4.2 Results of IEE

Result of the IEE for the 30 projects and programs selected from the 130 projects and programs are presented in Table 4.2 in the form of possible environmental impact matrix. A complete IEE for each project/program is compiled in Table 4.3.

Table 4.1 Projects/Programs Classification for IEE (1/3)

1. Regional Projects/Programs

Code No.	Project/Program Title	IEE is required	No IEE is required	Not complete project/program
(RP-1)	Subic Port Development	√		
(RP-2)	Subic Industrial Estate			√
(RP-3)	Greater Subic Tourism Core Development			√
(RP-4)	Subic-Looc Jet Foil Connection	√		
(RP-5)	Hermosa Agro-Industrial Estate	√		
(RP-6)	Clark International Aviation Complex	√		
(RP-7)	Clark Industrial Estate and Dry Port Development			√
(RP-8)	Clark Field Amusement Park	√		
(RP-9)	Main Line North Rehabilitation/upgrading	√		
(RP-10)	BEPZ-SBMA Complementary Development		√	
(RP-11)	New Intra-Regional Artery Establishment	√		
(RP-12)	North Luzon Expressway Extension	√		
(RP-13)	Manila Coastal Road	√		
(RP-14)	San Fernando-Dinlupihan Road Improvement	√		
(RP-15)	Iba-Tarlac Road			√
(RP-16)	Sierra Madre (Marginal) Highway	√		
(RP-17)	Regional Telephone Services Improvement			√
(RP-18)	Optic Fiber Network	√		
(RP-19)	Labrador-Hermosa Extra High Voltage Transmission Line	√		
(RP-20)	Hermosa-Dasmarinas Extra High Voltage Transmission Line	√		
(RP-21)	Balintingon Reservoir Multipurpose Development	√		
(RP-22)	Casecnan Multipurpose Development			√
(RP-23)	Holistic Water Catchment Management Program	√		
(RP-24)	Community-Based Manila Bay and Coastal Rehabilitation and Resource		√	
(RP-25)	Provincial Cooperative Savings and Loan Association		√	
(RP-26)	Expanded Agrarian Reform Communities Livelihood and Cooperative Development			√
(RP-27)	Micro and Small Enterprises Livelihood Systems Development		√	
(RP-28)	Resource Center for People's Participation in Local Governance and Dev't		√	

2. Special Programs

Code No.	Project/Program Title	IEE is required	No IEE is required	Not complete project/program
(SP-1)	Indigenous People Development Program		√	
(SP-2)	Indigenous Communities Cooperative Economic Development		√	
(SP-3)	Gender Development and Resource Center		√	
(SP-4)	Community-Based Disaster Management Program		√	
(SP-5)	Storm and Flood Monitoring		√	

3. Local Projects/Program

Code No.	Project/Program Title	IEE is required	No IEE is required	Not complete project/program
3.1 Community initiatives				
(CI-1)	Community-Based Upland Development Program (Bataan)			√
(CI-2)	Local Resource and Agri-Based Rural Industries Establishment (Bataan)			√
(CI-3)	Cooperative-Managed Food Terminal (Bulacan)			√
(CI-4)	Cooperative-Based Health Systems Development (Bulacan)		√	
(CI-5)	Sustainable Rice-Based Enterprise Development(Nueva Ecija,Pampanga)		√	
(CI-6)	Community-Based Integrated and Diversified Farming Promotion(Tarlac)		√	
(CI-7)	People's Postharvest and Trading Facilities (Tarlac)		√	
(CI-8)	Community-Based Resettlement and Livelihood Development (Zambales)			√
(CI-9)	Popular Leadership and Entrepreneurship Training (Six provinces)		√	
3.2 Government initiatives with strong NGO/PO components				
(GN-1)	Munoz Agro-Science Community-Quinguepartite Networking			√
(GN-2)	Tissue Culture Laboratory		√	
(GN-3)	Tropical Plants Multiplication and Distribution		√	
(GN-4)	Farm Mechanization	√		
(GN-5)	Multi-Storey Crop Diversification			√
(GN-6)	Crop-Livestock Integrated Farming			√
(GN-7)	Carabao-Based Dairy Development			√
(GN-8)	Community Coastal Fisheries Development		√	
(GN-9)	Aquaculture Integrated Farming	√		
(GN-10)	Masinloc-Oyon IPAS Conservation Program			√
(GN-11)	Tourism Communities Development		√	
(GN-12)	Balintingon Reservoir Resort	√		
(GN-13)	Localization Initiatives in Forest Protection and Upland Management			√
(GN-14)	Post MPC Agro-Industrial Rurban Community Program		√	√

Table 4.1 Projects/Programs Classification for IEE (2/3)

Code No.	Project/Program Title	IEE is required	No IEE is required	Not complete project/program
3.3 Refocused government supports				
-1 Rural development				
(RU-1)	Rural Water Supply and Sanitation Improvement			√
(RU-2)	Rural Energy Program		√	
(RU-3)	Rural Roads Development and Management			√
(RU-4)	Rural Database Development		√	
(RU-5)	Countryside Agro-Industrial Centers Development Program			√
(RU-6)	Seri-Culture Promotion		√	
(RU-7)	Postharvest Operations Nucleus Development			√
-2 Agriculture				
(AG-1)	Integrated Organic Farming Promotion		√	
(AG-2)	Integrated Upland Farming System Development			√
(AG-3)	Citrus Intercropping Pilot Development			√
(AG-4)	Angat Afterbay Regulator Dam (Bustos Diversion Dam)Rehabilitation	√		
(AG-5)	Pampanga Delta Development Project-Irrigation Component	√		
(AG-6)	Porac-Guman River Irrigation System Restoration	√		
(AG-7)	Mapanuepe River Lake Irrigation	√		
(AG-8)	Upper Tabuating Irrigation			√
(AG-9)	Aulo Small Water Impounding Project (SWIP)			√
(AG-10)	Small River Irrigation Projects			√
(AG-11)	North Lawis (Palongahon) Irrigation	√		
(AG-12)	Tarlac Satellite Irrigation			√
(AG-13)	Communal Irrigation			√
(AG-14)	Pilot Pump Irrigation			√
(AG-15)	Backyard Animal Production Enhancement Program		√	
(AG-16)	Provincial Tilapia Hatchery		√	
(AG-17)	Grouper Cage Culture			√
(AG-18)	Fishery Common Service Facilities Establishment	√		
(AG-19)	Regional Agricultural Training and Extension Center	√		
(AG-20)	Regional Cooperatives Development and Training Institute		√	
-3 Urban development				
(UR-1)	Integrated Urban Development Program			√
(UR-2)	Urban Land Readjustment Program			√
(UR-3)	Urban Renewal and Industrial Modernization			√
(UR-4)	San Fernando-Angeles Metropolitan Area Development			√
(UR-5)	Bulacan Central Water Supply			√
(UR-6)	Olongapo City Water Supply Improvement			√
(UR-7)	LWUA Water Supply			√
(UR-8)	Bypass Construction	√		
-4 Industry, trade and services				
(IN-1)	Industrial Clusters International Partnership Program		√	
(IN-2)	Strategic Overseas Workers Management Program		√	
(IN-3)	World Class Designer Invitation Program		√	
(IN-4)	Tripartite R & D Promotion Program		√	
(IN-5)	Skills Expert System Development		√	
(IN-6)	Industrial Clusters Integrated Modernization Program		√	
(IN-7)	Regional World Trade Center (ECLUZON)			√
(IN-8)	Central Luzon Research Triangle			√
(IN-9)	Techno-Communicator Development Program		√	
(IN-10)	Provincial Industrial Testing Center			√
(IN-11)	International Design Academy			√
(IN-12)	Life Style Research and Information Center			√
(IN-13)	Tourism-Local Industry Complex		√	
(IN-14)	Mining Area Development and Use		√	
(IN-15)	Bulacan Wholesale and Distribution Center	√		
(IN-16)	Regional Integrated Distributors Promotion		√	
-5 Social services				
(SO-1)	Bataan National School of Arts and Trade Upgrading		√	
(SO-2)	Bataan Teachers' College Upgrading		√	
(SO-3)	Acquisition and Upgrading of Teaching Tools		√	
(SO-4)	Elementary Science Schools Establishment			√
(SO-5)	Functional Division Educational Management Information System		√	
(SO-6)	Acquired Competencies and Excellence in Sports (ACES)		√	

Table 4.1 Projects/Programs Classification for IEE (3/3)

Code No.	Project/Program Title	IEE is required	No IEE is required	Not complete project/program
(SO-7)	Human Resources Development and Training Center			√
(SO-8)	Integrated Training, Livelihood and Organization Dev't		√	
(SO-9)	Public Heath Services Improvement			√
(SO-10)	Hospitals Upgrading		√	
(SO-11)	Regional Herbal Processing Plant			√
(SO-12)	Integrated Family Planning and Child Survival Program		√	
(SO-13)	Construction of Day Care Centers and Health Clinics		√	
(SO-14)	Computerization of LGU Data Base		√	
-6 Environment				
(EN-1)	Rattan Plantations Development and Management	√		
(EN-2)	Bamboo Plantations Development and Management			√
(EN-3)	Pollution Control and Prevention Center		√	
(EN-4)	Solid Waste Management Improvement Pilot Project	√		
(EN-5)	Candaba Swamp Conservation Program		√	
(EN-6)	Sta. Cruz Marine Conservation Program		√	
(EN-7)	Luzon Sea Coastal Resources Management		√	
(EN-8)	Subic Environmental Development Program		√	
(EN-9)	Land Resources Information System Development		√	
(EN-10)	Eco-Community Network		√	
(EN-11)	Comprehensive Regional Environmental Management Improvement Program		√	
(EN-12)	World University of the Environment			√

Table 4.2 Possible Environmental Impact Matrix for IEE (1/5)

Project Code	Project Phase	Class-I								Class-II		Class-III				Class-IV		Class-V								Class-VI		Class-VII		Class-VIII		Class-IX		
	Environmental Element	Surface Water	Groundwater	Soil	Geology	Climate	Wildlife habitat	Ecology of fisherics	Natural vegetation	Hazards substances	Solid waste	Water resources	Agricultural production	Timber production	Mining and energy resources	Air quality	Noise	Community facilities and services	Infrastructure	Transportation	Community population	Resettlement	Income	Racial, ethnic distribution	Lifestyle	Accessibility	Activities	Historical sites and structure	Archaeological or paleontological sites	Natural landscape	Cultural landscape	Elimination or relocation of commercial & industrial enterprises	Employment	Local economy
RP-1	Pre-Construction Phase																																	
	Construction Phase	C-						B-								C-	C-																C+	
	Operation Phase	B-						C-								C-	C-			B-							C-							B+
RP-4	Pre-Construction Phase																																	
	Construction Phase	C-						C-								C-	C-																C+	
	Operation Phase	C-															C-			C-						A+	A+						C+	B+
RP-5	Pre-Construction Phase								U				U	U								U										U		
	Construction Phase	C-		C-			U	U								C-	B-			B-										C-			B+	
	Operation Phase	B-						U			B-	C-				C-	C-			C-										U			B+	B+
RP-6	Pre-Construction Phase																																	
	Construction Phase															C-	C-	B-		C-													C+	
	Operation Phase	B-									B-	C-				C-	A-	B-		B-													C+	B+
RP-8	Pre-Construction Phase																																	
	Construction Phase															C-	C-			C-													C+	
	Operation Phase	C-									B-					C-	C-			B-			C+				A+						B+	B+
RP-9	Pre-Construction Phase						U		U				U									U										U		
	Construction Phase	C-									C-					C-	C-	C-		B-													B+	
	Operation Phase															C-	B-	C-		A+/B-	C+													A+
RP-11	Pre-Construction Phase						C-		U				B-	B-								A-						U	U			U		
	Construction Phase	B-		B-			C-	C-	B-		C-					C-	B-	B-		B-										C-		B-	A+	
	Operation Phase			B-												C-	C-		B+	A+								-		C-				B+

Environmental Elements

I. Natural and Biological Environment
II. Environmental Hazards
III. Resource Conservation and Use
IV Air Quality and Noise Environment
V. Community Facilities/Services and Structure
VI. Open Space and Recreation
VII Historic Resources
VIII Visual Resources
IX. Economic Environment

Environmental Impact Score

A+: Significant positive impact
B+: Moderately positive impact
C+: Negligible positive impact
A-: Significant negative impact
B-: Moderately negative impact
C-: Negligible negative impact
U : Unclear

Table 4.2 Possible Environmental Impact Matrix for IEE (2/5)

Project Code	Project Phase	Class-I								Class-II		Class-III				Class-IV		Class-V								Class-VI		Class-VII		Class-VIII		Class-IX		
	Environmental Element	Surface Water	Groundwater	Soil	Geology	Climate	Wildlife habitat	Ecology of fisheries	Natural vegetation	Hazards substances	Solid waste	Water resources	Agricultural production	Timber production	Mining and energy resources	Air quality	Noise	Community facilities and services	Infrastructure	Transportation	Community population	Resettlement	Income	Racial, ethnic distribution	Lifestyle	Accessibility	Activities	Historical sites and structure	Archaeological or palcontological sites	Natural landscape	Cultural landscape	Elimination or relocation of commercial & industrial enterprises	Employment	Local economy
RP-12	Pre-Construction Phase						U						B-									A-						U	U			U		
	Construction Phase	B-		B-			C-	C-	C-		C-					C-	B-	B-		B-										C-		B-	A+	
	Operation Phase			B-												C-	C-		B+	B+										C-				B+
RP-13	Pre-Construction Phase								U				B-									C-										U		
	Construction Phase	C-					U	B-									C-			C-													C+	
	Operation Phase						U	C-					C-			C-	C-	B+		B+										C-				
RP-14	Pre-Construction Phase												C-									C-										U		
	Construction Phase	C-						C-			C-					C-	B-	B-		B-											B-		B+	
	Operation Phase															C+			B+	B+	B+										B-			B+
RP-16	Pre-Construction Phase						A-		A-				B-	A-								U		U										
	Construction Phase	B-		B-			B-	C-	B-			U				C-	B-													B-			B+	
	Operation Phase	C-		C-			B-	C-				U				C-	C-	C+/C-		A+	C+				C+					C-				
RP-18	Pre-Construction Phase																																	
	Construction Phase																			C-														
	Operation Phase																		A+															
RP-19	Pre-Construction Phase						U		B-				C-									U												
	Construction Phase						U										C-			C-														
	Operation Phase														A+		C-				B-							B-		B-				
RP-20	Pre-Construction Phase						U		C-				C-									U												
	Construction Phase						U	C-									C-			C-														
	Operation Phase														A+		C-				B-									B-				

Environmental Elements

I. Natural and Biological Environment
II. Environmental Hazards
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IV Air Quality and Noise Environment
V. Community Facilities/Services and Structure
VI. Open Space and Recreation
VII Historic Resources
VIII Visual Resources
IX. Economic Environment

Environmental Impact Score

A+: Significant positive impact
B+: Moderately positive impact
C+: Negligible positive impact
U : Unclear
A-: Significant negative impact
B-: Moderately negative impact
C-: Negligible negative impact

Table 4.2 Possible Environmental Impact Matrix for IEE (3/5)

Project Code	Project Phase	Class-I								Class-II		Class-III				Class-IV		Class-V								Class-VI		Class-VII		Class-VIII		Class-IX		
	Environmental Element	Surface Water	Groundwater	Soil	Geology	Climate	Wildlife habitat	Ecology of fisheries	Natural vegetation	Hazards substances	Solid waste	Water resources	Agricultural production	Timber production	Mining and energy resources	Air quality	Noise	Community facilities and services	Infrastructure	Transportation	Community population	Resettlement	Income	Racial, ethnic distribution	Lifestyle	Accessibility	Activities	Historical sites and structure	Archaeological or paleontological sites	Natural landscape	Cultural landscape	Elimination or relocation of commercial & industrial enterprises	Employment	Local economy
RP-21	Pre-Construction Phase						A-		A-				C-	A-							U	B-				U		U	U			U		
	Construction Phase	B-		B-			B-	B-								C-	C-			U										B-			B+	
	Operation Phase	U		C-								A+	B+		B+					B+										A-				A+
RP-23	Pre-Construction Phase								B-					C-										U										
	Construction Phase	C-		B-			B-		B-			C-					C-									C-	C-			C-			C+	
	Operation Phase			A+			A+					B+		A+																B+/B-				
GN-4	Pre-Construction Phase																																	
	Construction Phase																																	
	Operation Phase										C-		A+										B+		B+								C-	A+
GN-9	Pre-Construction Phase																																	
	Construction Phase																																	
	Operation Phase	B-					U	U				U											B+		C+		U						B+	C+
GN-12	Pre-Construction Phase																																	
	Construction Phase															Same as RP-20																		
	Operation Phase																																	
AG-4	Pre-Construction Phase																																	
	Construction Phase	B-					C-	B-	C-		C-					C-	C-	C-		C-													C+	
	Operation Phase							U				B+	B+																	C+				B+
AG-5	Pre-Construction Phase								U				B-								B-	C-										U		
	Construction Phase	C-		C-			U	C-								C-	C-			B-										C-			B+	
	Operation Phase	U					U					A+	A+					B-	B+	U										B-				B+

Environmental Elements

I. Natural and Biological Environment
II. Environmental Hazards
III. Resource Conservation and Use
IV Air Quality and Noise Environment
V. Community Facilities/Services and Structure
VI. Open Space and Recreation
VII Historic Resources
VIII Visual Resources
IX. Economic Environment

Environmental Impact Score

A+: Significant positive impact
B+: Moderately positive impact
C+: Negligible positive impact
U : Unclear
A-: Significant negative impact
B-: Moderately negative impact
C-: Negligible negative impact

Table 4.2 Possible Environmental Impact Matrix for IEE (4/5)

Project Code	Project Phase	Class-I								Class-II		Class-III				Class-IV		Class-V									Class-VI		Class-VII		Class-VIII		Class-IX		
	Environmental Element	Surface Water	Groundwater	Soil	Geology	Climate	Wildlife habitat	Ecology of fisheries	Natural vegetation	Hazards substances	Solid waste	Water resources	Agricultural production	Timber production	Mining and energy resources	Air quality	Noise	Community facilities and services	Infrastructure	Transportation	Community population	Resettlement	Income	Racial, ethnic distribution	Lifestyle	Accessibility	Activities	Historical sites and structure	Archaeological or paleontological sites	Natural landscape	Cultural landscape	Elimination or relocation of commercial & industrial enterprises	Employment	Local economy
AG-6	Pre-Construction Phase												U									U											
	Construction Phase	C-		C-			U	B-			B-					C-	C-			C-										C-			C+	
	Operation Phase							U				B+	B+																	C+				B+
AG-7	Pre-Construction Phase																																	
	Construction Phase						U	C-	C-							C-	C-			C-										C-			C+	
	Operation Phase	U		B+				U				B+	B+																	B+/C-				B+
AG-11	Pre-Construction Phase								U				U	U								U												
	Construction Phase	B-					U	B-			B-	B-	C-			C-	C-	B-		C-										C-			B+	
	Operation Phase	U						U				A+	A+					B+		B+	C+		B+							B-				B+
AG-18	Pre-Construction Phase						U	U	U																		U					U		
	Construction Phase	B-					C-	C-	C-							C-	C-			C-										C-			B+	
	Operation Phase	B-						B-									C-										B-			B-				
AG-19	Pre-Construction Phase						B-		B-					U																				
	Construction Phase	C-		B-			B-	C-									C-		C-							B-	C-			C-			C+	
	Operation Phase	B-					B-					U	B+																	U				
UR-8	Pre-Construction Phase												U									U										U		
	Construction Phase										B-					C-	B-	C-		B-						U	U						A+	
	Operation Phase															C-	B-	B+/B-		B+														
IN-15	Pre-Construction Phase												U									U										U		
	Construction Phase															C-	B-			C-													C+	
	Operation Phase	C-									C-	C-				B-	B-			B-											U		B+	

Environmental Elements

I. Natural and Biological Environment
II. Environmental Hazards
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IV Air Quality and Noise Environment
V. Community Facilities/Services and Structure
VI. Open Space and Recreation
VII Historic Resources
VIII Visual Resources
IX. Economic Environment

