

**PART-IV**  
**RECOMMENDATIONS**

## **RECOMMENDATIONS**

### **(1) Implementation of Projects Proposed in the Master Plan**

The proposed Water Master Plan is composed of the water resources development and management in the Bali Province, targeting the year of 2025. The Master Plan is prepared on the vision that the water resources is a component which forms identity of culture and development power of the Bali people based on the Bali philosophy of “Tri Hita Karma (Three Happiness Causes)”. To realize this vision, the Master Plan targets the four objectives: 1) To improve water use, 2) To increase food production, 3) To conserve eco-system and 4) To maintain identity of Bali culture supported by agricultural value system.

To achieve these objectives, the Master Plan proposes the reasonable plans on the basis of the socio-economic framework up to the year of 2025 projected by the Study Team considering the existing plans and projection discussed in the latest Bali Spatial Plan. During the preparation of the Master Plan, three times of the Stakeholder Meeting were held at each regency/city. This method is quite a new system in Indonesia during the preparation of Master Plan. In this sense, the Master Plan was prepared through information disclosure and exchange opinion with the Stakeholder related to the water resources development and management.

The Master Plan prepared in such process proposes to solve or minimize water issues at present and in future. That is why the Master is useful and important plans to Bali people. It is very important to implement securely the plans or projects proposed in the Master Plan.

### **(2) Water Resources Development**

The proposed Master Plan was set to target the year of 2025 based on the population and economic growth projection conducted by the Study Team. Therefore the plan should be reviewed regularly and changed if necessary according to the change of socio-economic conditions and accumulated collection of new data.

Water resources development plan discusses the multi-purpose dam plans, water supply plans, irrigation plans and flood control plans. The multi-purpose dam plans and water supply plans design the optimum water resources development programs which include the most reasonable, economical and less impact methods to natural and social environments. The targets water sources to develop (surface water, groundwater, spring water) are carefully examined and selected considering the characteristics of demand (demand volume, demand location). Among the water resources development plans proposed in the Master Plan, the multi-purpose dam plan (Ayung Dam and Benel Dam) and the integrated water supply plan for SARBAGI area shall conduct environmental impact assessment (AMDAL) before the commencement of construction.

Before the implementation of the groundwater development projects proposed in the Master Plan, careful assessment is necessary to evade seawater intrusion in the coastal areas and to minimize impact to groundwater, spring and surface water in the inland areas.

As the water resources are limited, effective water use (or appropriate water demand control) shall be employed. Water supply companies (PDAM) to supply water to the users shall take the following demand control methods:

#### **<Leakage Management>**

The current average unaccounted water rate is 23 %, relatively low, in Bali. In the Master Plan, 20% of unaccounted water rate is proposed. The leakage counter measures for the existing distribution networks, addition to the measures for the new networks.

#### **<Reuse and Save Water>**

The application of the reuse and save water technology to the industrial water is effective to decrease the industrial water demand. It is necessary for PDAM to promote this technology. Also it is necessary for the government to give subsidy in the industry promotion program.

#### **<Water Use Regulation>**

Educational activity (water save campaign and poster) is effective methods to decrease water use.

Other methods to control water demand are decrease of water pressure and water use regulation by time and so on. These methods are emergent measures as they cause less public service. It is common that water use volume increase if the water tariff is cheaper. The water supply plan for SARBAGI area is designed under the conditions that such water use regulation is employed. The increased unit consumption rate in the area is planned to be 10 lit./capita/day. For example, Denpasar: 210 lit/capita/day → 220 lit/head/day, Kuta area: 200 lit /capita /day → 210 lit/ capita /day.

The Master Plan also discusses the water supply plans for the remote and isolated area. These plans will be entered the PDAM program. These plans will be sustainable if the construction is implemented with public investment (or subsidy), and users maintain the system by themselves.

### **(3) Water Resources Management**

Water resources management plan discusses the institutional plans, water quality improvement plans, river basin conservation plans, database for water resources management and capacity building program.

Step by step, to implement securely the proposed projects proposed in the master Plan, the Master Plan proposes the following new organizations considering the current issues on water resources management. Those are 1) DINAS-PSDA, 2) Water Resources Coordination Council for Bali Province or for Ayung River Basin, 3) BALAI-PSDA for Bali Province or Ayung River Basin, 4) Regional Water Production Entities, 5) SUDAHAN-AGUNG and 6) Subak Coordination Unit. It is recommendable to implement shortly the institutional reformation. The proposed Capacity Building Program is one which supports the improvement of new organizations capabilities.

The main program for the water quality improvement plan is the River Clean Water Campaign (PROKASIH) under the control of by the Provincial Environmental Control Agency (BAPEDALDA). As shown in this Program, the short-term target is to decrease pollutant roads by mind reformation of the people living along the rivers.

Among the basin conservation plans, the Forest Conservation Plan is the most important plan. The main framework of the Forest Conservation Plan is the Master Plan for Forest and Land Rehabilitation prepared by BP-DAS UNDA ANYAR and DINAS-FORESTRY, Bali. It is important to implement this Master Plan. Especially in the critical area, it is necessary to employ the hard measures such as check dam and channel works as well as soft measures.

The water resources database prepared in the Master Plan shall be used for the water resources management. New observed data and information will be stored in this GIS. This system is able to be used for planning of water supply.

### **(4) Implementation of Priority Projects**

Regarding the priority projects selected in the Master Plan, namely 1) Multi-purpose Ayung Dam, Project, 2) Integrated Water Supply Project for SARBAGI areas and 3) Flood Control Project for Badung and Mati Rivers, the feasibility study was conducted. These projects will contribute greatly to the solution of water supply, irrigation, power generation and flood control in the southern Bali areas. Urgent implementation of the projects is necessary. As EIRRs of the projects are over 12%: Opportunity Cost of Capital – Indonesia, the projects are economically feasible. From the aspects of environment and social consideration, the feasibility of the projects with necessary countermeasures to minimize or mitigate the impacts has been confirmed.

Before the implementation of the priority projects, the following matters shall be considered and conducted by the Government of Bali Province without fail:

#### **<AMDAL – Regal Environmental Impact Assessment>**

Due to the scale of the projects, AMDAL shall cover two priority projects, namely 1) Multi-purpose Ayung Dam, Project and 2) Integrated Water Supply Project for SARBAGI Areas. According to the clarification of the assessment, appropriate countermeasures and monitoring program shall be proposed to mitigate the environment and social impacts to the project areas.

**<Monitoring of Water Demands>**

The water demand projection for the Integrated Water Supply Project for SARBAGI Areas was carried out carefully and properly by the Study Team and the Counterpart Team. However, the projection is not always definite. Careful monitoring of the water demand is required before the implementation of the project.

**<Socialization of the Priority Projects>**

Generally, dam construction gives environmental and social impacts to the people at the project site. To minimize the adverse impacts and receive the cooperation of the inhabitants, at any occasion, before and during detailed design stage, the project implementation agency or the Bali Government shall conduct the socialization to the societies at the projects site.

**<Clarification of Current Water Right in Term of Discharge>**

The new dam and reservoir will increase water availability in the dry seasons even in that of drought years. However, unless the water use will be operated in term of the discharge of the intake water, it will be impossible to take the new developed water for the water supply. Thus, it is necessary to establish the new system to manage the intake discharge for irrigation and water supply along the Ayung River, by involving the current water users, such as SUBAKs and PDAMs.

As the cost of the projects is large, it is hard for the Bali Provincial Government to implement the project by himself due to the financial reason. It is recommendable that the Central Government gives financial assistant to the projects by employing the foreign soft loan.

**(5) Disclosure of Information**

The information on the Master Plan and the priority projects have been disclosed to the stakeholders through the stakeholder meetings (3 times in Master Plan phase and 2 times in F/S phase) and two times workshops. To disclose more information on the Master Plan and the priority projects, it is recommendable to put the Study results in the Bali Government Homepage.

# **APPENDICES**

## **APPENDIX-1**


**SCOPE OF WORK  
FOR  
THE COMPREHENSIVE STUDY  
ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN  
BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Jakarta, February 20<sup>th</sup>, 2004

**Scope of Work  
For  
The Comprehensive Study  
On  
Water Resources Development and Management  
In  
Bali Province  
In  
The Republic of Indonesia**


**Agreed upon among  
Ministry of Settlement and Regional Infrastructure,  
The Republic of Indonesia  
And  
The Government of Bali Province  
And  
Japan International Cooperation Agency**

Jakarta, February 20, 2004



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Dr. Ir. Moch. BASUKI H, M.Sc, *ks*  
Director General of Water Resources  
Ministry of Settlement and Regional Infrastructure



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MR. Yoshiyuki HOSHIYAMA  
Leader,  
Preparatory Study Team,

## **1. INTRODUCTION**

In response to the official request of the Government of the Republic of Indonesia (hereinafter referred to as "the Government of Indonesia") for technical cooperation on the Comprehensive Study on the Water Resources Development and Management in Bali Province (hereinafter referred to as "the Study"), the Government of Japan (hereinafter referred to as "GOJ") decided to conduct the Study in accordance with relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of GOJ, will undertake the Study in close cooperation with the authorities concerned of the Government of Indonesia.

On the parts of the Government of Indonesia, Ministry of Settlement and Regional Infrastructure (hereinafter referred to as "KIMPRASWIL") and Public Works Service of Bali Province (hereinafter referred to as "the Provincial Office"), shall act as the counterpart agencies to the Japanese study team (hereinafter referred to as "the Team") and also as the coordinating body in relation to other government and non-governmental organizations concerned for the smooth implementation of the Study.

The present document sets forth the scope of work with regard to the Study agreed upon among JICA, KIMPRASWIL and the Provincial Office.

## **2. OBJECTIVES OF THE STUDY**

The objectives of the Study are:

1. To formulate Master Plan on comprehensive water resources development and management in Bali Province targeting the year of 2025,
2. To conduct a feasibility study for high priority projects/areas, which are proposed in the master plan, and
3. To transfer technology and knowledge on water resources development and management to the Indonesian counterparts through their direct participation in the study and training programs.

## **3. STUDY AREA**

The Study area of the master plan shall cover the whole area of Bali province as shown in Annex-1. The Study area of the feasibility study shall be limited within necessary areas for selected priority projects.

## **4. SCOPE OF THE STUDY**

The study will be divided into two (2) phases: Phase I is for the formulation of the Master Plan and Phase II is for the conduct of the Feasibility Study.

