

- 1) preparation of socio-economic profile and marine/coastal resources inventory,
- 2) identification of needs for rehabilitation and conservation of coastal and marine resources,
- 3) identification of livelihood opportunities based on local resources,
- 4) formulation of frameworks for the development and management of coastal areas,
- 5) clarification of community-based management organizations for coastal and marine resources, and
- 6) preparation of a coastal resources management master plan.

The planning process should be participatory. The management master plan will identify specific measures for coastal resources management, consisting of institutional measures and projects to restore and utilize coastal resources. These measures will be implemented subsequently with active participation of local communities.

- (2) to protect/preserve the Subic rainforest, the Candava swamp and other environmental assets,
- (3) to induce increased flow of funds and other supports from national and international agencies for environmental protection and conservation,
- (4) to enhance environmental awareness throughout Central Luzon, the Philippines and the world.

Project No. EN - 8

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| 1. PROJECT TITLE | Subic Environmental Development Program |
| 2. LOCATION | Subic Bay and its hinterland, Zambales Province |
| 3. IMPLEMENTING AGENCIES | DENR, Subic Bay Metropolitan Authority |
| 4. OBJECTIVES | To protect and restore marine and forest resources; and
To use natural resources for environmental education. |
| 5. EXPECTED EFFECTS | Well protected/preserved Subic ecosystem with the tropical rain forest and Subic Bay linked together as an environmental asset.
Environment-conscious society supported by environmental education, training and scientific studies. |
| 6. PROJECT COSTS | |
| 7. IMPLEMENTATION SCHEDULE | 1 year during Phase I |
| 8. PROJECT DESCRIPTION | |

The Subic Bay area has rich marine and forest resources, located close to Manila. This area can be used for environmental education for people, scientific studies, and training for researchers and specialists. An essential prerequisite is to protect/preserve the environment through planned development. As Subic Bay is linked with the Subic rain forest in terms of ecosystem, the Program will cover both coastal/marine and land areas.

As the first step, a Subic Environmental Development Plan will be prepared, encompassing the following:

- (1) survey of environmental conditions to prepare an environmental profile,
- (2) formulation of an environmental management plan,
- (3) formulation of a natural resources conservation plan,
- (4) plan for utilization of natural resources.
- (5) preparation of environmental education programs making use of the Subic area, and
- (6) formulation of a supporting plan for training for natural resources researchers and specialists.

Project No. EN - 9

1. PROJECT TITLE Land Resources Information System Development
2. LOCATION San Fernando, Pampanga
3. IMPLEMENTING AGENCY NEDA-III and Provincial Government of Pampanga
4. OBJECTIVES To formulate the structure and plan for a land Resources Information System using GIS and implement it in one of the Central Luzon provinces; and
To set up a Central Land Resources Information Center in NEDA - III office.
5. EXPECTED EFFECTS Database of resources in a form for easy retrieval and understanding by different planning agencies - both governmental and non-governmental.
6. PROJECT COSTS US\$ 5.0 million
7. IMPLEMENTATION SCHEDULE Two years from 1999
8. PROJECT DESCRIPTION

The database needs to be geo-linked to enable spatial queries and spatial analysis to help national and regional policy and decision making for development. The NEDA-III office in San Fernando, Pampanga has built up some expertise in the use of GIS. With additional technical and logistic support, it could therefore be the key agency in the LRCS development and the location for the regional land resources information center.

The database is to serve as a basis for reliable and efficient planning, and to reduce confusion on sources of information from different agencies as is the case at present. The resources database developed using GIS through the CLDP Master Plan Study in cooperation with various governmental and non-governmental agencies, could serve as the base for further additions and comprehensive developmental planning.

Support needs to be provided in terms of tools and equipment for operation, technology, and personnel training in the use of GIS and computers. A main center needs to be developed along with sub-centers located possibly in different participating agencies like DTI, BSWM

and DENR, as well as in each province, all networked adequately. This would also help in decentralizing collection and compilation of land resources information to the provinces and lead to build up of expertise at the province and local levels.

The Project will be implemented as follows.

- 1) To study existing institutions, policies, and data available related to land resources.
- 2) To formulate the structure and concept plan for the LIS to be designed and created.

