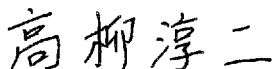


MINUTES OF MEETINGS  
BETWEEN  
THE JAPANESE FINAL EVALUATION TEAM  
AND  
THE AUTHORITIES CONCERNED  
OF  
THE GOVERNMENT OF PHILIPPINES  
ON  
THE TECHNICAL COOPERATION  
ON  
THE PROJECT FOR ENHANCEMENT OF CAPABILITIES OF FLOOD  
CONTROL AND SABO ENGINEERING OF DPWH, STAGE 1

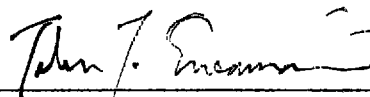
The Japanese Final Evaluation Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Junji TAKAYANAGI, visited the Republic of Philippines from June 24, 2002 to July 10, 2002. During their stay, the Japanese Final Evaluation Team (hereinafter referred to as "the Team") had a series of discussions, evaluated the present achievements of the Project for Enhancement of Capabilities of Flood Control and Sabo Engineering of DPWH, Stage 1 (hereinafter referred to as "the Project ENCA") and exchanged views on the possible measures to be taken to fulfill the Record of Discussions signed on November 29, 1999.

As a result of the discussions, both sides agreed to report to the respective Governments the matters referred to in the document attached hereto.

Manila, July 9, 2002



Mr. Junji TAKAYANAGI  
Team Leader  
Japanese Final Evaluation Team  
Japan International Cooperation Agency



Mr. Teodoro T. ENCARNACION  
Undersecretary  
Department of Public Works and Highways  
Republic of the Philippines

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## **1. INTRODUCTION**

### **1.1. Preface**

The Project ENCA started in January 10, 2000, and will be completed on January 9, 2003. This time, with the remaining cooperation period of approximately 6 months, the Japanese Final Evaluation Team dispatched by JICA visited the Republic of the Philippines from June 24, 2002 to July 10, 2002, for the purpose of evaluating the Project ENCA.

### **1.2. Objectives of Evaluation**

The objectives of evaluation are as follows.

- 1) To grasp the accomplishment of the Project ENCA and implementation process of the Project ENCA, as a basis of evaluation.
- 2) To execute a comprehensive evaluation of the Project ENCA from the viewpoints of five evaluation criteria (explained later in this document)
- 3) To make recommendations for the future prospect of the Project ENCA and to obtain general lessons learnt from the Project ENCA for the similar field of technical cooperation.

### **1.3. Evaluators**

#### **1.3.1. Members of Japanese Evaluation Team**

Mr. Junji Takayanagi, Director, First Research Department, Japan Water Resources Environment Technology Center

Mr. Masato Jogasaki, Inspector, Ministry of Land, Infrastructure and Transportation

Mr. Toshihisa Hasegawa, Staff, Social Development Cooperation Department, JICA

Ms. Nobuko Nishimura, Staff, Social Development Cooperation Department, JICA

Mr. Tsuneo Kuwahara, Engineer, Nippon Giken Inc.

#### **1.4. Brief Schedule of the Team (June 24, 2002 to July 10, 2002)**

<u>Date</u>	<u>Schedule</u>
June 24 – July 1	Interview survey to the Experts, DPWH Officials, Counterparts, etc. Collection of relevant data and analysis
July 1	Meeting with JICA Philippine Office, Meeting with Experts, Courtesy call on Embassy of Japan
July 2	Courtesy call on DPWH, University of Philippines
July 3	Courtesy call on NEDA Preparation of draft evaluation report
July 4	Site survey
July 5	Preparation of draft evaluation report and draft Minutes of Meeting based on the Study Explanation of drafted M/M to Counterpart
July 6-7	Preparation of evaluation report and draft Minutes of Meeting
July 8	Discussion on the draft Minutes of Meeting
July 9	Joint Coordinating Committee: discussion on evaluation result and Minutes of Meeting Signing of the Minutes of Meeting
July 10	Report to JICA Philippines Office Report to Embassy of Japan

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### **1.5. Methodology of Evaluation**

The evaluation study was conducted in accordance with the Japan Project Cycle Management (hereinafter referred to as JPCM) method in the following steps:

(1) The Project Design Matrix (hereinafter referred to as "PDM") for the final evaluation (PDMe) in Annex I was agreed upon by the both sides as the basis of the evaluation. PDMe was drafted by the Team and finalized considering the comments from the people concerned.

(2) Accomplishment of the Project was studied by means of analyzing collected data and other relevant information.

(3) Analysis was made for five evaluation criteria described below:

a. Relevance

Relevance of the project plan is reviewed by the validity of the project purpose and the overall goal in connection with the development policy of the Government of the Philippines and the needs of the beneficiaries and also by the logical consistency of the project plan.

b. Effectiveness

Effectiveness is assessed by evaluating to what extent the Project ENCA has achieved its purpose and clarifying the relationships between the purpose and the outputs.

c. Efficiency

Efficiency of the project implementation is analyzed with emphasis on the relationships between outputs and inputs in terms of timing, quality, and quantity.

d. Impact

Impacts of the Project are assessed by either positive or negative influences caused by the Project.

e. Sustainability

Sustainability of the Project is assessed in organizational, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained and disseminated after the cooperation's completion.

(4) Finally, the evaluators reached an agreement on the conclusion of evaluation and made recommendations.

The following materials were used for the evaluation.

The Record of Discussions (R/D), relevant Minutes of Meetings (M/M), Project Design Matrix (PDM), the Plan of Operation (hereinafter referred to as "PO") in Annex II, the reports made by the Project and the results of the meetings, interviews and observations while the Team stayed in the Philippines.

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## **2. BACKGROUND AND SUMMARY OF THE PROJECT**

### **2.1. Background of the Project ENCA**

The Philippines has suffered from natural disasters due to its geographical and climatic conditions. In the past decade, the country was hit by natural calamities of historical magnitude: the Killer Earthquake over Central Luzon in July 1990 that killed more than 2,000 people; the Ormoc City tragedy in November 1991, the flood that killed more than 8,000 people; the Mt. Pinatubo Eruption in June 1991 and its lahar and mudflows that buried large areas in the Pampanga Delta; the Eruption of Mayon Volcano in February 1993; and the flood in Metro Manila in 1988 and 1990. These Events had brought sufferings to the people and adverse impact to the economy and development of the country.

To realize a well-balanced socio-economic development and improve the living standard of the people, especially those belonging to the so-called low-income class, effective solutions have to be worked out to mitigate the damaging effects of natural disasters hampering the development of the country.

Flood control and sabo projects have long been undertaken by the government as one of the infrastructure measures to stimulate socio-economic developments. However, due to the frequent organizational reforms made in the past, technological standards have not been maintained because of the unsystematic handling of data and information in different government offices and the inadequate of experienced engineers and/or technicians to analyze and handle them properly. Besides, public consciousness and cooperation in most of the governments undertakings on disaster prevention works have been usually inadequate due to the inefficient data and information dissemination methods concerning the desirable effects of infrastructure projects.

### **2.2. Summary of the Project ENCA**

The Project ENCA was originally designed to enhance and sustain the capability of DPWH in the area of flood control and sabo engineering within five (5) years. The Project ENCA consisted of four (4) main components: Technical Standard, Training, Data Filing System, and Research, and activities are planned for enforcement of capabilities of the components, which was agreed on December 1997.

Since then, the formulation of the Project ENCA was continued based on the said agreement. However, construction of the facilities (administration/training building and hydraulic laboratory) for the project by Philippine side was delayed due to the Asian Economic Crisis occurred in 1997.

In March 1999, JICA and DPWH agreed that the project would be divided into two stages: Stage 1 and Stage 2, so that the Project ENCA will be able to start as early as possible before the construction of the facilities. Activities were divided into two categories based on the criteria that the activities require the facilities or not. Project design of Stage 1 was made to contain the activities, which could be done without the facilities.

As a result, project purpose of Stage 1 "Capability of the DPWH in planning and design of flood control and sabo facilities will be enhanced in order to cope with water-induced disasters" was agreed. At the same time, six (6) outputs of the Project ENCA were also agreed such as the establishment of FCSEC, upgrading of Technical standard in the field of flood control and sabo, training, basic information system, Research and Development function, and formulation of internal system of DPWH.

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### **2.3. Plan of Operation (PO)**

PO was discussed in the Project ENCA, then it was agreed at JCC (Joint Coordinating Committee) September 28, 2000. PO for the whole period is shown in Annex II. The activities of the Project ENCA were conducted according to the PO.

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### 3. PROJECT ACCOMPLISHMENT

#### 3.1. Input

Inputs of Japanese side were carried out as planned. On the other hand the Philippine side, budget and counterpart assignment were insufficient, and facility construction was delayed, in spite of its efforts. Annex III to V show the details.

##### 3.1.1. Japanese Side

All inputs were carried out in terms of long and short term experts assignment, budgetary allocation and equipment provision, such as vehicles, PCs, etc., though some equipment for training has not been fully utilized at the time of the evaluation. They are to be fully used in the course of the trainings.

Item	Plan	Accomplishment
Operational Budget	-	12.6 Million Pesos
Expert	4 (long term), 10 (short term)	4 (long term), 10 (short term)
Equipment	Vehicles, PCs, Survey Equip., etc.	22.7 Million Pesos

##### 3.1.2. Philippine side \* ( ) completion of construction

Budgetary allocation and counterpart assignment were insufficient compared with the plan which was explained in R/D study, and facility construction was delayed as shown in the table below.

Item		Plan	Accomplishment
Operational Budget		101.5 Million Pesos	12.0 Million Pesos
FCSEC	Staff	39	28
	Engineer	17	10
Facility		FCSEC(Dec.00), Dormitory	FCSEC(Apr.02), Dormitory(under construction)

#### 3.2. Output

The achievements of outputs shown in the project summary on PDM are the following:

Output 1: Basic functions, organizations and institutions of the FCSEC will be established and secured for sustainable activities.

Inputs from both Japanese and Philippine sides have been fully used for the preparation of the facilities in the FCSEC. But there are some problems as its PMO status, budgetary constraints and insufficiency of counterparts, so that the sustainable activities have not been achieved.

Output 2: The technical standards on Survey, Planning and Design in the field of flood control, Sabo, slope failure, and urban drainage will be upgraded and be made available for use.

The technical standards and guidelines (TSG), reflecting the real situation of the DPWH offices in the provinces, were completed (for Survey, Planning and Design in Flood control, Sabo, Slope failure, Urban drainage; the last 2 were implemented before the schedule). The TSG will be formally approved by the Secretary of DPWH within July 2002 and will be



distributed to all relevant offices (relevant bureaus in the central office and all offices in the provinces). Therefore the output will be achieved within the cooperation period.

Output 3: Sufficient number of the personnel of the DPWH will be trained.

Curriculum consisting of lectures, site practicum and on the job training (OJT) was completed. Trainer's training was conducted for 20 candidate trainers and eight of them gave lectures in the first training. The contents of the training are concentrated on the design of flood control structure because the topic is judged most crucial to improve the effectiveness of the structures.

All training components will be completed for 10 district offices in Region 1 within the cooperation period. Lectures will be conducted for other 30 regional and district offices and supporting manuals, which facilitate the understanding of trainees, will be materialized also. However, as training just started on June 2002, the trainings for 120 engineers and 20 senior officers/ engineers has not been accomplished yet. Training is insufficient in terms of its quality and number of trainees due to incomplete follow-up of output use for the actual work and very limited number of trainees. Therefore it is evaluated that achievement of this output within the period is insufficient.

Output 4: Basic Information system for profiling damages occurred on disaster prevention structures will be established.

The information system to grasp the present condition of damaged structures for disaster prevention was accomplished through formation of data format and input-output system on a PC. By using it, "Damage Profile" was published to show the examples of damaged structures of DPWH.

However, since "Damage Profile" does not include the analysis, study and suggestion of damage causes, a study report containing above will be formed by the end of the cooperation. With the completion of the report, the output is to be accomplished.

