Appendix-4
Environmental and Social Considerations

Master Plan Study

Appendix 4-1

Legal Framework of Environmental and Social Considerations in Philippines

Appendix 4-1

Legal Framework of Environmental and Social Considerations in Philippines

1. Legal Framework of Environmental and Social Considerations

1.1 Law and Administration

1.1.1 Law and Registration for EIS

Presidentia1 Decree (PD) No.1151 promulgated in 1977, known as the Philippine Environment Policy first set the tone for the requirement of Environmental Impact Statements (EISs) for projects, which might have an impact on the environment. The requirement for EISs was formalized by the promulgation of PD 1586 in 1978. Under the promulgation, environmental considerations must be incorporated at earliest stage of project development and disclosure of projects information and public participation in the EIS process are required.

Presidentia1 Proclamation 2146 provided for environmentally critical Projects (ECPs) and environmentally critical areas (ECAs) as the classification of projects in 1981. DENR Administrative Order No.12 prescribed Environmental Compliance Certificate (ECC) for the condition of the construction of projects in 1992. Procedural Manual for DENR Administrative Order No.30 Series 2003 can be referred to as guidelines in the Philippine EIS system. EIS related law could be seen in the WEB page of EMB.（www.emb.gov.ph/eia.htm）

1.1.2 Competent Agency of EIS

The Environmenta1 Management Bureau (EMB) in the Department of Environment and Natura1 Resource (DENR) is responsible for policies and programs for environmental management such as environmental conservation, condition of air, water and chemicals, pollution control, capability building and environmental education programs, EMB also administers EIS system, which requires all government agencies and private sectors to come up with EIS for ECPs, as well as projects that are located in an ECA. EMB examines EIS submitted by the proponent and ECCs is issued after the project is identified not to have a serious impact on the environment.

1.2 Implementation Framework of EIS

1.2.1 Project Proponent

Proponent agency of this Project is Department of Public Works and Highways (DPWH). The DPWH has the responsibility for preparation and submission of the EIS. DPWH usually establishes a Project Management Office–F/S (PMO-F/S) prior to feasibility studies and the PMO-F/S prepares the EIS. Once the execution of projects starts, PMO, which is converted from PMO-F/S, has responsibilities for implementation of environmental and social considerations such as land acquisition and resettlement in cooperation with local government units. Environmental Social Services Office (ESSO) in the Development Planning Division of DPWH has the functions to support and supervise preparation of EIS.

1.2.2 Framework of Resettlement

Implementation of resettlement is carried out by the related local government units (LGUs). The related cities/municipalities carry out investigation of residents' consciousness, new resettlement sites, compensation for land and property loss, means for an alternative sustainable livelihood, monitoring of resettled residents, and so forth for DPWH projects. The Cavite Province has been supporting cities/municipalities in this regard, and it established the Urban Development and Housing Board in 2005 to cover difficult issues beyond cities/municipalities' capacity, such as the provision of housing to the poverty and informal settlers.

1.3 Disclosure and Public Participation

1.3.1 Information Disclosure

Article IV Section 2 of DAO 96-37 details the following requirements of public information to be complied by the project proponent. Evidence demonstrating compliance with these requirements will form part of the supporting documents to be submitted with the IEE/EIS.

(1) The proponent will disclose all information about the proposed project to the public in the language and manner that are easily understood (i.e., evaluation of public health, environment, population, gender, socio-economic and cultural impacts, as well as the appropriate mitigation and enhancement measures).

(2) The proponent will post a notice of the submission of an IEE/EIS, in coordination with the DENR Regiona1 Office or EMB, together with a summery of the proposed project.

1.3.2 Public Participation

The Philippine EIS System states that the acceptability of the environmental impact of a project can only be fully determined through meaningful public participation and a transparent EIS process. In conformity with the requirements delineated in Article IV Section 3 of DAO No 96-37, proponents of projects that are required to undergo an EIA will initiate the conduct of public consultations as provided in the EMB Guidelines to ensure that the public concerns are fully incorporated in the EIA process.

To secure Environmenta1 Compliance Certificate (ECC) and Certificate of Non-Coverage(CNC), following procedures are required, as mentioned in Article 5.3, DAO 30-2003.

“For projects under Category A, the conduct of public consultation as part of the EIS reviews is mandatory unless otherwise determined by EMB. For all other undertakings, a public consultation is not mandatory unless specifically required by EMB.

Proponents should initiate pubic consultation early in order to ensure that environmentally relevant concerns of stakeholders are taken into consideration in the EIA study and the formulation of the management plan.”

1.4 Procedures and Documentary Requirements

1.4.1 Procedures of EIS

The first activity in the procedures of EIS is the submission of a project belief by a project proponent to EMB of DENR. EMB judge the project to correspond to the Environmentally Critical Projects (ECPs) and Environmentally Critical Areas (ECAs). If a project doesn’t fall under ECP or ECA, the Certificate of Non-Coverage (CNC) is issued.

If a project is categorized as ECP, the proponent submits Environmental Impact Statement (EIS) after the preparation of scoping, baseline study, identification, prediction, evaluation and mitigation of impact and environmental management plan to EMB. The EIS review is generally a two-stage process.

The first stage is a procedural review by the receiving staff of EMB. The second stage is substantive review by the Environmental Impact Assessment Review Committee (EIARC). DENR issues Environmental Compliance Certificate (ECCs) if DENR judges that the project doesn’t have a serious impact on the environment, after EIARC’s investigation of ESC and holding of public consultation.

If the project is not ECP but falls under ECA, the proponent must submit Initial Environmental Examination (IEE) Report and the project goes through investigation of DENR.

1.4.2 Categorization of Projects in Philippines

Projects are categorized into A, B, C and D based on the significance of adverse impacts on environment and they have deferent procedure depending on its category.

Table 1 Category and Reason

Category	Reason
Category A	ECPs with significant potential to cause negative environmental impacts
Category B	Projects that are not categorized as ECPs, but which may cause negative environmental impacts because they are located in ECAs
Category C	Projects intended to directly enhance environmental quality or address existing environmental problems not falling under Category A or B
Category D	Projects unlikely to cause adverse environmental impacts

Projects under Category A and B must obtain Environmental Compliance Certificate (ECC), which is the permission of the project in terms of environment.