The process of the Study shall be verified in accordance with "JICA's new guideline titled "Guidelines for Environmental and Social Considerations" to be in forth by JICA as from April 2004.



## Phase I: Formulation of Bali Basin Water Resources Management Framework

- (1) Collection and review of existing data and information related to the followings;
  - Natural conditions (including meteorological /hydrological conditions, soil / geological conditions, and topographical conditions);
  - Social and economic conditions;
  - Water demand and water use;
  - Water quality (surface water and groundwater);
  - Flood damages and the countermeasures;
  - Drought damages and the countermeasures;
  - Existing facilities for water resources management and flood control;
  - Existing water distribution, drainage and sewage systems;
  - Ongoing or proposed projects/programs relevant to the Study;
  - Legislative and Institutional aspects (e.g. laws, regulations, guidelines, standards, water rights, organizations for water sector and the environmental impact assessment),
  - Financial and budgetary conditions;
  - Existing maps and aerial photos, and
  - Other relevant data and information;
- (2) Scoping of environmental and social impacts and making framework of the Initial Environment Examination
- (3) Field Reconnaissance

Topographic and geological conditions, Groundwater conditions, Conditions of water bodies (rivers, lakes, ponds, marshes and springs), Existing facilities/systems of water supply, flood control, drainage and sewage, Irrigation canal systems and facilities, Conditions of other type of water uses, Conditions and damages of drought, flood/inundation, Landslide/Debris-flow, Situation of waste disposal and effluents, Conditions of sanitation, Social and economic conditions, Conditions of tourism and culture, Land use, etc.;
- (4) Specific Survey

River profile and cross section survey, Inventory survey of water utilization facilities, Flood damage survey, Survey on water qualities and the pollution sources/causes, Social survey (peoples awareness, living conditions, etc.), Environmental baseline survey and so on, if necessary.
- (5) Water resources potential analysis

Division of basins, Establishment of reference points, Hydrological analysis (including low flow and high/flood water);

Present water use and estimation/analyses of water resources potential for surface water and groundwater;
- (6) Water demand projection

Establishment of socio-economic framework for the target year of 2025;

Water demand of each sector such as drinking water, industrial water, irrigation water and hydro-power in each area/point

(7) Water balance analysis

Water balance analysis respectively for surface water and groundwater

(8) Flood runoff, inundation analysis and flood damage projection

(9) Analysis of water quality conditions

(10) Preparation of alternative plans for water resources development and management

(11) Formulation of Bali Basin Water Resources Management Framework

(12) Technology transfer

Phase II: Formulation of master plan on comprehensive Bali basin water resources development and management

(1) Preparation of master plan

(2) Technical assistance in the environmental and social survey for the Initial Environmental Examination (IEE)

The Government of Indonesia shall be responsible for IEE such as the result of IEE, explanation, socialization and agreement, and so on.

(3) Support for environmental and social consideration

Monitoring of the progress and making necessary suggestions through environmental and social considerations for the following items, which shall be done under responsibility of the Government of Indonesia

- IEE

- Public Consultation meeting with stakeholders

(4) Formulation of master plan

- Water resources development (water supply, irrigation, hydro-power, environment, etc.),

- Flood control and mitigation

- Improvement of water quality conditions

- Water resources management (establishment of GIS data-base system, Monitoring system, Water resources conservation, Watershed conservation, Improvement of policies and regulations, etc.)

- Basic design (Outline of facility plans of master plan level), Preparation of preliminary cost estimates, Preparation of project implementation schedule, Formulation of staged implementation program

- Overall evaluation of projects from social, economic, financial, technical and environmental aspects

(5) Assistance to prepare the Provincial Policy on Water Resources Management

(6) Selection of high priority projects/areas for the feasibility study

(7) Technology transfer

### Phase III: Feasibility Study

- (1) Supplementary data collection and analysis
- (2) Making framework of the Environmental Impact Study for priority projects based on IEE
- (3) Additional survey (soil, groundwater, environmental aspects, etc.) for the priority projects and /or in the priority areas
- (4) Technical assistance in the environmental impact study for the Environmental Impacts Assessment (EIA)

The Government of Indonesia shall be responsible for EIA such as the result of IEE, explanation, socialization and agreement, and so on.

#### (5) Support for Environmental and Social Consideration

Monitoring of the progress and provision of necessary suggestions on the environmental and social consideration, which shall be done under responsibility of the Government of Indonesia:

- EIA
- Public consultation meeting with stakeholders

#### (6) Formulation of implementation plan (include action plan) of priority projects

- Structural measures;
- Non-structural measures;
- Preliminary design of facilities;
- Construction planning;
- Project cost estimate;
- Implementation scheduling;
- Financial study/plan;
- Operation and maintenance plan;
- Management and institutional plan;

#### (7) Evaluation of Project feasibility (from social, economic, financial, technical and environmental aspects)

#### (8) Formulation of water user's association empowerment plan

#### (9) Conclusion and recommendation

#### (10) Technology transfer

## **5. SCHEDULE OF THE STUDY**

The Study will be carried out in accordance with the tentative schedule shown in the annex-2.

## 6. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Indonesia.

1. Inception Report:  
Twenty (20) copies at the commencement of the Study.
2. Progress Report(1):  
Twenty (20) copies at the end of Phase I.
3. Interim Report:  
Twenty (20) copies at the end of Phase II.
4. Progress Report(2):  
Twenty (20) copies in Phase III.
5. Draft Final Report:  
Twenty (20) copies at the end of Phase III.  
KIMPRASWIL and the Provincial Office shall submit the comments within one (1) month after receipt of the Draft Final Report.
6. Final Report (Main, Supporting, Summary, etc.):  
Fifty (50) copies within one (1) month after JICA's receipt of the comments on the Draft Final Report.

## 7. UNDERTAKINGS OF THE GOVERNMENT OF INDONESIA

1. To facilitate the smooth conduct of the Study, the Government of Indonesia shall take necessary measures:
  - (1) To permit the members of the Team to enter, leave and sojourn in the Indonesia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,
  - (2) To exempt the members of the Team from taxes, duties, fees and any other charges on equipments, machinery and other materials brought into and out the Indonesia for the implementation of the Study,
  - (3) To exempt the members of the Team from income taxes and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,
  - (4) To provide necessary facilities to the Team for the remittances as well as the utilization of the funds introduced into the Indonesia from Japan in connection with the implementation of the Study,
2. The government of Indonesia shall bear claims, if any arise, against the members of the Team

resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.

3. KIMPRASWIL and the Government of Bali Province shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned:

**KIMPRASWIL**

- (1) Security-related information on as well as measures to ensure the safety of the Team,
- (2) Information on as well as support in obtaining medical service,
- (3) Available data and information related to the Study,
- (4) Credentials or identification cards, and
- (5) Appropriate number of vehicles with drivers

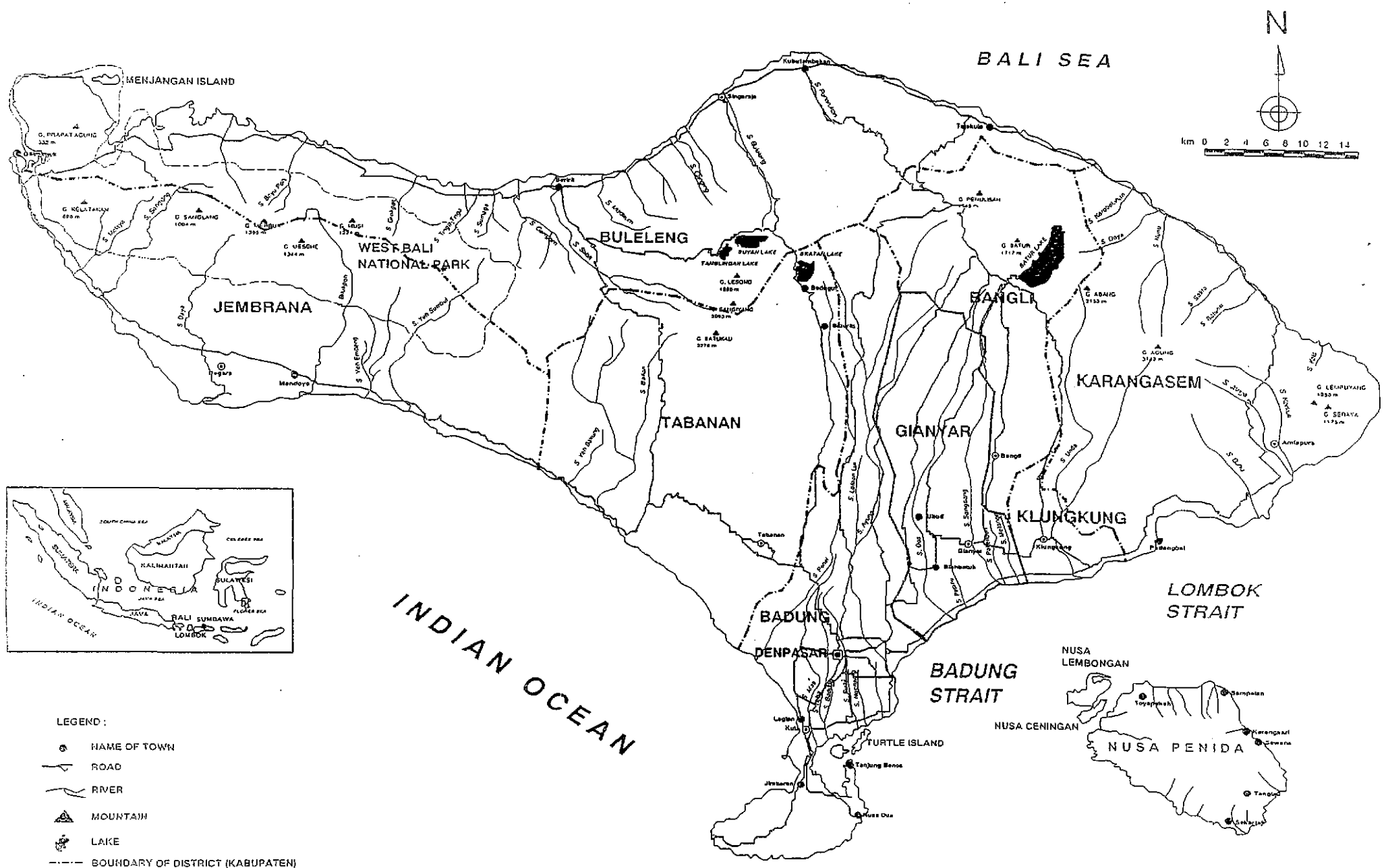
**Bali Province;**

- (1) Available data and information related to the Study,
- (2) Counterpart personnel, and
- (3) Suitable and adequate main office with necessary office equipment in Bali Province,

## **8. CONSULTATION**

JICA, KIMPRASWIL and the Government of Bali Province will consult with each other in respect of any matter that may arise from or in connection with the Study.