Output 5: Research and Development functions of the FCSEC will be established.

Two study themes were set, the observation equipment (rainfall gauges and a water level gauge) were installed and the observation started at both sites. The jurisdictional offices have responsibilities for operation and maintenance. Since the study started, it is evaluated that the output has been achieved.

Output 6: The DPWH will form an internal system to extend the technical standards and other outputs of the Project ENCA, throughout all relevant offices of the DPWH for effective implementation of services.

The technical committee aiming extension of project outputs has not been established yet. But during the cooperation period, outputs utilization is discussed in JCC (Joint Coordinating Committee) and PIC (Project Implementation Committee), which are managing the Project ENCA. DPWH has a will for its set-up and is under consideration. Therefore the output will be achieved by the end of the cooperation with the action to be taken by DPWH.

### **3.3. Achievement of the project purpose**

TSGs' distribution is planned to all relevant offices, and the Region 1 will be the only region completing all components of training. The number of structures constructed according to the new TSGs will be zero within the cooperation period. Therefore, the prospect of project purpose achievement will be difficult by the end of the cooperation.

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#### **4. IMPLEMENTATION PROCESS**

##### **4.1. Obstacles on project activities**

- a. Since the understanding for the real situation was insufficient among both the Japanese and Philippine sides at the stage of preparatory studies for the project, it took longer time than expected to grasp the basic situation. Concretely, the important facts were: 1. existing TSGs are hardly utilized, 2. "Survey", "Planning" and "Design" are not conducted in a reasonable manner on local projects.
- b. It took long time to collect information on damaged structures because jurisdictional offices of DPWH in the provinces have insufficient information.
- c. The budget allocation system for the Project ENCA has not been institutionalized and the amount of the budget was insufficient.
- d. At the start of the project, some officers and counterparts of the DPWH have a very limited understanding of the scheme of the Project Type Technical Cooperation (PTTC) in as much as it is considered the first PTTC project of the DPWH

##### **4.2. Promoting factor on project activities**

For the revision of existing TSGs, the cooperation with Bureau of Design facilitated the approval of the new TSGs formed by the Project ENCA.

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## **5. PROJECT EVALUATION**

### **5.1. Relevance**

The Project ENCA is judged relevant based on the following factors.

#### **5.1.1. Policy support**

- a. As the priority of flood control and drainage is stated in the Medium-Term Philippine Development Plan (1999-2004), the relevance of the Project ENCA in the policy is confirmed. In the section of strategy, it is also stated that the function of FCSEC should be strengthened.
- b. Since the budget in CY 2000 for flood control project by local fund (target of the Project ENCA) is 2 billion Pesos approximately half of all flood control budget (4 billion Pesos including foreign fund), thus the contribution of the Project ENCA for locally funded project is considerable.
- c. As most of the major rivers are not improved comprehensively, even existing facilities and structures for flood control are fragile against disasters (annual average death and missing toll by typhoons is more than 860; 1970-2001). Therefore, many local governments request implementation of flood control projects every year, and demand for the technology to be strengthened in the Project ENCA is quite high, and expected to be higher in the future.

#### **5.1.2. Needs of Implementation Organization**

The survey result in the Project ENCA proved the problem that the existing technical standards were not used to implement the locally funded projects by regional/district engineering offices, and some damaged structures and not-functioning structures are identified.

As the Project ENCA contributes to avoid construction of such structures by using appropriate technologies, and to enhance the efficient and effective use of limited budget, the Project ENCA is relevant to the needs of the regional/district offices of DPWH.

### **5.2. Effectiveness**

As the project purpose will not be achieved during the cooperation period, effectiveness of the Project ENCA cannot be identified at the time of the evaluation. The achievement expected in the cooperation period is too small to give visible effect on the target groups within the cooperation period.

#### **5.2.1. Factors that enhanced effectiveness**

There is much demand from the local community to DPWH local offices, and they are willing to implement the projects in effective and efficient manner.

#### **5.2.2. Factors that were considered to enhance effectiveness in the course of project implementation**

- a. Target groups were narrowed down to the engineers of regional/district engineering offices which are responsible for locally funded projects, because most of large scale projects are funded by foreign fund, and these projects are planned, designed and supervised by foreign consultants. And there are no technical problems in principle.
- b. Locally funded flood control projects are usually implemented without appropriate

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planning, so that the problems that obstructed effective project implementation are identified in the site surveys and the project activities are designed to solve them. As a result, technical standards and training programs are with high applicability to the actual project.

### **5.2.3. Problems in utilizing the project outputs**

The project purpose cannot be achieved within the cooperation period, so that effective results cannot be given to the target groups.

## **5.3. Efficiency**

Although most of the inputs were judged to be used effectively, overall efficiency was not high enough, especially in the initial stage, due to the lack of the counterpart personnel, and inexperience of their background.

### **5.3.1. Utilization of inputs**

Most of the inputs (personnel and budget) were used effectively.

As the number of counterpart in FCSEC was not enough, the Project ENCA set up Project Implementing Committee (PIC) and Technical Working Group (TWG) and assigned some engineers of the Planning Service (PS) and the Bureau of Design (BOD) as counterparts of the Project ENCA, in order to improve the efficiency.

### **5.3.2. Problems of input**

- a. At the initial stage of the Project ENCA, number of counterparts was less than what is planned, and they did not have enough capability to implement the Project ENCA. In the course of the Project ENCA, number of counterpart was increased and the capacity of the counterparts has been much improved through technology transfer. However, still number of counterpart is less than the necessary level.
- b. As for the budget, total amount of annual budget from Philippine side is much less than required, and the allocation of annual budget is delayed by several months, so that it is a negative factor for efficiency.

## **5.4. Impact**

As the Outputs and Project Purpose are not achieved at the time of evaluation or will not be achieved by the end of cooperation period, it was difficult to identify impact from the output. However, following impact is identified and expected from the evaluation;

### **5.4.1. Impact to the revision of technical standards in DPWH**

In the Project ENCA, procedure to revise the technical standards was made and discussed with DPWH. DPWH tried to use the procedure as a reference for revision of technical standards of other fields.

## **5.5. Sustainability**

Sustainability of the Project ENCA is judged difficult, in spite of the effort by Philippine side.

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#### **5.5.1. Policy Support**

Flood Control and Sabo are stated as priority policy in the development plan continuously, so that the policy support is expected for enhancement of sustainability. However, due to the constraint of budgetary allocation, strengthening the Flood Control and Sabo is difficult practically.

#### **5.5.2. Human Resources**

As the most of the counterparts in FCSEC are not permanent staff but on contractual basis, the continuity of their assignment to the present position is not secured, although their capability are gradually enhanced.

As for the engineers in regional offices and district engineering offices who are the target group of the Project ENCA, still the number of trained engineers is very little, only the lecture has been completed and core of the training (site practicum and OJT) has just started, so that there is high possibility that the transferred technology would not be used to the actual works.

#### **5.5.3. Organization**

As FCSEC is a Project Management Office (PMO), which does not have permanent status, there is a possibility of termination. Therefore, as long as the project activities are undertaken by FCSEC and the status of it remain unchanged, sustainability is not secured.

#### **5.5.4. Budget allocation and financial support**

Budget allocation by Philippines Government is not stable, even in the cooperation period. Therefore, sustainability is judged unstable.

#### **5.5.5. Extension system of the project outputs**

Extension of the Project outputs is planned to be made through the course of trainings. Therefore, if the training programs will be implemented and appropriate number of engineers is to be trained, technologies based on the revised technical standards will be extended and practically used in the actual work.

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## **6. CONCLUSIONS AND RECOMMENDATIONS**

### **6.1. Conclusions of the Evaluation**

The Team recognized that the Project activities have been implemented steadily for the enhancement of DPWH in terms of technical and management capacities, in spite of the negative factors such as insufficient baseline data, inadequate input from Philippine side. It was confirmed that some important outputs of the Project ENCA would not be achieved within the cooperation period until January 2003 and the achievement of the Project Purpose would be quite limited and much less than the targeted level.

At the time of the evaluation, it was recognized that the practical activities for enhancement of capability of DPWH engineers have been just started. It would take more time until their capacity will be enhanced to the appropriate level and they can contribute to the effective and efficient improvement of flood control and sabo facilities to be constructed out of the budget of the Philippine Government.

Therefore, the Team understands that even the Project outputs, which are already achieved, will also be lost if the Project activities will be terminated in the original period of three years. As the relevance of the Project ENCA is quite high and the most of the DPWH officials recognizes the significance of the Project ENCA, it is concluded that DPWH should continue the activities until the project purpose is fully achieved.

### **6.2. Recommendation**

- a. The Team recommends DPWH to exert more effort to provide the necessary input to the Project ENCA (budget and staff) to achieve the Project Purpose and sustainability of the Project activities for continuous enhancement of DPWH. Additionally Seven engineers and four administrative staffs are recommended to be assigned to FCSEC.
- b. The Team recommends the respective governments to take measures to extend the Cooperation period for one and half years in order to achieve the Project Purpose to the appropriate level, so that the project outputs can be utilized in the actual construction works in the field and extended sustainably. The main activities in the extension period will be training and it must be completed for the target of at least 1/3 of the 180 regional/district offices, considering the sustainability and impact of the Project ENCA.
- c. The Team recommends DPWH to take possible measures to enhance the project outputs to the appropriate level.
  - To take measures for the sustainability of FCSEC, including getting approval of a permanent organization.
  - To improve the training curriculum so that the trainees understand the phenomenon of flood and sediment movement, which are crucial for the design of the flood control and sabo structures, and to monitor the applicability of training results in the actual works. The monitoring results must be fed back to the curriculum.
  - To clarify the purpose of database system, considering the demand of the potential users, and take measures to improve the database system toward the specific purposes.
  - To assign researcher(s) in FCSEC and continue the research activities, based on the output of the Project ENCA.
  - To take measures to establish the Technical Committee, which will follow up and consider the system to extend the Project Outputs.



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### **6.3. Lessons learnt from the Project ENCA**

As baseline data, such as damaged structures and actual works by regional offices and district engineering offices, were not collected by the commencement of the Project, it took more time than expected, to grasp the actual situation and to formulate the detailed plan of operation. Therefore, enough time should be provided for project formulation survey or allocate enough time for baseline survey at the first stage of the Project ENCA.

### **6.4. Others**

As the Team observed damaged flood control structures at site, some structures do not have expected quality and functions because of poor construction supervision. Therefore, it is evaluated that besides the capacity building for survey, planning and design, the capacity for construction supervision will highly contribute to the improvement of locally funded projects.

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## **7. MATTERS DISCUSSED**

**7.1.** The Team requested Philippine side to increase the input to the Project ENCA (personnel and budget) to the necessary level, according to the recommendation in the evaluation result. Philippine side agreed to make all the effort to do so.

**7.2.** The Team requested Philippine side to take measures to secure the stability and sustainability of FCSEC as the project implementation organization. Philippine side explained that several measures (including making permanent organization) are under consideration, and will try its best to follow-up the request.

**7.3.** Philippine side requested the Team to extend the cooperation period for approximately two years in order to achieve the Project Outputs fully. The Team explained the necessity of the extension of the period for one and half years in the evaluation result. Therefore, both sides agreed to recommend the extension of the cooperation period to the respective government, and to take necessary measures accordingly.

**7.4.** Philippine side requested the Team to implement Stage 2 of the Project ENCA, which is to enhance the technical capability of construction and maintenance. The details of the request of the Project Stage 2 are attached in Annex VIII. The Team agreed to convey the request to the Government of Japan for further consideration.

