

MINUTES OF MEETING  
ON  
IMPLEMENTING ARRANGEMENT  
FOR  
THE FEASIBILITY STUDY  
ON  
THE UPLAND IRRIGATION AND RURAL DEVELOPMENT PROJECT  
IN  
SOUTHERN LUZON  
IN  
THE REPUBLIC OF THE PHILIPPINES

The preparatory study team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), and headed by Mr. Minoru Nakano, visited the Philippines from January 20 to February 5, 1993 for the purpose of discussing and confirming the Implementing Arrangement for the Feasibility Study on the Upland Irrigation and Rural Development Project in Southern Luzon in the Republic of the Philippines (hereinafter referred to as "the Study").

The Team had a series of discussions with the officials concerned of National Irrigation Administration (hereinafter referred to as "NIA") and other organizations on the Implementing Arrangement for the Study. The list of participants of the first and final meeting is attached in the ANNEX.

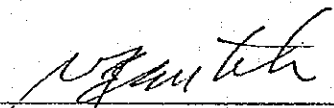
As a result of the discussions, the Team and NIA agreed on the Implementing Arrangement for the Study.

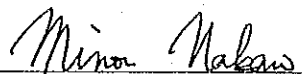
The following are the main issues discussed and agreed upon by both sides in relation to the Implementing Arrangement for the Study.

1. NIA shall investigate water discharge at the proposed spring, Liliw river and Maimpis river twice a month and summarize the data for the following period:
  - from February 1993 to the commencement of the Study
  - from the end of the first field survey to the commencement of the second field survey.
2. NIA shall make necessary arrangement/procedures to concerned government agencies and organizations for the preparation of a topographic map of the Study area on a request of the Japanese study team.
3. NIA shall prepare, at its own expense, the Environmental Impact Statements according to the Philippine laws and regulations. Japanese study team shall provide NIA with basic data and information on environmental issues in the course of the Study.

4. NIA shall make necessary arrangement for conducting farmers' household survey in consultation with the Japanese study team.
5. NIA requested that the following equipments necessary for the Study be procured by JICA and be donated to the NIA after the termination of the Study. The Team promised to convey its request to the Government of Japan.
  - vehicles
  - survey equipments for water discharge, sedimentation and water quality
6. NIA requested the counterpart training in Japan. The team promised to convey its request to the Government of Japan.

METRO MANILA, 3 FEBRUARY, 1993

  
\_\_\_\_\_  
Mr. APOLONIO V. BAUTISTA  
Administrator,  
National Irrigation  
Administration

  
\_\_\_\_\_  
Mr. MINORU NAKANO  
Leader,  
Preparatory Study Team,  
Japan International  
Cooperation Agency

## LIST OF PARTICIPANTS

## 1. Philippine Side

## National Irrigation Administration

Mr. EDILBERTO B. PUNZAL	Officer in Charge, Project Development Department
Mr. ABELARDO Y. ARMENTIA	Officer in Charge, Plan Formulation Division, Project Development Department
Mr. REYNALDO R. SANTOS	Supervising Engineer
Mr. FRANCISCO T. ORENSE	Senior Agronomist A
Mr. CONRADO M. CARLOS	Engineer A

## 2. Japanese Side

## Preparatory Study Team

Mr. MINORU NAKANO	Leader
Mr. YOSHIO KANAYA	Member
Mr. SHINJI KAWABE	Member
Mr. NAOFUMI HASHIMOTO	Member
Mr. YUTAKA NOZAKI	Member
Mr. HIDEHIKO HIOKI	Member



Republika ng Pilipinas  
Pambansang Pangasiwaan ng Patubig  
(NATIONAL IRRIGATION ADMINISTRATION)  
Lungsod ng Quezon

OFFICE ADDRESS NATIONAL GOVERNMENT CENTER  
F DE LOS SANTOS AVENUE  
QUEZON CITY, PHILIPPINES

TELEPHONE NOS:  
CABLE  
TELEX

97-60-71 16 74  
NIAPHIL  
42602 NIA PM

OUR REFERENCE:

1990 November 29

The Honorable Cayetano W. Paderanga, Jr.  
Secretary of Economic Planning and  
Director-General  
National Economic and Development Authority  
Amber Avenue, Pasig, Metro Manila

Dear Sir.

We are pleased to submit herewith our proposal entitled "Upland Irrigation & Rural Development Project in Southern Luzon" for NEDA's consideration and endorsement to the Japanese Government for technical assistance on development survey.