For projects under Category A, the proponent must submit EIS report and hold public consultation, and EMB will review the document. For projects under Category B, the proponent must submit EIS report or IEE report, depending on the size of the projects, and EMB regional office will review the document. EMB can request the proponent to hold public consultation, if the project under Category B is required to submit EIS report.

1.4.3 Requirements for Documents

The EIS should be submitted to the EMB Central Office, and will be reviewed by an EIA Review Committee (EIARC), and endorsed by the EMB Director to the approving authority (DENR Secretary). The maximum time necessary for the approval of ECC is 120 working days after the EIS had been received by EMB. Requirement for the minimum contents of EIS is as follows:

Contents of EIS

- EIS Executive Summary;
- Scoping report identifying critical issues and concerns, as validated by the EMB;
- Project Description;
- Baseline environmental conditions focusing on the sectors (and resources) most significantly affected by the proposed action;
- Impact assessment focused on significant environmental impacts (in relation to project construction/commissioning, operation and decommissioning), taking into account cumulative impacts;
- Environmental Risk Assessment (if EMB decides it to be mandatory during scoping);
- Environmental Management Program/Plan;
- Supporting documents, including technical/socio-economic data used/generated; certificate of zoning viability and municipal land use plan; and proof of consultation with stakeholders;
- Proposals for Environmental Monitoring and Guarantee Funds including justification of amount, when required;
- Accountability statement of EIA consultants/preparators and the project proponent; and
- Other clearances and documents, which may be determined and agreed upon during scoping.

The IEE Report should be submitted to the EMB regional office of the project area. EIA Division will examine the document and the EIA Division Chief will endorse it. The EMB Regional Director will give the final approval. The maximum time necessary for the approval of IEE report is 60 working days after the IEE Report is received by EMB. Requirement for the minimum contents of IEE report is as follows:

Contents of IEE Report

- Project description;
- A brief of the environmental setting and receiving environment, including the primary and secondary impact areas;
- A brief description of the project or undertaking and its process of operation;
- A brief description of the environmental impact of the project or undertaking, including its socio-economic impact;
- A matrix of mitigation and enhancement measures;

- A documentation of the consultative process undertaken, when appropriate;
- Other clearances and documents that may be determined and agreed upon during scoping.
- Accountability Statements of the preparator and the proponent.

1.5 Result of the Consultation with Recipient Government

Results of the consultation with the DPWH and Province of Cavite on environmental and social consideration are as follows.

- The DPWH and Province of Cavite will be responsible for conducting necessary procedures for Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) in accordance with both Philippines and JICA guidelines, in collaboration with the Japanese study team.
- The DPWH and Province of Cavite will have public consultation with stakeholders at its expense in principle and confirm favorable perception among the communities and the stakeholders before proceeding to the next step of the Study at each stage
- The disclosure of information by both sides will be ensured.
- Participation and dialogues with various stakeholders will be ensured in order to achieve appropriate environmental and social considerations.
- The DPWH and Province of Cavite will dispose counterpart personnel for environmental and social consideration in the Study.

Results of the consultation with the EMB on environmental and social consideration are as follows.

- EIS is not necessary for master plan study.
- If the construction of reservoir is chosen as a priority project of F/S, the project will fall under Category B. In this case, submission of EIS report (in case the area of the reservoir is over 25ha) or IEE report (under 25ha) is necessary.
- EIS or IEE report should be submitted to the EMB regional office.

Appendix 4-2

Scoping Matrix of Proposed Alternatives

Table 1 (1) Matrix for Imus River-overflow Flood Prevention Project (Alternative F I – 1)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for full-scale river improvement	PAPs (a large number)	Large	High	Permanent	A	○
2	Impact on Livelihood and Local Economy	Loss of employment due to resettlement	PAPs	Large	Medium	Permanent	A	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Reconstruction of bridge	Car drivers	Medium	High	During Construction	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Large	High	Permanent	A	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	-	-	-	-	-	-	-
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	-	-	-	-	-	-	-
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-
6	Fauna/Flora and Ecological Diversity	-	-	-	-	-	-	–
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air pollution	Dust generated by earth works for river improvement	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered

2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-						
4	Solid Waste	-						
5	Noise/Vibration	Noise caused by river improvement	Neighboring people	Medium	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity in this master plan study

Table 1 (2) Matrix for Imus River-overflow Flood Prevention Project (Alternative F I – 2)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement and off-site retarding basin	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland and fishpond for off-site retarding basin	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland and fishpond	PAPs (tenant farmer / fishpond operator)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by off-site retarding basin	People in region	Small	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canals by off-site retarding basin	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retarding basin	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-
6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by off-site retarding basin	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-

8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement and off-site retarding basin	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise/Vibration	Noise caused by construction works of river improvement and off-site retarding basin	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank and off-site retarding basin might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retarding basin	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retarding basin	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 1 (3) Matrix for Imus River-overflow Flood Prevention Project (Alternative F I – 3)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement and off-site retarding basin	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland and fishpond for off-site retarding basin	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland and fishpond	PAPs (tenant farmer / fishpond oerator)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by off-site retarding basin	People in region	Small	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canals by off-site retarding basin	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retarding basin	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-
6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by off-site retarding basin	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-

8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement and off-site retarding basin	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise	Noise caused by construction works of river improvement and off-site retarding basin	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank, off-site retarding basin and on-site regulation pond might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retarding basin and on-site regulation pond	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retarding basin and on-site regulation pond	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 2 (1) Matrix for San Juan River-overflow Flood Prevention Project (Alternative F S – 1)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Possibility	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for full-scale river improvement	PAPs (a large number)	Large	High	Permanent	A	○
2	Impact on Livelihood and Local Economy	Loss of employment due to resettlement	PAPs	Large	Medium	Permanent	A	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Reconstruction of bridge	Car drivers	Medium	High	During Construction	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Large	High	Permanent	A	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	-	-	-	-	-	-	-
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	-	-	-	-	-	-	-
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-
6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by river improvement	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air pollution	Dust generated by earth works for river improvement	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered

2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-		
4	Solid Waste	-	-	-	-	-		
5	Noise/Vibration	Noise caused by river improvement	Neighboring people	Medium	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity in this master plan study

