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**MINUTES OF MEETING
OF
THE PREPARATORY STUDY ON
THE JAPANESE TECHNICAL COOPERATION FOR
THE IMPROVEMENT OF AGRICULTURAL RIVER BASIN MANAGEMENT
AND DEVELOPMENT PROJECT (TSC 3)
IN THE KINGDOM OF CAMBODIA**


In response to the request made by the Royal Government of Cambodia (hereinafter referred to as “RGC”) for the Improvement of Agricultural River Basin Management and Development Project (TSC 3) (hereinafter referred to as “the Project”), the Japan International Cooperation Agency (hereinafter referred to as “JICA”) has sent a preparatory study team (hereinafter referred to as “the Team”) headed by Dr. NISHIMAKI Ryuzo from May 19 to May 29, 2009.

During its stay, the Team had a series of discussions and exchanged views on the Project based on the field observations with the authorities concerned of the RGC. Both sides held a workshop to prepare the drafts of the Record of Discussions(R/D), Project Design Matrix (PDM) and the Plan of Operations (PO) of the Project.


As a result of the discussions and the workshop, both sides agreed to the matters referred to in the documents attached hereto.

Phnom Penh, May 29, 2009




Dr. NISHIMAKI Ryuzo
Leader,
Preparatory Study Team,
Japan International Cooperation Agency
(JICA)




H.E. Mr. VENG Sakhon
Secretary of State,
Ministry of Water Resources and Meteorology
The Kingdom of Cambodia

The Attached Document

1. Draft Project Design Matrix (PDM) and Plan of Operations (PO)

The drafts of the PDM and the PO of the Project were prepared in consultation with a broad spectrum of stakeholders as attached in Appendix 1 and 2. The PDM and the PO will be used as a management tool of the Project, and will be finalized by the time of signing of the Record of Discussions (R/D).

2. Draft Record of Discussions (R/D)

The Record of Discussions (R/D), as the official document that defines the contents of a technical cooperation project, was prepared and agreed through a series of discussions as attached in Appendix 3. The draft R/D will be finalized in the course of further consultations towards the signing.

3. Common understanding on the “Agricultural River Basin Management and Development ”

Agricultural river basin management and development is the holistic concept of water resource management to enable efficient water distribution among the irrigation systems at a river basin level, considering the needs of the other sectors.

4. Model irrigation projects

Model irrigation projects are the interventions by the Project for improvement of water management, such as improvement of irrigation facilities, demonstration of participatory irrigation management as well as the operation and maintenance, enhancement of irrigated farming technologies and so forth. These model irrigation projects are to be implemented in the model project sites; that are to be selected within the target area of the Project. The model project sites will be determined upon consultation among the Project personnel after the inauguration of the Project. Current conditions of the proposed model project sites are shown in the attached Table 1.

5. Responsibility of the Ministry of Water Resources and Meteorology (MOWRAM) / Provincial Department of Water Resources and Meteorology (PDWRAM)

Fulfilment of the responsibility of the Cambodian side, which is mentioned in the draft R/D, is essential for the success of the Project. Especially, the following issues were discussed and agreed by the Cambodian side.

(1) Assignment of the counterpart personnel

For the smooth implementation of the Project, MOWRAM will assign the appropriate counterpart personnel in TSC as well as in 6 PDWRAM by the beginning of the Project. In selecting the counterpart personnel, considerations should be given to secure the continuity of activities from the TSC Phase 2 Project.

(2) Securing operational budget of TSC

As the Project is scheduled to start within the RGC fiscal year (FY) 2009, efforts are to be made to ensure timely disbursement of the approved budget of three hundred million (300,000,000) Cambodian Riels so that the initial activities of the Project would smoothly be implemented. Considering TSC's share of the operational costs of the Project, MOWRAM is committed to respond to the proposed budget of one thousand and two hundred million (1,200,000,000) Cambodian Riels for FY 2010 for TSC.

It is also expected that MOWRAM will make necessary arrangement with relevant agencies of RGC to secure the allocation of Counterpart Fund for the Project for coming five years, expected amount of which is about three hundred thousand (300,000) US Dollars. Aside from these arrangements for securing operational budget, MOWRAM should consider application for some support incentive systems such as Priority Mission Group (PMG), or Merit Based Payment Initiative (MBPI) for the counterpart personnel of TSC and 6 PDWRAM.

6. Measures to be taken by the Japanese side to ensure the continuation of the project related activities

In order to ensure the continuity of the relevant activities during the period between the termination of the foregoing TSC Phase 2 Project and the commencement of the Project, Japanese side will consider any possible measures to be taken to support the efforts by the Cambodian side.

7. Efforts for realization of the Road Map for the institutionalization of TSC

As the Project is to contribute to the development of technical capacities of TSC as a human resource development organization in MOWRAM, the progress for the realization of the Road Map for the institutionalisation of TSC should closely be monitored and discussed throughout the course of the Project implementation. As it is important to further strengthen the technical capacities of TSC personnel, MOWRAM may consider giving priorities to TSC staff and counterpart personnel for training opportunities such as the Group Training of JICA.

8. Provisional schedule until the Project commencement

- (1) Internal procedure for the approvals in both RGC and JICA (July 2009)
- (2) Signing the R/D (July 2009)
- (3) Commencement of the Project (September 2009)

List of Annex

- Appendix 1: Draft Project Design Matrix (PDM)
- Appendix 2: Draft Plan of Operations (PO)
- Appendix 3: Draft Record of Discussions (R/D)
- Table 1: Summary of survey results on proposed model project sites

Appendix 1 Draft Project Design Matrix (PDM)

Project Title: Improvement of Agricultural River Basin Management and Development Project (TSC 3)

Project Duration: September, 2009 to August, 2014 (tentative)

Target Area: Six (6) Provinces, namely, Kandal, Takeo, Pursat, Kampong Chhnang, Kampong Spue, and Battambang

Target Group: Counterpart personnel in TSC, PDWRAM and PDA in the target area, the engineers and technicians in MOWRAM and other PDWRAM, and the farmers in the model project sites

Version Number: Version 0 (draft)

Date: 29 May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: Agricultural productivity in the target area is stabilized through efficient water resource management realized by improved technical capacity of MOWRAM and PDWRAM in agricultural river basin management and development (*1).</p> <p>Project Purpose: Irrigation projects are properly planned, implemented and operated in the target area of the Project.</p> <p>Outputs:</p> <ol style="list-style-type: none"> TSC obtain capacities to implement training and provide technical supports for MOWRAM and PDWRAM related to the agricultural river basin management and development. The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training. The capacities of the engineers and technicians of MOWRAM and PDWRAM on planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in an irrigation system as a whole are improved through training. The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM. 	<ol style="list-style-type: none"> Unit yields of rice and other crops in the target area of the Project are improved to reach the national targets. More than XX among XX model irrigation projects in the target area are successfully implemented with continuous O&M. More than XX % of TSC staff become competent in carrying out training and technical supports. More than XX PDWRAM are satisfied with training and technical supports of TSC More than XX training courses on agricultural river basin management and development are conducted. More than XX% of training participants achieve the curriculum targets (*2) of the training courses. More than XX training courses are conducted on technologies related to the development and management of an irrigation system as a whole. More than XX% of training participants achieve the curriculum targets (*2) of the training courses. More than XX project plans are formulated with technical supports of TSC for budget requests. 	<ol style="list-style-type: none"> Statistical Data of MAFF and PDA in the target area. 1-1 Project records and documents 1-2 Field survey and interviews 1-1 Evaluation by training participants 1-2 Self evaluation of TSC staff Questionnaire survey with PDWRAM Project records and documents Evaluation results of the training courses Project records and documents Evaluation results of the training courses Records and documents of TSC and the Project 	<ul style="list-style-type: none"> * There is no drastic change in the government policy in agriculture and water sector. * Price of the agricultural products and inputs do not become extremely unstable. * There is no drastic climate change that affects the agricultural production. * There is no significant change in the water sector policies of RGC and priority on the human resource development. * The funds are made available for the planned irrigation projects in the target area. * The staff of MOWRAM and PDWRAM who participated in the Project are involved in the implementation of the planned irrigation projects in the target area.
<p>Activities:</p> <ol style="list-style-type: none"> 1-1 Provide training to the TSC staff on the knowledge and technologies related to the agricultural river basin management and development. 1-2 Provide training to the TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system. 1-3 Reinforce the technical learning above of the TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM. 	<p>(Cambodia side)</p> <p>Personnel</p> <ol style="list-style-type: none"> (1) Project Director: Secretary of State, MOWRAM (2) Project Manager: Director General of Technical Affairs, MOWRAM (3) Project Sub-Manager: <ul style="list-style-type: none"> - Deputy Director of the Department of Administration Affair and Director of TSC - Deputy Director General of Technical Affairs and Director of Water Conservation and management - Director of Planning and International Cooperation (4) Counterpart Personnel of TSC and PDWRAM <p>Inputs</p>	<p>(Japanese side)</p> <p>Long-term Experts</p> <ol style="list-style-type: none"> (1) Chief Advisor / Agricultural River Basin Management (2) Participatory Irrigation Management (3) Training / Project Coordinator <p>Short-term Experts</p> <ol style="list-style-type: none"> (1) GIS (2) Metro-Hydrological Analysis (3) Structural Design and Calculation for Reservoir and Main Dyke (4) Water Balance Calculation and Planning for Water Allocation (5) Soil and Concrete Analysis 	<ul style="list-style-type: none"> * The trained staff of TSC, MOWRAM and PDWRAM continue their services in their respective positions. * There is no conflict among the farmers in the model project sites. * Security situations in the target area do not become extremely unstable.