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Annex I

**Project Design Matrix for Evaluation (PDMe) on July 2002**

Project Title : The Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH Stage 1

Period : Jan.10, 2000~Jan.9, 2003

Implementing Agency: The Flood Control and Sabo Engineering Center of the DPWH (FCSEC)

Target Group: Internal organizations and Personnel of the DPWH relevant to Flood Control and Sabo Engineering Activities

Date : July 1, 2002

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<b>Super Goal</b> Water Induced Disasters will be mitigated through improved effectiveness of disaster prevention facilities and structures constructed or/and maintained by the DPWH in accordance with technical standards and flood & sediment control measures developed by the Project	Disaster prevention facilities and structures constructed or/and maintained by trained personnel of the DPWH in accordance with technical standards produced by the project prove their effectiveness within projected limits.	1. Damage Assessment Report	
<b>Overall Goal</b> Capability of the DPWH in planning, design, construction and maintenance of flood control and Sabo facilities will be enhanced in order to cope with water-induced disasters	(1) Number of facilities and structures surveyed, planned, designed, implemented and maintained in accordance with the technical standard produced by the Project, (2) Distribution record of technical standards (survey, planning, design, construction and maintenance) (3) Appropriate assignment of personnel trained in the Project	1. Monitoring report on usage of technical standards 2. Allocation list of personnel trained	1. Support by policies of the government 2. DPWH and civil engineering companies observe the technical standards 3. Needed equipment and materials are obtainable
<b>Project Purpose</b> Capability of the DPWH in planning and design of flood control and Sabo facilities will be enhanced in order to cope with water-induced disasters.	(1) Number of facilities and structures surveyed, planned and designed in accordance with the technical standard produced by the Project (2) Distribution record of technical standards (survey, planning, design) (3) Appropriate assignment of personnel trained in the Project	1. Monitoring report on usage of technical standards 2. Allocation list of personnel trained.	1. Project (stage 2) will be implemented and the output will be come out as expected. 2. Hydraulic Laboratory will be built by the time of commencement of stage 2

# Annex I

<p><b>Outputs</b></p> <p>1. Basic functions, organizations and institutions of the FCSEC will be established and secured for sustainable activities.</p> <p>2. The technical standards on <u>Survey, Planning and Design</u> in the field of flood control, Sabo, <u>slope failure, and urban drainage</u> will be upgraded and be made available for use.</p> <p>3. Sufficient number of the personnel of the DPWH will be trained.</p> <p>4. Basic Information system for profiling damages occurred on disaster prevention structures will be established.</p> <p>5. Research and Development functions of the FCSEC will be established.</p> <p>6. The DPWH will form an internal system to extend the technical standards and other outputs of the project, throughout all relevant offices of the DPWH for effective implementation of services.</p>	<p>1-1. Powers, responsibilities and functions of FCSEC 1-2. Number of staff members of FCSEC 1-3. Budget of FCSEC 1-4. Equipment, machinery and materials of FCSEC</p> <p>2-1. Draft of technical standards for "Survey", "Planning", and "Design" for flood control, Sabo operations, <u>slope failure, and urban drainage</u> are produced.</p> <p>3-1. Number of trainers who are trained in the Project 3-2. Training Curriculum 3-3. Training textbooks and materials 3-4. 120 people from the DPWH staff engineers and 20 people from Senior officers and Engineers are trained.</p> <p>4-1. A set of basic information system installed in FCSEC. 4-2. Damage assessment reports made by FCSEC</p> <p>5-1. At least one (1) research proposal per research site is being conducted. 5-2. A set of research and survey equipment installed at each site. 5-3. Researchers capacity of handling basic research and survey equipment.</p> <p>6-1. Technical committee headed by undersecretary is created in DPWH 6-2. Policies made by the committee for enforcement.</p>	<p>1-1. Documents clarifies those matters 1-2. List of staff members 1-3. Budget records 1-4. List of equipment 1-5. Maintenance records 1-6. Hydraulic laboratory</p> <p>2-1. List of technical standards drafted</p> <p>3-1. List of trainers trained 3-2. List of curriculum made 3-3. List of textbooks and materials made 3-4. Records on training</p> <p>4-1. installed system 4-2. List of reports made</p> <p>5-1. list of research proposals 5-2. list of equipment installed 5-3. report on survey and research</p> <p>6-1. Minutes of meeting 6-2. Formulated collaboration system</p>	<p>1. Trained staff members and employees stay in DPWH and are assigned to flood control and Sabo works. 2. Trained staff members and employees can use the equipment and materials necessary for effective operation.</p>
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## Annex I

Activities	Inputs	
<p>1. Basic functions, organizations and institutions of the FCSEC will be established and secured for sustainable activities.</p> <p>1-1. Function organization and institution.</p> <p>1-2. Assign sufficient number of staff members.</p> <p>1-3. Get allocation of sufficient budget.</p> <p>1-4. Purchase and install necessary equipment, machinery and materials.</p> <p>1-5. Formulate internal capabilities for publishing of reports and newsletters, and public relations.</p> <p>1-6. Facilitate smooth implementation of construction of hydraulic laboratory.</p> <p>2. The technical standards on <u>Survey, Planning and Design</u> in the field of flood control, Sabo, <u>slope failure</u>, and <u>urban drainage</u> will be upgraded and be made available for use.</p> <p>2-1. Formulate a procedure for upgrade and review of technical standards.</p> <p>2-2. Collect and evaluate available information/documents.</p> <p>2-3. Produce technical standards.</p> <p>2-4. Conduct studies for further clarification or adaptation of introduced technical standards.</p> <p>2-5. Compile drafts of technical standards and distributes them to organizations (including private companies) concerned.</p> <p>2-6. Conduct workshops or seminars.</p> <p>3. Sufficient number of the personnel of the DPWH will be trained.</p> <p>3-1. Form implementing section and system for training programs.</p> <p>3-2. Formulate training programs.</p> <p>3-3. Produce training curriculum</p> <p>3-4. Produce training textbooks and materials.</p> <p>3-5. Purchase and install necessary equipment for training</p> <p>3-6. Train trainers.</p> <p>3-7. Train senior staff and engineers of DPWH</p> <p>3-8. Check and monitor trainee's performance during and after training.</p> <p>3-9. Evaluate training conducted and draw up an improvement plan if necessary.</p> <p>4. Basic information system for profiling damages occurred on disaster prevention structures will be established.</p> <p>4-1. Formulate implementing plan.</p> <p>4-2. Make a detailed survey and operation plan.</p> <p>4-3. Install computer systems.</p> <p>4-4. Collect data and information to make a database</p> <p>4-5. Analyze data and information to make a database</p> <p>4-6. Produce a damage assessment report.</p> <p>4-7. Formulate effective way/system to improve/modify technical standards.</p> <p>5. Research and Development functions of the FCSEC will be established.</p> <p>5-1. Formulate research plan.</p> <p>5-2. Purchase necessary equipment and materials</p> <p>5-3. Install survey equipment at respective sites.</p> <p>5-4. Commence research works.</p> <p>6. The DPWH will form an internal system to extend the technical standards and other outputs of the project, throughout all relevant offices of the DPWH for effective implementation of services.</p> <p>6-1. Form a technical committee for effective/efficient enhancement of DPWH</p> <p>6-2. Address effective and efficient use of technical standards and other outputs of the project throughout all relevant organizations of DPWH.</p> <p>6-3. Address appropriate procedure in order to make the technical standards drafted by the project official standards of DPWH.</p> <p>6-4. Recommend other necessary manuals, aids, supplementary training, or/and workshops for people from construction companies so that they properly implement and comply with the standards.</p> <p>6-5. Monitor progress of usage of technical standards and other outputs of the project.</p> <p>6-6. Obtain feedback for further review of technical standards and improvement.</p>	<p>[Philippines side]</p> <ul style="list-style-type: none"> <li>-Assignment of counterpart personnel</li> <li>-Assignment of administrative personnel</li> <li>-Buildings / facilities / equipment</li> <li>-Expenses for maintenance of equipment</li> <li>-Expense necessary for implementation of the Project</li> </ul> <p>[Japanese side]</p> <ul style="list-style-type: none"> <li>-Long-term experts;</li> <li>Chief advisor 36 M/M</li> <li>Coordinator 36 M/M</li> <li>River engineering 36 M/M</li> <li>Sabo engineering 36 M/M</li> </ul> <ul style="list-style-type: none"> <li>-Short-term experts;</li> <li>As required</li> <li>-Training of counterpart personnel in Japan</li> <li>-Approximately 10 people during a period of 3 years</li> <li>-Provision of equipment</li> </ul>	<p><b>Preconditions</b></p> <ol style="list-style-type: none"> <li>1. The Japanese government shows favorable reaction to the request of Philippine government for grant aid for building of hydraulic laboratory.</li> <li>2. Construction of FCSEC building will be nearly completed or confirmed date of completion and authorized its organization and function by DPWH.</li> <li>3. Counterpart personnel are competent and have adequate knowledge and experience to become trainers.</li> <li>4. FCSEC is equipped with adequate number of staff members competent and experienced in the field of flood control and Sabo engineering.</li> <li>5. Philippine side confirmed strong demand of collaboration among all-relevant personnel and organizations in DPWH including FCSEC for effective enforcement of disaster mitigation measures.</li> </ol>

## Annex I

### Corrected Items from the original PDM to the PDMe

#### 1. Overall Goal

##### (1) Objectively Verifiable Indicator

Description was modified and divided into three items that can be described numerically.

#### 2. Project purpose

##### (1) Objectively Verifiable Indicator

Description was modified and divided as well as overall goal.

##### (2) Important assumption

"Technical Standard will be produced" is replaced by "Project Stage 2 will be implemented and the output will be come out as expected".

#### 3. Output

##### (1) Narrative summary

2. Technical standard of slope failure and urban drainage were added to the output, which was not originally planned but actually implemented.

##### (2) Indicators

Some descriptions of indicators are modified, so that numerical evaluation might be easier.

# Annex I

## Project Design Matrix

Project Title : The Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH

Period : Jan.10, 2000~Jan.9, 2003

Implementing Agency: The Flood Control and Sabo Engineering Center of the DPWH (ECSEC)

Target Group: Internal organizations and Personnel of the DPWH relevant to Flood Control and Sabo Engineering

Date : Nov. 25, 1999

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<b>Super Goal</b> Water Induced Disasters will be mitigated through improved effectiveness of disaster prevention facilities and structures constructed or/and maintained by the DPWH in accordance with technical standards and flood & sediment control measures developed by the Project	Disaster prevention facilities and structures constructed or/and maintained by trained personnel of the DPWH in accordance with technical standards produced by the project prove their effectiveness within projected limits.	1. Damage Assessment Report	
<b>Overall Goal</b> Capability of the DPWH in planning, design, construction and maintenance of flood control and Sabo facilities will be enhanced in order to cope with water-induced disasters	The DPWH and its regional and project offices where trained personnel are attached will commence survey, planning, design, implementation and maintenance operations in accordance with the technical standards produced by the Project.	1. Distribution record of technical standards 2. Monitoring report on usage of technical standards 3. Allocation list of personnel trained	1. Support by policies of the government 2. DPWH and civil engineering companies observe the technical standards 3. Needed equipment and materials are obtainable
<b>Project Purpose</b> Capability of the DPWH in planning and design of flood control and Sabo facilities will be enhanced in order to cope with water-induced disasters.	The DPWH and its regional and project offices where trained personnel are being attached with will commence survey, planning, and design works in accordance with the technical standards produced by the Project	1. Distribution record of technical standards. 2. Monitoring report on usage of technical standards 3. Allocation list of personnel trained.	1. Two (2) volumes of technical standards- "construction" and "maintenance"- for flood control and Sabo operations will be produced. 2. Four (4) volumes Technical standards- "Survey & planning", "design", "construction", "maintenance", for landslides and urban drainage will be produced. 3. Hydraulic Laboratory will be built by the time of commencement of stage 2