Environmental Impact Score

A+: Significant positive impact
B+: Moderately positive impact
C+: Negligible positive impact
A-: Significant negative impact
B-: Moderately negative impact
C-: Negligible negative impact
U : Unclear

Table 4.2 Possible Environmental Impact Matrix for IEE (5/5)

Project Code	Project Phase \ Environmental Element	Class-I								Class-II		Class-III				Class-IV		Class-V								Class-VI		Class-VII		Class-VIII		Class-IX		
		Surface Water	Groundwater	Soil	Geology	Climate	Wildlife habitat	Ecology of fisheries	Natural vegetation	Hazards substances	Solid waste	Water resources	Agricultural production	Timber production	Mining and energy resources	Air quality	Noise	Community facilities and services	Infrastructure	Transportation	Community population	Resettlement	Income	Racial, ethnic distribution	Lifestyle	Accessibility	Activities	Historical sites and structure	Archaeological or paleontological sites	Natural landscape	Cultural landscape	Elimination or relocation of commercial & industrial enterprises	Employment	Local economy
EN-1	Pre-Construction Phase						U		U				U	U																				
	Construction Phase	C-		B-			C-	C-																									B+	
	Operation Phase	B+		A+			A+	B+				B+																		B+				
EN-4	Pre-Construction Phase												U	U								U												
	Construction Phase	C-		C-			U		U							C-	B-			C-													C-	
	Operation Phase	C-						U			A+	U				C-	B-	A+	C-	B-										U				
	Pre-Construction Phase																																	
	Construction Phase																																	
	Operation Phase																																	
	Pre-Construction Phase																																	
	Construction Phase																																	
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	Operation Phase																																	
	Pre-Construction Phase																																	
	Construction Phase																																	
	Operation Phase																																	
	Pre-Construction Phase																																	
	Construction Phase																																	
	Operation Phase																																	

Environmental Elements
I. Natural and Biological Environment
II. Environmental Hazards
III. Resource Conservation and Use
IV Air Quality and Noise Environment
V. Community Facilities/Services and Structure
VI. Open Space and Recreation
VII Historic Resources
VIII Visual Resources
IX. Economics Environment

Environmental Impact Score
A+: Significant positive impact
B+: Moderately positive impact
C+: Negligible positive impact
U : Unclear
A-: Significant negative impact
B-: Moderately negative impact
C-: Negligible negative impact

Table 4.3 Result of Initial Environmental Examination (1/30)

Code No.	Project/Program Title
RP-1	**Subic Port Development**

Location

Zambales
Former Subic Naval Base, Subic Bay Metropolitan Authority, Olagapo City

Project/Program Description

The former naval base converts into international commercial port

a) Project Components
- Strengthening container cargo handling facilities: handling capacity : 500,000 TEU (final stage : 1.5 million TEU).
- Expanding facilities
- 6 berths (total 8 berths)
- expanding container stock yard

b) Project Activities

Construction Phase
- Construction of container cargo handling facilities
- Construction of berths
- Construction of container stockyard
- Operation of heavy equipment
- Dredging
- Employment of labour

Operation and Maintenance Phase
- Increasing number of cargo ships
- Transportation of containers by truck

Site Description

Project site is located in former Subic naval base, and in Subic Bay.

Topography
Front of Subic Bay

Land Use
Around the site : industry, commercial area
Coastal area : recreational activities etc.
Hinterland : rain forest, eco-tourism etc.

Hinterland of the site is watershed preservation area and virgin forest.

Environmental Impact Evaluation

Construction Phase
- Environmental impact on land will be within SBMA area.
- On Coastal area, marine ecosystem may affected by construction works.

Operation and Maintenance Phase
- Marine ecosystem will be deteriorated by leak of oil from container cargo ships.
- Marine recreation will affected by increasing sea transportation
- Transportation on the road from SBMA will congested with container trucks.
- Noise and air pollution will increase on access roads by transportation of container trucks.

Environmental Recommendations

EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (2/30)

Code No.	**Project/Program Title**
RP-4	**Subic -Looc Jet Foil Connection**

Location

Zambales — Subic Metropolitan Authority, Olongapo
Batangas — Looc, Nasugbu
Corregidor island

Project/Program Description

Construction of Passenger Piers for Jet Foil.

a) Project Activities

Construction Phase
- Construction of passenger piers
- Construction of passenger terminal building

Operation and Maintenance Phase
- Operation of jet foils
- Using terminal building by passengers
- Increasing number of visitors

Site Description

Subic side
Project site is located in former Subic naval base in Subic Bay.

Land Use
Around the site:
Industry, Commercial area;
Coastal area:
Recreational activities etc.
Hinterland:
Rain forest, eco-tourism etc.

Hinterland of the site is watershed preservation area and virgin forest.

Route
This route crosses mouth of Manila Bay

Environmental Impact Evaluation

Target of Evaluation is Subic Side and route of Jet Foil.

Construction Phase
- Marine ecosystem will be affected by construction of piers.
- Environmental impact on land will be within SBMA area.

Operation and Maintenance
- Existing sea transportation will be obstructed by operation of jet foils.
- Sea water will be polluted by waste water from passenger buildings.
- Accessibility of tourist will be improved.
- Impact of marine ecosystem by navigation of jet foil may not be services.
- Employment opportunity will increase.

Environmental Recommendations

Waste water treatment system of passenger building should be installed.
EIA study will be required in further study.

Table 4.3 Result of Initial Environmental Examination (3/30)

Code No.	Project/Program Title
RP-5	**Hermosa Agro-Industrial Estate**

Location

Bataan
Pandatung Hermosa

Project/Program Description

Establishment of Agro-Industrial Estate

a) Project components
Land area : 116 ha.
Infrastructures
Roads, power supply, water system and telecommunications.
Agriculture
Post-harvest facilities and agricultural machinery Workshop.
Others
Food processing (fish, root crop, fruit) gifts toys and houseware, electronics and garment.

b) Project activities
Pre-construction Phase
- Land acquisition

Construction Phase
- Site preparation
- Construction of structures and facilities
- Operation of heavy equipment
- Transportation of construction materials
- Employment of labour

Operational and Maintenance
- Operation of processing
- Operation of supporting facilities
- Transportation of materials and products
- Employment of labour

Site Description

Project is located 2 km from National Road

Environmental Impact Evaluation

Pre-construction Phase
It is not clear that resettlement and land acquisition of cultivated land will be required.
Construction Phase
- Soil erosion will occur by site preparation.
- Noise and Air pollution will increase by operation of heavy equipment and transportation of construction material.
- Transportation will be obstructed by construction vehicles.

Operation and Maintenance
- River water will be polluted by waste water from food processing.
- Access roads will be congested with transportation of materials and products.
- Landscape will change.

Environmental Recommendations

Project site selection should be considered natural and socio-economic environments.
Water treatment facilities should be installed food processing factories.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (4/30)

Code No.	Project/Program Title
RP-6	**Clark International Aviation Complex**

Location

Pampanga
Angeles City
Clark Field

Project/Program Description

Establishment of new airport and other facilities in Clark Field

a) Project components
Area : 1620 ha
- Rehabilitation of runway
- Construction of passenger terminal buildings for international and domestic.
- Construction of cargo terminals
- Construction of other facilities

b) Project activities

Construction Phase
- Construction of runway
- Demolition of existing structures
- Construction of buildings and facilities
- Operation of heavy equipment
- Employment of labour

Operation and Maintenance Phase
- Operation of airport
- Increase number of passengers and cargo
- Using terminal building by passengers
- Employment of labour

Site Description

The Project site is located in Clark Field.
Existing airport facilities including runways will be used for new airport.

Topography
Almost flat area where is at the foot of Mt. Pinatubo.

Land use
Clark Field will be commercial area in the future.
Around Clark Field is commercial area where is in Angeles city and are cultivated area.

Environmental Impact Evaluation

Construction Phase
- Impact of air pollution and noise will be within Clark Field.
- Employment opportunity will increase.

Operation and Maintenance
- Noise level by aircraft will increase.
- Generating waste water will cause water pollution.
- Generating solid waste will cause shortening life span of disposal site.
- Traffic volume on existing roads will increase by visitors care and trucks.

Environmental Recommendations

Accesses to airport from Metro Manila require.
EIA will be required in further study, especially noise level by aircraft.

Table 4.3 Result of Initial Environmental Examination (5/30)

Code No.	Project/Program Title
RP-8	**Clark Field Amusement Park**

Location

Pampanga
Angeles City
Clark Field

Project/Program Description

Establishment of large scale amusement park.

a) Project Activities

Construction phase
- Construction of amusement facilities.
- Jet coaster, ferris wheel, restaurants, etc.
- Transportation of facilities and construction materials.

Operation and Maintenance Phase
- Operation and maintenance facilities.
- Operation of attractions.
- Increasing visitors.

Site Description

The project site is located in Clark Field.

Topography
Project site is almost flat area where is at the foot of Mt. Pinatubo.

Land use
Clark Field will be commercial area in the future. Around Clark Field is commercial area and cultivated area.

Environmental Impact Evaluation

Construction Phase
- Transportation of facilities and construction materials will cause traffic congestion for short period.
- Noise and air pollution will generate by operation of heavy equipment. However, impact by operation of heavy equipment may be within Clark Field.
- Number of employment will increase.

Operation and Maintenance Phase
- Water pollution will occur by waste water from restaurants and toilets.
- Access roads will congested with visitor's cars
- Increasing solid waste will cause shortening life span of disposal site.
- Noise will generate from facilities and visitors, However, affected area may be within Clark Field.
- Employment opportunity will increase.

Environmental Recommendations

Access roads and other ways to Clark Field are required.
Water treatment system should be installed.
Disposal sites for solid waste and lahar are secured.
EIA will required in further study.

Table 4.3 Result of Initial Environmental Examination (6/30)

Code No.	Project/Program Title
RP-9	**Main Line North Rehabilitation/Upgrading**

Location

Pampanga, Bulacan, Metro Manila
Main Line North Railway
(Clark Field - Manila)

Project/Program Description

Rehabilitation of Main Line North Railway.

a) Project Contents
This railway's for passengers and cargo.
Existing railway does not work.

Route : Clark International Airport - Paco Station
Type of railway : at grade type
Projection of Passenger : 75,700 person/day year
(Year 2005)

b) Project activities

Pre-construction Phase
- Survey of existing railway.

Construction Phase
- Rehabilitation of railway.
- Employment of labour.

Operation of Maintenance Phase
- Operation of passenger car.
- Operation of freight and container train.

Site Description

Topography
Almost plain area.

Land Use
Urban area, Cultivated area, Commercial area, Space etc.

Environmental Impact Evaluation

Pre-construction Phase
It is not clear that existing railway requires additional area for expanding line. Therefore , impact by land acquisition is unknown.

Construction Phase
- Existing transportation will be obstructed by construction works.
- Operation of heavy equipment will cause increasing noise level and air pollution.
- Replacement of rails will cause increasing waste.
- Working activities will generate dust.
- Employment of labour will increase.

Operation and Maintenance Phase
- Noise and air pollution will increase by service.
- Accessibility will be improved. However, existing road transportation will be obstructed by service of train.
- Service of train will cause split of community.

Environmental Recommendations

Viaduct type railway is recommendable at crossing main-road sections.
Schedule of work should be considered for existing traffic conditions
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (7/30)

Code No.	Project/Program Title
RP-11	**New Intra-Regional Artery Establishment (Rainbow Highway)**

Location

Zambales, Bataan, Pampanga, Nueva Ecija
Route : Olongapo City-Dinalupihan City-Angeles City - Cabanatuan City-Palayan City

Project/Program Description

Construction of highways.

Structure type : unknown

a) Project activities

Pre-construction Phase
- Land acquisition

Construction Phase
- Cut and fill work.
- Demolition of existing structures.
- Piling work.
- Construction of road structure.
- Operation of heavy equipment.
- Transportation of construction materials.
- Employment of labour.

Operation and Maintenance Phase
- Increasing traveling vehicles.

Site Description

Topography
Olongapo - Dinalupihan
mountain area
Dinalupihan - Cabanatuan
plain area
Cabanatuan - Palayan
hilly area

Land Use
Forest, Cultivated area, Resident area, Commercial area, Urban area etc.

Environmental Impact Evaluations

Pre-construction Phase
- Residents may be resettled for land acquisition
- Forest and agricultural area will be required for project site so that wildlife habitat will be vanished, and timber and agricultural production will decrease.

Construction Phase
- Soil erosion may occur by cut and fill works so that river environment will be deteriorated
- Demolition of existing structures will cause air pollution such as dust, and generating construction waste.
- Transportation of construction materials and operation of heavy equipment and generating construction waste will cause increasing noise level and air pollution.
- Existing transportation will be obstructed by construction works.

Operation and Maintenance Phase
- Noise and air pollution will increase by traveling vehicles
- Drainage of rainwater will occur soil erosion and flooding
- Traffic volume will increase on access roads.

Environmental Recommendations

We have to consider that road alignment does not high population density area and valuable areas for ecosystem.
Slope protection requires.
Traffic management on access roads should be carried out during construction phase.
River and canals should be secured for drainage of rain water.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (8/30)

Code No.	Project/Program Title
RP-12	**North Luzon Expressway Extension**

Location

Pampanga, Tarlac, Pangasinan
Route:Mabalacat, Paniqui, Carmen, Rosales

Project/Program Description

Extension of North Luzon Expressway from Mabalacat.

a) Structures
Type of road : Highway
Structure Type : Unknown
Length of road : 74.3 km.

b) Project Activities
Pre-construction Phase
- Land acquisition.

Construction Phase
- Cut and fill work.
- Demolition of existing structures.
- Piling work.
- Construction of road structure.
- Operation of heavy equipment.
- Transportation of construction materials.
- Employment of labour.

Operation and Maintenance Phase
- Increasing traveling vehicles.

Site Description

Topography
Plain area

Land Use
Urban area, Cultivated area, Residential area, Commercial area.

Environmental Impact Evaluation

Pre-construction Phase
- Residents may be resettled for land acquisition
- Agricultural area will be required for project site so that agricultural production will decrease.

Construction Phase
- Turbid water will generated by cut and fill work so that river environment will be deteriorated.
- Demolition of existing structures will cause air pollution such as dust, and generating waste
- Transportation of construction materials and operation of heavy equipment will cause increasing noise level and air pollution.
- Existing transportation will be obstructed by construction works.

Operation and Maintenance
- Noise and air pollution will increase by traveling vehicles.
- Drainage of rainwater will occur soil erosion and flooding.
- Traffic volume will increase on access roads.

Environmental Recommendations

We have to consider that road alignment does not avoid high population density area.
Traffic management should be carried out during construction phase.
Rivers and canals should be secured for drainage of rain water.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (9/30)

Code No.	Project/Program Title
RP-13	**Manila Coastal Road**

Location

Bataan, Metro Manila
Calumpit - Lubao

Project/Program Description

Construction of road.

Length : 24.4 km.

a) Project Components

Pre-construction Phase
- Land acquisition

Construction Phase
- Cut and fill works
- Demolition of existing structures
- Piling work
- Construction of road structure and bridges
- Operation of heavy equipment
- Transportation of construction materials
- Employment of labour

Operation and Maintenance Phase
- Increasing traveling vehicles

Site Description

Topography
Low land, (swamp)

Land Use
Cultivated area, fishpond, etc.

Environmental Impact Evaluation

Pre-construction Phase
- Residents may be resettled.
- Agricultural area and fishponds will be required for project site so that agricultural and fishery production in this area will decrease.
- Impact on wild life such as migration birds is not clear.

Construction Phase
- Construction works will cause deterioration of aquatic ecosystem in swamp area.
- Existing transportation will be obstructed by construction activity.
- Operation of heavy equipment and transportation of construction materials will cause increasing noise and air pollution. However, this impact is not serious.

Operation and Maintenance Phase
- Noise and air pollution will increase by traveling vehicles.
- Drainage of rain water on the road will affect aquaculture (seawater fish).
- Existence of road structures may cause split of communities.

Environmental Recommendations

We have to consider that road alignment does not avoid communities and valuable areas for ecosystem.
We have to pay attentions to crossing proposed road. Fisherman and residents need to cross proposed road.
Measures of soil erosion requires.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (10/30)

Code No.	Project/Program Title
RP-14	**San Fernando-Dinalupihan Road Improvement**

Location

Pampanga, Bataan
Route :San Fernando-Bacolor-Sta.Rita-Guagua-Lubao-Dinalupihan

Project/Program Description

Road improvement for damaged by lahar and traffic congestion.

a) Project Components
Additional lanes at the critical section is constructed to run parallel to the existing roads.
- Improvement of existing roads.
- Construction of additional lanes.
- Improvement of river crossing.
- Construction of flyovers in San Fernando.

b) Project Activities
Pre-construction Phase
- Land acquisition for additional lanes.

Construction Phase
- Demolition of existing structures.
- Piling work.
- Construction of road structure.
- Operation of heavy equipment.
- Transportation of construction materials.
- Employment of labour.

Operation and Maintenance Phase
- Increasing traveling vehicles.

Site Description

Topography
Plain area
Damaged area by lahar

Land Use
Gapan - San Fernando - Dinalupihan
Urban area, Cultivated area, Commercial area.

Environmental Impact Evaluation

Pre-construction Phase
- Residential and agricultural areas will be required for construction of additional lanes.

Construction Phase
- Improvement of road by operation of heavy equipment will cause increasing noise level and air pollution.
- Existing transportation will be obstructed by construction works.
- Demolition of existing buildings for construction of flyovers will generate dust and construction waste.

Operation and Maintenance
- Traffic conditions will be improved.
- Existence of flyovers will affect landscape.

Environmental Recommendations

We have to pay attention to construction time in view of traffic congestion. Therefore, traffic management should be carried out during construction phase.
Design of flyovers should be considered existing landscape and land use.
EIA will be required for construct of additional lanes and flyovers in further study.

Table 4.3 Result of Initial Environmental Examination (11/30)

Code No.	Project/Program Title
RP-16	**Sierra Madre (Marginal) Highway**

Location

Bulacan, Nueva Ecija
Route : Unknown

Project/Program Description

Establishment of highway in the eastern side (mountain area) of Bulacan and Nueva Ecija.

a) Project Activities

Pre-construction Phase
- Land acquisition

Construction Phase
- Cut and fill work.
- Demolition of existing structures.
- Piling work.
- Construction of road structure.
- Construction of access roads.
- Transportation of construction materials.
- Operation of heavy equipment.
- Employment of labour.

Operation and Maintenance Phase
- Increasing traveling vehicles.

Site Description

Topography
Mountain area, undulating area

Land Use
Forest area, Cultivated area.

National park and watershed conservation areas were established in Bulacan and Nueva Ecija mountain areas.

Environmental Impact Evaluation

Pre-construction Phase
- Forest and agricultural area will be required for project site so that wildlife habitat will be vanished, and timber and agricultural production will decrease.

Construction Phase
- Soil erosion may occur by cut and fill work so that terrestrial and aquatic environments will be deteriorated.
- Construction work will affect wildlife habitat.
- Number of employment will increase.

Operation and Maintenance Phase
- Drainage of rain water will occur soil erosion, so that land and aquatic environments will be deteriorated.
- Road structure will bring about split of community and obstruction of wildlife migration.
- Accessibility of people who live in mountain area can be improved.

Environmental Recommendations

The route should be avoided in protected areas especially National Park.
Mountain slope should be protected for soil erosion.
Drainage of rainwater should be considered for environment
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (12/30)

Code No.	Project/Program Title
RP-18	**Optic Fiber Network**

Location

The whole region
Major cities in Central Luzon

Project/Program Description

Installation of overhead optic fiber cable.

a) Project Contents
Installation Length : 1400 km
Stations : 122

b) Project activities
Construction Phase
- Installation of new communication poles.
- Rebuilding of existing telephone offices.

Operation and Maintenance Phase
- Increase of computers and switching exchangers.

Site Description

Optic fiber cable will be installed along the main roads.

Environmental Impact Evaluation

Construction Phase
Traffic will be obstructed during installation work, because optic fiber cable is installed along the main roads.