<p>1-4 Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.</p> <p>2-1 Formulate training courses on agricultural river basin management and development.</p> <p>2-2 Conduct and evaluate the training courses on agricultural river basin management and development.</p> <p>2-3 Review and revise the training courses on agricultural river basin management and development.</p> <p>3-1 Formulate the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>3-2 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>3-3 Review and revise the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>3-4 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the tertiary system that have been developed through the foregoing TSC Phase 2 Project.</p> <p>3-5 Review and revise the training courses on the technologies related to the irrigation facilities and structures in the tertiary system.</p> <p>3-6 Formulate the training courses for the newly recruited staff of MOWRAM and PDWRAM based on the revised training courses above.</p> <p>4-1 Select the sites for the model irrigation projects (*2) of in the target area of the Project.</p> <p>4-2 Provide technical support for the respective PDWRAM to plan, design, construct and conduct operation and maintenance (O&M) of the model irrigation projects.</p> <p>4-3 Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area.</p> <p>4-4 Based on the experiences of the technical supports above, formulate manuals for PDWRAM on planning of the irrigation projects.</p>	<p>(6) Remote Sensing (7) Watershed Management (8) Other relevant fields</p> <p>Training of counterpart personnel in Japan and/or the third countries</p> <p>Land, Building and Facilities (1) Office building and facilities necessary for the implementation of the Project (2) Office space and necessary facilities for the Japanese experts and related staff members (3) Land for the model project sites (4) Other facilities mutually agreed upon as necessary</p>	<p>Pre-conditions</p> <ul style="list-style-type: none"> * Sufficient number of counterpart personnel are assigned to the Project. * The intended training participants attend the training courses. * Farmers in the model project sites are willing to participate to the model irrigation projects. * Local government administration and other stakeholders in the model project sites understand and cooperate to the Project.
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*1: Agricultural river basin management and development is the holistic concept of water resource management to enable efficient water distribution among the irrigation systems at a river basin level, considering the needs of the other sectors.

*2: Curriculum target is set for each training course to evaluate the level of participants' understanding, based on the pre- and post-training tests, self evaluation of participants and so forth.

*3: Model irrigation projects are the interventions by the Project for improvement of water management, such as improvement of irrigation facilities, demonstration of participatory irrigation management as well as the operation and maintenance, enhancement of irrigated farming technologies and so forth.

Appendix 2 Draft Plan of Operations (PO)

Activities	JFY2009				JFY2010				JFY2011				JFY2012				JFY2013				JFY2014														
	Q2	Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
0. Preparatory activities																																			
(1) Gather technical references on the agricultural river basin management and development.																																		
(2) Gather basic information on the proposed model project sites.																																		
(3) Set up the management body of the Project and prepare the work plan.																																			
(4) Review and decide the indicators with target figures.																																			
1-1 Provide training to TSC staff on the knowledge and technologies related to the agricultural river basin management and development.																																			
(1) Prepare training course and materials for in-house training on the agricultural river basin management and development.																																			
(2) Organize the in-house training on the agricultural river basin management and development.																																			
1-2 Provide training to TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system.																																			
(1) Prepare training course and materials for in-house training on the knowledge and technologies related to the irrigation facilities and structures in the main system.																																			
(2) Organize the in-house training on the knowledge and technologies related to the irrigation facilities and structures in the main system.																																			
1-3 Reinforce the technical learning above of TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM.																																			
(1) Organize preparatory meetings among TSC staff for formulation of training course on the agricultural river basin management and development.																																			
(2) Organize preparatory meetings among TSC staff for formulation of training course on the knowledge and technologies related to the irrigation facilities and structures in the main system.																																			
(3) Organize the review meetings among TSC staff to evaluate their own understanding on the training subjects.																																			
1-4 Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.																																			
(1) Analyze the results of training evaluations to be reflected in the human resource development program on water and irrigation management.																																			
(2) Provide suggestions for possible modification of the human resource development program on water and irrigation management.																																			
2-1 Formulate training courses on agricultural river basin management and development.																																			
(1) Review the technical references to select the contents to be covered in the training courses.																																			
(2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation.																																			
(3) Prepare necessary textbook and/or training materials.																																			
2-2 Conduct and evaluate the training courses on agricultural river basin management and development.																																			
(1) Conduct training courses with field exercises.																																			
(2) Conduct evaluation of the training courses.																																			
2-3 Review and revise the training courses on agricultural river basin management and development.																																			
(1) Analyze the results of evaluation to identify any topic or method of training to be improved.																																			
(2) Revise the contents of the training course with appropriate modifications.																																			

Activities	JFY2009			JFY2010			JFY2011			JFY2012			JFY2013			JFY2014	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
3-1 Formulate the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Review the technical references to select the contents to be covered in the training courses. (2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation. (3) Prepare necessary textbook and/or training materials.																	
3-2 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Conduct training courses with field exercises. (2) Conduct evaluation of the training courses.																	
3-3 Review and revise the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Analyze the results of evaluation to identify any topic or method of training to be improved. (2) Revise the contents of the training course with appropriate modifications.																	
3-4 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the tertiary system that have been developed through the foregoing TSC Phase 2 Project. (1) Conduct training courses with field exercises. (2) Conduct evaluation of the training courses.																	
3-5 Review and revise the training courses on technologies related to the irrigation facilities and structures in the tertiary system. (1) Analyze the results of evaluation to identify any topic or method of training to be improved. (2) Revise the contents of the training courses with appropriate modifications.																	
3-6 Formulate the training courses for the newly recruited staff of MOWRAM and PDWGRAM based on the revised training courses above. (1) Select the appropriate contents from the revised training courses for newly recruited staff. (2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation.																	
4-1 Select the sites for the model irrigation projects of in the target areas of the Project. (1) Review the basic data and identify the contents of model irrigation projects for each proposed sites. (2) Discuss between PDWGRAM and TSC to formulate the overall implementation plans of the model irrigation projects. (3) Conduct initial explanatory meetings for the relevant stakeholders in the model project sites.																	
4-2 Provide technical support for the respective PDWGRAM to plan, design, construct and conduct operation and maintenance (O&M) of the model irrigation projects. (1) Organize workshops with farmers and local government authorities in the model project sites for mapping and planning of the model irrigation projects. (2) Conduct survey and design the facilities and/or structures in consultation with the farmers. (3) Plan, conduct and supervise the construction activities with participation of the farmers. (4) Formulate the O&M plans in consultation with the farmer water user groups (FWUG) and facilitate the implementation of O&M activities.																	

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Activities	JFY2009			JFY2010			JFY2011			JFY2012			JFY2013			JFY2014	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
4-3 Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area.																	
(1) Facilitate the farmers to organize the FWUG.																	
(2) Conduct farmer-to-farmer training / study tours for the FWUG members.																	
(3) Coordinate with PDA and other relevant stakeholders to disseminate improved farming technologies to the farmers in the model project sites.																	
(4) Assist the local authorities and the FWUG to organize Farmer Water User Community (FWUC).																	
4-4 Based on the experiences of the technical supports above, formulate manuals for PDWRAM on formulation on planning of irrigation projects																	
(1) Review the implementation processes of the model irrigation projects.																	
(2) Review the samples of irrigation project plans submitted for budget requests.																	
(3) Formulate the manuals for PDWRAM on formulation of irrigation project plans.																	

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RECORD OF DISCUSSIONS BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
THE MINISTRY OF WATER RESOURCES AND METEOROLOGY
OF ROYAL GOVERNMENT OF CAMBODIA
ON
JAPANESE TECHNICAL COOPERATION
FOR
THE IMPROVEMENT OF AGRICULTURAL RIVER BASIN MANAGEMENT AND
DEVELOPMENT PROJECT (TSC 3)

In response to the request of Royal Government of Cambodia (hereinafter referred to as “RGC”), the Japan International Cooperation Agency (hereinafter referred to as “JICA”) has decided to implement Japanese Technical Cooperation for the Improvement of Agricultural River Basin Management and Development Project (TSC 3) (hereinafter referred to as “the Project”).

Accordingly, JICA the independent administrative institution responsible for operation of technical cooperation program of the Government of Japan (hereinafter referred to as “GOJ”), will cooperate with the authorities concerned of RGC, namely the Ministry of Water Resources and Meteorology (hereinafter referred to as “MOWRAM”).

JICA and Cambodian authorities concerned exchanged views and had a series of discussions with respect to desirable measures to be taken by JICA and RGC represented by MOWRAM for the successful implementation of the Project. As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between the GOJ and the RGC, signed in Phnom Penh on June 17th 2003 (hereinafter referred to as “the Agreement”), JICA and Cambodian authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Phnom Penh, July 2009

Mr. YONEDA Kazuhiro
 Chief Representative
 Japan International Cooperation Agency
 Cambodia Office

H.E. VENG Sakhon
 Secretary of State
 Ministry of Water Resources and Meteorology
 The Kingdom of Cambodia

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THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND ROYAL GOVERNMENT OF CAMBODIA

1. RGC will implement the Improvement of Agricultural River Basin Management and Development Project (TSC 3) in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provision of Article III of the Agreement, JICA, as the executing agency of the GOJ for technical cooperation, will take its own expense, the following measures according to the normal procedure of the technical cooperation scheme of Japan.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide limited amount of machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III.

3. TRAINING OF CAMBODIAN PERSONNEL IN JAPAN

JICA will receive the Cambodian personnel connected with the Project for technical training in Japan and/or third country. The participants and contents of the training are to be decided upon the basic purpose of the Project.

III. MEASURES TO BE TAKEN BY RGC

1. RGC will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement of all related authorities and beneficiary groups and institutions in the Project.

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2. RGC will take necessary measures to ensure that the knowledge and experience acquired by the Cambodian personnel from technical training in Japan and/or third countries will be utilized effectively in the implementation of the Project.
3. In accordance with the provision of Article VI of the Agreement, RGC will provide the services of Cambodian counterpart personnel and administrative personnel as listed in Annex IV.
4. In accordance with the provision of Article VI of the Agreement, RGC will provide suitable office and facilities as listed in Annex V.
5. In accordance with the laws and regulations in force in Cambodia, RGC will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA under II-2.
6. In accordance with the laws and regulations in force in Cambodia, RGC will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. Project Director from MOWRAM will bear overall responsibility for the administration and implementation of the Project.
2. The Japanese experts will provide necessary recommendations and advice to the Project Director on any matters pertaining to the implementation of the Project.
3. The Japanese experts will give necessary technical guidance and advice to Cambodian counterpart personnel on technical matters pertaining to implementation of the Project.
4. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex VI.