Table 2 (2) Matrix for San Juan River-overflow Flood Prevention Project (Alternative F S – 2)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Possibility	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement and off-site retarding basin	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland for off-site retarding basin	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland	PAPs (tenant farmer)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by off-site retarding basin	People in region	Small	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canals by off-site retarding basin	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retarding basin	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-
6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by river improvement	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-

8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement and off-site retarding basin	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise/Vibration	Noise caused by construction works of river improvement and off-site retarding basin	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank and off-site retarding basin might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retarding basin	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retarding basin	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 2 (3) Matrix for San Juan River-overflow Flood Prevention Project (Alternative F S – 3)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Possibility	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement and diversion channel	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland for diversion channel	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland	PAPs (tenant farmer)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by diversion channel	People in region	Small	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canals by diversion channel	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
		Salinity intrusion by diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-

6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by river improvement and diversion channel	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement and diversion channel	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise/Vibration	Noise caused by construction works of river improvement and diversion channel	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank and diversion channel might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 2 (4) Matrix for San Juan River-overflow Flood Prevention Project (Alternative F S – 4)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement, off-site retarding basin and diversion channel	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland for off-site retarding basin and diversion channel	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland	PAPs (tenant farmer)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by off-site retarding basin and diversion channel	People in region	Medium	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canal by off-site retarding basin and diversion channel	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retarding basin and diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
		Salinity intrusion by diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-

6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by river improvement and diversion channel	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement, off-site retarding basin and diversion channel	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise	Noise caused by construction works of river improvement, off-site retarding basin and diversion channel	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank, off-site retarding basin and diversion channel might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retarding basin	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retarding basin	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 2 (5) Matrix for San Juan River-overflow Flood Prevention Project (Alternative F S – 5)

No	Elements	Nature of Impacts	Affected Object	Magnitude	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for partial river improvement, off-site retarding basin and diversion channel	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland for off-site retarding basin /diversion channel	PAPs (landowner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland	PAPs (tenant farmer)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	Intersection of roads by off-site retarding basin/diversion channel	People in region	Medium	Medium	Permanent	B	○
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	Intersection of irrigation canals by off-site retarding basin/diversion channel	Concerned farmers	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retarding basin /diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
		Salinity intrusion by diversion channel	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-

6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by river improvement and diversion channel	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air Pollution	Dust generated by earth works for river improvement, off-site retarding basin and diversion channel	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	Water turbidity due to river excavation	Downstream people	Medium	Medium	During Construction	B	○
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise	Noise caused by construction works of river improvement, off-site retarding basin and diversion channel.	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment								
1.	Impact on Livelihood and Local Economy	Decrease of employment due to control of land development for industrial estate	Residents	Medium	Medium	Permanent	B	○
		Deterioration in industrial development due to control of land development	Land developer	Medium	Medium	Permanent	B	○
2.	Regional Conflicts of Interests	Conflicts between the lower reaches as the beneficial area for flood mitigation and the upper reaches as the objective area for control of land development	Residents in the lower reaches and land owners in the upper reaches	Medium	Medium	Permanent	B	○
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Cleared river bank, off-site retarding basin, diversion channel and on-site regulation pond might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retarding basin and on-site regulation pond	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retarding basin and on-site regulation pond	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 3 (1) Matrix for Inland Drainage Project (Alternative D-1)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for coastal dike, off site retention pond and drainage channel improvement	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland and fishpond for coastal dike, off site retention pond and drainage channel improvement.	PAPs (land owner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland and fishpond	PAPs (tenant farmer / fishpond operator)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	-	-	-	-	-	-	-
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	-	-	-	-	-	-	-
11	Fishery	Prevention of fishing boat anchorage by coastal dike	Fisherman	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retention pond	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-

6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by construction of coastal dike and off-site retention pond	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air pollution	Dust generated by earth works for drainage facilities	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	-	-	-	-	-	-	-
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise/Vibration	Noise caused by construction works of drainage facilities	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment		Not anticipated						
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Banks of coastal dike, off-site retention pond and cleared drainage channel might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retention pond	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retention pond	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Table 3 (2) Matrix for Inland Drainage Project (Alternative D-2)

No	Elements	Nature of Impacts	Affected Object	Magnitude/ Extent	Occurrence Probability	Duration	Impact Score	Necessity of Anticipation*
Construction Phase								
Social Environment								
1	Involuntary Resettlement and Land Acquisition	House relocation for coastal dike, ring dike, off site retention pond and drainage channel improvement	PAPs (a certain number)	Medium	High	Permanent	B	○
		Acquisition of farmland/grassland and fishpond for coastal dike, ring dike, off site retention pond and drainage channel improvement.	PAPs (land owner)	Medium	High	Permanent	B	○
2	Impact on Livelihood and Local Economy	Loss of employment du to resettlement	PAPs	Medium	Medium	Permanent	B	○
		Loss of employment due to land acquisition of farmland and fishpond	PAPs (tenant farmer / fishpond operator)	Medium	Medium	Permanent	B	○
3	Change in Land Use	-	-	-	-	-	-	-
4	Social Institution	-	-	-	-	-	-	-
5	Social Service and Infrastructure	-	-	-	-	-	-	-
6	Poverty/Indigenous People/Ethnic Minority	Poor people are included in PAPs	PAPs	Medium	High	Permanent	B	○
7	Uneven Distribution of Losses and Benefits	-	-	-	-	-	-	-
8	Historical and Archaeological Site	-	-	-	-	-	-	-
9	Regional Conflicts of Interests	-	-	-	-	-	-	-
10	Water Use	-	-	-	-	-	-	-
11	Fishery	Prevention of fishing boat anchorage by coastal dike	Fisherman	Medium	Medium	Permanent	B	○
Natural Environment								
1	Topography/Geology	-	-	-	-	-	-	-
2	Groundwater	Groundwater lowering by off-site retention pond	People in surrounding area	Small	Medium	Permanent	B	○
3	Soil Erosion	-	-	-	-	-	-	-
4	River Flow Regime	-	-	-	-	-	-	-
5	Seashore	-	-	-	-	-	-	-