Operation and Maintenance Phase
In several parts of area, existence of communication pole may affect on landscape. However, optic fiber cable may give lower impact than former cable, because optic fiber cable is finer than former.

Environmental Recommendations

We have to pay attention to construction schedule in view of traffic congestion.

Table 4.3 Result of Initial Environmental Examination (13/30)

Code No.	Project/Program Title
RP-19	**Labrador-Hermosa Extra High Voltage Transmission Line Project.**

Location

Pampanga, Zambales, Bataan, Bulacan, (Pangasinan)
Transmission line : Labrador - Zambales - Hermosa - Pampanga - San Jose

Project/Program Description

Construction of high-voltage transmission line.

a) Outline of Structure
Transmission line is to be constructed newly.
- Line Voltage : 500 KV
- Conductor size : 4 x 795 MCM budle conductor
- Nos. of circuit : 2
- Support : Steel tower
- Length : 210 km

b) Project activities

Pre-construction Phase
- Procurement of right of way under the transmission line.

Construction Phase
- Construction of temporary stock yard for materials and equipment, and access road.
- Construction of tower foundation, creation of tower, stringing of line.

Operation and Maintenance
- Land clearance work under transmission
- Existence of structure

Site Description

Topography
Zambales, Bataan : Mountain area
Pampanga, Bulacan : Plain area

Land Use
Cultivated area, etc.

Environmental Impact Evaluation

Pre-construction Phase
- Sections where are for tower foundation will occupy.

Construction Phase
- Noise level will increase.
- Existing transportation and other activities will obstructed by construction work, such as stringing of line.

Operation and Maintenance Phase
- The area where under transmission line cannot be developed, so that land use will change
- Noise will be generated by wind and electric discharge.
- Radio wave jamming may occur.
- Landscape will change.

Environmental Recommendations

We should consider route of transmission line for minimizing socio-economic and natural environmental impacts such as land use, landscape and natural vegetation.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (14/30)

Code No.	Project/Program Title
RP-20	**Hermosa-Dasmarinas Extra-High Voltage Transmission Line Project**

Location

Bataan, (Cavite)
Transmission line :Hermosa - Manila bay - Dasmarinas

Project/Program Description

Construction of high voltage transmission line

a) Outline of Structure
Transmission line is to be constructed newly.
- Line Voltage : 500 KV
- Conductor size : 4 x 795 MCM bundle conductor
- Nos of circuit : 2
- Support : Steel tower
- Length : 110 km

Remarks : Route of Manila Bay is to be constructed by submarine cable.

b) Project activities
Pre-constructions Phase
- Procurement of right of way under the transmission line.

Construction phase
- Construction of temporary stock yard for materials and equipment, and access road.
- Construction of tower foundation, creation of tower, stringing of line.

Operation and Maintenance
- Land clearance work under transmission.
- Existence of structure.

Site Description

Topography
Bataan : Plain area
Submarine cable route : Bottom of Manila Bay

Land Use
Cultivated area, forest area, space, etc.

Environmental Impact Evaluation

Pre-construction Phase
- Sections where are for tower foundation will occupy.

Construction Phase
- Noise level will increase.
- Existing transportation and other activities will obstructed by construction works, such as stringing of line.

Operation and Maintenance Phase
- The area where under transmission line cannot be developed, so that land use will change.
- Noise will generated by wind and electric discharge.
- Radio wave jamming may occur.
- Landscape will change.

Environmental Recommendations

We should consider route of transmission line for minimizing socio-economic and natural environmental impacts such as land use, landscape and natural vegetation.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (15/30)

Code No.	Project/Program Title
RP-21	**Balintingon Reservoir Multipurpose Development**

Location

Nueva Ecija : (Cabanatuan, Cabiao, Gapan, Gen. Tinio, Peñaranda, San Isidro and Sta. Cruz)
Bulacan : (San Ildefonso, San Miguel and San Rafael)
Pampanga : (Arayat)

Project/Program Description

Construction of rockfill center-core type dam and supplemental facilities.

a) Project Structure and Contents

Rock dam	H=140m
Power house	P=44MW (2units)
Headrace tunnel	L=710m
Diversion weir	L=140m
Irrigation canal	L=109km (Main)
	L=168km (Lateral)
Access Road	L=20 km (Improvement)
	L=10 km (Reconstruction)
Reservoir storage	= 572 million m^3
Irrigation Service Area	= 16,200 ha

b) Project Activities

Pre-construction Phase
- Land acquisition (2,300 ha)

Construction Phase
- Site preparation.
- Construction of dam and supplemental facilities.
- Operation of heavy equipment.
- Transportation of construction waste and materials.
- Employment of labour.

Operation and Maintenance Phase
- Filling dam with water.
- Providing water for irrigation and hydraulic.

Site Description

The dam site is located on Sumacbao river in Sierra Madre Mountains.

Catchment area : 228 km2
Irrigation area : .... closed to Gapan along the highway, about 90 km North of Manila.

Topography
Dam site : Mountain area
Irrigation : upland, plain area

Land Use
Forest, Cultivated area

Population
Total population in the project area is 548,000, out of which 85% rural (As of Nov. 1983, from F/S' Report).

Environmental Impact Evaluation

Pre-construction Phase
- 45 households will be resettled.

Construction Phase
- Turbid water will generate by construction work so that aquatic ecosystem will be impacted.
- Soil erosion will occur by construction of supplementary facilities so that terrestrial and aquatic environments will be deteriorated.
- Transportation of construction materials and residual soil will generate dust and noise, and occur obstruction of existing traffic, so that living environment will be deteriorated.

Operation and Maintenance Phase
- Reservoir shoreline will be up so that this area will be vanished.
- Forest and cultivated areas will be vanished due to filling water.
- Water can be provided for irrigation and hydraulic power generation.

Environmental Recommendations

Location of project site should be considered for conservation of terrestrial ecosystem.
Construction method should be considered for conservation of aquatic ecosystem.
Constructed activities should be considered for communities.
Project proponent should make compensation for resettled people.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (16/30)

Code No.	Project/Program Title
RP-23	**Holistic Water Catchment Management Program**

Location

Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac and Zambales), (six provinces)
Selected river basins in the whole region

Project/Program Description

Establishment of watershed management program
The Program covers six provinces in Region III.

a) Project Contents
- Construction of forest road network.
- Plantation.
- Establishment of nursery for seeding production.
- Construction of checkdams and retaining walls.
- Implementation of Small Water Impounding Project.

b) Project Activities

Pre-construction Phase
- Procurement of project site

Construction Phase
- Site preparation
- Cut and fill work
- Construction of forest roads
- Construction of seeding production area
- Plantation
- Transportation of construction materials
- Employment of labour

Operation and Maintenance Phase
- Traveling vehicles on forest roads
- Filling ponds with water
- Existence of structure
- Growing plants

Site Description

Topography
Upland

Land Use
Forest area

Preservation area
Project sites include several national parks and natural reserves.

Environmental Impact Evaluation

Pre-construction Phase
- Forest area will be required for forest roads, ponds and other structures.
- Environmental impact on ecosystem is not clear, because project site is not yet decided

Construction Phase
- Natural environment may be deteriorated by construction works.
- Site preparation may cause soil erosion so that terrestrial and aquatic ecosystem will be deteriorated.
- Access of visitors to National Parks and natural reserves may be disturbed by construction works.

Operation and Maintenance Phase
- Natural resources will be enriched.
- Soil erosion will be reduced.
- Natural landscape will be improved by plantation. On the other hand, construction of forest roads, impounding and structures will cause change of natural landscape.

Environmental Recommendations

In consideration of Biodiversity, any types and species of planting trees should be selected.
Since the present situation is critical and project area is huge, it is required to cope with the most imminent priority areas.

Table 4.3 Result of Initial Environmental Examination (17/30)

Code No.	Project/Program Title
GN-4	**Farm Mechanization**

Location

Region-wide

Project/Program Description	Site Description
Improvement of farm mechanization. a) Project Activities - Leasing of appropriate farm machinery. - Provision of credit for purchase of farm machinery. - Establishment of farm level grain center. - Training of farmers for operation farm machinery.	Not yet identified.

Environmental Impact Evaluation

It is expected that farm mechanization bring about increase in agriculture production. Furthermore income and living condition will be improved, and local economy will be uplifted. On the other hand, mechanization will accelerate the fuel consumption and give rise to an unemployment.

Environmental Recommendations

We have to consider balance of income and expenses for leasing by introduction of farm mechanization.
Maintenance of farm machinery should be properly carried out.

Table 4.3 Result of Initial Environmental Examination (18/30)

Code No.	Project/Program Title
GN-9	**Aquaculture Integrated Farming**

Location

Pampanga, Nueva Ecija

Project/Program Description

Establishment of low cost freshwater aquaculture

Project Activities
Installation of aquaculture equipment such as cage, pen and pond.

Pre-construction Phase
- Sites acquisition

Construction Phase
- Installation of aquaculture equipment

Operation Phase
- Haulage of fishes
- Feeding

Site Description

Aquaculture equipment is installed in rivers, lakes, and ponds.

Environmental Impact Evaluation

Pre-construction and Construction Phases
- It is not expected that implementation of the project will cause serious impact on environment.

Operation Phase
- Over feeding will cause water pollution.
- Biodiversity and indigenous fauna and flora can be affected, if aquaculture size is over environmental capacity, or aquaculture management is poor.

Environmental Recommendations

We should consider the existing operation areas for site selection. The following river, lakes and ponds should be avoided for conservation of natural and socio-economic environments:
- rich and valuable natural aquatic resources, and
- used for drinking water use.

Project proponent has to pay attention to the aquaculture management especially feeding.

Table 4.3 Result of Initial Environmental Examination (19/30)

Code No.	Project/Program Title
GN-12	**Balintingon Reservoir Development**

Location

Nueva Ecija : (Cabanatuan, Cabiao, Gapan, Gen. Tinio, Peñaranda, San Isidro and Sta. Cruz)
Bulacan : (San Ildefonso, San Miguel and San Rafael)
Pampanga : (Arayat)

Project/Program Description

Construction of rockfill center-core type dam and supplemental facilities.

a) Project Structure and Contents

Rock dam	H=140m
Power house	P=44MW (2units)
Headrace tunnel	L=710m
Diversion weir	L=140m
Irrigation canal	L=109km (Main)
	L=168km (Lateral)
Access Road	L=20 km (Improvement)
	L=10 km (Reconstruction)
Reservoir storage	= 572 million m^3
Irrigation Service Area	= 16,200 ha

b) Project Activities

Pre-construction Phase
- Land acquisition (2,300 ha)

Construction Phase
- Site preparation.
- Construction of dam and supplemental facilities.
- Operation of heavy equipment.
- Transportation of construction waste and materials.
- Employment of labour.

Operation and Maintenance Phase
- Filling dam with water.
- Providing water for irrigation and hydraulic.

Site Description

The dam site is located on Sumacbao river in Sierra Madre Mountains.

Catchment area : 228 km2
Irrigation area : .... closed to Gapan along the highway, about 90 km North of Manila.

Topography
Dam site : Mountain area
Irrigation : upland, plain area

Land Use
Forest, Cultivated area

Population
Total population in the project area is 548,000, out of which 85% rural (As of Nov. 1983, from F/S' Report).

Environmental Impact Evaluation

Pre-construction Phase
- 45 households will be resettled.

Construction Phase
- Turbid water will generate by construction work so that aquatic ecosystem will be impacted.
- Soil erosion will occur by construction of supplementary facilities so that terrestrial and aquatic environments will be deteriorated.
- Transportation of construction materials and residual soil will generate dust and noise, and occur obstruction of existing traffic, so that living environment will be deteriorated.

Operation and Maintenance Phase
- Reservoir shoreline will be up so that this area will be vanished.
- Forest and cultivated areas will be vanished due to filling water.
- Water can be provided for irrigation and hydraulic power generation.

Environmental Recommendations

Location of project site should be considered for conservation of terrestrial ecosystem.
Construction method should be considered for conservation of aquatic ecosystem.
Constructed activities should be considered for communities.
Project proponent should make compensation for resettled people.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (20/30)

Code No.	Project/Program Title
AG-4	**Angat Afterbay Regulator Dam (Bustos Diversion Dam) Rehabilitation**

Location

Bulacan
Angat Afterbay Regulatory Dam on Angat-Maasim River

Project/Program Description

Rehabilitation of regulatory dam

a) Project Structures
- Demolition of existing weir
  - Storage Capacity : 36,000m^3
  - Gates : 6 sectors gates
  - Height : 2.5 m
  - Length : 78 m
- Reconstruction of weir by rubber dam
  - Service area : 31,485 ha
  - Potential area : 34,000 ha

b) Project Activities

Pre-construction Phase
- Land acquisition is not required

Construction Phase
- Demolition of existing weir
- Reconstruction of weir by rubber dam
- Transportation of construction waste and materials
- Employment of labor

Operation and Maintenance Phase
- Charge and discharge water
- Increasing water level

Site Description

This dam is located about 50 km down stream of NPC Power Plant.

Topography
Upland area
Proposed dam site is located on Angat river

Land Use
Forest area, cultivated area

Environmental Impact Evaluation

Pre-construction Phase
- It is not expected that the project activities will cause environmental impact.

Construction Phase
- Turbid water will generated by demolition work so that aquatic life will be impacted.
- Generating noise and air pollution are will not be serious.
- Deteriorating facilities will be disposed.
- Employment opportunities will increase.

Operation and Maintenance Phase
- Reservoir shoreline will be up so that this area under water will be vanished.
- Deteriorating facilities will be changed so that landscape can be improve.

Environmental Recommendations

Construction period should be considered due to not obstruction to agricultural activities.
Structure design and construction method should be considered for aquatic ecosystem.
EIA will be required in further study, if reservoir area expands.

Table 4.3 Result of Initial Environmental Examination (21/30)

Code No.	Project/Program Title
AG-5	**Pampanga Delta Development Project - Irrigation Component**

Location

Pampanga
Southward from Mt. Arayat

Project/Program Description

Establishment of irrigation and drainage

a) Project components

Water of 20.18 m^3/s will be diverted from Pampanga river.

Project area : 15,000 ha

- Construction of a diversion dam
- Construction of irrigation and drainage facilities

b) Project Activities

Pre-construction Phase

- Land acquisition

Construction Phase

- Construction of dam and other facilities.
- Dredging
- Transportation of residual soil and construction materials.
- Operation of heavy equipment
- Employment of labour.

Operation and Maintenance Phase

- Charge and discharge water of diversion dam
- Providing water to agricultural area

Site Description

The project site is located at about 60 km northwest of Metro Manila and extends southwards from Mt. Arayat on the right bank of Pampanga river.

Topography

Plain area

Land Use

Agriculture area (fish pond)

Environmental Impact Evaluation

Pre-Construction Phase

- Residents may be resettled.
- Agricultural area will be required for project site, so that agriculture production in dam site and canals will decrease.
- Impact on wildlife by land acquisition is not clear.

Construction Phase

- Generating turbid water by construction works will affect aquatic ecosystem.
- Construction work will affect wildlife habitat such as migration birds.
- Existing transportation will be obstructed by construction activities.
- Operation of heavy equipment and transportation of construction materials will cause increasing noise and air pollution.
- Number of employment will increase.

Operation and Maintenance Phase

- Ecosystem will be changed by fill up dam with water.
- Landscape will change.
- Accessibility of community and public-facilities will be constructed by existence of canals, and dam.
- Water resources for agriculture will increase.
- Infrastructure can be protected.

Environmental Recommendations

We should consider site selection of dam and canals for socio-economic and natural environments.
Traffic management should be carried out during construction phase.
Accessibility of community and public facilities by residents should be considered in operation phase, for example construction roads and bridges.

Table 4.3 Result of Initial Environmental Examination (22/30)

Code No.	Project/Program Title
AG-6	**Porac-Gumain River Irrigation System Restoration**

Location

Pampanga
Floridablanca

Project/Program Description

Restoration of irrigation system

a) Project Components
- Dredging and disposal lahar
- Replacement of steel sluice gates and headgates and falling shutters.
- Channelization
- Desilting of canals and canal structures, and disposal of silts.
- Repair of canal structures, embankment, service road and office building.
- Restoration of a existing earthdam.

b) Project Activities

Re-Construction Phase
- land acquisition is not clear.

Construction Phase
- Demolition of existing structures.
- Construction of canals and its structures.
- Dredging of canals and disposal of sediment.
- Operation of heavy equipment.
- Transportation of facilities and construction materials.

Operation and Maintenance Phase
- Providing water to agricultural area.

Site Description

Topography
Alluvial flat plain

Environmental Impact Evaluation

Pre-Construction Phase
- Environmental impact by land acquisition for channelization is unknown.

Construction Phase
- Generating turbid waste by construction work will affect acquisition ecosystem.
- Dredging of canals will cause vanishment of benthos.
- Residual soil by dredging work cause shortening life span of disposal site.
- Air pollution and noise by operation of heavy equipment will not serious impact because this areas is agricultural area.
- Deteriorating facilities will be disposed.
- Employment opportunity will increase.

Operation and Maintenance Phase
- Water can be provided to agricultural area.
- Landscape can be improved by rehabilitation.

Environmental Recommendations

We should select appropriate construction methods and period for conservation of aquatic ecosystem and socio-economic environment.
Project proponent should secure disposal sites for residual soil by dreading work.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (23/30)

Code No.	Project/Program Title
AG-7	**Mapanuepe River Lake Irrigation**

Location

Zambales
San Marcelino, San Antonio

Project/Program Description

Partial rehabilitation of Sto. Tomas Irrigation System.

a) Project Components
- Construction of intake at the outlet channel
- Construction diversion channel (5 km)
- Stretch of existing system's main canal (3 km)
- Rehabilitation of existing irrigation canals and structures.
- Construction of lahar protection dike

b) Project Activities

Construction Phase
- Construction of structures.
- Concreting existing structures.
- Transportation of construction materials.
- Operation of heavy equipment.
- Employment of labour.

Operation and Maintenance Phase
- Providing water to agriculture.

Site Description

Manpanuepe lake was created by the eruption of Mt. Pinatubo. Water of this lake is planned to use for irrigation.

The lake is located on Mapanuepe river

Topography
Dam site : Mountain area
Irrigation : Upland, Lowland

Land use
Forest, Cultivated area.

Environmental Impact Evaluation

Construction Phase
- Construction activities will affect aquatic ecosystem.
- Dredging of canals will generate so that residual soil should be disposed.
- Air pollution and noise by construction activities will not be serious impact.
- Employment opportunity will increase.

Operation and Maintenance Phase
- Water can be provided to agriculture.
- Soil erosion can be improved.

Environmental Recommendations

We should consider construction method and structures design that match with geology conditions.
EIA will be required in further study, especially for physical stability of lake.

Table 4.3 Result of Initial Environmental Examination (24/30)

Code No.	Project/Program Title
AG-11	**North Lawis (Palongohon) Irrigation**

Location

Zambales
Candelaria

Project/Program Description

Construction of irrigation facilities

a) Project Structure
Potential service area : 1,020 ha. (820 farmers)
Concrete diversion dam: 2 x 100m
Main canal and laterals : 30 km long
Access roads and service road : about 20 km long
Other: Cut and cover structures canals siphons, road crossing and drainage structures, technical facilities.

b) Project Activities
Pre-construction Phase
- Land acquisition is not clear.

Construction Phase
- Construction of new concrete diversion dam
- Construction of canals and access roads
- Transportation of residual soil and construction materials
- Operation of heavy equipment
- Employment of labour

Operation and Maintenance Phase
- Filling dam with water
- Providing water to agricultural area

Site Description

Topography
Coastal Area, Low land, Flat plain

Land Use
Cultivated area, etc.

Environmental Impact Evaluation

Pre-Construction Phase
- Environmental impact by land acquisition is unknown.
- It may be possible that habitat of fauna and flora will be vanished in proposed dam site.

Construction Phase
- Generating turbid water by construction work will affect aquatic ecosystem.
- Residual soil by dredging work cause shortening life span of disposal site.
- Air pollution and noise by operation of heavy equipment will not be serious impact.
- Employment opportunity will increase.

