

**DATA BOOK E**  
**Minutes of Meeting**

# **THE STUDY ON THE NATIONWIDE FLOOD RISK ASSESSMENT AND THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS IN THE REPUBLIC OF THE PHILIPPINES**

## **FINAL REPORT VOLUME IV**

### **DATA BOOK E MUNITES OF MEETING**

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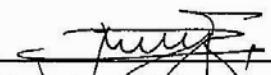
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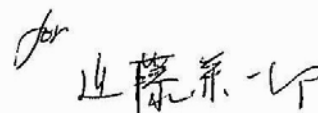
## **E.1**

### **Minutes of Technical Working Group Meeting**

*MINUTES OF MEETING*  
*ON*  
*THE FIRST TECHNICAL WORKING GROUP MEETING*  
*OF*  
*THE STUDY*  
*ON*  
*THE NATIONWIDE FLOOD RISK ASSESSMENT*  
*AND THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS*  
*IN*  
*THE REPUBLIC OF THE PHILIPPINES*

*MANILA, October 2, 2006*

  
\_\_\_\_\_  
Ms. Rebecca T. Garsula  
Engineer V, Planning Service  
Chair of Technical Working Group  
Department of Public Works and  
Highways

  
\_\_\_\_\_  
Mr. Yoshiharu Matsumoto  
Team Leader  
JICA Study Team

## **I. General**

The meeting for the presentation of the Inception Report for the Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines (hereinafter referred to as "the Study") was held on October 2, 2006 at Room 306 of DPWH Central Office, Manila.

The list of attendance is shown in the Attachment.

## **II. Discussions**

First, Mr. Yoshiharu Matsumoto, the Leader of the Study Team, explained the contents of the Inception Report to the Philippine side. The contents of the Inception Report were accepted in principle by the Philippine side.

In the meeting, the following confirmation and comments on the Study were made:

### **1. Comment on Institutional Arrangement**

#### **1) TWG Meetings**

The Philippine side (DPWH) proposed that TWG meetings should be held once every two months in principle in order to discuss the progress of the Study including criteria for the selection. In addition, urgent meetings should be held for matters that need discussion and decision, e.g., the final list of the flood prone areas.

The Study Team agreed on this matter.

### **2. Comments on the Inception Report**

#### **1) Identification of the Flood Prone Areas**

The Philippine side (DPWH) informed that based on the partial result of the survey conducted by the District Engineering Offices of the DPWH, there were 586 flood prone areas (cities /municipalities), and out of these, only 212 areas were included in the 947 flood prone areas identified by the NDCC.

The Philippine side (DPWH) advised the Study Team to start with the 212 flood prone areas in the NDCC list, which areas were also identified by the DPWH surveys, while the number of the flood prone areas will be fixed at 947. Therefore, the identification of the remaining 735 flood prone areas shall be finalized by the DPWH. The Philippine side (DPWH) assured that the DPWH shall



validate flood prone areas through: a) completing the survey, b) analyzing the congressional fund project expenditures, and c) other relevant records.

The Study Team agreed and stressed that the deadline was October 9, 2006.

## **2) Contents of Non-structural Measures**

The Philippine side (PAGASA) stressed that not only flood forecasting and warning systems but also other non-structural measures should be considered in the Study.

The Study Team agreed.

## **3) Selection of the Projects**

The Philippine side (PAGASA) asked whether the selection of the projects was based on the cities/municipalities or the river basins.

The Study Team answered that the selection would be based on the river basins.

## **4) Screening Criteria**

The Philippine side (DPWH) stressed that contents of the first and second screening criteria should be refined and improved based on obtained data and information. The Philippine side (DPWH) also proposed that the screening criteria would be discussed in the next TWG meetings.

The Study Team agreed.

## **5) Timing of the Education and Training Workshop for DPWH Personnel on River Engineering**

The Philippine side (DPWH) requested that the workshop should be held in the middle of 2007, so as to utilize the technology, e.g., screening procedures and methodology. The Philippine side (PAGASA) also requested that if there were seminars or workshops, including trainings or technology transfers applicable for PAGASA, e.g., non-structural measures, PAGASA should be invited to the seminars or workshops.