<Draft>**V. MONITORING AND JOINT EVALUATION**

The progress of the Project will be monitored properly through various measures such as mutual consultations or dispatching of monitoring missions. Evaluation of the Project will be conducted jointly by JICA and the Cambodian authorities concerned, at least one (1) time (terminal evaluation) within the cooperation term in order to examine the level of achievement.

VI. MUTUAL CONSULTATION

There will be mutual consultation between the RGC and JICA on any major issue arising from, or in connection with the Project.

VII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of Cambodia, RGC will take appropriate measures to make the Project widely known to the people of Cambodia.

VIII. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be five (5) years from September 2009 to August 2014.

ANNEX I	MASTER PLAN
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	LIST OF CAMBODIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF LAND, BUILDING AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE
ANNEX VII	AGREEMENT ON TECHNICAL COOPERATION BETWEEN THE ROYAL GOVERNMENT OF CAMBODIA AND THE GOVERNMENT OF JAPAN

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ANNEX I MASTER PLAN**1. Project Title**

Improvement of Agricultural River Basin Management and Development Project (TSC 3)

2. Project Duration

September 2009 to August 2014 (tentative).

3. Target Area

Six (6) Provinces, namely, Kandal, Takeo, Pursat, Kampong Chhnang, Kampong Spue, and Battambang.

4. Target Group

Counterpart personnel in TSC, Provincial Department of Water Resources and Meteorology (hereinafter referred to as "PDWRAM") and Provincial Department of Agriculture (hereinafter referred to as "PDA") in the target area, the engineers and technicians in MOWRAM and other PDWRAM, and the farmers in the model project sites.

5. Overall Goal

Agricultural productivity in the target area is stabilized through efficient water resource management realized by improved technical capacity of MOWRAM and PDWRAM in agricultural river basin management and development¹.

6. Project Purpose

Irrigation projects are properly planned, implemented and operated in the target area of the Project.

7. Outputs of the Project

- (1) TSC obtain capacities to implement training and technical support for MOWRAM and PDWRAM related to the agricultural river basin management and development.
- (2) The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training.
- (3) The capacities of the engineers and technicians of MOWRAM and PDWRAM on

¹ Agricultural river basin management and development is the holistic concept of water resource management to enable efficient water distribution among the irrigation systems at a river basin level, considering the needs of the other sectors.

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planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in an irrigation systems as a whole are improved through training.

- (4) The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM.

8. Activities

Output 1: TSC obtain capacities to implement training and technical support for MOWRAM and PDWRAM related to the agricultural river basin management and development.

- 1-1 Provide training to TSC staff on the knowledge and technologies related to the agricultural river basin management and development.
- 1-2 Provide training to TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system.
- 1-3 Reinforce the technical learning above of TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM.
- 1-4 Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.

Output 2: The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training.

- 2-1 Formulate training courses on agricultural river basin management and development.
- 2-2 Conduct and evaluate the training courses on agricultural river basin management and development.
- 2-3 Review and revise the training courses on agricultural river basin management and development.

Output 3: The capacities of the engineers and technicians of MOWRAM and PDWRAM on planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in irrigation systems as a whole are improved through training.

- 3-1 Formulate the training courses on technologies related to the irrigation facilities and structures in the main system.

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- 3-2 Conduct and evaluate the training courses on technologies related to the irrigation facilities and structures in the main system.
- 3-3 Review and revise the training courses on technologies related to the irrigation facilities and structures in the main system.
- 3-4 Conduct and evaluate the training courses on technologies related to the irrigation facilities and structures in the tertiary system.
- 3-5 Review and revise the training courses on technologies related to the irrigation facilities and structures in the tertiary system.
- 3-6 Formulate the training courses for the newly recruited staff of MOWRAM and PDWRAM based on the revised training courses above.

Output 4: The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM.

- 4-1 Select the sites for the model irrigation projects² of in the target area of the Project.
- 4-2 Provide technical support for the respective PDWRAM to plan, design, construct and conduct O&M of the model irrigation projects.
- 4-3 Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area.
- 4-4 Based on the experiences of the technical supports above, formulate manuals for PDWRAM on planning of the irrigation projects.

² Model irrigation projects are the interventions by the Project for improvement of water management, such as improvement of irrigation facilities, demonstration of participatory irrigation management as well as the operation and maintenance, enhancement of irrigated farming technologies and so forth.

<Draft>**ANNEX II LIST OF JAPANESE EXPERTS****1. Long-term Experts**

The following long-term experts will be dispatched for the smooth implementation of the Project.

- (1) Chief Advisor / Agricultural River Basin Management
- (2) Participatory Irrigation Management
- (3) Training / Project Coordinator

2. Short-term Experts

Short-term expert will be assigned within the framework of the Project. The following fields are listed for the dispatch of short-term experts.

- (1) GIS
- (2) Meteo-Hydrological Analysis
- (3) Structural Design and Calculation for Reservoir and Main Dyke
- (4) Water Balance Calculation and Planning for Water Allocation
- (5) Soil and Concrete Analysis
- (6) Remote Sensing
- (7) Watershed Management
- (8) Other relevant fields

The Terms of Reference of the short-term experts will be decided based on the discussions between Japanese experts and MOWRAM/TSC after the inauguration of the Project.

<Draft>

ANNEX III LIST OF MACHINERY AND EQUIPMENT

The Equipment necessary for the activities described in ANNEX I above for the technical transfer will be provided.

1. Vehicles
2. Survey and experimental equipment such as total station, GPS and auto-level
3. Computers and software

Notes:

Contents, specifications and quantity of the above-mentioned equipment will be decided through mutual consultations within the allocated budget of the Japanese fiscal years.

<Draft>

ANNEX IV LIST OF CAMBODIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Project Director: Secretary of State, MOWRAM
2. Project Manager: Director General of Technical Affairs, MOWRAM
3. Sub Project Manager:
 - (1) Deputy Director General of Administration and Director of TSC, MOWRAM
 - (2) Deputy Director General of Technical Affairs and Director of Water Resources Management and Conservation, MOWRAM
 - (3) Director of Planning and International Cooperation, MOWRAM
4. Counterpart Personnel
 - (1) TSC Counterparts: 17
 - (2) Japanese Fund Implementation Group: 5
 - (3) Kandal Stung Operation & Maintenance Team: 7
 - (4) Ten (10) counterpart personnel from each PDWRAM in the target area
 - (5) Two (2) counterpart personnel from each PDA in the target area

<Draft>**ANNEX V LIST OF LAND BUILDING AND FACILITIES**

The following will be prepared by RGC for the Project implementation.

1. Technical Service Center for Irrigation System (TSC)
 - (1) Office and working rooms for Japanese experts
 - (2) Lecture and computer room for training
 - (3) Laboratories for soil test and concrete test
 - (4) Storage space for provided machinery, instruments and equipment
 - (5) Electricity, water supply and telecommunication facilities
 - (6) Machinery, vehicle and equipment provided by TSC Phase 1 Project & Phase 2 Project
2. Model Project Site
 - (1) Ream Kon Area, Por Canal Irrigation Area, Battambang Province
 - (2) Damnak Ampil, Wat Luong, Wat Chre, Thlea Ma Orm Irrigation Area, Pursat Province
 - (3) Lum Hach Irrigation Area, Kampong Chhunang Province
 - (4) Kandal Stung Irrigation Area, Kandal Province
 - (5) Upper Slakou and Thomney Irrigation Area, Takeo Province
 - (6) Roleng Chery Irrigation Area, Kampong Spue Province
3. Office and working rooms for TSC staff and Japanese experts with electricity, water supply and telecommunication facilities at PDWRAM in above mentioned provinces
4. Other land, buildings, facilities necessary for the implementation of the Project

<Draft>**ANNEX VI JOINT COORDINATING COMMITTEE****1. Function**

For effective and successful implementation of the Project, the Joint Coordinating Committee (JCC) will be established in order to fulfill the following functions:

- 1) To approve an Annual Plan of Operations under the framework of the Master Plan of the Project.
- 2) To review the overall progress of the Project as well as achievement of the Annual Plan of Operations of the Project.
- 3) To review and exchange opinions on important issues originated in, or in relation to the Project; and
- 4) To provide advice to the Project team for the better implementation and management of the Project.

2. Members of JCC

Chairperson

Project Director, Secretary of State, MOWRAM

Member

1) Cambodian Side

Director General of Technical Affairs (Project Manager)

Director of TSC

Director of Planning and International Cooperation

Director of Administration and Human Resource

Director of Finance

Director of Engineering Department

Director of Irrigated Agriculture Department

Director of Water Resources Management and Conservation

Director of Hydrology and River Works

Director of Meteorology

Director of PDWRAM in Battambang, Pursat, Kampong Chhnang, Kandal, Kampong Spue and Takeo

Representative of Ministry of Economy and Finance

Representative of Ministry of Agriculture, Forestry and Fisheries

Representative of Council of Administration Reform

<Draft>

- 2) Japanese Side
 - Chief Advisor
 - Project Coordinator
 - Experts assigned to the Project
 - JICA advisor to MOWRAM
 - Chief Representative of JICA Cambodia Office
 - Other Japanese Experts and personnel concerned dispatched by JICA, as necessary
- 3) Other necessary personnel mutually agreed upon as necessary
- 4) Observers:

Officials of the Embassy of Japan in the Kingdom of Cambodia may attend JCC as observers. Persons who are nominated by the Chairperson may also attend JCC.

