	Digital Camera	Canon/IXY Digital	US$492.00	○		
2000	J	009	Laptop Computer	Fujitsu/FMV-BIBLO NE5/650R	US$2,292.00	○		
2000	J	010	Laptop Computer	IBM/ThinkPad I Series 1800	US$1,917.00	×	since May 2003, broken	
2000	J	011	Glassfibre Tape Measure 50m	KDS/211-1952	US$48.00	○		
2000	J	012	Measure Rope 100m	Sekisui/210-1603	US$90.00	○		
2000	J	013	Aluminum Measurement Rod	Harakeikisha/252-2135	US$79.00	○		
2000	J	015	Current Meter	Harakeikisha/type 10	US$2,250.00	○		
2000	J	016	Curve Ruler	Harakeikisha/103-2011	US$150.00	○		
2000	J	017	Drawing Instruments	Harakeikisha/120-3581	US$111.00	○		
2000	J	018	Barometer	Harakeikisha/271-3581	US$350.00	○		
2000	J	019	Iron Spirit Level	Harakeikisha/4621	US$34.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2000	L	001	Water Cooler and Heater	National/Milux	US$150.00	O		
2000	L	002	Electric Pot	National/3-21	US$30.00	O		
2000	L	003	Sofa Set	Chea Luck	US$275.00	O		
2000	L	004	Refrigerator	Hitachi/180J	US$250.00	O		
2000	L	005	Refrigerator	Hitachi/180J	US$250.00	O		
2000	L	006	Sofa Set	Chea Luck	US$275.00	O		
2000	L	007	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	008	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	009	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	010	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	011	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	012	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	013	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	014	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	015	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	016	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	017	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	018	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	019	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	020	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	021	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	022	Desk and Drawers	LEECO/BD147CH+046A+046B	US$255.00	O		
2000	L	023	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	024	Office Chair	LEECO/LSC421	US$65.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2000	L	025	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	026	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	027	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	028	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	029	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	030	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	031	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	032	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	033	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	034	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	035	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	036	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	037	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	038	Office Chair	LEECO/LSC421	US$65.00	O		
2000	L	039	Bookshelf	LEECO/304SGB	US$135.00	O		
2000	L	040	Bookshelf	LEECO/304SGB	US$135.00	O		
2000	L	041	Bookshelf	LEECO/304SGB	US$135.00	O		
2000	L	042	Desk	LEECO/AT1600	US$170.00	O		
2000	L	043	Leather Chair	LEECO	US$380.00	O		
2000	L	044	Safety Box	LEECO/ES20	US$150.00	O		
2000	L	045	Camera	Olympus/200M115	US$210.00	O		
2000	L	046	Electric Fan	Toshiba/934-2533	US$37.00	O		
2000	L	047	Electric Fan	Toshiba/934-2533	US$37.00	O		
2000	L	048	Electric Fan	Toshiba/934-2533	US$37.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2000	L	049	Electric Fan	Toshiba/934-2533	US$37.00	○		
2000	L	050	Hall Puncher	KW-triO	US$4.80	○		
2000	L	051	Hall Puncher	KW-triO	US$14.90	○		
2000	L	052	Stapler	Kangaro/DS-12S/17	US$35.00	○		
2000	L	053	Paper Cutter	ALFAX	US$38.00	○		
2000	L	054	Fax Machine	PanasonicKX-FP105	US$270.00	○		
2001	E	001	Concrete Test Hammer	PROCEQ/NR	US$1,450.00	○		
2001	E	013	4WD Vehicle	Toyota/Land Cruiser Station Wagon	US$38,950.00	○		
2001	E	014	Software Autodeck	Autocad 2002 (E)	US$4,060.00	○		
2001	E	015	Printer	HP/Deskjet 1125C	US$324.00	○		
2001	E	016	Compression Apparatus	Marui/MIC-101-0-02	US$39,610.00	○	under final adjustment	
2001	E	017	Concrete Mixer	Marui/MIC-109-1-61	US$27,266.00	○		
2001	E	018	Crawler Carrier	Komatsu/CD60R-1A	US$73,050.00	○		
2001	E	019	Concrete Breaker	Toyo Kuuki Seisakusho/TPB-40	US$1,528.00	○		
2001	E	020	Concrete Vibrator	Marui/MIC-135-0-01	US$3,040.00	○		
2001	E	021	Air Compressor	Denyo/DIS-180SS	US$23,375.00	○		
2001	E	022	Generator	Denyo/DCA-60SPI	US$28,188.00	○		
2001	E	023	Hydraulic Excavator	Caterpillar/312C	US$120,560.00	○		
2001	E	024	Bulldozer	Caterpillar/D5MXL	US$118,800.00	○		
2001	E	025	Vibratory Roller	Hokuetsu Kougyou/BW115AD	US$25,600.00	○		
2001	E	026	Vibratory Roller	Hokuetsu Kougyou/BW75S	US$8,800.00	○		
2001	E	027	Dump Truck	Hino/FD3HESD-AAVDUMP	US$24,576.00	○		
2001	E	028	LCD data projector	Sony/VPL-CS3	US$2,850.00	○		
2001	E	029	Television	Sharp/20GP3)	US$320.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2001	E	030	VCR	Sharp/V50S	US$128.00	O		
2001	E	031	Overhead Projector	Kodak/EKTA Lite H30, 220V	US$1,250.00	O		
2001	E	032	Slide Projector	Kodak/EKTA Graphic III ATS, 220V	US$2,250.00	O		
2001	E	033	Projector Screen		US$170.00	O		
2001	E	034	Level	Topukon/AT-M3	US$1,155.00	O		