Operation and Maintenance Phase
- Ecosystem may change by fill up dam with water.
- Landscape will change.

Environmental Recommendations

We should consider site selection of diversion dam for conservation of the territorial and aquatic ecosystem.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (25/30)

Code No.	Project/Program Title
AG-18	**Fishery Common Service Facilities Establishment**

Location

Zambales, Bataan
Seventeen (17) coastal municipalities

Project/Program Description

Construction of fishing port complex and processing center.

a) Project Components
- Fishing Port Complex
  Landing jetties, landing quay, landing wharf, fish market hall ice plant, cold storage etc.
- Processing Center
  Mini-standard factory buildings with water system, 20 modular buildings (floor 600 m^2 each).
- Improvement of existing municipal fishing port

b) Project Activities

Pre-construction Phase
- Land acquisition of fishing port complex and processing center.

Construction Phase
- Demolition of existing facilities (if necessary).
- Construction and improvement of facilities and building.

Operation and Maintenance
- Using port facilities
- Operation of marine processing center
- Haulage of marine products

Site Description

Topography
Coastal Area

Zambales : Rim of South China Sea
Bataan : Rim of South China Sea and Manila Bay

Land Use
These areas are used for fishing bases on ports.

Protected Area
Masinloc of Oyon Bay was established as protected seascape area (NIPAS).
There are important coastal areas from the viewpoint of marine ecology.

Environmental Impact Evaluation

Pre-construction Phase
- It is not clear that mangrove area and beach will be vanished by the project.

Construction Phase
- Transportation of construction materials will cause traffic congestion and increasing noise.
- Operation of heavy equipment will cause increasing water pollution and noise level.
- Recreational activities will be avoided by constructed facilities and buildings.
- Landscape will change, if these buildings are constructed in natural coastal lines.

Operational and Maintenance
- Oil may be leaked by operation of port facilities and fishing boat may generate oil so that sea water will be polluted.
- Waste water from marine port center and processing center may cause water pollution.
- Traffic volume and noise will increase, due to transportation of products.

Environmental Recommendations

We should consider site selection because there are many important coastal areas from viewpoint of marine ecology, especially Masinloc Oyon Bay seascape protected area (NIPAs), and Sta. Cruz and Subic Bay.
Waste treatment system should be installed with processing center.
The project site are located in NIPAS areas or important areas from the viewpoint of ecosystem.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (26/30)

Code No.	Project/Program Title
AG-19	**Regional Agricultural Training and Extension Center**

Location

Pampanga
Sto. Niño, Magalang

Project/Program Description

Construction of Agricultural Training Center Complex for farmers and fishfolks.

a) Project Activities

Pre-Construction Phase
- Procurement of project site

Construction Phase
- Site preparation
- Demolition of existing structures (if necessary)
- Construction of buildings and facilities
- Operation of heavy equipment
- Transportation of construction materials
- Employment of labour

Operation and Maintenance Phase
- Transportation of trainee
- Training activities
- Operation of facilities

Site Description

These facilities will be constructed at foot of the Mt. Arayat.

The project site is located in the Arayat National Park .

Environmental Impact Evaluation

Pre-Construction Phase
- Environmental impact especially ecosystem is not clear, because project site is not decided.

Construction Phase
- Natural environment may be deteriorated by construction works.
- Access of visitors to National Park may disturbed by construction works.
- Site preparation may cause soil erosion, so that terrestrial and aquatic ecosystem will be deteriorated by sedimentation and turbid water.

Operation and Maintenance Phase
- Environmental impact, especially ecosystem, is not clear.
- Discharge of Waste water from this facilities causes water pollution.
- Landscape will change.

Environmental Recommendation

This plan should consider the natural and socio-economic environment, especially ecosystem of Mt. Arayat, because this area belong to National Park (NIPAS).
Design of building should be considered to match with natural landscape.
Waste water should be treated.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (27/30)

Code No.	Project/Program Title
UR-8	**Bypass Construction**

Location

Nueva Ecija, Cabanatuan
Pampanga, Angeles City
Zambales, Olongapo City
Tarlac

Project/Program Description

Construction of Bypasses

a) Routes

Cabanatuan City
- San Gregorio-Alibangbang
- San Joseph-Magasawang Alibangbang

Angeles City
- Santol-Calibutbut-Palungmarago

Tarlac
- Capaz-Sta. Ignacio
- Capaz-Lapaz

b) Project Activities:

Pre-Construction Phase
- Land acquisition

Construction Phase
- Demolition of existing structures.
- Preparing project site.
- Construction of road structures.
- Transportation of construction materials.
- Employment of labour.

Operation and Maintenance Phase
- Increasing traveling vehicles.

Site Description

Land Use
Rural area, Urban area

Environmental Impact Evaluation

Pre-construction Phase
- Cultivated land may be shifted to road.
- Residents may be resettled.

Construction Phase
- Air pollution, noise, vibration will be occur by operation of heavy equipment and transportation of construction materials.
- Construction waste will generate by demolition work.
- Existing transportation will be disturbed by construction activities.

Operation and Maintenance Phase
- Air pollution and noise will increase by traveling vehicles.
- Existence of road structures will cause split of communities.

Environmental Recommendation

We should consider road alignments. High population density areas should be avoided for project site.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (28/30)

Code No.	Project/Program Title
IN-15	**Bulacan Wholesale and Distribution Center**

Location

Bulacan
Meycauayan, Obando or Bocaue

Project/Program Description

Construction of a wholesale and distribution center.

a) Structures and Facilities
- truck terminal
- dry port facility with freight depot
- wholesale market
- warehouse and cold-storage warehouse
- processing and packaging factories

b) Project Activities

Pre-Construction Phase
- Land acquisition

Construction Phase
- Site preparation
- Demolition of existing structures
- Construction of structures and facilities
- Employment of labour

Operation and Maintenance Phase
- Existence of structures
- Haulage by trucks
- Operation of warehouses and factories

Site Description

Project site is located near the intersection of North Expressway and C-5 or C-6

Topography
Plain area

Land Use
Commercial area

Environmental Impact Evaluation

Pre-construction Phase
- Resettlement is not clear.

Construction Phase
- Increasing traffic volume by transportation of construction materials.
- Generating noise and air pollution.
- Increasing labour employment for construction.

Operation and Maintenance Phase
- Increasing traffic volume on access roads.
- Increasing air pollution and noise levels by operation of tracks.
- Increasing water pollution by waste water.
- Increasing employment opportunity for operation and maintenance.

Environmental Recommendations

Water treatment system should be installed.
Traffic management including access roads should be curried out during constriction and operation phases.
Noise and air pollution by trucks should be mitigated in operation phase.
EIA will be required in further study.

Table 4.3 Result of Initial Environmental Examination (29/30)

Code No.	Project/Program Title
EN-1	**Rattan Plantation Development and Management**

Location

Bataan, Tarlac, Pampanga
Bagac

Project/Program Description

Establishment of rattan plantation

a) Project activities
The project consists of two steps as follows:

First step
- Preparing maps and plan
  covering slope, soil conditions, agro-ecology, existing vegetation, socio-economic conditions.
- Determination of most suitable species

Second step
- Rattan plantation
- Monitoring of soil, forest, and other ecological information

Site Description

Topography
Bataan : Upland (Bagac)
logged-over forest land

Pampanga : Lowland

Tarlac : Upland/lowland

Environmental Impact Evaluation

Target of IEE is rattan plantation.

Pre-Plantation Phase
- Environmental impact is not clear.

Plantation Phase
- Soil erosion will occur.
- Rivers and canals will be sedimented by preparation of sites.
- Wildlife and natural vegetation will be affected by plantation work.

After Plantation
- In terms of biodiversity, mono-culture will cause poor ecosystem.
- Soil erosion will be improved.
- Natural resources will be rich.

Environmental Recommendations

In consideration of biodiversity, several species should be planted.
We have to consider the project activities such as operation of heavy equipment, transportation of materials, because project site maybe located in conservation area.

The followings should be considered in the project.
- Slope protection
- Measures for sedimentation of river
- Conservation of ecosystem

Table 4.3 Result of Initial Environmental Examination (30/30)

Code No.	Project/Program Title
EN-4	**Solid Waste Management Improvement Pilot Project**

Location

Bataan	Bulacan	Nueva Ecija	Pampanga	Tarlac	Zambales
Abucay	Meycauayan	Palayan	Angeles	Camiling	Olongapo

Project/Program Description

Target of Project is Construction and operation of final disposal site.

a) Project Activities

Pre-construction Phase
- Land acquisition.

Construction Phase
- Construction of sanitary landfill site.
- Transportation of construction materials.
- Operation of heavy equipment.

Operation and Maintenance Phase
- Transportation of solid waste by collection vehicles.
- Disposal of solid waste.
- Covering soil.

Site Description

Bataan : Coastal area, residents are almost fishermen.

Bulacan : small medium sized industrial area

Nueva Ecija : Upland

Pampanga : urban area in land

Tarlac : Agricultural area

Zambales : Urban area on coastal area

Environmental Impact Evaluation

Target of IEE is pilot projects.

Pre-construction Phase
- Impacts of land acquisition is not clear, because project sites is not decided.

Construction Phase
- Increasing traffic volume, noise and vibration levels by transportation of construction materials.
- Increasing air pollution and noise by operation of heavy equipment.

Operation and Maintenance Phase
- Increasing traffic volume by waste collection vehicles.
- Generating odor from disposal site and waste collection vehicles (it depends on sanitary landfill level).

Environmental Recommendations

We should consider selection of appropriate disposal site. Disposal site requires as follows:
- No high population density area.
- No agricultural and fish pond around the sites.
- No rivers for drinking water.
- Not far from center of a city and municipality.
- EIA will be required in further study.

If project proponent does not manage disposal site, the following impacts will occur:
- Generating odor.
- Scattering garbage.
- Surface and ground water pollution by leak of leachate.

CHAPTER 5

CHAPTER 5 PROJECT PROFILES

A total of 133 projects and programs have been proposed in the CLDP Master Plan (revised draft). Profiles have been prepared for all of them. All of them have been subjected to an initial environmental examination as reported in Chapter IV. For some of them, more detailed profiles have been prepared.

Profiles of all the projects and programs are contained in this chapter. They are presented in the following order.

5.1 Regional Projects/Programs

5.1.1 Agri-industrial-trade support

(RP-1) Subic Port Development
(RP-2) Subic Industrial Estate
(RP-3) Greater Subic Tourism Core Development
(RP-4) Subic-Looc Jet Foil Connection
(RP-5) Hermosa Agro-Industrial Estate
(RP-6) Clark International Aviation Complex
(RP-7) Clark Industrial Estate and Dry Port Development
(RP-8) Clark Field Amusement Park
(RP-9) Main Line North Rehabilitation/upgrading
(RP-10) BEPZ-SBMA Complementary Development

5.1.2 Spatial transformation

(RP-11) New Intra-Regional Artery Establishment
(RP-12) North Luzon Expressway Extension
(RP-13) Manila Coastal Road
(RP-14) San Fernando-Dinalupihan Road Improvement
(RP-15) Iba-Tarlac Road
(RP-16) Sierra Madre (Marginal) Highway
(RP-17) Regional Telephone Services Improvement
(RP-18) Optic Fiber Network
(RP-19) Labrador-Hermosa Extra High Voltage Transmission Line
(RP-20) Hermosa-Dasmarinas Extra High Voltage Transmission Line
(RP-21) Balintingon Reservoir Multipurpose Development
(RP-22) Casecnan Multipurpose Development

5.1.3 Community development

(RP-23) Holistic Catchment Management Program

(RP-24) Community-Based Manila Bay and Coastal Rehabilitation and Resource Management

(RP-25) Provincial Cooperative Savings and Loan Association

(RP-26) Agrarian Reform Communities Livelihood and Cooperative Development

(RP-27) Micro and Small Enterprises Livelihood Systems Development

(RP-28) Resource Center for People's Participation in Local Governance and Development

5.2 Special Programs

5.2.1 Indigenous people issues

(SP-1) Indigenous People Development Program

(SP-2) Indigenous Communities Cooperative Economic Development

5.2.2 Gender concerns

(SP-3) Women's Resource Center

5.2.3 Disaster preparedness and response

(SP-4) Community-Based Disaster Management Program

(SP-5) Storm and Flood Monitoring

5.3. Local Projects/Program

5.3.1 Community initiatives

(CI-1) Community-Based Upland Development Program (Bataan)

(CI-2) Local Resource and Agri-Based Rural Industries Establishment (Bataan)

(CI-3) Cooperative-Managed Food Terminal (Bulacan)

(CI-4) Cooperative-Based Health Systems Development (Bulacan)

(CI-5) Sustainable Rice-Based Enterprise Development (Nueva Ecija, Pampanga)

(CI-6) Community-Based Integrated and Diversified Farming Promotion (Tarlac)

(CI-7) People's Postharvest and Trading Facilities (Tarlac)

(CI-8) Community-Based Resettlement and Livelihood Development (Zambales)

(CI-9) Popular Leadership and Entrepreneurship Training (Six provinces)

5.3.2 Government initiatives with strong NGO/PO components

(GN-1) Munoz Agro-Science Community-Quinguepartite Networking

(GN-2) Tissue Culture Laboratory

(GN-3) Tropical Plants Multiplication and Distribution

(GN-4) Farm Mechanization

(GN-5) Multi-Storey Crop Diversification

(GN-6) Crop-Livestock Integrated Farming

(GN-7) Carabao-Based Dairy Development

(GN-8) Community Coastal Fisheries Development

(GN-9) Aquaculture Integrated Farming

(GN-10) Masinloc-Oyon IPAS Conservation Program

(GN-11) Tourism Communities Development

(GN-12) Balintingon Reservoir Resort

(GN-13) Localization Initiatives in Forest Protection and Upland Management

(GN-14) Post MPC Agro-Industrial Rurban Community Program

5.3.3 Refocused government supports

(1) Rural development

(RU-1) Rural Water Supply and Sanitation Improvement

(RU-2) Rural Energy Program

(RU-3) Rural Roads Development and Management

(RU-4) Rural Database Development

(RU-5) Countryside Agro-Industrial Centers Development Program

(RU-6) Seri-Culture Promotion

(RU-7) Postharvest Operations Nucleus Development

(2) Agriculture

(AG-1) Integrated Organic Farming Promotion

(AG-2) Integrated Upland Farming System Development

(AG-3) Citrus Intercropping Pilot Development

(AG-4) Angat Afterbay Regulator Dam (Bustos Diversion Dam)Rehabilitation

(AG-5) Pampanga Delta Development Project-Irrigation Component

(AG-6) Porac-Gumain River Irrigation System Restoration

(AG-7) Mapanuepe River Lake Irrigation
(AG-8) Upper Tabuating Irrigation
(AG-9) Aulo Small Water Impounding Project (SWIP)
(AG-10) Small River Irrigation Projects
(AG-11) Tarlac Satellite Irrigation
(AG-12) North Lawis (Palongahon) Irrigation
(AG-13) Communal Irrigation
(AG-14) Pilot Pump Irrigation
(AG-15) Backyard Animal Production Enhancement Program
(AG-16) Provincial Tilapia Hutchery
(AG-17) Grouper Cage Culture
(AG-18) Fishery Common Service Facilities Establishment
(AG-19) Regional Agricultural Training and Extension Center
(AG-20) Regional Cooperatives Development and Training Institute

(3) Urban development

(UR-1) Integrated Urban Development Program
(UR-2) Urban Land Readjustment Program
(UR-3) Urban Renewal and Industrial Modernization
(UR-4) San Fernando-Angeles Metropolitan Area Development
(UR-5) Bulacan Central Water Supply
(UR-6) Olongapo City Water Supply Improvement
(UR-7) LWUA Water Supply
(UR-8) Bypass Construction

(4) Industry, trade and services

(IN-1) Industrial Clusters International Partnership Program
(IN-2) Strategic Overseas Workers Management Program
(IN-3) World Class Designer Invitation Program
(IN-4) Tripartite R & D Promotion Program
(IN-5) Skills Expert System Development
(IN-6) Industrial Clusters Integrated Modernization Program
(IN-7) Regional World Trade Center (ECLUZON)
(IN-8) Central Luzon Research Triangle
(IN-9) Techno-Communicator Development Program
(IN-10) Provincial Industrial Testing Center
(IN-11) International Design Academy
(IN-12) Life Style Research and Information Center

(IN-13) Tourism-Local Industry Complex
(IN-14) Mining Area Development and Use
(IN-15) Bulacan Wholesale and Distribution Center
(IN-16) Regional Integrated Distributors Promotion

(5) Social services

(SO-1) Bataan National School of Arts and Trade Upgrading
(SO-2) Bataan Teachers' College Upgrading
(SO-3) Acquisition and Upgrading of Teaching Tools
(SO-4) Elementary Science Schools Establishment
(SO-5) Functional Division Educational Management Information System (EMIS)
(SO-6) Acquired Competencies and Excellence in Sports (ACES)
(SO-7) Human Resources Development and Training Center
(SO-8) Integrated Training, Livelihood and Organization Development Program for Mt. Pinatubo Resettlement Areas
(SO-9) Public Health Services Improvement
(SO-10) Hospitals Upgrading
(SO-11) Regional Herbal Processing Plant
(SO-12) Integrated Family Planning and Child Survival Program
(SO-13) Construciton of Day Care Centers and Health Clinics
(SO-14) Computerization of LGU Data Base

(6) Environment

(EN-1) Rattan Plantations Development and Management
(EN-2) Bamboo Plantations Development and Management
(EN-3) Pollution Control and Prevention Center
(EN-4) Solid Waste Management Improvement Pilot Project
(EN-5) Candaba Swamp Conservation Program
(EN-6) Sta. Cruz Marine Conservation Program
(EN-7) Luzon Sea Coastal Resources Management
(EN-8) Subic Environmental Development Program
(EN-9) Land Resources Information System Development
(EN-10) Eco-Community Network
(EN-11) Comprehensive Regional Environmental Management Improvement Program
(EN-12) World University of the Environment

PROJECT PROFILES

Project No. RP - 1

1.	PROJECT TITLE	Subic Port Development
2.	LOCATION	Olongapo City
3.	IMPLEMENTING AGENCY	DOTC, SBMA
4.	OBJECTIVES	To develop the existing Subic Port into a hub container port serving the Southeast Asian countries; and To provide an alternative outlet for goods produced in Central Luzon and Northern Luzon instead of the Manila Port.
5.	EXPECTED EFFECTS	Stronger ties between Central Luzon and neighbouring economies and upgraded status of Central Luzon
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Initial development in Phase I

8. PROJECT DESCRIPTION

The former naval base at Subic would be converted into an international commercial port by strengthening container handling facilities. SBMA plans to expand the port facility by adding six berths, totaling eight births, and by expanding a container stock yard.

The port would increase the container handling capacity up to 500,000 T.E.U. by 1997. At the final stage, the port would be able to handle 1.5 million T.E.U.

SBMA plans to develop the port as one of hub container ports in the Southeast Asia area. It would provide a sort of transshipment function for freight liners, complementing port facilities of Singapore and Hong Kong as well as Manila.

A high speed ship, "Techno-liner" is being developed in Japan for commercial use by 1998. This development would make possible one-day travel within the East and Southeast Asia. The Subic port may be utilized for this new type of sea transportation for cargoes that need faster transport at costs lower than for air cargo transportation.

Project No. RP - 2

1.	PROJECT TITLE	Subic Industrial Estate
2.	LOCATION	Olongapo City
3.	IMPLEMENTING AGENCY	SBMA and the private sector
4.	OBJECTIVES	(1) To establish an industrial estate within the Subic Economic Zone and Freeport; and (2) To provide essential processing and trade functions and facilities of an international transshipment hub.
5.	EXPECTED EFFECTS	Strong core economic activities to support both related domestic activities in the Subic Bay Area and international transshipment operations.
6.	PROJECT COSTS	US$ 188 million
7.	IMPLEMENTATION SCHEDULE	Stage-wise development from Phase I through early part of Phase III

8. PROJECT DESCRIPTION

A development plan for the Subic Economic Zone and Freeport area has been prepared already based on detailed studies in the past. The total area of 3,030 ha will be developed for four components: industrial, commercial, tourism and residential.

