

Republic of the Philippines
Department of Public Works and Highways
Flood Control and Sabo Engineering Center

Case Study

Philippines: A Technical Cooperation Project on Flood Control and Sabo Engineering

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Phase II

Jan. 10, 2000 Jul. 01, 2005

Start

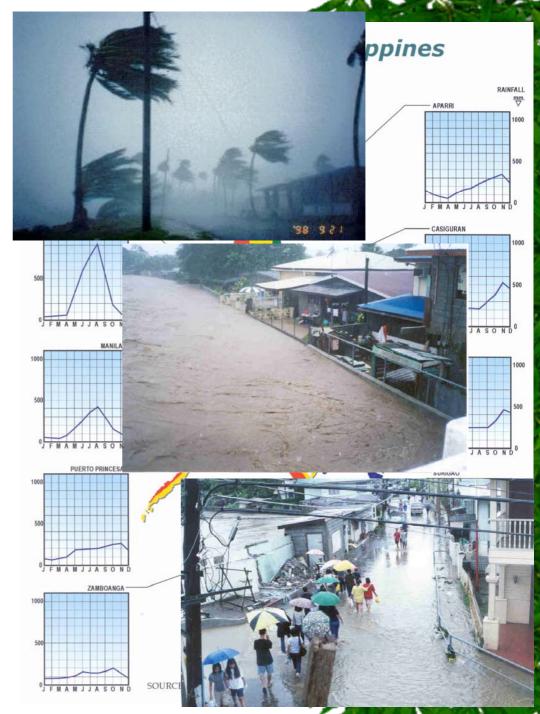
Jun. 30, 2005 Present

Finish

2006/1/25

The Philippines Background

- 20 typhoons affect the country every year
 - > Intense Rainfall
 - Strong Winds
 - Overflowing of Waterways
 - Inundation and deposition of sediment in the floodplains



The Philippines

Background

- Susceptible to Water Related Hazards
 - Flooding
 - Debris and Mud Flows
 - Landslide
- 7, 107 islands
- Land Area : 298,170 km²
- Population : 82 Million
- Coastline : 32,400 km



Super Goal



"Water induced disasters will be mitigated through improved effectiveness of disaster prevention facilities and structures of the DPWH in accordance with technical standards and guidelines developed by the Project"



Overall Goal

"The DPWH will be fully capable in planning, design, construction and maintenance of Flood Control and Sabo Facilities in order to cope with water induced disasters"





Project Purpose

"Enhancement of Capability of DPWH in planning, design, construction and maintenance of Flood Control and Sabo Facilities"







Philippines: Technical Cooperation Project on Flood Control and Sabo Engineering

Accomplishments of Project ENCA



Project Outputs

Establishment of FCSEC Basic Functions, Organizations Institutions





Accomplishments

- 1. Dept. Order No. 237, series of 1999 Creating FCSEC was issued in December 1999 and the Technical Cooperation Project commenced in January 2000.
- 2. Inputs from the Philippine Government Side
 - a. 4-storey Administration/Training Building constructed
 - b. 2-storey Dormitory Building constructed
 - c. 21 contractual plantilla positions approved by DBM
 - d. 15 technical and administrative staff assigned
- 3. Inputs from the Japanese Government Side (thru JICA)
 - a. 3 Nissan Safari vehicle and 1 Mitsubishi Mini Bus
 - b. Survey and investigation instrument
 - c. Hydraulic Laboratory Building and research equipment / facilities

Project Outputs

Formulation of Technical Standards, Guidelines and Manuals







Accomplishments

- Technical Standards & Guidelines for Flood Control and Sabo Works
 - Vol. 1 Planning and Design of Flood Control Structures
 - Vol. 2 Urban Drainage
 - Vol. 3 Sabo Works
 - Vol. 4 Natural Slope Failure Countermeasures
- 2. Manual on Flood Control Planning
- 3. Typical Design Drawings of Flood Control Structures
- 4. Specific Discharge Curve, RIDF, Isohyet of Probable 1-Day Rainfall
- 5. Manual on Rainfall Computation with HEC-HMS
- 6. Manual on River Analysis with HEC-RAS
- 7. Manual on Design of Flood Control Structures
- 8. Manual on Construction Supervision of Flood Control Projects
- 9. Manual on Maintenance of Flood Control and Drainage Structures

Project Outputs

3. Sufficient number of DPWH personnel are trained





Accomplishments

- 1. 25 key engineers from selected DPWH offices trained as trainors/lecturers
- 2. 12 counterpart personnel trained in Japan
- 3. 5 Batches of Training on Planning and Design of Flood Control Structures
- 4. 4 Batches of Training on Maintenance of Flood Control Structures and Drainage Structures
- 5. 3 Batches of Training on Construction Supervision of Flood Control Projects

1 Batch = 30 Participants

Project Outputs

4. Establishment of Database and Information System



| Marketing | Mark

Accomplishments

- 1. 1 Database on flood control Information System developed
- 2. 2 Manuals on Damage-Profile of Flood Control Structures (1st/2nd Editions) formulated
- 3. All available studies (MP/FS) conducted by Consultants secured and filed in FCSEC Library