2001	E	035	Level	Topukon/AT-M3	US$1,155.00	O		
2001	E	036	Theodolite	Topukon/TL-20G	US$3,448.00	O		
2001	E	037	Prism Aridade Set	Myzox/EX-3	US$783.00	O		
2001	E	038	Prism Aridade Set	Myzox/EX-3	US$783.00	O		
2001	E	039	Area-line Meter	Tamaya/Planix 7	US$601.00	O		
2001	E	040	Area-line Meter	Tamaya/Planix 7	US$601.00	O		
2001	E	041	Desicator	TokyoShinohara/SS-605	US$1,600.00	O		
2001	E	042	Desicator	TokyoShinohara/SS-605	US$1,600.00	O		
2001	E	043	Desicator	TokyoShinohara/SS-605	US$1,600.00	O		
2001	E	044	Infrared Moisture Meter	KettoKagaku/FD-600	US$1,080.00	O		
2001	E	045	Field Density Apparatus	Hisanaga/LS-501A	US$250.00	O		
2001	E	046	Field Density Apparatus	Hisanaga/LS-501A	US$250.00	O		
2001	E	047	Field Density Apparatus	Hisanaga/LS-501A	US$250.00	O		
2001	E	048	Electric Balance	ShimazuSeisakusho/AW-220	US$1,570.00	O		
2001	E	049	Electric Balance	ShimazuSeisakusho/BL-2200H	US$660.00	O		
2001	E	050	Electric Scale	ShinkoDenshi/CG-60KE	US$1,540.00	O		
2001	E	051	Oven	TokyoShinohara/SSA-135	US$3,760.00	O		
2001	E	052	Automatic Water Distiller	Toyo/GS-2000	US$3,440.00	×	has not been connected to water supply	
2001	E	053	Liquid Limited Test Set	TokyoShinohara/SS-S-243	US$260.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2001	E	054	Recedes Depth Meter	Daikirikakougyo/DIK-4300	US$880.00	○		
2001	E	055	Recedes Depth Meter	Daikirikakougyo/DIK-4300	US$880.00	○		
2001	E	056	Coarse Aggregate Hydrometer	TokyoShinohara/SS-C-468	US$1,260.00	○		
2001	E	057	Slump Tester	TokyoShinohara/SS-C-508A	US$180.00	○		
2001	E	058	Rool-in Meter	TokyoShinohara/SS-C-516A	US$1,950.00	×	never used, laboratory prepared recently	
2001	E	059	Vibrator	TokyoShinohara/SS-C-507	US$504.00	○		
2001	E	060	Instrument Shelter	Hisanaga/H3-SF	US$816.00	×	will be set up in November 2003	
2001	E	061	Thermo-Hydrograph	Otakeiki/No.3、I 型	US$332.00	×	will be set up in November 2003	
2001	E	062	Rain Gauge	Ootakeiki/No.34	US$910.00	×	will be set up in November 2003	
2001	E	063	Evaporation Pan	Ootakeiki/No.41	US$311.00	×	will be set up in November 2003	
2001	J	001	Laptop Computer	NEC/LAVIEC LC700J/64DR	US$2,067.00	○		
2001	J	002	Computer Software	Sokia/12D-Earthworks 50K Base	US$1,920.00	○		
2001	J	003	Computer Software	Autodesk/Autocad2002	US$4,144.00	○		
2001	J	004	Color Printer	HP/desk jet 1125C	US$399.00	○		
2001	J	005	Mechanical Tool Set	KQ6010	US$2,520.00	○		
2001	L	001	UPS	Power Tree/600VAN	US$47.00	○		
2001	L	002	UPS	Power Tree/600VAN	US$47.00	○		
2001	L	003	UPS	Power Tree/600VAN	US$47.00	○		
2001	L	004	UPS	Power Tree/600VAN	US$47.00	○		
2001	L	005	UPS	Power Tree/600VAN	US$47.00	○		
2001	L	006	Transformer	HANSHIN/TR2002	US$21.00	○		
2001	L	007	Cupboard		US$28.00	○		
2001	L	008	Electric Drill	Makita/6222DWE	US$115.00	○		
2001	L	009	Transformer	HANSHIN/TR2002	US$21.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2001	L	010	Codeless Telephone	Sony/SPP-68	US$80.00	×	since April 2003, new telephone system installed	
2001	L	011	Computer Table	COM-690	US$75.00	○		
2001	L	012	Filing Cabinet	Leeco/FC-014	US$78.00	○		
2001	L	013	Book Shelf	Otani/S-S04	US$60.00	○		
2001	L	014	Book Shelf	Otani/S-S02	US$48.00	○		
2001	L	015	Book Shelf	Otani/S-S02	US$48.00	○		
2001	L	016	Table		US$85.00	○		
2001	L	017	Table		US$85.00	○		
2001	L	018	Shelf	S-2136	US$60.00	○		
2001	L	019	Wireless Lan Station	BUFFALO/AirStation WLAR-L11-M	US$315.00	×	since April 2003, wire LAN network installed	
2001	L	020	Desktop Computer	MRT Desktop Computer PIII 800	US$1,580.00	○		
2001	L	021	Desktop Computer	MRT Desktop Computer PIII 801	US$1,330.00	○		
2001	L	022	Printer	HP 842C	US$250.00	○		
2001	L	023	Paper Shredder	DOCU-SHRED/RDS-545	US$135.00	○		
2001	L	024	Desk	Otani	US$80.00	○		
2001	L	025	Key Box	Lucky	US$50.00	○		
2001	L	026	CD-Writer	HP/4*4*6 Plus (USB)	US$240.00	○		
2001	L	027	2 Door Locker	SH-104	US$240.00	○		
2001	L	028	2 Door Locker	SH-104	US$240.00	○		
2001	L	029	2 Door Locker	SH-104	US$240.00	○		
2001	L	030	2 Door Locker	SH-104	US$240.00	○		
2001	L	031	2 Door Locker	SH-104	US$240.00	○		
2001	L	032	TV/VCR Table		US$70.00	○		
2002	E	001	Water Level Logger	RT510-W / Topcon	US$7,500.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2002	E	002	Water Level Logger	RT510-W / Topcon	US$7,500.00	○		
2002	E	003	Desktop Computer	Compaq/Desk pro Pentium 4, 1.7Ghz	US$9,320.00	○		
2002	E	004	Desktop Computer	Compaq/Desk pro Pentium 4, 1.7Ghz	US$9,320.00	○		
2002	E	005	Desktop Computer	Compaq/Desk pro Pentium 4, 1.7Ghz	US$9,320.00	○		
2002	E	006	Desktop Computer	Compaq/Desk pro Pentium 4, 1.7Ghz	US$9,320.00	○		
2002	E	007	Desktop Computer	Compaq/Desk pro Pentium 4, 1.7Ghz	US$9,320.00	○		
2002	E	008	Laser Jet Printer	HP1200	US$315.00	○		
2002	E	009	Laser Jet Printer	HP1200	US$315.00	○		
2002	E	010	Meteorogical Station	JS-360, D1-015-8A	US$28,000.00	×	will be set up in November 2003	
2002	E	011	Hydro Scale	102257	US$135.00	×	will be set up in November 2003	
2002	E	012	Truck (UNIC)	Hino/FTR33M	US$75,300.00	○		
2002	E	013	Bulldozer	Komatsu/D20P-7	US$81,400.00	×	will be used in construction in 2003	
2002	E	014	Truck (machinery transport)	Hino/CXZ81Q	US$138,400.00	×	will be used in construction in 2003	
2002	E	015	Plotter	C4714A#ABJ DesignJet430	US$7,850.00	○		
