

Ⅲ 実施協議

実施協議結果

事前評価調査団帰国後、R/D の署名・交換に先立ち、JICA ベトナム事務所及び水利研究所の間で最終協議を行い、プロジェクトの基本計画のうち、上位目標、プロジェクト目標、成果について一部修正することで合意した。修正後の基本計画は以下の通り。

(1) 上位目標

参加型水管理が展開された地域において、効率的な水管理によって、収量・コストの両面で農業生産性が向上する。

指標：参加型水管理を実践した水利組合の数、乾期裏作における作付率の増加・収量の増加、水利費の低減

事前評価調査からの変更の内容

第二次事前評価調査後に策定した PDM0 においては、上位目標を「農民参加型水管理（PIM）体制が幅広く展開される。」と設定していた。JICA 内での検討過程において、プロジェクト地域を紅河流域からベトナム北部 25 省とするとともに、上位目標は「(ベトナム北部 25 省のうち) 参加型水管理が展開された地域」における「効率的な水管理による収量・コストの両面で農業生産性の向上」を目標とした。これにより、「農民参加型水管理体制の幅広い展開」のみでなく、参加型水管理が展開された地域における末端の農民をターゲットとした上位目標の設定となった。

(2) プロジェクト目標

モデルサイトにおいて、農民リーダー及び水利技術者の能力向上を通じて、農民参加による水管理が推進され、収量・コストの両面で農業生産性が向上する。

指標：乾期裏作の作付率の増加・収量の増加、水利費の低減

事前評価調査からの変更の内容

第二次事前評価調査後に策定した PDM0 においては、プロジェクト目標を「水利研究所（VIWRR）技術者の能力向上を通じて、農民参加型水管理（PIM）を推進する体制が強化される。」と設定していた。JICA 内での検討過程において、「農民リーダー及び水利技術者の能力向上」を通じた「モデルサイトにおける農民参加による水管理が推進され、収量・コストの両面で農業生産性が向上する」ことをプロジェクト目標とした。これにより、「農民参加型水管理体制の強化」のみでなく、モデルサイトにおける末端の農民をターゲットとしたプロジェクト目標の設定となった。

(3) 成果

【成果 1：水利研究所参加型水管理センターにおいて、農民参加による水管理を推進する機能が強化される】

活動 1-1：これまでに他ドナーが実施したパイロットプロジェクトにおける参加型水管理手法の調査を行う。

1-2：参加型水管理に関するガイドライン・マニュアル・研修プログラムを作成する。

1-3：参加型水管理の研修指導者を育成するために、水利研究所の技術者に対して研修を実施する（水管理手法、指導手法）。

1-4：水利研究所の技術者が研修指導者としてモデルサイトにおいて実践経験を積む。

1-5：モデルサイトでの成果を踏まえて、ガイドライン・マニュアル、研修プログラムを改善する。

(指標・目標値) ガイドライン・マニュアル、研修プログラムの完成、所定の知識・技術・経験を獲得した研修指導者が育成された人数（研修終了時に実施する試験にて判断する）

【成果 2：灌漑管理公社の技術者が水管理に関する知識・技術・経験を獲得する。】

活動 2-1：水利研究所の研修指導者が、灌漑管理公社の技術者に対して各省の現場にて研修を実施する（水管理手法、組織運営管理手法、指導手法）。

2-2：灌漑管理公社の技術者に対してモデルサイトにおいて参加型水管理のセミナーを実施する。

(指標・目標値) 所定の知識・技術・経験を獲得した技術者が育成された人数（研修終了時に実施する試験にて判断する）

【成果 3：モデルサイトにおいて農民組織による水管理が改善され、作物の多様化が図られる。】

活動 3-1：モデルサイトに関するベースライン調査を行う。（水管理、作付体系、営農、流通、市場調査）

3-2：モデルサイトにおいて灌漑管理公社の技術者が農民リーダーに対して指導する（水管理の組織的連携法、水路の維持管理手法、ポンプや取水口等の操作・管理）。

3-3：モデルサイトにおいて営農・水配分について農民同士で話合う場を設ける。

3-4：モデルサイトにおいて灌漑管理公社・農民組織が参加型水管理を実践する。

3-5：モデルサイトにおける農民組織の営農改善活動を支援する（栽培計画の作成、展示圃での紹介、成功事例の紹介、等）。

3-6：モデルサイトにおいて農民組織が水管理を改善し、多様な作物栽培を実践する。

(指標・目標値) 所定の知識・技術・経験を獲得した農民リーダーが育成された人数(研修終了時に実施する試験にて判断する)、モデルサイトにおける水管理の改善度(水利費徴収率、水利組合への参加率、水管理活動への参加農人数、用水量の変化)、栽培された作物の種類・生産量・栽培面積

事前評価調査からの変更の内容

第二次事前評価調査時に策定した PDM0 においては、以下の通り設定した。

成果 1：各水管理レベルに応じた研修プログラムが作成される。

成果 2：水利研究所の技術者が「研修教官」としての水利技術を習得する。

成果 3：水利技術者が「研修教官」による研修コースを通じて水利技術を取得する。

成果 4：(モデルサイトの)水管理スタッフが「研修教官」による研修コースを通じて水利技術を取得する。

JICA 内での検討過程において、第二次事前評価調査時点での成果 1 及び成果 2 は、協議結果の成果 1「水利研究所参加型水管理センターにおいて、農民参加による水管理を推進する機能が強化される」に整理された。また、成果 3 は、協議結果の成果 2「灌漑管理公社の技術者が水管理に関する知識・技術・経験を獲得する」に、成果 4 は協議結果の成果 3「モデルサイトにおいて農民組織による水管理が改善され、作物の多様化が図られる」に整理された。

(4) プロジェクト名

農業生産性向上のための参加型水管理推進計画

事前評価調査からの変更の内容

要請書では「水利技術者能力向上プロジェクト」とされていたが、上記(1)から(3)に示したプロジェクト内容に適した名称として、「農業生産性向上のための参加型水管理推進計画」に変更された。

上記協議を経た後、2005 年 6 月 14 日に双方の間で R/D 及び実施協議議事録(M/M)の署名・交換がなされた(日本側：JICA ベトナム事務所菊地所長、ベトナム国側：NGUYEN TUAN ANH 所長)。

第二次事前評価調査／実施協議
付 属 資 料

1. ミニッツ (2004年12月9日署名)
2. R/D、ミニッツ (2005年6月14日署名)
3. PDM (案) (和文)
4. 詳細活動計画
5. 対象地域問題系図・目的系図・開発アプローチと優先度
(ハイズン県ザ・スエン地区、クアンニン県イェンドン地区、
プロジェクト全体の問題系図)
6. 他援助機関実施プロジェクトと本プロジェクトの関係
7. プロジェクト実施体制
8. 機材リスト (案)

MINUTES OF MEETING OF THE SECOND PREPARATORY STUDY TEAM
ON THE PROJECT FOR CAPACITY DEVELOPMENT
OF PARTICIPATORY IRRIGATION MANAGEMENT SYSTEM
THROUGH VIET NAM INSTITUTE FOR WATER RESOURCES RESEARCH
FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT IN VIET NAM

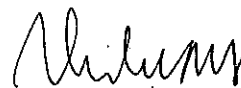
Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Second Preparatory Study Team (hereinafter referred to as "the Team"), headed by Mr. Etsuo KITAHARA, to the Socialist Republic of Viet Nam from November 29 to December 10, 2004 for the purpose of discussing details about the Project for Capacity Development of Participatory Irrigation Management System (hereinafter referred to as "the Project").

During its stay in the Socialist Republic of Viet Nam, the Team carried out observation and exchanged views on the Project with the authorized representatives of MARD of the Socialist Republic of Viet Nam.

As a result of the discussions, both parties reached common understandings concerning the matters referred to in the documents attached hereto. Both parties will convey the contents of this Minutes of Meetings to their respective government.

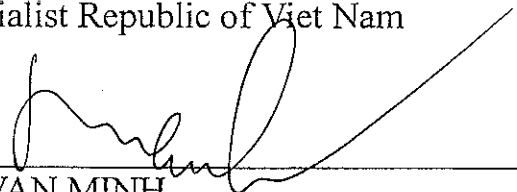
Hanoi, December 9, 2004

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Mr. Etsuo KITAHARA
Leader
The Second Preparatory Study Team
Japan International Cooperation Agency
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Ass. Prof. Dr. NGUYEN THE QUANG
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Viet Nam Institute for Water Resources
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Mr. BUI LIEM
Deputy Director General
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Ministry of Planning and Investment
The Socialist Republic of Viet Nam

Dr. LE VAN MINH
Director General
International Cooperation Department
Ministry of Agriculture and Rural
Development
The Socialist Republic of Viet Nam



THE ATTACHED DOCUMENT

1. Background

Eighty percent (80 %) of the people of Viet Nam live in rural area. Agriculture is a main industry of the country accounting for 25 % of GDP and 36 % of its exports. However, various problems on agriculture burden the farmers. Their farming is characterized by small landholding size (0.7 ha/household on the average), improper shape of farm plots, poor irrigation facilities and inadequate water management that result in low irrigation efficiency and overwork of farmers.

Based on the recognition that development of irrigation and drainage system is one of the nation's policies of high priority, the Vietnamese government has made great efforts to invest in the water resources sector. However, there are problems of deterioration and malfunctioning of the existing irrigation and drainage facilities due to lack of proper operation and maintenance system. Therefore, the Vietnamese government has given priority to modernization of irrigation and drainage facilities and management with participation of water users.

Operation and maintenance of the irrigation and drainage facilities of Viet Nam is guided and arranged by water resources engineers of Ministry of Agriculture and Rural Development (hereinafter referred to as "MARD"), People's Committees at various administrative levels and state-owned Irrigation Management Company (hereinafter referred to as "IMC").

The Vietnamese Institute of Water Resources Research (hereinafter referred to as "VIWRR") was founded under MARD in 1959 to lead research in the field of development and conservation of water resources. The institute has been strengthened to meet requirements of the national development in the water resources sector. The institute conducts i) research on water resources, irrigation, drainage, river engineering and flood control, land reclamation, and others, ii) transfer of technology to irrigation engineers of the central and local authorities, iii) consultation on water resources management and related issues and iv) postgraduate training.

Although VIWRR has been widely recognized as one of the leading institutes, it has difficulties in performing its functions and duties due to lack of, i) trained staffs in charge of planning and design of modernized irrigation and drainage system for better water management, and ii) trained staffs in charge of Participatory Irrigation Management (hereinafter referred to as "PIM") which are indispensable for rational and sustainable management of irrigation and drainage system. Thus, the Vietnamese government submitted an official request for technical cooperation to Japan which has a lot of experiences and skills of PIM at Land Improvement District (Tochi-kairyō-ku).

Responding to the official request, JICA dispatched a fact finding study team in February 2004 to investigate the current situation of water management and agriculture of

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Viet Nam, in comparison with the situation of Cambodia and Thailand. In July 2004, the First Preparatory Study was conducted by JICA to formulate a framework of the Project. After the First Preparatory Study, the Vietnamese counterpart personnel visited project sites of JICA's technical cooperation in Thailand and China to utilize their lessons in the formulation of the Project in Viet Nam. In October 2004, they were invited to Japan and learned agriculture and water management conditions of Japan.

2. Purpose of the Second Preparatory Study Team

The Second Preparatory Study Team was dispatched to conduct the followings.

- (1) To determine Master Plan of the Project according to the framework of the Project.
- (2) To carry out preliminary evaluation of the Project.
- (3) To prepare the Project Document and Ex-ante Evaluation Table.
- (4) To transfer the method of Project Cycle Management (hereinafter referred to as "PCM") to the Vietnamese counterpart personnel.

3. Major points that were discussed and agreed upon by both sides

- (1) Project Design Matrix (hereinafter referred to as "PDM")

PCM workshops were held in the provinces where model sites of the Project are located, namely, Hai Duong (on November 17th~18th) and Quang Ninh (on November 24th~25th). In the workshops, approaches and activities of the Project at the model sites were identified by the stakeholders.