(Appl-8)



THE STUDY AREA

## TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Phase I and II: Framework and Master Plan Study																						
Phase II : Feasibility Study																						
REPORTS	▲ IC/R				▲ P/R(1)				▲ IT/R					▲ P/R(2)				▲ DF/R			▲ F/R	

(App1-9)

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**APPENDIX-2**

**MINUTES OF MEETING  
ON  
SCOPE OF WORK  
FOR  
THE COMPREHENSIVE STUDY  
ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN  
BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Jakarta, February 20<sup>th</sup>, 2004



MINUTES OF MEETING  
ON  
SCOPE OF WORK  
FOR  
THE COMPREHENSIVE STUDY  
ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN  
BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA

AGREED UPON AMONG

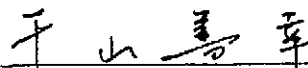
MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

Jakarta, February 20, 2004



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Dr. Ir. Moch. BASUKI H, M.Sc,  
Director General of Water Resources  
Ministry of Settlement and Regional Infrastructure  
The Republic of Indonesia



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MR. Yoshiyuki HOSHIYAMA  
Leader,  
Preparatory Study Team,  
Japan International Cooperation Agency

Japan International Cooperation Agency (hereinafter referred to as "JICA"), in response to the official request of the government of the Republic of Indonesia, dispatched a Preparatory Study Team led by Mr. Yoshiyuki HOSHIYAMA (hereinafter referred to as "the Preparatory Team"), from February 12<sup>th</sup> to March 2<sup>th</sup>, 2004 to discuss and determine the Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province, the Republic of Indonesia (hereinafter referred to as "the Study"),

The Preparatory Team carried out field reconnaissance in the Study area, and held a series of discussions with the Ministry of Settlement and Regional Infrastructure (hereinafter referred to as "KIMPRASWIL"), the Public Works Office of the Bali Province (hereinafter referred to as "the Provincial Office") and other authorities concerned.

The Minutes of Meeting summarize the results of discussions between the Preparatory Team and the concerned agencies of the Government of Indonesia. The list of attendees is attached in Appendix 1 and the results of the discussions between the Preparatory Team and the Provincial Office is summarized in Appendix 2.

The main items discussed regarding S/W are as follows;

#### **1. Title of the Study**

Both sides agreed that the Study title should be "the Comprehensive Study on Water Resources Development and Management in Bali Province, the Republic of Indonesia" (partly amending the title submitted in the proposal to make it more clear about the target area).

#### **2. Counterpart Personnel**

Both sides agreed that KIMPRASWIL and the Provincial Office would organize a counterpart team that would cooperate and actively work with the Study Team. Indonesian side promised to assign reasonable number of counterpart personnel during the study period. The list of the personnel will be submitted before commencement of the Study.

#### **3. Steering Committee**

Both sides agreed that the Indonesian side would set up a Steering Committee under the initiative of KIMPRASWIL. The Committee will be comprised of the following organizations, and the other organizations could be included if KIMPRASWIL recognizes it necessity.

- a. Head of Bali Provincial Public Works Service as the Chairman
- b. Head of Bali Provincial Water Resources Development Office. as Secretary
- c. Head of Planning Service of Bali Provincial Water Resources Office
- d. Head of Bali Provincial Irrigation Section
- e. Provincial Development Planning Service (BAPPEDA)
- f. Ministry of Settlement and Regional Infrastructure (KIMPRASWIL)

The Steering Committee shall monitor the progress of the Study and provide guidance related to National and Provincial policies, regulations, principle and procedure. The Committee shall also provide necessary resources to the Study Team for improving and supporting their activities.

#### **4. Technical Working Group**

Both sides agreed that the Indonesian side would organize a Technical Working Group that will handle the technical and scientific aspects or activities in relation with the Study. It shall ensure that all accurate data and information concerned are obtained in the course of the Study. The Technical Working Group will be composed of the followings;

- a. KIMPRASWIL shall act as the Leading Agency
- b. The Provincial Office
- c. Regency Office

#### **5. Seminar/Workshops on Technology Transfer**

Both sides agreed that holding of seminars and workshops will be essential for providing necessary information and knowledge to the provincial and regency staff.

#### **6. Counterpart Training**

Indonesian side requested that JICA conduct counterpart training in Japan for the personnel of the concerned agencies to transfer the technology smoothly during the Study.

#### **7. The Concept of Environment and Social Consideration Based on JICA's New Guidelines**

The Preparatory Team explained the background and the present situation on the revision of JICA's "Guidelines for Environmental and Social Considerations".

The Preparatory Team emphasized the proponent's responsibility for environmental and social considerations, information disclosure and participation of stakeholders from early stage of the Study. The new basic approaches set forth in the Guideline accordingly shall be applied to the Study.

The Indonesian side agreed in principle to these cited responsibilities.

##### **(1) Responsibility for IEE and EIA**

Both sides agreed that the Indonesian side shall be responsible for IEE and EIA, and the necessary activities for IEE and EIA shall be implemented as cooperative work between the Indonesian side and JICA.

##### **2) Role of Indonesian side and JICA Concerning Environmental and Social Considerations**

Both sides agreed that environmental and social considerations including collection of necessary data for consultations with stakeholders shall be carried out by Indonesian side, being the proponent of the Project. On the other hand, JICA shall provide KIMPRASWIL and Provincial Office with technical support to resolve environmental and social consideration issues.

##### **(3) Preparation for IEE and EIA**

The Indonesian side agreed to make efforts to prepare necessary budget for counterpart activities, formation of organization and so on for the conduct of the IEE and EIA, including public consultation and other related activities. The Indonesian side also agreed that these preparatory activities shall be started after the sign of this Minutes of Meeting.

##### **(4) Agreement among stakeholders**

The Indonesian side agreed to confirm agreements among the stakeholders upon the results of selected alternative plans before proceeding to the next steps of the Study at each environmental and social consideration stage.

#### **(5) Information Disclosure**

Both side agreed that information disclosure shall be implemented by Indonesian side and JICA. The Preparatory Team explained that information disclosure is necessary to ensure the participation of and dialogues with various stakeholders for taking accountability in order to achieve appropriate environmental and social considerations.

The preparatory Team also emphasized that JICA will make the Study reports open to the public.

#### **8. Report**

- (1) Indonesian side requested that the reports for common people should be developed and prepared in Indonesian Language as well.
- (2) Indonesian side strongly requested that the main report should be prepared in Indonesian language as well. The Preparatory Team also promised to convey the request to JICA Headquarter.
- (3) Digital version (original format and PDF) of the reports will be submitted in addition to the hard copies.
- (4) Both sides agreed that the counterpart team should be actively involved in the writing of the reports.

#### **9. Undertakings of the Government of Indonesia**

Indonesian side promised to provide decent and adequate office space with some facilities at the Bldg. of the Provincial Office before commencement of the Study. However the Indonesian side explained it difficulties to provide the office equipments and vehicles for the Study and requested the Preparatory Team to provide necessary office equipment and transportation for the Study. The Preparatory Team promises to convey the requests to JICA Headquarter.

**APPENDIX-3**

**MINUTES OF MEETING  
BETWEEN  
THE GOVERNMENT OF BALI PROVINCE  
AND JICA PREPARATORY TEAM**

**ON  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Jakarta, February 20<sup>th</sup>, 2004

**Minutes of Meeting**

**Between**

**The Government of Bali Province and JICA Preparatory Team**

**On**

**The Comprehensive Study on Water Resources Development and  
Management**

**In**

**Bali Province**

**In**

**The Republic of Indonesia**

Jakarta, February 20, 2004



Ir. I Nyoman SUDIANA,  
Head of Public Works Service,  
Bali Province



MR. Yoshiyuki HOSHIYAMA  
Leader,  
Preparatory Study Team,  
Japan International Cooperation Agency

The Preparatory Study Team headed by Mr. Yoshiyuki HOSHIYAMA (hereinafter referred to as "the Preparatory Team"), visited Bali Province from February 14<sup>th</sup> to February 19<sup>th</sup>, 2004 to discuss and finalize the formulation of Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province, the Republic of Indonesia (hereinafter referred to as "the Study").

The Preparatory Team carried out field reconnaissance in the Study area, and held a series of discussions with the Public Works Service of the Bali Province (hereinafter referred to as "the Provincial Office") and other authorities concerned.

The Minutes of Meeting summarize the results of discussions between the Preparatory Team and the concerned agencies under Bali Province. The list of attendees is attached in the Appendix.

The main items discussed regarding S/W are as follows;

### **1. Implementation Agency of the Study**

The Provincial Office shall be the implementing agency of the Study. In order to ensure the successful execution of the Study, the Government of Bali Province will give the Study Team necessary assistance should any problem arise.

### **2. The Scope of the Study**

The Provincial Office agreed the contents of the scope of the Study in principle.

### **3. Counterpart Personnel**

Both sides agreed that the Provincial Office would organize a counterpart team that would cooperate and actively work with the Study Team. The Provincial Office promised to assign reasonable number of counterpart personnel during the study period. The list of the personnel will be submitted before commencement of the Study.

### **4. Counterpart Training**

The Provincial Office requested that JICA conduct counterpart training in Japan for the personnel of the concerned agencies to transfer the technology smoothly during the Study.

### **5. The Concept of Environment and Social Consideration Based on JICA's New Guidelines**

The Preparatory Team explained the background and the present situation on the revision of JICA's "Guidelines for Environmental and Social Considerations".

The Preparatory Team emphasized the proponent's responsibility for environmental and social considerations, information disclosure and participation of stakeholders from early stage of the Study. The new basic approaches set forth in the Guideline accordingly shall be applied to the Study.

The Provincial Office agreed in principle to these cited responsibilities.