6	Fauna/Flora and Ecological Diversity	Clearance of mangrove by construction of coastal dike and off-site retention pond	Fishes	Small	Medium	Permanent	B	○
7	Landscape	-	-	-	-	-	-	-
8	Global Warming	-	-	-	-	-	-	-
Public Hazard								
1	Air pollution	Dust generated by earth works for drainage facilities	People in surrounding area	Small	Medium	During Construction	B	None but mitigation measure should be considered
2	Water Pollution	-	-	-	-	-	-	-
3	Soil Pollution	-	-	-	-	-	-	-
4	Solid Waste	-	-	-	-	-	-	-
5	Noise/Vibration	Noise caused by construction works of drainage facilities	Neighboring people	Small	Medium	During Construction	B	○
6	Ground Subsidence	-	-	-	-	-	-	-
7	Odor	-	-	-	-	-	-	-
Operation Phase								
Social Environment		Not anticipated						
Natural Environment		Not anticipated						
Public Hazard								
1	Solid Waste Disposal	Banks of coastal dike/ring dike, off-site retention pond and cleared drainage channel might induce people's garbage dumping	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
2	Water Pollution	Wastewater discharged into off-site retention pond	Surrounding communities	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered
3	Odor	Odor emitted from wastewater in off-site retention pond	People in surrounding area	Uncertain	Uncertain	Permanent	C	None but mitigation measure should be considered

Note: 1) A: significant impact, B: moderate impact, C: uncertain, Blank: no impact, 2) *: necessity of anticipation in this master plan study

Appendix 4-3

Interview Survey Results on the Household Conditions of Riverbank Residents and Farmers/Fishpond Operators

Table 1 Household Conditions of Riverbank Residents

No.	River	Municipality	Barangay	Family				Working Member of Family including Respondent		Total F. Income (P/mo.)	Ownership		House Structure
				Respondent		Head	Size	No.	Sex/Age/Job		House	Lot	
				Sex/Age	Education								
1	I	Bacoor	Sineguelasan	Fe/41	C.G.	M/47	7	2	M/47/welder, Fe/41/?	7,800	R. Own	Gov't	Concrete
2	I	Bacoor	Sineguelasan	Fe/29	L.H.S.	M/30	4	1	M/30/salesman	5,000	Landlord	Others	Scrap
3	I	Bacoor	Sineguelasan	Fe/38	H.S.G.	M/37	4	1	M/37/security guard	7,000	R. Own	Gov't	Scrap
4	I	Bacoor	Sineguelasan	Fe/28	L.H.S.	M/30	8	2	M/30/const.worker, Fe/28/fish selling	11,000	Relative	Others	Scrap
5	I	Bacoor	Sineguelasan	Fe/77	L.E.S.	Fe/77	4	-	-	-	R. Own	F. Own	Concrete
6	I	Bacoor	Sineguelasan	Fe/42	L.C.	Fe/42	5	4	Fe/42/business, M/22/census, M/19/apholstery, M/18/working student	25,500	Landlord	Private	Concrete
7	I	Bacoor	Sineguelasan	Fe/43	C.G.	M/47	6	2	M/47/seaman, Fe/43/teacher	30,000	F. Own	R. Own	Semi-conc.
8	I	Bacoor	Sineguelasan	M/37	H.S.G.	M/37	2	1	M/37/security guard	8,000	Relative	Others	Others
9	I	Bacoor	Sineguelasan	Fe/37	L.H.S.	M/70	8	1	M/70/US navy pensioner	40,000	F. Own	Others	Semi-conc.
10	I	Bacoor	Sineguelasan	Fe/25	L.H.S.	M/28	4	2	M/28/fisherman, Fe/25/vendor	4,000	R. Own	F. Own	Scrap
11	I	Bacoor	Sineguelasan	Fe/43	H.S.G.	Fe/43	4	2	Fe/43/fishing, M/22/fisherman	4,000	R. Own	F. Own	Scrap
12	I	Bacoor	Sineguelasan	Fe/42	E.S.G.	Fe/42	9	3	Fe/42/fishing, M/46/dispatcher, M/22/factory worker	11,000	F. Own	F. Own	Concrete
13	I	Bacoor	Sineguelasan	M/28	C.G.	M/28	3	1	M/28/electronic operator	11,000	F. Own	-	Concrete
14	I	Kawit	Manggahan	Fe/26	H.S.G.	M/28	10	2	M/28/factory worker, Fe/26/?, Fe/25/factory worker	8,700	R. Own	Gov't	Scrap
15	I	Kawit	Manggahan	Fe/61	L.H.S.	M/31	4	2	M/31/welder, Fe/61/health worker	6,600	R. Own	F. Own	Semi-conc.
16	I	Kawit	Manggahan	Fe/38	L.H.S.	M/48	8	5	M/48/driver, Fe/38/laundry, Fe/23/factory worker, Fe/21/bakery worker Fe/18/bakery worker	15,000	Landlord	Gov't	Scrap
17	I	Kawit	Manggahan	Fe/25	L.C.	M/24	3	1	M/24/tricycle driver	6,000	R. Own	Gov't	Scrap
18	I	Kawit	Manggahan	Fe/28	L.H.S.	M/32	7	1	M/32/extra	2,500	F. Own	Others	Scrap
19	I	Kawit	Manggahan	Fe/28	H.S.G.	M/29	3	2	M/29/bakery worker, Fe/28/small store	5,600	R. Own	Gov't	Semi-conc.
20	I	Kawit	Manggahan	M/37	L.C.	M/37	6	1	M/37/store&hospital worker	7,500	R. Own	Others	Concrete
21	I	Kawit	Manggahan	Fe/31	L.H.S.	Fe/31	9	3	Fe/31/laundry, Fe/29/maid, Fe/27/helper	5,000	F. Own	F. Own	Scrap
22	I	Kawit	Manggahan	Fe/32	H.S.G.	M/33	6	1	M/33/market worker,	2,900	Landlord	Gov't	Scrap
23	I	Kawit	Manggahan	Fe/32	H.S.G.	M/50	4	2	M/50/bakery, Fe/32/small store	2,500	F. Own	Private	Semi-conc.
24	I	Kawit	Manggahan	Fe/69	Others	Fe/69	2	1	Fe/69/small store	-	R. Own	F. Own	Concrete
25	I	Kawit	Manggahan	Fe/45	E.S.G.	M/49	7	4	M/49/tricycle driver, Fe/45/food selling, M/24/overseas working, M/20/factory work	15,600	R. Own	Gov't	Others
26	I	Kawit	Manggahan	M/51	L.H.S.	M/51	6	1	M/51/jeepney driver	10,000	R. Own	Private	Semi-conc.
27	I	Kawit	Manggahan	M/38	H.S.G.	Fe/34	3	1	Fe/34/sales lady	8,000	R. Own	F. Own	Semi-conc.
28	I	Kawit	Manggahan	Fe/58	L.H.S.	Fe/26	4	2	Fe/26/computer shop, Fe/58//small store	10,500	R. Own	F. Own	Concrete
29	I	Kawit	Manggahan	M/55	L.H.S.	M/55	12	4	M/55/carpentry, Fe/52/laundry, M/29/driver, M/27/driver	24,000	R. Own	Gov't	Scrap
30	I	Kawit	Manggahan	M/65	E.S.G.	M/65	17	2	M/65/vulcanizer, Fe/30/factory worker	-	R. Own	F. Own	Semi-conc.