Table 1 Summary of Survey Results on Proposed Model Project Sites

Province	Project		Present Status of Proposed Model Site *				Remarks
	Name	Total Area (ha)	Canal			FWUC	
			Main	Secondary	Tertiary		
Kampong Chhnang	Lum Hach Left bank area	3,100	Existing	-	-	Not established	
	Thlea Maom	3,500	Existing	Existing	Existing	Existing without registering	Intervention by TSC 2, Double cropping on a trial basis
Pursat	Damnak Ampil	2,270	Existing	Existing	-	Existing without registering	Candidate site for irrigation management
	Wat Loung	2,540	Existing	-	-	Not established	
	Wat Chre	1,020	Existing	-	-	Not established	
Battambang	Ream Kon	1,890	Existing	-	-	Not established	
	Por Canal	1,940	Existing	Existing	-	Not established	
Kampong Spue	Loreng Chery	10,000	Existing	-	-	5 FWUCs exist	Candidate site for irrigation management
	Upper Slako	3,500	Existing	Existing	-	Existing without registering	
Takeo	Thmney	600	Existing	Existing	-	Registered	Intervention by TSC 2, Double cropping on a trial basis
Kandal	Kandal Stung	2,000	Existing	Existing	Existing	FWUG is existing without registering	Intervention by TSC 1, 2 Double cropping on a trial basis, Candidate site for irrigation management

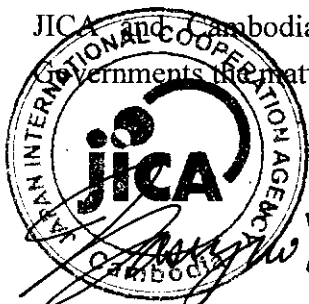
Note : * The model project suite of approximately 100 ha is to be selected from each project area.

**RECORD OF DISCUSSIONS BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
MINISTRY OF WATER RESOURCES AND METEOROLOGY
OF ROYAL GOVERNMENT OF CAMBODIA
ON
JAPANESE TECHNICAL COOPERATION
FOR
THE IMPROVEMENT OF AGRICULTURAL RIVER BASIN MANAGEMENT AND
DEVELOPMENT PROJECT (TSC 3)**

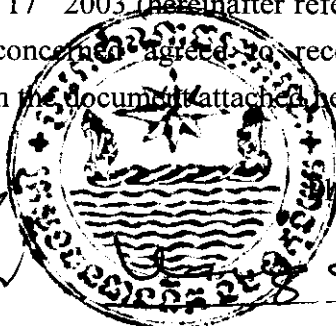
In response to the request of Royal Government of Cambodia (hereinafter referred to as “RGC”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) has decided to implement Japanese Technical Cooperation for the Improvement of Agricultural River Basin Management and Development Project (TSC 3) (hereinafter referred to as “the Project”).

Accordingly, JICA, the independent administrative institution responsible for operation of technical cooperation program of the Government of Japan (hereinafter referred to as “GOJ”), will cooperate with the authorities concerned of RGC, namely Ministry of Water Resources and Meteorology (hereinafter referred to as “MOWRAM”).

JICA and Cambodian authorities concerned exchanged views and had series of discussions with respect to desirable measures to be taken by JICA and RGC represented by MOWRAM for the successful implementation of the Project. As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between GOJ and RGC, signed in Phnom Penh on June 17th 2003 (hereinafter referred to as “the Agreement”), JICA and Cambodian authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.



Mr. Yasujiro SUZUKI
Chief Representative
Japan International Cooperation Agency
Cambodia Office



H.E. Mr. VENG Sakhon
Secretary of State
Ministry of Water Resources and Meteorology
Kingdom of Cambodia

Phnom Penh, August 24, 2009

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND ROYAL GOVERNMENT OF CAMBODIA

1. RGC will implement the Improvement of Agricultural River Basin Management and Development Project (TSC 3) in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provision of Article III of the Agreement, JICA, as the executing agency of the GOJ for technical cooperation, will take its own expense, the following measures according to the normal procedure of the technical cooperation scheme of Japan.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide limited amount of machinery, equipment and other materials (hereinafter referred to as "Equipment") necessary for the implementation of the Project as listed in Annex III.

3. TRAINING OF CAMBODIAN PERSONNEL IN JAPAN

JICA will receive the Cambodian personnel connected with the Project for technical training in Japan and/or third country. The participants and contents of the training are to be decided upon the basic purpose of the Project.

III. MEASURES TO BE TAKEN BY RGC

1. RGC will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement of all related authorities and beneficiary groups and institutions in the Project.

2. RGC will take necessary measures to ensure that the knowledge and experience acquired by the Cambodian personnel from technical training in Japan and/or third countries will be utilized effectively in the implementation of the Project.
3. In accordance with the provision of Article VI of the Agreement, RGC will provide the services of Cambodian counterpart personnel and administrative personnel as listed in Annex IV.
4. In accordance with the provision of Article VI of the Agreement, RGC will provide suitable office and facilities as listed in Annex V.
5. In accordance with the laws and regulations in force in Cambodia, RGC will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA under II-2.
6. In accordance with the laws and regulations in force in Cambodia, RGC will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. Project Director from MOWRAM will bear overall responsibility for the administration and implementation of the Project.
2. The Japanese experts will provide necessary recommendations and advice to the Project Director on any matters pertaining to the implementation of the Project.
3. The Japanese experts will give necessary technical guidance and advice to Cambodian counterpart personnel on technical matters pertaining to implementation of the Project.
4. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex V.

V. MONITORING AND JOINT EVALUATION

The progress of the Project will be monitored properly through various measures such as mutual consultations or dispatching of monitoring missions. Evaluation of the Project will be conducted jointly by JICA and the Cambodian authorities concerned, at least one (1) time (terminal evaluation) within the cooperation term in order to examine the level of achievement.

VI. MUTUAL CONSULTATION

There will be mutual consultation between RGC and JICA on any major issue arising from, or in connection with the Project.

VII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of Cambodia, RGC will take appropriate measures to make the Project widely known to the people of Cambodia.

VIII. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be five (5) years from September 2009 to August 2014.

ANNEX I	MASTER PLAN
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	LIST OF CAMBODIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF LAND, BUILDING AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE
ANNEX VII	AGREEMENT ON TECHNICAL COOPERATION BETWEEN THE ROYAL GOVERNMENT OF CAMBODIA AND THE GOVERNMENT OF JAPAN

ANNEX I MASTER PLAN

1. Project Title

Improvement of Agricultural River Basin Management and Development Project (TSC 3)

2. Project Duration

September 2009 to August 2014.

3. Target Area

Six (6) Provinces, namely, Kandal, Takeo, Pursat, Kampong Chhnang, Kampong Speu, and Battambang.

4. Target Group

Counterpart personnel in TSC, Provincial Department of Water Resources and Meteorology (hereinafter referred to as “PDWRAM”) and Provincial Department of Agriculture (hereinafter referred to as “PDA”) in the target area, the engineers and technicians in MOWRAM and other PDWRAM, and the farmers in the model project sites.

5. Overall Goal

Agricultural productivity in the target area is stabilized through efficient water resource management realized by improved technical capacity of MOWRAM and PDWRAM in agricultural river basin management and development¹.

6. Project Purpose

Irrigation projects are properly planned, implemented and operated in the target area of the Project.

7. Outputs of the Project

- (1) TSC obtain capacities to implement training and provide technical support for MOWRAM and PDWRAM related to the agricultural river basin management and development.
- (2) The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training.

¹ Agricultural river basin management and development is the holistic concept of water resource management to enable efficient water distribution among the irrigation systems at a river basin level, considering the needs of the other sectors.

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- (3) The capacities of the engineers and technicians of MOWRAM and PDWRAM on planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in an irrigation systems as a whole are improved through training.
- (4) The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM.

8. Activities

Output 1: TSC obtain capacities to implement training and technical support for MOWRAM and PDWRAM related to the agricultural river basin management and development.

- 1-1 Provide training to TSC staff on the knowledge and technologies related to the agricultural river basin management and development.
- 1-2 Provide training to TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system.
- 1-3 Reinforce the technical learning above of TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM.
- 1-4 Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.

Output 2: The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training.

- 2-1 Formulate training courses on agricultural river basin management and development.
- 2-2 Conduct and evaluate the training courses on agricultural river basin management and development.
- 2-3 Review and revise the training courses on agricultural river basin management and development.

Output 3: The capacities of the engineers and technicians of MOWRAM and PDWRAM on planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in irrigation systems as a whole are improved through training.

- 3-1 Formulate the training courses on technologies related to the irrigation facilities and

structures in the main system.

- 3-2 Conduct and evaluate the training courses on technologies related to the irrigation facilities and structures in the main system.
- 3-3 Review and revise the training courses on technologies related to the irrigation facilities and structures in the main system.
- 3-4 Conduct and evaluate the training courses on technologies related to the irrigation facilities and structures in the tertiary system that have been developed through the TSC Phase 2 Project.
- 3-5 Review and revise the training courses on technologies related to the irrigation facilities and structures in the tertiary system.
- 3-6 Formulate the training courses for the newly recruited staff of MOWRAM and PDWRAM based on the revised training courses above.

Output 4: The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM.

- 4-1 Select the sites for the model irrigation projects² of in the target area of the Project.
- 4-2 Provide technical support for the respective PDWRAM to plan, design, construct and conduct O&M of the model irrigation projects.
- 4-3 Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area.
- 4-4 Based on the experiences of the technical supports above, formulate manuals for PDWRAM on planning of the irrigation projects.

² Model irrigation projects are the interventions by the Project for improvement of water management, such as improvement of irrigation facilities, demonstration of participatory irrigation management as well as the operation and maintenance, enhancement of irrigated farming technologies and so forth.

ANNEX II LIST OF JAPANESE EXPERTS

1. Long-term Experts

The following long-term experts will be dispatched for the smooth implementation of the Project.

- (1) Chief Advisor / Agricultural River Basin Management
- (2) Participatory Irrigation Management
- (3) Training / Project Coordinator

2. Short-term Experts

Short-term expert will be assigned within the framework of the Project. The following fields are listed for the dispatch of short-term experts.

- (1) GIS
- (2) Meteo-Hydrological Analysis
- (3) Structural Design and Calculation for Reservoir and Main Dyke
- (4) Water Balance Calculation and Planning for Water Allocation
- (5) Soil and Concrete Analysis
- (6) Remote Sensing
- (7) Watershed Management
- (8) Other relevant fields

The Terms of Reference of the short-term experts will be decided based on the discussions between Japanese experts and MOWRAM/TSC after the inauguration of the Project.

ANNEX III LIST OF MACHINERY AND EQUIPMENT

The Equipment necessary for the activities described in ANNEX I above for the technical transfer will be provided.

1. Vehicles
2. Survey and experimental equipment such as total station, GPS and auto-level, etc.
3. Computers and software

Notes:

Contents, specifications and quantity of the above-mentioned equipment will be decided through mutual consultations within the allocated budget of the Japanese fiscal years.