The Study Team replied that the both items would be clarified.

## **6) Period of Project Implementation**

The Philippine side (DPWH) informed that projects under the current MTPDP were already published and can not be changed anymore, thus the period of 2004-2010 of MTPDP should be



excluded from the period proposed by the Study Team. However, the proposed projects in MTPIP, which were prepared by the DPWH, can be changed/updated.

The Study Team agreed.

**3. Deadline of Comments from the TWG Members**

The Philippine side (DPWH) informed that other comments from the TWG members should be submitted within one week.

The Study Team agreed.



**ATTACHMENT**

The list of participants to the First Technical Working Group Meeting for the Explanation of the Inception Report held on October 2, 2006 at Room 306 of DPWH Central Office, Manila:

**The First Technical Working Group Meeting**

**Room 306, DPWH Central office, Manila**

**October 2, 2006**

**2:00 PM-5:00 PM**

**ATTENDANCE LIST****Philippine Side**

NAME	POSITION	OFFICE
Rebecca T. Garsuta	Engineer V	DPWH, Planning Service
Susan Espinueva	Sr. Weather Specialist	PAGASA
Dolores Hipolito	Project Manager II	PMO-FCSEC
Alejandro Sosa	Project Manager II	PMO-MFCP-II
Leonila Mercado	Engineer IV	PMO-MFCP-I
Aquilina T. Decilos	Engineer III	DPWH, Planning Service
Grecile Christopher R. Damo	Engineer III	PMO-FCSEC
Orlando M. Casio	Engineer III	DPWH, Planning Service
Madelyn B. Loyola	Engineer III	DPWH, Planning Service
Estelita Leonado	Economist II	DPWH, Planning Service
Jaime T. Surot, Jr.	Engineer II	DPWH, Planning Service
Gloria Atilano	Staff	DPWH, Planning Service

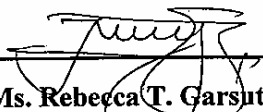
**Japanese Side**

NAME	POSITION	OFFICE
Shunta Dozono	JICA Expert	DPWH-P.S.
Takeo Mitsunaga	JICA SABO Expert	PMO-FCSEC
Yoshiharu Matsumoto	Team Leader/Flood Control and Flood Damage Reduction Plan	JICA Study Team
Kenichiro Kondo	Co-Team Leader/River Engineering-1 (Flood Risk Assessment-1/Structural Measures)	JICA Study Team
Kenji Toyota	River Engineering-2 (Flood Risk Assessment-2)	JICA Study Team



***MINUTES OF MEETING  
ON  
THE SECOND TECHNICAL WORKING GROUP MEETING  
OF  
THE STUDY  
ON  
THE NATIONWIDE FLOOD RISK ASSESSMENT  
AND THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS  
IN  
THE REPUBLIC OF THE PHILIPPINES***

*MANILA, December 15, 2006*



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**Ms. Rebecca T. Garsuta  
Engineer V, Planning Service  
Chair of Technical Working Group  
Department of Public Works and  
Highways**



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**Mr. Yoshiharu Matsumoto  
Team Leader  
JICA Study Team**

## **I. General**

The meeting for the presentation of the Progress Report for the Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines (hereinafter referred to as "the Study") was held on December 15, 2006 at the Operation's Room, Office of the Secretary, 2<sup>nd</sup> Floor of DPWH Central Office, Manila.

The list of attendance is shown in the Attachment.

## **II. Discussions**

First, Ms. Rebecca T. Garsuta, the Chairwoman of the Technical Working Group (TWG), called the meeting to order and discussed to the participants the summary of the TWG Minutes of Meeting held on October 2<sup>nd</sup> 2006 held at the Development Planning Division, Planning Service.

Then, Mr. Yoshiharu Matsumoto, the Leader of the Study Team, informed the members that thirty (30) copies of the Progress Report had been submitted to the Philippine side, and he proceeded to explain the contents of the Progress Report to the Philippine side. The contents were accepted in principle by the Philippines side.