In Hanoi, a wrap-up workshop was held on December 6th 2004 with participation of the stakeholders of the provinces of the model sites and VIWRR. The overall project design was tentatively determined and agreed by the participants as shown in Attachment-1.

- (2) Plan of Operation

Details of the Project such as activities, schedules, implementers, supervisors and necessary inputs, were agreed in a form of Plan of Operation of the Project (hereinafter referred to as "P/O") as shown in Attachment-2.

- (3) Cooperation between Viet Nam and Japan

- a) VIWRR will implement the Project in cooperation with JICA.
- b) The Project will be implemented in accordance with the Master Plan as described in

ANNEX I.

- c) JICA will support VIWRR in developing the capacity of Vietnamese personnel in the field of participatory irrigation management and water resources management for sustainable agricultural development.

(4) Measures to be taken by the Japanese side

JICA, at its own expenses, will take the following measures under the technical cooperation scheme of Japan. Details will be discussed and determined by the commencement of the Project.

- a) Dispatch of Japanese Experts

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

- b) Provision of Equipment and Facilities

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

- c) Training of Vietnamese personnel in Japan and other countries

JICA will receive and/or dispatch Vietnamese personnel connected with the Project for technical training in Japan and/or other countries.

(5) Measures to be taken by the Vietnamese side

- a) The Vietnamese side will provide services of Vietnamese counterpart personnel as listed in ANNEX IV.

- b) The Vietnamese side will provide or arrange the buildings and facilities as listed in ANNEX V.

- c) In accordance with the laws and regulations in force in the Socialist Republic of Viet Nam, VIWRR will take measures to meet the running expenses for the implementation of the Project.

(6) Administration of the Project

- a) Project Director: The General Director of VIWRR will bear overall responsibility for

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the Project.

- b) Project Manager: The Manager of International Cooperation Division (ICD) of VIWRR will bear responsibility for implementation of the Project.
- c) The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Director and Project Manager on all matters pertaining to implementation of the Project.
- d) The Japanese experts will provide technical guidance and advice as stated in Annex II.
- e) To ensure effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee (ANNEX VI) and a Steering Committee (ANNEX VII) will be established.

4.3 Evaluation of the Project

For the following reasons, this project is judged to be of high relevance.

- Developing capacity of water resources engineer and improving participatory irrigation management through the Project are closely connected with the priority subjects of the Vietnamese national development plan, Comprehensive Poverty Reduction and Growth Strategy (CPRGS) and Japan's country-specific aid plan for Viet Nam .
- The Project focuses on not only enhancement of knowledge of the water resources engineers but also an extension process of the developed capacity to the field level through model site activities. Therefore, the effect of the Project will benefit water management organizations from the central government to water users group.
- Japan's expertise on irrigation, drainage and participatory irrigation management will be applied to the Project. Japan has a lot of experiences of PIM at Land Improvement District (Tochi-kairyō-ku), which is supported by the legislative framework of Land Improvement Law. Japan's cooperation on PIM promotion in Viet Nam is of high relevance considering common natural and agricultural conditions of both countries.
- Agriculture is one of the main industries of Viet Nam and enrollment in agricultural sector is large. Approaches of the Project include cooperation and coordination with local authorities and other donors' programmes. The Project will highly contribute to public welfare.

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5. Recommendation

(1) Budget Allocation

The Vietnamese side should take prompt actions so that the Project will be approved with necessary budget.

(2) PIM Road Map and PIM Centre of VIWRR

In accordance with the PIM Road Map of Viet Nam which has been submitted to MARD for approval and issuance, VIWRR should promote necessary procedures for the establishment of the PIM Centre.

(3) Arrangement for the Commencement of the Project

Prior to the Project, necessary actions such as establishment of Joint Coordinating Committee, Steering Committee and arrangement of the model sites should properly be taken in accordance with the schedule shown in "6. Future Schedule" for smooth commencement of the Project.

6. Future Schedule

- Approval of the Project by the Vietnamese Government : December 2004
- Exchange of Record of Discussions (R/D) : February 2005
- Commencement of the Project : May or June 2005

ANNEXES

- I MASTER PLAN
- II LIST OF JAPANESE EXPERTS
- III LIST OF MACHINERY, EQUIPMENT AND FACILITIES
- IV LIST OF VIETNAMESE COUNTERPART PERSONNEL
- V BUILDINGS AND FACILITIES TO BE ARRANGED BY THE VIETNAMESE SIDE
- VI JOINT COORDINATING COMMITTEE
- VII STEERING COMMITTEE

Attachments

1. Draft Project Design Matrix (PDM)
2. Plan of Operation (P/O)

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ANNEX I MASTER PLAN

1. Overall Goal

System for promoting participatory irrigation management including improvement of water resources management is widely practiced through VIWRR engineers.

2. Project Purpose

System for promoting participatory irrigation management including improvement of water resources management is strengthened through capacity development of VIWRR engineers.

3. Output of the Project

- (1) Training programme for good water management at each management level is developed.
- (2) VIWRR engineers acquire water management skills as “trainer of water management”.
- (3) Water resources engineers acquire water management skills through the training courses conducted by VIWRR trainers.
- (4) Water management staffs acquire water management skills through the training courses conducted by the VIWRR trainers.

4. Activities of the Project

- (1)-1 Training tools (training materials and implementation plan) are prepared.
- (1)-2 Training with the above programme is applied and monitored.
- (1)-3 Training programme is reviewed and revised (feedback).
- (2)-1 VIWRR engineers acquire necessary knowledge and know-how on water management training through the training programme developed in the Project.
- (2)-2 VIWRR engineers acquire practical experience of water management training through on the job training (OJT).
- (3)-1 Water Resources engineers acquire sufficient knowledge on water management through the training programme developed in the Project.
- (3)-2 Water resources engineers acquire experience of water management through OJT.
- (3)-3 Water resources engineers learn expertise on strengthening of water management institution.
- (4)-1 Water management staffs acquire sufficient knowledge on water management

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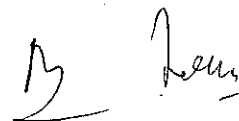
through the training programme developed in the Project.

(4)-2 Water management staffs acquire experience of water management through OJT.

(4)-3 Function of irrigation management company (IMC) and agricultural production cooperative (APC) is improved.

5. Project site

- VIWRR, Hanoi
- Hop Tien Irrigation Scheme, Hai Duong Province as a model site
- Gia Xuyen Irrigation Scheme, Hai Duong Province as a model site
- Irrigation area of Yen Dong agricultural production cooperative (APC) of Yen Lap Irrigation Scheme, Quang Ninh Province as a model site.



ANNEX II LIST OF JAPANESE EXPERTS (Tentative)

1. Long-term Expert

The following long-term experts are assumed for the project activities.

(1) Chief Advisor

Details of activities:

- To supervise Japanese experts as a responsible person
- To provide recommendations and advice to the Project Director, the Project Manager and relevant authorities on all matters pertaining to the project
- To assist planning of strategy / institutional framework / relevant activities comprehensively
- To coordinate Japanese experts and related organizations from managerial and technical aspects
- To monitor project progress and present progress reports both in English and Japanese to the responsible authorities

(2) Irrigation and Drainage

Details of activities:

- To prepare training programme and materials on technical aspect of irrigation and drainage focusing on farmers' participation.
- To provide technical advice and training on planning, design and operation and maintenance of irrigation and drainage facilities focusing on farmers' participation.
- To provide technical advice and training on appropriate technology on investigation, planning and design of irrigation and drainage system focusing on farmers' participation.
- To provide technical advice and training on participatory construction of on-farm irrigation and drainage facilities

(3) Water Management / Institution

Details of activities:

- To prepare training programme and materials on technical aspect of water management and institution concerned
- To provide technical advice and training on water management institution
- To provide technical advice and training on water management at each level of irrigation system (main, secondary, on-farm)
- To provide technical advice and training on participatory irrigation management

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(4) Training/ Project Coordination

Details of activities:

- To coordinate on administrative and managerial matters of the project activities assisting the Chief Advisor to ensure smooth operations
- To promote the solution of the problems, to manage the Japanese budget, to make necessary contacts and coordination for implementing the project
- To coordinate among Japanese experts and related organizations from administrative aspects
- To provide technical advice for conducting training in the field of water management and water resources engineering

2. Short-term Expert

Short-term experts will be assigned within the framework of the Project. The Terms of Reference of short-term experts will be decided based on discussion between VIWRR and long-term experts. At present, the following expertise is listed for the short-term experts.

- operation of water management organization
- control devices
- information management
- maintenance of facilities
- agriculture
- others (as required)

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ANNEX III LIST OF MACHINERY, EQUIPMENT AND FACILITIES (Tentative)

The following machinery, equipment and facilities are tentatively considered for the Project. Details will be discussed and modified in accordance with further discussions.

(1) Equipment

Equipment	Relevant activities (refer to Number of P/O in Attachment-2)	Unit	Qty
1. Common			
1.1 Transport			
Vehicles (4WD)	All	Nos.	2
Vehicle (pick up truck)	All	Nos.	1
Vehicle (van)	All	Nos.	1
1.2 Office in Hanoi			
Copy machine with scanning function	All	Nos.	1
PC desktop	All	Nos.	4
PC Notebook	All	Nos.	4
Printer	All	Nos.	1
Printer	All	nos.	2
Tools for book binding	All	LS	1
Fax	All	nos.	1
Mobile phone	All	Set	5
Map cabinet	All	Set	1
Furniture and office fixtures	All	LS	1
Instruments	All	LS	1
Miscellaneous	All	LS	1
1.3 Office in provinces			
Fax/copy/scanner	All	nos.	2
PC desktop	All	nos.	2
Furniture and office fixtures	All	LS	2
Miscellaneous	All	LS	2
1.4 Field work equipment (general)			
Digital camera	All	nos.	3
GPS	All	nos.	2
Miscellaneous	All	LS	1
2. Training equipment			
Television set	1.1.2	Set	1
Video recorder	1.1.2, 1.2.2	Set	1
Video camera	1.1.2, 1.2.2	Set	1
PC for editing with capture board	1.1.2, 1.2.2	Set	1
Software	1.1.2, 1.2.2	Set	1
LCD projector	1.2.2	Set	2
Screen	1.2.2	Set	1
Notebook-computer	1.2.2	Set	5
Printer	1.1.2	Set	1

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Equipment	Relevant activities (refer to Number of P/O in Attachment-2)	Unit	Qty
3. Field investigation & laboratory equipment			
Theodolite with mirror, tripod	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	2
Auto level with tripod	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	nos.	2
Staff for leveling survey	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	nos.	4
Pole for survey	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	nos.	10
Total station with mirror, tripod	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	2
Plate table set	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	2
Digital camera with GPS	2.1.1, 2.1.2, 3.1, 3.2.1	nos.	1
PC for data management system	2.1, 3.1	Set	3
Software for data management system	2.1, 3.1	Set	2
Software (auto CAD)	2.1, 3.1	Set	1
A2 scanner	2.1, 3.1	Set	1
A0 plotter	2.1, 3.1	Set	1
A0 digitizer	2.1, 3.1	Set	1
Meteorological station	2.1, 3.1	Set	2
Current meter (river)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	5
Current meter (canal)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	5
EC meter	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	5
pH meter	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	5
Water level sensor	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	10
Water quality sensor (salinity)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	3
Data logger	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	3
I/O unit	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	3
Data communication	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	3
Water quality checker (6 items)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	Set	5
Motor cycle	4.3	Set	6
4. Model site equipment			
movable engine pump (20 m ³ /hour)	4.3	Set	15
grass cutter	4.3	Set	10
radio communication (station)	4.3	Set	3
radio communication (mobile)	4.3	Set	6
hand tools	4.3	Set	60
Construction material	4.3	LS	1

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(2) Facilities

Equipment	Relevant activities	Unit	Qty
1. Model site			
1.1 Hai Duong (Nam Sach, Gia Loc)			
Regulating structure on 2nd system (gate)	4.2. 4.3	unit	6
Regulating structure on 3rd system (gate)	4.2. 4.3	unit	10
Repair of structure	4.2. 4.3	LS	2
Repair of pump	4.2. 4.3	LS	2
1.2 Quang Ninh (Yen Dong)			
On-farm facilities (support or credit)	4.2. 4.3	LS	1
Regulating structure on 3rd system (gate)	4.2. 4.3	unit	10
Repair of structure	4.2. 4.3	LS	2
Repair of pump	4.2. 4.3	LS	2
1.3 Miscellaneous	4.2. 4.3	LS	1
Sub-total			
2. Field experiment			
2.1 Hai Duong (Nam Sach, Gia Loc)			
Installation of sensors and datalogger	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	2
Installation of meteorological station	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	1
Measuring structures (frume, etc.)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	2
2.2 Quang Ninh (Yen Dong)			
Installation of sensors and datalogger	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	1
Installation of meteorological station	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	1
Measuring structures (frume, etc.)	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	1
2.3 Miscellaneous	2.1.1, 2.1.2, 3.1, 3.2.1, 4.3	LS	1
Sub-total			

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ANNEX IV LIST OF VIETNAMESE COUNTERPART PERSONNEL (Tentative)

Eight (8) counterparts including the chief counterpart will be assigned at the central level, six (6) and four (4) counterparts will be assigned at each province of Hai Duong and Quang Ninh, respectively.