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ANNEX IV LIST OF CAMBODIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Project Director: Secretary of State, MOWRAM
2. Project Manager: Director General of Technical Affairs, MOWRAM
3. Sub Project Manager:
 - (1) Deputy Director General of Administration Affairs and Director of TSC, MOWRAM
 - (2) Deputy Director General of Technical Affairs and Director of Water Resources Management and Conservation Department, MOWRAM
 - (3) Director of Planning and International Cooperation Department, MOWRAM
4. Counterpart Personnel
 - (1) TSC Counterparts: 17
 - (2) Japanese Fund Implementation Group: 5
 - (3) Kandal Stung Operation & Maintenance Team: 7
 - (4) Ten (10) counterpart personnel from each PDWRAM in the target area
 - (5) Two (2) counterpart personnel from each PDA in the target area

ANNEX V LIST OF LAND BUILDING AND FACILITIES

The following will be prepared by RGC for the Project implementation.

1. Technical Service Center for Irrigation System (TSC)

- (1) Office and working rooms for Japanese experts
- (2) Lecture and computer room for training
- (3) Laboratories for soil test and concrete test
- (4) Storage space for provided machinery, instruments and equipment
- (5) Electricity, water supply and telecommunication facilities
- (6) Machinery, vehicle and equipment provided by TSC Phase 1 Project & Phase 2 Project

2. Model Project Site

- (1) Ream Kon Area, Por Canal Irrigation Area, Battambang Province
- (2) Damnak Ampil, Wat Luong, Wat Chre, Thlea Ma Orm Irrigation Area, Pursat Province
- (3) Lum Hach Irrigation Area, Kampong Chhnang Province
- (4) Kandal Stung Irrigation Area, Kandal Province
- (5) Upper Slakou and Thomney Irrigation Area, Takeo Province
- (6) Roleang Chrey Irrigation Area, Kampong Speu Province

3. Office and working rooms for TSC staff and Japanese experts with electricity, water supply and telecommunication facilities at PDWRAM in above mentioned provinces.

4. Other land, buildings, facilities necessary for the implementation of the Project.

ANNEX VI JOINT COORDINATING COMMITTEE

1. Joint Coordination Committee

(1) Function

For effective and successful implementation of the Project, the Joint Coordinating Committee (JCC) will be established in order to fulfill the following functions:

- 1) To approve an Annual Plan of Operations under the framework of the Master Plan of the Project.
- 2) To review the overall progress of the Project as well as achievement of the Annual Plan of Operations of the Project.
- 3) To review and exchange opinions on important issues originated in, or in relation to the Project; and
- 4) To provide advice to the Project team for the better implementation and management of the Project.

(2) Members of JCC

Chairperson

Project Director, Secretary of State, MOWRAM

Member

1) Cambodian Side

Director General of Technical Affairs (Project Manager)

Director of TSC

Director of Planning and International Cooperation Department

Director of Administration and Human Resource Department

Director of Finance Department

Director of Engineering Department

Director of Irrigated Agriculture Department

Director of Water Resources Management and Conservation Department

Director of Hydrology and River Works Department

Director of Meteorology Department

Director of PDWRAM in Battambang, Pursat, Kampong Chhnang, Kandal, Kampong Spue and Takeo

Representative of Ministry of Economy and Finance

Representative of Ministry of Agriculture, Forestry and Fisheries

Representative of Council of Administration Reform

2) Japanese Side

Chief Advisor

Project Coordinator

Experts assigned to the Project

JICA advisor to MOWRAM

Chief Representative of JICA Cambodia Office

Other Japanese Experts and personnel concerned dispatched by JICA, as necessary

3) Other necessary personnel mutually agreed upon as necessary

4) Observers:

Officials of the Embassy of Japan in Kingdom of Cambodia may attend JCC as observers. Persons who are nominated by the Chairperson may also attend JCC.

2. Executive Committee

An Executive Committee (EC) will be organized when the Project Director judges it necessary. According to the issues to be discussed, the members of the Executive Committee will be nominated by the Project Director. The result of the discussion will be reported to JCC.

The function of EC are as follows:

- 1) To develop and improve detailed plan of the project activities.
- 2) To monitor, coordinate and evaluate the project activities.
- 3) To summarize the proceedings of activities and report it to JCC.

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**MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
MINISTRY OF WATER RESOURCES AND METEOROLOGY
OF THE ROYAL GOVERNMENT OF CAMBODIA
ON
THE JAPANESE TECHNICAL COOPERATION FOR
THE IMPROVEMENT OF AGRICULTURAL RIVER BASIN MANAGEMENT
AND DEVELOPMENT PROJECT (TSC 3)
IN THE KINGDOM OF CAMBODIA**

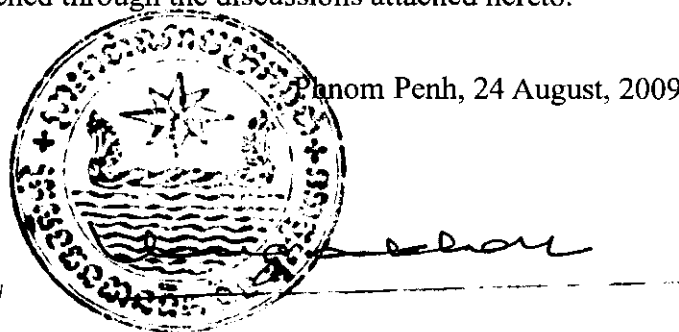
Chief Representative of the Japan International Cooperation Agency (hereinafter referred to as “JICA”) Cambodia Office and Ministry of Water Resources and Meteorology (hereinafter referred to as “MOWRAM”) had series of meetings for the purpose of working out the details of the technical cooperation programme concerning the Improvement of Agricultural River Basin Management and Development Project (TSC 3) (hereinafter referred to as “the Project”).

As a result of the discussions JICA and MOWRAM agreed to recommend to their respective Governments the matter referred to in the Record of Discussions (hereinafter referred to as “R/D”) signed on 24 August, 2009.

Both JICA and MOWRAM also agreed to make this Minutes of Meeting in order to confirm the mutual understanding reached through the discussions attached hereto.

The image shows the official seal of the Japan International Cooperation Agency (JICA) on the left, which is circular and contains the text "JAPAN INTERNATIONAL COOPERATION AGENCY" and "JICA". To the right of the seal is a handwritten signature in black ink, which appears to be "Yasujiro Suzuki".

Mr. Yasujiro SUZUKI
Chief Representative
Japan International Cooperation Agency
Cambodia Office

The image shows the official seal of the Ministry of Water Resources and Meteorology (MOWRAM) of Cambodia on the left, which is circular and features a central emblem with a star and waves, surrounded by Khmer text. To the right of the seal is a handwritten signature in black ink, which appears to be "Veng Sakhon".

H.E. Mr. VENG Sakhon
Secretary of State,
Ministry of Water Resources and
Meteorology
The Kingdom of Cambodia

Phnom Penh, 24 August, 2009

The Attached Document

1. Project Design Matrix

As a result of the discussions, both side agreed to adopt the Project Design Matrix (hereinafter referred to as "PDM") shown in the ANNEX 1. PDM specifies the objectives, outputs and activities and achievements. PDM may be modified upon the approval of the Joint Coordination Committee (hereinafter referred to as "JCC") within the framework of R/D when necessity arises in accordance with the progress of the Project.

2. Plan of Operations

JICA and MOWRAM have jointly formulated the Plan of Operations (hereinafter referred to as "PO") shown ANNEX 2. PO has been formulated in connection with R/D signed by JICA and MOWRAM. PO may be modified upon the approval of JCC within the framework of R/D when necessity arises in accordance with the progress of the Project.

3. Securing operational budget of TSC Plan of Operation

As the Project is scheduled to start within the RGC fiscal year (FY) 2009, efforts are to be made to ensure timely disbursement of the approved budget of three hundred million (300,000,000) Cambodian Riels so that the initial activities of the Project would smoothly be implemented. Considering TSC's share of the operational costs of the Project, MOWRAM is committed to respond to the proposed budget of one thousand and two hundred million (1,200,000,000) Cambodian Riels for FY 2010 for TSC.

It is also expected that MOWRAM will make necessary arrangements with relevant agencies of RGC to secure the allocation of Counterpart Fund for the Project for coming five years, expected amount of which is about three hundred thousand (300,000) US Dollars. Aside from these arrangements for securing operational budget, MOWRAM will consider application for some support incentive systems such as Priority Mission Group (PMG), or Merit Based Payment Initiative (MBPI) for the counterpart personnel of TSC and six (6) PDWRAM.

4. Utilization of the Output of the Previous Project

Both sides agreed that the Project should be conducted with utilizing the inputs and outputs of the previous project, such as the equipments, materials and counterpart personnel.