In the meeting, the following confirmation and comments on the Study were made:

### **1. Methodology of First Screening**

#### **1) Data on Flood Casualty and Frequency of Floods**

The Philippine side (NEDA) pointed out that flood casualty data was used for the both indexes: flood casualties in socio-economic condition, and flood frequency in natural condition. In this connection, NEDA questioned whether this may be computed as double count, or not.

The Study Team answered that the parameter on the number of flood casualties is considered as an index for socio-economic condition while the flood frequency is an index for natural condition. In the Study, the flood frequency is also estimated based on the flood casualty data. This is because the available data for the flood frequency is limited. Generally, the number of the flood casualties might be directly related with flood frequency, but level of the relationship is different. Thus, there is no double counting on the computation.

The Philippine side (NEDA) agreed.



## **2) Data for Screening**

JICA expert stressed that the data used for the screening should be official data, i.e., data from NDCC, and Philippine side can modify the first screening using official data anytime.

The Philippine side agreed.

## **3) Clarification of the Manner of Putting the Score**

The Philippine side (FCSEC) pointed out that the total score of the indexes on flood casualties, damages and frequency occupies 45 points (at maximum) and 75 points as total score. In this regard, FCSEC stressed the score on flood frequency should be lowered since this is not directly reflected to casualties and damages.

Following to this, NEDA expressed the manner of putting the score should be clarified.

The Study Team answered that the relative ranking of the basins will not change even absolute point changes with lowered weighting. In this connection, the Study Team also answered that sensitivity analysis will be carried out in order to confirm the score to be used in the evaluation.

## **2. Selection of 100 River Basins**

### **1) River Basins Implemented or Scheduled by DPWH**

The Study Team proposed that the river basins, which have already implemented or scheduled for implementation by DPWH such as Laoag, Cagayan, Pampanga, Pasig, should be excluded from the selection of 100 river basins.

The Philippine side agreed to adopt this method of selection proposed by the Study Team.

### **2) Major River Basins**

The Study Team proposed that the major river basins should be principally selected as the 100 river basins, excluding the above-said major river basins.

The Philippine side agreed to adopt this method of selection proposed by the Study Team.

### **3) Dangerous River Basin on Flood Events**

The Study Team proposed that the dangerous river basins on flood events should be extracted preferentially.

The Philippine side concurred with the Study Team's suggestion.



#### **4) Selection of a few River Basins for Respective Region**

The Study Team proposed that the extraction of a few river basins for respective region should be considered.

The Philippine side requested to prepare the selection results for extraction of a few river basins on respective region.

The Study Team agreed to prepare some selection results during the homework stage in Japan.

#### **5) Allocation of Small River Basins**

The Philippine side (DPWH) pointed out that all the selected river basins has the area of more than 40 km<sup>2</sup>.

In response to this comment, the Study Team proposed that the remaining river basins for the 100 river basins are allocated with a certain ratio for the principal and small river basins (i.e., 70:30).

The Philippine side requested to prepare the selection results for allocation of principal and small river basins.

The Study Team agreed to prepare some selection results during the homework stage in Japan.

#### **6) Selection Considering Strategies of Related Agencies**

JICA expert stressed that concerned agencies other than DPWH should establish their policies and strategies in official manner to consider the prioritized 100 river basins.

The Philippine side agreed on the suggestion.

### **3. Others**

#### **1) Direction of the Study**

JBIC stressed the direction of the Study should be decided through discussions with the participation of other related agencies.

The Philippine side (DPWH) answered that the members of TWG already include the concerned agencies, and the workshops will include LGU representatives, which will be conducted later.

JBIC understood on the matter.

## **2) Data Analysis on LGU's Capacity on Flood Control Projects**

JBIC questioned if the data analysis on LGU's capacity of flood control projects is considered in the Study.

The Philippine side (DPWH) answered the analysis is not included in the TOR of the Study.

JBIC understood on the matter.

## **3) Technical Session**

The Philippine side (DPWH) questioned what kind of expertise is necessary for the local counterparts to be acquired, which can be applied in the Study.

The Study Team answered the skills of GIS and civil engineering are necessary.