2002	E	016	Map Cabinet	1106BN	US$2,200.00	○		
2002	L	001	Book Shelf	30366B	US$115.00	○		
2002	L	002	Book Shelf	30366B	US$115.00	○		
2002	L	003	Cup Board Partition	LK-402	US$115.00	○		
2002	L	004	Fax machine	KXF105	US$215.00	○		
2002	L	005	General Table	UTF-80180	US$85.00	○		
2002	L	006	General Table	UTF-80180	US$85.00	○		
2002	L	007	General Table	UTF-80180	US$85.00	○		
2002	L	008	General Table	UTF-80180	US$85.00	○		
2002	L	009	Printer	Canon / S4500	US$515.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2002	L	010	Floppy Disk Drive	Mitsumi	US$45.00	O		
2002	L	011	Mobile Wireless Phone	Motorola/GP68	US$180.00	O		
2002	L	012	Mobile Wireless Phone	Motorola/GP68	US$180.00	O		
2002	L	013	Mobile Wireless Phone	Motorola/GP68	US$180.00	O		
2002	L	014	Mobile Wireless Phone	Motorola/GP68	US$180.00	O		
2002	L	015	Desk 1200*700*740	LEECO/BD127	US$118.00	O		
2002	L	016	Desk 1200*700*740	LEECO/BD127	US$118.00	O		
2002	L	017	Desk 1600*700*740	LEECO/BD167CH	US$135.00	O		
2002	L	018	Desk 1200*700*740	LEECO/	US$90.00	O		
2002	L	019	Printer Table 1000*700*710	LEECO/BD107CE	US$90.00	O		
2002	L	020	Printer Table 1000*700*710	LEECO/BD108CE	US$90.00	O		
2002	L	021	Chair	LEECO/LSC-421 LG-F400	US$65.00	O		
2002	L	022	Chair	LEECO/LSC-421 LG-F400	US$65.00	O		
2002	L	023	File Shelf	LEECO/FS-410	US$90.00	O		
2002	L	024	File Shelf	LEECO/FS-410	US$90.00	O		
2002	L	025	File Shelf	LEECO/FS-410	US$90.00	O		
2002	L	026	Book Shelf	OTANI/S-502	US$50.00	O		
2002	L	027	Floppy Disk Drive	Mitsumi	US$50.00	O		
2002	L	028	Rattan chair		US$44.00	O		
2002	L	029	Rattan chair		US$44.00	O		
2002	L	030	Cupboard	LEECO/304SOB	US$123.00	O		
2002	L	031	Cupboard	LEECO/304SOB	US$123.00	O		
2002	L	032	Cupboard	LEECO/304SOB	US$123.00	O		
2002	L	033	Cupboard	LEECO/304SOB	US$123.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2002	L	034	Cupboard	LEECO/304SOB	US$123.00	O		
2002	L	035	Locker	LEECO/CB07	US$78.00	O		
2002	L	036	Table 1.8m		US$80.00	O		
2002	L	037	Table 1.8m		US$80.00	O		
2002	L	038	Table 1.8m		US$80.00	O		
2002	L	039	Table 1.8m		US$80.00	O		
2002	L	040	Table 1.8m		US$80.00	O		
2002	L	041	Table 1.8m		US$80.00	O		
2002	L	042	Table 1.8m		US$80.00	O		
2002	L	043	Table 1.8m		US$80.00	O		
2002	L	044	Table 1.8m		US$80.00	O		
2002	L	045	Table 1.8m		US$80.00	O		
2002	L	046	Meeting table	AT2010	US$160.00	O		
2002	L	047	Telephone table	AT420	US$55.00	O		
2002	L	048	Telephone table	AT420	US$55.00	O		
2002	L	049	Telephone table	AT420	US$55.00	O		
2002	L	050	Meeting chair	MSN-S	US$25.00	O		
2002	L	051	Meeting chair	MSN-S	US$25.00	O		
2002	L	052	Meeting chair	MSN-S	US$25.00	O		
2002	L	053	Meeting chair	MSN-S	US$25.00	O		
2002	L	054	Meeting chair	MSN-S	US$25.00	O		
2002	L	055	Meeting chair	MSN-S	US$25.00	O		
2002	L	056	Meeting chair	MSN-S	US$25.00	O		
2002	L	057	Meeting chair	MSN-S	US$25.00	O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2002	L	058	Storage shelf	S-2136	US$60.00	O		
2002	L	059	Storage shelf	S-2136	US$60.00	O		
2002	L	060	Storage shelf	S-2136	US$60.00	O		
2002	L	061	White board (1905cm)	BS-90180	US$130.00	O		
2002	L	062	White board (1905cm)	BS-90180	US$130.00	O		
2002	L	063	White board (1905cm)	BS-90180	US$130.00	O		
2002	L	064	White board (1600cm)	BS-90150	US$120.00	O		
2002	L	065	White board (1600cm)	BS-90150	US$120.00	O		
2002	L	066	Camera	Olympus/ MU 7000m 140 pano	US$190.00	O		
2002	L	067	Camera	Olympus/ MU 7000m 140 pano	US$190.00	O		
2002	L	068	Digital camera	Canon / IXUS V2	US$380.00	O		
2002	L	069	Digital camera	Canon / IXUS V2	US$380.00	O		
2002	L	070	Digital camera	Canon / IXUS V2	US$380.00	O		
2002	L	071	Printer	HP/DeskJet 1200 Color	US$380.00	O		
2002	L	072	Printer	Canon/ xnu i320	US$129.00	O		
2002	L	073	Auto Level	TOPCON/AT-G4	US$1,277.00	O		
2002	L	074	Auto Level	TOPCON/AT-G4	US$1,277.00	O		
2002	L	075	Auto Level	TOPCON/AT-G4	US$1,277.00	O		
2002	L	076	Generator	Denyo	US$21,500.00	O		
2002	L	077	Telephone PBX System	Panasonic/KX-TA3089		O		
2002	L	078	Telephone	Panasonic/KX-T7730		O		
2002	L	079	Telephone	Panasonic/KX-T7730		O		
2002	L	080	Telephone	Panasonic/KX-T7730		O		
2002	L	081	Telephone	Panasonic/KX-T7730		O		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2002	L	082	Telephone	Panasonic/KX-T7730		○		
2002	L	083	Telephone	Panasonic/KX-T7730		○		
2002	L	084	Telephone	Panasonic/KX-T7730		○		
2002	L	085	Telephone	Panasonic/KX-T7730		○		
2002	L	086	Telephone	Panasonic/KX-T7730		○		
2002	L	087	Telephone	Panasonic/KX-T7730		○		
2002	J	001	Plate Table Set	Tamaya/TPT-SET Tamura	US$292.00	○		
2002	J	002	Digital Camera	FUJIFILM/DS-260HD	US$1,070.00	○		
2002	J	003	Super Plate	TOPCON/SUP-S	US$270.00	○		
2002	J	004	Current Meter	Cat.No.3-2	US$3,000.00	○		
2002	J	005	GPS	e-Trex Vista	US$542.00	○		
2002	J	006	GPS	e-Trex Vista	US$542.00	○		
2002	J	007	GPS	e-Trex Vista	US$542.00	○		
2002	J	008	Mirror Stereoscope	Type III	US$1,186.00	○		
2003	L	001	Locker	CB-1	US$87.00	○		
2003	L	002	Locker	CB-1	US$87.00	○		
2003	L	003	Locker	CB-1	US$87.00	○		
2003	L	004	Locker	CB-1	US$87.00	○		
2003	L	005	Locker	CB-1	US$87.00	○		
2003	L	006	Water pump		US$100.00	○		
2003	L	007	Storage shelf	S2136	US$60.00	○		
2003	L	008	Storage shelf	S2136	US$60.00	○		
2003	L	009	Storage shelf	S2136	US$60.00	○		
2003	L	010	Bookshelf	304SGB	US$130.00	○		
2003	L	011	Bookshelf	304SGB	US$130.00	○		