1. Project Director / Chief counterpart: General Director of VIWRR
2. Counterpart (central): Vice General Director of VIWRR
3. Project Manager / Counterpart (central): Manager, ICD, VIWRR
4. Counterpart (central): Manager (or Deputy Manager), Centre for Water Resources Software, VIWRR
5. Counterpart (central): Manager (or Deputy Manager), Centre for Water Resources Economics, VIWRR
6. Counterpart (central): Manager (or Deputy Manager), Centre for Water Resources and Environment, VIWRR
7. Counterpart (central): Manager (or Deputy Manager), Centre for Irrigation, Drainage and Water Supply, VIWRR
8. Counterpart (central): Manager (or Deputy Manager), Centre for PIM, VIWRR
9. Counterpart (Hai Duong): Representative of DARD
10. Counterpart (Hai Duong): Representative of IMC
11. Counterpart (Hai Duong): Representative of Nam Sach IME
12. Counterpart (Hai Duong): Representative of Gia Loc IME
13. Counterpart (Hai Duong): Representative of Model site (Gia Xuyen)
14. Counterpart (Hai Duong): Representative of Model site (Hop Tien)
15. Counterpart (Quang Ninh): Representative of DPC, Yen Hung District
16. Counterpart (Quang Ninh): Representative of Yen Lap IMC
17. Counterpart (Quang Ninh): Representative of Model site (Yen Hai)
18. Counterpart (Quang Ninh): Manager of Yen Dong APC (Model Site)

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ANNEX V BUILDINGS AND FACILITIES TO BE ARRANGED BY THE VIETNAMESE SIDE (Tentative)

1. Office Space at VIWRR and Provinces

VIWRR has already constructed new office space for the Project at the headquarters of VIWRR.

In Hai Duong Province where two model sites are located, an office space will be allocated at DARD.

In Quang Ninh Province, another office space will be allocated at CPC of Yen Hai Commune.

2. Model Site Arrangement

Both provinces have been aware of the model sites to be included in the Project and get prepared for the commencement.

3. Project Facilities and Equipment Provided by Vietnamese Side

Office spaces in Hanoi and the provinces of the model sites will be provided exclusively for the Project. The model sites facilities and land will possibly be used in accordance with discussions and agreement with the stakeholders of the model sites. VIWRR will make necessary arrangement and coordination with relevant stakeholders for the Project purpose. Facilities and equipment of VIWRR and other organizations closely related to the Project will be available as agreed with by the organization if necessary.

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ANNEX VI JOINT COORDINATING COMMITTEE (Tentative)

The Joint Coordinating Committee (JCC) will meet once a year and whenever the necessity arises.

1. Functions

- (1) To formulate the Annual Work Plan of the Project
- (2) To review the overall progress and annual expenditure of the Project.
- (3) To review and exchange views on major issues arising from or in connection with the Project.
- (4) To coordinate with the activity of other donors related to the Project

2. Chairperson: General Director of ICD, MARD

3. Members

(1) Vietnamese side:

- 1) General Director (or Deputy G. Director), Dept. of Foreign Economic Relations, MPI
- 2) General Director (or Deputy G. Director), Dept. of Agriculture & Rural Development, MPI
- 3) General Director (or Deputy G. Director), Dept. of Water Resources, MARD
- 4) General Director (or Deputy G. Director), Dept. of Personnel Organization, MARD
- 5) General Director of VIWRR
- 6) Person in charge of the Project of VIWRR
- 7) General Director (or Deputy G. Director), Hai Duong DARD
- 8) Director (or Deputy Director), Hai Duong IMC
- 9) Chairperson (or Vice-chairperson), Hop Tien CPC, Nam Sach, Hai Duong
- 10) Chairperson (or Vice-chairperson), Gia Xuyen CPC, Gia Loc, Hai Duong
- 11) Chairperson (or Vice-chairperson), Yen Hung DPC, Quang Ninh
- 12) Director (or Deputy Director), Yen Lap IMC, Quang Ninh
- 13) Chairperson (or Vice-chairperson), Yen Hai CPC, Yen Hung, Quang Ninh

(2) Japanese side:

- 1) Chief Advisor
- 2) Coordinator
- 3) Other Japanese experts
- 4) Resident Representative of the JICA Vietnamese Office
- 5) Personnel concerned to be dispatched by JICA

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Notes:

- 1) Officials of the Embassy of Japan may attend the Joint Coordinating Committee meetings as observers.
- 2) Persons who are invited by the Chairperson may attend the Joint Coordinating Committee meeting.

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ANNEX VII STEERING COMMITTEE (Tentative)

The Steering Committee will meet as the necessity arises.

1. Functions

- (1) To develop and improve detailed plan of activities
- (2) To monitor, coordinate and evaluate activities
- (3) To summarize the proceedings of activities and report it to the Joint Coordinating Committee

2. Chairperson: General Director of VIWRR

3. Members

(1) Members of Vietnamese side

- 1) Representative of ICD, MARD
- 2) Representative of Dept. of Water Resources, MARD
- 3) Representative of Dept. of Personnel Organization, MARD
- 4) Deputy General Director - VIWRR
- 5) Director, ICD - VIWRR
- 6) Working team members (4 persons) - VIWRR
- 7) Representative of Hai Duong DARD
- 8) Representative of Hai Duong IMC
- 9) Representative of Hop Tien CPC, Nam Sach, Hai Duong
- 10) Manager of Hop Tien APC, Nam Sach, Hai Duong
- 11) Representative of Gia Xuyen CPC, Gia Loc, Hai Duong
- 12) Manager of Gia Xuyen APC, Gia Loc, Hai Duong
- 13) Representative of Yen Hung DPC, Quang Ninh
- 14) Representative of Yen Lap IMC, Quang Ninh
- 15) Representative of Yen Hai CPC, Yen Hung, Quang Ninh
- 16) Manager of Yen Dong APC, Yen Hung, Quang Ninh

(2) Members of Japanese side

- 1) Chief Advisor
- 2) Coordinator
- 3) Other Japanese experts

Project title: Capacity development of participatory Irrigation Management System through Viet Nam Institute for water resources research for Sustainable Agricultural Development in Viet Nam

Duration: 2005 spring to 2010 spring

Project Area: Provinces in the Red River basin

Target Group: Water resources engineers of VIWRR, related MARD agencies, People's Committee, IMC/IME and water management staffs of water users' group

PDM₀ (DRAFT)

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal System for promoting participatory irrigation management including improvement of water resources management is widely practiced by VIWRR engineers.</p> <p>Project Purpose System for promoting participatory irrigation management including improvement of water resources management is strengthened through capacity development of VIWRR engineers.</p>	<p>Skilled trainers and water resources engineers trained by the Project extend and transfer their water management skills to water management staffs.</p> <p>- Trainers are qualified through evaluation with average score of 60 % of the full-score. - Condition of water management at the model sites (ISF collection rate, registration rate, number of water users participated, increase of irrigated area, etc.)</p>	<p>Record of activities of the trainers and water resources engineers.</p> <p>- Evaluation record of the trainees. - Baseline survey (irrigated area, harvested area, yield, etc.)</p>	<p>- Number of qualified trainers is increased on the initiative of Vietnamese government. - Government policy on water resource management is supportive for promoting project outcome.</p> <p>- Qualified water resources trainers and engineers are designated to perform their improved capacity in the irrigation schemes of poor provinces.</p>
<p>Outputs</p> <ol style="list-style-type: none"> 1. Training program for good water management at each management level is developed. 2. VIWRR engineers acquire water management skills as "trainer of water management" 3. Water resources engineers acquire water management skills thorough the training courses conducted by VIWRR trainers. 4. Water management staffs acquire water management skills through the training courses conducted by the VIWRR trainers. 	<p>1.1. Training tools are completed for each training program. 1.2. 25 trainees (trainers) are qualified through evaluation with average score of 60 % of the full-score. 1.3. 1,800 trainees (water resources engineers) are qualified through evaluation with average score of 60 % of the full-score. 1.4. 150 trainees (water management staff) of the model sites are qualified through evaluation with average score of 60 % of the full-score. Water management condition of the model sites is improved at 60 % of the evaluation score of the full-score.</p>	<p>1.1 List and copy of guidelines, manuals and other training materials. 1.2 Evaluation record of the trainees. 1.3 Evaluation record of the trainees. 1.4 Evaluation record of the trainees. / Evaluation record of the model site</p>	<p>- Trainees are designated to continue and complete the training program.</p>
<p>Activities</p> <ol style="list-style-type: none"> 1.1 Training tools (training materials and implementation plan) are prepared. 1.2 Training with the above program is applied and monitored. 1.3 Training program is reviewed and revised (feedback). 2.1 VIWRR engineers acquire necessary knowledge and know-how on WM training through the training program developed in the project. 2.2 VIWRR engineers acquire practical experience of WM training through OJT. 3.1 Water Resources engineers acquire sufficient knowledge on WM through the training program developed in the project. 3.2 Water resources engineers acquire experience of WM through OJT. 3.3 Water resources engineers learn expertise on strengthening of water management institution. 4.1 Water management staffs acquire sufficient knowledge on WM through the training program developed in the project. 4.2 Water management staffs acquire experience of WM through OJT. 4.3 Function of IMC/APC is improved. 	<p>Inputs</p> <p>I. Japanese side</p> <ol style="list-style-type: none"> a) Manpower and Training <ul style="list-style-type: none"> - Long-term experts (Chief adviser, irrigation and drainage, water management/institution, training/coordination) 4 persons x 5 years - Short-term experts: 1 or 2 experts per year (as required); 9 experts / project period b) Training courses in Japan 5 engineers (trainers) per year c) Equipment and facilities <ul style="list-style-type: none"> - Equipment and facilities for operation of model sites, laboratory equipment, training facilities and equipment, vehicles, office utilities, and others <p>II. Vietnamese side</p> <ol style="list-style-type: none"> a) Counterpart <ul style="list-style-type: none"> - Assign necessary number of counterparts at MARD, VIWRR, local authorities, IMC/IME, water users' organization such as agricultural production cooperative b) Office space and facilities <ul style="list-style-type: none"> - Project office space in Hanoi and provinces of the model sites, facilities for operation of model sites c) Counter budget <ul style="list-style-type: none"> - Employment cost of counterparts, operation, maintenance and repair cost of project office such as electricity service, water supply, etc. d) Others <ul style="list-style-type: none"> - Provision of necessary data/information, tax exemption arrangement for the equipment 	<p>- Trainees of the Project are nominated properly by the Vietnamese side. - Improvement of irrigation and drainage facilities of the model sites that is planned in other projects is realized.</p> <p>Pre-condition</p> <p>- Function of irrigation and drainage facilities of the model sites is not damaged drastically</p>	<p>- Trainees of the Project are nominated properly by the Vietnamese side. - Improvement of irrigation and drainage facilities of the model sites that is planned in other projects is realized.</p> <p>Pre-condition</p> <p>- Function of irrigation and drainage facilities of the model sites is not damaged drastically</p>