Following to this, the Philippine side (DPWH) requested to hold special technical sessions on GIS in order to update the database for the Study in the context of the technical transfer knowledge.

The Study Team agreed.

## **4) Deadline of Comments from the TWG Members**

The Philippine side (DPWH) informed that other comments from the TWG members should be submitted on/or before January 5, 2007.

The Study Team agreed.

## **5) TWG Meeting**

The Philippine side (DPWH) proposed that another TWG meeting will be held in order to verify the first screening in January 2007 before the conduct of the 2<sup>nd</sup> Steering Committee Meeting.

The Study Team agreed.



**ATTACHMENT****THE STUDY ON NATIONWIDE FLOOD RISK ASSESSMENT AND  
THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS IN THE PHILIPPINES**

**The Second Technical Working Group Meeting  
OPERATION'S Room, 2<sup>ND</sup> FLOOR, DPWH Central office, Manila  
December 15, 2006 (2:00 PM-5:00 PM)**

**ATTENDANCE LIST****Philippine Side**

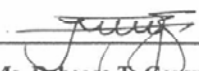
NAME	POSITION	OFFICE
Rebecca T. Garsuta	Engineer V	DPWH, PS
Narciso Prudente	OIC-Chief, Water Resources Development, Infrastructure	NEDA
Alejandro A. Sosa	Project Manager II	DPWH, PMO-MFCP-II
Dolores M. Hipolito	Project Manager II	DPWH, FCSEC
Ignacia M. Ramos	Supervising Environmental Management specialist	ESSO
Tirso R. Perlada, Jr.	Engineer IV	DPWH, BOD
Leonila P. Mercado	Engineer IV	DPWH, PMO-MFCP-I
Joanna Ruvi Ayuson	Science Research Specialist-I	PHIVOLCS
Rosalie C. Pagulayan	Weather Specialist-I	PAGASA
Leonardo P. Sanchez	Engineer III	DPWH, PMO-MFCP-I
Aquilina T. Decilos	Engineer III	DPWH, PS
Orlando M. Casio	Engineer III	DPWH, PS
Gloria L. Atillano	Staff	DPWH, PS

**Japanese Side**

NAME	POSITION	OFFICE
Shunta Dozono	JICA Expert	DPWH, PS
Takashi Baba	Representative	JBIC
Mari Sawa	Country Officer	JBIC
Catherine G. Vidar	Project Officer	JBIC
Yoshiharu Matsumoto	Team Leader/Flood Control and Flood Damage Reduction Plan	JICA Study Team
Kenichiro Kondo	Co-Team Leader/River Engineering-1 (Flood Risk Assessment-1/Structural Measures)	JICA Study Team
Kenji Toyota	River Engineering-2 (Flood Risk Assessment-2)	JICA Study Team

**MINUTES OF MEETING**  
**ON**  
**THE THIRD TECHNICAL WORKING GROUP MEETING**  
**OF**  
**THE STUDY**  
**ON**  
**THE NATIONWIDE FLOOD RISK ASSESSMENT**  
**AND THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS**  
**IN**  
**THE REPUBLIC OF THE PHILIPPINES**

*MANILA, January 10, 2007*



Ms. Rebecca T. Garsuta

Engineer V, Planning Service  
Chair of Technical Working Group  
Department of Public Works and  
Highways



Mr. Kenichiro Kondo

Co-Team Leader  
JICA Study Team

## **I. General**

The meeting for the presentation of the results of the selected river basins on respective region, based on the Progress Report for the Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines (hereinafter referred to as "the Study"), was held on January 10, 2007 at the Operation's Room, Office of the Secretary, 2<sup>nd</sup> Floor of DPWH Central Office, Manila.

The list of attendance is shown in the Attachment.

## **II. Discussions**

First, Ms. Rebecca T. Garsuta, the Chairwoman of the Technical Working Group (TWG), called the meeting to order and discussed to the participants the approval of the 2<sup>nd</sup> TWG Minutes of Meeting held on December 15<sup>th</sup>, 2006 at the Operation's Room, Office of the Secretary, DPWH Central Office.