# Annex I

<p><b>Outputs</b></p> <p>1. Basic functions, organizations and institutions of the FCSEC will be established and secured for sustainable activities.</p> <p>2. The technical standards in the field of flood control and Sabo will be upgraded and be made available for use.</p> <p>3. Sufficient number of the personnel of the DPWH will be trained.</p> <p>4. Basic Information system for profiling damages occurred on disaster prevention structures will be established.</p> <p>5. Research and Development functions of the FCSEC will be established.</p> <p>6. The DPWH will form an Internal system to extend the technical standards and other outputs of the project throughout all relevant offices of the DPWH for effective implementation of services.</p>	<p>1-1. Powers and responsibilities and functions of FCSEC are established.</p> <p>1-2. Sufficient number of staff members is assigned in accordance with the plan.</p> <p>1-3. Sufficient budget for smooth implementation of activities is allocated.</p> <p>1-4. Equipment and materials are supplied in accordance with the plan.</p> <p>1-5. Equipment and machinery is adequately maintained.</p> <p>1-6. Hydraulic laboratory is accepted to build by Japanese Government</p> <p>2-1. Draft of technical standards for "Survey", "Planning", and "Design" for flood control are produced.</p> <p>2-2. Draft of technical standards for "Survey", "Planning", "Design" for Sabo Operations are produced.</p> <p>3-1. Sufficient number of trainers are trained.</p> <p>3-2. Training Curriculum for each course will be formulated.</p> <p>3-3. Training textbooks and materials are prepared.</p> <p>3-4. 120 people from the DPWH staff engineers and 20 people from Senior officers and Engineers are trained.</p> <p>4-1. A set of basic information system is installed.</p> <p>4-2. Become capable at making a damage assessment report.</p> <p>5-1. Become capable of conducting at least one (1) research proposal per research site during a period of three years.</p> <p>5-2. A set of research and survey equipment is installed at each site.</p> <p>5-3. Become capable of handling basic research and survey equipment.</p> <p>6-1. Technical committee headed by undersecretary is created in DPWH and take effective policies for enforcement.</p>	<p>1-1. Documents clarifies those matters</p> <p>1-2. List of staff members</p> <p>1-3. Budget records</p> <p>1-4. List of equipment</p> <p>1-5. Maintenance records</p> <p>1-6. Hydraulic laboratory</p> <p>2-1. List of technical standards drafted</p> <p>2-2. List of technical standards drafted</p> <p>3-1. List of trainers trained</p> <p>3-2. List of curriculum made</p> <p>3-3. List of textbooks and materials made</p> <p>3-4. Records on training</p> <p>4-1. installed system</p> <p>4-2. List of reports made</p> <p>5-1. list of research proposals</p> <p>5-2. list of equipment installed</p> <p>5-3. report on survey and research</p> <p>6-1. Minutes of meeting</p> <p>6-2. Formulated collaboration system</p>	<p>1. Trained staff members and employees stay in DPWH are assigned to flood control and Sabo works.</p> <p>2. Trained staff members and employees can use the equipment and materials necessary for effective operation.</p>
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# Annex I

Activities	Inputs	
<p>1-1. Function organization and institution.  1-2. Assign sufficient number of staff members.  1-3. Get allocation of sufficient budget.  1-4. Purchase and install necessary equipment, machinery and materials.  1-5. Formulate internal capabilities for publishing of reports and newsletters, and public relations.  1-6. Facilitate smooth implementation of construction of hydraulic laboratory.  2-1. Formulate a procedure for upgrade and review of technical standards.  2-2. Collect and evaluate available information/documents.  2-3. Produce technical standards.  2-4. Conduct studies for further clarification or adaptation of introduced technical standards.  2-5. Compile drafts of technical standards and distributes them to organizations (including private companies) concerned.  2-6. Conduct workshops or seminars.  3-1. Form implementing section and system for training programs.  3-2. Formulate training programs.  3-3. Produce training curriculum  3-4. Produce training textbooks and materials.  3-5. Purchase and install necessary equipment for training.  3-6. Train trainers.  3-7. Train senior staff and engineers of DPWH  3-8. Check and monitor trainee's performance during and after training.  3-9. Evaluate training conducted and draw up an improvement plan if necessary.  4-1. Formulate implementing plan.  4-2. Make a detailed survey and operation plan.  4-3. Install computer systems.  4-4. Collect data and information to make a database  4-5. Analyze data and information to make a database  4-6. Produce a damage assessment report.  4-7. Formulate effective way/system to improve/modify technical standards.  5-1. Formulate research plan.  5-2. Purchase necessary equipment and materials  5-3. Install survey equipment at respective sites.  5-4. Commence research works.  6-1. Form a technical committee for effective/efficient enhancement of DPWH  6-2. Address effective and efficient use of technical standards and other outputs of the project throughout all relevant organizations of DPWH.  6-3. Address appropriate procedure in order to make the technical standards drafted by the project official standards of DPWH.  6-4. Recommend other necessary manuals, aids, supplementary training, or/and workshops for people from construction companies so that they properly implement and comply with the standards.  6-5. Monitor progress of usage of technical standards and other outputs of the project.  6-6. Obtain feedback for further review of technical standards and improvement.</p>	<p>[Philippines side]  -Assignment of counterpart personnel  -Assignment of administrative personnel  -Buildings / facilities / equipment  -Expenses for maintenance of equipment  -Expense necessary for implementation of the Project</p> <p>[Japanese side]  -Long-term experts;  Chief advisor 36 M/M  Coordinator 36 M/M  River engineering 36 M/M  Sabo engineering 36 M/M</p> <p>-Short-term experts;  As required  -Training of counterpart personnel in Japan  -Approximately 10 people during a period of 3 years  -Provision of equipment</p>	
		<p><b>Preconditions</b></p> <ol style="list-style-type: none"> <li>1. The Japanese government shows favorable reaction to the request of Philippines government for grant aid for building of hydraulic laboratory.</li> <li>2. Construction of FCSEC building will be nearly completed or confirmed date of completion and authorized its organization and function by DPWH.</li> <li>3. Counterpart personnel are competent and have adequate knowledge and experiences to become trainers.</li> <li>4. FCSEC is equipped with adequate number of staff members competent and experienced in the field of flood control and Sabo engineering.</li> <li>5. Philippine side confirmed strong demands of collaboration among all-relevant personnel and organizations in DPWH including FCSEC for effective enforcement of disaster mitigation measures.</li> </ol>

## ANNEX II

throughout all relevant offices of the DPWH for effective implementation of services.	6-2 Efficient collaboration among all relevant personnel and organizations in DPWH will be formed for effective enforcement.	All offices recognize the collaboration	All organizations are formed for enforcement	All relevant people are formed for enforcement
	6-3 Technical standards will be enacted by the DPWH.	One-third of draft standards are made	All standards are formulated	Technical standards are enacted officially by DPWH
	6-4 Training program becomes official education scheme for the DPWH.	One-third of training materials are made	First training program is conducted	Several training programs are implemented officially
	6-5 A scheme to secure human resources of the FCSEC is created.	Scheme is designed	Basic scheme is prepared	Scheme is implemented

### 3. Implementing Schedule by Year for Each Output of the PDM

The following schedule for each activity is necessary to achieve the above-mentioned targets.

- OUTPUT 1: Basic function, organizations and institutions of the FCSEC will be established and secured for sustainable activities.

Activity in PDM	Year 2000	Year 2001	Year 2002
1-1 Functions, organizations and institution	a. Determine roles, responsibilities and functions of FCSEC while it remains as a core agency for implementation of project "ENCA" to secure sustainable operation. b. Determine roles, responsibilities and functions of FCSEC as a permanent institution, with due consideration of the designated activities c. Determine viable and appropriate activities, roles, responsibilities, and functions of FCSEC in relation to other offices such as PS, MFCP, BOD, BOC, BRS, and Regional/District Offices (PIC).	a. Obtain the approval from DBM as a formal organization. b. Coordinate detailed duties of related organizations c. Provide assistance on accomplishment of performance appraisal	a. Get JCC approval of functions of FCSEC b. Obtain Issuance of Department Order (Relevant organizations to be duly informed)
1-2 Assign sufficient number of staff members	a. Request DPWH to provide FCSEC adequate work force for the Administrative Division. b. Request DPWH to provide FCSEC sufficient number of competent engineers. c. Determine appropriate staffing pattern for FCSEC to implement full operation of designated activities.	a. Administer the recruitment/selection of engineering staff of FCSEC. b. Conduct the screening/selection of applicants for hydraulic researchers. c. Facilitate the preparation/approval of appointment papers of hired personnel.	
1-3 Get allocation of sufficient budget	a. Estimate necessary amount of budget based on the revised plan of operation for whole period b. Request for cash advance for emergency purchases c. Request needed budget for 2001 d. Adopt proper accounting/auditing procedure on the liquidation of FCSEC expenses.	a. Secure allocation of budget 2001 and expedite the releases. b. Secure allocation and releases of cash advance c. Request the necessary budget for 2002	d. Secure allocation of budget 2002 and expedite the releases. e. Secure allocation and releases of cash advance f. Request the necessary budget for 2003



1-4 Purchase and install necessary equipment, machinery and materials	<ul style="list-style-type: none"> <li>a. Determine necessary equipment, materials and supplies for the years 2000 and 2001</li> <li>b. Determine necessary cost for installation, repair consumables, maintenance and other necessary expenditures</li> <li>c. Obtain necessary documents to purchase equipment and determine suppliers</li> <li>d. Enter contracts of procurement</li> <li>e. Secure maintenance contracts for equipments.</li> <li>f. Make ledger and data base system</li> <li>g. Follow-up utilization of equipment</li> </ul>	<ul style="list-style-type: none"> <li>a. Determine necessary equipment, materials and supplies for 2002</li> <li>b. Prepare documents for procurement of equipment for training</li> <li>c. Purchase of basic materials and equipment for the activities of FCSEC, such as desks and chairs</li> <li>d. Provide preventive maintenance to all serviceable equipment/vehicles</li> <li>e. Facilitate physical inventory and placing of inventory tags</li> <li>f. Monitor the use of equipment to prevent damage/improper utilization.</li> </ul>	<ul style="list-style-type: none"> <li>a. Determine necessary equipment, materials and supplies for 2003.</li> <li>b. Purchase basic materials and equipment for the activities of FCSEC, such as desks and chairs</li> <li>c. Provide preventive maintenance to all serviceable equipment/vehicles.</li> <li>d. Facilitate physical inventory and placing of inventory tags</li> <li>e. Monitor the use of equipment to prevent damage/improper utilization.</li> </ul>
1-5 Formulate internal capabilities for publishing of reports & newsletters, and public relations	<ul style="list-style-type: none"> <li>a. Determine public relations strategy</li> <li>b. Determine function of Information Division in public relations</li> </ul>	<ul style="list-style-type: none"> <li>a. Produce to produce printed materials</li> </ul>	<ul style="list-style-type: none"> <li>a. Produce appropriate materials for public relations</li> </ul>
1-6 Facilitate smooth implementation of construction of hydraulic laboratory	<ul style="list-style-type: none"> <li>a. Facilitate procedure of EOC approval</li> <li>b. Facilitate procedure of ICC approval</li> <li>c. Facilitate Exchange of Note Verbale</li> <li>d. Facilitate Bidding</li> <li>e. Facilitate grounds preparation works and transfer gate</li> </ul>	<ul style="list-style-type: none"> <li>a. Various procedures related to construction</li> <li>b. Secure contract for electricity and water supply services</li> </ul>	<ul style="list-style-type: none"> <li>a. Secure contract for telephone service</li> <li>b. Facilitate preventive maintenance of the Administration &amp; Training Building premises.</li> </ul>

- OUTPUT 2: Technical standards in flood control and sabo will be upgraded and be made available for use.