The industrial component of 284 ha covers a public work center, naval supply depot (NSD) and Boton Warf areas. Utilization of these areas has been planned as follows.

Location	Land area (ha)	Proposed use
Public works center	23	General industrial use
NSD core area	15	General industrial use
NSD east area	102	Comprehensive development area for industrial estate
NSD north area	100	Comprehensive development area for industrial estate
Boton Warf area	44	40 ha for general industrial use; 4 ha for comprehensive development

Source : Strategy for the Conversion of the Subic Naval Base into a pecial Economic Zone and Freeport, TSG, 1992.

Project No. RP- 3

1.	PROJECT TITLE	Greater Subic Tourism Core Development
2.	LOCATION	SBMA, Olongapo City, San Antonio, Morong Bagac and Mariveles
3.	IMPLEMENTING AGENCY	Department of Tourism, private sector, LGUs
4.	OBJECTIVES	To create a major tourist destination within the Luzon cluster of tourism.
5.	EXPECTED EFFECTS	High image of Central Luzon as a first class tourism destination.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Concentrated investments in Phase II

8. PROJECT DESCRIPTION

The Greater Subic Tourism Core consists of SBMA and Olongapo City as a center and satellite resorts in San Antonio, Morong (Long Beach) and Bagac. The center would provide convention and exposition facilities, shopping attractions and various entertainments. The satellites provide accommodations in a good natural environment with basic commercial facilities, linked to the center.

SBMA has a plan to build a convention and exposition center, and a convention bureau for the Greater Subic may be established. Public transport links between SBMA and its vicinities should be established. The Subic port would cater to cruise ship tourism as well.

Satellites should be developed by applying the "tourism communities development" approach. The San Miguel naval station occupying 1,112 ha may be partially converted for tourism purposes. It would be ideal for a tourism farm and beach resort and complementary tourism development with the Capones islands.

Improvement of road access is a prerequisite for the development of each satellite resort.

Project No. RP - 4

1.	PROJECT TITLE	Subic-Looc Jet Foil Connection
2.	LOCATION	SBMA, Olongapo City, Nasugbu
3.	IMPLEMENTING AGENCY	Private sector supported by DOTC
4.	OBJECTIVES	To contribute to the formation of the West Luzon Resort Belt integrating with CALABARZON tourism.
5.	EXPECTED EFFECTS	Increased tourists by complementary effects of the two tourism cores.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

The Project would introduce a jet foil service between Looc Hacienda in Nasugbu and Subic . Looc is a proposed site for tourism estate development by Department of Tourism. Combining the two tourism cores, a new tourism circuit would be created and complete the West Luzon Resort Belt.

The jet foil service would make a short stop at Corregidor, another key tourism attraction. Provision of passenger piers would be necessary at Nasugbu and Subic.

Project No. RP - 5

1.	PROJECT TITLE	Hermosa Agro-Industrial Estate
2.	LOCATION	Hermosa (Pandatung) - Bataan
3.	IMPLEMENTING AGENCIES	DTI
4.	OBJECTIVES	To accelerate rural industrialization and agricultural modernization to enhance rural employment.
5.	EXPECTED EFFECTS	Viable rural industries More employment opportunities and higher income
6.	PROJECT COSTS	₱ 270 million
7.	IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The proposed Hermosa Agro-Industrial Estate is to be established on a 116 ha land in Pandatung, Hermosa, two kilometers off the national highway. It would cater to light and medium industries. More promising industries include food processing (e.g. fish, rootcrop, fruits), gift, toys and houseware, electronics and garments. Post-harvest facilities and agricultural machinery workshops may also be established to benefit the agricultural sector.

The Project is expected to be implemented by the participation of private investors for development, possibly under a joint venture scheme with the Government. All the basic infrastructure should be included such as roads, power supply, water system and telecommunications. A package of incentives would be offered to attract investors to put up their business in the HAIE. In particular, enterprises to be set up by cooperatives or community organizations will be entitled to special incentives.

A Provincial Task Force for the HAIE has been formed to oversee the planning, implementation, monitoring and promotion/marketing of the Project. It is composed of private sector representatives and heads of line agencies, and chaired by DTI. The Task Force will make sure that industries will establish within the designated area to avoide indiscriminate conversion of agricultural lands for industrial uses and control also land speculation. All enterprises should be subject to a thorough environmental impact assessment.

Project No. RP - 6

1.	PROJECT TITLE	Clark International Aviation Complex
2.	LOCATION	Angeles City
3.	IMPLEMENTING AGENCY	DOTC, CDC
4.	OBJECTIVES	To establish a new international airport as the main gateway to the Philippines; and To provide an alternative outlet for high-value goods produced in Central Luzon.
5.	EXPECTED EFFECTS	Stronger ties between Central Luzon and neighbouring economies and upgraded status of Central Luzon.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Initial opening with a new passenger terminal building in Phase I; full opening in Phase II.

8. PROJECT DESCRIPTION

The Clark International Aviation Complex would be established on 1,620 ha land in the Clark Field to handle all the international and a part of domestic traffic for Metro Manila. Components of the Complex include an international passenger terminal, international cargo terminal, aircraft maintenance and repair facilities, other airport-related functions, and airport-related business location.

Passenger traffic is projected at 8.2 million in 1998 to increase to 13.7 million in 2005 and 18.7 million in 2010. Cargo traffic is projected at 309,000 ton in 1998 to increase to 505,000 ton in 2005 and 684,000 ton in 2010. A new passenger terminal would be provided initially for 14 million passengers. It would be expanded in stages to accommodate 24 million and ultimately 60 million passengers.

Initial operation of the airport may be affected by continuing puffing of ash by Mt. Pinatubo. Operating plans of aircrafts should be worked out in detail to minimize night stays and to allow complementary operation with the NAIA, including emergency operations during heavy puffing.

Project No. RP - 7

1.	PROJECT TITLE	Clark Industrial Estate and Dry Port Development
2.	LOCATION	Angeles City
3.	IMPLEMENTING AGENCIES	CDC and the private sector
4.	OBJECTIVES	To establish an industrial estate with container handling facilities within the Clark Special Economic Zone; and To provide essential processing and trade functions and facilities of an international transshipment hub.
5.	EXPECTED EFFECTS	Strong core economic activities to support both related domestic activities in the Clark area and international transshipment operations.
6.	PROJECT COSTS	US$ 160 million
7.	IMPLEMENTATION SCHEDULE	Stage-wise development from Phase I through early part of Phase III

8. PROJECT DESCRIPTION

According to the existing Clark Development Program, an industrial park will be developed in the area of 320 ha. Light and high value-added industries can be established in this airport-side industrial park. To enhance the comparative advantages of the area for location of other industries, transport links with the Subic port will be strengthened and container handling facilities will be provided to establish effectively a dry port.

The Clark-Subic areas will be served by a multi-modal transportation system combining highway, railway, air link and oil pipeline, as well as upgraded telecommunication and power supply infrastructure. An information highway may be established in a long run along the Clark-Subic highway.

Project No. RP - 8

1.	PROJECT TITLE	Clark Field Amusement Park
2.	LOCATION	Clark Field
3.	IMPLEMENTING AGENCY	Private sector
4.	OBJECTIVES	To establish the first large scale amusement park in the Philippines.
5.	EXPECTED EFFECTS	More employment opportunities in sound services sector activities. Generation of major flow of people from Metro Manila to Central Luzon.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	
8.	PROJECT DESCRIPTION	

Manila has a few amusement parks of small scale. The Project would establish the first large scale amusement park in the Philippines targeting at young population. It would provide various ride attractions including jet coasters and a Ferris wheel. As the park will be the first of the kind in the Philippines and its principal target is the domestic market, it should not be a theme park but should have authentic attractions. However, it would better have a quality to attract also international amusement park freaks.

The Project can be initiated immediately. The first step is to apply the Clark Development Corporation (CDC) for allocation of land. A detailed plan will be prepared covering land use, facilities, management organization and financial plan for approval by CDC. Opening of the Park coinciding the opening of the Clark International Aviation Complex will be ideal.

Project No. RP - 9

1.	PROJECT TITLE	Main Line North Rehabilitation/Upgrading
2.	LOCATION	Manila-Clark International Airport
3.	IMPLEMENTING AGENCIES	DOTC
4.	OBJECTIVES	To provide rapid and reliable access for air passengers; To provide commuter rail service for those in Metro Manila and the San Fernando-Angeles Metropolitan Area; and To provide cargo transport service from/to the airport and the planned dry port.
5.	EXPECTED EFFECTS	More integrated regional economies with multi-modal transport links
6.	PROJECT COSTS	US$450 million
7.	IMPLEMENTATION SCHEDULE	Detailed design in Phase I; implementation during Phase II

8. PROJECT DESCRIPTION

The Main Line North would be rehabilitated between the Paco station and the Clark International Airport. It would serve air passengers and well-wishers to/from the airport as well as local passengers along the route. Furthermore, it would transport cargo to/from the airport.

The air passengers and well-wishers to/from Metro Manila would be served by special express trains. Others would be served by local trains. Daily railway passengers are projected to reach 75,700 by 2005, consisting of 21,900 air passengers and well-wishers 6,200 airport employees and 47,600 commuters

Re-activated railway services would induce residential and commercial development along the route. Unlike in the case of highways, however, such development would be more concentrated around each station.

Project No. RP - 10

1.	PROJECT TITLE	BEPZ-SBMA Complementary Development Program
2.	LOCATION	Olongapo City and Bataan Province
3.	IMPLEMENTING AGENCIES	BEPZA, SBMA
4.	OBJECTIVES	(1) To promote the complementary development of BEPZ and SBMA; and (2) To plan the phased development of roads, Mariveles port and other infrastructure facilities to support BEPZ.
5.	EXPECTED EFFECTS	More balanced and robust industrial structure More spatially balanced socio-economic development of Bataan
6.	PROJECT COSTS	US$5 million for study
7.	IMPLEMENTATION SCHEDULE	Study in Phase I; project implementation subject to study results

8. PROJECT DESCRIPTION

The Bataan Export Processing Zone (BEPZ) and the Subic Economic Zone and Freeport are two major industrial areas in Central Luzon. These areas should be developed further in a complementary manner. As a first step, a study should be conducted to characterize BEPZ and SBMA for industrial development, define functions and facilities to be developed in each, and plan for phased implementation of roads, Mariveles port and related infrastructure facilities.

In characterizing BEPZ and SBMA, locational conditions of these areas should be analyzed including environmental aspects. Also functions and facilities to be developed at the Hermosa Agro-Industrial Estate (HAIE) and the former Philippine Refugee Processing Center (PRPC) in Morong should be taken into account. Types of industries to be encouraged and amenity and other related facilities to be provided will be clarified. Roads to strengthen links between BEPZ and SBMA should be planned for phased implementation in view of tourism and other socio-economic activities along proposed routes. Functions of the

Mariveles port vis-a-vis those of the Subic port will be clarified and facilities to be provided/upgraded planned according by.

Project No. RP- 11

1.	PROJECT TITLE	New Intra-Regional Artery Establishment (Rainbow Highway)
2.	LOCATION	Olongapo City-Dinalupihan-Angeles City-Cabanatuan City - Palayan City
3.	IMPLEMENTING AGENCIES	DPWH
4.	OBJECTIVES	To establish a strong intra-regional artery linking directly five provinces (except Bulacan) and four cities (except San Jose City); To link between the two industrial/trade anchors at Subic and Clark with the shortest time distance; and To change the patterns of goods flow and people's movement away from Metro Manila.
5.	EXPECTED EFFECTS	Strong tie among Central Luzon provinces with a sort of identity Integrated economic activities throughout the region
6.	PROJECT COSTS	US$ 200 million
7.	IMPLEMENTATION SCHEDULE	Dinalupihan-Angeles City section in Phase I

8. PROJECT DESCRIPTION

The Project would establish the shortest link between the Subic Port and the Clark Field and extend further to Cabanatuan City and Palayan City, Nueva Ecija. It would help to integrate various economic activities throughout the region and to establish a sort of identity of Central Luzon.

The proposed route connects the northern part of Capaz, through the planned interchange in the Luisita Industrial Estate, to La Paz. The remaining section between La Paz, through Cabanatuan City, to Palayan City on existing roads would be improved. If the North Luzon Expressway Extension (Project No.RP -11) takes an eastern alternative alignment, the Rainbow Highway would take advantage of this for the section between Mabalacat, through Concepcion, to the Luisita Estate, where it may branch off to connect to La Paz.

Economic viability of the Project has been analyzed at a preliminary level as part of the CLDP Master Plan Study. The economic internal rate of return has been calculated to be 17% for the section connecting Dinalupihan, Porac and Angeles City, and 12% for the section between Tarlac and Cabanatuan City.

Project No. RP - 12

1.	PROJECT TITLE	North Luzon Expressway Extension
2.	LOCATION	Mabalacat, Pampanga - Paniqui, Tarlac - Carmen - Rosales
3.	IMPLEMENTING AGENCIES	DPWH
4.	OBJECTIVES	To strengthen the main artery connecting Metro Manila, through Central Luzon, to Pangasinan, La Union and Ilocos; and To support economic activities in Tarlac.
5.	EXPECTED EFFECTS	New highway of 74.3 km
6.	PROJECT COSTS	₱ 3,468 million
7.	IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The Project would extend the North Luzon Expressway from Mabalacat, Pampanga to Carmen, Rosales, and connect it to the Marcos highway serving Baguio. It consists of the Carmen, Rosales - Paniqui, Tarlac section of 24.05 km with estimated project costs at ₱1,122 million and the Paniqui, Tarlac - Mabalacat, Pampanga section of 50.29 km with estimated project costs at ₱ 2,346 million.

The Project has been suspended due to the Mt. Pinatubo eruption. The Philippine National Construction Cooperation (PNCC) has been franchised for toll road operation. PNCC will conduct the rehabilitation work of the Marcos highway to be opened as a toll road, and plans to extend their work to the Carmen-Paniqui section first.

From the Central Luzon regional development point of view, however, the Paniqui-Mabalacat section needs to be implemented at an early time. Currently this main north-south artery is disrupted at Bamban, and re-establishment of this connection is a matter of urgency in view of heavy traffics and the weak and threatened alternative crossing of the Bamban river at San Francisco. Alternatives are either an improved crossing at San Francisco or a crossing at the further upstreams to avoid extensive lahar areas. This would call for additional survey and revised detailed design based on early decisions.

Project No. RP - 13

1.	PROJECT TITLE	Manila Coastal Road
2.	LOCATION	Calumpit-Lubao
3.	IMPLEMENTING AGENCIES	DPWH
4.	OBJECTIVES	To provide a more direct connection between the Bulacan - Metro Manila conurbation and the Bataan peninsula and the Dinalupihan/Subic area; and To provide a reliable alternative to lahar-affected roads.
5.	EXPECTED EFFECTS	Stronger economic links between, and complementary development of industries in Bataan, Bulacan and Zambales
6.	PROJECT COSTS	US$340 million
7.	IMPLEMENTATION SCHEDULE	Subject to further investigations

8. PROJECT DESCRIPTION

This is a long-standing project, and a few proposals have been presented in past studies. Most recently, a feasibility study was conducted by Wilbur Smith Associates in 1993 for the alignment connecting Calumpit, Bulacan and Lubao, Pampanga as well as other sections.

After the Mt. Pinatubo eruption, the Project has been given a second thought as a reliable alternative to lahar-affected roads. However, social and environmental viability of the Project has not been established yet. More recently, an alternative alignment passing through the further inland has been proposed to avoid vulnerable coastal areas and serve better as an alternative to existing roads.

The Project in its entirety may be looked at as a long term undertaking. It should be taken as a factor in planning for alternative roads and related development. In the meantime, social and environmental aspects should be looked into under the Manila Bay and Coastal Rehabilitation and Resource Management Program (Project No. GN-14).

Project No. RP - 14

1.	PROJECT TITLE	San Fernando-Dinalupihan Road Improvement
2.	LOCATION	San Fernando, Bacolor, Sta Rita, Guagua, Lubao, Dinalupihan
3.	IMPLEMENTING AGENCIES	DPWH
4.	OBJECTIVES	To decongest the existing Gapan-San Fernando-Dinalupihan road by increasing its capacity at critical sections.
5.	EXPECTED EFFECTS	Reduced travel time from the Central part of the region to the Subic Port and the Bataan EPZ.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The Gapan-San Fernando-Dinalupihan road have been congested in recent years due to the development of the Subic Free Port and re-vitalization of the Bataan Export Processing Zone. Some sections between San Fernando and Dinalupihan have been damaged by the Mt. Pinatubo derived lahar.

The Project would improve those sections of the San Fernando-Dinalupihan road severely affected by the lahar. It would provide a fast-track solution to the present congestion on the road and serve effectively as a more realistic alternative to the expensive new road proposed to run parallel to the existing roads.

There exist several critical sections on the road. A few of them are due to elevated river beds and damaged river crossings or damages caused by poor drainage as a result of the lahar. Others are due to heavy local traffic. Also seasonal traffic of sugarcane carrying trucks adds to the problem. In addition to the improvement of river crossings, additional lanes at the critical sections would solve most of the problems. The additional lanes should be provided on the upstream side with raised ground and proper drainage to protect also the existing roadways.

In addition, flyovers would be necessary in San Fernando to reduce traffic congestion at existing at -grade intersections.

Project No. RP - 15

1.	PROJECT TITLE	Iba-Tarlac Road
2.	LOCATION	Iba, Zambales - Tarlac, Tarlac
3.	IMPLEMENTING AGENCY	DPWH
4.	OBJECTIVES	To establish an alternative link between Zambales and the rest of the region to relieve the Province from isolation by a cut of roadway; and To help to open up the western part of Tarlac
5.	EXPECTED EFFECTS	Integration of the Zambales economy into the regional economic with more active interactions.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	
8.	PROJECT DESCRIPTION	

The Project would provide an alternative route between the Provinces of Tarlac and Zambales. The existing route between Botolan, Zambales and Capas, Tarlac has been disrupted by the Mt. Pinatubo derived lahar, the alternative route passes through areas less vulnerable to lahar hazard.

Viability of the Project needs to be enhanced in steps, starting from extension of existing roads in Tarlac and Zambales to establish economic activities in the mountainous areas. For this, farm to market roads need to be improved together as well as links with resettlement sites. Not only technical but also social aspects of road sections passing through the mountainous areas need to be looked into, as related to livelihood of the upland people. To facilitate this, local people supported by NGOs/POs should participate in monitoring during bidding and construction.

Project No. RP - 16

1.	PROJECT TITLE	Sierra Madre (Marginal) Highway
2.	LOCATION	Bulacan, Nueva Ecija, Pampanga and Tarlac
3.	IMPLEMENTING AGENCIES	DPWH
4.	OBJECTIVES	To establish an alternative inter-regional highway serving the eastern part of Central Luzon linking to the northern/northwestern regions; To contribute to a better balanced regional development; and To provide an alternative link with the Metro Manila urban transportation.
5.	EXPECTED EFFECTS	More balanced regional development and better links with the Cagayan Valley, the Aurora province, the northwestern region and Metro Manila
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	F/S on the section in Bulacan and the Mt. Arayat east section during Phase I

8. PROJECT DESCRIPTION

The Project would establish another north-south highway linking Central Luzon with Metro Manila and the northern/northwestern regions through eastern part of Central Luzon. The complete establishment is a long-term option, but the section in Bulacan and the Mt. Arayat east section needs a feasibility study at early time.

Economic viability of the Project has been analyzed at a preliminary level as part of the CLDP Master Plan Study. The economic internal rate of return for the section between Metro Manila and San Miguel, Bulacan is calculated at 18%. The Mt. Arayat eastern section is subject to an early feasibility study and possible implementation by BOT.