The Philippine side stressed to amend a part of the 2<sup>nd</sup> TWG Minutes of Meeting based on the TWG comments. The Study Team agreed to amend the part of 2<sup>nd</sup> TWG Minutes of Meeting based on TWG members comments.

Then, Mr. Kenichiro Kondo, the Co-Team Leader of the Study Team, explained the results of the selected 100 river basins with the selection criteria, which had been proposed by the Study Team, to the Philippine side. The contents of the selection results were accepted in principle by the Philippines side.

In the meeting, the following confirmation and comments on the Study were made:

### **1. Consideration of Scoring on Each Evaluation Indexes**

#### **1) Concentration of Score on Evaluation of Socio-Economic Condition**

The Philippine side pointed out that the histograms of score distribution (full scores of 5 or 15 scores) on the evaluation indexes of S2 (Population), S4 (Production), S6 (Built-up Area Ratio), S7 (Flood Casualties) and S8 (Flood Damages) show the excessive concentration on one scores, and asked whether the evaluation results for those indexes are appropriate to select the 100 river basins.

The Study Team replied to review the score distribution system, which can clarify the characteristics of the river basin data for those indexes.

The Philippine side agreed on the suggestion of the Study Team.



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## **2) Score for Flood Frequency based on Flood Casualties**

The Philippine side (NEDA) stressed that 10 scores of evaluation index for flood frequency based on flood casualties seems to be too high as compared with 5 scores of flood frequency based on flood damages.

The Philippine side (DPWH) commented that the frequency of flooding does not really refer to the number of flood occurrence, and requested that the Study Team considers to clarify such a parameter or if not, lower the score.

The Study Team replied to change 10 scores as full scores of evaluation index for flood frequency based on flood casualties into 5 scores.

The Philippine side agreed.

## **3) Data for Historical Calamity**

JICA Sabo expert (FCSEC) asked whether the data for the historical calamities like Ormoc City is evaluated in the first screening, and suggested that if not, the river basins, which have already experienced the great flood damages in past, should be included as a part of the selected 100 river basins.

The Study Team replied to agree the suggestion, and expressed that such river basins are incorporated in the list of the selected 100 river basins as "Dangerous River Basins", studied by DPWH (refer to the report of Water & Floods by DPWH in 2004). With field reconnaissance for additional data collection, the list of the selected 100 river basins will be revised based on the additional information, if necessary.

JICA expert agreed.

## **2. Flood Damage Reduction Plan for Selected Several River Basins after Second Screening**

The Philippine side (NEDA) requested that not only the flood structural measures but also non-structural measures, which are considered for the landslide and sediment disaster with sediment transportation model, will be carried out to formulate the Feasibility Study (hereinafter referred to as F/S) for the selected several river basins after second screening.

The Study Team replied that the F/S for selected river basins are not contained in the TOR of the Study. Instead, rough project evaluation, including non-structural measures, is carried out for the selected several river basins after the second screening.

The Philippine side understood.

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### **3. Definition of Small River Basins**

The Philippine side (DPWH) pointed out that, among the small river basins in the list of the selected 100 river basins, are those with catchment area of more than 40 km<sup>2</sup> and, requested the Study Team to carefully review the estimation of catchment areas.

The Study Team replied that the major and principal river basins are based on NWRC designation, and then the rest of river basins were named as small river basins. However, as pointed out, some of the river basins have more than 40 km<sup>2</sup> catchment areas, so that the Study Team explained to change the name of "Small River Basins" into "Other River Basins".

In this connection, the Philippine side (the Chairwoman) suggested that the said matter shall be discussed together with NWRB in the next TWG meeting.

The Study Team agreed on the suggestion.

### **4. Comments of NEDA on the Progress Report**

At the end of the TWG meeting, the Philippine side (the Chairwoman) introduced the comments from NEDA issued by January 8<sup>th</sup> 2007 on the Progress Report, and suggested that the discussion and explanation for the comments shall be carried out in the next TWG meeting.