#### **(1) Responsibility for IEE and EIA**

Both sides agreed that the Indonesian side shall be responsible for IEE and EIA, and the necessary activities for IEE and EIA shall be implemented as cooperative work between the Indonesian side and JICA.

## **(2) Role of Indonesian side and JICA Concerning Environmental and Social Considerations**

Both sides agreed that environmental and social considerations including collection of necessary data for consultations with stakeholders shall be carried out by Indonesian side, being the proponent of the Project. On the other hand, JICA shall provide KIMPRASWIL and Provincial Office with technical support to resolve environmental and social consideration issues.

## **(3) Preparation for IEE and EIA**

The Indonesian side agreed to make efforts to prepare necessary budget for counterpart activities, formation of organization and so on for the conduct of the IEE and EIA, including public consultation and other related activities. The Indonesian side also agreed that these preparatory activities shall be started after the sign of this Minutes of Meeting.

## **(4) Agreement among stakeholders**

The Provincial Office agreed to confirm agreements among the stakeholders upon the results of selected alternative plans before proceeding to the next steps of the Study at each environmental and social consideration stage.

## **(5) Information Disclosure**

Both side agreed that information disclosure shall be implemented by Indonesian side and JICA. The Preparatory Team explained that information disclosure is necessary to ensure the participation of and dialogues with various stakeholders for taking accountability in order to achieve appropriate environmental and social considerations.

The preparatory Team also emphasized that JICA will make the Study reports open to the public.

## **6. Undertakings of the Government of Bali Province**

The Provincial Office agreed that the Government of Bali Province shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned:

- (1) Available data and information related to the Study,
- (1) Counterpart personnel

The Provincial Office promised to provide decent and adequate office space with some facilities at the Bldg. of the Provincial Office before commencement of the Study. However the Indonesian side explained it difficulties to provide the office equipments and vehicles for the Study and requested the Preparatory Team to provide necessary office equipment and transportation for the Study. The Preparatory Team promises to convey the requests to JICA Headquarter.



## ATTENDANCE LIST

### Indonesia Side

(KIMPRASWIL)

Dr. Ir. Moch. BASUKI H, M.Sc,  
Dr. Ir.M.AMRON.Msc  
Ir. Soekrasno DIPL.HE  
Mr. Anthony Raymond KEMUR

Director General of Water Resources  
Secretary, Directorate General of Water Resources  
Director of Water Resources Management  
Head of Sub Directorate for Basin Water Resources  
Planning, Directorate for Water Resources Management,  
Directorate General of Water Resources

(Bali Province)

Hon. Dewa Made BERATHA  
Ir. I Wayan SUBAGIARTA  
Ir.I Nyoman SUDIANA  
Ir.I Gusti Nyoman SURA ADNYANA  
I Putu ARTJA, Dipl.ATP

Governor of Bali Province  
Government of Bali  
Head of Public Works Service  
Head of Water Resources Office, Public works Service  
Head of Office, Water Resources Development of  
Bleleng, Public works Service  
Sustainable Development of Irrigated Agriculture in  
Buleleng and Kalangasam  
Water Resources Engineer, Public Works Service Office  
Division of Irrigation, Public Works Service  
BAPPEDA

Ir. Nyoman SUETA

Ir. I Made SUDIARSA  
Ir. G.B.P. Budiarta  
Ir. I Wayan SUDIARTHA

### Japanese Side

(The Preparatory Study Team)

Mr. Yoshiyuki HOSHIYAMA

Deputy Managing Director, Social Development Study  
Department, JICA

Mr. Mikio MORIKAWA

Deputy Director of River Information Office, River  
Bureau, Ministry of Land, Infrastructure and Transport

Mr. Hisakatsu OKUDA

Staff, 2<sup>nd</sup> Social Development Study Division, Social  
Development Study Department, JICA

Mr. Hiroshi OKADA

NJS Consultants Co., LTD

Mr. Tsuyoshi SASAKA

IC-NET LTD.

(JICA Expert)

Mr. Shunichi MAEDA

Directorate General of Water Resources, Ministry of  
Settlement and Regional Infrastructure

(JICA Indonesia Office)

Mr. Shiro NAKASONE

Assistant Resident Representative, JICA Indonesia Office

**APPENDIX-4**

**MINUTES OF MEETING  
ON  
THE INCRPTION REPORT**

**FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Jakarta, October 29<sup>th</sup>, 2004

**MINUTES OF MEETING  
ON  
THE INCEPTION REPORT  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

**AGREED UPON AMONG  
MINISTRY OF PUBLIC WORKS  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

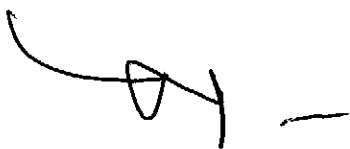
Jakarta, October 29th, 2004



Ir. Soekrasno Dipl. HE  
Director,  
Directorate of Water Resources  
Management,  
Directorate General of Water Resources,  
Ministry of Public Works

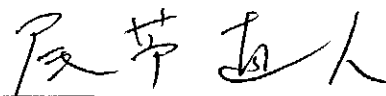


Masatomo WATANABE  
Leader,  
Study Team,  
Japan International Cooperation Agency



Ir. I. Gusti Nyoman Sura Adnyana, MSc.  
Head of Water Resources Development  
and Village Infrastructure, Public Works  
Service, Bali Province  
on behalf of  
Head of Public Works Service,  
Bali Province

Witnessed by



Naoto OASHI  
Leader,  
Monitoring Team,  
Japan International Cooperation Agency

In accordance with the Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Settlement and Regional Infrastructure, the Government of Bali Province and Japan International Cooperation Agency (JICA), the JICA Study Team (the Study Team) submitted the Inception Report on September 28th, 2004 to the Public Works Service of Bali Province.

This Minutes of Meeting summarizes the results of the meetings on the Inception Report held on October 27th in Denpasar and on October 28th in Jakarta. The participants of the meetings are listed on the Attachment-1.

The Indonesian side agreed with the approach and methodology of the Inception Report with the following notes:

- (1) The Steering Committee and the counterpart team have been established by the Indonesian side as shown in the Attachment-2.
- (2) The Indonesian side requested that the main report of the final report in English should be translated into Indonesian. The Japanese side agreed to convey the request to the JICA headquarters.
- (3) The Study Team would explain the framework of the M/P in the first workshop, in which participants should include not only the officials concerned but also stakeholders.
- (4) The Japanese side explained that a stakeholder meeting is one of the policies in accordance with the "JICA Guidelines for Environmental and Social Consideration" that was formally issued on April 2004. The both sides of Japan and Indonesia (hereinafter referred to "the Both Side") agreed that as stakeholder meetings were very important in the Study, Bali Province should positively lead the stakeholder meetings and the Study Team should support Bali Province.
- (5) The Indonesian side requested the training on the Project Cycle Management (PCM) and Participatory Rural Appraisal (PRA) for facilitators of the stakeholder meetings. The Japanese side agreed to convey the request to the JICA headquarters.
- (6) The Indonesian side suggested the following issues on the Study, and the Japanese side promised to pay attention on those issues:
  - As the new water resources law enforced on March 2004 differs from the policy and regulations by WATSAL on some details, the Study should follow the new law if there are difficulties to judge issues on water resources.
  - As the local culture and tradition in Bali are very important, the Master Plan should be planned and established with respect for those culture and tradition. The Balinese traditional rules and the new water resources law should be compromised each other.

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- For the estimation of irrigation water consumption, the reuse of irrigation water in SUBAK system should be carefully examined.
  - There are many existing data and information concerning with water resources in Bali. However, as some data include some misreading, miscompiling and errors, those are necessary to be carefully examined and corrected.
- (7) As the conservation of upstream basins is very important on formulation of the Master Plan for water resources, watershed management should be included in the Master Plan. The Both Sides agreed that the forestry master plan in Bali should be referred in the proposed Master Plan, giving the review of the existing plan.
  - (8) The cost and profit sharing between the upstream and the downstream should be considered by the Study Team. For instance, the Study Team should consider and propose the rules that the people in the downstream would contribute to the conservation of the upstream, because the conservation of the upstream might contribute to raise the flood safety and water availability.
  - (9) In response to the suggestion that the Master Plan for water resources should refer to a spatial plan in urban and rural areas, the Japanese side agreed that the Study Team would refer the spatial master plan in Bali Province for the preparation of the Master Plan for water resources.
  - (10) As the water reallocation among large-water-consumed areas and rich-water-resources areas is one of the main issues, the Study should introduce some kind of a compensation rule, considering the existing local regulation for water reallocation.
  - (11) As Bali is one of the famous international tourism spots, environment-friendly plan might be applicable to facilities for flood control and water use.

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**Attachment-1(1) Attendant List of the Meeting in Denpasar**

Name	Institution
Ir. Nyoman Sudiana	Head of Public Works Service, Bali Province
Ir. I GN. Sura Adnyana	Head of Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Ketut Ardiana	BAPPEDA, Bali Province
Ir. Wayan Nuada	Bureau of Economic & Development, Bali Province
Ir. Tjok Bagus Budiana, Dipl. HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. I Made Sudiarsa, HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Herning Widayati, HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Putra Budiarta	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Naoto Oashi	Leader, Advisory Committee in charge of Water Resources Development and Management
Yoshihito Ono	Project Planning, JICA Staff in Headquarters
Masatomo Watanabe	Leader, JICA Study Team
Kenji Nagata	Vice-Leader, JICA Study Team
Toshio Katayama	JICA Study Team
Shimao Hidaka	JICA Study Team
Oshika Yusuke	JICA Study Team
Takeshi Yoshida	JICA Study Team
Naoto Mizuno	JICA Study Team

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**Attachment-1(2) Attendant List of the Meeting in Jakarta**

Name	Institution
Ir. Soekrasno Dipl. HE	Director, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
Ir. Anthony Raymond Kemur	Head of Sub-Directorate for Basin Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources
Ir. Ridwan	Chief of Section for Eastern Region, Sub-Directorate of Basin Water Resources Management, Directorate of Water Resources Management, Directorate General of Water Resources
Ir. Haryanto Dipl. HE	Chief of Section for Environment, Sub-Directorate for Basin Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources
Ir. I GN. Sura Adnyana	Head of Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Naoto Oashi	Leader, Advisory Committee in charge of Water Resources Development and Management
Yoshihito Ono	Project Planning, JICA Staff in Headquarters
Shiro Nakasone	Assistant Resident Representative, JICA Indonesia
Shunich Maeda	JICA Expert on Water Resources Policy
Masatomo Watanabe	Leader, JICA Study Team
Kenji Nagata	Vice-Leader, JICA Study Team