The proposed project envisions the development of a new vegetable producing center along the foot of Mt. Banahaw in Nagcarlan, Laguna. Field investigation and preliminary studies conducted by NIA and an ADCA Mission showed that an area of about 3,000 ha could be developed into irrigated agriculture. The suitability of the area for year-round production of all kinds of vegetables has been proven through series of tests carried by UPLS in their Demonstration and Experimental Farm on High-Altitude Vegetables and Fruit Trees established in the area. In addition, the location is near Metro Manila and transportation facilities are no problems. The proposed project will complement the developmental activities now on-going and programmed in the CALABARZON Region.

Your prompt attention on this matter will be highly appreciated.

Very truly yours,

  
JOSE B. DEL ROSARIO, JR.  
Administrator

## PROJECT PROPOSAL

- (1) PROJECT TITLE : Upland Irrigation & Rural Development Project in Southern Luzon
- (2) LOCATION : Nagcarlan and adjacent municipalities Province of Laguna
- (3) EXECUTING AGENCY : National Irrigation Administration (NIA)
- (4) GENERAL BACKGROUND AND RATIONALE:

The agricultural sector has always played a dominant role in the Philippine economy. The principal food crops, rice and maize were almost sufficient to make imports unnecessary after 1977 owing to the introduction of higher yield strains, although small purchases were again required in 1988 - 1990.

Accordingly, the basic aim of agricultural development under the Medium Term Development Plan is to lay the foundation for an equitable, efficient and ecologically sustainable growth in the agricultural sector. The objective is not only one of achieving production targets on a competitive basis but that of improving the health and nutritional status of the population, or increasing the real income of the poorer agricultural households. This means that food security in basic staples and agricultural diversification shall continuously be addressed.

Efforts at crop diversification shall be intensified to support the goal of attaining food security and to minimize the country's dependence on traditional export commodities, particularly, sugar and coconut. For this reason, new and potentially viable agricultural crops especially vegetables

shall be promoted in all regions. Highland areas around Baguio City are the most famous producing region of green vegetables in the whole Philippines. As demand for the vegetables increase, immediate attention to produce vegetables at environs of urbanized centers will be needed.

The proposed project area, the higher portion of the foot of Mt. Banahaw in Nagcarlan and adjacent towns in the Province of Laguna, could be prioritized as new vegetable producing center due to the easiness of transportation to the Metro-Manila and higher suitability for vegetable cultivation. The possibilities for year round production of all kinds of vegetables has been proven through the series of cultivation testings carried by the University of the Philippines, College of Agriculture at their Demonstration and Experimental Farms established in the area. Fresh vegetables produced in the Project area can be supplied to the population who lived in and around the Metro-Manila.

The Project area is located in the CALABARZON Region (so-called so far "Cavite-Laguna-Batangas Growth Corridor") where efforts are now being exerted to prevent the premature conversion of agricultural areas for urban-industrial land uses. The Project will effectively contribute to harmonize the industrial exploitation with agricultural development. Previously, a project entitled "Nagcarlan-Vegetable Basket of Southern Tagalog" has been proposed by the University of the Philippines, College of Agriculture-Laguna Countryside Action Program (UPLBCA-LCAP) and Nagcarlan Community

Development Association (NCDA). However, due to lack of funds and funding source, the project was not realized. The proposed project, then, involves the maximum utilization of around seven hundred (700) hectares in Nagcarlan, for vegetable production thereby attaining social, economic and political ameliorations of the rural inhabitants in the area.

#### (5) OBJECTIVES OF THE STUDY

The objectives of the study is to conduct the Feasibility Study on the Upland Irrigation & Rural Development Project in Southern Luzon.

The Project aims to create new vegetable producing center in Southern Luzon harmonizing rural development with industrial growth in the region. Specifically, the objectives of the study are as follows:

- to increase upland crop production (vegetable),
- to create new vegetable producing center,
- to formulate a development plan in the project area in line with the strategy for the development of the Cavite-Laguna-Batangas-Rizal-Quezon (CALABARZON),
- to raise living standard of farmers resulting from increase of farm income,
- to supply irrigation and/or domestic and drinking water year round, by developing surface and spring water resources,
- to expand vegetable cultivation technology for farmers with an extension service program,
- to create a sound rural society,

to support the development of agricultural business.

(6) STUDY AREA

The study area is located in and around Nagcarlan and adjacent municipalities, Province of Laguna, covering an area of about 3,000 hectares (See Location Map). The area is bordered by the Province of Quezon and San Pablo City on the West and South, respectively. Borders of the area on the North and East coincide with probable cultivation lines of green vegetables in higher elevation.