Project No. RP - 17

1.	PROJECT TITLE	Regional Telephone Services Improvement
2.	LOCATION	Six provinces
3.	IMPLEMENTING AGENCIES	DOTC
4.	OBJECTIVES	To contribute to the establishment of an integrated, efficient and reliable telephone network throughout the Country with new technologies and services.
5.	EXPECTED EFFECTS	Main telephone station density increased from 1.4 stations per 100 inhabitants to 3.8 by 1998.
6.	PROJECT COSTS	US$ 13.9 million
7.	IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The Project is a part related to Central Luzon of the project proposed by "A Study on the Improvement and Optimization of Telecommunications Networks" prepared for DOTC. Of the 122 municipalities in Central Luzon, 103 have already been served or planned to be served. The Project will install telephone lines in six more municipalities in Nueva Ecija to improve the service coverage to 89% of all the municipalities. At the same time, it will contribute to the interconnection of networks among operators for reliable and efficient services throughout the Country, envisioned by DOTC. Engineering services will be conducted in 1995 for construction during 1997-98.

Project No. RP - 18

1.	PROJECT TITLE	Optic Fiber Network
2.	LOCATION	Central Luzon
3.	IMPLEMENTING AGENCIES	DOTC
4.	OBJECTIVES	To introduce an optic fiber network for multi-media communications to support a wide range of socio-economic activities.
5.	EXPECTED EFFECTS	Highly integrated and dynamic multi-media society in the long run.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Master planning during Phase I

8. PROJECT DESCRIPTION

Multi-media represent a new concept of advanced communication technology, which will allow two-way and mutually responsive communications. Potentials for multi-media application are very high, encompassing various economic activities, social services, community and cultural activities. In line with the CLDP paradigm, Central Luzon should serve as a pilot case for future multi-media society.

A master plan study will be conducted in Phase I to formulate a stage-wise plan to introduce a fiber optic network in Central Luzon. Possible uses of the network will be clarified and reflected in the plan.

In the long-term future, the network will be linked to Southeast Asian countries by underwater fiber optic cables extending from the west coast of Central Luzon. It will allow high speed transmission of large capacity for voice, data and pictures/images to/from Central Luzon.

Project No. RP - 19

1.	PROJECT TITLE	Labrador-Hermosa Extra High Voltage Transmission Line
2.	LOCATION	Labrador-Hermosa-San Jose
3.	IMPLEMENTING AGENCIES	National Power Corporation (NPC/NAPOCOR)
4.	OBJECTIVES	To enhance the power transmission system.
5.	EXPECTED EFFECTS	Effective use of generated power and more reliable power supply system.
6.	PROJECT COSTS	Foreign Portion - US$ 147.3 million Local Portion - ₱ 1,354.9 million
7.	IMPLEMENTATION SCHEDULE	Construction period : 1997-2001

8. PROJECT DESCRIPTION

The Labrador substation will play a key role as a power supply management center in northern areas of Luzon. The substation is planned to receive the power generated at the Masinloc coal-fired power plant (600 MW) in Zambales and the Sual coal-fired plant (1,000 MW) in Pangasinan, which will be commissioned in 1996-97 and 1998-99, respectively. The power will be delivered to Metro Manila via Labrador-San Manuel-San Jose high voltage line running through Nueva Ecija and Bulacan provinces.

NPC has a plan to construct another set of coal-fired power plants with the capacity of 2,700 MW in Pangasinan in 2002 and 2005. In order to meet the power development plan in northern areas, the transmission line project will be required to increase the power transmission capacity and supply reliability by means of constructing another extra high voltage line from Labrador to San Jose via Hermosa Substation, of which length is estimated at 210 km. The transmission line will be designed for 500 kV, 4-795 MCM bundle conductor, double circuits and steel tower construction.

Project No. RP - 20

1.	PROJECT TITLE	Hermosa-Dasmariñas Extra High Voltage Transmission Line
2.	LOCATION	Hermosa-Dasmariñas
3.	IMPLEMENTING AGENCIES	National Power Corporation (NPC/NAPOCOR)
4.	OBJECTIVES	To enhance the power transmission system.
5.	EXPECTED EFFECTS	More reliable power supply system with the establishment of a loop linked to the CALABARZON system.
6.	PROJECT COSTS	Foreign Portion - US$ 86.5 million Local Portion - ₱ 658.36 million
7.	IMPLEMENTATION SCHEDULE	Construction period : 2001-2005

8. PROJECT DESCRIPTION

The Project will expand the extra high voltage line for diversification of power flow to the San Jose substation from northern areas of Luzon. The transmission line will be branched off at the Hermosa substation and extend to the Dasmariñas substation located in Cavite province crossing the Manila Bay by the submarine power cable. The transmission line length is estimated at 110 km. At the Dasmariñas substation, extra high voltage transmission line is connected to the San Jose substation through Tayabas and Kalayaan substation. The transmission line will be designed for 500 kV, 4-795 MCM bundle conductor, double circuits and steel tower construction.

Project No. RP- 21

1.	PROJECT TITLE	Balintingon Reservoir Multipurpose Project
2.	LOCATION	Nueva Ecija, Bulacan and Pampanga
3.	IMPLEMENTING AGENCY	National Irrigation Administration - Upper Pampanga River Integrated Irrigation System (NIA-UPRIIS)
4.	OBJECTIVES	General: To uplift socio-economic conditions of farmers by enhancing agricultural productivity, providing fishing opportunities, and extending electrification. Specific: (1) to increase paddy production by a year-round, irrigation to 18,800 ha, (2) to contribute to crop diversification, (3) to generate power, and (4) to promote inland fishery.
5.	EXPECTED EFFECTS	Economic internal rate of return calculated at 15.8%*
6.	PROJECT COSTS	Total construction costs estimated to be ₱1,934 million at October 1993 price.
7.	IMPLEMENTATION SCHEDULE	F/S update in Phase I: Construction in Phase II

8. PROJECT DESCRIPTION

A rockfill center-core type dam of 140 m height would be constructed on the Sumacbao river, one of the two main branches of the Peñaranda river - a tributary of the Pampanga river - to regulate the discharges for the catchment area of 228 km^2. At the toe of the dam or the right abutment, an open air type powerhouse would be build, equipped with two Francis turbines of 22 MW each.

A reservoir of 572 million m^3 storage capacity would be provided. Supplemental facilities include a concrete tunnel 710 m long with a discharge of 1,430 m^3/sec, a diversion weir 140 m long, and new irrigation facilities consisting of 109 km main canals, 168 km laterals and

sub-laterals, main and supplementary farm ditches, 210 km drainage channels, and access and service roads.

At full implementation, 16,200 ha of additional land would be irrigated, consisting of 14,900 ha in the Balintingon area and 1,300 ha in the District IV expansion area. Also served would be the irrigation requirements of 2,600 ha already equipped with irrigation facilities under UPRIIS District IV. Service areas cover portions of seven municipalities in Nueva Ecija (Cabanatuan City, Cabilao, Gapan, Gen. Tinio, Penaranda, San Isidro and Sta. Rosa), three in Bulacan (San Ildefonso, San Miguel and San Rafael), and one in Pampanga (Arayat,)

NIA would be the main implementing agency. An agreement with NPC should be worked out.

* Source: NIA, Balintingon Reservoir Multipurpose Project Feasibility Study.

Project No. RP - 22

1.	PROJECT TITLE	Casecnan Multipurpose Development (First Phase)
2.	LOCATION	Nueva Ecija
3.	IMPLEMENTING AGENCIES	NPC, NIA, LGUs
4.	OBJECTIVES	To increase the power generation to feed into the Luzon grid; and To augment the amount of water to irrigate the UPRIZS service areas.
5.	EXPECTED EFFECTS	Economic internal rate of return calculated at 19.5% with irrigation-oriented operation or 21.1% with power-oriented operation.*
6.	PROJECT COSTS	US$558 million with irrigation-oriented operation or US$523 million with power-oriented operation.*
7.	IMPLEMENTATION SCHEDULE	Comprehensive environmental inventory and impact analysis and detailed design in Phase I; implementation in Phase II.

8. PROJECT DESCRIPTION

The Project is a multipurpose development for hydropower generation and irrigation by transbasin diversion of water from the upstream of the Cagayan river. The original Casecnan project has been reformulated recently as a phased transbasin scheme. The Project is currently promoted for implementation by BOT, but the Government initiative is necessary to avoide undesirable consequences on social and natural environment.

The Project should be seen as a long-term undertaking. Even if the current planning for facilities is technically sound, the optimal operation of the system has not been established. The latter should not be determined simply on the basis of financing possibilities of Government agencies concerned nor of purely technical and economic viability.

The firs step to prepare for the early implementation of the Project would be to conduct a comprehensive environmental inventory and impact analysis, covering not only the natural but also the social environment. The latter should naturally cover the native people in the

upstream of the Cagayan river and the people in the Pantabangan reservoir area including those relocated by the original Pantabangan dam project.

As a body to oversee this environmental study as well as further project planning and development, a sort of forum should be created with the initiative of concerned local governments based on local communities, relevant NGOs and other experts. Proper government agencies should also be invited to clarify on-going activities, technical aspects involved in development and financing possibilities. The optimal scheme to implement this 21st century project should be worked out through a series of dialogues at the forum supported by broad expertises and social agreement.

* Source: NPC/IBRD, Casecnan Project Phased Transbasin Scheme, Feasibility Study, Main Report May 1994.

Project No. RP - 23

1.	PROJECT TITLE	Holistic Water Catchment Management Program
2.	LOCATION	Critical river basins in each province of Central Luzon
3.	IMPLEMENTING AGENCIES	LGUs/PENRO and NGOs
4.	OBJECTIVES	(1) To promote community-based management of water and land resources by a river basin approach; (2) To protect, restore and improve water and land environment in catchment areas of rivers by combination of water impoundment, soil conservation, reforestation and other measures; and (3) To enhance land productivity through environment friendly agricultural practices.
5.	EXPECTED EFFECTS	Higher income for farmers through widespread practice of sound and sustainable agriculture Improved environment downstreams through more regulated discharges and reduced soil erosion.
6.	PROJECT COSTS	US$ 5.6 million for M/P, F/S and I/P
7.	IMPLEMENTATION SCHEDULE	M/P and implementing arrangements in Phase I

8. PROJECT DESCRIPTION

The Program will promote and substantiate the community-based resource management by active participation of riparian/coastal communities and NGOs. An entire river basin (or a sub-basin for a large river) is taken as a coherent unit for managing water and related land resources.

As the first step, existing conditions of water and land resources will be examined by province to identify critical basins through the cooperation of LGUs and viable NGOs in consultation also with DENR-CENROs and PENROs. Not only physical conditions such as hydrology, structure and facilities but also water and land use practices and socio-economic problems will be examined. A management body will be formed by critical basin with the

participation of local communities and NGOs in cooperation with LGUs and related Government agencies. It will subsequently formulate a comprehensive catchment conservation and management plan with guidelines and standards, implementing arrangements involving local communities and NGOs, and implementation schedule with priority areas. It will oversee the preparation of implementation programs by identified implementing agencies, and monitor and evaluate their implementation. Training and consultation for natural resources management in general and preparation of implementation programs in particular constitute part of the Program.

The Program coverage in each province is indicated in the following. This will be reviewed as part of the initial works for the program.

Bataan

The Program may cover the Bataan National Park and twenty Small Water Impounding Project (SWIP) watershed areas, covering 11 municipalities. Small river impounding projects (SRIPs) may be covered with dams at Tangilad, Labangan, Aliabon and Morong. A key activity of the Project is to organize and train local communities to make them main actors for operation and management of the Project. As the first step, they will take the lead, supported by NGOs, in preparing comprehensive catchment conservation and management plans covering not only facilities and infrastructure to be provided but also management activities and mechanisms, and land tenure and other social issues.

Following the plans, key facilities and infrastructure may be established by relevant government agencies, such as the following:

(1) nursery for seedling production,
(2) plantation of forest and fruit/nut bearing trees,
(3) forest road network, including access roads to plantation sites, and
(4) other basic infrastructure such as rural water supply.

Operation and management of the facilities will be transferred in steps to respective communities, which will assume main responsibilities also for the following:

(5) protection and maintenance of facilities and reforested areas,
(6) control of pests and diseases, and
(7) area surveillance.

NGOs will cooperate with relevant government agencies for the following:

(8) information campaign,
(9) technology transfer, and

(10) capacity strengthening of CENRO and PENRO for planning, research and extension.

Bulacan

The Program covers nine municipalities: San Miguel, San Ildefonso, Dona Remedios Trinidad, San Rafael, Angat, Norzagaray, San Jose del Monte, Pandi and Sta. Maria. In addition to those listed under Bataan, components of the Program for Bulacan emphasize production activities in the upland. They cover extension, pre-production facilities (nurseries, demo-farms, irrigation facilities and farm-to-market roads), post-harvest facilities, rural finance, and marketing.

The latter intend to mobilize 192 rice-based cooperatives and are expected to benefit directly their 9,742 members. Farmers, through cooperatives, would be the principal actors with assistance of LGUs and other government agencies and NGOs.

Nueva Ecija

The Program covers nine municipalities: Carranglan, Pantabangan, Lupao, San Jose City, Bongabon, Rizal, Laur, Gabaldon and Gen. Tinio. Components of the Program for Nueva Ecija are similar to those for Bataan.

Tarlac

Watershed areas in Tarlac was severely damaged by the Mt. Pinatubo eruption and lahar. The Program will cover all the damaged river basins especially in the western part of Tarlac (San Jose, Sta. Ignacia, Mayantoc, Capas, Bambang, Camiling, Concepcion and San Clemente), and address among others issues related to those displaced by calamities. Kinds of fruit-bearing trees and areas suitable for rattan and bamboo plantations will be identified through the comprehensive catchment conservation and management planning.

Pampanga

The Program will cover critical river basins affected by the Mt. Pinatubo eruption and subsequent lahar in general, and the Gumain river basin in particular. Livelihood development of those displaced by calamities will be addressed among others.

Zambales

The Program will cover critical river basins affected by Mt. Pinatubo eruption and subsequent lahar, including the Bucao and the Sto. Thomas river basins. Livelihood development of the upland and those displaced by calamities will be addressed among others.

Project No. RP - 24

1. PROJECT TITLE	Community-Based Manila Bay and Coastal Rehabilitation and Resource Management
2. LOCATION	Manila Bay and its coastal areas
3. IMPLEMENTING AGENCIES	GO-NGO Manila Bay Environmental Task Force and PO-led resource management councils
4. OBJECTIVES	To contribute to the rehabilitation of Manila Bay and its coastal areas; To establish/strengthen community-based resource management mechanisms for Manila Bay and its coastal areas; and To increase incomes of small fishfolks and coastal people through the establishment of alternative livelihood systems.
5. EXPECTED EFFECTS	Sound and more diversified environment of Manila Bay and its coastal areas. More lively coastal economies supported by robust and sustainable resource base.
6. PROJECT COSTS	₱ 57 million
7. IMPLEMENTATION SCHEDULE	Initial implementation for three years in Phase I
8. PROJECT DESCRIPTION	As per attached

Community-Based Manila Bay and Coastal Rehabilitation and Resource Management

1. Background

Manila Bay and its coastal areas face serious environmental and other related problems. Major problems include (1) degrading fishery resources due to over fishing and illegal fishing activities, (2) deteriorating water quality due to industrial and domestic wastewater discharges and waste dumping, (3) destruction of mangrove areas, coral reef and seagrass beds, and (4) threat to livelihood of small fishfolks and coastal communities caused by these and other problems. Increased siltation derived from forest depletion and other improper land management in the upper catchment areas and the recent lahar hazard add to these problems.

Mangrove areas have been converted to fishponds or encroached upon by residences and industrial establishments. The total remaining mangrove area of Manila Bay is 1,260 ha, consisting of 220 ha in Bataan, 748 ha in Pampanga and 294 ha in Bulacan (Manila Bay Environmental Profile, Region III). Coral reefs have been mostly destroyed by trawls, dynamite fishing and other destructive fishing methods. Remaining reefs are found only at the mouth of Manila Bay including Coregidor islands.

Around Manila Bay are approximately 500 manufacturing firms and industrial complexes discharging effluents into the Bay. Despite the existing pollution control laws, monitoring of industrial effluents by government agencies is inadequate and imposition of sanctions against violations is largely lacking. In Bataan above, only 72 out of 128 industrial firms have been found to be fully complying with wastewater treatment and anti-pollution laws.

Most municipalities discharge domestic sewage without treatment. Dumped garbage also find ways to the Bay. Most of the households in the coastal areas have no sanitary toilets. Rapid deforestation results in increased erosion and siltation. Use of insecticides and chemical fertilizer and improper land management increase pollution loads to the Bay.

Most of these issues have been addressed by the on-going Fishery Sector Program (FSP), which focuses on Manila Bay as one of priority areas. There exist, however, needs to continue the on-going efforts with more comprehensive coverage and emphasis on some aspects not adequately addressed in the FSP including institutional aspects.

2. Objectives

The Program aims at (1) establishment of community-based coastal resources management mechanisms, (2) enhancement of livelihood support programs, and (3) minimization of environmental pollution. The Program will start with a critical review of the FSP and impact assessment of its Manila Bay program. The Program emphasizes among others institutional aspects related to community organizing, social infrastructure, monitoring and control of pollution as well as planning for livelihood development.

Specific objectives of the Program are:

(1) to contribute to the rehabilitation of Manila Bay and its coastal areas,
(2) to establish/strengthen community-based resource management mechanisms for Manila Bay and its coastal areas, and
(3) to increase incomes of small fishfolks and coastal people through the establishment of alternative livelihood systems.

3. Program Description

The Program consists of five components as described below.

(1) Impact assessment and strategy formulation

The FSP and other initiatives related to Manila Bay will be critically reviewed, and impact of each measure assessed. As a basis for the assessment, existing conditions of the Manila Bay coastal areas will be clarified, focusing on socio-economic and livelihood conditions of small fishfolks and other coastal people and factors affecting them. Also the ecological condition of Manila Bay itself will be assessed. Past studies based on secondary data will be validated.

Based on the review and the assessment, development and management strategy for Manila Bay and its coastal areas will be re-oriented and refined. Frameworks should be formulated for alternative livelihood systems for small fishfolks and other coastal people.

(2) Establishment of community-based coastal resources management mechanisms

The establishment of community-based coastal resources management (CRM) mechanisms will start from barrio levels led by POs. It will take a form of PO/fishfolk-led resource management councils, which will liaise with other sectors within each community, fishfolks groups in other areas, LGUs, relevant government agencies and technical experts. They may be federated to the municipal and the provincial levels.

Based on the coastal resource appraisals, the councils will formulate coastal resource management plans. Each plan will include the following.

1) Community plan for sustainable use of marine resources, clarifying appropriate fishing methods and gear, fishing grounds and sanctuaries, mechanism for enforcing laws, coastal rehabilitation projects and other measures;
2) Action plan specifying immediate measures to take, including advocacies on (a) fighting pollution caused by existing/planned industrial complexes. (b) strict enforcement of fishing and anti-pollution laws, and (c) development of alternative livelihood systems; and
3) Implementing arrangements including identification of fund sources for coastal resource management projects such as mangrove reforestation, artificial reefs, sanctuaries and seaweed/seagrass culture.

The establishment of community-based CRM mechanisms will be supported by capability-building of POs in the following aspects: sustainable coastal and marine resources management, livelihood development, organizational development, and other aspects of empowerment and community development. Also to meet imminent needs, equipment necessary for self-watch of illegal fishing activities should be provided such as patrol boats, binoculars and others.

(3) Implementation of coastal rehabilitation projects

Coastal rehabilitation projects will be implemented initially in at least two or three barangays in each municipality. In northern areas of the Bay, mangrove reforestation may be among the initial projects, while artificial reef deployment may be more applicable to southern areas of Bataan. Pilot barangays for the initial implementation would be selected based on the following criteria : 1) technical conditions, 2) PO strength and capabilities, 3) potential for community support, and 4) potential for LGU support.

(4) Development of alternative livelihood development systems

An alternative livelihood development system for small fishfolks and other coastal people encompasses 1) viable primary production activities such as fishery, crop cultivation and livestock, 2) aqua- or agro- processing, 3) alternative trading and marketing system, and 4) alternative rural finance. Research and development activities will be conducted to identify appropriate, economically viable, and ecologically-sound processing activities which can be undertaken at the barrio and/or municipal level by people's organizations. In addition, the Program will include the establishment of demonstration processing and marketing projects (at least one municipal-level project per province), and the provision of low-cost, easily accessible credit facilities for other livelihood initiatives. The Program will also include the

establishment/strengthening of fishery cooperatives for joint procurement of inputs, ownership of fishing gear and facilities, and marketing of products.