Attachment-2 Plan of Operation (Tentative)

Activities	Schedule					Person in charge		Target to Activities
	2005	2006	2007	2008	2009	2010	Supervisor	
1 Training Programming Approach 1.1 Training tool preparation 1.1.1 Baseline survey ~ Training needs identification 1.1.2 Training material (manual, guidelines, textbook, audio visual) preparation 1.1.3 Training programming (identification of trainee, arrangement of training, scheduling) 1.2 Training Practice (monitoring and evaluation) 1.2.1 Pre-training evaluation 1.2.2 Training course 1.2.3 Qualification and registration 1.3 Training review and feedback 1.3.1 Post-training evaluation 1.3.2 Feedback to training program 1.3.3 Support for ex-trainees (WRE)						Chief Ad. Training Ex.	Experts Expts ↓ Training Ex. Expts TRNs	TRNs, WRE, WRS ↓ WRE
2 Trainers' Training Approach 2.1 Knowledge improvement 2.1.1 Lectures Irrigation and Drainage (planning) Irrigation and Drainage (design) On-farm development (construction) Watermanagement (main & 2nd system) Participatory irrigation management (PIM) Operation and maintenance (O&M) Legal framework / institution Administration of organization Finance / accounting Information management (database)(common for A,B,C) Training and capacity building (common for A,B,C) 2.1.2 Field investigation 2.1.3 Workshop/seminar 2.1.4 Study tour Japan 3rd countries 2.2 Experience improvement 2.2.1 Activities as lecturer for Water Resources Engineer (WRE) 2.2.2 Activities as lecturer for Water Management Staff (WMS) 2.2.3 Activities as OJT facilitator						Chief Ad.	Experts ↓ I&D Ex. ST Ex. ↓ WM Ex. ↓ I&D Ex. ST Ex. ↓ WM Ex. ST Ex. ↓ Training Ex. ST Ex. ↓ Training Ex. ↓ I&D Ex. ↓ Training Ex. ↓ Training Ex. ↓ JICA HQ ↓ Training Ex. ↓ Experts	TRNs, CP
3 Water Resources Engineers (WRE) Training Approach 3.1 Knowledge improvement System planning of irrigation and drainage Design of pump facilities Design of canal and regulating structures Information management (database) Water distribution planning Under current situation With control and measuring devices Participatory irrigation management (PIM) Operation and maintenance (O&M) Participatory construction management Socio-economic survey Administration of organization Finance / accounting						Experts	TRNs ↓ TRNs, ST Ex. ↓ TRNs	WRE
3.2 On the job training 3.2.1 Field survey and investigation Survey for design Meteo-hydrological analysis Water management devices (operation, data management, laboratory analysis) 3.2.2 Field practice on O&M, WM, PIM Community development O&M organizing and practice Practice of water distribution schedule Facilitating PIM Accounting supervision for WMS 3.3 Policy Making and Institutional improvement 3.3.1 Training of policy makers Lecture on the legal framework on PIM 3.3.2 Training of managers / administrators Lecture on the management						Chief Ad.	Chief Ad., WM Ex. ↓ ST Ex., WM Ex.	
4. Pilot Project Approach 4.1 Knowledge improvement & feedback O&M Accounting Communication and involvement of users Construction management 4.2 On the job training Application of water distribution schedule and guidelines Application of O&M guidelines Application of administration guidelines 4.3 Participatory Irrigation Management (Participatory construction) Participatory water scheduling Participatory O&M Public announcement of activities, accounting, etc. Demonstration / field workshop						Experts ↓ Experts, WRE ↓ Training Ex.	TRNs ↓ WMS (model site) ↓ WMS (model site) ↓ WRE (province)	WMS (model sites)

RECORD OF DISCUSSIONS
 BETWEEN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 AND
 AUTHORITIES CONCERNED OF THE GOVERNMENT OF
 THE SOCIALIST REPUBLIC OF VIETNAM
 ON
 JAPANESE TECHNICAL COOPERATION PROJECT
 FOR
 CAPACITY DEVELOPMENT OF PARTICIPATORY IRRIGATION MANAGEMENT SYSTEM
 THROUGH VIET NAM INSTITUTE FOR WATER RESOURCES RESEARCH FOR IMPROVEMENT OF
 AGRICULTURAL PRODUCTIVITY IN VIET NAM

In response to the request of the Government of Vietnam, the Government of Japan has decided to implement Japan-Vietnam Technical Cooperation Project for Capacity Development of Participatory Irrigation Management System through Viet Nam Institute for Water Resources Research for Improvement of Agricultural Productivity in Viet Nam (hereinafter referred to as "the Project") in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of the Socialist Republic of Viet Nam, signed on October 20, 1998 (hereinafter referred to as "the Agreement"), the Embassy of Japan's note No. J.D.49/2004 dated May 20, 2004 and the Ministry of Planning and Investment of Vietnam's note No. 3398BKH/KTĐN dated June 04, 2004.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation program of the Government of Japan, will cooperate with the authorities concerned of the Government of Vietnam in implementing the Project.

JICA and the authorities concerned of the Government of Vietnam had a series of discussions on the framework of the Project. As a result of the discussions, JICA and the authorities concerned agreed on the matters referred to in the document attached hereto.

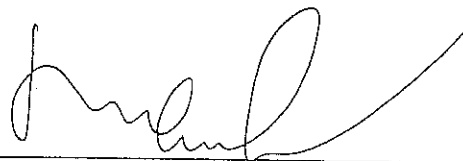
Hanoi, June 14, 2005



Asso.Prof. NGUYEN TUAN ANH
 Director General
 Viet Nam Institute for Water Resources Research
 Ministry of Agriculture and Rural Development
 The Socialist Republic of Viet Nam



Mr. FUMIO KIKUCHI
 Resident Representative
 Vietnam Office,
 Japan International Cooperation Agency
 Japan



Dr. LE VAN MINH
 Director General
 International Cooperation Department
 Ministry of Agriculture and Rural Development
 The Socialist Republic of Viet Nam



Mr. BUI LIEM
 Deputy Director General
 Foreign Economic Relations Department
 Ministry of Planning and Investment
 The Socialist Republic of Viet Nam

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Vietnam will implement the Project for Capacity Development of Participatory Irrigation Management System through Viet Nam Institute for Water Resources Research for Improvement of Agricultural Productivity in Viet Nam (hereinafter referred to as "the Project") 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 provisions of Article III of the Agreement, JICA, as the executing agency for technical cooperation by the Government of Japan, will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

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 such 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 VIETNAMESE PERSONNEL IN JAPAN

JICA will receive the Vietnamese personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Viet Nam 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 in the Project by all related authorities, beneficiary groups and institutions.
2. In accordance with the provisions of Article IV of the Agreement, the Government of the Socialist Republic of Viet Nam will ensure that the technologies and knowledge acquired by the Vietnamese nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of Vietnam.

3. In accordance with the provisions of Article VI of the Agreement, the Government of the Socialist Republic of Viet Nam will grant in Vietnam privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.
4. In accordance with the provisions of Article VIII of the Agreement, the Government of the Socialist Republic of Viet Nam will take the measures necessary to receive and use the Equipment provided through JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.
5. The Government of the Socialist Republic of Viet Nam will take necessary measures to ensure that the knowledge and experience acquired by the Vietnamese personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the provision of Article V-(b) of the Agreement, the Government of the Socialist Republic of Viet Nam will provide the services of Vietnamese counterpart personnel and administrative personnel as listed in Annex IV.
7. In accordance with the provision of Article V-(a) of the Agreement, the Government of the Socialist Republic of Viet Nam will provide the buildings and facilities as listed in Annex V.
8. In accordance with the laws and regulations in force in Vietnam, the Government of the Socialist Republic of Viet Nam will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above.
9. In accordance with the laws and regulations in force in Vietnam, the Government of the Socialist Republic of Viet Nam will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. The Director General, Viet Nam Institute for Water Resources Research, Ministry of Agriculture and Rural Development of the Socialist Republic of Viet Nam (hereinafter referred to as "VIWRR"), as the Project Director, will bear overall responsibility for the administration of the Project.
2. The Manager of International Cooperation Division (ICD) of VIWRR, as the Project Coordinator, will be responsible for the managerial matters the Project.
3. The Japanese experts will give necessary technical guidance and advice to Vietnamese counterpart personnel on technical matters pertaining to the implementation of the Project.
4. For the effective and successful implementation of technical cooperation for the Project, a Project Management Unit and a Joint Coordinating Committee will be established whose functions and composition are described in Annex IV and Annex VI respectively.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Vietnamese authorities concerned during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VII of the Agreement, the Government of the Socialist Republic of Viet Nam undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Socialist Republic of Viet Nam except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and the Government of the Socialist Republic of Viet Nam on any major issues arising from, or in connection with this Attached Document.

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

For the purpose of promoting support for the Project among the people of the Socialist Republic of Viet Nam, the Government of the Socialist Republic of Viet Nam will take appropriate measures to make the Project widely known to the people of the Socialist Republic of Viet Nam.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be five (5) years from the dispatch date of the first long-term experts.

ANNEX I	MASTER PLAN
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	LIST OF VIETNAMESE COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF BUILDINGS AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE

ANNEX I MASTER PLAN

1. **Overall Goal** (to be achieved 5 years after completion of the project)
Agricultural productivity is improved in terms of both yield and cost through improved irrigation management in the area where participatory irrigation management (PIM) is promoted.
2. **Project Purpose** (to be achieved by the end of the project period)
Participatory irrigation management is promoted and agricultural productivity is improved in terms of both yield and cost through enhancement of the capacity of leading farmers and water resources engineers in the model site.
3. **Outputs** (components to achieve the Project Purpose)
 - (1) The function of promoting PIM is strengthened in VIWRR.
 - (2) Engineers of irrigation management company (IMC) acquire knowledge, technology and experience on water management.
 - (3) Water management by farmers' organizations in the model sites is improved and crop diversification is promoted.
4. **Activities**
 - 1-1 To review PIM approaches which were conducted in the pilot projects of other donors.
 - 1-2 To formulate guidelines, manuals and training programs for PIM promotion.
 - 1-3 To implement training courses (water management method, training method) for VIWRR engineers as "PIM trainers".
 - 1-4 To provide VIWRR engineers with practical experience as trainers at the model sites.
 - 1-5 To improve the guidelines, manuals and training programs based on the experiences acquired in the model sites.
 - 2-1 To organize training courses by the trainers for IMC engineers in each province on the methods of water management, organization management, and instruction on PIM.
 - 2-2 To organize seminars on PIM in the model sites for IMC engineers.
 - 3-1 To conduct base-line survey on the model sites (survey on water management, irrigated area, cropping pattern, farming practices, marketing).
 - 3-2 To organize training courses by IMC engineers for leading farmers (method for organizational cooperation in water management, method for operation and maintenance of canals, pumps, and other facilities).
 - 3-3 To promote PIM in the model site through farmers' organizations and IMC.



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- 3-4 To support improvement of farming practices by the farmers' organizations in the model site (formulation of cropping plan, introduction of demonstration plot, introduction of good practices)
- 3-5 To improve the water management through activities of farmers' organization in the model site in order to support crop diversification

In case in which the Master Plan should be changed due to the situation of the Project, JICA and the Government of the Socialist of Vietnam will agree to and confirm the changes by exchanging Minutes of Meeting.