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**Attachment-2(1) List of Steering Committee**

No	Position	Name	Institution
1	Chairman	Ir. Soekrasno Dipl. HE	Director, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
2	Vice Chairman	Ir. Nyoman SUDIANA	Head of Public Works Service, Bali Province
3	Secretary I	Ir. Anthony Raymond Kemur, MSc.	Head of Sub-Directorate for Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
4	Secretary II	Ir. I. Gusti Nyoman Sura Adnyana, MSc.	Head of Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
5	Member	-	Head of BAPPEDA, Bali Province
6	Member	-	Head of Bureau for Economic and Development, Bali Provincial Secretariat
7	Member	-	Head of Sub-Directorate of Basin Water Resources Management, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
8	Member	-	Chief of Section for Design, Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
9	Member	-	Chief of Section for Irrigation Development, Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
10	Member	-	Chief of Section for River, Lake and Coastal Management, Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
11	Member	-	Chief of Section for Program, Sub-Directorate for Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
12	Member	-	Chief of Section for Evaluation, Sub-Directorate for Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works

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**Attachment-2(2) List of Counterpart Team**

**DAFTAR COUNTERPART**  
**THE COMPREHENSIVE STUDY ON WATER RESOURCES DEVELOPMENT AND MANAGEMENT**  
**IN BALI PROVINCE IN THE REPUBLIC OF INDONESIA**

No.	Assignment	Nama personil konsultan	Nama Counterpart	Keterangan
1	Team Leader/Flood Control an Water Utilization Plan	Masatomo Watanabe	1 Ir. Tjok Bagus Budiana, Dipl.HE	<b>Pelindung :</b> Kepala Dinas Pekerjaan Umum Propinsi Bali  <b>Penanggung Jawab :</b> Kepala Sub Dinas Sumber Daya Air dan Prasarana Pedesaan  <b>Kordinator :</b> 1. Kasi. Perencanaan Teknis Sumber Daya Air 2. Kasi. Pengembangan Irigasi, Air Baku dan Prasarana Pedesaan. 3. Kasi. Pengelolaan Sungai, Danau dan Pantai 4. Kasi. Bina Manfaat
2	Deputy Team Leader/River and Reservoir	Kenji Nagata	2.1 Dwi Aryani, ST, Sp.1 2.2 Ir. Tjok Bagus Purnawarman, Sp.1	
3	Hidrology/Hidrouitics	Toshio Katayama	3.1 Airangga Marjono, ST, MT 3.2 Dewa Arya Wiadnyana	
4	Geology	Yasushi Momose	4.1 Ir. Modesta Tandiyuk, Sp.1 4.2 I Gst. Putu Suparka, BE	
5	Groundwater	Yusuke Oshika	5.1 Ir. I Wayan Sudarpa 5.2 Hermansyah	
6	Agriculture & Irrigation	Kazuhiko Otani	6.1 Nyoman Sadhi Negara, ST 6.2 Ir. Nyoman Wiarta	
7	Water Supply	Shimao Hidaka	7.1 Ir. Wayan Budhiyasa, Dipl.HE 7.2 Agus Suherman	
8	Sociaty/law an institution	Naoko Anzai	8.1 Ketut Sulasa, BE 8.2 Putu Riyasa, SH	
9	Economic an Financial Evaluation	Noboru Osakabe	9.1 Sunarwan Sunaryo, Sp.1 9.2 Drs. Ketut Alit	
10	Environment and Water Quality	Jayamohan Somasundaram	10.1 Ketut Alit Sudiastika, ST 10.2 Maruli Manulang	
11	Social Consideration/Public Involvement	Nyoman Sutawan	11.1 Drs. Nengah Suardana 11.2 Drs. Nyoman Nirkajaya	
12	Facility Design / Cost Evaluation	Masayuki Kawabata	12.1 Ketut Semarajaya, SST 12.2 Ir. Made Nunuk Yuswari	
13	GIS Database	Takeshi Yoshida	13.1 I Made Yasa, ST 13.2 I Gst. Ketut Sumarya, ST	
14	Cordinator/Flood Analysis	Taizou Hashiguchi	14.1 Nengah Toya, ST 14.2 Komang Putra Antara, ST	
15	Public Consultation	Naoto Mizuno	15.1 Nym. Warka, AMd 15.2 Nym. Sudira	

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**APPENDIX-5**

**MINUTES OF MEETING  
ON  
THE PROGRESS REPORT (1)**

**FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Denpasar, March 2<sup>nd</sup>, 2005

**MINUTES OF MEETINGS  
ON  
THE PROGRESS REPORT (1)  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

**AGREED UPON AMONG**

**MINISTRY OF PUBLIC WORKS  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

Denpasar, March 2nd, 2005



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Ir. Soekrasno Sastro Hardjono Dipl. HE  
Director,  
Directorate of Water Resources  
Management,  
Directorate General of Water Resources,  
Ministry of Public Works



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Masatomo WATANABE  
Leader,  
Study Team,  
Japan International Cooperation Agency

In accordance with the Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Public Works, the Government of Bali Province and Japan International Cooperation Agency (JICA), the JICA Study Team (the Study Team) submitted the Progress Report (1) on February 21st, 2005 to the Public Works Service of Bali Province.

This Minutes of Meetings summarizes the results of the meetings on the Progress Report (1) held on February 23<sup>rd</sup> and on March 2<sup>nd</sup> both in Denpasar with the technical committee and the steering committee respectively. The participants of the steering committee meeting are listed in the Attachment-1.

The DGWR and the government of Bali Province (hereinafter referred to "the Indonesian Side") agreed with the contents of the Progress Report (1) with the following notes:

- (1) International commitment by the government of Indonesia, such as Millennium Development Goals, Integrated Water Resources Management and Water Efficiency Strategies, should be reflected to the Master Plan.
- (2) The traditional cultural and religious commitment of Bali is embodied in *subak*. As the Study Team proposed as a general policy that *subak* and its philosophy of "*Tri Hita Karana*" should be respected in water resources development and management, following the new water resources law issued in 2004. The both sides of the Study Team and DGWR and the government of Bali Province (hereinafter referred to "the Both Sides") confirmed its importance and effectiveness to water resources management in Bali.
- (3) Although it is not disputed that a *subak* is the best organization for irrigation water management in Bali, there are many conflicts arising in recent years. The conflicts between internal *subaks* could be solved by themselves, but the conflicts between *subaks* and non-*subaks* such as PDAMs and industries often could not easily find a solution. Therefore, the Both Sides agreed that proper institutions and regulations are needed to manage these problems.
- (4) The possible need to restore the system of *Sedahan Agung* was discussed. The Study Team explained about the traditional roles played by *Sedahan Agung* and the wishes of many *subaks* to have *Sedahan Agung* as a government focal point. The Indonesian Side suggested to explore whether the current services provided by the revenue office to *subaks* are sufficient and to determine additional support, particularly on technical matters, would be necessary. The Study Team agreed and mentioned that as many *subaks* seem to want to have a government "one stop shop", a decision will have to be made as to which office would be most suitable to locate such a role.
- (5) With respect to the institutional reform, Mr. Soekrasno described the different roles in water resources management: regulator, developer, operator, users, and coordinating bodies. The Study Team said that the proposed Option II (with the introduction of *Balai PSDA*) corresponds to the separation of the roles of regulator and operator. The Study Team also mentioned that in light of the principle of "one island, one river basin, one management," Options II-C and II-D would be ideal, while Option II-B would also be better than the existing arrangement.



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- (6) The Indonesian Side requested to explore the possibility of introducing “water police”, or the system of civil service investigation officers (in accordance with Article 93 of Water Resources Law No. 7/2004) in Bali. The Study Team said that the possibility will be studied.
- (7) The Study Team proposed in the Progress Report (1) that the river basin unit of SWS 03.01, which is managed by the government of Bali Province, is divided newly into 20 sub river basins. The Indonesian Side agreed to this proposal, which will be applied to new river basin administration in Bali Province.
- (8) The Indonesian Side requested that environmental flow for a river itself has to be included in water demand projection, and the Study Team agreed it.
- (9) Concerning agriculture water demand projection, the following request was made by the Indonesian Side. The Study Team agreed to re-examine the relevant figures.
  - As seepage loss of 1 mm/day that was adopted by the Study Team seems to be too low, existing survey data should be checked and referred to.
  - Present and future irrigation efficiency of 50 % should be reviewed, and future irrigation efficiency seems to be increased by the improvement efforts of operation and maintenance.
- (10) The Indonesian Side requested that the study for water balance between water demand and potential should include the study by sub river basin in addition to the study by regency/city, and the Study Team agreed it.
- (11) The JICA expert suggested that every possible alternative should be studied in the water resources development plan in the Master Plan. For example, decreasing of water loss rate is considered to also be one of the water resources development schemes. The Study Team agreed it.
- (12) The Both Sides agreed that in flood control planning, non-structural measures should be included in the Master Plan in addition to structural measures.
- (13) The Indonesian Side requested that the comprehensive flood disaster mitigation should be included in the Master Plan and “zero  $\Delta q$  policy”, which means that it is not allowed that flood water is increased due to urbanization or other development, should be introduced into the flood control plan in the Master Plan.
- (14) The Both Sides agreed to adopt the policy of “Stay Harmony with Water” as compromise of two principles that are to let people away from floods and to let floods away from people.
- (15) The Both Sides agreed that in water quality improvement, PROKASIH (Clean River Water Program), which is being implemented by BAPEDALDA as a coordinator in Bali, should be included in the Master Plan. The Both Side also agreed that “Polluter Pay Principle” should be applied in the Master Plan.
- (16) The Indonesian Side requested to include coastal protection in the Study. The Both Sides agreed that a kind of inventory survey and recommendation would be implemented based on existing survey data and reports during the phase 2 of the Study.