Serial Number			Name of Equipment		Price	Used / Not Used	Reason for Not being Used	Remarks
FY	B/L	No.	English	Maker / Model				
2003	L	012	File cabinet	FC013	US$68.00	O		
2003	L	013	Closet	304S	US$70.00	O		
2003	J	001	Laptop Computer	Toshiba/DynaBook V7/513LMDW	US$3,000.00	O		
2003	J	002	Total Station	Topcon/GTS-229	US$8,600.00	O		
2003	J	003	Prlams Target for Total Station		US$1,300.00	O		
2003	J	004	Prlams Target for Total Station		US$1,300.00	O		

ANNEX 6

Equipment not being Used

Name of Equipment	Price	Date of Receipt			Durability	Present Condition	Reason / Period of
		D	M	Y			
Laptop Computer	US$2,408.00	14	3	2001		Broken, cannot repair in Cambodia	Not been used since May 2003, Broken
Wireless Print Server	US$192.00	14	3	2001		Usable, presently unnecessary due to system change	Not been used since Apr. 2003, new system installed
Wireless Lan Station	US$275.00	14	3	2001		Broken, presently unnecessary due to system change	Not been used since May 2001, Broken
Laptop Computer	US$1,917.00	14	3	2001		Broken, cannot repair in Cambodia	Not been used since May 2003, Broken
Automatic Water Distiller	US$3,440.00	23	7	2002		Plan to be operational by Sep. 2003	has not bee connected to water supply
Rool-in Meter	US$1,950.00	23	7	2002		Plan to be operational by Sep. 2003	Has not been used, Laboratory prepared recently
Instrument Shelter	US$816.00	23	7	2002		Plan to be installed at the Model Site soon	Will be set up in November 2003
Thermo-Hydrograph	US$332.00	23	7	2002		Plan to be installed at the Model Site soon	Will be set up in November 2003
Rain Gauge	US$910.00	23	7	2002		Plan to be installed at the Model Site soon	Will be set up in November 2003
Evaporation Pan	US$311.00	23	7	2002		Plan to be installed at the Model Site soon	Will be set up in November 2003
Codeless Telephone	US$80.00	12	7	2001		Usable	Not being used since Apr. 2003, new system installed
Wireless Lan Station	US$315.00	6	11	2001		Usable, presently unnecessary due to system change	Not been used since Apr. 2003, new system installed
Meteorogical Station	US$28,000.00	14	7	2003		Plan to be installed at the Model Site soon	Will be set up in November 2003
Hydro Scale	US$135.00	14	7	2003		Plan to be installed at the Model Site soon	Will be set up in November 2003
Bulldozer	US$81,400.00	14	7	2003		Plan to be used for construction at the Model Site	Will be used in construction in 2003
Truck (machinery transport)	US$138,400.00	14	7	2003		Plan to be used for construction at the Model Site	Will be used in construction in 2003

ANNEX 7

Budget Allocation by the Japanese Government for Local Cost Expenditure

(Unit : US$)

Items	FY2000	FY2001	FY2002	FY2003	Total	Remarks
General Budget (Running Expenses)	19,089.99	48,208.50	61,536.68	32,150.00	160,985.17	
General Budget (Facilities, Activities)	9,848.70	14,805.40			24,654.10	
Project Budget (Facilities)			38,836.00	16,240.40	55,076.40	
Project Budget (Activities)		10,994.25			10,994.25	

*as of 30 September 2003

Assignment of Cambodian Counterparts

ANNEX 8

Name and Position	Field	Training	Expert in Charge	Period Assigned to TSC	Remarks
H.E. Veng Sakhon Under Secretary of State	Management and Administration	10 December 2000 ~ 16 December 2000		January 2001 ~ present	
H.E. Bun Hean Director General of Technical Affairs	Management and Administration			January 2001 ~ present	
Te Ouv Kim Director, Department of Irrigation and Drainage	Management and Administration	14 May 2001 ~ 25 May 2001		January 2001 ~ present	
Ngoun Pich Deputy Director, Department of Engineering	Management and Administration	14 May 2001 ~ 25 May 2001		January 2001 ~ present	
Klok Sam Ang Chief, International Cooperation Office, Department of Planning and International Cooperation	Management and Administration			January 2001 ~ present	
Mao Rath Official, Department of Engineering	Survey	14 April 2002 ~ 13 July 2002	Kenji Yasuda	January 2001 ~ present	
Uch Hing Official, Department of Engineering	Survey	13 June 2003 ~ 23 September 2003	Kenji Yasuda	January 2001 ~ present	
Im Veasna Official, Department of Engineering	Planning		Kenji Yasuda	January 2001 ~ September 2002	
Sam Chhom Sangha Official, Department of Engineering	Planning		Kenji Yasuda	January 2001 ~ present	
Meas Savoeun Official, Department of Engineering	Planning		Kenji Yasuda	May 2002 ~ present	
You Sotha Official, Department of Engineering	Planning		Kenji Yasuda	November 2002 ~ present	

Name and Position	Field	Training	Expert in Charge	Period Assigned to TSC	Remarks
Sem Samnang Official, Department of Engineering	Design		Yoji Ebihara	January 2001 ~ May 2002	
Bunpa Marylux Official, Department of Engineering	Design		Yoji Ebihara	January 2001 ~ May 2003	
Hay Bunthoeun Official, Department of Engineering	Design		Yoji Ebihara	May 2002 ~ present	
Teav Vutha Official, Department of Engineering	Design		Yoji Ebihara	May 2002 ~ present	
Phiv Phalkun Chief, Construction Office, Department of Engineering	Construction Management		Yoichi Ihara	January 2001 ~ May 2002	
Ung Kotaro Official, Department of Engineering	Construction Management	16 May 2002 ~ 17 August 2002	Yoichi Ihara Kenji Sekijima	January 2001 ~ present	
Touch Bun Leng Official, Department of Engineering	Construction Management		Yoichi Ihara	May 2002 ~ July 2002	
Noun Vannarith Official, Department of Engineering	Construction Management		Yoichi Ihara Kenji Sekijima	August 2002 ~ present	
Huot Chandararith Official, Department of Irrigation and Drainage	Water Management/Farmers Survey	15 July 2002 ~ 24 October 2002	Yoji Ebihara	January 2001 ~ present	
Prum Kanthel Official, Department of Irrigation and Drainage	Water Management/Farmers Survey	30 July 2001 ~ 17 October 2001	Yoji Ebihara	January 2001 ~ present	