5. Project site

- VIWRR
- Hop Tien Irrigation Scheme, Hai Duong Province as a model site
- Gia Xuyen Irrigation Scheme, Hai Duong Province as a model site
- Irrigation area of Yen Dong Agricultural Production Cooperative of Yen Lap Irrigation Scheme, Quang Ninh Province as a model site.

ANNEX II LIST OF JAPANESE EXPERTS

1. Long term expert

- (1) Chief Advisor: 1 person x 5 years
- (2) Expert in Irrigation and Drainage: 1 person x 5 years
- (3) Expert in Water Management/Institution: 1 person x 5 years
- (4) Training/Project Coordinator: 1 person x 5 years

2. Short-Term Experts

Short-term experts in the fields of farming practice, marketing, management of organization, may be dispatched depending on the needs as specified in the annual plan of the Project

Short-term experts might be additionally designated if necessary.

ANNEX III LIST OF MACHINERY AND EQUIPMENT

1. Common Equipment: vehicles, office equipment, field work equipment...
2. Training Equipment: television, video recorder, video camera, PC with capture board, notebook computer, software, LCD projector, screen...
3. Field investigation and laboratory equipment: theodolite, auto level with tripod, pole for survey, total station, digital camera with GPS, PC, software for data management, AutoCAD software, scanner, plotter, digitizer, current meter, EC meter, pH meter...
4. Model site equipment: movable engine pump, grass cutter, radio communication station and mobile, hand tools, construction material...
5. Other machinery, equipment, tools, materials and their spare parts mutually agreed upon necessary.

ANNEX IV LIST OF VIETNAMESE COUNTERPARTS AND
ADMINISTRATIVE PERSONNEL

1. Counterpart:

The Vietnamese side will assign a sufficient number of counterpart officials, who are staff members of VIWRR or representative from related authorities in the project model site.

2. Project Management Unit (PMU)

2.1 Functions

2.1.1 PMU is inter-organizational unit responsible for the management and coordination of the Project.

2.1.2 PMU holds meetings when necessity arises, in order to fulfill the followings:

- (i) To supervise the working progress and adjust the working schedule of the Project if necessary
- (ii) To review and exchange views on major issues arising from or in connection with the Project, and
- (iii) To approve progress reports.

2.2 Composition (tentative)

- Director General, Viet Nam Institute for Water Resources Research
- Manager, International Cooperation Department, Viet Nam Institute for Water Resources Research
- Director (or Deputy Director), Hai Duong Provincial Department of Agricultural and Rural Development
- Director (or Deputy Director), Hai Duong Irrigation Management Company
- Chairman (or Vice Chairman), Hop Tien Communal People's Committee, Nam Sach District, Hai Duong Province
- Chairman (or Vice Chairman), Gia Xuyen Communal People's Committee, Gia Loc District, Hai Duong Province
- Chairman (or Vice Chairman), Yen Hung District People's Committee, Quang Ninh Province
- Director (or Deputy Director), Yen Lap Irrigation Management Company, Quang Ninh Province
- Chairman (or Vice Chairman), Yen Hai Communal People's Committee, Yen Hung District, Quang Ninh Province

And other personnel as mutually agreed upon.

ANNEX V LIST OF BUILDINGS AND FACILITIES

1. Office space at VIWRR and the Project provinces

Office space for exclusive use of the Project will be allocated in the followings:

- Headquarters of VIWRR
- Hai Duong Provincial Department of Agriculture and Rural Development
- Yen Hai Communal People's Committee, Quang Ninh Province

2. Model Site Arrangement

VIWRR will make necessary arrangement and coordination with stakeholders of the model sites in order to get facilities in those sites ready for the relevant Project activities.

3. Other facilities necessary for the implementation of the Project.

ANNEX VI JOINT COODINATING COMMITTEE

1. Functions

The Joint Coordinating Committee shall:

- (1) authorize an annual work plan of the Project based on the Plan of Operations within the framework of R/D,
- (2) monitor and evaluate the progress of the Project and the results of the annual work plan, and
- (3) discuss and advise on major issues that arise during the implementation period of the Project.

2. Compositions

The Joint Coordination Committee shall be composed of:

- (1) Chairman: Director General of International Cooperation Department, Ministry of Agriculture and Rural Development.

- (2) Members (tentative):

- *Vietnamese side:*

- Director General (or Deputy Director General), Department of Foreign Economic Relations, Ministry of Planning and Investment
- Director General (or Deputy Director General), Department of Agricultural Economy, Ministry of Planning and Investment
- Director General (or Deputy Director General), Department of Water Resources, Ministry of Agricultural and Rural Development
- Director General (or Deputy Director General), Department of Personnel Organization, Ministry of Agricultural and Rural Development
- Director General, Viet Nam Institute for Water Resources Research
- Manager, International Cooperation Department, Viet Nam Institute for Water Resources Research
- Director (or Deputy Director), Hai Duong Provincial Department of Agricultural and Rural Development
- Director (or Deputy Director), Hai Duong Irrigation Management Company
- Chairman (or Vice Chairman), Hop Tien Communal People's Committee, Nam Sach District, Hai Duong Province
- Chairman (or Vice Chairman), Gia Xuyen Communal People's Committee, Gia Loc District, Hai Duong Province
- Chairman (or Vice Chairman), Yen Hung District People's Committee, Quang Ninh Province
- Director (or Deputy Director), Yen Lap Irrigation Management Company, Quan Ninh Province
- Chairman (or Vice Chairman), Yen Hai Communal People's Committee, Yen Hung District, Quang Ninh Province

- *Japanese side:*

- The Project Chief Advisor
- The Project Coordinator
- Other Project Japanese experts
- Resident Representative of JICA Vietnam Office
- Personnel concerned to be dispatched by JICA.

(3) Observers: Official(s) of the Embassy of Japan may attend the committee sessions as observer(s).



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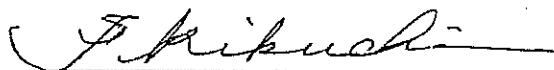
MINUTES OF MEETING
 BETWEEN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 AND
 THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
 THE SOCIALIST REPUBLIC OF VIET NAM
 ON
 THE JAPANESE TECHNICAL COOPERATION PROJECT
 FOR
 CAPACITY DEVELOPMENT OF PARTICIPATORY IRRIGATION MANAGEMENT
 SYSTEM THROUGH VIET NAM INSTITUTE FOR WATER RESOURCES
 RESEARCH FOR IMPROVEMENT OF AGRICULTURAL PRODUCTIVITY
 IN VIET NAM

Resident Representative of the Japan International Cooperation Agency (hereinafter referred to as "JICA") Viet Nam Office and the Vietnamese authorities concerned (hereinafter referred to as "the Vietnamese side") had a series of meetings for the purpose of working out the details of the technical cooperation program concerning Project for Capacity Development of Participatory Irrigation Management System through Viet Nam Institute for Water Resources Research for Improvement of Agricultural Productivity in Viet Nam (hereinafter referred to as the "Project").

As a result of the discussions, JICA and the Vietnamese side agreed to recommend to their respective Governments the matters referred to in the Record of Discussions (hereinafter referred to as "R/D") signed on June 14, 2005.

Both JICA and the Vietnamese side also agreed to make this Minutes of Meeting in order to confirm the mutual understandings reached through the discussions as attached hereto.

Hanoi, June 14, 2005



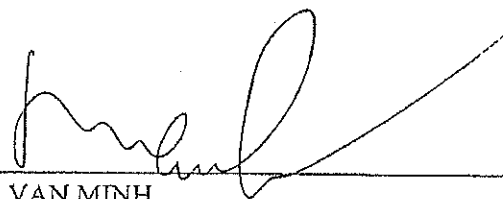
Mr. FUMIO KIKUCHI
 Resident Representative
 Vietnam Office,
 Japan International Cooperation Agency
 Japan



Asso. Prof. NGUYEN TUAN ANH
 Director General
 Viet Nam Institute for Water Resources Research
 Ministry of Agriculture and Rural Development
 The Socialist Republic of Viet Nam



Mr. BUI LIEM
 Deputy Director General
 Foreign Economic Relations Department
 Ministry of Planning and Investment
 The Socialist Republic of Viet Nam



Dr. LE VAN MINH
 Director General
 International Cooperation Department
 Ministry of Agriculture and Rural Development
 The Socialist Republic of Viet Nam

THE ATTACHED DOCUMENT

1. MEASURES TO BE TAKEN FOR THE SMOOTH IMPLEMENTATION OF THE PROJECT

Viet Nam Institute for Water Resources Research, Ministry of Agriculture and Rural Development (hereinafter referred to as "MARD") is responsible for coordinating and supporting the Project activities. Also, cooperation and coordination with related organizations including Hai Duong Provincial Department of Agricultural and Rural Development, Hai Duong Irrigation Management Company, Hop Tien Communal People's Committee (Nam Sach District, Hai Duong Province), Gia Xuyen Communal People's Committee (Gia Loc District, Hai Duong Province), Yen Hung District People's Committee (Quang Ninh Province), Yen Lap Irrigation Management Company (Quang Ninh Province), Yen Hai Communal People's Committee (Yen Hung District, Quang Ninh Province). In case where problems arise, the related authorities concerned should hold discussions to solve the problem.

2. TENTATIVE FRAMEWORK OF THE PROJECT

As a result of the discussions, the both side agreed to adopt the Project Design Matrix (hereinafter referred to as "PDM") shown in the Annex 1 as the implementation guidelines of the project management. The PDM is commonly introduced to technical cooperation projects for the purpose of clear, efficient and effective management planning, implementation, monitoring, and evaluation of the Project.

The tentative Plan of Operation of the Project (hereinafter referred to as "P/O") which is also agreed by the both sides is shown in Annex 2. Although it is ideal if the Project shall be implemented in accordance with the PDM and P/O without any amendment, they may be revised after the commencement of the Project within the framework of the Record of Discussions (hereinafter referred to as "R/D") through mutual discussions when necessity arises according to the progress of the Project.

3. PROJECT DOCUMENT

JICA and the Vietnamese side have jointly prepared the Project Document for the implementation of the Project as shown in Annex 3. The Project Document is important to share consensus on any issues related to the Project, such as its background, strategy, purpose, activities, outputs, inputs and expected impacts. The summary of the Project Document will be opened to the public in Japan.

ANNEX 1 PROJECT DESIGN MATRIX

Project title: Capacity Development of Participatory Irrigation Management System through Vietnam Institute for Water Resources Research (VIWRR) for Improvement of Agricultural Productivity in Vietnam

Duration: June 2005 to June 2010

Project Area: 25 Provinces in the Red River basin

Project counterpart: VIWRR

Model site: Hai Duong Province (2), Quang Ninh Province (1)

Target Group: Water resources engineers of VIWRR, related MARD agencies, People's Committee, IMC/IME and water management staffs of water users' group, leading Farmers at the Model Sites.