- (17) The Indonesian Side suggested that the framework of the Master Plan has to be authorized by the government of Bali Province through the discussion in PTPA plus some stakeholders and concerned organizations. The Indonesian Side requested to prepare the draft report of the framework of the Master Plan (POLA) to obtain the authorization. The Study Team agreed to convey the request to the JICA headquarters.
- (18) The Indonesian Side reminded the Study Team that the training on the Project Cycle Management (PCM) and Participatory Rural Appraisal (PRA) for facilitators of the stakeholders meetings is very useful and effective in holding stakeholders meetings. Thus, the Indonesian Side again requested the said training in parallel with the Study. The Study Team agreed to convey the request to the JICA headquarters.
- (19) The Indonesian Side stated that the flood control analysis during the period of formulating the Master Plan and conducting the feasibility study is also very important in Bali, and the relevant technical transfer is very useful for the Indonesian Side. Thus, the Indonesian Side requested that an international-level computer software for flood control analysis would be applied in the Study, and the Indonesian Side would continue to utilize it through the technical transfer by the Study Team. The Study Team agreed to convey the request to the JICA headquarters.

**Attachment-1 Attendant List**

Name	Institution
Ir. Soekrasno Dipl. HE	<u>Chairman of Steering Committee</u> Director, Directorate of Water Resources Management, Directorate General of Water Resources, Ministry of Public Works
Ir. Nyoman Sudiana	<u>Vice-chairman of Steering Committee</u> Head of Public Works Service, Bali Province
Ir. Anthony Raymond Kemur	<u>Secretary I of Steering Committee</u> Head of Sub-Directorate for Basin Water Resources Planning, Directorate of Water Resources Management, Directorate General of Water Resources
Ir. I GN. Sura Adnyana	<u>Secretary II of Steering Committee</u> Head of Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Ketut Ardiana	BAPPEDA, Bali Province
Ir. Tjok Bagus Budiana, Dipl. HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. I Made Sudiarsa, HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Herning Widayati, HE	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Putra Budiarta	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Modesta Tandiyuk. Sp.1	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Ketut Alit Sudiastika	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Ir. Gst. Made Alit	Water Resources Development and Village Infrastructure, Public Works Service, Bali Province
Shunich Maeda	JICA Expert on Water Resources Policy
Masatomo Watanabe	Leader, JICA Study Team
Kenji Nagata	Deputy Leader, JICA Study Team
Naoko ANZAI	JICA Study Team
Shimao Hidaka	JICA Study Team
Dr. Ir. Nyoman Sutawan	JICA Study Team

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**APPENDIX-6**

**MINUTES OF MEETING  
ON  
THE INTERIM REPORT  
  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Jakarta, August 5<sup>th</sup>, 2005




**MINUTES OF MEETINGS  
ON  
THE INTERIM REPORT**


**FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

**AGREED UPON AMONG**

**MINISTRY OF PUBLIC WORKS  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

Jakarta, August 5th, 2005

  
f \_\_\_\_\_  
Mr. Imam Anshori  
Director,  
Directorate of Water Resources  
Management  
Directorate General of Water Resources,  
Ministry of Public Works

  
\_\_\_\_\_  
Masatomo WATANABE  
Leader,  
Study Team  
Japan International Cooperation Agency

Witnessed by

  
\_\_\_\_\_  
Naoto OASHI  
Leader,  
Monitoring Team,  
Japan International Cooperation Agency



In accordance with the Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Public Works, the Government of Bali Province and Japan International Cooperation Agency (JICA), the team for the Study (Study Team) submitted the Interim Report on July 29<sup>th</sup>, 2005 to the Public Works Services of Bali Province.

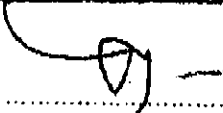

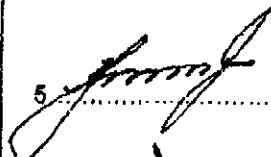

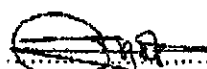
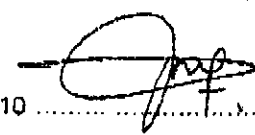
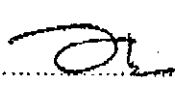

The Minutes of Meetings summarizes the results of meetings on the Interim Report held at the office of Public Works Services in Denpasar on August 1st with the Study Team and Technical Committee, and August 2nd with Study Team and Steering Committee. The participants of the Technical Committee and the Steering Committee are listed in the Attachment.

Through the explanation done by the Study Team and mutual discussion, DGWR and the Government of Bali Province understood and agreed on the contents of the Interim Report with the following notes:

- (1) The Master Plan of Water Resources Development and Management in Bali Province proposed in the Interim Report would be elaborated in the next phase of the Study and concluded in the Final Report taking the following items into consideration.
  - a) Some of the contents will be moved to POLA documents.
  - b) Flood damage management such as public education and flood defense activities.
  - c) Increase of flood discharge in flood control plan according to the urbanization.
  - d) Figures adopted in the Spatial Plan of the Provincial Government.
  - e) Cost recovery including some government subsidies for water supply companies
  - f) Water supply countermeasures for the poor water resources area.
  - g) Water conservation countermeasures for the whole catchments area.
- (2) The priority projects for the feasibility study in next stage selected by the Study Team were discussed and approved through the meetings.
- (3) Through the discussions on the institutional arrangement for water resources management, both side confirmed necessity of establishing of the preparatory team for the institutional reform.
- (4) Framework of Master Plan (POLA) prepared by the Study Team was discussed and accepted in the meeting held by Bali Provincial Government on 23<sup>rd</sup> June. DGWR, however, requested the Study Team to improve and elaborate it until the termination of third stage for the feasibility study under the guidance of DGWR.
- (5) DGWR requested the Study Team to prepare three volumes of reports, namely POLA Report, Master Plan Report and F/S Report. The Study Team will convey this request to JICA Headquarters, Tokyo.
- (6) DGWR requested more practical technical transfer to the Counterparts through on the job training in the feasibility study.

## DAFTAR HADIR

Hari / Tanggal : Senin, 1 Agustus 2005  
 Tempat : Ruang Rapat Utama, Dinas PU Prop. Bali  
 Acara : Technical Meeting Penyusunan Master Plan Sumber Daya Air Bali

No.	Nama	Jabatan	Tanda Tangan
1	Sura Adayana	Kepala Sub Dinas SDA dan PP - Dinas Pekerjaan Umum Propinsi Bali	
2	MG Sudharsana	Kepala Sub Dinas Program dan Pengendalian - Dinas Pekerjaan Umum Propinsi Bali	
3		Kepala Sub Dinas SDA & PP - Dinas Pekerjaan Umum Propinsi Bali	
4		Kepala Seksi Perencanaan Teknis - Subdis. SDA & PP	
5	HERNING	Kepala Seksi Sungai, Danau dan Pantai - Subdis. SDA & PP	
6	Puteh Budiarta	Kepala Seksi Irigasi, Air Baku dan Prasarana Pedesaan - Subdis. SDA & PP	
7	OST. MD ALI	Kepala Seksi Bina Manfaat - Subdis. SDA & PP	
8		Kepala Satker Sementara Irigasi Andalan Bali.	
9		Kepala Satker Sementara Air Baku Bali.	
10	I Wayan Wardana	Kepala Satker Sementara Pengendalian Banjir dan Pengamanan Pantai Bali	
11	N DARMAWAN	Kepala Satker Sementara Pengamanan Daerah Pantai Bali Selatan	
12	nyoman E. yusa	Kepala Satker Sementara Pengembangan dan Pengelolaan Sumber Air Bali.	



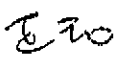
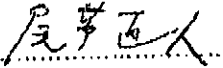
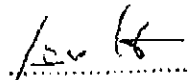
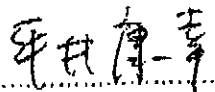
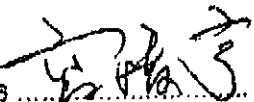
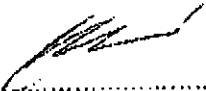
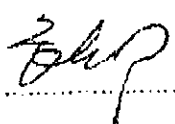
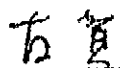
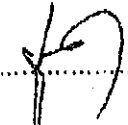
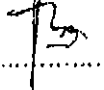



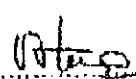
No.	Nama	Jabatan	Tanda Tangan
13	Masafono WATONABE	JICA Study Team	13
14	Shinichi MASUDA	JICA HA	14
15	Naoto OACHI	JICA Mission	15
16	Yasuyuki HIRAI	JICA expert	16
17	Komang Sumijana <del>Komang Soerangata</del> Putra	JICA Study Team	17
18	Ni Ketut Indah Setiawati	JICA Study Team	18
19	Ni Made Yustina Dewi		19
20	Noboru Osakabe	JICA Study Team	20
21	Nyoman Setawan	"	21
22	S. Sembengrono	"	22
23	S. Hasibuan	"	23
24	HERNING	Koordinator PSBP	24
25	Tomu TAKAHASHI	JICA Study Team	25
26	Junichi Koga	"	26
27	Naoto MIZUNO	"	27
28	N. DARMAWAN	Ka Sathker-S PPSA	28
29	IWAYAN SUARDANA	Staf PBPP Bali	29

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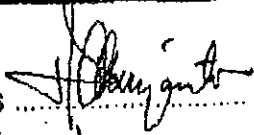
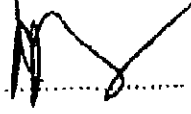

## DAFTAR HADIR

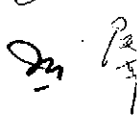
**Hari / Tanggal** : Selasa, 2 Agustus 2006  
**Tempat** : Ruang Rapat Utama, Dinas PU Prop. Bali  
**Acara** : Steering Committee Meeting Penyusunan Master Plan Sumber Daya Air Bali