Demonstration projects can be established through a version of the "build-operate-transfer" scheme wherein the government would first build and own the facilities, with management and ownership gradually being divested in favor of local fisherfolk groups.

(5) Establishment of regulatory frameworks

Coastal rehabilitation efforts need to be supported by the resolution of issues having impact on coastal resources. The following will be essential.

1) Strict implementation of pollution control laws,
2) Planning and implementation by coastal municipalities of waste disposal and management systems,
3) Strict implementation of the ban on the expansion of fishponds and closure of illegal fishponds,
4) Implementation of laws against destructive fishing methods,
5) Control of the establishment of polluting industries, and
6) Amendment to existing laws or passage of a new fisheries law which will control commercial fishery and large aquaculture operations in favour of small fishfolks.

To support these effort, the Program will set up a pollution monitoring and control system.

4. Implementing Arrangement

Two key mechanisms will be established under the Program. Resource management councils will be established at community levels as PO/fishfolk-led institutions with the participation of NGOs, education/research institutes, LGUs, and relevant government agencies. They will provide a driving force for the implementation of the Program in general, and prepare coastal resources management plans in particular. They will also be main actors in implementing coastal rehabilitation projects and their monitoring and evaluation.

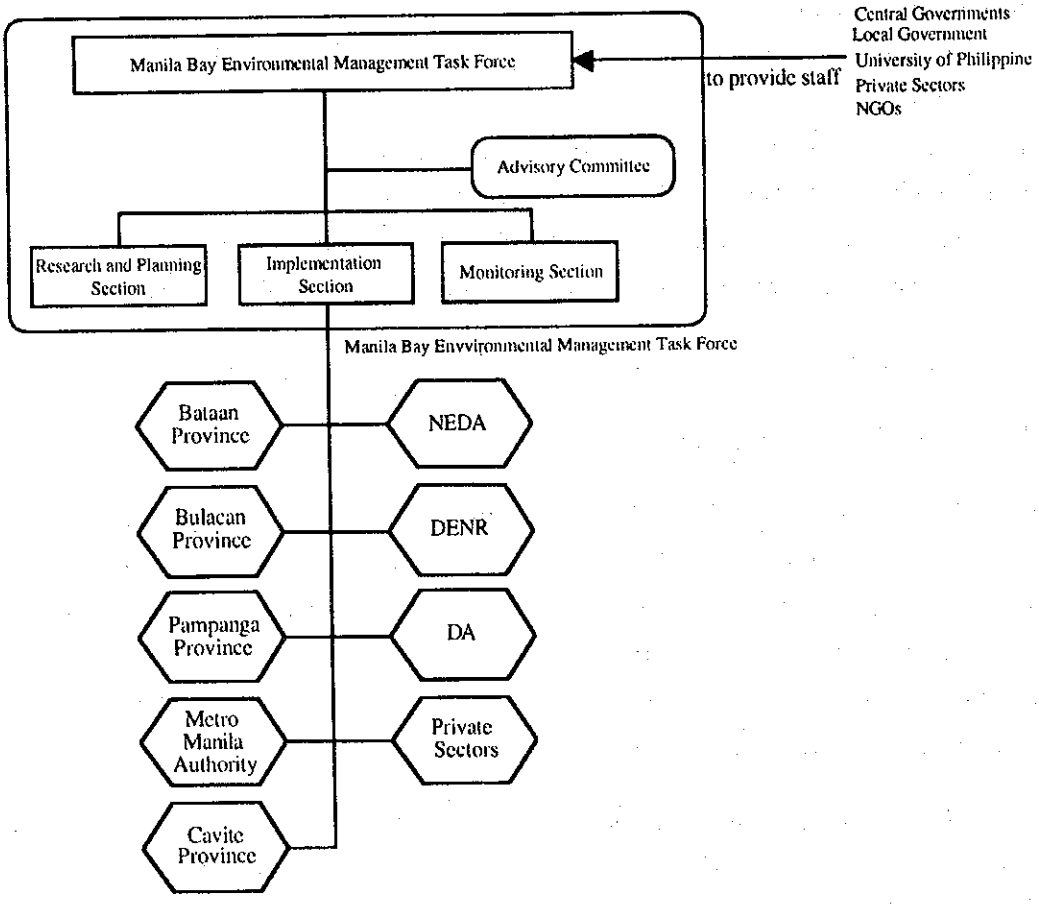
The other mechanism is a GO-NGO-PO Manila Bay Environmental Task Force, which shall be replicated as Provincial Task Forces at the provincial level. The main functions of the Task Force(s) would be: 1) to draw up the broad framework for the Bay/province-wide CRM plan; 2) to ensure that the community CRM plans are consistent with one another and with the Bay-wide plan, and would thus redound to the overall benefit of coastal communities, 3) to formulate recommended regulatory frameworks into legislative measures, 4) to review existing and proposed development projects along the Bay (e.g. establishment of industries, reclamation projects, infrastructure projects) to ensure their consistency with the

Bay-wide CRM plan, and 5) to formulate and provide support measures (including financing) for coastal rehabilitation projects.

The Task Force will consist of GO, NGO and PO representatives. Each province would have three representatives (LGU, PO, NGO) in the Bay-wide Task Force. Other members of the Task Force would come from the line agencies (NEDA, DENR, DA, Metro Manila Authority).

Members of the Provincial Task Force would include representatives from barrio and municipal-level POs, NGOs, line agencies, local government units (municipal level), and research institutions.

A possible structure of the Task Force is illustrated below.



5. Program Costs

Costs involved in the initial implementation of the Program are estimated as follows.

(Unit: in million pesos)

Cost element	Cost	Note
1. Community organizing and capability building	30.0	60 barrios x 100 pax/barrio x ₱ 5,000 per pax
2. Coastal rehabilitation demonstration projects		
- Mangrove reforestation	2.0	20 sites x ₱ 100,000 per site
- Artificial reefs	2.0	20 sites x ₱ 100,000 per site
- Others (seagrass rehabilitation, fish sanctuary etc.)	2.0	10 sites x ₱ 200,000 per site
3. Vessels and equipment for community-based law enforcement	6.0	
4. Demonstration livelihood projects	10.0	
5. Researches and studies	5.0	
6. Establishment of pollution control and monitoring and monitoring system	15.0	
7. Contingencies	7.0	
Total	₱ 79 million	

Project No. RP - 25

1.	PROJECT TITLE	Provincial Cooperative Savings and Loan Association
2.	LOCATION	Each of the six provinces
3.	IMPLEMENTING AGENCY	Cooperatives in cooperation with NGOs
4.	OBJECTIVES	To expand the capital to be used for income-generating activities; To raise income through more employment generation of new business ventures; and To reduce dependence on and influence of the practice of usury.
5.	EXPECTED EFFECTS	More sound and active local financial market. More vibrant local economy
6.	PROJECT COSTS	₱ 120 million
7.	IMPLEMENTATION SCHEDULE	Establishment of PCOSALs in Phase I, strengthening in Phase II, and establishment of the Regional Cooperative Bank in Phase III

8. PROJECT DESCRIPTION

At present, credit sources for small farmers and fishfolk are limited. Linking local savings with local production is a key not only of injecting vibrancy into the local economy but also of making banking with the poor a good business. There is a considerable amount of mobilizable savings in rural communities as indicated by Jueteng (illegal gambling) operations.

The Project will set up a provincial cooperative with quasi-baking operations in each province of Central Luzon. This new institution may be named the Provincial Cooperative Savings and Loan Association (PCOSAL). It has features of a credit cooperatives and works like a bank generating savings and extending loans to its members.

Members of PCOSAL are secondary formations of all types of cooperatives with surpluses. It will also count on people's enterprises, NGOs and individual clients as members. Sources

of funds are savings and time deposits, capital structure, donations and conduit funds from funding agencies entrusted to PCOSAL by NGOs for safekeeping.

Paid-up capital and seed capital from donations will also augment the funds. Earnings will come from interests accruing from the cycle of lending and re-lending and selected investment placements. Business operations of PCOSAL are solely among and by its members so that it needs to be registered with the Cooperative Development Authority.

PCOSAL at the onset will relying mainly on its members. Therefore, an effective organizing strategy is necessary. A number of farmers' cooperatives will be identified to be part of core members. A seed fund of P20 million is sufficient to sustain PCOSAL initially. Aggressive collection of savings plus the paid-up capital share of members will also be the main source of capital. A savings mobilizing strategy needs to be mapped out carefully as it will be the crucial factor determining the long-term viability of PCOSAL.

As the financial capacity of PCOSAL becomes firm enough, it will go into relatively less risky investment placements and projects, either on its own or in partnership with other similar institutions. A link-up with an alternative trading network will also be mutually beneficial.

PCOSAL will be established in each province during Phase I and strengthened in Phase II. In Phase III, a Regional Cooperative Bank will be established with PCOSAL based provincial branches.

Project No. RP - 26

1. PROJECT TITLE	Expanded Agrarian Reform Communities (ARCs) Livelihood and Cooperative Development
2. LOCATION	All the six provinces in Central Luzon
3. IMPLEMENTING AGENCIES	LGUs NGOs/POs consorcium in cooperation with DAR Provincial Office
4. OBJECTIVES	General: To accelerate the implementation of the agrarian reform with a broader coverage; To improve the quality of life of beneficiaries in agrarian reform communities; and To establish community-managed agricultural support services. Specific: (1) to raise the annual income of farmers and other rural workers, (2) To establish community-managed agricultural support services with the following components: a) alternative rural financing b) sustainable agricultural technology promotion c) post-harvest facilities and infrastructure d) alternative trading and marketing and infrastructure e) irrigation infrastructure and services f) legal support g) research and policy advocacy (3) to establish/strengthen organizations responsive to sustainable agro-industrial development

5. EXPECTED EFFECTS

Developed ARC's as growth points in countryside. More active and lively rural life.

More responsive agrarian reform program.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE

Comprehensive study and implementation for model ARCs in Phase I; implementation for additional ARCs together with programs addressing to existing agrarian issues in Phase II-Phase III.

8. PROJECT DESCRIPTION

The Program will be instrumental in accelerating the agrarian reform. It can be immediately implemented for established agrarian reform communities (ARCs) to support and revitalize them. At the same time, a comprehensive study will be carried out by a participatory approach (1) to identify additional ARCs with more lands to be allocated (2) to clarify existing conditions of agrarian issues such as loss of allocated lands through usury, land speculation and grabbing, and land conversion to evade the reform, and (3) to formulate strategy and programs to solve these issues. For this, all the outstanding issues will be reviewed with public disclosure of relevant documents as well as existing ARC lists of DAR and LISTASAKA. Issues of occupied base lands in Pampanga, Tarlac and Zambales will also be addressed.

For the initial implementation of the Program, some existing ARCs have been identified as below. Additional ARCs listed in LISTASAKA may also be for early implemention. Priority may be given to Bulacan, where agro-industrial potentials are very high and cooperatives are most active. For other identified ARCs, viable livelihood activities need to be identified first, and their implementation planned by respective communities in cooperation with LGUs and NGOs/POs.

<u>Bataan</u>

The Program may cover initially the ARCs of Maligaya, Dinalupihan (upland), San Huan, Lalawigan (lowland), Imelda, Samal (lowland) and Alas-Asin, Mariveles (coastal).

<u>Bulacan</u>

ARCs of Sibul/Tartoro in San Miguel, San Francisco in Bulacan, Bagna in Malolos and Kaybanban in San Jose del Monte would be covered initially. In each ARC, the following livelihood centers would be established anchored on "One Village-One Product" concept. A

village level dairy processing center would be established in Sibul/Tartaro having extensive pasture land. It would be supported by dairy enterprises, small holder milk production units, and cooperative based milk collection, processing and marketing. The project components include dispersal of 150 dairy cows, upgrading of carabao herd, technical support services, and establishment of mini-dairy processing plant.

A post harvest facility complex would be established in San Francisco. It would serve as a trading post of rice from the North, equipped with a rice mill, solar dryer, warehouse and other facilities and equipment.

A high value crops storage and village level processing and marketing center would be provided in Kaybanban. The area has an average production of 3,200 tons of mango, guyabano, avocado, langka, atis, papaya, banana and other fruits. To expand the production, capital assistance would be provided. A total of 15,000 fruits trees would be dispersed.

Vegetable production, 1,300 ton annually, is represented by amargoso, stringbeans, tomato, squash, pechay and baguio beans. Cassava, sweet potato, yam and gabi are also produced for the total of 1,300 ton per annum.

Production of other crops would also be encouraged. The establishment of the center would stimulate production of these crops in other target areas such as ARCs of San Mateo in Norzagaray, Pulong Buhangin and Balasing in Sta. Maria and Gaya-Gaya in San Jose del Monte.

Additionally, Umgucao, San Ildefonso has also been identified for early implementation.

Nueva Ecija

The Program may cover initially the ARCs in Munoz (lowland), Karrangan (upland), San Jose City, Laur (hilly and rolling), Gapaldan (upland) and Cabiao (lowland). Settlements within the military reservation (Gabaldon, Palayan City, Gen. Tinio and Sta. Rosa) may be subject to further examination within the comprehensive study.

Pampanga

ARCs of Sta. Rita in San Luis, Magalang settlement project in Ayala - Magalang, and Yulo estate in Pabanlag - Floridablanca have been selected for initial implementation in Pampanga. Sta. Rita represents ARCs in urbanized areas. Important livelihood projects include duck raising, garments industry, cooperative store and farm machineries. Support measures consist of the strengthening of Sta. Rita Multipurpose Cooperative, a seed farm for cash crops, fish pond, barangay road and multipurpose pavement, marketing of crops, fish and salted eggs, and health and sanitation improvement.

Ayala represent upland ARCs. The program will support its three villages for rice, livestock and orchard by rehabilitation of the Tacqui dam, construction of a small water impounding project, pipeline water distribution system and other measures. Pabanlang represents lowland ARCs. The program will rehabilitate existing communal irrigation and strengthen institutional capabilities of existing cooperative.

Tarlac

The ARCs in Tarlac that may be covered initially by the Program have been identified by the provincial government - one in each municipality for a total of 18 ARCs. Among them are Laoang, Tarlac with livestock and rice, Bawang, Paniqui with rice and vegetables, Tinang, Talimundoc and Pitanan, Concepcion with sugarcane. Other candidates include Panaisan and Mailang in Bambang, Sta. Rita, San Martin, Malupa, Cafe, Sta. Cruz, Mago, Lilibingen, Baluto, Balas, Culatingan, San Miguel and San Vicente in Concepcion, San Leon, San Juan and Maluac in Moncada. Barangays in Concepcion may be suitable for livestock in lahar affected areas.

Zambales

The Program may cover initially the ARCs of Maloma, San Felipe, Sta. Rita, Masinloc, and Pammoran-Biay-Bolitoc, Sta. Cruz.

Project No. RP - 27

1. PROJECT TITLE	Micro and Small Enterprises Livelihood Systems Development
2. LOCATION	Region-wide
3. IMPLEMENTING AGENCY	Feasibility study by a consortium of NGOs, which will identify subsequent implementing agencies
4. OBJECTIVES	(1) To establish alternative livelihood systems for micro and small enterprises; and (2) To increase income and employment opportunities by inter-related activities within the system.
5. EXPECTED EFFECTS	More diversified and robust rural economies linked also to urban economies. Reduced out-migration from rural areas.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Feasibility study during Phase I to be followed by implementation of viable schemes

8. PROJECT DESCRIPTION

An important component of the Central Luzon Development Program (CLDP) strategy is to establish/strengthen economic linkages between large foreign capital-led and export-oriented industries and local economies. As a prerequisite, various local industries need to be upgraded into viable economic units. Existing support measures particularly for micro and small enterprises are limited. The micro lending scheme by DTI addresses particularly to this point. This scheme, however, suffers from a failure to establish viability of each enterprise and overlooked marketing factors. Another problem is a basic weakness in developing organizational capabilities of cooperatives and backward/forward linkaging of local community enterprises.

The Program will establish inter-related economic activities centering on and supporting entrepreneurial activities in micro or small scale in the form of livelihood systems in order to optimize the use of local resources through fostering forward/backward linkages. Each

livelihood system will encompass production/services activities, trading and marketing, postharvest facilities, and other essential infrastructure such as water supply and farm to market roads. Prospective activities include not only simple agro or aqua-based processing, handicraft and other cottage industries, but also other agro-related industries (e.g. farm implements, machinery and fertilizer), metalcraft and eco-cultural tourism.

As the first step, a feasibility study will be conducted by a consortium of NGOs in cooperation with local communities, LGU and related government agencies. A set of prospective production/services activities will be identified, and for each of them site-specific project development will be carried out to establish feasibility with respect to raw materials availability, technical conditions, entrepreneurial capabilities, potential for LGU support, and market prospects.

The feasibility study will clarify components of each viable livelihood system, step-wise establishment of the system, and implementing arrangements as well as technical conditions and costs. Alternative trading and marketing mechanisms will also be clarified as part of the livelihood systems.

A key specialized enterprise should be identified in each province to capitalize comparative advantages of different provinces and to avoid unnecessary competition among them. For instance, a community-based metalcraft enterprise may be developed in Tarlac to provide farm implements needed by other provinces as well.

Implementation of each livelihood system will follow by implementing agencies to be identified also by the feasibility study. The consortium of NGOs will participate in the implementation as well in two major ways. First, it will be represented in the implementing body of the Program which will be responsible for overall management, monitoring and evaluation. Second, it will facilitate and/or conduct capability building, training and education components of the Program for local entrepreneurs, leaders and managers necessary for the Program implementation.

The Program will also provide through relevant government agencies assistance in linking enterprises supplying raw materials to various small and micro enterprises, and programs geared to improving the output quality, and ensuring sustainability of production. The upstream assistance will be to link these enterprises with their market networks (e.g. alternative trading organizations or marketing cooperatives) for finished products and with other enterprises (e.g. small and medium enterprises) which process their products into goods with more value added. A major consideration will be the complementality and synergy of various enterprises in order to ensure the optimal use of renewable and local resources for higher productivity.

Project No. RP - 28

1. PROJECT TITLE	Resource Center for People's Participation in Local Governance and Development.
2. LOCATION	Central Luzon
3. IMPLEMENTING AGENCIES	NGOs with capacities for non-formal education, skills training, research and project management, coordinative links with regional offices of key government agencies (e.g. NEDA) and local government bodies (e.g RDC).
4. OBJECTIVES	General: To enhance the scope and quality of people's participation in the definition, implementation, monitoring and assessment of the Central Luzon Development Plan and other similar development initiatives; and To strengthen the institutionalization of people's economic formations like cooperatives and community enterprises as viable vehicles for development. Specific: To improve the leadership skills, management and entrepreneurial capabilities of leaders and members of NGOs and people's organizations; To define mechanism to enable NGOs and people's organizations to participate in project development and implementation; To generate indicators of people's participation that will become part of the overall monitoring and assessment of the CLDP; and To raise popular consciousness in Central Luzon communities on current development programs

	and on other development options as basis for meaningful people's participation.
5. EXPECTED EFFECTS	Stronger and more capable NGOs and POs Higher level of popular participation in the CLDP including the setting up of effective mechanisms for such.
6. PROJECT COSTS	P 50 Million for three years
7. IMPLEMENTATION SCHEDULE	Phase II

8. PROJECT DESCRIPTION

The Center will provide per-needs as well as pro-active services to the region's NGO and PO community to enable them to meaningfully participate in the CLDP and other similar development initiatives. These include a comprehensive education program that focuses on leadership and management, enterprise development, local governance, negotiation, community development and ecology. A special course on gender and development will be developed to ensure the incorporation of gender consciousness into development initiates at various levels. Coordinative links should be established with formal education institutions – for effective delivery of these courses.

A methodology that combines training, distance education, area workshops and tutorials, multi-media materials and on-the-job case work will be developed.

The Center will also engage in continuing research especially on the quantity and quality of people's participation in the CLDP. Since the Plan has clearly identified social development as one of its three general goals, it is relevant for the Center to lead in the generation of social development indicators. It will also come out with recommendations on participatory mechanisms.