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal</p> <p>Agricultural productivity is improved in terms of both yield and cost through improved irrigation management in the area where participatory irrigation management (PIM) is promoted</p>	<ul style="list-style-type: none"> - Increase of cropping intensity and yields of non-paddy crops - Reduction in irrigation/ production cost 	<ul style="list-style-type: none"> - Record of activities of the trainers and water resources engineers. - Benchmark survey on the yields and planted areas of diversified crops around the model sites. 	<ul style="list-style-type: none"> - Number of qualified trainers is increased on the initiative of Vietnamese government. - Government policy on water resource management is supportive for promoting project outcome.
<p>Project Purpose</p> <p>Participatory irrigation management (PIM) is promoted and agricultural productivity is improved in terms of both yield and cost through enhancement of the capacity of leading farmers and water resources engineers in the model site</p>	<ul style="list-style-type: none"> - Increase of cropping intensity and yields of non-paddy crops - Reduction in irrigation / production cost 	<ul style="list-style-type: none"> - Evaluation record of the trainees. - Baseline survey (irrigated area, harvested area, yield, etc.) 	<ul style="list-style-type: none"> - Qualified water resources trainers and engineers are designated to perform their improved capacity in the irrigation schemes of poor provinces after the Project.
<p>Outputs</p> <ol style="list-style-type: none"> 1. The function of promoting PIM is strengthened in VIWRR. 2. Engineers of irrigation management company (IMC) acquire knowledge, technology and experience on water management. 3. Water management by farmers' organizations in the model sites is improved and crop diversification is promoted 	<ol style="list-style-type: none"> 1.1. Completion of the guidelines, manuals and training programs. 1.2. Number of trained PIM trainers who acquired targeted knowledge, technology and experience 2. Number of trained engineers who acquired targeted knowledge, technology and experience 3.1. Number of trained leading farmers who acquired targeted knowledge, technology and experience 3.2. The level of improvement of water management in the model sites 	<ul style="list-style-type: none"> - List and copy of guidelines, manuals and other training materials. - Evaluation record of the trainees. - Evaluation record of the trainees. - Evaluation record of the trainees - Evaluation record of the model site 	<ul style="list-style-type: none"> - Trainees of the Project are designated to participate in and complete the training program.

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<p>Activities</p> <ol style="list-style-type: none"> 1.1. To review PIM approaches which were conducted in the pilot projects of other donors. 1.2. To formulate guidelines, manuals and training programs for PIM promotion. 1.3. To implement training courses (water management method, training method) for VIWRR engineers as "PIM trainers". 1.4. To provide VIWRR engineers with practical experience as trainers at the model sites. 1.5. To improve the guidelines, manuals and training programs based on the experiences acquired in the model sites. 2.1. To organize training courses by the trainers for IMC engineers in each province on the methods of water management, organization management, and instruction on PIM. 2.2. To organize seminars on PIM in the model sites for IMC engineers. 3.1. To conduct base-line survey on the model sites (survey on water management, irrigated area, cropping pattern, farming practices, marketing). 3.2. To organize training courses by IMC engineers for leading farmers (method for organizational cooperation in water management, method for operation and maintenance of canals, pumps, and other facilities). 3.3. To promote PIM in the model site through farmers' organizations and IMC. 3.4. To support improvement of farming practices by the farmers' organizations in the model site (Formulation of cropping plan, introduction of demonstration plot, introduction of good practices) 3.5. To improve the water management through activities of farmers' organization in the model site in order to support crop diversification 	<p>Input</p> <ol style="list-style-type: none"> 1. Japanese side <ol style="list-style-type: none"> a) Expert dispatch <ul style="list-style-type: none"> - Long-term experts (Chief adviser, irrigation and drainage, water management / institution, training/coordination)) 4 persons x 5 years - Short-term experts: Approximately 1 or 2 experts (as required), 9 experts/project period b) Training <ul style="list-style-type: none"> - Training in Japan: about 5 men months per year (PIM, organization management, and others as required) - Counterpart training: about 2 men months per year (third country training) c) Equipment and facilities <ul style="list-style-type: none"> Equipment: Equipment for making training materials, laboratory equipment, audio-visual equipment, books, vehicles, equipment for model site activities (meteorological and hydrological observations, survey, analysis, regulators, etc.) Facilities: Facilities for installation of equipment, irrigation and drainage facilities at the model sites, construction materials, etc. d) Local cost <ul style="list-style-type: none"> Baseline survey by local consultants (conditions of markets and diversified crops in/around the model sites), workshop, seminar, etc. 2. Vietnamese side <ol style="list-style-type: none"> a) Counterpart <ul style="list-style-type: none"> - 7 persons in the central government, 8 persons in the provinces b) Office space and facilities <ul style="list-style-type: none"> - Project office space in Hanoi and provinces of the model sites, facilities for operation of model sites c) Counter budget <ul style="list-style-type: none"> - Employment cost of counterparts, operation, maintenance and repair cost of project office such as electricity service, water supply, etc. 	<p>- Trainees of the Project are nominated for the training course properly by the Vietnamese side.</p> <p>- Improvement of irrigation and drainage facilities of the model sites that is planned in other projects is implemented as scheduled.</p> <p style="text-align: center;">Pre-condition</p> <p>Function of irrigation and drainage facilities of the model sites is not damaged drastically</p>
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ANNEX 2 PLAN OF OPERATION

Activities	Schedule						Person in charge			Target to Activities
	2005	2006	2007	2008	2009	2010	Supervisor	Implementer	Person	
1. Training Programming Approach 1.1 Training tool preparation 1.1.1 Baseline survey - Training needs identification 1.1.2 Training material (manual, guidelines, textbook, audio visual) preparation 1.1.3 Training programming (identification of trainees, arrangement of training, scheduling) 1.2 Training Practice (monitoring and evaluation) 1.2.1 Pre-training evaluation 1.2.2 Training course 1.2.3 Qualification and registration 1.3 Training review and feedback 1.3.1 Post-training evaluation 1.3.2 Feedback to training program 1.3.3 Support for ex-trainees (WRE)	[Gantt chart showing activity bars from 2005 to 2010]						Chief Ad Training Ex.	Experts Experts Training Ex. Experts, TRNs	TRNs, WRE, WRS WRE	
2. Trainers' Training Approach 2.1 Knowledge improvement 2.1.1 Lectures Irrigation and Drainage (planning) Irrigation and Drainage (design) On-farm development (construction) Water management (main A 2nd system) Participatory irrigation management (PIM) Operation and maintenance (O&M) Legal framework / institution Administration of organization Finance / accounting Information management (database)(common for A,B,C) Training and capacity building (common for A,B,C) 2.1.2 Field investigation 2.1.3 Workshop/seminar 2.1.4 Study tour Japan 3rd countries 2.2 Experience improvement 2.2.1 Activities as lecturer for Water Resources Engineer (WRE) 2.2.2 Activities as lecturer for Water Management Staff (WMS) 2.2.3 Activities as OJT facilitator	[Gantt chart showing activity bars from 2005 to 2010]						Chief Ad.	Experts I&D Ex., ST Ex. WM Ex. I&O Ex., ST Ex. WM Ex. WM Ex., ST Ex. Training Ex. ST Ex. Training Ex. I&O Ex. Training Ex. Training Ex. JICA HQ Training Ex. Experts	TRNs, C/P	
3. Water Resources Engineers (WRE) Training Approach 3.1 Knowledge improvement System planning of irrigation and drainage Design of pump facilities Design of canal and regulating structures Information management (database) Water distribution planning Under current situation With control and measuring devices Participatory irrigation management (PIM) Operation and maintenance (O&M) Participatory construction management Socio-economic survey Administration of organization Finance / accounting 3.2 On the job training 3.2.1 Field survey and investigation Survey for design Meteorological analysis Water management devices (operation, data management) Laboratory analysis 3.2.2 Field practice on O&M, WM, PIM Community development O&M organizing and practice Practice of water distribution schedule Facilitating PIM Accounting supervision for WMS 3.3 Policy Making and Institutional Improvement 3.3.1 Training of policy makers Lecture on the legal framework on PIM 3.3.2 Training of managers / administrators Lecture on the management	[Gantt chart showing activity bars from 2005 to 2010]						Experts	TRNs TRNs, ST Ex. TRNs	WRE	
4. Pilot Project Approach 4.1 Knowledge improvement & feedback O&M Accounting Communication and involvement of users Construction management 4.2 On the job training Application of water distribution schedule and guidelines Application of O&M guidelines Application of administration guidelines 4.3 Participatory Irrigation Management (Participatory construction) Participatory water scheduling Participatory O&M Public announcement of activities, accounting, etc Demonstration / field workshop	[Gantt chart showing activity bars from 2005 to 2010]						Experts	TRNs WMS (model site) WRE (province)	WMS (model sites)	

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TECHNICAL COOPERATION PROJECT
FOR
CAPACITY DEVELOPMENT OF PARTICIPATORY IRRIGATION
MANAGEMENT SYSTEM THROUGH VIET NAM INSTITUTE
FOR WATER RESOURCES RESEARCH FOR IMPROVEMENT OF
AGRICULTURAL PRODUCTIVITY
IN VIET NAM

Project Document

14 June 2005

Japan International Cooperation
Agency

Viet Nam Institute for Water
Resources Research



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ABBREVIATION

ADB	Asia Development Bank
APC	Agricultural Production Cooperative
AusAID	The Australian Government's Overseas Aid Program
CG	Consultative Group
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
DANIDA	Danish International Development Assistance
DARD	Department of Agriculture and Rural Development
FAO	Food Administration Organization
ICD	International Cooperation Department
IDA	International Development Association
IMC	Irrigation Management Company
IME	Irrigation Management Enterprise
IPIM	International Participatory Irrigation Management
ISF	Irrigation Service Fee
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
LID	Land Improvement District
MARD	Ministry of Agriculture and Rural Development
MOLISA	Ministry of Labor, Invalids and Social Affairs
MPI	Ministry of Planning and Investment
NERC	National Water Resources Council
O&M	Operation and Management
PIM	Participatory Irrigation Management
PMU	Project Management Unit
SARD	Section of Agriculture and Rural Development
VNPIM	Vietnam Participatory Irrigation Management
VWRAP	Vietnam Water Resources Management Assistance Project
WaterSPS	Water Sector Program Support – DANIDA

EXECUTIVE SUMMARY

Name of the Project: Project for Capacity Development of Participatory Irrigation Management System through Viet Nam Institute for Water Resources Research for Improvement of Agricultural Productivity in Viet Nam	
Country: Socialist Republic of Vietnam	Target area: 25 Provinces in the Red River basin Model site: Hai Duong Province (2), Quang Ninh Province (1)
Project duration: June 2005 ~ June 2010	
I. Background	
<p>In Vietnam, 80% of the population lives rural areas where agriculture is the main industry. Small land holding size, especially in northern region, makes it necessary for farmers to improve productivity and diversify crops for better income from the limited cultivation land. These efforts must be supported by stable water resource provision.</p> <p>Water resources in Vietnam are mostly provided by big rivers with catchment areas of over 3,000km² like Red River and Mekong River. Annual catchment rainfalls in the two rivers are comparatively big ranging from 1,500 mm to 1,650 mm but not distributed evenly. Therefore, supplemental irrigation is required.</p> <p>A large part of the existing irrigation and drainage system in Vietnam has malfunctioned due to deterioration and improper maintenance. On the other hand, water management has been practiced with the initiative of the government. Thus, water distribution does always not satisfy the real needs or demand of water users. The reason why water management at on-farm level has not been operated well is the lack of i) proper operation of pump and intake facilities, ii) adequate maintenance of facilities, and iii) knowledge and experience of farmers, water management staffs and water resource engineers on efficient water management and administrative arrangements.</p> <p>The concept of Participatory Irrigation Management has been recently introduced to Vietnam as a solution for the above mentioned difficulties. PIM - Participatory Irrigation Management was firstly used in Vietnam in 1997 (in the 1st national workshop on PIM). "Draft Framework Strategy on Development of Participatory Irrigation Management in Vietnam" has been prepared. As its concept is quite has yet been properly understood by new to irrigation technical staff at all levels from central to communal levels, technology transfer from more experienced country is vital to promote PIM in Vietnam. PIM's objectives are to manage and utilize the hydraulic works in an efficient and sustainable way. PIM model is not subject to the administrative boundary, but situation of particular hydraulic works (headworks, canal layouts, pumping stations, small-scale dams and reservoirs, etc.) and demands of direct water users.</p>	

PIM's scope covers all the fields, including technical and management issues such as: planning, design, investment, construction, system operation and management and so on at all levels from the headworks to field system. The technical level in these activities is unlimited.