No.	Nama	Jabatan	Tanda Tangan
1		Dirjen Sumber Daya Air, Departemen Pekerjaan Umum	1
2	Ir. Imam Angari	Direktur Bina Pengelolaan SDA, Ditjen. SDA	2
3	Raymond Kenna	Kasubdit. Perencanaan SDA, Direktorat BPSDA	3
4	SITOH FDP	Kasubdit. Pengelolaan SDA, Direktorat BPSDA	4
5		Kasi Program Subdin. Perencanaan Wilayah Sungai, Direktorat BPSDA	5
6		Kasi Evaluasi Subdin. Perencanaan Wilayah Sungai, Direktorat BPSDA	6
7	Donny Azdan	Kasubdit Sungai, Direktorat Pengairan dan Irigasi, Bappenas	7
8		Kepala Bappeda Prov. Bali	8
9		Kepala Biro Ekonomi dan Pembangunan Prov. Bali	9
10		Kasubdit Sungai, Direktorat Pengairan dan Irigasi, Bappenas	10
11		Kepala Sub Dinas SDA dan PP - Dinas Pekerjaan Umum Prov. Bali	11
12	MG Subharsana	Kepala Sub Dinas Program dan Pengendalian - Dinas Pekerjaan Umum Prov. Bali	12
13	Pudjawan	Kepala Seksi Perencanaan Teknis - Subdis. SDA & PP	13
14		Kepala Seksi Sungai, Danau dan Pantai - Subdis. SDA & PP	14
15		Kepala Seksi Irigasi, Air Baku dan Prasarana Pedesaan - Subdis. SDA & PP	15
16		Kepala Seksi Bina Manfaat Subdis. SDA & PP	16
17	Bayus Sireja	Kepala Satker Sementara Irigasi Andalan Bali.	17
18	I Hengah Suardana	Kepala Satker Sementara Air Baku Bali.	18

No.	Nama	Jabatan	Tanda Tangan
19	Modesta Tandiyuh	Kepala Satker Sementara Pengendalian Banjir dan Pengamanan Pantai Bali	19 
20		Kepala Satker Sementara Pengamanan Daerah Pantai Bali Selatan	20
21	N. DARMAWAN	Kepala Satker Sementara Pengembangan dan Pengelolaan Sumber Air Bali.	21 
22	Masakemo WATOHABE	JICA STUDY TEAM	22 
23	Naoto OASHI	JICA Mission	23 
24	Shinshu; MASUDA	JICA Mission	24 
25	Yasuyuki HIRAI	JICA expert	25 
26	Tom TAKAHASHI	STUDY Team	26 
27	Nyoman Sutawan		27 
28	Noboru OSAKABE		28 
29	Junichi Kaga		29 
30	Naoto MIZUNO		30 
31	Ni Ketut Indah Setiawati		31 
32	Ni Made Yustina Dewi		32 
33	N Romang Coemangana		33 
34	Djau. Bas. Burhan	COUNTERPART TEAM	34 
35	ILASIBU AN	STUDY TEAMS	35 

to 20  
04

No.	Nama	Jabatan	Tanda Tangan
36	Hariyanto	Kasi Evaluasi Dit BPSDA	36 
37	EKO SUBEKTI	Ka Sub Dit JAKSTRA-SDA	37 
38	Made Rai Suborini	Staf CanteK Subdin SDA & PP	38 
39			39
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**APPENDIX-7**

**MINUTES OF MEETING  
ON  
STEERING COMMITTEE MEETING**

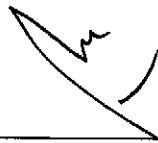
**FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND  
MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Bali, October 28<sup>th</sup>, 2005



**MINUTES OF MEETING**  
**ON**  
**STEERING COMMITTEE MEETING**  
**FOR**  
**THE COMPREHENSIVE STUDY ON**  
**WATER RESOURCES DEVELOPMENT AND MANAGEMENT**  
**IN BALI PROVINCE**  
**IN**  
**THE REPUBLIC OF INDONESIA**  
**AGREED UPON AMONG**  
**MINISTRY OF PUBLIC WORKS**  
**AND**  
**THE GOVERNMENT OF BALI PROVINCE**  
**AND**  
**JAPAN INTERNATIONAL COOPERATION AGENCY**

Bali, October 28<sup>th</sup>, 2005



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Ir. Bambang Sigit S., M. Eng

Sub Director,  
Sub Directorate of River Basin Planning  
Directorate of Planning and Programming  
Directorate General of Water Resources,  
Ministry of Public Works



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Masatomo WATANABE

Leader,  
Study Team  
Japan International Cooperation Agency

In accordance with the Scope of Work for the Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Public Works, the Government of Bali Province and Japan International Cooperation Agency (JICA), the team for the Study (Study Team) and the Steering Committee for the Study held the meeting on the Study Program for the Phase III at the office of Public Works Services in Denpasar on October 28<sup>th</sup>, 2005. The main topics of discussion are as follows:

- Study Plan for Ayung Dam
- Environmental and Social Impact Assessment Study
- Project Components and Schedule during Phase III study

The Minutes of Meetings summarize the results of the meetings on the Study Program for the Phase III with the Study Team and Steering Committee. The participants of the meeting are listed in the Attachment.

Through the explanation done by the Study Team and mutual discussion, the Steering Committee understood and agreed the Study Program for the Phase III as well as the modification proposed by the Study Team with the following notes:

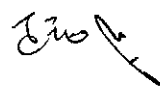
- (1) The POLA (Framework of Water Resources Development and Management in Bali Province) and the Master Plan of in Bali Province would be elaborated in Phase III of the Study. Especially, the POLA should be approved before the formulation of the Master Plan with the further meetings in Bali or Jakarta.
- (2) According to the recommendation from the JICA Advisory Council of Environmental and Social Considerations Review, the Study Team reexamined the Ayung Dam plan to minimize the environmental and social impacts caused by the dam construction. As the results of this reexamination, concrete gravity dam was selected. To minimize the dam height (or reservoir volume), sedimentation volume is planned to store and maintained by regular excavation at check dams out of the reservoir. This modified dam decreases the dam height (-10m) and reservoir volume (-6 million m<sup>3</sup>).
- (3) Although PDAM Badung initially planned the new water treatment facility at Kapal as the Study Team proposed in the Western System for the metropolitan water supply, PDAM Badung insists to change the location at Kapal to Mungu near the Penet River mouth due to the disagreement with SUBAK as to water intake at Kapal. Finally, the Study Team accepted the location of water treatment facility at Mongu and the final destination at Kerobokan of main water transmission-line
- (4) As AMDAL (EIA in Indonesian Regulation) should be conducted after the completion of final design or before the construction, the official AMDAL for the projects proposed by the Study Team will not be implemented during Phase III of the Study. Knowing these situations, the Study Team will conduct EIA for the projects of the integrated public water supply system including Ayung Dam. The results of this EIA will be good references for the future AMDAL for the projects to be done by the Indonesian side.
- (5) Submission of Draft Final Report is scheduled on early March, 2006 following by the comments from the JICA Advisory Council of Environmental and Social Considerations Review on late February, 2006 in Japan.

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## ATTENDANCE LIST

Day / Date : Friday, October 28, 2005  
Place : Ruang Rapat Utama, Public Works of Bali Province  
Program : Steering Committee Meeting (4)

No.	Name	Position
1	Bambang Sigit	Sub Directorate of River Basin Planning
2	Sura Adnyana	Head of Sub-Dinas of Water Resources, Public Works of Bali Province
3	Boy.Jw	Provincial Regional Development Planning Agency (BAPPEDA)of Bali Province
4	Sudiarsa	Head of Technical Planning Section, Sub-Dinas Water Resources Public Works of Bali Province
5	N. Darmawan	Head of Working unit of Bali Water Resources Development and Management Project.
6	Putu Budiarta	Head of Water Resources and Rural Infrastructures Section.
7	Herning W	Head of River, Lake and Beach Management Section
8	Made Rai Suwartini	Staff of Sub-Dinas Water Resources, Pubic Work
9	I Ketut Alit	Working Unit of Coastal Conversation
10	Suteja	Working Unit of Irrigation System
11	I Wayan Riasa	Working Unit of Bali Flood Control and Coastal Protection Project.
12	Ketut Laba	Program and Controlling staff
13	N. Sueta	Technical Planning Coordinator
14	Masatomo Watanabe	JICA Study Team
15	TORU Takahashi	JICA Study Team
16	Nym. Sutawan	JICA Study Team
17	S. Jaya Mohan	JICA Study Team
18	Y. Momose	JICA Study Team
19	Yustina	JICA Study Team
20	Naoto Mizuno	JICA Study Team
21	Hasibuan.O.	Staff of JICA Study Team



**APPENDIX-8**

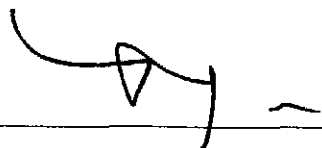
**MINUTES OF MEETING  
ON  
STEERING COMMITTEE MEETING (No.5)**

**FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND  
MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Bali, December 29<sup>th</sup>, 2005

**MINUTES OF MEETING  
ON  
STEERING COMMITTEE MEETING (No.5)  
  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA  
  
AGREED UPON AMONG  
  
MINISTRY OF PUBLIC WORKS  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

Bali, December 29<sup>th</sup>, 2005



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**Ir. I GN. Sura Adnyana, MSc.**  
Head of Water Resources Development and  
Village Infrastructure, Public Works  
Service, Bali Province



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**Masatomo WATANABE**  
Leader,  
Study Team  
Japan International Cooperation Agency

In accordance with the Scope of Work for “The Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia” (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Public Works, the Government of Bali Province and Japan International Cooperation Agency (JICA), Progress Report (2) prepared by the team for the Study (the Study Team) was submitted on December 26<sup>th</sup>, 2005 to the Indonesian side. ✓

The Minutes of Meeting summarize the comments and suggestions of the meetings on Progress Report (2) held at the office of Public Works Services in Denpasar on December 29<sup>th</sup>, 2005 with the Study Team and the Steering Committee. The participants of the meeting are listed in the attachment.

Through the explanation done by the Study Team and mutual discussion, DGWR and the Government of Bali Province understood and agreed on the contents of Progress Report (2) with following notes: ✓

- (1) The Western Water Supply System is called as ‘Penet System’ in Master Plan Study Phase as the location of the water intake was planned at the midstream of Penet River near Kapal, Badung Regency. Through the discussion and coordination with SUBAK, the original location was shifted to the downstream ✓ at the confluence point of Penet River and Sungai River. Responding to this background, this water supply system should be called as ‘Sungi System’. ✓
- (2) Regarding the flood control project of Badung River, the existing function of the Batan Nyuh weir should be secured by proper temporary works during construction. The Mergaya weir located more downstream does not need this kind of temporary works. ✓
- (3) There are several holy places to be submerged by the proposed Ayung dam reservoir and by the proposed intake weir of Petanu System. The Provincial Government shall continue careful and courteous explanations to such stakeholders as local temple, cultural office and Hindu’s organization (PHDI). Especially good relation with the Provincial Government and PHDI should be necessary. ✓
- (4) The Study Team proposed the water supply system for the Denpasar Metropolitan Area (SARBAGI) including one city (Denpasar) and two regencies (Badung and Gianyar). The cover area of the proposed system should be extended more by adding two regencies (Tabanan and Klungkung). Because the water supply companies in the area (SARBAGITAKU) made an agreement on December 28, 2005 regarding the cooperation of water supply in the area. The Study shall consider this situation. ✓
- (5) Meanwhile, Provincial Government named the metropolitan area “SARBAGITA”. The metropolitan area does not include Klungkung regency. In order to avoid terminological confusion, more careful confirmation is necessary. ✓
- (6) For the construction and operation & maintenance of the dam and the water treatment facilities, the regulation under the latest New Water Law must be

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prepared shortly. To make final decision of the projects, careful consensus-building with stakeholders is necessary through the meetings.