The summary of the comments from NEDA are shown as follows:

- Justification/clarification for frequency of flooding as one of the major parameter and consideration of impact of flooding occurrences per year
- Clarification of scoring system based on the parameter/criteria proposed by the Study Team
- Consideration for institutional arrangement, particularly on the ownership and responsibility of the implementation
- Clear delineation of responsibilities between RBCO and NWRB
- Request of the consideration with sediment transport modeling and forest/watershed management for the selected several river basins after second screening
- Suggestion to consider identifying/adopting alternative/innovative or non-traditional approaches
- Coordination of the problem of conflicts of jurisdictions among concerned agencies

The Study Team agreed on the suggestion.



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**ATTACHMENT**

**THE STUDY ON NATIONWIDE FLOOD RISK ASSESSMENT AND  
THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS IN THE PHILIPPINES**

**The Third Technical Working Group Meeting  
OPERATION'S Room, 2<sup>ND</sup> FLOOR, DPWH Central office, Manila  
January 10, 2007 (9:00 AM-12:00 PM)**

**ATTENDANCE LIST**

**Philippine Side**

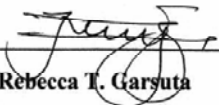
NAME	POSITION	OFFICE
Rebecca T. Garsuta	Engineer V	DPWH, Planning Service
Julius D. Borja	Project Manager/Co-Team Leader	MFCD-CII
Narciso Prudente	OIC-Chief, Water Resources Development, Infrastructure	NEDA
Dolores Hipolito	Project Manager II	PMO-FCSEC
Agnes T. Palacio	Chief, Operations Division	OCD
Leonila Mercado	Engineer IV	PMO-MFCP-I
Tirso R. Perlada, Jr.	Engineer IV	DPWH, BOC
J.C.Felizardo	Engineer IV	PMO-FCSEC
Lynn M. Losantoi	Science Research Specialist	PHIVOLCS
Socrates Paat, Jr.	Weather Specialist	PAGASA
Aquilina T. Decilos	Engineer III	DPWH, Planning Service
Orlando M. Casio	Engineer III	DPWH, Planning Service
Leonardo P. Sanchez	Engineer III	DPWH, PMO-MFCP-I
Grecile Christopher R. Damo	Engineer III	PMO-FCSEC
Evth Renan C. Florendo	Engineer II	MFCDP-II
Estelita Leonado	Economist II	DPWH, Planning Service
Gloria Atillano	Staff	DPWH, Planning Service

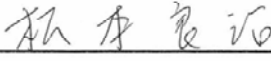
**Japanese Side**

NAME	POSITION	OFFICE
Shunta Dozono	JICA Expert	DPWH-P.S.
Yosho Tokunaga	JICA Chief Adviser	PMO-FCSEC
Takeo Mitsunaga	JICA SABO Expert	PMO-FCSEC
Kenichiro Kondo	Co-Team Leader/River Engineering-1 (Flood Risk Assessment-1 /Structural Measures)	JICA Study Team
Kenji Toyota	River Engineering-2 (Flood Risk Assessment-2)	JICA Study Team
Hideki Konno	Coordinator	JICA Study Team

**MINUTES OF MEETING  
ON  
THE FOURTH TECHNICAL WORKING GROUP MEETING  
OF  
THE STUDY  
ON  
THE NATIONWIDE FLOOD RISK ASSESSMENT  
AND THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS  
IN  
THE REPUBLIC OF THE PHILIPPINES**

**MANILA, March 1, 2007**

  
\_\_\_\_\_  
**Ms. Rebecca T. Garsuta**  
Engineer V, Planning Service  
Chairwoman of Technical Working Group  
Department of Public Works and  
Highways

  
\_\_\_\_\_  
**Mr. Yoshiharu Matsumoto**  
Team Leader  
JICA Study Team

## **I. General**

The meeting for the presentation of the on going activities and the criteria for the second screening for the Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines (hereinafter referred to as "the Study"), was held on March 1, 2007 at the Operation's Room, Office of the Secretary, 2<sup>nd</sup> Floor of DPWH Central Office, Manila.

The list of attendance is shown in the Attachment.

## **II. Discussions**

First, Ms. Rebecca T. Garsuta, the Chairwoman of the Technical Working Group (TWG), called the meeting to order.