PIM includes both direct and indirect involvement of all stakeholders. Therefore, PIM's stakeholders do not limit to any specific group. Besides water users and water management staff, PIM also includes every level of management and authority, and even non-water users who live in the environment related to such water resource. Hence, PIM is the consensus and voluntary participation (in direct and indirect ways).

Japan has accumulated a lot of experience and developed PIM technologies through long practice of paddy farming. Irrigation facilities are maintained and operated with the initiative of farmers from the intake to the end. Such experiences and know-how in PIM of Japan can be applied to the promotion of PIM in Vietnam through capacity development of farmers, irrigation technical staff at district, provincial and central levels.

II. Brief description of project design

1. *Project master plan*

1.1. Overall Goal

Agricultural productivity is improved in terms of both yield and cost through improved irrigation management in the area where participatory irrigation management (PIM) is promoted.

1.2. Project Purpose

Participatory irrigation management is promoted and agricultural productivity is improved in terms of both yield and cost through enhancement of the capacity of leading farmers and water resources engineers in the model site.

1.3. Outputs and Activities

- (1) The function of promoting PIM is strengthened in VIWRR.
 - 1-1 To review PIM approaches which were conducted in the pilot projects of other donors.
 - 1-2 To formulate guidelines, manuals and training programs for PIM promotion.
 - 1-3 To implement training courses (water management method, training method) for VIWRR engineers as "PIM trainers".
 - 1-4 To provide VIWRR engineers with practical experience as trainers at the model sites.
 - 1-5 To improve the guidelines, manuals and training programs based on the experiences acquired in the model sites.

- (2) Engineers of irrigation management company (IMC) acquire knowledge, technology and experience on water management.
 - 2-1 To organize training courses by the trainers for IMC engineers in each province on the methods of water management, organization management, and instruction on PIM.
 - 2-2 To organize seminars on PIM in the model sites for IMC engineers.
- (3) Water management by farmers' organizations in the model sites is improved and crop diversification is promoted.
 - 3-1 To conduct base-line survey on the model sites (survey on water management, irrigated area, cropping pattern, farming practices, marketing).
 - 3-2 To organize training courses by IMC engineers for leading farmers (method for organizational cooperation in water management, method for operation and maintenance of canals, pumps, and other facilities).
 - 3-3 To promote PIM in the model site through farmers' organizations and IMC.
 - 3-4 To support improvement of farming practices by the farmers' organizations in the model site (formulation of cropping plan, introduction of demonstration plot, introduction of good practices)
 - 3-5 To improve the water management through activities of farmers' organization in the model site in order to support crop diversification

2. *Planned inputs*

2.1. Japanese side

a) *Expert dispatch*

- Long-term experts (Chief adviser, irrigation and drainage, water management / institution, training/coordination) 4 persons x 5 years
- Short-term experts: Approximately 1 or 2 experts (as required), 9 experts/project period

b) *Training*

- Training in Japan: about 5 men months per year (PIM, organization management, and others as required)
- Counterpart training: about 2 men months per year (third country training)

c) *Equipment and facilities*

- Equipment: Equipment for making training materials, laboratory equipment, audio-visual equipment, books, vehicles, equipment for model site activities (meteorological and hydrological observations, survey, analysis, regulators, etc.)

- Facilities: Facilities for installation of equipment, irrigation and drainage facilities at the model sites, construction materials, etc.

d) Local cost

- Baseline survey by local consultants (conditions of markets and diversified crops in/around the model sites), workshop, seminar, etc.

2.2. Vietnamese side

a) Counterpart

- 7 persons in the central government, 8 persons in the provinces

b) Office space and facilities

- Project office space in Hanoi and provinces of the model sites, facilities for operation of model sites

c) Counter budget

- Employment cost of counterparts, operation, maintenance and repair cost of project office such as electricity service, water supply, etc.

3. Organizational Structure

The implementation of the Project will be supervised and coordinated by a Joint Coordinating Committee (JCC) and Project Management Unit (PMU), which will consist of the stakeholders of the central government and the local authorities related to the model sites in Hai Duong and Quang Ninh Provinces.

III. Ex-ante evaluation

The Project was designed in accordance with development policy of Vietnam and needs of the stakeholders. The Project also reflects the aid policy of Japan to Vietnam and will utilize Japan's advanced technologies in irrigation and drainage management. In this sense, the Project is highly relevant.

In terms of effectiveness, relationship of the activities, the outputs, the project purposes, and the overall goal are clearly and logically formulated. The Project aims at not only knowledge improvement of target engineers but also practical skills of PIM promotion through activities at the model sites. Such training procedure will enhance possibility of achieving the Project purpose and relevance of the project itself.

Most of the inputs for the Project will be utilized for the capacity development itself. The inputs for improvement of the facilities are minimized so that the existing facilities will be optimized. If the capacity of the target engineers is substantially improved, those engineers will extend the effects of the Project to the whole country. Thus the efficiency of the Project is considered very high.

The Project impact on accelerating Vietnamese strategies in water resources sector, namely PIM, will be large. The Project will take part in formulation of PIM guidelines and training programs. These outputs of the Project will be utilized for other projects. The engineers and staffs who will be trained by the Project will contribute to poverty alleviation and industrialization in rural areas through efficient use of water and eradication of heavy work load for the farming practices.

The function of promoting PIM will be strengthened in VIWRR after the Project. VNPIM whose engineers will also be strengthened through the training program of the Project will also support to promote the PIM strategy and policy. Thus the sustainability of the Project effects will also be secured.

The Project targets agriculture and rural areas where poor households concentrate. Therefore, the Project is expected to contribute to poverty alleviation. Involvement of stakeholders into the project activities should be carefully promoted so that gender balance should be maintained. Conflicts among the stakeholders on water distribution and management of organization should be carefully managed to avoid social disparity and disadvantage to the weak.

IV. Monitoring and Evaluation

A baseline survey will be carried out at the initial stage of the Project in order to identify conditions and needs of the Project targets. Findings of the survey will be used as benchmarks which will be monitored through the Project period to measure the effects of the Project. In addition, a record of training will be maintained for each trainee to measure degree of improvement of their capacity.

Evaluation will be done two years after the commencement of the Project, six months prior to the ending of the Project and one or two years after the ending of the Project on the basis of evaluating against the benchmarks.

I. Introduction

The Socialist Republic of Vietnam (hereinafter referred to as "Vietnam") established its socialist regime in 1976, the year of the North-south unification. Agriculture had been controlled by the government in accordance with its "planned-economy policy". After commencement of the Doi Moi Reforms in 1986, farmers were entitled to cultivate their own farm land, to select crops and to sell them for their own income. However, the irrigation and drainage systems developed mainly for large paddy rice cultivation systems were not suitable enough for non-paddy crops. Procedures for the improvement of irrigation and drainage facilities and water management (hereinafter referred to as "irrigation management") for the diversified crops have not been established by now.

Farming techniques in Vietnam are not very poor in comparison with those of neighboring countries. Yields of paddy rice are high and incomes from cash crops occupy high percentage of those of the farm households. However, due to very small land holding size (0.33 ha/household in northern region) and large number of farm households per unit area, water distribution to each plot of farm households is quite difficult to manage. Minute adjustment and close coordination among the water users are required. Nevertheless, farmers are largely dependent upon the government, which hampers promotion of organizing of the farmers themselves.

The Vietnamese government has set targets on irrigation management as follows.

- To sustain the efficiency of the irrigation systems and to reduce the government budget for irrigation management through involvement of the farmers.
- To increase income of farmers through promotion of crop diversification which should be realized by improving irrigation management at on-farm level.

Approaches to attain the above targets are; i) improvement of efficiency of the existing irrigation and drainage facilities, and ii) awareness building and promotion of participation of farmers. The Vietnamese government requested technical cooperation to Japan which has a long experience and know-how of participatory irrigation management (hereinafter referred to as "PIM") at Land Improvement District ("Tochi-kairyo-ku" in Japanese, hereinafter referred to as "LID"), aiming at developing human resources for the promotion of PIM.

Receiving the request, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched preparatory study teams twice in July and November of 2004. The both sides discussed and agreed on implementation of a technical cooperation project (hereinafter referred to as "the Project") in northern region of Vietnam so that PIM promotion system should be strengthened through capacity development of governmental water resources engineers and leading farmers at the irrigation schemes. Accordingly, the Record of

Discussion (R/D) of the Project was agreed and signed by the both sides in June 2005.

This draft project document has been prepared in accordance with the results of the studies and discussions by the both sides, consisting of background information, problems to be addressed, current situation, strategy, design and justification of the Project.

2. Background Information

2.1 Socio-economic Conditions

2.1.1 General

Land area of Vietnam is 329,241 km² which is 90 % of that of Japan. Population is 82 million (as of October 2004), of which growth rate is 1.18 %. More than 90 % of the population belongs to the Kinh ethnic group, while the remaining consists of about 54 minor ethnic groups. Buddhists occupy 80 % of the population, then, Catholic and Cao Dai follow.

The Democratic Republic of Vietnam was established in 1945 and divided into the North and the South in 1954 according to Geneva Convention. After the Vietnam War, a unified nation was established as the Socialist Republic of Vietnam.

Since the unification, Vietnam has adhered socialism, however, since 1986, the Doi Moi Reforms have been promoted for introduction of foreign investment and strengthening of economic competitiveness in the international market. On the other hand, problems of disparity in wealth, bribery and bureaucracy have been prevailing.

Vietnam consists of 64 provinces, which are categorized into seven regions, namely, Northern Mountains, Red River Delta, North Central Coast, Central Coast, Central Highlands, South East and Mekong River Delta. Northern Mountains and Red River Delta are defined as "northern region", while Central Coast, North Central Coast and Central Highlands are defined as "central region". "South region" is composed of South East and Mekong River Delta.

2.1.2 Economy

Agriculture, forestry, fisheries and mining are major industries in Vietnam. GDP is USD 39 billion (2004, IMF), which is equivalent to a per-capita GDP of USD 483 per person. Economic growth rate was 7.2 % per annum (draft, 2003), while price escalation rate was about 3.0 % (2003). Unemployment rate in the urban area was 5.8 % (2003).

The amount of export in 2003 (draft) was USD 19.87 billion, while that of import was USD 24.95 billion. Major exported commodities are crude oil, textile and marine products, whereas imported commodities were machines, textiles, oil products and leather materials.

Currency of Vietnam is Dong (VND) whose exchange rate to US dollar as of December 2004

was USD 1 = VND 15,740.

The Doi Moi Reforms came into effect in late 1980's and the economy of Vietnam recorded remarkable economic growth rate of 9 % between 1995 and 1996. However in 1997, after the peak of the growth, the foreign investment to Vietnam fell down due to influence of Asian economic crisis and competition with neighboring countries, then growth rate fell to 4.8 % in 1999.

Growth rate recovered to 6.7 % in 2000 and maintained 6.8 % (2001), 7.0 % (2002) and 7.0 % in 2003 even with some constraints such as chronic trade deficit and unfavorable conditions for the investment.

2.1.3 Poverty

Food poverty rates in 1993 were 24.9 % for the whole country and 29.1 % for rural area, whereas they decreased to 15.0 % and 18.3 % respectively in 1998. Overall poverty rates have also decreased, but 37.4 % of households in the country or 44.9 % in rural area are classified "poor households". Since 77 % of the total households in the country reside in rural area, it is estimated that 95 % of the poor households reside in rural area.

Ministry of Labor, Invalids and Social Affairs (MOLISA) defines "poverty line" according to per capita income by residential area as follows:

- Urban area : VND 150,000
- Islands and mountainous area: VND 80,000
- Other plain rural area : VND 100,000

Average poverty rate of the country was estimated at 9.5 % in 2003.

2.1.4 Human Resources

It is well known that education level of the Vietnamese people is quite high. However, constraints of human resources capacity are often pointed out in every situation of development activities. Capacity development declined both in term of quantity and quality due to insufficient budget allocation, and the incompatibility between development programs and new demands which occurred in drastic changes of socio-economic conditions after the Doi Moi Reforms.