- (7) For the preservation of natural storing function in the retarding basin which is proposed in the Mati river flood control plan, it is necessary to prepare special regulation like a land use regulation to manage uncontrolled development
- (8) In order to arrange Water Resources of Master Plan in Bali Province, 'POLA' (water resources management scheme) must be prepared first, and then POLA should be legalized by the concerned authority.
- (9) The approval to change the status of the Bali River Basin from Provincial River Basin to National Strategic Basin is under process.

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## ATTENDANCE LIST

Day / Date : Thursday, December 29, 2005  
 Place : Ruang Rapat Utama, Public Works of Bali Province  
 Program : Steering Committee Meeting (No.5)

No.	Name	Position
1	Bambang Sigit	Sub Directorate of River Basin Planning
2	Sura Adnyana	Head of Sub-Dinas of Water Resources, Public Works of Bali Province
3	I.B.M Parsa	Division Head of Physic and Program of BAPPEDA
4	Made Gde Sudharsana	Head of Sub-Dinas Program and Controlling, Public Works of Bali Province
5	Putu Budiarta	Head of Water Resources and Rural Infrastructures Section.
6	Nyoman Sueta	Chief Counterpart for JICA Study Team
7	Masatomo Watanabe	JICA Study Team (Leader)
8	Toru Takahashi	JICA Study Team (Deputy leader)
9	Nyoman Sutawan	JICA Study Team
10	Keizo Sueyoshi	JICA Study Team
11	Yasushi Momose	JICA Study Team.
12	Naoto Mizuno	JICA Study Team
13	Boy.Jw	Provincial Regional Development Planning Agency (BAPPEDA)of Bali Province
14	Gusti Putu Wandira	Irrigation Project Office
15	I Gusti Ngurah Raka	Working Unit of PBPP Bali
16	N. Darmawan	Head of Working unit of Bali Water Resources Development and Management Project.
17	Sudiarsa	Head of Technical Planning Section, Sub-Dinas Water Resources Public Works of Bali Province
18	Gusti Made Acir	Section Head of Bina Manfaat (utilization part)
19	I Ketut Jimbaran	Section Head of Bina Manfaat (utilization part)
20	Made Rai Suwartini	Staff of Sub-Dinas Water Resources, Pubic Work

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**APPENDIX-9**

**MINUTES OF MEETING  
ON  
THE DRAFT FINAL REPORT  
  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND  
MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA**

Denpasar, June 6<sup>th</sup>, 2006

**MINUTES OF MEETINGS  
ON  
THE DRAFT FINAL REPORT  
FOR  
THE COMPREHENSIVE STUDY ON  
WATER RESOURCES DEVELOPMENT AND MANAGEMENT  
IN BALI PROVINCE  
IN  
THE REPUBLIC OF INDONESIA  
AGREED UPON AMONG  
MINISTRY OF PUBLIC WORKS  
AND  
THE GOVERNMENT OF BALI PROVINCE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

Denpasar, June 6, 2006

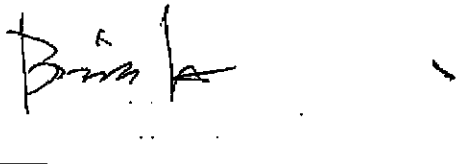


Ir. Nyoman Sudiana  
Head of Public Works Service,  
Bali Province

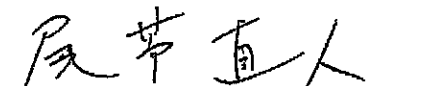


Masatomo WATANABE  
Leader,  
Study Team  
Japan International Cooperation Agency

Witnessed by



Ir. Slamet Budi Santoso, Dipl. HE  
Sub Director of River, Lake and Dam  
Technical Planning  
Directorate of River, Lake and Dam  
Directorate General of Water Resources  
Ministry of Public Works



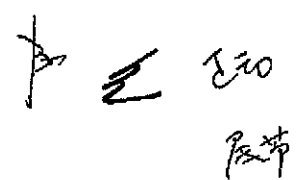
Naoto OASHI  
Leader,  
Monitoring Team  
Japan International Cooperation Agency

In accordance with the Scope of Work for "The Comprehensive Study on Water Resources Development and Management in Bali Province in the Republic of Indonesia" (the Study) agreed upon among Directorate General of Water Resources (DGWR) of the Ministry of Public Works, the Government of Bali Province and Japan International Cooperation Agency (JICA), the Draft Final Report prepared by the team for the Study (the Study Team) was submitted on June 6th, 2006 to DGWR and the Government of Bali Province (the Indonesian side).

The Minutes of Meetings summarize the comments and suggestions of the technical committee and steering committee meetings on the Draft Final Report held at the office of Public Works Services in Denpasar on June 5th and 6th, 2006. The participants of the meetings are listed in the attachment.

Through the explanation done by the Study Team and mutual discussion, the Indonesian side understood and agreed on the contents of the Draft Final Report with following notes:

- (1) DGWR reminded the following points regarding the central governmental policy on water resources management;
  - The Study results are acceptable since the Master Plan reflects the interests of stakeholders and includes water resources management plans as well as water resources development plans.
  - It is hoped Bali would not face serious problems on water like those in Jakarta, Bandung and Surabaya, through implementing the programs proposed in the Master Plan.
  - The Law on Water Resources No. 7, 2004 states that "Water resources utilization shall be based on the relatedness of rainwater, surface water, and groundwater by prioritizing the utilization of surface water." Large scale groundwater development shall be carefully examined.
  - The central governments still discuss about the national strategic basin in the whole country, and about establishment of regional water resources council. These new systems would set up within next year.
- (2) The Indonesian side expressed their expectation of early implementation of the priority projects, and will start the application for JBIC Loan soon after the Study is terminated.
- (3) Regarding flood control plan of Mati River, there is possibility that Ulung Tanjung Weir is still used for irrigation even in small scale. In the detailed design stage, it must be confirmed, and countermeasures are necessary to examine if irrigation scheme from Ulung Tanjung Weir is still functioned.
- (4) As mentioned in the Draft Final Report, some issues to be solved to proceed the priority projects remains such as a holy place and springs inundated due to Ayung Dam Project and land acquisition. Bali Provincial Government would solve these issues, consequently.

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- (5) According to the Law on Water Resources No. 7, 2004, a framework and master plan of water resources development and management shall be consistent with regional spatial plan. The Master Plan would be referred for compilation of the new spatial plan of Bali Province for after 2010.
- (6) DGWR confirmed that 'POLA' (water resources management framework) will be prepared by Provincial Government based on the Master Plan.
- (7) The Indonesian side and the Study Team confirmed that importance of non-structural measures such as integrated basin flood control, basin water management, and capacity building. It is also confirmed that mutual efforts by both central and local governments are essential to implement non-structural measures. The Indonesian side expected the project for the non-structural measures by JICA's Technical Cooperation Project Scheme.
- (8) The Study Team requested the Indonesian side should submit further comments on the Draft Final Report to the JICA Indonesia Office before the end of June, 2006. The Indonesian side agreed to it.

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## ATTENDANCE LIST

Day / Date : 5th and 6th June, 2006  
 Place : Ruang Rapat Utama, Public Works Service of Bali Province  
 Program : Technical and Steering Committee Meeting

No.	Name	Position
1	Ir. Siswoko	Director General of Water Resources, Ministry of Public Works
2	Budi Santoso	Sub Director of River, Lake and Dam Technical Planning, Ministry of Public Works
3	Djodi,SS	Section Chief of Sub Directorate of River Basin Planning, Ministry of Public Works
4	Juliarta	Head of Provincial Regional Development Planning Agency (BAPPEDA) of Bali Province
5	IGN Sudjana	Head of Economic and Development Bureau, Bali Province
6	N. Sudiana	Head of Public Works Service, Bali Province
7	IB. Wisnuardhana	Head of Agriculture Service, Bali Province
8	Nyoman Silanawa	Head of Forestry Service, Bali Province
9	Budijono	Head of Unda Anayr River Basin Management Unit
10	Sura Adnyana	Head of Sub-Dinas of Water Resources, Public Works of Bali Province
11	MG.Sudharsana	Head of Sub-Dinas of Planning and Management, Public Works of Bali Province
12	Made Sudiarsa	Head of Technical Planning Section, Sub-Dinas Water Resources Public Works of Bali Province
13	Herning	Head of River, Lake and Beach Section, Sub-Dinas Water Resources Public Works of Bali Province
14	Putra Budiarta	Head of Irrigation, Raw Water and Regional Infrastructure Section, Sub-Dinas Water Resources
15	Mr. Wirawan	Head of Working Unit of Irrigation
16	N.Sadhi Negara	Head of Working Unit of Raw Water
17	Ngh Mangku Suantara	Head of Working Unit of Flood Control and Beach Conservation, Bali
18	Nyoman Ray Yusra	Head of Working Unit of South Bali Beach Conservation
19	Darmawan	Head of Working Unit of Water Resources Development and Management, Bali
20	Eddy P. Wijaya	Working Unit of South Bali Beach Conservation
21	Kenji NAGATA	JICA Advisory Committee
22	Naoto OASHI	JICA Advisory Committee

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23	Yasuyuki HIRAI	JICA Expert
24	Tjok Bagus Budiana	Counterpart
25	Sueta	Counterpart
26	Nunuk Yuswari	Counterpart
27	Made Rai Suwartini	Counterpart
28	Masatomo WATANABE	JICA Study Team
29	Sutawan	JICA Study Team
30	Naoto MIZUNO	JICA Study Team
31	Yustina	JICA Study Team
32	Diwangkara	JICA Study Team

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