The terrain of the Municipality of Nagcarlan consists of rolling hills extending from the base of Mt. Banahaw downward north towards Laguna de Bay. The terrain is intersected by six major streams. These streams flow in a south to north direction forming the Sta. Cruz river which drains into Laguna de Bay.

The soil in Nagcarlan and in most of the surrounding region is Macolod Clay Loam Type. The soil is excellent for growing upland rice, sugar cane, corn and almost all vegetable crops.

The region concerned falls under the first Type of climate of two pronounced seasons, dry from December to May and wet from June to December. Rainfall is heavy during the months of June, July, August and September.

The temperature is slightly lower than the temperature in Manila. Elevated area of the mountain foot is relatively cool and is suitable for high altitude vegetable cultivation.



(7) PROPOSED SCHEME

Preliminary scheme envisions the construction of irrigation and drainage facilities and appurtenant structures for an area of about 3,000 ha of gently sloping terrain along the foot of Mt. Banahaw for commercial vegetable production and other cash crops. An underground or storage reservoir is planned to collect discharge flows from springs and creeks at the upper elevation for gravity distribution to the proposed service area. Substantial portions of the service area require land development and there is a need to provide basic social infrastructure.

(8) SCOPE OF STUDY

The Study will be carried out in two stages:

Phase I- Data collection and field survey

1. Aerial photopgraphic mapping of the study area
2. Data collection and field survey on the following items:
  - 1) General information on socio-economic and development plan relevant to the Project
  - 2) Topography
  - 3) Meteorology and hydrology
  - 4) Water quality
  - 5) Geology and hydrogeology
  - 6) Soil and land use
  - 7) Agriculture especially for vegetables
  - 8) Irrigation and drainage
  - 9) Environmental aspect (erosion, watershed)

- 10) Agricultural infrastructure
- 11) Rural and social infrastructure
- 12) Construction

3. Evaluation and setting of development strategies

Phase II - Feasibility Study

a. Formulation of Upland Irrigation & Rural Development Project

- 1) Agricultural development
- 2) Water resources development
- 3) Irrigation development
- 4) Rural development
- 5) Social infrastructure development, and
- 6) Others, if any

b. Preparation of the Feasibility Study report involving the following items:

- 1) Cropping pattern and farming practice
- 2) Irrigation and drainage system
- 3) Agricultural infrastructure
- 4) Rural and social infrastructure
- 5) Agricultural support and extension services
- 6) Formulation of the Project Works
- 7) Preliminary design of major structures
- 8) Implementation schedule of the Project
- 9) Operation and maintenance
- 10) Project cost and benefit
- 11) Project evaluation

(9) STUDY SCHEDULE

The Study will be commenced in 1991 and would be accomplished within fifteen (15) months as shown in the "Tentative Study Schedule".



Location Map of the Project Scale 1:250,000

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

ENFORM 1

PROPONENT : \_\_\_\_\_

LOCATION : \_\_\_\_\_

SHORT DESCRIPTION OF PROJECT: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. Is your project in any of those areas that fall under the category of 'Environmentally Critical Projects' which list appears as Annex A?

Yes  No

2. Is your project in any of those areas within the identified 'Environmentally Critical Areas' which list appear as Annex B?

Yes  No

I hereby certify that the above information are true to my knowledge and I shall be held liable if found to be untrue:

\_\_\_\_\_ Date

\_\_\_\_\_ Proponent

Processing fee ₪ \_\_\_\_\_

Official Receipt #: \_\_\_\_\_

THIS PORTION IS TO BE FILLED UP BY APPROPRIATE DENR AUTHORITY

TO WHOM IT MAY CONCERN:

This is to certify that \_\_\_\_\_ is hereby exempted from PD 1586 and that, therefore, the proponent can proceed with the implementation of the proposed project, subject however, to the conditions attached to this certificate and other appropriate environmental rules and regulations required by both national and local authorities.

Given this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, at \_\_\_\_\_

(PLACE DENR SEAL HERE)

BY AUTHORITY OF THE DENR SECRETARY:

\_\_\_\_\_  
(Name & Designation)

## ANNOTATED PROJECT DESCRIPTION OUTLINE

The following form shall be filled up for projects to be located in any of the twelve (12) environmentally critical areas as identified under Presidential Proclamation no. 2146

### 1.0 NAME AND ADDRESS OF PROJECT/PROGRAM PROPONENT

State the name of the person entity who/which plans to undertake the project. The address and telephone, fax and pager no. if applicable number of the above should also be included to facilitate communications between the DENR and all concerned.