A database on people's participation will be developed by the Center and will be part of its services to NGOs and POs. This will also be made accessible to government planning and monitoring agencies like NEDA and to the academe. A research forum that includes government academic and NGO research groups will be occasionally convened by the Center to surface key areas to monitor and elaborate regarding people's participation in development and local governance.

An extension service will also be established to respond to specific contexts and problems confronted by NGOs, and POs. Activities in this area include facilitating dialogue between

NGOs, POs and local government bodies, conducting special researches and aiding organizations in development planning. Training for local government staff itself, however, will be covered mainly by an on-going program.

The Center will also offer trainings on local governance for the appointed and elected local government officials particularly at the barangay level to ensure a more responsive and effective governance. The trainings would include mechanisms for participatory planning and implementation of development activities. In this way, interaction between local officials and NGO-PO community would be enhanced. It is expected that with learnings from PO experiences and improved skills more dynamic community development would be realized.

The Project will be initially implemented by a consortium of participating NGOs with long-term education and research capacities. Once the Center is set up, it will have a separate legal existence but the participating NGOs will have representation in the governing board. Even at the onset, the Center will require separate staffing.

Project No. SP-1

1.	PROJECT TITLE	Indigenous People Development Program
2.	LOCATION	Region-wide
3.	IMPLEMENTING AGENCY	Consortium of NGOs in cooperation with LGUs
4.	OBJECTIVES	(1) To clarify existing socio-cultural and livelihood conditions of indigenous people; and (2) To empower indigenous people for various livelihood activities.
5.	EXPECTED EFFECTS	More lively indigenous communities. Wider recognition of indigenous people
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Master plan study in Phase I

8. PROJECT DESCRIPTION

The Program aims at providing a comprehensive package of measures to support holistic development of the indigenous people observing their traditional value and culture. As the first step, a master plan study will be conducted to examine all the aspects of existing conditions of indigenous people, establish strategy for indigenous people development; identify viable livelihood opportunities, and formulate institutional and policy measures to secure their tenureship. Strategy to involve indigenous people into Government programs will constitute important part of the strategy. All the on-going and planned activities related to indigenous people will be reviewed, and better orientations will be given for these and new activities. Needs for community organizing and capability building will also be clarified.

The Program also provides for advocacy activities necessary to cultivate a better understanding of indigenous people and to facilitate the adoption of institutional and policy measures formulated through the master planning.

Measures formulated by the master plan study will be implemented by respective implementing agencies to be identified also by the study. The consortium of NGOs will be involved in the implementation phase as well. To facilitate the implementation of the Program and to sustain indigenous people participation, a center for indigenous people concerns will be set up. The center will have desks for (1) advocacy and networking, (2) communications and research, (3) training, and (4) legal support.

Project No. SP-2

1.	PROJECT TITLE	Indigenous Communities Cooperative Economic Development
2.	LOCATION	Upland barangays in Central Luzon
3.	IMPLEMENTING AGENCY	Cooperatives supported by NGOs
4.	OBJECTIVES	(1) To increase farmgate prices of products produced by upland people; (2) To establish an alternative trading and marketing system for upland products; and (3) To build capability of indigenous people through the establishment of more viable livelihood systems.
5.	EXPECTED EFFECTS	More lively indigenous communities. Wider recognition of indigenous communities and their produce.
6.	PROJECT COSTS	₱ 85 million
7.	IMPLEMENTATION SCHEDULE	Three years during Phase I - Phase II

8. PROJECT DESCRIPTION

Dominance by trader/usurers of marketing of agricultural products affects most severely the upland people who lack transportation means and an alternative market. Many are forced to consign their produce to traders even at the start of production cycles.

The Project will support both subsistence activities of indigenous people based on traditional practices to make them self-sufficient and self-reliant, and market-oriented activities. For the former, community organizing, skills training and extension are the main forms of support.

For market-oriented activities, the Project will establish a multi-purpose cooperative and several trading stations in strategic areas to facilitate the marketing of products produced by the upland people and to contribute to the establishment of more viable livelihood systems particularly for the Aeta people. Aeta producers will leave the marketing of their produce to

the cooperative or trading stations owned and managed by the cooperative. The Project will cover also a multipurpose transport service and initial capitalization for farmgate purchasing of products. The Project will establish a buying and selling network linking directly the upland producers and bulk buyers.

Components of the Project are the following.

(1) Community organizing and capability building

Social infrastructure appropriate to conditions in upland communities will be established, taking into consideration existing cultural, traditional or indigenous formations. Training on sectoral and community development will be provided focusing on upland conditions.

(2) Research and planning

An in-depth study will be conducted on the culture and settlement patterns of indigenous people to refine the overall concept of the Project. Alternative livelihood systems will be examined for their socio-cultural and environmental viability as well as technical soundness.

(3) Infrastructure

Acquisition/establishment of infrastructure will be cumulative, as more resources are generated through re-investment or external contributions. Transport facilities will be acquired first, followed by the establishment of trading stations.

The Project calls for effective partnership and coordination with other established POs and NGOs working in the same area. Aeta communities should have the primary responsibility for all aspects of the Project. NGOs will be contracted to handle the aspects of community organizing, capability building and livelihood development.

Costs involved in the Project over the three year period are estimated as follows.

(Unit: million pesos)

Cost element	Cost
1. Community organizing and capacity building	10.0
2. Cooperative formation	5.0
3. Initial procurement of equipment and a "seed fund"	20.0
4. Trading stations	45.0
5. Monitoring and evaluation	2.5
6. Research and planning	2.5
Total	₱ 85 million

Project No. SP-3

1. PROJECT TITLE	Gender Development and Resource Center
2. LOCATION	To be determined
3. IMPLEMENTING AGENCY	Initially by a consortium of NGOs/POs with gender concerns in cooperation with relevant government agencies
4. OBJECTIVES	General: To enhance women's participation in all spheres of development and governance; and Specific: (1) to provide a venue for research capability building and awareness raising on gender and development concerns, (2) to provide training to equip women with knowledge and skills, (3) to provide legal, counseling and other support services for women with special concerns, and (4) to advocate and support gender fair and gender sensitive policies and programs.
5. EXPECTED EFFECTS	Equal status and opportunities for women as for men in the labour force and social activities and at home as well as in governments..
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Three years in Phase I

8. PROJECT DESCRIPTION

People empowerment is one of the three objectives of the Central Luzon Development Program (CLDP), and the assurance of access to a wide range of opportunities is one essential means to realize it. These objective and means naturally embrace gender concerns. Equal opportunities would have to be provided to men and women in all segments of the society.

The Project aims at broadening a social resource base for women to tap in their efforts to prepare themselves for various socio-economic activities. The Project will establish a women's resource center as the central facilities to equip women with necessary skills, training and education. The center will offer short and long training/education courses on various subjects such as production processes and skills, management, and value development, develop curriculum proposals for other formal and non-formal education institutes, and provide services to groups involved in gender development. The center will have desks for (1) gender advocacy and networking, (2) communications and research, (3) training, (4) counselling, (5) legal support, and (6) day care services.

A consortium of NGOs having good track records in gender development will be formed. It will carry out a study to design the center in cooperation with other NGOs/POs, LGUs and relevant government agencies, defining the scope of work, training/education courses to be offered, other services to be provided, operating and management setups including finance, location and other specifics of the center.

Functions and facilities of the center will expand in steps. Initially, emphasis of training/education may be placed more on value development and basic skills training, including "pre-departure orientation" for women overseas workers. It will shift to science and technology gradually as the resource base expands and needs of industrial and business sectors develop. Ultimately, the center will become instrumental in creasing women labour force in the forefront of science and technological advancement.

Project No. SP-4

1.	PROJECT TITLE	Community-Based Disaster Management Program
2.	LOCATION	Region-wide
3.	IMPLEMENTING AGENCY	Consortium of NGOs/POs with DSWD/LGUs
4.	OBJECTIVES	(1) To facilitate the rehabilitation of disaster affected communities; (2) To integrate and consolidate disaster management and response efforts of all concerned LGUs, NGOs and communities; and (3) To organize and mobilize communities from rehabilitation toward genuine community development through an empowerment process.
5.	EXPECTED EFFECTS	(1) Organized community disaster management committees both in disaster prone areas and adjacent communities prepared to respond and manage disasters. (2) Improved and consolidated rehabilitation efforts of LGUs, NGOs and POs that will make space for further community development beyond external intervention.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

Central Luzon is prone to various disasters. In addition to habitual typhoons and flooding, the region suffered from a major earthquake in 1990 and the Mt. Pinatubo eruption in 1991. The four provinces of Bataan, Pampanga, Tarlac and Zambales continue to suffer from the Mt. Pinatubo derived lahar and associated flooding/siltation for the years to come. The northern communitees of Nueva Ecija still occasionally feel the after effects of the earthquake that increased the vulnerability of the already fragile ecosystem. Coastal communities are

affected by red tide almost yearly and pollution-related disasters (e.g. oil-spills, white tide, etc.). Aside from these natural and environmental disasters, social disasters like military operations are not completely unheard of.

Responses to disasters so far have been mostly allophatic. Typically, responses to the Mt. Pinatubo eruption have been limited to relocation-resettlement and construction of dikes, which have been proven relatively expensive and deemed unsustainable.

The Program aims to improve disaster management and response of the various development actors at the regional level. Specifically, it will tap on the potentials of the communities to deliver quick and appropriate response. Through proper coordination, the Program will also improve disaster management initiatives of LGUs and NGOs to avert the current overlapping of efforts that cancels out desired effects of intervention. The Program will also focus on exploring and strengthening preventive measures against the ill-effects of disasters.

The Program will establish/consolidate people's organization in disaster prone areas, strengthen the disaster preparedness aspect rather than costly mitigation measures after disasters have occurred, and minimize effects of disasters on their livelihood. Corresponding consolidation activities will also be made in adjacent communities to prepare them to respond and absorb affected communities.

Relevant peoples participation in all aspects of the Program should be ensured. The concerned POs will be involved in the planning, implementation, monitoring up to evaluation.

Rehabilitation efforts will be taken beyond the resettlement site to more viable areas for community development. Internal repatriation to original barangays where possible will be made with corresponding support in terms of infrastructure and livelihood inputs. Alternative sites where the communities can commence their traditional/indigenous/appropriate productive activities will also be identified and eventually made available.

The Program consists of the following components:

(1) Development of consolidated disaster preparedness and response plans,
(2) Formation of village disaster committees,
(3) Disaster management training,
(4) Networking for information dissemination and resource mobilization,
(5) Advocacy for policy reforms,
(6) Review of environmental impact of infrastructure built to mitigate effects of disaster,

(7) Review viability for community development in resettlement areas, possible internal repatriation and identification of alternative sites for rebuilding communities, and

(8) Provision of livelihood and infrastructure support for communities relocated to original barangays and/or alternative sites.

Project No. SP-5

1.	PROJECT TITLE	Storm and Flood Monitoring
2.	LOCATION	Pampanga river basin
3.	IMPLEMENTING AGENCIES	
4.	OBJECTIVES	(1) To establish a radar raingauge system for effective measurement of rainfalls and timely forecasting of storms, floods and lahar; and (2) To reduce magnitude of disasters by early provision of related information.
5.	EXPECTED EFFECTS	Reduced damages and victims of disasters
6.	PROJECT COSTS	US$10 million
7.	IPLEMENTATION SCHEDULE	System design in Phase I followed by implementation

8. PROJECT DESCRIPTION

People in lowlying areas in Central Luzon are suffering from severe flooding due to typhoons and lahar and mudflows from Mt. Pinatubo. However, an effective rainstorm forecast has not been conducted as the existing rainfall observation system are inadequate. Inaccurate forecast of rainfall amount, intensity and areas had resulted in aggravating the magnitude of disasters because of insufficient time for preparation of warning announcement. Therefore, improvement of rainfall monitoring and forecasting capacity with the establishment of a Rader Raingage System is essential for providing the effective data and information in mitigating damages.

This project aims at providing more accurate forecast of the time, range and scale of rainfalls in lowlying areas of Central Luzon, especially in Mt. Pinatubo hazard areas. Eventually, the project will result in mitigating the magnitude of disasters and securing adequate time for preparation of evacuation plans. The project will also enhance the effective water control of reservoirs of the Pantabangan and Angat dams for the purpose of irrigation and hydropower generation.

Project No. CI-1

1.	PROJECT TITLE	Community-Based Upland Development Program
2.	LOCATION	Upland barangays in Bataan
3.	IMPLEMENTING AGENCY	Consortium of NGOs/POs supported by LGUs, DENR and other relevant government agencies
4.	OBJECTIVES	(1) To arrest the degradation of forest/watershed areas and contribute to their rehabilitation; (2) To institute community-based forest resources management; (3) To provide sustainable livelihood opportunities to upland inhabitants; and (4) To improve social services delivery to upland people.
5.	EXPECTED EFFECTS	More viable and self-reliant upland communities. Improved environmental quality of forest/watershed areas.
6.	PROJECT COSTS	₱ 445 million
7.	IMPLEMENTATION SCHEDULE	5 years during Phase I - Phase II
8.	PROJECT DESCRIPTION	As per attached

Community-Based Upland Development Program

1. Background

The upland areas in Bataan comprise 111, 210 ha or 81% of the province's total land area. Of the total upland area, forest land accounted for 59% in 1991 at 65,430 ha decreased by 3,000 ha from the 1981 figure of 67,971 ha. Forest land accounted for 48% of the province's total land area in 1991 compared with 49.5% in 1981.

In 1992, Bataan had a total of 17,300 hectares timberland , decreased by 653 ha from the 1991 level. A forest inventory study in 1992 showed that the province's production forest cover (timberland) corresponds to only 0.04 ha per inhabitant. At an average consumption per inhabitant of 1 m^3 per year, and an estimated output of 3 m^3 per year per ha, the remaining timberland (output of 51,000 m^3 per year) can only support 12% of the local timber and fuelwood demand.

The provincial government undertakes occasional reforestation activities. However, these tend to be piecemeal measures, like an aerial sowing project (which tends to have a low degree of success) undertaken in 1993, through which 1 million seeds were reportedly sowed over Bataan's mountains.

The protection of the forest/watershed areas of Bataan is critical to the maintenance of the productivity of the lowland, and to some extent, the coastal areas of the province. The denudation of vast forest areas and consequent soil erosion have already contributed to floods in lowland farms and siltation of fishing grounds. Furthermore, the deterioration of the watershed areas is causing the rivers, which provide natural irrigation to farmlands, to dry up.

The depletion of the upland's natural resource base also poses a threat to the life support system of its approximately 20,000 inhabitants, which include the indigenous Aeta communities. In addition, the upland inhabitants are faced with the issue of non-ownership of lands considered to be forested areas. Some upland households are given rights to the forest lands, but they can be taken away either by incursion of outsiders or government decisions.

The rapid industrialization track in the province coupled with the need to find investment alternatives to the deteriorating coastal resources are providing impetus to massive land speculation in the uplands. This may inevitably lead to the conversion of upland agricultural and forest areas to industrial, tourism and residential purposes, resulting in a more degraded

forest condition, community dislocation and loss of livelihood for an already-marginalized sector.

Other threats to the forest include continued illegal logging activities, as well as unsustainable agricultural technologies being practiced by most upland farmers.

Based on the above, there is an urgent need to undertake massive reforestation and forest protection activities in the province to arrest the further degradation of the forest and watershed areas. At the same time, the upland areas can be considered to be relatively underutilized vis-avis the lowland and coastal areas of the province, when by virtue of their large land area and resources, the uplands can play a major role in the development of the province. There is thus a need for a comprehensive upland development program which can sustainably and optimally utilize the upland resources while protecting the environment.

The current inhabitants of the uplands have the greatest stake in the maintenance of the upland ecosystem. They will also be first to be affected (either positively or negatively) by any development effort undertaken in the upland areas. Hence, these communities should be actively involved, and in fact should take the lead, in the planning, implementation and management of the development program for the Bataan uplands.

2. Program Description and Objectives

The Program aims at the protection, rehabilitation and management of the forest/watershed areas. Forest/watershed protection, rehabilitation and management are proposed to be undertaken through community-based mechanisms involving all of the households in the forest areas. Each upland barrio should have its own forest management plan which would include:

(1) zoning of the communities/sub-clusters to delineate areas for strict "defense" (total ban on logging and extraction/harvest of forest product, very little incursion by people allowed, except for forest wardens), for protection (total ban on logging, harvest of minor forest products allowable), for rehabilitation, and for sustainable utilization (egologically-sound practices such as Sloping Agricultural Land Technologies to be practiced in denuded/currently cultivated areas);

(2) mechanisms for operationalizing the Forest Protector or Bantay-Gubat system, including specific assignments and rotation of responsibilities; this would include mechanisms for the enforcement of laws/ordinances, as well as sanctions for violations; and

(3) campaigns (i.e. pursuit of advocacies through rallies and position papers directed to government and private companies) for : 1) a total log ban in the provinces, 2) strict enforcement of existing laws, and 3) assistance for the development of appropriate livelihood systems.

One major problem which has to be addressed in line with the need to protect the watershed/forest areas is the ongoing speculation and land-grabbing in the upland areas. This has even resulted in the titling of land which should legally be government property. Advocacy thus needs to be pursued, both in terms of the proper implementation of existing laws and the passage of laws/ordinances which would grant ownership or rights to the land to the current occupants.

The emphasis on forest/watershed rehabilitation and protection requires a corollary emphasis on sustainable livelihood development to ease the stresses on the forest resources. Thus, the proposed upland development plan puts equal emphasis on support for sustainable agriculture and income-enhancing activities for upland inhabitants.

Lastly, the delivery of basic social services to the upland barrios needs to be improved with the end in view of improving the inhabitants quality of life.

To sum up, the main objective of the Program are as follows:

(1) To arrest the degradation of forest/watershed areas and contribute to their rehabilitation;
(2) To institute community-based forest resources management;
(3) To provide sustainable livelihood opportunities to upland inhabitants; and
(4) To improve social services delivery to upland people

3. Program Design

The Program consists of the following components:

(1) research and planning,
(2) community organizing and capability-building,
(3) forest rehabilitation and management,
(4) livelihood development,
(5) enhancement of the delivery of basic social services, and
(6) passage of laws/ordinances supportive of sustainable upland development.

(1) Research and planning

River/watershed rehabilitation program

There is a dearth of secondary data regarding the current status of forest and watershed areas in Bataan. Data and materials on hand are inadequate to provide an analysis of forest utilization and degradation trends and patterns. In order to be able to come up with proposed provincial forest rehabilitation and major river system revitalization programs, surveys and research studies are proposed to be conducted covering the following aspects:

(a) Current land/forest use and classification down to the community level;
(b) Existing forest cover and rate of degradation identifying actual causes;
(c) Current status of Bataan's major river systems, tributaries and outlets;
(d) Profile of forest dwellers, including migration patterns; and
(e) Communities' capacity to undertake forest/river rehabilitation activities.

Community development planning

Planning workshops shall be conducted in all upland barangays to define the bases of unity and draw up general programs of action. These programs of action shall serve as the bases for community development plans that shall include sectoral/environmental concerns and the establishment of mechanisms for people's participation in decision-making processes.

Aeta settlement development

An in-depth study on the Aeta culture and settlement patterns in Bataan needs to be conducted to refine development strategies for indigenous Aeta communities. This study will consider the experiences of government, non-government and people's organizations involved in Aeta organizing.

(2) Community organizing and capability-building

The main organizing track in the upland communities will revolve around the forest/watershed protection imperative. "Bantay-Gubat" formations shall be organized. These are village-level organizations tasked to undertake conservation, protection, management and monitoring of forests and watershed areas within their immediate boundaries. These formations shall set up systems and mechanisms for specific assignments and rotation of responsibilities (including protection against unauthorized incursions and enforcement of forestry laws and ordinances).

Training on sectoral and community development orientation with specific focus on upland conditions shall be undertaken in each barangay. The Bantay-Gubat formations are also expected to take up various aspects of development work which shall require capability-building trainings, specifically on organizational management and leadership.