31	I	Kawit	Manggahan	Fe/37	E.S.G.	M/35	15	1	M/35/mechanic	-	Relative	R. Own	Semi-conc.
32	I	Kawit	Manggahan	Fe/29	C.G.	M/31	2	2	M/31/agent, Fe/29/store	35,000	Landlord	Gov't	Concrete
33	I	Bacoor	Mabolo 3	Fe/30	H.S.G.	M/50	7	2	M/50/gov't employee, Fe/30/store	30,000	R. Own	R. Own	Concrete
34	I	Bacoor	Mabolo 3	M/40	H.S.G.	M/40	2	1	M/40/driver	10,000	Relative	Gov't	Scrap
35	I	Bacoor	Mabolo 3	Fe/42	C.G.	M/44	4	2	M/44/technician, Fe/42/sewing	8,000	Landlord	Gov't	Semi-conc.
36	I	Bacoor	Mabolo 3	Fe/48	H.S.G.	M/46	4	2	M/46/company employee , Fe/48/selling dealer	8,000	R. Own	Gov't	Semi-conc.
37	I	Bacoor	Mabolo 3	Fe/61	E.S.G.	M/61	7	2	M/61/selling&buyingr, Fe/61/sea food selling	12,000	R. Own	Others	Semi-conc.
38	I	Bacoor	Mabolo 3	Fe/48	L.H.S.	M/54	3	2	M/54/mechanic, Fe/48/laundry	10,000	R. Own	Private	Semi-conc.
39	I	Bacoor	Mabolo 3	Fe/62	E.S.G.	M/27	5	3	M/27/driver, Fe/62/selling, Fe/22/factory worker	15,000	R. Own	Gov't	Scrap
40	I	Bacoor	Mabolo 3	Fe/35	H.S.G.	M/32	7	2	M/32/driver, Fe/35//small store	6,000	F. Own	Private	Semi-conc.
41	I	Bacoor	Mabolo 3	M/48	H.S.G.	M/48	12	2	M/48/small store, Fe/23/candy maker	13,000	R. Own	Gov't	Scrap
42	I	Bacoor	Sineguelasan	Fe/40	L.H.S.	M/59	7	4	M/59/fisherman, Fe/40/fishing, M/22/fishing, M/27/factory worker	18,000	R. Own	F. Own	Scrap
43	I	Bacoor	Sineguelasan	Fe/57	H.S.G.	M/29	8	4	M/29/cook, Fe/57/sewing, M/27/carpenter, M/21/packing	12,000	R. Own	F. Own	Scrap
44	I	Bacoor	Sineguelasan	M/69	L.E.S.	M/69	3	3	M/69/fishing, Fe/47/selling, M/26/?	7,000	R. Own	F. Own	Scrap
45	I	Bacoor	Sineguelasan	Fe/27	H.S.G.	M/42	5	2	M/42/fisherman, Fe/27/selling	6,000	R. Own	F. Own	Scrap
46	I	Bacoor	Sineguelasan	M/25	H.S.G.	M/25	4	1	M/25/fishing	5,000	R. Own	F. Own	Scrap
47	I	Bacoor	Sineguelasan	M/23	L.C.	M/23	5	2	M/23/fishing&factory worker, M/60/fisherman	11,000	F. Own	Gov't	Scrap
48	I	Bacoor	Sineguelasan	Fe/29	C.G.	M/29	3	1	M/29/security guard	15,000	R. Own	Private	Concrete
49	I	Bacoor	Banalo	Fe/63	E.S.G.	Fe/63	7	5	M/74/fisherman, Fe/63/fish selling, M/40/fisherman, M/36/fisherman, Fe/38/vendor	3,500	R. Own	F. Own	Semi-conc.
50	I	Bacoor	Sineguelasan	M/59	L.H.S.	M/59	4	3	M/59/fisherman, F/33/dress maker, M/25/fisherman	6,000	R. Own		Scrap
51	I	Bacoor	Sineguelasan	Fe/45	L.H.S.	Fe/45	7	4	Fe/45/fishing, M/46/fisherman, M/28/factory worker, F/?/helper	20,000	R. Own	F. Own	Scrap
52	I	Bacoor	Sineguelasan	M/37	L.H.S.	M/37	4	2	M/37/company emplyee&small store owner, Fe/37/selling	6,000	R. Own	F. Own	Semi-conc.
53	I	Bacoor	Banalo	Fe/43	H.S.G.	M/47	9	5	M/47/fishing, Fe/43/fishing, M/27/factory worker, Fe/25/cashier, M/31/merchant	37,000	R. Own	R. Own	Semi-conc.
54	I	Bacoor	Sineguelasan	Fe/36	C.G.	M/44	10	2	M/44/office worker, Fe/36/office worker	42,000	Landlord	Gov't	Concrete
55	S	Noveleta	Sta Rosa II	Fe/31	E.S.G.	Fe/31	5	1	Fe/31/food selling	60,000	R. Own	Private	Concrete
56	S	Noveleta	Sta Rosa II	Fe/58	L.E.S.	Fe/58	2	1	Fe/58//small store	17,500	R. Own	Gov't	Concrete
57	S	Noveleta	Sta Rosa II	Fe/72	L.E.S.	M/36	10	2	M/36/factory worker, Fe/36/factory worker	8,000	R. Own	R. Own	Concrete
58	S	Noveleta	San Juan II	M/37	Others	M/37	9	2	M/37/welding shop, Fe/31/employee	18,000	Landlord	Gov't	Concrete
59	S	Noveleta	San Juan II	Fe/46	L.H.S.	Fe/46	6	-	-	-	R. Own	F. Own	Semi-conc.
60	S	Noveleta	San Juan II	Fe/53	E.S.G.	M/27	5	1	M/27/food selling	7,200	F. Own	Private	Others
61	S	Noveleta	San Juan II	M/68	H.S.G.	M/68	2	1	M/68/pension	1,000	R. Own	R. Own	Others
62	S	Noveleta	San Juan II	Fe/73	L.E.S.	Fe/73	3	1	Fe/73/fish selling	200	R. Own	R. Own	Concrete
63	S	Noveleta	San Juan II	M/47	E.S.G.	M/47	8	2	M/47/church care taking, Fe/42/laundry	2,450	Others	Others	Others
64	S	Noveleta	Sta Rosa II	Fe/49	H.S.G.	Fe/24	4	1	Fe/24/cashino	11,000	R. Own	R. Own	Concrete
65	S	Noveleta	Sta Rosa II	Fe/59	H.S.G.	M/56	2	1	M/56/mechanic	4,000	F. Own	Others	Semi-conc.
66	S	Noveleta	Sta Rosa I	M/76	L.H.S.	Fe/24	4	1	Fe/24/electronics	6,500	F. Own	Others	Concrete
67	S	Noveleta	Sta Rosa I	Fe/52	L.E.S.	M/54	4	1	M/54/mailman	6,000	F. Own	F. Own	Semi-conc.