List of Annex

Appendix 1: Project Design Matrix (PDM)

Appendix 2: Plan of Operation (PO)

Appendix 1 Draft Project Design Matrix (PDM)

Project Title: Improvement of Agricultural River Basin Management and Development Project (TSC 3)

Project Duration: September, 2009 to August, 2014 (tentative)

Project Area: Six (6) Provinces, namely, Kandal, Takeo, Pursat, Kampong Chhnang, Kampong Spuc, and Battambang

Project Group: Counterpart personnel in TSC, PDWRAM and PDA in the target area, the engineers and technicians in MOWRAM and other PDWRAM, and the farmers in the model project sites

Version Number: Version 0 (draft)

Date: 29 May 2009

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: Cultural productivity in the target area is stabilized through efficient resource management realized by improved technical capacity of MOWRAM and PDWRAM in agricultural river basin management and development (*1).</p>	<p>1. Unit yield of rice and other crops in the target area of the Project is improved to reach the national target.</p>	<p>1. Statistical Data of MAFF and PDA in the target area.</p>	<p>* There is no drastic climate change that affects the agricultural production.</p>
<p>Project Purpose: Irrigation projects are properly planned, implemented and operated in the target area of the Project.</p>	<p>1. Number of the newly formulated irrigation projects in the target area, which are planned and designed based on the water supply circulation. 2. Number of PDWRAM technicians who obtained appropriate operation skills. 3. Number of farmers group (water user committee and so on), are newly established, and periodical O&M activates.</p>	<p>1-1 Project records and documents 1-2 Field survey and interviews</p>	<p>* The funds are made available for the planned irrigation projects in the target area. * Security situations in the target area do not become extremely unstable. * There is no conflict among the farmers in the model project sites.</p>
<p>Outputs: TSC obtain capacities to implement training and provide technical supports for MOWRAM and PDWRAM related to the agricultural river basin management and development.</p>	<p>1. More than XX % of TSC staff become competent in carrying out training and technical supports. 2. More than XX PDWRAM are satisfied with training and technical supports of TSC</p>	<p>1-1 Evaluation by training participants 1-2 Self evaluation of TSC staff 2. Questionnaire survey with PDWRAM</p>	<p>* Relevant authorities and stakeholders are supportive to promote the model projects. * farmers are eager to participate the model irrigation projects.</p>
<p>The engineers and technicians in MOWRAM and PDWRAM obtain knowledge on concepts and technologies related to the agricultural river basin management and development through training.</p>	<p>1. More than XX training courses on agricultural river basin management and development are conducted. 2. More than XX% of training participants achieve the curriculum targets (*2) of the training courses.</p>	<p>1. Project records and documents 2. Evaluation results of the training courses</p>	
<p>The capacities of the engineers and technicians of MOWRAM and PDWRAM on planning, survey, design, construction management, operation and maintenance (O&M) of facilities and structures in an irrigation system as a whole are improved through training.</p>	<p>1. More than XX training courses are conducted on technologies related to the development and management of an irrigation system as a whole. 2. More than XX% of training participants achieve the curriculum targets (*2) of the training courses.</p>	<p>1. Project records and documents 2. Evaluation results of the training courses</p>	
<p>The technical support system of TSC is established to promote implementation of irrigation projects by PDWRAM.</p>	<p>1. More than XX project plans are formulated with technical supports of TSC for budget requests.</p>	<p>1. Records and documents of TSC and the Project</p>	
<p>Notes: Provide training to the TSC staff on the knowledge and technologies related to the agricultural river basin management and development. Provide training to the TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system.</p>	<p>Inputs (Cambodia side) Personnel (1) Project Director: Secretary of State, MOWRAM (2) Project Manager: Director General of Technical Affairs, MOWRAM</p>	<p>(Japanese side) Long-term Experts (1) Chief Advisor / Agricultural River Basin Management (2) Participatory Irrigation Management (3) Training / Project Coordinator</p>	

<p>Reinforce the technical learning above of the TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM.</p> <p>Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.</p>	<p>(3) Project Sub-Manager: - Deputy Director of the Department of Administration Affair and Director of TSC - Deputy Director General of Technical Affairs and Director of Water Conservation and management - Director of Planning and International Cooperation (4) Counterpart Personnel of TSC and PDWRAM</p>	<p>Short-term Experts (1) GIS (2) Metro-Hydrological Analysis (3) Structural Design and Calculation for Reservoir and Main Dyke (4) Water Balance Calculation and Planning for Water Allocation (5) Soil and Concrete Analysis (6) Remote Sensing (7) Watershed Management (8) Other relevant fields</p> <p>Training of counterpart personnel in Japan and/or in third countries</p>
<p>Formulate training courses on agricultural river basin management and development.</p> <p>Conduct and evaluate the training courses on agricultural river basin management and development.</p> <p>Review and revise the training courses on agricultural river basin management and development.</p>	<p>Land, Building and Facilities (1) Office building and facilities necessary for the implementation of the Project (2) Office space and necessary facilities for the Japanese experts and related staff members (3) Land for the model project sites (4) Other facilities mutually agreed upon as necessary</p>	
<p>Formulate the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>Review and revise the training courses on the technologies related to the irrigation facilities and structures in the main system.</p> <p>Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the tertiary system that have been developed through the foregoing TSC Phase 2</p> <p>Review and revise the training courses on the technologies related to the irrigation facilities and structures in the tertiary system.</p> <p>Formulate the training courses for the newly recruited staff of MOWRAM and PDWRAM based on the revised training courses</p>		
<p>Select the sites for the model irrigation projects (*2) of in the target area of the Project.</p> <p>Provide technical support for the respective PDWRAM to plan, design, construct and conduct operation and maintenance (O&M) of the model irrigation projects.</p> <p>Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area.</p> <p>Based on the experiences of the technical supports above, formulate manuals for PDWRAM on planning of the irrigation projects.</p>		

*1: Agricultural river basin management and development is the holistic concept of water resource management to enable efficient water distribution among the irrigation systems at a river basin level, considering the needs of the other sectors.

*2: Curriculum target is set for each training course to evaluate the level of participants' understanding, based on the pre- and post-training tests, self evaluation of participants and so forth.

*3: Model irrigation projects are the interventions by the Project for improvement of water management, such as improvement of irrigation facilities, demonstration of participatory irrigation management as well as the operation and maintenance, enhancement of irrigated farming technologies and so forth..

Appendix 2 Draft Plan of Operations (PO)

Activities	JFY2009		JFY2010		JFY2011		JFY2012		JFY2013		JFY2014		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
(1) Gather technical references on the agricultural river basin management and development.												
(2) Gather basic information on the proposed model project sites.												
(3) Set up the management body of the Project and prepare the work plan.												
(4) Review and decide the indicators with target figures.												
1-1 Provide training to TSC staff on the knowledge and technologies related to the agricultural river basin management and development.													
(1) Prepare training course and materials for in-house training on the agricultural river basin management and development.													
(2) Organize the in-house training on the agricultural river basin management and development.													
1-2 Provide training to TSC staff on the knowledge and technologies related to the irrigation facilities and structures in the main system.													
(1) Prepare training course and materials for in-house training on the knowledge and technologies related to the irrigation facilities and structures in the main system.													
(2) Organize the in-house training on the knowledge and technologies related to the irrigation facilities and structures in the main system.													
1-3 Reinforce the technical learning above of TSC staff through actual conduct of the training courses for the engineers and technicians of MOWRAM and PDWRAM.													
(1) Organize preparatory meetings among TSC staff for formulation of training course on the agricultural river basin management and development.													
(2) Organize preparatory meetings among TSC staff for formulation of training course on the knowledge and technologies related to the irrigation facilities and structures in the main system.													
(3) Organize the review meetings among TSC staff to evaluate their own understanding on the training subjects.													
1-4 Provide support to MOWRAM to formulate the mid- / long-term human resource development plan on water and irrigation management.													
(1) Analyze the results of training evaluations to be reflected in the human resource development program on water and irrigation management.													
(2) Provide suggestions for possible modification of the human resource development program on water and irrigation management.													
2-1 Formulate training courses on agricultural river basin management and development.													
(1) Review the technical references to select the contents to be covered in the training courses.													
(2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation.													
(3) Prepare necessary textbook and/or training materials.													
2-2 Conduct and evaluate the training courses on agricultural river basin management and development.													
(1) Conduct training courses with field exercises.													
(2) Conduct evaluation of the training courses.													
2-3 Review and revise the training courses on agricultural river basin management and development.													
(1) Analyze the results of evaluation to identify any topic or method of training to be improved.													
(2) Revise the contents of the training course with appropriate modifications.													

Activities	JFY2009				JFY2010				JFY2011				JFY2012				JFY2013				JFY2014			
	Q2	Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3-1 Formulate the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Review the technical references to select the contents to be covered in the training courses. (2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation. (3) Prepare necessary textbook and/or training materials.																								
3-2 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Conduct training courses with field exercises. (2) Conduct evaluation of the training courses																								
3-3 Review and revise the training courses on the technologies related to the irrigation facilities and structures in the main system. (1) Analyze the results of evaluation to identify any topic or method of training to be improved. (2) Revise the contents of the training course with appropriate modifications.																								
3-4 Conduct and evaluate the training courses on the technologies related to the irrigation facilities and structures in the tertiary system that have been developed through the foregoing TSC Phase 2 Project. (1) Conduct training courses with field exercises. (2) Conduct evaluation of the training courses.																								
3-5 Review and revise the training courses on technologies related to the irrigation facilities and structures in the tertiary system. (1) Analyze the results of evaluation to identify any topic or method of training to be improved. (2) Revise the contents of the training courses with appropriate modifications.																								
3-6 Formulate the training courses for the newly recruited staff of MOWRAM and PDWRAM based on the revised training courses above. (1) Select the appropriate contents from the revised training courses for newly recruited staff. (2) Formulate the detailed plan of the training courses and set curriculum targets for evaluation.																								
4-1 Select the sites for the model irrigation projects of in the target areas of the Project. (1) Review the basic data and identify the contents of model irrigation projects for each proposed sites. (2) Discuss between PDWRAM and TSC to formulate the overall implementation plans of the model irrigation projects. (3) Conduct initial explanatory meetings for the relevant stakeholders in the model project sites.																								
4-2 Provide technical support for the respective PDWRAM to plan, design, construct and conduct operation and maintenance (O&M) of the model irrigation projects. (1) Organize workshops with farmers and local government authorities in the model project sites for mapping and planning of the model irrigation projects. (2) Conduct survey and design the facilities and/or structures in consultation with the farmers. (3) Plan, conduct and supervise the construction activities with participation of the farmers. (4) Formulate the O&M plans in consultation with the farmer water user groups (FWUG) and facilitate the implementation of O&M activities.																								

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Activities	JFY2009		JFY2010		JFY2011		JFY2012		JFY2013		JFY2014		
	02	03	04	01	02	03	04	01	02	03	04	01	02
4-3 Provide technical support for the respective PDWRAM to apply participatory irrigation management in close collaboration with beneficiary farmers, PDA and other relevant stakeholders in the area (1) Facilitate the farmers to organize the FWUG. (2) Conduct farmer-to-farmer training / study tours for the FWUG members. (3) Coordinate with PDA and other relevant stakeholders to disseminate improved farming technologies to the farmers in the model project sites. (4) Assist the local authorities and the FWUG to organize Farmer Water User Community (FWUC).													
4-4 Based on the experiences of the technical supports above, formulate manuals for PDWRAM on formulation on planning of irrigation projects (1) Review the implementation processes of the model irrigation projects (2) Review the samples of irrigation project plans submitted for budget requests. (3) Formulate the manuals for PDWRAM on formulation of irrigation project plans.													