### 2.0 TYPE AND PURPOSE OF THE PROJECT

State the category and type to which the project belongs. It is recommended that DTI Industrial classification be used. Describe briefly the goals and objectives of the project.

### 3.0 LOCATION AND AREA TO BE COVERED BY THE PROJECT

Indicate the exact location as well as the total area of the project site on a 1:10,000 scale topographic map and/or 1:10,000 cadastral survey plan. Attach appropriate clearances/references/proofs of application zoning certification form on other regulatory agencies concerned with land use planning e.g. HLRB, DZA etc.

### 4.0 PROJECT SCALE AND CYCLE

- a. Discuss the project process. Include in this portion the projected extraction rate, milling rate, manufacturing rate, capacity and/or output of the project.
- b. State the projected lifespan of the project in year and the estimated cost of the project in persons. Project cost should include cost of each of the following:
  - a. Workforce
  - b. Maintenance/Operation
  - c. Rehabilitation
  - d. Installation
  - e. Machineries/equipment
  - f. Supplies/Materials
  - g. Total Project Cost

For facility of the process describe present in a flowchart the plan of operation or process flow of the project. This portion should show the source of raw materials/construction materials on pertinent maps and how these materials are processed/utilized into their end products and by-products. The volume of the aforementioned materials should be stated in cubic meters and/or metric tons.

All activities that would be undertaken by the project proponent covering the entire project cycle (preconstruction, construction, operation, abandonment) should be discussed.

5.0 IDENTIFICATION ENVIRONMENTAL IMPACTS

Fill up the attached leopard matrix

6.0 ENVIRONMENTAL MANAGEMENT MEASURES

On the basis of the filled matrix, state the mitigating measures that will be undertaken by identified impacts that will minimize the adverse effects.

7.0 SIGNATURE OF PROJECT PROPONENT OR PERSONS PREPARING THE PROJECT DESCRIPTION

Attach a sworn statement of the persons who prepared the project description together with his/their corresponding signature, and signify therein that the information provided are factual and true. Any discovery of misrepresentation of information can be a basis for the rejection of the PD or non issuance of the ECC.

Notes:

- \* All documents should be submitted in Five (5) copies. The original copy should be notarized.
- \* This outline was prepared by Environmental Impact Assessment Section of Environmental Management Bureau (EMB), Department of Environment and Natural Resources (DENR) and is provided free to all applicants.

## COMPARISON BETWEEN OUTLINES OF A FEASIBILITY STUDY AND AN ENVIRONMENTAL IMPACT STUDY

	FS Outline		EIS Outline
I.	Project Profile	I.	Project Profile
II.	Background <ul style="list-style-type: none"> <li>a. Problem Analysis</li> <li>b. Objectives</li> <li>c. Methodology of Analysis</li> </ul>	II.	Project Setting <ul style="list-style-type: none"> <li>a. Need Analysis</li> <li>b. Goals and objectives of project</li> <li>c. Scope of the study</li> <li>d. General background studies and reports</li> </ul>
III.	Technical Study <ul style="list-style-type: none"> <li>a. Bio-physical conditions of the area</li> <li>b. Resource condition</li> <li>c. Infrastructure situation</li> <li>d. Population</li> </ul>	III.	Environmental Concerns <ul style="list-style-type: none"> <li>a. Bio-physical resources</li> <li>b. Ecological resources</li> <li>c. Human use values</li> <li>d. Quality of line values*</li> </ul>
IV.	Marketing Assets <ul style="list-style-type: none"> <li>a. Demand Analysis</li> <li>b. Supply Analysis</li> <li>c. Demand-Supply Consideration</li> <li>d. Market Target</li> <li>e. Marketing Organization</li> </ul>	IV.	Description of the project process <ul style="list-style-type: none"> <li>a. Operational i.e. from planning to implementation stage</li> </ul>
V.	Financial Analysis <ul style="list-style-type: none"> <li>a. Cash flow</li> <li>b. Financial assessment</li> </ul>	V.	Identification and prediction of Impacts..
VI.	Socio-economic Analysis <ul style="list-style-type: none"> <li>a. Identification and Estimation of benefits</li> <li>b. Identification and Estimation of Costs</li> <li>c. Benefit cost analysis</li> <li>d. Social Analysis</li> <li>e. Sensitivity analysis</li> <li>f. Other socio-economic Impact of the project</li> </ul>	VI.	Evaluation of the Impacts <ul style="list-style-type: none"> <li>a. Analysis of the positive benefits</li> <li>b. Analysis of negative benefits</li> <li>c. Cost and benefit assessment</li> <li>d. Analysis of the Socio-cultural effects</li> </ul>
VII.	Operational Feasibility	VII.	Identification of Mitigating Measures
VIII.	Analysis of Alternatives <ul style="list-style-type: none"> <li>a. With the project</li> <li>b. Without the project</li> </ul>	VIII.	Analysis of Alternatives <ul style="list-style-type: none"> <li>a. With the project</li> <li>b. Without the project</li> </ul>
IX.	Recommendations	IX.	Recommendations