68	S	Noveleta	Sta Rosa I	Fe/51	E.S.G.	M/59	6	4	M/59/shoemaker, Fe/51/?, Fe/31/garments, Fe/28/garments,	30,000	Landlord	Others	Semi-conc.
69	S	Noveleta	San Juan II	Fe/26		M/26	3	3	M/26/car parking, Fe/26/factory worker, Fe/24/car parking	22,000	Landlord	Gov't	Semi-conc.
70	S	Noveleta	San Juan II	Fe/30	H.S.G.	M/34	4	2	M/34/driver, Fe/30/?	5,500	Relative	F. Own	Concrete
71	S	Noveleta	San Juan II	Fe/40	H.S.G.	M/37	5	1	M/37/mason	7,700	F. Own	Private	Semi-conc.
72	S	Noveleta	San Juan II	Fe/55	E.S.G.	M/57	8	1	M/57/tricycle driver	4,800	F. Own	F. Own	Concrete
73	S	Noveleta	San Juan II	M/39	Others	M/39	-	2	M/39/driver, M/36/laborer	10,000	F. Own	F. Own	Semi-conc.
74	S	Noveleta	Sta Rosa II	Fe/37	H.S.G.	Fe/37	6	1	Fe/37/factory worker	5,600	R. Own	R. Own	Scrap
75	S	Noveleta	Sta Rosa I	Fe/47	E.S.G.	M/47	5	2	M/47/family driver, Fe/47/meat selling	15,000	R. Own	Gov't	Scrap
76	S	Noveleta	Sta Rosa I	Fe/41	L.H.S.	M/46	8	3	M/46/mason, Fe/41/laundry, Fe/22/nurse	19,500	R. Own	Gov't	Scrap
77	S	Noveleta	Sta Rosa I	M/29	H.S.G.	M/29	3	1	M/29/factory worker	6,480	R. Own	Gov't	Concrete
78	S	Noveleta	Sta Rosa I	M/53	E.S.G.	Fe/53	5	2	Fe/53/selling, Fe/22/factory worker	36,528	R. Own	Others	Semi-conc.
79	S	Noveleta	Sta Rosa II	Fe/56	E.S.G.	M/66	6	3	M/66/catering, Fe/56/?, M/24/factory worker	12,600	R. Own	R. Own	Concrete
80	S	Noveleta	Sta Rosa II	Fe/27	L.H.S.	M/30	5	2	M/30/poultry, Fe/27/?	8,760	Others	Others	Concrete
81	S	Noveleta	San Juan II	Fe/22	C.G.	M/30	4	1	M/30/const. worker	7,200	Landlord	F. Own	Scrap
82	S	Noveleta	San Juan II	Fe/53	E.S.G.	M/30	7	1	M/30/driver	3,000	R. Own	Private	Concrete
83	S	Noveleta	San Juan II	Fe/54	E.S.G.	M/30	6	2	M/30/production business, Fe/54/helper	10,800	R. Own	Others	Semi-conc.
84	S	Noveleta	San Juan II	Fe/50	H.S.G.	Fe/50	7	2	Fe/50/selling, M/22/factory worker	17,000	R. Own	Private	Semi-conc.
85	S	Noveleta	San Juan II	Fe/91	L.E.S.	Fe/91	4	2	M/54/counselor, Fe/91/apartment	3,800	R. Own	R. Own	Semi-conc.
86	S	Noveleta	Sta Rosa II	Fe/54	H.S.G.	M/23	4	2	M/23/factory worker, Fe/54/helper	4,000	R. Own	R. Own	Semi-conc.
87	S	Noveleta	Sta Rosa I	M/59	H.S.G.	Fe/29	5	2	Fe/29/office worker, M/59//small store	13,000	R. Own	Gov't	Semi-conc.
88	S	Noveleta	San Juan II	Fe/52	E.S.G.	Fe/52	4	2	?/22/factory worker, Fe/52/selling	10,000	Landlord	Gov't	Semi-conc.
89	S	Noveleta	Sta Rosa II	M/69	E.S.G.	M/69	8	2	M/69/carpenter, Fe/35/factory worker	-	R. Own	R. Own	Semi-conc.
90	S	Noveleta	Sta Rosa I	Fe/53	L.H.S.	Fe/25	6	3	Fe/53/selling, Fe/25/factory worker, Fe/?/factory worker	12,000	R. Own	Private	Semi-conc.
91	S	Noveleta	San Juan II	M/24	H.S.G.	M/24	6	2	M/24/factory worker&tricycle driver, M/54/driver, M/23/factory worker	21,000	F. Own	Private	Semi-conc.
92	S	Noveleta	Sta Rosa I	Fe/51	E.S.G.	Fe/25	5	3	M/52/const.worker, Fe/25/cashier, Fe/51/sewing	15,500	R. Own	Others	Scrap
93	S	Noveleta	San Juan II	Fe/51	L.E.S.	M/55	4	3	M/55/carpenter, Fe/51/carpenter, M/28/worker	23,000	R. Own	F. Own	Concrete
94	S	Noveleta	San Juan II	Fe/44	E.S.G.	Fe/44	4	2	Fe/44/laundry&cook, M/37/cook	6,200	Relative	F. Own	Scrap
95	S	Noveleta	San Juan II	M/45	E.S.G.	M/45	4	1	M/45/tricycle driver, ?/50/selling	10,500	Relative	F. Own	Semi-conc.
96	S	Noveleta	San Juan II	M/69	H.S.G.	Fe/23	4	2	Fe/23/factory worker, M/69/?	8,500	R. Own	R. Own	Concrete
97	S	Noveleta	San Juan II	Fe/33	E.S.G.	Fe/33	6	2	Fe/33/tricycle driver&laundry, M/39/tricycle driver	10,800	Relative	F. Own	Concrete
98	S	Noveleta	San Juan II	Fe/34	L.H.S.	M/37	2	2	M/37/tricycle driver, Fe/34/?	12,000	Relative	F. Own	Concrete
99	S	Noveleta	Sta Rosa I	Fe/57	H.S.G.	Fe/57	3	1	Fe/57/selling	500	R. Own	Others	Semi-conc.
100	S	Noveleta	Sta Rosa II	Fe/36	H.S.G.	M/57	5	2	M/57/factory worker, Fe/36/vegetable selling,	6,000	R. Own	R. Own	Concrete
101	S	Noveleta	Sta Rosa I	Fe/28	L.H.S.	M/39	6	1	M/39/tricycle driver	2,500	R. Own	Private	Scrap
102	C	Gen. Trias	Tejero	Fe/38	H.S.G.	Fe/38	9	1	Fe/38/factory worker,	6,000	R. Own	F. Own	Semi-conc.
103	C	Gen. Trias	Tejero	Fe/24	L.E.S.	M/24	4	1	M/24/rice mill worker	3,000	F. Own		Concrete