Table 1 Summary of Survey Results on Proposed Model Project Sites

Province	Project		Present Status of Proposed Model Site *				Remarks
	Name	Total Area (ha)	Main	Secondary	Tertiary	FWUC	
Kampong Chhnang	Lum Hach Left bank area	3,100	Existing	-	-	Not established	
	Thlea Maom	3,500	Existing	Existing	Existing	Existing without registering	Intervention by TSC 2, Double cropping on a trial basis
	Damnak Ampil	2,270	Existing	Existing	-	Existing without registering	Candidate site for irrigation management
	Wat Loung	2,540	Existing	-	-	Not established	
	Wat Chre	1,020	Existing	-	-	Not established	
Battambang	Ream Kon	1,890	Existing	-	-	Not established	
	Por Canal	1,940	Existing	Existing	-	Not established	
Kampong Spue	Loreng Chery	10,000	Existing	-	-	5 FWUCs exist	Candidate site for irrigation management
Takeo	Upper Slako	3,500	Existing	Existing	-	Existing without registering	
	Thmney	600	Existing	Existing	-	Registered	Intervention by TSC 2, Double cropping on a trial basis
Kandal	Kandal Stung	2,000	Existing	Existing	Existing	FWUG is existing without registering	Intervention by TSC 1, 2 Double cropping on a trial basis, Candidate site for irrigation management

Note : * The model project siute of approximately 100 ha is to be selected from each project area.

4. 調査日程

流域灌漑管理及び開発能力改善プロジェクト(TSC3) 詳細計画策定調査 日程表

平成21年5月19日(火)～6月6日(土): 計19日間

月 日	曜	調査活動内容		宿泊
		官団員 総括(5.24-)、灌漑技術、計画管理	コンサル団員: 評価分析/研修計画、灌漑システム分析	
1	5月19日	火	成田→バンコク→プノンペン	
2	5月20日	水	AM: JICA事務所打合せ、大使館表敬 PM: (水資源気象省表敬)、灌漑技術センター訪問、JICA関係者との打合せ	
3	5月21日	木	現地調査①(プルサット、バットンバン地区)	
4	5月22日	金	現地調査②(コンポン・スパー、コンポン・チュナン地区)	
5	5月23日	土	現地調査③(カンダル・スタン、タケオ地区)	
6	5月24日	日	資料整理 団長: 成田→バンコク→プノンペン	
7	5月25日	月	水資源気象省との打合せ(ワークショップ含む)	
8	5月26日	火	資料整理、団内打合せ、ミニッツ案作成	
9	5月27日	水	AM ミニッツ案作成 PM 水資源気象省ミニッツ協議	
10	5月28日	木	水資源気象省ミニッツ協議	
11	5月29日	金	AM 水資源気象省ミニッツ署名 PM JICA事務所報告、大使館報告 PM: プノンペン発→バンコク→	
12	5月30日	土	→成田着	追加調査・資料収集
13	5月31日	日		資料整理
14	6月1日	月		追加調査・資料収集
15	6月2日	火		追加調査・資料収集
16	6月3日	水		資料収集、事前評価表(案)等作成
17	6月4日	木		資料収集、事前評価表(案)等作成
18	6月5日	金		AM: JICA事務所報告 PM: プノンペン発→バンコク→
19	6月6日	土		→成田着

プノンペン

5. 主要面談者

カンボジア国流域灌漑管理及び開発能力改善プロジェクト 詳細計画策定調査（事前評価調査） 主要面談者一覧

<日本側>

1. 在カンボジア日本大使館

一等書記官	松尾 秀明
二等書記官	杉山 裕秀

2. 灌漑技術センター計画フェーズⅡ

チーフアドバイザー	塚元 重光
水管理専門家	鷺野 健二
業務調整員	西本 悟朗

3. 水資源気象省

個別専門家	井原 昭彦
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（農業のための水資源流域管理アドバイザー）

4. JICA カンボジア事務所

所長	米田 一弘
次長	小林 雪治
所員	渋谷 幸弘

<カンボジア側>

1. 水資源気象省 Ministry of Water Resources and Meteorology (MOWRAM)

H.E. Veng Sakhon	Secretary of State
H.E. Bun Hean	Secretary of State
Mr. Teng Tara	Deputy Director General of Technical Affair
Mr. Chea Chhun Keat	Director, Department of Planning and International Cooperation
Mr. Chhea Bunrith	Director, Department of Administration and Human Resources
Mr. Pich Veasna	Deputy Director General of Administration Affair / TSC Director

2. 農林水産省 Ministry of Agriculture, Forestry and Fisheries (MAFF)

Srun Lim Song	Deputy Director General, General Directorate of Agriculture (GDA)
Prak Cheatiho	Deputy Director General, GDA
Op Pich	Deputy Director General, GDA
Iv Phirun	Deputy Director General, Rice Crop Department GDA

3. 灌漑技術センター Technical Service Center, for Irrigation (TSC)

Ms. Pich Maly	Chief, Administration Office, TSC
Mr. Teng Tongheng	Vice Chief Administration/ Counterpart Water Management
Mr. Sao Ena	Vice Chief /Counterpart Construction Section
Mr. Noun Vannarith	Vice Chief, Water Management, Research & Information Management Office, TSC
Ms . Sous Chenda	Vice Chief Administration/ Supporting Staff

4. 州水資源気象局

(1) カンダル州水資源気象事務所

Mr. Chun Peng Long	Director, Provincial Department of Water Resources and Meteorology, Kandal Province (Kandal PDWRAM)
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(2) タケオ州水資源気象事務所

Mr. Bun Huor	Director, Provincial Department of Water Resources and Meteorology, Takeo Province (Takeo PDWRAM)
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(3) プルサット州水資源気象事務所

Mr. Keo Vey	Director, Provincial Department of Water Resources and Meteorology, Pursat Province (Pursat PDWRAM)
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(4) コンポン・スプー州水資源気象事務所

Mr. Ea Piselh	Director, Provincial Department of Water Resources and Meteorology, Kampong Spue Province (Kampong Spuet PDWRAM)
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(5) タケオ州水資源気象事務所

Mr. Bun Hour	Director, Provincial Department of Water Resources and Meteorology, Takeo Province (Takeo PDWRAM)
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(6) コンポン・チュナン州水資源気象事務所

Mr. Dauk Bunthon	Director, Provincial Department of Water Resources and Meteorology, Kampong Chhnang Province (Kampong Chhnang PDWRAM)
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6. 研修コース及び受講者数内訳

研修コース及び所属先別受講者内訳

Sl.	研修コース	MOVRAM 合計	POVRAM 合計	Phnom Penh	Kandal	Kampong Speu	Takeo	Kampot	Shanouk Vill	Krong Kep	Kohkong	Kampong Chhnang	Pursat	Battamban g	Banteay Meanchey	Pailin	Oddar Meanchey	Siam Reap	Presh Vhear	Kampong Thom	Kampong Cham	Kratié	Stungtreng	Mondoliri	Ratanakiri Prey Veng	Svay Reng		
1	水文観測	20	1	1	1	1	1	1	1	1	1	2	2	1			1	1	1	1	2	1			2			
2	気象・単位用水量観測	20	1	1	1	1	1	1	1	1	1	2	2	1			1	1	1	1	2	1			2			
3	GISによる灌漑・水管理計画	10	9		2	3							3	1														
4	測量基礎1	19	19	2	2	2	2	2	1	1	1				1	1	1	2		2					1	1		
5	施工現場管理	19	19	1	2	2	2	2	1	1			1				2		2		2	1			2	2		
6	持続的水管理のための農民参加	19	19	2	2	2	2	2	1	2			2	1	2					2	1				2	2		
7	GISによる灌漑・水管理計画	10	10	3	3								3	1														
8	測量基礎2	20	20	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2		2					1	1		
9	水理設計の基礎	20	20	2	2	2	2	2	1	1	1	3	3	2				2		2				1	2	2		
10	水文観測	20	20	1	2	1	1	1	2	1	1	1	1	1	2	2	2	2		2					2			
11	気象・単位用水量観測	19	19	1	2	1	1	1	2	1	1	1	1	1	2	2	1	2		2					2			
12	灌漑施設の設計及び製図	10	10	1	3	1							3	2														
13	持続的水管理のための農民参加	14	14	2	2	2	2	2	1	1	1	1	1	1			2	2	2									
14	施工管理	20	20	2	2	1	2	1	1	1	1	1	2	2	2	2	1	1		1				1	1	1		
15	トータルステーション及びデータ処理	10	10	2	2	1	2	1	1	1			1				1			1								
16	灌漑施設の設計及び製図	10	10	1	1						1			1			1	1		1				1	1	1		
17	操作・維持管理	8	8	1	1	1	1	1					1							1	1				1	1		
18	地形・路線測量(測量基礎1、 2、トータルステーション) (注 20 D)	24	24	3	3	3	3	3	3			3	3	3						3					3	3		
19	施工現場管理(土水路、コンク リート水路、ブロック水路の施 工管理)	9	9	4		3							2															
21	持続的水管理のための農民参加	19	19	2	2	2	2	2	2	2	1	2	2						1	2						2		
22	灌漑施設の設計及び製図	14	14	1	1	1	1	1	1	1			1				1	1		1				1	1	1		
23	灌漑計画	20	20	2	2	1	2	1	1	1	1	1	2		1	1	1	1		1				1	1	1		
24	施工管理	20	20	1	2	1	2	1	1	1	1	1	2				1	1		1					1	1		
25	操作・維持管理	19	19	2	2	1	2	1	1	1	1	1	2		1	1	1	1		1				1	1	1		
26	灌漑施設の構造計算・設計	20	20	2	2	1	2	1	1	1	1	1	2	1	1	1	1	1		1				1	1	1		
27	GIS等を活用した灌漑・水管理 計画	13	12	1	1	1	1	1	1			1	1						1	1					1	1		
28	気象・水文・単位用水量観測	57	57	3	3	3	6					3	6	3	3	3	3	3		3				3	3	3		
29	持続的水管理のための農民参加	19	19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1				1	1	1		
30	操作・維持管理	20	20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1				1	1	1		
31	灌漑施設の設計及び製図	15	3	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1				1	1	1		
32	GISによる灌漑計画	19	7	12					1	1	1			1	1	1	1	1		1				1	1	1		
総計		556	12	544	10	49	39	57	22	25	7	16	22	53	20	20	2	25	26	16	29	20	4	1	13	9	30	26
受講者実数(注3)		11		4	7	11	10	5	4	2	3	8	10	11	6	2	2	10	7	3	10	9	1	1	2	3	12	9