Activity in PDM	Year 2000	Year 2001	Year 2002
2-1 Formulate a procedure for upgrade and review of technical standards.	<ul style="list-style-type: none"> <li>a. Determine the current state of usage of technical standards</li> <li>b. Determine the necessity to upgrade and review the present technical standards</li> <li>c. Coordinate with organizations concerned to formulate a procedure for revision of technical standards</li> <li>d. Formulate the system, the contents, and the schedule for the revision work</li> </ul>		
2-2 Collect and evaluate available information and documents.	<ul style="list-style-type: none"> <li>a. Determine availability of relevant information and documents</li> <li>b. Collect data and information to make a database for technical standards</li> </ul>		
2-3 Produce technical standards.	<ul style="list-style-type: none"> <li>a. Formulate the contents of the revised technical standards</li> <li>b. Define the technical terms</li> <li>c. Implement the revision work</li> </ul>	<ul style="list-style-type: none"> <li>a. Complete the first draft in the 1st quarter</li> <li>b. Complete the final draft within the year</li> </ul>	
2-4 Conduct studies for further clarification or adaptation of introduced technical standards.	<ul style="list-style-type: none"> <li>a. Identify the studies theme in detail</li> </ul>	<ul style="list-style-type: none"> <li>a. Draw up long-term plan and theme for studies</li> <li>b. Schedule the operation plan of studies</li> <li>c. Prepare for the beginning of studies</li> </ul>	<ul style="list-style-type: none"> <li>a. Begin studies</li> <li>b. Identify the problem areas that need modification</li> </ul>
2-5 Compile drafts of technical standards and distribute them to concerned organizations		<ul style="list-style-type: none"> <li>a. Formulate the plan of the distribution to the organization concerned.</li> <li>b. Prepare the Department order.</li> </ul>	<ul style="list-style-type: none"> <li>a. Distribute technical standards.</li> </ul>

2-6 Conduct workshop or seminars.	a. Formulate the concept of the workshop	a. Formulate the system, program and curriculum for the conduct of workshop/seminar b. Conduct workshop based on the first draft of technical standard	a. Conduct seminar based on the final draft
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- OUTPUT 3: Sufficient number of the personnel of the DPWH will be trained.

Activity in PDM	Year 2000	Year 2001	Year 2002
3-1. Form implementing section and system for training programs		a. Make a framework of training activity and coordinate with AMMS b. Facilitate forming of implementing structure for training c. Establish close coordination with accounting and budgeting divisions	
3-2. Formulate training programs	a. Collect related materials and information	a. Facilitate development of training needs assessment b. Coordinate with AMMS c. Plan the implementation of training for the year d. Plan the details of implementation for different training courses	
3-3. Produce training curricula		a. Determine the training course and training subjects. b. Develop training curricula for training programs.	
3-4. Produce training textbooks and materials		a. Identify training text/materials needed b. Make training textbooks c. Make training exercise d. Search audio-visual materials	a. Formulate and make training exercises b. Produce visual teaching materials c. Make the necessary revision of the training courses based on analysis
3-5. Purchase and install necessary equipment for training.	a. Determine the equipment necessary for training. b. Purchase of the equipment necessary for training.	a. Determine the equipment necessary for training b. Maintain the equipment for the training	a. Maintain the equipment for the training.
3-6. Train trainers	a. Select the core members as trainers b. Commence training for trainers through technical working group activities	a. Conduct training of trainers	
3-7. Train senior staff and engineers of DPWH.			a. Conduct training
3-8. Check and monitor trainee's performance during and after training.		a. Prepare training survey forms for evaluation	a. Prepare training survey forms for evaluation
3-9. Evaluate training conducted and draw up an improvement plan if necessary		a. Prepare the questionnaires for the lecturers and trainees b. Undertake pre & post evaluation	a. Undertake pre & post evaluation

- OUTPUT 4: Basic-information system for profiling damages on disaster prevention structures will be established.

Activities in PDM	Year 2000	Year 2001	Year 2002
4-1. Formulate implementing plan	a. Review existing information systems of DPWH b. Prepare the structure of damage		

	surveys and its data gathering system c. Formulate implementing plan for survey, data gathering and computer system		
4-2. Make a detailed survey and operation plan	a. Determine the trial survey format and the survey methods b. Determine the data gathering system	a. Draw up the survey manual b. Determine a special survey system by committee (mainly composed of FCSEC) for large disasters	
4-3. Install computer system	a. Determine the necessary data stored to the system b. Design the filing system c. Determine the data transmission system d. Determine the hardware system [Short term Expert for b, c, d]	a. Procure the computer system b. Setup the data filing software	
4-4. Collect data and information to make a database	c. Implement the tryout survey at one Regional Office (RO) d. Gather existing data of DPWH	a. Issue the Department Order for the implementation of damage surveys b. Save the gathered data to the filing system c. Implement the briefing of survey manual for RO d. Practice the data gathering from RO	a. Review the established data gathering system
4-5. Analyze data and information to find causes of damage to flood control and sabo facilities			a. Analyze damage causes b. Study additional survey items c. Technical committee discussions (refer to 6-1)
4-6. Produce a damage assessment report		a. Make a guideline for making report	a. Produce the report
4-7. Formulate effective way/system to improve/modify technical standards			a. Conduct studies for modifications (refer to 2-4) b. Technical committee discussions (refer to 6-1)

- OUTPUT 5: Research and Development functions of the FCSEC will be established

Activity in PDM	Year 2000	Year 2001	Year 2002
5-1. Formulate research plan	a. Determine provisional theme for model sites b. Make a Plan for data collection on sites c. Make initial arrangement with RO	a. Modify the provisional research plan b. Discuss the need for additional surveys and experiments c. Make a concrete Plan for each research theme d. Finalize arrangements with RODO	
5-2. Purchase necessary equipment and materials	a. Determine necessary equipment for data collection on sites b. Procure the equipment	a. Procure the additional necessary equipment	
5-3. Install survey equipment at respective sites	a. Install measurement equipment [Short-term expert]		
5-4. Commence research works	a. Determine observation system b. Commence observation	a. Operate observation system	a. Operate observation system b. Formulate alternative countermeasures

- OUTPUT 6: The DPWH will form an internal system to disseminate the technical standards and other outputs of the project throughout all relevant offices of the DPWH for effective implementation of services.

Activity in PDM	Year 2000	Year 2001	Year 2002
6-1 Form a Technical Committee for effective/efficient enhancement of DPWH	a. Determine function, members and authorization of the committee	a. DPWH grants authority to Technical Committee	a. Establish the technical committee
6-2 Address effective and efficient use of technical standards and other outputs of the project throughout all relevant organizations of DPWH	a. Review basic necessary works related to flood control in RODO b. Formulate the framework of effective and efficient network between PCSEC and RODO	a. Establish the network of PCSEC and RODO b. Immediate implementation of each upgraded technical standards c. Implement workshop for organizations of the Head Office	a. Implement trial works and workshop in RODO b. Issue the Department Order that ordinary works should be done in RODO c. Implement guidance tours for RODO by PCSEC
6-3 Address appropriate procedures for making the technical standards drafted by the project the official standards of DPWH		a. Systematize the technical standards and other handbooks/materials b. Make a draft proposal of authorization procedure for the standards	a. Issue the Department Order for authorization of technical standards
6-4 Recommend other necessary manuals, aids, supplementary training, or/and workshops for people from relevant private companies so that they properly implement and comply with the standards.		a. Make additional materials for workshops for private firms on technical standards	a. Implement workshops and guidance tours for private firms b. Announce beginning of utilization of new technical standards
6-5 Monitor progress of usage of technical standards and other outputs of the project		a. Determine monitoring matters and data	a. Analyze monitoring system b. Evaluate trial works
6-6 Obtain the feedback for further review of the technical standards and improvement.		a. Determine other matters to be considered and necessary additional data collecting	a. Determine the framework for revisions b. Determine improvements by the technical committee

## ANNEX III

### Cumulated Inputs by JICA from JFY 1999 to June 2002

Hereunder are the Cumulated inputs of the Japanese Government in the implementation of the Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPHW – Stage I (ENCA) from FY1999 to June 2002 through the Japan International Cooperation Agency.

#### 1. Long-term Experts

The following long-term experts are assigned to the Project until the completion of their period of assignment.

Field	Name of Expert	Period of Assignment
Chief Adviser	Mr. Hideaki Fujiyama	Jan. 10, 2000 – Jan. 09, 2003
Coordinator	Mr. Tadashi Hidaka	Jan. 10, 2000 – Jan. 09, 2003
River Engineering	Mr. Kazuhiza Komatsu	Jan. 10, 2000 – Jan. 09, 2002
	Mr. Motohiro Tsujiuchi	Dec.10, 2001 – Jan.09, 2003
Sabo Engineering	Mr. Toshihide Kawachi	Apr. 01, 2000 – Mar. 31, 2002
	Mr. Hideki Tanaka	Dec.10, 2001 – Jan.09, 2003

#### 2. Short-term Experts

The following short-term experts were dispatched by JICA to assist in the implementation of Project ENCA.

In JFY2002, two (2) short-term experts will be assigned the project.

JFY	Field	No. of Experts	Period of Assignment
2000	Technical Standard (Design for River Structure)	One (1) person	Mar. 5 – Mar. 13, 2001
	Technical Standard (Design for Sabo Structure)	One (1) person	Feb. 15 – Feb. 25, 2001
	Field Investigation for Sabo (Condition of the Land Surface)	One (1) person	Feb. 28 – Mar. 10, 2001
	Information System	One (1) person	Feb. 19 – Feb. 28, 2001

### ANNEX III

JFY	Field	No. of Experts	Period of Assignment
2001	Training System	One (1) person	Jun. 11 – Oct. 31, 2001
	Establishment of Disaster Information System	One (1) person	Nov. 5 – May 4, 2002
	Slope Failure Prevention	One (1) person	June 4 – 16, 2001
	Urban Drainage	One (1) person	Sept. 24 – Oct. 7, 2001
	Research Planning (River)	One (1) person	Jun. 20 – 30, 2001
	Research Planning (Sabo)	One (1) person	June 18 – 30, 2001
2002	Production of Training Materials	One (1) person	Six (6) months
	Preparation of Technical Manuals	One (1) person	Six (6) months

### 3. Counterpart Training Program in Japan

In JFY2000 and 2001, seven (7) engineers from DPWH participated in the Counterpart Training in Japan. In 2002, the Government of Japan allocated two (2) training programs for three (3) counterpart personnel of the above-mentioned agency.

JFY	Field of Study	Name of Counterpart Sent	Period of Training
2000	River Engineering	Mr. Michael Alpasan	Aug. 14 – Dec. 01, 2000
	Sabo Engineering	Ms. Rosalinda Pare	Nov. 06 – Dec. 05, 2000
	Sabo Engineering	Mr. Jessie Felizardo	Mar. 20 – Sept. 16, 2001
2001	River Engineering	Mr. Elmo Atillano	Aug. 13 – Dec. 1, 2001
	Sabo Engineering	Mr. Napoleon Famadico	Jul 4 – Aug 7, 2001
	Sabo Engineering	Ms. Dolores Hipolito	Mar. 31 – Apr. 26, 2002
	River Management	Dir. Resito V. David	Mar. 31 – Apr. 23, 2002
2002 (Plan)	Planning and Design for River Structures	Two (2)	Two (2) months

## ANNEX III

### 4.Provision of Equipment

The following were procured under the JICA's provision of equipment program for Project ENCA.