List of Facility and Equipment Prepared by the Royal Government of Cambodia

ANNEX 9

Institution	Facility	Equipment	Running Expenses
Ministry of Water Resources and Meteorology	- Project Office - Parking Space for Project Vehicles - Meeting Room	- Telephone (1 line)	- Electricity charges
Ministry of Water Resources and Meteorology Tuk Thla Office	- Project Office - Chief Advisor's Office - Kitchen - Warehouse for Equipment - Parking Space for Project Vehicles - Meeting Room	- Telephone (1 line) - Network for Wireless Radio - Level (1 set) - Transit (1 set) - Staff Gauge (2 sets) - Measure Tape (1 unit) - Total Station (1 set)	- Electricity charges - Telephone charges for 1 line - fuel for 4 project vehicles
Technical Service Center	- Technical Service Center (under construction) Offices, Training Room, Meeting Room Laboratory		

Allocation of Budget by the Royal Government of Cambodia

ANNEX 10

(Unit:US$)

Items	FY2000	FY2001	FY2002	FY2003	Total	Remarks
Basic Salary of All Counterparts	750.00	3,000.00	3,000.00	1,000.00	7,750.00	
Basic Salary of 2 Secretaries / 4 Drivers	450.00	1,800.00	1,800.00	600.00	4,650.00	
Office Construction / Improvements	rehabilitation of project office		construction of project office			
Electricity / Water Charges	electricity/water for project office	electricity/water for project office	electricity/water for project office	electricity/water for project office		
Local Telephone Charges (2 lines)	120.00	480.00	480.00	0.00	1,080.00	
Fuel for Project Vehicles	1,200.00	4,800.00	4,800.00	960.00	11,760.00	

*as of July 2003

*FY : from April 2001 to march 2003

*FY2000 : from January 2001 to march 2001

2．PDMe(和文)

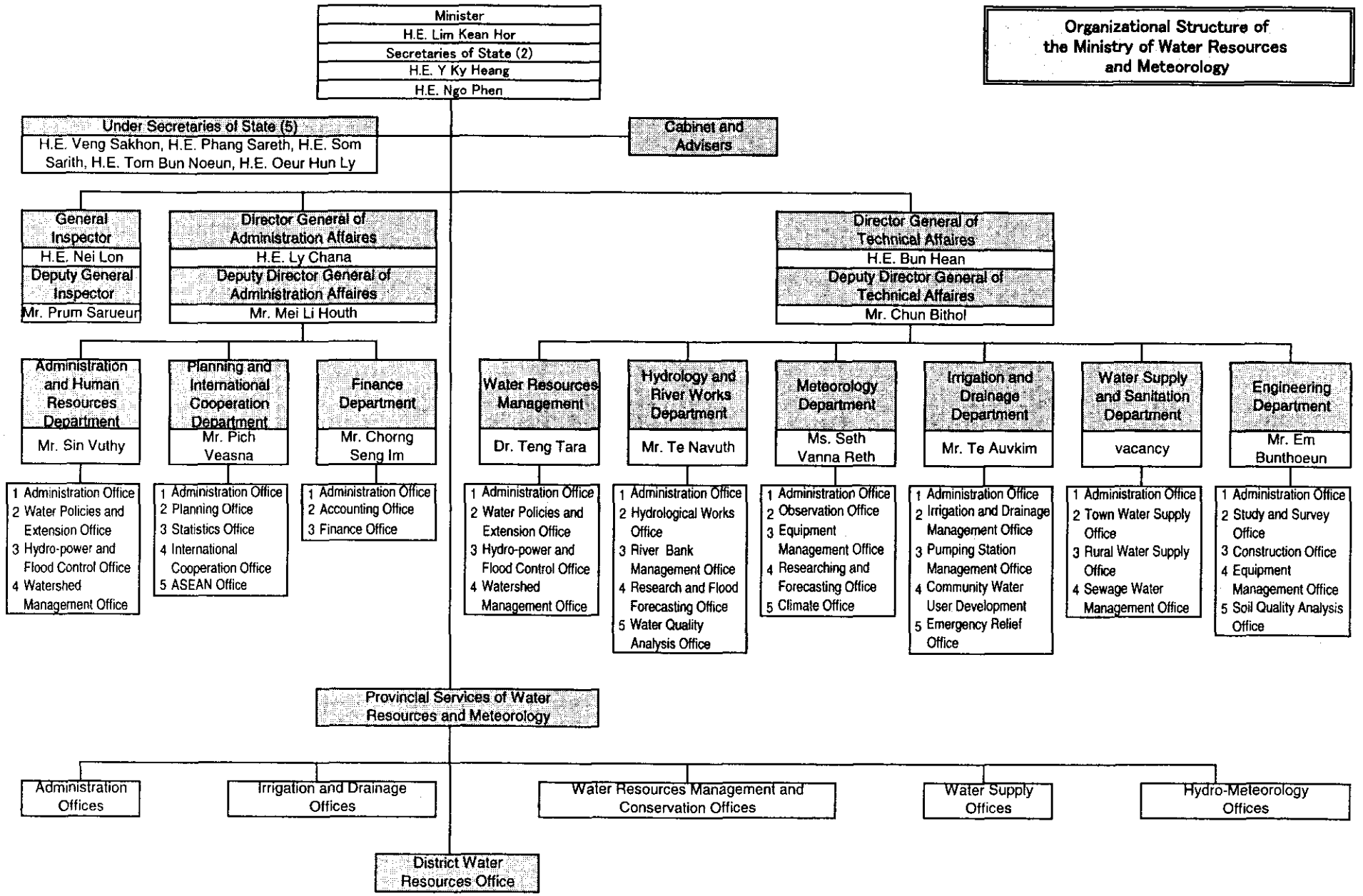
中間評価用 PDM(PDM e-mid)

プロジェクト名: 灌漑技術センター(TSC)計画
ターゲットグループ: TSC の常勤カウンターパート及び水資源気象省、同省地方事務所の技術者
対象地区: カンボジア全国
プロジェクトサイト: トゥクトゥラ、プノンペン(プロジェクト事務所)、及びカンダルスタン、カンダル県(モデル地区)
実施者: 水資源気象省(同省地方事務所含む)及び JICA
協力期間: 5 年間(2001 1/ 10 – 2006 1/ 9)