注1: 同一受講者8名を対象として3コースを実施。
 注2: 同一受講者19名を対象として3コースを実施。
 注3: 実数はTSC-2プロジェクト作成資料Result of training course on Implemented 35 Training Course by TSC, MOVRAM のParticipant Listによる。
 出所: TSC-2プロジェクト作成資料Result of training course on Implemented 35 Training Course by TSC, MOVRAM

TRAINING OUTLINE

OF

**IRRIGATION AND WATER
MANAGEMENT PLAN BY GIS2**

DRAFT

(JULY, 16 - 27, 2007)

PREPARED BY SURVEY & PLANNING SECTION

**TECHNICAL SERVICE CENTER
FOR IRRIGATION SYSTEMS
MOWRAM – JICA**

1. Title of Training Course

Irrigation and Water Management plan by GIS

2. Training Objectives

By the end of training, the participants are expected,

- a- To make basin and provincial irrigation inventory map including hydrology & meteorology information for water resources development and management
- b- To make simple topographic and land title map from balloon photo by GIS for irrigation water management plan
- c- To use GIS

3. Duration

10days (From July 16 (Mon), 2007 to July 27 (Fri), 2007)

4. Number of participants

10 participants (3 engineer or Technician from Kandal, Pursat and Takeo provinces and 1 engineer or Technician from Battambang province)

5. Qualifications of participants

Applicable candidate must be with background and condition:

- a Be able to read and write English
- b Basic operation of computer like: Operating system (Window: 95, 98, Me or XP), MSWord, MS Excel.
- c Fundamental of GIS background
- d His/Her work related to mapping
- e Priority will be given to participants who attended the training course for Irrigation and Water Management Plan which was held in February.

6. Implementation Agency

Technical Service Center for Irrigation Systems Project Phase 2(JICA) and Technical Service Center for Irrigation & Meteorology in collaboration with the Ministry of Water Resources and Meteorology (MOWRAM)

7. Cooperation Agency

Phnom Penh Geo informatics Education Center

8. Language

Textbooks and reference materials will be delivered in English and lecture will be delivered in Khmer.

9. Resource persons

- a Mr. Teng Peng Seang Director of PGEC
- b Mr. Uch Hing C/P, Survey section, TSC
- c Mr. Mean Seng C/P, Survey section, TSC
- d Mr. Meas Savoeun C/P, Planning section, TSC

10. Implementation Team

The Steering Committee for the TSC Project supervises, advises and monitors activities in the following team, which conduct this training course efficiently.

(1) The technical matters are managed by the technical team members:

- 1. Mr. Uch Hing C/P, Survey section, TSC
- 2. Mr. Mean Seng C/P, Survey section, TSC
- 3. Mr. Meas Savoeun C/P, Planning section, TSC

(2) The administration and evaluation are managed by the training course implementation team members:

- 1. Ms. Pich Maly Chief of Administration Office of TSC
- 2. Sous Chenda Deputy Chief of Administration Office of TSC

11. Certificate

Each participant who has successfully completed this training course will be awarded a certificate by MOWRAM

12. Venue

Technical Service Center for Irrigation System Project, MOWRAM
 Tuk Thla Commune, Russey Keo District, Phnom Penh
 Tel/Fax 023-881745/023-881910

13. Detailed Schedule

Attached

14. Allowance (Pending)

JICA/TSC will provide daily allowance, accommodation and transportation fee are following:

- Daily allowance \$6
- Accommodation \$6
- Transportation according to really cost by bus

Questionery (1)

(Before Training)

Item	Level 1	Level 2	Level 3	Level 4	Level 5
How to use arc map					
How to make a land title map by GIS and balloon photo					
How to make Irrigation inventory map by GIS					

(After Training)

Item	Level 1	Level 2	Level 3	Level 4	Level 5
How to use arc map					
How to make a land title map by GIS and balloon photo					
How to make Irrigation inventory map by GIS					

GIS (2) Test

Name:

1. How do you make the land title map by GIS and balloon photo of the three pilot sites?
2. What is the methodology to make an irrigation inventory map?
3. How do you add the data of land title layer in the shape file after digitizing the data to the GIS Map?
4. How do you convert the shape file into the coverage file?
5. How do you convert the coverage file into the shape file?

8. 研修コース評価様式例

受講者による研修コース評価様式例

1. Curriculum

1-1	Do you think that the curriculum is properly and good for the purpose of the course?	Not Proper(0%)	Small Proper(25%)	50% Proper	75% Proper	100% Proper
	- Lecture at TSC	Not Proper(0%)	Small Proper(25%)	50% Proper	75% Proper	100% Proper
	- OJT at Model Site	Not Proper(0%)	Small Proper(25%)	50% Proper	75% Proper	100% Proper
1-2	Do you think that the duration of this training course was appropriate?	Duration is Short	Duration is Small short	Duration is appropriate	Duration is small Long	Duration is Long
	- Lecture at TSC	Duration is Short	Duration is Small short	Duration is appropriate	Duration is small Long	Duration is Long
	- OJT at Model Site	Duration is Short	Duration is Small short	Duration is appropriate	Duration is small Long	Duration is Long
1-3	Does the curriculum of course suit the present situation of engineers and technician in Cambodia?	Not suit (0%)	Small suit (25%)	Half suit (50%)	75% suit	100% suit
1-4	Do you think that the curriculum is useful your provincial irrigation project or activities?	Not useful(0%)	Small useful(25%)	Half Useful(50%)	Almost useful(75%)	Useful(100%)

2. Material

2-1	Is text book material) easy and good to understand ?	Difficult(0%)	25% understand	50% understand	75% understand	100% understand
	- Text1 ()	Difficult(0%)	25% understand	50% understand	75% understand	100% understand
	- Text2 ()	Difficult(0%)	25% understand	50% understand	75% understand	100% understand
	- Text3 ()	Difficult(0%)	25% understand	50% understand	75% understand	100% understand
2-1	Is text book (material) useful in your provincial irrigation project or activities?	Not useful(0%)	Small useful(25%)	Half Useful(50%)	Almost useful(75%)	Useful(100%)
	- Text1 ()	Not useful(0%)	Small useful(25%)	Half Useful(50%)	Almost useful(75%)	Useful(100%)
	- Text2 ()	Not useful(0%)	Small useful(25%)	Half Useful(50%)	Almost useful(75%)	Useful(100%)
	- Text3 ()	Not useful(0%)	Small useful(25%)	Half Useful(50%)	Almost useful(75%)	Useful(100%)

3. Lecturer's teaching ability

3-1	Was the each lecturer's explanation good and proper?	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Mr. Uch Hing	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Mr. Mean Seng	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Hok Meng Hoin (PGEC)	Not good (0%)	Small good (25%)	50% good	75% good	100% good
3-2	Could each lecturer answer trainees question clearly?	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Mr. Uch Hing	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Mr. Mean Seng	Not good (0%)	Small good (25%)	50% good	75% good	100% good
	- Hok Meng Hoin (PGEC)	Not good (0%)	Small good (25%)	50% good	75% good	100% good
3-3	Did the lecturer communicate clearly in the training session ?	No communicate (0%)	Small communicate (25%)	50% communicate	75% communicate	Good (100%) communicate
	- Mr. Uch Hing	No communicate (0%)	Small communicate (25%)	50% communicate	75% communicate	Good (100%) communicate
	- Mr. Mean Seng	No communicate (0%)	Small communicate (25%)	50% communicate	75% communicate	Good (100%) communicate
	- Hok Meng Hoin (PGEC)	No communicate (0%)	Small communicate (25%)	50% communicate	75% communicate	Good (100%) communicate

4. Course management

受講者による研修コース評価様式例

4-1	Was the timing of contact from MOWRAM on participation appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-2	Do you think that the reception for participants is appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-3	Was course orientation and explanation is appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-4	Was arrangement of accommodation appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-5	Was traveling cost arrangement is appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-6	Was arrangement of meal appropriate?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)
4-7	Was training set and equipment properly for the course?	Not Proper (0%)	Small Proper (25%)	50% Proper	75% Proper	100% Proper
4-8	Did you think that the facilities of course were appropriate ?	Not appropriate (0%)	Small appropriate (25%)	Half appropriate (50%)	75% appropriate	Appropriate (100%)

5. Overall view and result

5-1	Do you satisfy this training course?	No satisfied (0%)	Small satisfied (25%)	Half satisfied (50%)	75% satisfied	Satisfied (100%)
5-2	How would you evaluate and rank the result of training course?	Rank 1(Score 0)	Rank 2 (Score 25)	Rank 3 (Score 50)	Rank 4 (Score 75)	Rank 5 (Score 100)
5-3	Do you think that the course was helpful in improving your skill ?	No improvement	Small improvement	Half improvement	75% improvement	100% improvement

6. Training course output utilization in trainees activities

6-1	Do you think that you will use this training output on your provincial irrigation work?	No use (0%)	Small use (25% use)	Half use (50% use)	75% use	100% use
6-2	Please describe your provincial irrigation project.					
	- How many area will be irrigated in your province un	Over 1,000ha	Over 3,000ha	Over 5,000ha	Over 7,000ha	Over 10,000ha
	- How many unit yield of rice will be increase after irrigation project in your province?	10% increase	20% increase	30% increase	40% increase	50% increase
	- How much farmer's household income will be improved after irrigation project in your province?	5% increase	10% increase	15% increase	20% increase	30% increase
6-3	Do you think that your training output will how much contribute above figure?					
	- Irrigation Area	20%	40%	60%	80%	100%
	- Increase of unit yield of rice	20%	40%	60%	80%	100%
	- Increase of household income	20%	40%	60%	80%	100%