104	C	Tanza	Bucal	Fe/57	H.S.G.	Fe/57	4	2	Fe/57/small store, M/29/printing office worker,	4,000	R. Own	Private	Semi-conc.
105	C	Gen. Trias	Tejero	M/33	L.E.S.	M/33	-	1	M/33/?	6,000	F. Own	F. Own	Concrete
106	C	Gen. Trias	Tejero	Fe/33	H.S.G.	M/32	4	1	M/32/driver	3,000	R. Own	F. Own	Others
107	C	Gen. Trias	Tejero	Fe/25	L.H.S.	Fe/25	8	-		-	Others	F. Own	Scrap
108	C	Rosario	Tejeros Conven.	M/53	H.S.G.	M/53	7	4	M/53/liason officer, M/54/pension, M/28/electronics, Fe/22/semi-technician	22,460	R. Own	F. Own	Concrete
109	C	Rosario	Tejeros Conven.	Fe/73	L.H.S.	Fe/73	2	-	-	-	R. Own	F. Own	Semi-conc.
110	C	Rosario	Tejeros Conven.	M/25	H.S.G.	M/25	3	1	M/25/company employee	7,000	Landlord	F. Own	Semi-conc.
111	C	Tanza	Bucal	Fe/56	E.S.G.	M/62	4	1	M/62/mason	1,800	R. Own	R. Own	
112	C	Tanza	Bucal	Fe/50	H.S.G.	Fe/50	4	4	Fe/50/mason, M/27/factory worker, Fe/25/factory worker, M/22/factory worker	29,000	R. Own	R. Own	Concrete
113	C	Tanza	Bucal	M/49	H.S.G.	M/49	3	2	M/49/publication, M/51/farmer	6,100	Others	Private	Scrap
114	C	Gen. Trias	Tejero	Fe/33	C.G.	Fe/33	4	1	Fe/33/factory worker,	7,000	R. Own	F. Own	Concrete
115	C	Gen. Trias	Tejero	M/67	L.E.S.	Fe/22	11	3	Fe/22/factory worker, M/19/factory worker, M/32/const. worker	18,000	R. Own	R. Own	Concrete
116	C	Gen. Trias	Tejero	M/39	L.C.	M/39	8	1	M/39/building maintenance	7,000	R. Own	F. Own	Semi-conc.
117	C	Gen. Trias	Tejero	Fe/37	H.S.G.	Fe/37	3	2	Fe/37/clothes selling, M/20/service crew	9,000	R. Own	F. Own	Semi-conc.
118	C	Gen. Trias	Tejero	Fe/50	E.S.G.	M/50	8	3	M/50/?, Fe/50/doormat production, M/27/laborer	23,640	R. Own	F. Own	Semi-conc.
119	C	Rosario	Tejeros Conven.	Fe/60	C.G.	Fe/60	8	1	Fe/60/selling	-	Relative	Others	Semi-conc.
120	C	Gen. Trias	Tejero	Fe/59	E.S.G.	M/22	2	2	M/22/office staff, Fe/60/selling	6,500	R. Own	Gov't	Scrap
121	C	Rosario	Tejeros Conven.	Fe/62	L.H.S.	M/62	5	2	Fe/62/food selling, M/62/care taker	2,000	R. Own	F. Own	Concrete
122	C	Tanza	Bucal	Fe/62	E.S.G.	M/21	8	2	M/21/gasoline boy, M/18/gasoline boy	11,520	Others	Others	Semi-conc.
123	C	Tanza	Biwas	Fe/38	L.H.S.	M/40	7	2	M/40/const. worker, Fe/38/worker	2,600	F. Own	Private	Semi-conc.
124	C	Gen. Trias	Tejero	M/47	L.E.S.	M/47	4	2	M/47/?, Fe/40/helper	8,500	R. Own	F. Own	Scrap
125	C	Gen. Trias	Tejero	Fe/49	E.S.G.	M/50	5	3	Fe/49/selling, M/50/carpenter, M/22/factory worker	15,500	R. Own	F. Own	Scrap
126	C	Gen. Trias	Tejero	M/58	Others	Fe/31	6	1	Fe/31/sewing	7,500	Relative	F. Own	Others
127	C	Gen. Trias	Tejero	Fe/25	L.C.	Fe/25	7	2	Fe/25/cashier, Fe/23/factory worker	15,000	Relative	F. Own	Concrete
128	C	Tanza	Bucal	M/87	H.S.G.	M/87	3	-		-	R. Own	R. Own	Semi-conc.
129	C	Tanza	Bucal	Fe/49	E.S.G.	M/62	3	2	M/62/carpenter, Fe/49/carpentry	5,000	Landlord	Gov't	Scrap
130	C	Tanza	Biwas	M/35	E.S.G.	M/35	15	1	M/35/care taker	1,500	Others	Gov't	Concrete
131	C	Gen. Trias	Tejero	Fe/51	E.S.G.	M/57	3	2	Fe/51/selling, M/57/tricycle driver	12,000	R. Own	F. Own	Concrete
132	C	Tanza	Biwas	Fe/41	H.S.G.	M/42	4	2	Fe/41/selling, M/42/vendor	14,000	Landlord	Gov't	Concrete
133	C	Tanza	Bucal	Fe/26	C.G.	Fe/26	2	1	Fe/26/collection staff	7,000	R. Own	R. Own	Scrap
134	C	Tanza	Bucal	Fe/35	C.G.	M/33	6	2	Fe/36/food selling, M/33/driver	9,000	R. Own	R. Own	Concrete
135	C	Tanza	Biwas	M/64	C.G.	M/64	8	3	M/64/gov't emloyee, Fe/23/employee, M/26/overseas working	18,000	R. Own	R. Own	Others
136	C	Tanza	Biwas	Fe/35	H.S.G.	Fe/35	7	1	Fe/35/technician	4,000	R. Own	F. Own	Concrete
137	C	Tanza	Biwas	Fe/25	C.G.	Fe/25	15	1	Fe/25/office staff	7,900	Landlord	Gov't	Concrete
138	C	Gen. Trias	Tejero	Fe/23		Fe/23	4	2	Fe/23/?, Fe/34/sewing	14,000	Landlord	Gov't	Scrap
139	C	Gen. Trias	Tejero	Fe/43	H.S.G.	M/48	5	2	Fe/43/laundry, M/48/driver	10,200	R. Own	F. Own	Scrap