2.2 Description of the Sector

2.2.1 Agriculture

Agricultural land¹ in Vietnam in 2001 was 93.82 million ha, which occupied 28 % of the

¹ Lowland, upland, garden yard, pasture land, land for perennial crop and inland fishery.

total land.

Agricultural Land (2001, Unit : 1,000ha)

Lowland	Upland	Other annual crop	Garden yard	Perennial Crop	Pasture land	Inland fishery	Total
4,148	634	1,244	623	2,192	38	503	9,382
44%	7%	13%	7%	23%	0.4%	5%	100%

Source : Statistical Year Book 2002

Farm lands per farm household consisting of lowland, upland and land for perennial crops by region were as follows:

Farm Land per Farm Household (2001, Unit: ha/household)

	Northern Region		Central Region	Southern Region	Nation Average
	Red River Delta	Northern Mountains			
Land Holding	0.24	0.38	0.78	1.10	0.71

Source : Estimated from data of "Vietnam Agriculture and Rural Area in the Renovation Period"

As shown above, land holding size is small particularly in the northern region. Farmers must spend lots of inputs in order to earn necessary income through crop diversification and improvement of productivity. Since prices of rice in the international market have fallen these years, the farmers are forced to diversify the crops for better income in their limited lands. Annual productions of the food crops in Vietnam are shown below.

Production of Major Food Crops (Unit: 1,000 ton)

Year	Rice	Cassava	Maize
2002	34,063	4,157	2,315
2001	32,108	3,509	2,162
2000	32,529	1,986	2,006

Source : Statistical Year Book 2002

Vietnam has been a "rice exporter" since 1989, and is the second largest exporter following Thailand. According to FAO statistics, 'FAOSTAT', the rice production of Vietnam in 2002 was 22.976 million tons, of which 14 % or 3.275 million tons (20 % of domestic consumption) was exported.

According to the decline of the international rice price, the trade amount of rice export has decreased even with increase of exported volume. Qualitative improvement of rice is a main concern of Vietnam at present.

As for annual commercial crops, sugarcane (16.8 million tons), peanut (0.397 million tons), soybean (0.201 million tons), rush (0.085 million tons) and others are cultivated, while coconut (0.841 million tons), coffee (0.776 million tons), and rubber (0.327 million tons) are

major perennial commercial crops.

2.2.2 Water Resources, Irrigation and Drainage Sector

(1) Water Resources

Water resources of Vietnam are mostly provided by big rivers with catchment areas of over 3,000 km² such as the Mekong River and the Red River. Annual catchment rainfalls in the two rivers are comparatively big ranging from 1,500 mm to 1,650 mm. However, most of the rainfall concentrates in the rainy season. Even during the rainy season, the rainfall distribution is not stable, therefore, supplemental irrigation is required.

According to the strategy report on the water resources development and management during a decade of 2001 to 2010, which was issued by the Ministry of Agriculture and Rural Development (hereinafter referred to as "MARD") in 2003, water demands for the purposes of irrigation, inland fishery, domestic use, industry and environmental conservation are as follows.

Anticipated Water Demand (Unit : million cubic meter)

Year	Irrigation	Fishery	Domestic	Industry	Environment	Total
2000	62,200	6,517	1,042	3,074		72,833
2010	71,909	9,724	2,058	4,848	6,982	95,521
2020	80,084	12,147	3,098	6,168	10,907	112,424

Source : Strategy Report on Water Resources Development and Management, 2001 - 2010

The water demands of domestic and socio-economic sectors are estimated to increase by 31 % during 10 years between 2001 and 2010, and 18 % between 2010 and 2020. Demand and supply balance during six months of the dry season in the northern region shows that the demand remains half of the available runoff in 2000, but the demands will increase to 60 % in 2010 and 72 % in 2020, respectively. It is obvious that efficient use of the irrigation water which consumes more than 70 % of the total demand will be an important subject on the water resources sector.

(2) Irrigation and Drainage

Most of the existing irrigation and drainage systems in Vietnam, which were constructed during the French administration, have malfunctioned. Rehabilitation and re-construction have been repeatedly implemented without proper maintenance of the facilities. It was not only because of lack of budget but also due to lack of awareness on necessity of routine maintenance. Due to lack of budget, many new irrigation and drainage systems were constructed only with the main and secondary systems but without tertiary and on-farm facilities. Therefore, the existing irrigation and drainage systems can not perform their capacity as expected.

There are 75 medium or large scale irrigation schemes in Vietnam commanding 2.2 million

ha of which 1.7 million ha is located in the Red River Delta and the Mekong River Delta. These schemes are maintained by 172 Irrigation Management Companies (hereinafter referred to as "IMC") or Department of Agriculture and Rural Development of the Provincial authority (hereinafter referred to as "DARD"). Small irrigation schemes and on-farm irrigation and drainage facilities are maintained by water management organizations of agricultural production cooperatives (hereinafter referred to as "APC"), Communes or water users associations with technical guidance of Section of Agriculture and Rural Development of the District government (hereinafter referred to as "SARD"). The irrigation and drainage development is generally implemented in conformity to the policy of MARD.

2.3 National Development Strategies

2.3.1 *Ten-Year Strategy for Socio-Economic Development*

The basic policy of socio-economic development of Vietnam was identified in the Ten-Year Strategy for Socio-Economic Development 2001 - 2010 and the 7th Five-Year Plan for Socio-Economic Development 2001 -2005, which were adopted at the 9th general assembly of the communist party in April 2001. These are the uppermost official documents, which are referred to by various plans of development sectors. Annual budget allocation for the public investment is also determined in conformity to the policies mentioned in these documents. The Ten-Year Strategy clearly worked out a development vision of Vietnam to shift from agricultural nation to industrial one with the following targets.

- To double the GDP by 2010 with an economic growth rate of 7.5 % from 2001 to 2005.
- To increase proportion of the investment in GDP from 25 % of 1990s to 30 %.
- Exports are to increase at a rate more than double that of GDP growth.
- Agriculture is to account for 16-17% of GDP, industry 40-41%, and services 42~43%.
- Agricultural labor is to drop to around 50% of the workforce.
- Urban population is to be increased from 25 % to 33 %.

2.3.2 *Comprehensive Poverty Reduction and Growth Strategy (CPRGS)*

Vietnam is the first country that drew up a full poverty reduction strategy paper (hereinafter referred to as "PRSP") among East-Asian countries. The Ministry of Planning and Investment (hereinafter referred to as "MPI") took an initiative and collaborated with ministries concerned. A draft PRSP was issued in March 2003. Then the draft PRSP was renamed as "Comprehensive Poverty Reduction and Growth Strategy" (hereinafter referred to as "CPRGS"), which was proposed to the donors unofficially at an intermediate CG Meeting in May 2005.

The government of Vietnam placed CPRGS as an action plan to implement the Five-year plan and the Ten-year strategy with the targets of; i) achievement of economic growth and ii) poverty reduction and social equity. Based on an understanding that the poverty reduction is closely connected with the economic growth, Vietnamese development strategies were formulated with the poverty reduction approach through acceleration of economic growth and equal distribution of wealth.

2.3.3 Development Strategy of Agriculture Sector

The development strategies of the agricultural sector identified in the 10-Year Development Strategy are as follows:

- Industrialization and modernization of rural area --- enhancement of agricultural productivity and shifting of agricultural labor force to industrial sector.
- Restructuring of agricultural production system --- food security, export of rice, increase of production of commercial crops and livestock, promotion of inland fishery for export, forestation to increase forest area.
- Strengthening of agricultural technology and capacity development of extensionists.
- Improvement of irrigation and drainage facilities.

The five-year agriculture plan for 2001-2005 identified the following targets.

- Economic growth rate: 4.5 % (agriculture sector).
- Stable food supply for 85 million people.
- Export amount of agricultural products : USD 4.5 billion
- Income increase of the farm households: 1.5 ~ 1.7 times that of the year 2000
- Employment generation, poverty reduction, dissolution of starvation
- Improvement of agricultural production infrastructure

2.3.4 Development Strategy of Water Resources Sector

In order to attain the targets of the agriculture sector, improvement of agricultural infrastructure, particularly, improvement and maintenance of functions of the irrigation and drainage facilities is an important theme of the agriculture sector. Major subjects of the water resources sector are as follows:

- Restoration of functions of existing facilities through rehabilitation.
- To sustain the functions of the irrigation and drainage facilities with efficient operation and maintenance (O&M)
- Reduction of the government budget for O&M through irrigation management transfer.

- Promotion of small-to-medium-scale projects by beneficiaries or local authorities.
- Establishment of irrigation and drainage systems and technologies which will encourage crop diversification for the income increase.

2.4 Prior and On-going Project / Assistance

2.4.1 Activities of Donors

(1) World Bank – Vietnam Water Resources Assistance Project

The Government of Vietnam has requested a credit from the International Development Association (IDA) to finance modernization of irrigation schemes and improvement of the safety of the reservoir dams. Preparations for the implementation of these objectives for six selected irrigation schemes and one river improvement scheme have been facilitated by a grant from Japanese Government under the proposed project. The preparation works started in March 2002 and the first stage as the feasibility study was completed in November 2003.

VWRAP consists of four main components as follows:

1. Irrigation modernization including dam safety remedial works;
2. Dam safety management;
3. Thu Bon Basin development;
4. Project management and capacity building.

Under the capacity building program, training on PIM was proposed for the government officials of MARD, DARD, IMC and water management staffs of the provinces, districts and water users associations of the six target schemes. For this program, Vietnam Institute for Water Resources Research (hereinafter referred to as “VIWRR”) takes the responsibility as the counterpart agency.

(2) Water Sector Program Support (WaterSPS) - DANIDA

Danish International Development Assistance (DANIDA) has been implementing “Water Sector Program Support” since 1999. VIWRR is the main counterpart. The program consists of four components of; i) capacity building of central government officials, ii) water supply and sanitation in rural area, iii) water resources management, and iv) water supply and sanitation in urban area.

(3) AusAID

AusAID has been implementing Vietnam Water Resources Management Assistance Project: (VWRMAP) since 2002. Study tours, workshops and training courses on the water resources management are main activities of the project.

(4) NGO

NGO activities were not very active before 1975. However, after the Dõi Moi Reforms, number of NGOs increased. Over 100 NGOs were registered in 1990's and its number exceeded 500 in 2002. International NGOs are registered at People's Aid Coordinate Committee (PACCOM). Programs of the NGOs cover various sectors such as poverty reduction, health and medical care, education, micro credit, social welfare, environment, and others. Number of the international NGOs listed by PACCOM is 178, of which 19 NGOs have activities on irrigation and drainage sector in the northern region.

2.4.2 Collaboration by Donors on PIM

Asian Development Bank (ADB), which is supporting the Red River Basin Irrigation Project, organized National Water Resources Council (NERC) to establish a legal framework of the water resources management. ADB also conducts training programs on the irrigation management in cooperation with WaterSPSP of DANIDA and VWRMAP of AusAID. ADB organized an international workshop on PIM in Nghe An Province in 1997 in collaboration with DANIDA, the World Bank and other organizations in order to promote and propagate the PIM approaches in Vietnam. The second workshop on PIM was held with the initiative of the World Bank at Thanh Hoa Province, and the third one was organized by International Participatory Irrigation Management (INPIM) in Halong Bay in March 2004 aiming at the followings:

- To discuss PIM strategy and the action plan of MARD;
- To share international views and experiences of PIM among the participants;
- To share evaluation results of activities at pilot schemes and to identify constraints against PIM promotion at province or IMC levels.
- To formulate "PIM Road Map" which suggests process of PIM promotion by water resources management projects by donors concerned.

In June 2004, a strategic paper titled, "Draft Framework Strategy on Development of Participatory Irrigation Management in Vietnam" was prepared consisting of action plans of PIM promotion in Vietnam with the target year of 2015.