The LIS would be designed to facilitate easy data retrieval and to serve the purpose of availability of spatial information for sound land use planning as per national and regional policies. The LIS would be made up of various independent sub-systems like base maps, public utility database, property value database, soil property and natural resources database, land allocation database forestry database and socio-economic database.

- 3) To select one of the provinces for a demonstration project
- 4) To provide a training program for technology transfer related to GIS.

Project No. EN - 10

1. PROJECT TITLE Eco-Community Networks
2. LOCATION Central Luzon
3. IMPLEMENTING AGENCY DENR
4. OBJECTIVES To formulate communication network for environmental information among government, community and industrial sectors.
5. EXPECTED EFFECTS
Closer cooperation between government agencies, local communities and the industrial sector through sharing of common environmental information.
Enhanced environmental awareness and better understanding of community needs for environmental management
6. PROJECT COSTS
7. IMPLEMENTATION SCHEDULE Study for one year during Phase I to be followed by implementation for two years.
8. PROJECT DESCRIPTION

The Project will provide both soft and hard infrastructure to facilitate the communication between local communities, government agencies, and the industrial sector for environment related information. It will promote dialogues between these related parties by providing a common information base and facilitate the implementation of development activities to benefit local communities. The Network can be used also for environmental education, training, environmental awareness campaigns and other activities.

A study will be carried out to design the Network by a participatory approach. A series of workshops will be conducted to clarify issues related to environmental communications and also to cultivate understanding for better communications.

The Network will be established initially based on telephone systems with facsimile machines, complemented by radio apparatus. Seminars will be conducted as part of initial implementation for use of the Network.

Project No. EN - 11

1. PROJECT TITLE Comprehensive Regional Environmental Management Improvement Program
2. LOCATION Regional-wide
3. IMPLEMENTING AGENCY DENR-III and LGUs
4. OBJECTIVES To strengthen DENR-III and LGUs for environmental administration in line with the devolution;
To develop manpower for environmental management by DENR-III and LGUs; and
To increase awareness of people for environmental development.
5. EXPECTED EFFECTS More comprehensive and consistent policies and measures for environmental management.
Better enforcement of environmental conservation.
More environment-conscious people and society.
6. PROJECT COSTS
7. IMPLEMENTATION SCHEDULE Master planning with an Action Plan for one year during Phase I followed by a three year initial implementation phase.
8. PROJECT DESCRIPTION

Environmental management constitutes essential part of sustainable development. It suffers at present from insufficient human resources for environmental administration, pollution control, monitoring and EIA. Proper structures of environmental administration need to be established and manpower for environmental management developed especially in line with the devolution.

A study will be carried out first to clarify functional division between DENR regional office, LGUs and local communities in improving environmental management, and needs to develop manpower to fulfill clarified functions. Then a master plan will be formulated on environmental management improvement for DENR-III and LGUs.

The Program encompasses the following.

- (1) strengthening functions and capacity of DENR-III and LGUs,
- (2) strengthening cooperation among DENR-III, LGUs, education-institutes and NGOs,
- (3) development of training programs and materials,
- (4) development of environmental monitoring system and data base system:
 - determination of monitoring indices, coverage areas and monitoring stations,
 - design of monitoring system,
 - design of database, and
 - formulation of a plan of the RP-Japan Training Center for staff training of environmental monitoring.
- (5) promotion of environmental awareness by environmental education and public relations through the following:
 - development of environmental education materials to be distributed,
 - classroom teaching,
 - information campaign/posters/radio/TV/newspaper, etc. and
 - meetings/conferences/seminars.