JFY	Equipment	Amount (Pesos)
1999	Motor Vehicles	4,665,000.00
	Computer Sets	2,282,000.00
	Audiovisual Equipment	2,103,000.00
	Survey Equipment	2,783,600.00
	<b>Total</b>	<b>11,833,600.00</b>
2000	Observation Equipment	3,856,500.00
	Computer & Peripherals, Office Equipment, A/V Equipment	918,800.00
	Mini Bus	1,800,000.00
	Training Equipment	2,176,430.00
	Training Room Facilities	2,116,600.00
	<b>Total</b>	<b>10,868,330.00</b>

### 5.Other Financial Assistance

#### 5.1 Recurrent local cost for expert activities and supplementary equipment & supplies

JFY	Amount (Pesos)
1999	371,000.00
2000	1,300,000.00
2001	1,300,000.00
2002	800,000.00

#### 5.2 Financial assistance for project activities

JFY	Categories	Amount (Pesos)
2001	Contract out fee for the production of the following training materials: • Printing of Technical Standards and Guidelines • Survey & Map production	1,565,000.00
	Contract out fee for the production of the ff: • Rainfall intensity formula and Rating curves • Analysis of rainfall characteristics	3,750,000.00
2002	Production of training materials and textbooks	1,360,000.00
	Contract out fee for the production of Technical Manuals	2,160,000.00

# Annex IV Equipment Control

(Equipment 100,000 to 1,600,000 JPY)

as of June 2002

JFY	Asset ID	Equipment (Manufacturers•Specification)	Donated	Disposed	Present	Utilization	Control	Comment
H-11 (99)	ENCA-99-003	AUTOMATIC LEVEL, PENTAX AL-320	1	0	1	D	A	to be used for training
H-11 (99)	ENCA-99-004	ELECTRONIC THEODOLITE, PENTAX MODEL:ETH-05A	1	0	1	D	A	to be used for training
H-11 (99)	ENCA-99-005	MIRROR STEREOSCOPE, TOPCON MODEL 3 W/ BUILT-IN 1.8 X MAGNIFIER, 3X BINOCULAR, 6X EYEPIECES & CARRYING CASE	5	0	5	D	A	to be used for training
H-11 (99)	ENCA-99-006	CURRENT VELOCITY METER SWOFFER 2100 SERIES	4	0	4	D	A	to be used for site survey
H-11 (99)	ENCA-99-007	SUPER PLANIX B DIGITIZING TAMAYA FSI 45113	1	0	1	C	A	to be used for training and site survey
H-11 (99)	ENCA-99-008	COPY MACHINE FUJI XEROX MODEL VIVACE 340 W/ AUTO DOC FEEDER 10 BIN SORTER & 3 CASSETTE TRAY	1	0	1	A	A	
H-11 (99)	ENCA-99-009	OVERHEAD PROJECTOR 3M 9800	1	0	1	C	A	used for seminars and workshops
H-11 (99)	ENCA-99-010	LCD PROJECTOR FUJITSU LPF 4200	1	0	1	C	A	used for seminars and workshops
H-11 (99)	ENCA-99-011	35 MM SLR CAMERA NIKON F60	2	0	2	C	A	used for site survey
H-11 (99)	ENCA-99-012	VIDEO CAMERA SONY DCR-TRV 900	1	0	1	D	A	used for site survey
H-11 (99)	ENCA-99-013	DIGITAL CAMERA SONY MAVICA DSC-F-55	1	0	1	B	A	
H-11 (99)	ENCA-99-014	COLOR PLOTTER HP DESIGN JET 450C	1	0	1	D	A	very limited
H-11 (99)	ENCA-99-015	JAPANESE PC SYSTEM (DESKTOP) MODEL 300 GL 6563-22A (IBM) W/ 17" SYNCMASTER 7001 FT MONITOR (SAMSUNG)& JIS KB, M & C	4	0	4	A	A	
H-11 (99)	ENCA-99-016	ENGLISH PC SYSTEM (DESKTOP) MODEL 300 GL 6563-22A (IBM) W/ 17" SYNCMASTER MONITOR (SAMSUNG)	12	0	12	A	A	



# Annex IV Equipment Control

(Equipment 100,000 to 1,600,000 JPY)

as of June 2002

JFY	Asset ID	Equipment (Manufacturer•Specification)	Donated	Disposed	Present	Utilization	Control	Comment
H-11 (99)	ENCA-99-017	LASER PRINTER HP 5000N LASER JET W/ LAN CARD	2	0	2	A	A	
H-12 (00)	ENCA-00-001	TIPPING BUCKET RAIN GUAGE & LONG TERM EVENT RECORDER W/ 240 ROLL EVENT RECORDER CHART	4	0	4	A	A	
H-12 (00)	ENCA-00-005	TECHNICAL SOFTWARE, AUTOCAD LT 2000i FULL VERSION	2	0	2	A	A	
H-12 (00)	ENCA-00-006	FILM SCANNER, MINOLTA DIMAGE SCN DUAL II 35MM FILM SIZE, SINGLE PASS, 2820 DPI OPTICAL RESOLUTION, USB INTERFACE	1	0	1	D	A	used for publishing
H-12 (00)	ENCA-00-008	EPSON EPL-5800 LASER PRINTER, TRUE 1200 DPI, 10 PPM, A4 USB COMPLAINT	2	0	2	A	A	
H-12 (00)	ENCA-00-011	LAPTOP COMPUTER, MITAC MINOTE 6020 INTEL MOBILE PENTIUM III 500MHZ, 14.1" TFT COLOR DISPLAY, 64MB SDRAM, 8GB HDD, 1.44 FDD, 24X	2	0	2	A	A	
H-12 (00)	ENCA-00-013	EIKI OVERHEAD PROJECTOR-2500M FOR HIGH RESOLUTION LCD COMPUTER PROJECTION, 250W METAL HIDE LAMP	1	0	1	C	A	used for training
H-12 (00)	ENCA-00-014	LCD PROJECTOR, EIKI LC-XGA970E MULTIMEDIA PROJECTOR 1024X768 DOTS XGA, MAC-19 & SXGA, 120 WATT UHP LAMP, 600 ANSI LUMENS	1	0	1	C	A	used for training, seminar and workshops
H-12 (00)	ENCA-0-022	HORIBA U-10 WATER QUALITY CHECKER	2	0	2	E	A	to be used for site survey
H-12 (00)	ENCA-00-030	TOPCON ELECTRONIC TOTAL STATION GTS-226	2	0	2	D	A	to be used for training
H-12 (00)	ENCA-00-053	MINOLTA COPY MACHINE EP400 W/ DUPLEXING DOCUMENT FEEDER, BIN SORTER, CABINET FOR A4 & 5 PCS. TONER	1	0	1	A	A	
H-12 (00)	ENCA-00-060	SEKAKU OPEN CONFERENCE SYSTEM FOR 1 CHAIRMAN & 20 DELEGATES	1	0	1	C	A	used for meeting

# Annex IV Equipment Control

(Equipment more than 1,600,000 JPY)

as of June 2002

JPY procured	Asset ID	Name of Equipment	Unit Price (1,000 JPY)	Qty	Installed Place	Utilization	Control	Remarks
H-11 (99)	ENCA-99-001	VEHICLE NISSAN PATROL SAFARI 4X4 STD	4,212	3	FCSEC	A	A	SFT384-1/3, SFT374-2/3, SFT375-3/3
H-11 (99)	ENCA-99-002	TOTAL STATION TOPCON GTS-312 S.N. NX 1738	1,932	1	FCSEC	D	A	
H-12 (00)	ENCA-00-002	WATER LEVEL GUAGE & LONG TERM EVENT RECORDER, DENTAN MODEL DL-2 10 M WATER LEVEL RECORDER W/ RECORDING UNIT	3,252	1	NUEVA ECIJA	A	A	
H-12 (00)	ENCA-00-063	MITSUBISHI ROSA MINI BUS	4,440	1	FCSEC	C	A	

## ACCUMULATED INPUTS OF THE PHILIPPINE SIDE

### I. Facilities and Equipment

#### A. Administration/Training Building

The Four (4) Storey Reinforced Concrete Administration/Training Building and Provision of Support Facilities that includes pump house, guard house, fence with gate, driveway and parking with peripheral lighting were undertaken by the A.D. Gonzales Corporation under the supervision and monitoring of the DPWH Bureau of Construction (BOC). The total floor area of the main building is 1,980 square meters composed of two (2) training rooms, nine (9) offices, one (1) multi-purpose room, one (1) conference room, one (1) library and one (1) canteen. The original project cost is P 23,159,061.88 and revised to P 24,022,909.89 due to Change Orders 1 & 2 for Phase I. The Completion stage costs 20,431,184.20, which includes additional work such as installation of Local Area Network (LAN), Intercom etc. There is also a proposed change order # 1 amounting to more or less P 6M. The total contract amount is P44,454,094.09 excluding the Change Order # 1 for the completion stage.

The Department of Budget and Management has also granted the DPWH Authority to *modify of the scope of the project* (construction of the Four-Storey Administration and Training Building of Flood Control and Sabo Engineering Center, Dormitory Building and related facilities in Napindan Hydraulic Control Structure Compound, Pasig City) under the DPWH Infrastructure Program (Re-enacted Budget) with funds released through SARO No. A-01-00713. This caused the release of P24,260,000.00 (in addition to the initially allotted amount for these buildings) which defrayed other expenses such as *site development provision of water and power utilities and payment for the right-of way* for these projects.

PMO-FCSEC transferred to the partially turned over Administration/Training Building during the first week of April, 2002. The second floor is occupied as the main office and training rooms on the ground floor are now being utilized. The training rooms are equipped with the requisite devices and facilities for training.

#### B. Dormitory Building

The original date of start of the construction of the Dormitory Building is April 2001, but was rescheduled in June 2002 caused by Right-of-Way (ROW) problems which was settled by the PMO-Action Office for the Relocation of Squatter Families (PMO – AORSF) in May 2002. R.R. Encabo Construction & Traders has 210 Calendar Days for finish the Construction. The contract amount of the Dormitory Building is P 11,149,805.87.

## ANNEX V

### C. Hydraulic Laboratory Building

Mssrs. Resito V. David and Peter P.M. Castro, the OIC Project Director of PMO-FCSEC and Associate Professor of the University of the Philippines, respectively, attended the **“Tender Opening”** at Nissoken Head Office in Tokyo Japan on procedures on the construction of this Grant Aid Project, amounting to ¥799.0 M which was signed by and between the representatives of the Philippine Government and the Government of Japan on the 27<sup>th</sup> of June 2001 thru the Exchange of Notes for the Project for the Construction of a Hydraulic Laboratory Building.

The Hydraulic Laboratory Building Groundbreaking Ceremonies was held on February 07, 2002. The building permit for the said project, through the joint effort of the contractor, consultant and DPWH, was issued on 05 June 2002 after the issuance of the Environmental Preservation Area (EPA) Clearance from the Pasig River Rehabilitation Commission (PRRC).

Presently, the construction of the Hydraulic Laboratory Building is on-going. The actual percentage of progress at the end of May 2002 is 8.5%.

### D. Office Equipment/Vehicles

The JICA donated engineering, training and office equipment, books and furniture are already being fully utilized in the effective implementation of the Project ENCA, particularly at present, that training is conducted at the Admin/Training Building. These equipment are being maintained and are being taken cared of the FCSEC after the issuance of Memorandum Receipts (MR).

DPWH property numbers were obtained from the Bureau of Equipment (BOE) and also, insurance policies were already secured for Mitsubishi Rosa Mini Bus and for the three (3) Safari Vehicles from GSIS. The maintenance expenses of the aforementioned vehicles are shouldered by the PMO –FCSEC such as, tune-up, change oil, etc.

This Office has insufficient funds to finance the maintenance expenses of the office equipment and vehicle, though such expenses are sometimes being sourced out from other DPWH offices and bureaus.

## II. Manpower

The Department of Budget and Management (DBM) authorized the creation of twenty-one (21) positions effective September 01, 2000 for PMO – FCSEC.

There are four (4) Divisions in the approved Staffing Pattern, namely: Administrative & Training Division, Flood Control Engineering Division, Sabo Engineering Division and Information Technology Division.

## ANNEX V

As of May 2002, fourteen (14) positions are filled up and seven (7) positions are vacant. Evaluation and hiring for the vacant positions will resume after the lifting of election ban on July 16, 2002.

The hiring of additional manpower was undertaken in view of the voluminous work that this office is undergoing, not only on technical concerns, but administrative matters as well. There are two (2) permanent employees and two (2) contractual employees re-assigned in this Office to assist in the implementation of Project ENCA.