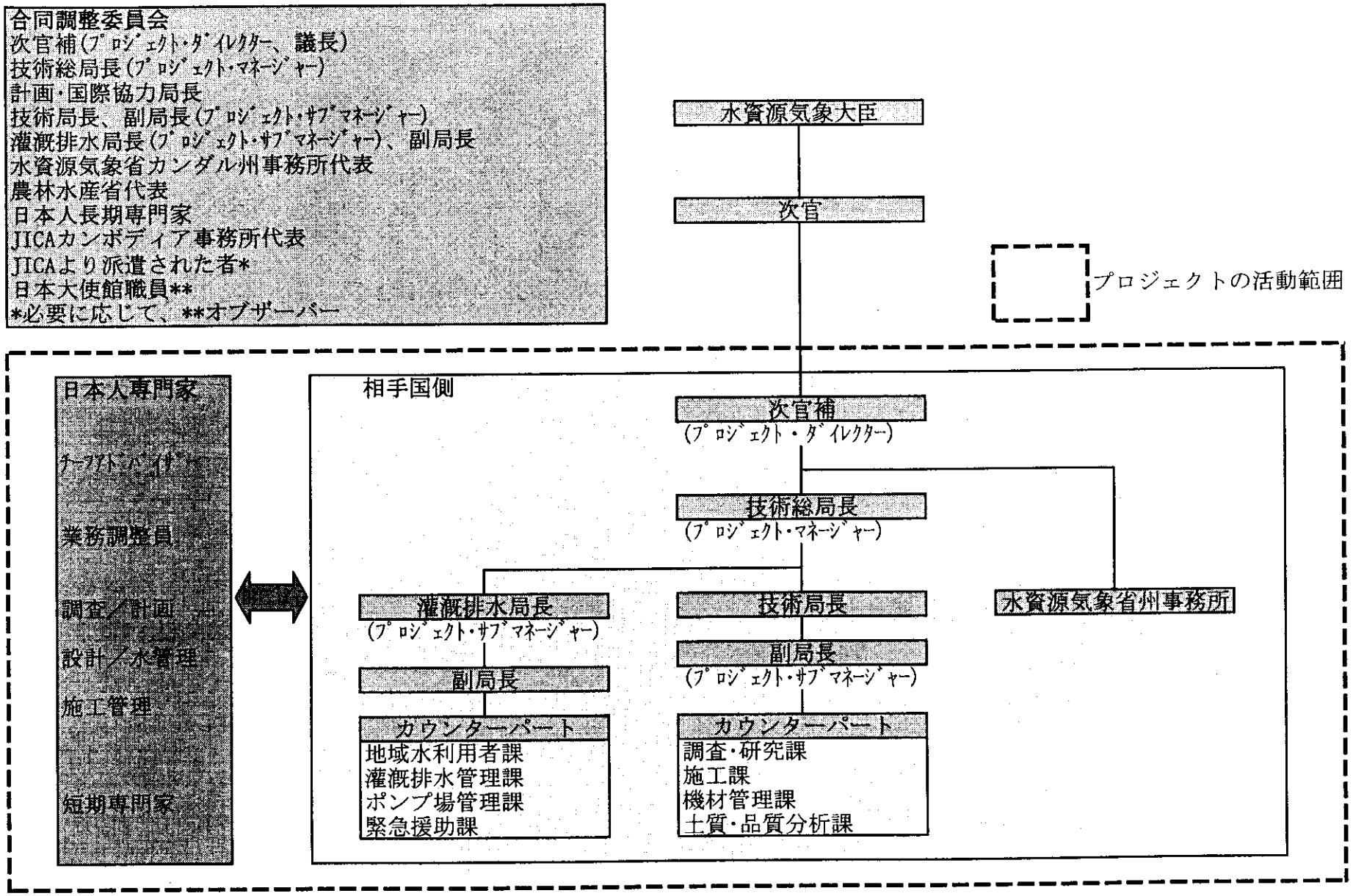
バージョン: 3
修正日: 2003 10/28

プロジェクトの要約	指標	指標データ入手手段	外部条件
上位目標 灌漑事業が水資源気象省と同省地方事務所により適切に実施される。	2011 年までに TSC で移転された技術を用いて、10 以上の事業が実施される。	水資源気象省文書	
プロジェクト目標 灌漑のための、調査、計画、設計、施工管理及び参加型水管理の分野で、水資源気象省及び同省地方事務所の技術者の技術力が向上する。	1. プロジェクト終了までに、10 名の常勤カウンターパートが、灌漑システムの研修を実施できるだけの技術力を身に付ける。 2. プロジェクト終了までに、水資源気象省と同省地方事務所の 100 名以上の技術者が、TSC の研修を通して技術力を向上する。	1. プロジェクト文書 2. 研修報告	1. 研修を受けた技術者が、水資源気象省及び同省地方事務所に残る。 2. 水資源気象省の予算が確保される。
成果 1.調査、計画、設計、施工管理及び参加型水管理の分野で、常勤カウンターパートの技術力が、OJT(オンザジョブトレーニング)を通じて改善される。 2.調査、計画、設計、施工管理及び参加型水管理の分野で、水資源気象省及び同省地方事務所の他の技術者に技術移転するための一連の研修が実施される。	1.1 プロジェクト終了までに、OJT を通して習得した技術を用いて、カウンターパートによって灌漑排水施設が適切に整備される。 1.2 プロジェクト終了までに、調査、計画、設計、施工管理及び参加型水管理に関するマニュアルが作成される。 2. プロジェクト終了までに、調査、計画、設計、施工管理及び参加型水管理に関する研修のためのテキスト及びカリキュラムが作成される。	1.1 プロジェクト資料、モデル地区 1.2 マニュアル 2. テキスト及びカリキュラム	