Project No. EN - 12

1. PROJECT TITLE World University of the Environment
2. LOCATION To be determined
3. IMPLEMENTING AGENCY
4. OBJECTIVES
 - (1) To establish a World University of the Environment as the center for environmental research and education,
 - (2) To protect/preserve the Subic rainforest, the Candaba Swamp and other environmental assets,
 - (3) To induce increased flow of funds and other supports from national and international agencies for environmental protection and conservation, and
 - (4) To enhance environmental awareness throughout Central Luzon, the Philippines and the world.
5. EXPECTED EFFECTS

Well protected/preserved environmental assets in Central Luzon.
Enhanced environmental awareness
High reputation of Central Luzon and the Philippines as a world center for environmental education.
6. PROJECT COSTS
7. IMPLEMENTATION SCHEDULE
8. PROJECT DESCRIPTION As per attached

World University of the Environment

1. Background

The Central Luzon Development Program (CLDP) will pursue a new paradigm placing much emphasis on environmental quality and social value as well as economic interests for environmentally and socially sound and sustainable development. This will involve a fundamental transformation of value systems of the modern society and re-orientation of developmental activities. Environmental education will constitute an essential part of collective efforts along this line.

Central Luzon has three major assets for environmental education: the Subic rainforest, the Candaba swamp and the Aeta people having extensive knowledge and experiences on resources use and survival in forest areas. Making use of these and other resources, a World University of the Environment may be established. Other resources to be used for research and field works include Subic Bay and Zambales coasts with well preserved coral reefs and marine environment, Mt. Pinatubo and its influence areas. Even traditional craftsmanship may be a subject for environmental education, as it makes effective use of natural resources to enrich living environment.

In particular, the Subic rainforest and the Subic Bay environment combined make one of the rarest ecosystems remaining near any major urban center in the world. The triple canopy primeval rainforest of Subic occupies 13,790 ha in the Cubi Point area of the former military reservation of Subic Bay, where most of its wild-life are still intact. Marine and coastal environment with coral reefs, mangroves and wetland constitutes part of the unified ecosystem.

2. Objectives

The Project aims at establishing a world renowned academic institution dedicated to scientific research, education and field works related to environment. It will also provide means to protect and enhance valuable environmental assets in Central Luzon.

Specific objectives of the Project are the following:

- (1) to establish a World University of the Environment as the center for environmental research and education,
- (2) to protect/preserve the Subic rainforest, the Candaba swamp and other environmental assets,
- (3) to induce increased flow of funds and other supports from national and international agencies for environmental protection and conservation, and

- (4) to enhance environmental awareness throughout Central Luzon, the Philippines and the world.

3. Project Description

The World University of the Environment (WUE) will be established within or close to a major environment asset. Cubi Point within the Subic rain forest is a proposed site. The former Philippine Refugee Processing Center (PRPC) is an alternative. Other locations may also be considered.

The WUE will initiate research in many areas of science. Its program will expand in steps. An initial focus may be on forest ecosystem and marine/coastal environment. Possible subjects include medical compounds from forest plants, coral regeneration, climatic research, plant propagation, surviving animal species, tropical medicine and others. Further, causes of environmental destruction such as a foreign debt, questionable trade practices and industrial policies, toxic and chemical wastes will be studied.

The WUE will have a school of theology, where the appearance of universal consciousness and self-reflecting matter as products of the cosmos will be studied. Studies of environmental morality will develop, learning about duties and obligations of mankind to live in harmony with the environment. It will provide the personal motivation and social/spiritual commitment to preserving and restoring the human and natural ecology, and promote environmental protection and regeneration throughout the Philippines and the world.

The WUE will have a school of tropical medicine with the attached hospital where tropical medicine will be researched and applied. Medical experts in tropical medicine world-wide can be invited to participate in research, and practices.

The WUE through its law school will provide opportunities to study human rights of indigenous people including their ancestral land rights, patent rights of commercial and medical applications of forest-derived products, and issues related to common goods such as the environment. It will work toward a proposal of the international law of the environment that considers the planet as a whole.

4. Implementing Arrangements

It is proposed that a consortium of interested parties, Philippine universities, NGO environmental groups and international institutes such as the Asian Institute of Technology (AIT) and the United Nations University gather and legally bind themselves together into a corporation under the Philippine law and draw up a constitution of the proposed WUE. They will establish a board to direct the Project, which will develop financial structure and

operation plan. The structure and establishment of AIT could serve as a model for the development of the WUE.

They will select a location for the WUE, and take necessary actions to acquire the land and procure/establish facilities. The WUE will gain irrevocable jurisdiction over some of the environmental assets that will be used for the purposes of the WUE through a debt for nature swap.

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