### A. List of FCSEC Personnel

	As of Dec. 2000	As of Dec. 2001	As of June 2002
<b>OIC, Project Director</b>	1	1	1
<b>Contractual Plantilla Position</b>			
Engineer V	-	2	1
Engineer IV	-	1	3
Engineer III	-	4	4
Budget Officer III	-	1	1
Draftsman III	-	1	1
Laboratory Technician III	-	1	1
Artist Illustrator II	-	1	1
Clerk III	-	1	1
Driver II	-	1	1
<b>Reassigned Permanent Personnel</b>	4	4	2
<b>Reassigned Contractual Personnel</b>	8	3	2
Daily Waged	2	2	2
Job Order	2	7	7
<b>TOTAL NUMBER OF PERSONNEL</b>	<b>17</b>	<b>30</b>	<b>28</b>

### B. Budget

In CY 2000, the PMO –FCSEC was manned by re-assigned personnel from other DPWH Offices. Funds for its operation during that time amounting to P 1M was sourced from its cluster head, the PMO-Major Flood Control Projects (MFCP).

In CY 2001, the amount of P 21.0 M for the O/M of the office was proposed. However, said amount was reduced to P 6.0M, which was sourced from

## ANNEX V

Preliminary Detailed Engineering (PDE) Funds, since “regular” PMOs are implementing infrastructure projects rather than this PTTC.

In CY 2002, the amount of P 5.0 M PDE fund is allocated for the Project. However, since the said amount is due for release by July or August 2002, funds for the O/M of the office were sourced for the excess of the CY 2001 Budget from the PMO –MFCP.

The proposed budget for CY 2003 is P 45M to be sourced from the Budget Proposal for the Repair and Maintenance for Flood Control and Drainage Structures and Related Facilities of the National Capital Region (NCR) under the Special Projects.

### **III. Public Information and Relation Capability**

Copies of the Project ENCA Brochure were already printed and distributed to a number of DPWH offices. The handout on “the Damage Profile of Flood Control Structures” was also published.

1,000 copies of the draft of the four-volume Technical Standards and Guidelines on the Planning and Design of Flood Control and Sabo Structures were printed.

The technical guidelines and standards regarding Planning and Design in Flood Control and Sabo Structures, before it was finally drafted has gone through a series of site investigations and interviews. Through these activities, the capabilities of the FCSEC engineers to promote the Project ENCA’s mission, vision and goals through public information were also enhanced.

These brochures, handouts, Technical Standards and Guidelines were made possible through the efforts exerted by the PMO – FCSEC personnel, in collaboration with Bureau of Design and Planning and Design personnel with the guidance of the JICA Experts.

Some engineers and administrative staffs have enhanced their capabilities in carrying out the design and layout of brochures, handout and other important documents relative hereto, with the use of Computer Aided Design (CAD) and software.

## ANNEX VI

**PMO-Flood Control and Sabo Engineering Center Personnel  
(As of June 2002)**

**Engr. RESITO V. DAVID  
OIC-Project Director (DPWH)**

<b>Flood Control Engineering</b>	<b>Sabo Engineering</b>	<b>Information Technology</b>	<b>Administrative/ Training</b>
<b>Gil I. Iturralde</b> "Gil" OIC-Engineer V	<b>Dolores Hipolito</b> "Babes" Project Manager I	<b>Galileo Fortaleza*</b> "Gali" Engineer V	- HRMO IV
<b>Alexander Borja*</b> "Alex" Engineer IV	<b>Jesse C. Felizardo*</b> "Jess" Engineer IV	<b>Leticia E. Gaminde*</b> "Letty" Engineer IV	- Accountant III
<b>Michael T. Alpasan*</b> "Michael" Engineer III	<b>Richard D. Taguba, Sr.*</b> "Richard" Engineer III	- Information Technology Officer II	<b>Esther C. Balbas*</b> "Tare" Budget Officer III
<b>Grecile Christopher Damo*</b> "Toto" Engineer III	<b>Harold Uyap***</b> "Harold" Computer Operator II	- Librarian II	<b>Melanie Limbo*</b> "Melanie" Laboratory Technician III
<b>Baldwin Priela*</b> "Bal" Engineer III (On leave)	<b>Jason Ray Gamboa***</b> "Jason" Computer Operator I	<b>Cristina Potolin****</b> "Cristy" Systems Analyst	<b>Ma. Kathrina B. Abary*</b> "Kim" Clerk III
<b>Romeo Ronda*</b> "Romy" Draftsman III		<b>Adolfo M. Rey*</b> "Dupoy" Artist Illustrator II	<b>Dominga Menor****</b> "Ingrid" Clerk II
		<b>Norma Durian****</b> "Norma" Utility Worker I	<b>Charo A. Peña***</b> "Cha" Computer File Librarian I
			<b>Jennifer R. Mahinay***</b> "Jenny" Computer Operator I
			<b>Fausto C. Chincuanco***</b> "Jun C." Computer Operator I (Alternate Driver)
			<b>Emanuel Estanislao Magno**</b> "Noel" Reproduction Machine Operator
			<b>Marilyn Dela Cruz Evale**</b> "Marilyn" Utility Worker II
			<b>Jose Herrero*</b> "Jun" Driver II
			<b>Reynaldo Alonzo****</b> "Rey" Driver I

■\* - Approved-FCSEC Plantilla  
■\*\* - Job Order  
■\*\*\* - Daily Wage Personnel

■ - Permanent Reassigned Personnel  
■\*\*\*\* - Daily Wage Reassigned Personnel

# Annex VII

## Activity Accomplishment of the Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH Stage I

as of 1 July 2002

Activity		Project Summary	Progress		2000		2001		2002		2003		2004		Outcomes	Prospect of Accomplishment	Promoting & Obstructing Factor	Problem in Plan	Suggestion
					I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV					
Output 1	Basic functions, organizations and institutions of the FCSECC will be established and secured for sustainable activities.																		
1-1	Function organization and institution.	-FCSECC was established by the Secretary order on Dec. 1999. -JICA approved the function of FCSECC as a project implementing agency.													FCSECC main building (Training unit) was completed.	Achieved as the project implementing body.	FCSECC is PMO, so that not permanent institution.	The function in future (training, study, technical support) is not clear.	
1-2	Assign sufficient number of staff members.	DBM approved FCSECC as PMO on Dec. 2001 and designated number of staffs.													28 in total, 12 engineers	Achieved so far, but difficulty is expected in 2003.	It is difficult to get more staffs than 28. It is possible to employ young engineers within budgetary limitation but their activity is also limited as counterparts.	The project established PIC, TWG and involved engineers in PS and BOD into the project.	
1-3	Get allocation of sufficient budget.	-Though the person in charge is making effort to acquire more budget, he is not familiar to the work and insufficient budget continues. -Budget execution in Philippines side is delayed.													2000: 1 million p. 2001: 6 million p. 2002: 5 million p.	Achieved despite of insufficient amount, but difficulty is expected in 2003.	FCSECC director's lack of will to acquire budget, Officer's incapability & inexperience, PMO status, Budgetary constraints of GOP		Consultation with the undersecretary.
1-4	Purchase and install necessary equipment, machinery and materials.	-Facility of the training room was installed. -As FCSECC has no budget for equipment, it is purchased by JICA's provision. -JICA instruct CPs to make effort for O/M budget.													Facility & equipment were installed almost completely.	Completed.	Philippines budget has no material procurement.	It is difficult to change budgetary system of GOP	CPs are instructed to secure O/M budget.
1-5	Formulate internal capabilities for publishing of reports and newsletters, and public relations.	-Compilation system by PCs is formulated. -CPs need more guidance to express contents more appropriately.													Project summary	Difficult.	Staffs do not understand the "logic" well to explain project activities outside. Skills of expression etc. are insufficient.		Continuous guidance shall be done. Chances of training by DPWH publicity section etc. will be provided.
1-6	Facilitate smooth implementation of construction of hydraulic laboratory.	The construction work is on going although arrangement took long time with relevant sections due to delay of construction approval procedure.													Foundation work is on going as of the end of May 2002. It will be completed within July.	Building completed by Mar. 2003, but no support so far.	Lack of DPWH's responsibility, FCSECC director's incapability, Lack of support for documentation process		
Output 2	The technical standards on Survey, Planning and Design in the field of flood control, Sabo, slope failure, and urban drainage will be upgraded and be made available for use.																		
2-1	Formulate a procedure for upgrade and review of technical standards.	The project is consulting with BOD's TWG for standards revision since 2001													There is no specific procedure. The project will propose revision procedure for future revision.	Possible.	As the project started revision work along Japanese standard without grasping the actual works of DPWH branches, the work must have been restarted.	The actual conditions of DPWH's implementation works were not grasped and target group was set unclear.	
2-2	Collect and evaluate available information/documents.	Necessary information for standards making was collected through site inspection, etc.													Report for problems of present technical standards	Completed.	From the very beginning, as most offices have not used the present technical standards, it took long time to grasp problems		
2-3	Produce technical standards.	Technical standards were compiled and they are on the formalizing process by BOD.													Tech. Standards Project version (Flood Control, Sabo, Slope, Urban Drainage/ Survey, Plan, Design)	Completed.	Technical level of CPs and BOD is low.		Initial plan included only flood control and sabo but slope and urban drainage were added along the revision work of BOD. Developed material should be called technical guide rather than standard.
2-4	Conduct studies for further clarification or adaptation of introduced technical standards.	Official notice will be issued and delivered with revised standards.															It may take long time for application because standards include survey and planning which now branch offices are not in charge.		Tour for guidance and workshop must be repeated many times.
2-5	Compile drafts of technical standards and distributes them to organizations (including private companies) concerned.	Standards will be distributed to DPWH offices all over Philippines within June.														Distribution in DPWH on July, difficult to private sector		DPWH will sell standards to private sector.	
2-6	Conduct workshops or seminars.	TWG workshop was held during draft making and a nation wide workshop was jointly held with BOD (DPWH regional offices and private consultants)													Workshop report by TWG, Nation wide workshop report	Difficult.			



# Annex VII

## Activity Accomplishment of the Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH Stage I

as of 1 July 2002

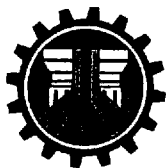
Project Summary			Progress		2000		2001		2002		2003		2004		Outcomes	Prospect of Accomplishment	Promoting & Obstructing Factor	Problem in Plan	Suggestion
I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV										
Output 3	Sufficient number of the personnel of the DPWH will be trained.																		
3-1	Form implementing section and system for training programs.	-2 groups were established in FCSEC for training implementation. -AMMS coordinator has been assigned in FCSEC. -FCSEC's training was registered in AMMS training plan. -Training room was well equipped.													Possible, improvement needed.	Training in DPWH has no function to improve daily works, as its purpose becomes training itself.			
3-2	Formulate training programs.	Training program of the 1 <sup>st</sup> for the Region I was made. Appropriate practicing sites are under selection according to the Regions.												Training program	Possible	It was revealed that classroom training only could not improve daily works. It took long time to agree to the program with Philippines side.		Classroom training will be minimized for structure plan&design and "site practices" and "individual OJT" (in each office) will be the main subject for understanding for structures planning and design.	
3-3	Produce training curriculum	FCSEC's training curriculum was developed.												Lecture resums, Lecture curriculum	Possible.				
3-4	Produce training textbooks and materials.	-Texts and materials are under consideration. -Technical guidelines will be the main text in lectures.												Technical standards & guidelines, Damaged structure report	Possible, improvement needed.			A short-term expert will be assigned for training material production.	
3-5	Purchase and install necessary equipment for training	Completed.													Completed				
3-6	Train trainers.	-Training was carried out through revision works of the technical standards/ guidelines. -Training was started to the candidate trainers recommended by each bureau. -Classroom trainings are completed by the middle of June (more OJT needed to train others)													Assistance of JE still needed, difficulty in complete achievement.	-Candidates' basic knowledge level of technical capacity is low, so that there are few experienced people who can be a trainer. -Trainers' travel allowance is not secured yet. As there is no trainer's system, only trainers' fee is paid to them. -They are skeptical if travels are beneficial for their promotion. It is not clear that they want to travel as a trainer.		Trainers' training will be provided. Trainers who can travel in regions will be prioritized for trainings. FCSEC should make effort to secure travel allowance.	
3-7	Train senior staff and engineers of DPWH	-The 1 <sup>st</sup> training will be held on June 2002. -A negotiation is on going to carry out trainings by Philippines' cost.													Engineers in 10 offices to complete all stages, 20 offices to be lectured			-To build a sustainable training system is important for FCSEC's works in the future. Therefore Philippines side is asked to carry out training by itself. -As 3 training planned Regions need to secure staff's accommodation, near practice site should be chosen to save moving time.	
3-8	Check and monitor trainee's performance during and after training.														Follow-up impossible				
3-9	Evaluate training conducted and draw up an improvement plan if necessary.														Possible in short-term				
Output 4	Basic information system for profiling damages occurred on disaster prevention structures will be established.																		
4-1	Formulate implementing plan.													Implementing plan	Completed.				
4-2	Make a detailed survey and operation plan														Completed.	All damage informations are not collected only at DPWH HQ.			
4-3	Install computer systems.	The systems were installed.												PC system	Completed.				
4-4	Collect data and information to make a database	Methods of data' information collection were transferred to CPs as OJT. Data collection is still continued.												Site survey manual	Completed.	Data are lacking. Branch offices have few structures. Data collection needs a lot of transporting time.		More effective method of data collection is considered.	
4-5	Analyze data and information to make a database	Cause analyses were carried out at each site.												Damaged structure database, Malfunctioning structure database	Completed.	There remains very little information in most offices in change, though survey forms were made.	The project proposes information recording to DPWH but that may not be viable.		
4-6	Produce a damage assessment report.	-A format of the damaged structure report is under consideration. -A method is studied to improve DPWH's works.												Damage structure report	Possible.				