Then, Mr. Yoshiharu Matsumoto, the Team Leader of the Study Team, proceeded to explain the on-going activities and the criteria for the second screening. After the presentation of Mr. Matsumoto, Mr. Bhuvneshwar P. Sah (member of the Study Team) briefed the results of GIS study and the GIS special session. The contents were accepted in principle by the Philippine side.

In the meeting, the following confirmation and comments on the Study were made:

### **1. Comments on the First Screening**

#### **1) Flood Prone Areas and Definition of River Basins**

The Philippine side (NEDA) expressed there was understanding that the Study Team would have discussed with the Steering Committee members, in particular PHIVOLCS and NWRB, and settled the issues on the first screening criteria, e.g., the flood frequency, flood prone areas and the definition of river basins, before the 4<sup>th</sup> TWG meeting. NEDA asked to explain the outcome of such meeting.

The Study Team answered that the issue of the flood prone areas was already settled down in the 2<sup>nd</sup> Steering Committee meeting. The Study Team also replied that its member had visited NWRB to settle the issue of the definition of river basins.

DPWH suggested the Study Team to have discussion with NWRB for them to officially concur or agree on the findings of the Study in relation to the number of principal rivers.

The Study Team agreed.

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## **2) Sensitivity Analysis**

The Philippine side (DPWH) pointed out that sensitivity analysis is necessary because the results of the first screening will change if the criteria changed.

The Study Team answered that the sensitivity analysis was already conducted in order to verify the criteria from the viewpoint of scoring system, and the analysis resulted into insignificant change in the final results.

The Chairwoman commented that this issue was already resolved, and requested to conduct the sensitivity analysis on the 100 river basins in the second screening stage.

The Study Team agreed.

## **2. Comment on Field Survey Results**

### **1) Partial Replacement**

The Philippine side (DPWH) asked whether Lubayat River Basin will be replaced by Kinan Liman River Basin. The Philippine side (DPWH) also commented the reason of excluding Daraga River Basin is not clear.

The Study Team explained Kinan Liman River Basin is included in Real River Basin presented in the list. Regarding to Daraga River Basin, its basin identified with the 1/250,000 scale map was not actual Daraga River Basin itself when surveyed with the 1/50,000 scale map, but its name was Kapantaran River Basin and this river basin had no flood problems. On the other hand, the original Daraga River Basin is included in Legazpi City Basin which is one of the selected 100 river basins.

The Philippine side (DPWH) requested another explanation on these matters using 1/50,000 scale maps.

The Study Team agreed.

## **3. Comments on Second Screening**

### **1) Criteria on Strategic Point**

The Philippine side (DPWH) suggested the 1<sup>st</sup> Point "classification of river basins" and 2<sup>nd</sup> Point "the dangerous river basins" can be combined. Another suggestion was the strategic importance of river basins can be measured from the viewpoint of water usage, e.g., power generation and irrigation, etc.

The Study Team agreed to combine the 1<sup>st</sup> and 2<sup>nd</sup> Points. Regarding to the second suggestion, the Study Team answered the subject of this Study is flood mitigation, and the priority should be based only the flood problems of the river basin.

JICA expert stressed such survey is not included in the TOR of the Study. This suggestion is related to policy, not to the Study itself, as mentioned in the first Steering Committee meeting. The Study should concentrate on the analysis on the flood risk assessment and flood control.

The Philippine side understood the situation in principle.

#### **2) Consideration of Difference between Flash Floods and Overflow Floods**

JICA Sabo expert (FCSEC) pointed out the damages by flash floods and by overflow floods are different, and recovery cost also would be different. The Sabo expert recommended such difference should be considered in the scoring of the second screening, if possible.

The Study Team answered such aspect will be considered.

#### **4. Comments on GIS**

##### **1) Concerns about GIS Data**

During discussion, clarification for the standard method of data coding and allocation of color and pattern for different features (road, land use/land cover, bridge, etc. for example) were raised by the Philippine side (NWRB). Another concern on the GIS database creation was the inclusion of metadata. The third concern was the timing and method of technology transfer regarding GIS.