活動	インプット		前提条件
	(日本側)	(カンボジア側)	常勤カウンターパートは継続してプロジェクトで働く。
1.技術力の評価と目標技術レベルの設定 1.1.データを収集する 1.2.調査分野での現況技術力を評価する 1.3.計画分野での現況技術力を評価する 1.4.設計分野での現況技術力を評価する 1.5.施工管理分野での現況技術力を評価する 1.6.参加型水管理分野での現況技術力を評価する 1.7.各分野での技術移転のレベルを設定する 2.OJT を通じた技術移転 2.1.OJT を通じて調査技術を移転する 2.2.OJT を通じて計画技術を移転する 2.3.OJT を通じて設計技術を移転する 2.4.OJT を通じて施工管理技術を移転する 2.5.OJT を通じて参加型水管理技術を移転する 3.マニュアル作成 3.1.調査技術のマニュアルを作成する 3.2.計画技術のマニュアルを作成する 3.3.設計基準及び設計技術と事業評価のマニュアルを作成する 3.4.施工管理技術のマニュアルを作成する 3.5.参加型水管理技術のマニュアルを作成する 4.研修 4.1.調査技術の研修を実施する 4.2.計画技術の研修を実施する 4.3.設計技術の研修を実施する 4.4.施工管理技術の研修を実施する 4.5.参加型水管理技術の研修を実施する	1. 専門家派遣: (1) 長期専門家: 数名/年、以下参照: -チーフアドバイザー; -業務調整/農家調査: 及び -各分野専門家 1) 調査/計画 2) 設計/水管理 3) 施工管理 (2) 短期専門家は必要に応じて派遣される。 2. 資機材の調達 3. カウンターパート職員の本邦研修	1.カウンターパート及び他職員の配置. (1) プロジェクトダイレクター (2) プロジェクトマネージャー (3) サブマネージャー (4) 常勤カウンターパート職員 1) 調査 / 計画 2) 設計 / 水管理 3) 施工管理 4) 短期専門家 (5) 事務職員 (6) 技術職員 2.プロジェクトに関する土地、建物及び施設の提供 3.プロジェクトに必要な機材の提供 4.以下についての予算措置: (1)灌漑システムの維持管理 (2)カウンターパート及び他職員の給与 (3)プロジェクト実施に必要な運転経費	1. 十分な数の有能なカウンターパートが配置される。 2. 農民がプロジェクトに反対しない。


Organizational Structure of the Ministry of Water Resources and Meteorology
Minister
H.E. Lim Kean Hor
Secretaries of State (2)
H.E. Y Ky Heang
H.E. Ngo Phen
Under Secretaries of State (5)
H.E. Veng Sakhon, H.E. Phang Sareth, H.E. Som Sarith, H.E. Tom Bun Noeun, H.E. Oeur Hun Ly
Cabinet and Advisers
General Inspector
H.E. Nei Lon
Deputy General Inspector
Mr. Prum Sarueur
Director General of Administration Affaires
H.E. Ly Chana
Deputy Director General of Administration Affaires
Mr. Mei Li Houth
Director General of Technical Affaires
H.E. Bun Hean
Deputy Director General of Technical Affaires
Mr. Chun Bithol
Administration and Human Resources Department
Mr. Sin Vuthy
1 Administration Office
2 Water Policies and Extension Office
3 Hydro-power and Flood Control Office
4 Watershed Management Office
Planning and International Cooperation Department
Mr. Pich Veasna
1 Administration Office
2 Planning Office
3 Statistics Office
4 International Cooperation Office
5 ASEAN Office
Finance Department
Mr. Chorng Seng Im
1 Administration Office
2 Accounting Office
3 Finance Office
Water Resources Management
Dr. Teng Tara
1 Administration Office
2 Water Policies and Extension Office
3 Hydro-power and Flood Control Office
4 Watershed Management Office
Hydrology and River Works Department
Mr. Te Navuth
1 Administration Office
2 Hydrological Works Office
3 River Bank Management Office
4 Research and Flood Forecasting Office
5 Water Quality Analysis Office
Meteorology Department
Ms. Seth Vanna Reth
1 Administration Office
2 Observation Office
3 Equipment Management Office
4 Researching and Forecasting Office
5 Climate Office
Irrigation and Drainage Department
Mr. Te Auvkim
1 Administration Office
2 Irrigation and Drainage Management Office
3 Pumping Station Management Office
4 Community Water User Development
5 Emergency Relief Office
Water Supply and Sanitation Department
vacancy
1 Administration Office
2 Town Water Supply Office
3 Rural Water Supply Office
4 Sewage Water Management Office
Engineering Department
Mr. Em Bunthoeun
1 Administration Office
2 Study and Survey Office
3 Construction Office
4 Equipment Management Office
5 Soil Quality Analysis Office
Provincial Services of Water Resources and Meteorology
Administration Offices
Irrigation and Drainage Offices
Water Resources Management and Conservation Offices
Water Supply Offices
Hydro-Meteorology Offices
District Water Resources Office