# Annex VII

## Activity Accomplishment of the Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH Stage1

as of 1 July 2002

Activity Accomplishment of the Project for Enhancement of Capabilities in Flood Control and Sabo Engineering of the DPWH Stage I																	as of 1 July 2002	
Activity	Project Summary	Progress	2000		2001		2002		2003		2004		Outcomes	Prospect of Accomplishment	Promoting & Obstructing Factor	Problem in Plan	Suggestion	
			I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV	I, II	III, IV						
4-7	Formulate effective way/system to improve/modify technical standards.	Necessary revision topic will be set up and studies will be implemented.											Revision topics	Possible.				
Output 5	Research and Development	functions of the FCSEC will be established.																
5-1	Formulate research plan.	Research plans for 2 sites were formulated.											Research plan	Completed.	As DPWH has little budget for studies and engineers can not formulate a river improvement plan due to their technical incapability; F/S for proposed 2 model sites can not be carried out by the project.		Therefore themes are focused on "Study contributing to revision of technical guidelines", "Study contributing to plan/ design of actual works". F/S implementation will be studied to correspond to budgetary condition.	
5-2	Purchase necessary equipment and materials	Equipment was purchased.											Equipment	Completed.				
5-3	Install survey equipment at respective sites.	Equipment was installed and observation system was built in the offices in charge.											Installed equipment	Completed.				
5-4	Commence research works.	Observation was started.											Observed data	Completed.				
Output 6	The DPWH will form an internal system to extend the technical standards and other outputs of the project, throughout all relevant offices of the DPWH for effective implementation of services.																	
6-1	Form a technical committee for effective/efficient enhancement of DPWH	The technical committee will be discussed on JCC & PIC.												Impossible.				
6-2	Address effective and efficient use of technical standards and other outputs of the project throughout all relevant organizations of DPWH.	-An official notice will be delivered to facilitate use of standards thoroughly. -The way of promoting other outputs produced by the project will be discussed upon their completion at PIC, etc.												Difficult.				
6-3	Address appropriate procedure in order to make the technical standards drafted by the project official standards of DPWH.	After the consultation and inspection by the revision committee, standards and guidelines will be formalized and distributed.												Dept. Order to be issued so far.	The formal name of DPWH's standard is "Design Guidelines, Criteria and standards" and it covers the whole public works. Therefore, it is difficult to make the revised version produced by the project a formal revision.		The project's revised version will be applied in this field by the time DPWH's revised version formalized	
6-4	Recommend other necessary manuals, aids, supplementary training, or/and workshops for people from construction companies so that they properly implement and comply with the standards.	Necessary manuals were studied.											Manual list	Difficult.	DPWH engineers need manuals before the private sector. Technical standards/ guidelines can not improve all actual works.		A short-term expert will produce necessary materials.	
6-5	Monitor progress of usage of technical standards and other outputs of the project.													Difficult.				
6-6	Obtain feedback for further review of technical standards and improvement.													Difficult.				



Republika ng Pilipinas  
**KAGAWARAN NG PAGAWAIN AT LANSANGANG PAMBAYAN**  
**TANGGAPAN NG KALIHIM**  
Maynila

09 July 2002

**MR. JUNJI TAKAYANAGI**  
Team Leader  
JICA Evaluation Team for the  
Project for the Enhancement of  
Capabilities in Flood Control and  
Sabo Engineering of DPWH

Subject : Request for Extension of Stage I and Approval of Stage II

Dear Mr. Takayanagi:

First of all, we wish to extend our appreciation for the smooth conduct of the final evaluation of the status of Project ENCA by the Evaluation Team dispatched by JICA Tokyo from 24 June to 10 July 2002.

May we take this opportunity to convey our interest in the possible extension of Stage I (and approval of Stage II) with the following scopes of work:

1. Continue On-the-Job Training (OJT) for Planning and Design of Flood Control and Sabo Structures. (Maximum of 72 Field Offices in Luzon only)
2. OJT for the preparation of Flood Control Plan for selected Regional Offices.
3. OJT for the preparation of Sabo Plan for selected Regional and District Offices. (Mountain Area)
4. Conduct of Experiment in the Hydraulic Laboratory Building for training and research.
5. Preparation of Manual for Construction Supervision of Flood Control Works including related training for Regional Offices.
6. Preparation of Format for Inventory of River and Flood Control Structures including related training for selected Regional and District Offices.

With the assurance of honoring DPWH's commitments for the sustainability of the Flood Control and Sabo Engineering Center (FCSEC).

Very truly yours,

**TEODORO T. ENCARNACION**  
Undersecretary

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## Target Group

### Stage 1 : Survey, Planning and Design

District Office : Planning & Design Section

Regional Office : Planning & Design Division

Central Office : Planning Service, BOD

PMO

### Stage 2 : Construction and Maintenance

Regional Office : Construction Division, Maintenance Division

District Office : Construction Section, Maintenance Section

Central Office : BOC, BOM

PMO (for construction)

### Total Number of engineers of target

$$16 \text{ Regional Office} \times \text{Planning \& Design Div. (6)} = 16 \times 4 = 64$$

$$162 \text{ District Office} \times \text{Planning \& Design Sec. (5)} = 162 \times 4 = 648$$

$$= \text{Total} \quad \text{Appro. 700}$$

### Total number of trainees (or target offices)

#### Training for Planning and Design of Flood Control Structures

#### Stage I Indicator : 120 engineers

One office 4 engineers = 30 Offices

One office 2 engineers = 60 Offices

Present situation (up to end of 2002)

Lecture : 80 engineers

OJT : 12 ~ 15 Offices

## Proposal 1 On the Job Training for Planning and Design of Flood Control Structure

Region I 11  
 Region III 14 + PMO 3  
 Region IV-A 15

---

[Sub Total-I] 40 + PMO 3 = 43

Region NCR 6  
 Region IV-B 7 + PMO 1  
 Region CAR 8  
 Region II 12

---

[Sub Total-2] 33 + PMO 1 = 34

Sub Total 1 + 2 = 73 + PMO 4 = 77 \* 80% = 62

Additionally Region V 10 + PMO 1 = 11

---

[Sub Total-3] 43 + PMO 2 = 45

Sub Total 1 + 3 = 83 + PMO 5 = 88 \* 80% = 70

### Necessary Time for OJT

One year 1.5 times / month \* 10 months \* 2 party = 30 Offices

CY 2002 1.5 times / month \* 4 months \* 2 party = 12 Offices

CY 2003 1.5 times / month \* 10 months \* 2 party = 30 Offices

CY 2004 1.5 times / month \* 6 months \* 2 party = 18 Offices

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**Case 1 One year and a half Total 60 Offices**

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**Case 2 Two years Total 72 Offices**

## **Proposal 2 Flood Control Planning**

Present situation, RO/DEO don't have the comprehensive flood control plans in their jurisdiction. Flood control plan is necessary to improve the rivers effectively.

Training for Flood control planning is not included in the present training program.

It needs long time that all RO/DEO become capable to formulate flood control plans.

Basis of flood control planning is included in formulated TSG.

The manual for flood control planning should be formulated.

Training : Several Regional Offices (NCR, I, II, III, IV-A, IV-B, CAR)

It isn't so difficult to conduct only lecture, but it needs long time that each office becomes capable to formulate the real flood control plan on the pilot river by On the Job Training.

At least, PMO-FCSEC becomes capable to formulate flood control plan.

## **Proposal 3 Sabo works (planning and design)**

Present situation, RO/DEO don't conduct sabo works.

There are sediment problems in many places, not only Pinatubo and Mayon.

There is very difficult budgetary situation to conduct comprehensive sabo projects by RO/DEO.

There is the possibility to conduct the small scale of sabo works to protect the High Ways from sediment related disasters.

Training for Sabo Works is not included in the present training program.

Technical Standards and Guidelines for Sabo and Natural Slope Failure are formulated.

Training : Several Regional Offices and District Engineering Offices (CAR, I, II, III)

To make the lecture in each Region.

To conduct pilot sabo projects with each office.

At least, PMO-FCSEC becomes capable to plan and design sabo works.

#### **Proposal 4 Experiment**

FCSEC plans to conduct the experiments for training and research.

The engineers of DPWH don't have experience of operation of experiment.

DPWH needs the technology transfer on experiment under the cooperation of JICA.

##### **For Training**

DPWH engineers should know the hydraulic and sediment phenomena especially what might be occurring during flooding time.

Example: Relationship between river gradient, velocity and sediment movement

Effect of bridge piers (scouring)

Effectiveness of spur dikes

FCSEC plans to conduct the experiments to show the hydraulic phenomenon on the occasions of any engineering training courses not only the trainings conducted by FCSEC.

##### **For Research**

There are two main categories of research with experiment

One is further revision of Technical Standards and Guidelines.

- Spacing of spur dikes
- Sediment movement phenomenon of fine sediment of Pinatubo and Mayon

The other one is to determine the most appropriate plan and design

- Spacing, length and height of spur dikes
- Alignments of river
- Design of ground sill, weir, etc



### **Proposal 5 Construction**

It is no necessary to formulate Technical Standards and Guidelines for Construction.

It is general matter for all construction works not only flood control works.

The mandate of DPWH engineers is supervise the construction works of contractors.

Formulation : Manual for supervision of flood control works

(Checklist of supervision)

Training : Several Regional Offices ( NCR, Region III )

Appropriate supervision should be confirmed in real construction works.

So the pilot project areas have to be limited.

( No time for District Engineering Offices)

Regional Offices will instruct to DEO how to utilize the checklist.

### **Proposal 6 Maintenance**

Present situation, the structure inventory information is insufficient.

There is little basic information of existing structure and rivers in the jurisdiction of each office.

(Map, total numbers, location, information of design and construction, etc.)

It is no necessary to formulate Technical Standards and Guidelines for Maintenance.

The appropriate maintenance works might be proposed with "Typical maintenance works"

Example : If the degradation is being continued, additional toe protection of revetment should be installed.

If the scouring is evident, toe protection of revetment should be installed.

If the gully erosion is evident, sodding should be treated.

However, the maintenance budget is very limited, it is very difficult to realize the proposed maintenance works under the present situation.

Formulation : Format for Inventory of rivers and flood control structures

Training : A few Regional Offices and District Engineering Offices in same areas  
(NCR, Region III, I )

It takes time to conduct the inventory survey for all cover areas.

So the pilot project areas have to be limited.

BOM and FCSEC will follow up other Regions.

ADMIN VILL

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