## 調査地域の指定地区

フィリピンには全国で63か所の国立公園があり、調査地域の周辺では、Banahaw山及び San Cristobal山群のLaguna及びQuezon州の両側が、Mts. Banahaw-San Cristobal国立公園に指定されている(国立公園区域界図)。Laguna州側ではSan Pablo、Rizal、Nagcarlan、Liliw、Majayjay郡が含まれ、面積は約3,152haである。CENROによると、国立公園内は公共地であるが、一部は耕作地となっており、植林地も計画されている。また、隣接する下方には伐採地がある。

調査地域は、国立公園区域の下方に位置し、一部湧水地周辺を除き、公園区域には含まれていない。地元の情報では、国立公園内の公用地の1割程度は、既に耕作地として利用されている、とのことである。

## 調査地域の環境問題

現在、調査地域では顕著な環境問題は発生していない。しかし、年間を通しての高温、短期に集中する降雨、傾斜地、火山性の土壌、森林の欠如など、調査地域では土壌侵食が発生しやすい要因が多い。

土壌侵食は表土の流亡により、直接的に農用地の生産性を低下させ、下流域では堆砂の問題を発生させる。調査地域はLaguna湖水系の一部であり、上流域での土壌侵食は、直接的に湖の水質汚濁及び堆砂を増大させる可能性がある。

現地の情報では、調査地域及び周辺地域では、乾期だけ畑作が行われ、雨期には土壌侵食防止のために休耕し、自然草地として表土保全を行っている、とのことである。

附属資料 5. 収集資料リスト

収 集 資 料 リ ス ト

1. Philippine Environmental Law, Comments and Materials, Volume I, The National Environmental Protection Council, 1981
2. Philippine Environmental Law, Volume II, The National Environmental Protection Council, 1983
3. Annotated Outline -EIS MODEL-, EMB, 1990 (Print)
4. Environmental Compliance Certificate, EMB, 1991 (Letter)
5. Flowchart for the Processing of Clearance for Development Project / Program / Plan (LLDA Clearance) (Print)
6. Checklist of Requirements on Application for LLDA Clearance, 1991 (Print)
7. Environmental Impact Assessment, Miral Swin Project, NIA, 1990
8. Environmental Impact Assessment, Ilocos Sur Transbasin Project, NIA, 1992
9. Environmental Impact Statement, Second Irrigation Operations Support Project (IOSP II), NIA, 1992
10. The Master Plan Study on the Project Calabarzon, JICA and Department of Trade and Industry, 1991
11. Environmental Impact Assessment of Stage II of the Malitubog-Maridagao Irrigation Project (Lower Malitubog Service Area and Pagalungan Extension Area), NIA and Sanyu et al., 1992
12. The Philippine Agricultural Development Plan 1990-1995, DA, 1990
13. Corporate Plan 1993-2002, Thrusts and Strategies, Part 5
14. Annual Financial Requirements CY 1993 to CY 1998, Medium Term Philippine Development Plan, NIA (Print)
15. Barangay Development Plans, Laguna Countryside Action Project, Barangay Development Council, 1988
16. Topographical Map 1:50,000, San Pablo, NAMRIA, 1990
17. Topographical Map 1:250,000, Manila, NAMRIA, 1991
18. Administrative Map 1:150,000, Province of Laguna, NAMRIA, 1991
19. Vegetation Map (P. C. G. S.) 1:250,000, Manila, NAMRIA and Swedish Space Corporation, 1988
20. Map of Integrated Protected Area System 1:50,000, The Mts. Banahaw-Cristobal National Park, CENRO
21. The Philippine Agricultural Development Plan 1991-1995, Preliminary Edition, DA, 1990
22. Medium-term Philippine Development Plan 1993-1998, Preliminary Edition, National Economic and Development Authority, 1992





JICA