Project Outputs

Research and Development





Accomplishments

- 1. 4 rainfall gauging stations installed in candidate pilot project areas
- 2. 1 water level gauging station installed in Sta. Fe River, Nueva Vizcaya, Luzon Island
- 3. 7 technical staff trained for basic hydraulic experiment operation
- 4. 3 hydraulic research activities conducted under JICA Experts supervision
 - a. Relationship of Spacing and Direction of Spurdike
 - b. Fine Sediment Movement in Pasig-Potrero River
 - c. Badoc River Model Experiment

Project Outputs

6. DPWH Internal Mechanism
Extend outputs of the Project
throughout all relevant offices of
the DPWH for effective
implementation of flood control
projects.



Accomplishments

1. Creation of Joint Coordinating Committee (JCC), headed by Undersecretary of the DPWH for monitoring activities and drawing up plan for continuation of effective, innovative measures to assure sustainability. The Project Implementing Committee (PIC), with its working arm the Technical Working Group (TWG) was created to provide technical assistance and make recommendation to JCC on how to improve/maximize outputs.



Philippines: Technical Cooperation Project on Flood Control

and Sabo Engineering

Problems Encountered / Actions Taken



Problems Encountered / Actions Taken

Issues / Concern	Japanese Input	Philippine Input	Remarks
Insufficient Assignment of Counterpart Personnel	Chief Advisor 30MM Project Coordinator 30MM River Engineering 25MM Sabo Engineering 25MM Maintenance Engineer 25MM Construction Engineer 25MM Total 160MM	11 - Technical Staff 13 - Administrative Staff	 More technical personnel is needed to do the work assignment and to conduct hydraulic experiment and for operation and maintenance of buildings/equipment. Casual (job order) personnel were assigned to FCSEC to support the technical staff. More technical staff is programmed in the DPWH Rationalization Plan.
Delayed Disbursement of Local Operational Budget	1999 1,000T ¥ 2000 3,000T 2001 15,750T 2002 10,800T 2003 4,700T 2004 10,400T Total 46,650T ¥	2004 10M Peso 2003 10M (Actual 6.5M Peso) 2002 4M 2001 6M 2000 6M	 There is delay in disbursement because of economic constraint of the national government. The CY2004 P10M was disbursed, after discussion with DBM on the importance of the Project.

Problems Encountered / Actions Taken

Issues / Concern	Japanese Input	Philippine Input	Remarks
Under Utilization of Hydraulic Laboratory Building	Cost of JICA-Grant Hydraulic Laboratory Building including appurtenant equipment: 799 M ¥	DPWH Building and Facilities: Administrative Bldg. Dormitory Bldg. (Both buildings were constructed using local funds by the Philippine Government.)	 Not enough local personnel to concentrate on research activity. Only a few staff are assigned to conduct hydraulic experiment. We have opened the use of laboratory to other related offices e.g. UP and Municipality of Infanta.

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Philippines: Technical Cooperation Project on Flood Control and Sabo Engineering

Lessons Learned

Lessons Learned / Assessments

CRITERIA

Post Evaluation Results

1. RELEVANCE





- Project ENCA that aims to strengthen the capabilities of DPWH in research and development and human resources development is consistent with the policies of the donor (GOJ) and recipient (GOP) needs and priorities.
- The goals and objectives of Project ENCA are consistent with the priority issues of Official Development Assistance (ODA) of Japan, especially on addressing environmental problems and natural disasters.
- The Medium Term DPWH Infrastructure Development Plan (2001-2004) includes as a policy the "Strengthening of the Flood Control and Sabo Engineering Center (FCSEC) to conduct basic and applied research and development feasibility studies, serve as information center and implementation of sabo engineering programs".

CRITERIA	Post Evaluation Results	
2. EFFECTIVENESS	 Considering the substantial number of engineers benefiting from the project, both project purpose and immediate goals were achieved in spite of Austerity Measures adopted by the national government. 	
3. EFFICIENCY	A measure of the production of outputs of the Project in relation to the total inputs shows that the donated equipment and resources were generally utilized in the project activities and contributed to the achievement of the objectives.	
4. IMPACT	 The DPWH in general appreciate the outputs of the Project as these contributed in improving the technical capability of the district engineering offices. With the adverse impact of recent disasters, the people and government have become more aware on the 	
NOOL CONTX	and government have become more aware on the importance of flood control and sabo engineering.	

Lessons Learned / Assessments

CRITERIA

Post Evaluation Results

5. SUSTAINABILITY





- It is recommended to further enhance the technical capability of counterpart personnel through training. Also immersion training is necessary to put into practice the knowledge gained through implementation of pilot projects.
- For the sustainability of the Project gains, FCSEC should be organized as a permanent office under the DPWH, with clear mandates. Once this is done, regular budget and permanent personnel will be provided. Linkages with other bureaus and offices dealing with flood control and water disaster management will be established.

Proposed DPWH Rationalization Plan