プロジェクト実施体制図



5．モデルサイトの灌漑の現況概要図

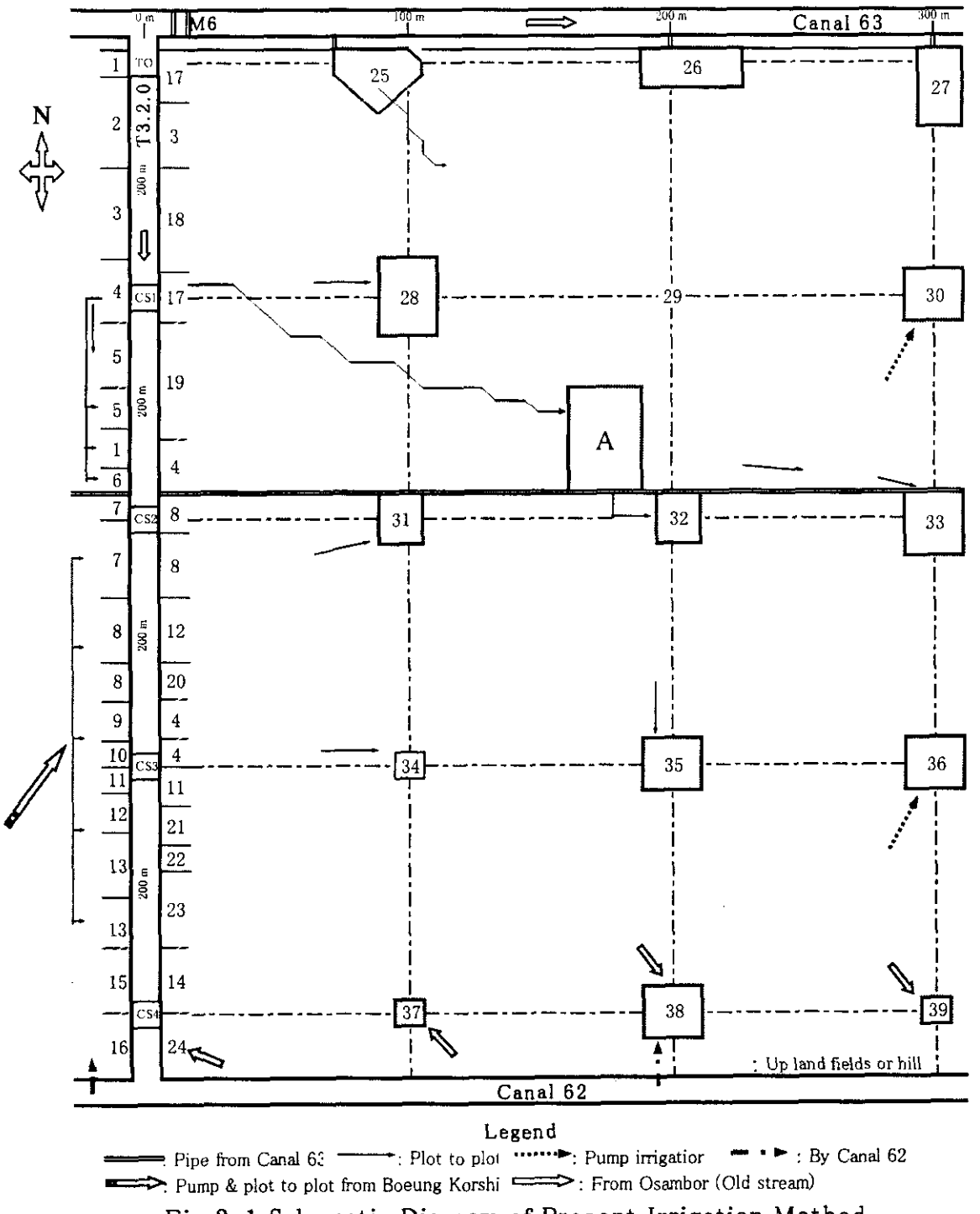
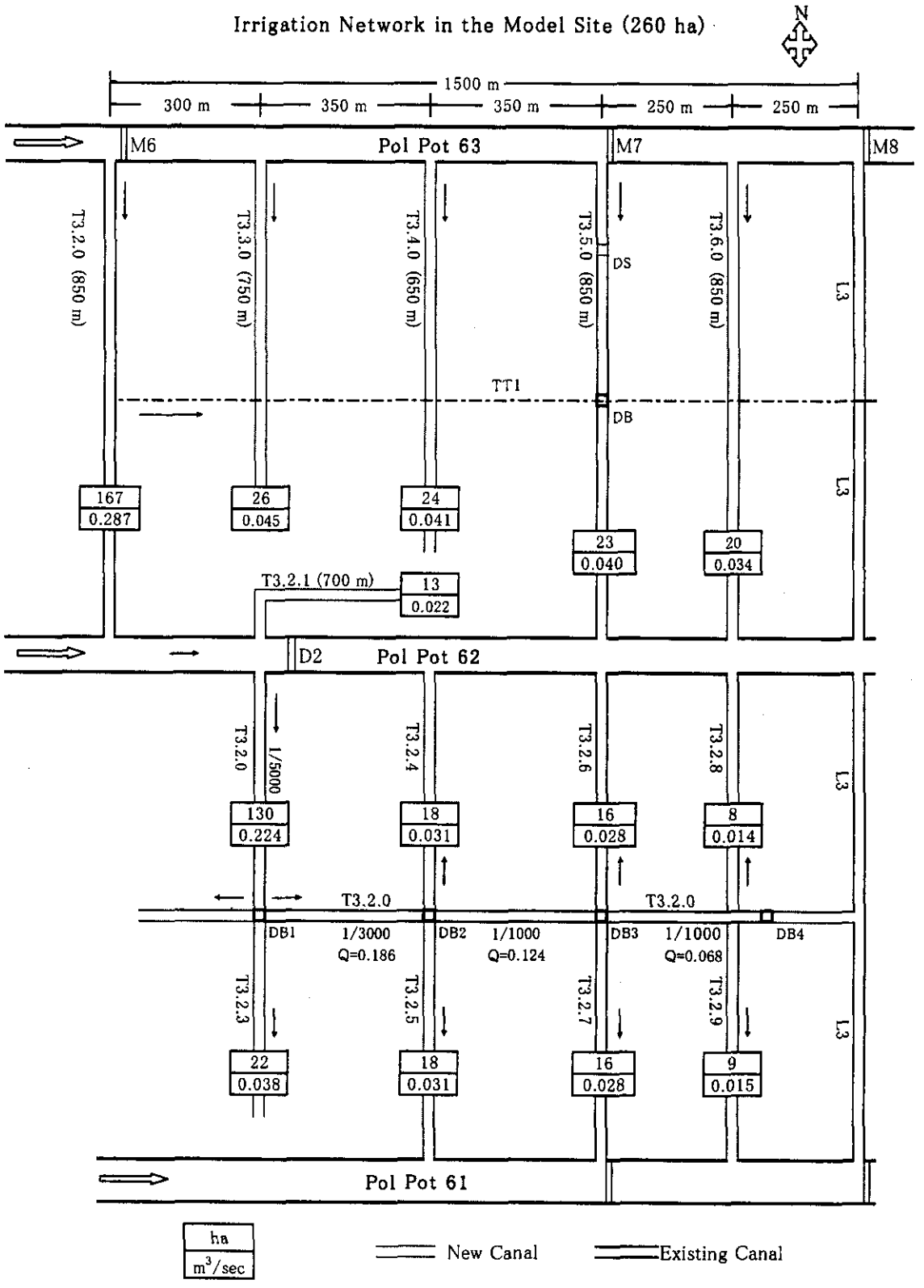


Fig.2-1 Schematic Diagram of Present Irrigation Method

6．モデルサイトの計画支線水路網



モデルサイトの計画支線水路網
(2003年10月現在)

7．作成マニュアルリスト

List of Manuals

As of October 2003

No	Field	Title	Progress					Target Deadline
			Plan	Ongoing	Complete in English	Translating to Khmer	Khmer Completed	
1	Survey	General guidelines of farmers survey			○			Finished
2		Manual on survey (general)					○	Finished
3		Manual on survey (route survey)		○				Mar. 04
4		Manual on survey (traverse survey)			○ (1st)			Mar. 04
5		Manual on hydrology and meteorology	○					Sep. 04
6		Manual on discharge measurement		○		○		Mar. 04
7	Planning	Manual on water requirement			○ (1st)			Mar. 04
8	Design	Basic hydraulic			○			Finished
9		Basic design		○				Dec. 03
10		Survey practice for new C/P			○			Finished
11		Operation manual of current meter and discharge measurement			○			Finished
12		Manual on design of small irrigation canals and related structures, 2002			○			Finished
13		Manual on design of small irrigation canals and related structures, 2003			○			Finished
14		Side reading for manual on design for small scale irrigation canals			○			Finished
15	Construction Management	General specification		○				Dec. 03
16		Manual for construction management		○				Dec. 04
17		Manual for making fixed ruler		○				Dec. 04
18		Manual for water control of soil	○					Dec. 04
19		Manual for concrete mixed design	○					Dec. 04
20	Water Management	Manual on operation and maintenance of irrigation structures on-farm level	○					Mar. 04
21		Water management techniques on-farm level	○					Mar. 04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