The Study Team had clarified these questions.

##### **2) Data Coding System**

On the matter of standard practice of data coding, it was clarified that in real world there is no specific standard coding system, however, the GIS experts are adopting the widely used global and local coding practices. Such practices are also followed for the defining features pattern and color during the map composition. In this case, a flood mitigation study, the standard practices of hydrology (for defining the flood) is being followed. For geographical features, the global as well as practices adopted at NAMRIA has been adopted.

##### **3) Creation of Metadata**

Regarding the creation of metadata, it was responded by illustrating an example of already created metadata. There was agreement among the participants that without metadata, the data will have a very little value.

#### **4) Timing and Method of Technology Transfer**

Based on the previous discussion with counterpart, the method and timing of GIS technology transfer was explained. Informal GIS workshop will be conducted by the GIS expert for the counterpart. It will include brief handouts lecture followed by practice by the participants. The probable topics are (i) introduction of GIS, (ii) extraction of data for GIS database, and (iii) simple GIS analysis. The timing of such workshop will be during the next assignment of the Study Team, which is expected to commence from the middle of April 2007. It was agreed that detailed program (duration, number and list of participants, etc.) will be devised after further consultation.

#### **5. Others**

##### **1) Deadline of Comments from the TWG Members**

The Philippine side (DPWH) informed that other comments from the TWG members should be submitted on/or before the end of March 2007.

The Study Team agreed.

##### **2) TWG and SC Meetings**

The Philippine side (DPWH) stressed that the criteria of the second screening should be approved before the Study Team begins the second screening.

The Study Team informed the 3<sup>rd</sup> Field Survey in the Philippines is expected to commence from the middle of April 2007. Following to this schedule, TWG and SC Meetings will be held at the beginning of the next field survey.

The Philippine side (DPWH) agreed.



**ATTACHMENT**

**THE STUDY ON NATIONWIDE FLOOD RISK ASSESSMENT AND  
THE FLOOD MITIGATION PLAN FOR THE SELECTED AREAS IN THE PHILIPPINES**

**The Fourth Technical Working Group Meeting  
OPERATION'S Room, 2<sup>ND</sup> FLOOR, DPWH Central office, Manila  
March 1, 2007 (9:40 AM-12:40 PM)**

**ATTENDANCE LIST**

**Philippine Side**

NAME	POSITION	OFFICE
Rebecca T. Garsuta	Engineer V	DPWH, Planning Service
Julius D. Borja	Project Manager/ Co-Team Leader	MFCD-CII
Florentino R. Sison	Representative	OCD
Narciso Prudente	OIC-Chief, Water Resources	NEDA
Evth Renan C. Florentino	Representative	MFCDP-II
Dolores M. Hipolito	Project Manager II	FCSEC
Leonila R. Mercado	Engineer IV	PMO-MFCP-I
Grecile Christopher R. Damo	Engineer III	FCSEC
Tirso R. Perlada, Jr.	Engineer IV	BOC
Aquilina T. Decilos	Engineer III	DPWH, Planning Service
Orlando M. Casio	Engineer III	DPWH, Planning Service
Estelita M. Leonado	Economist II	DPWH, Planning Service
Gloria L. Atillano	Staff	DPWH, Planning Service
Francis Hilarie	Economist	NWRB
Luis S. Rongavilla	Engineer III	NWRB
Cesar P. Odi	Forester	DENR (RBC)
Socrates Paat, Jr.	Hydrologist	PAGASA

**Japanese Side**

NAME	POSITION	OFFICE
Takeshi Kanome	Assistant Resident Representative	JICA
Mae Leyson	Program Assistant	JICA
Shunta Dozono	JICA Expert	DPWH-P. S.
Takeo Mitsunaga	JICA SABO Expert	PMO-FCSEC
Yoshiharu Matsumoto	Team Leader/ Flood Control and Flood Damage Reduction Plan	JICA Study Team
Kenichiro Kondo	Co-Team Leader/ River Engineering-1	JICA Study Team
Bhuwneshwar P. Sah	GIS Expert	JICA Study Team
Hideki Konno	Coordinator	JICA Study Team