140	C	Tanza	Bucal	Fe/22	L.H.S.	M/30	9	2	Fe/22/factory worker, M/30/factory worker	8,160	F. Own	Private	Semi-conc.
141	C	Tanza	Bucal	Fe/52	E.S.G.	Fe/52	7	1	Fe/52/overseas working	16,000	R. Own	Private	Semi-conc.
142	C	Tanza	Biwas	M/69	L.E.S.	M/69	6	1	M/69/vegetable selling&driver	4,900	R. Own	R. Own	Semi-conc.
143	C	Tanza	Bucal	M/29	L.H.S.	M/29	3	1	M/29/factory worker	8,000	Landlord	F. Own	Semi-conc.
144	C	Tanza	Biwas	M/65	E.S.G.	M/65	4	1	M/65/driver	3,000	R. Own	Private	Semi-conc.
145	C	Tanza	Biwas	M/35	C.G.	M/35	5	1	M/35/driver	4,000	F. Own	Private	Semi-conc.
146	C	Tanza	Biwas	Fe/48	H.S.G.	Fe/48	6	1	Fe/48/store&factory worker	17,000	R. Own	Private	Semi-conc.
147	C	Tanza	Biwas	M/28	H.S.G.	M/43	12	2	M/28/center aid, M/43/boating	13,000	F. Own	F. Own	Semi-conc.
148	C	Tanza	Biwas	Fe/58	H.S.G.	M/60	2	2	Fe/58/selling, M/60/driver	5,000	F. Own	R. Own	Semi-conc.
149	C	Tanza	Biwas	M/40	H.S.G.	M/40	4	1	M/40/food selling	4,000	R. Own	Private	Semi-conc.
150	C	Rosario	Tejeros Conven.	M/60	H.S.G.	M/33	8	3	M/60/shoe repair, M/33/const. worker, M/30/dispatcher	7,000	R. Own	F. Own	Semi-conc.
151	C	Rosario	Tejeros Conven.	Fe/59	H.S.G.	M/56	6	2	Fe/59/sewing, M/56/driver	10,500	R. Own	Private	Concrete
152	C	Rosario	Tejeros Conven.	Fe/31	H.S.G.	Fe/31	3	1	Fe/31/selling	3,500	Relative	Gov't	Concrete
153	C	Tanza	Bucal	M/55	C.G.	M/27	5	3	M/55/selling, M/27/factory worker, Fe/29/factory worker	13,000	R. Own	R. Own	Semi-conc.
154	C	Gen. Trias	Tejero	Fe/53	H.S.G.	Fe/53	5	1	Fe/53/cooking	6,000		F. Own	Semi-conc.
155	C	Gen. Trias	Tejero	Fe/77	Others	Fe/77	2	1	Fe/77/selling	2,000	R. Own	F. Own	Semi-conc.
156	C	Gen. Trias	Tejero	Fe/70	E.S.G.	Fe/70	4	1	Fe/70/selling	2,000	Relative	F. Own	Semi-conc.
157	C	Tanza	Biwas	M/25	C.G.	M/25	3	2	M/25/computer technician, Fe/20/sales lady	6,500	F. Own	F. Own	Semi-conc.
158	C	Gen. Trias	Tejero	Fe/28	L.H.S.	Fe/28	5	2	Fe/28/sewing, M/24/junk shop	1,000	F. Own	F. Own	Semi-conc.
159	C	Gen. Trias	Tejero	Fe/33	H.S.G.	M/26	5	2	Fe/33/rug making, M/26/seaman	10,500	R. Own	Gov't	Semi-conc.
160	C	Gen. Trias	Tejero	M/25	H.S.G.	M/25	1	1	M/25/factory worker	9,000	R. Own	R. Own	Semi-conc.
161	C	Tanza	Bucal	Fe/26	E.S.G.	Fe/26	8	2	Fe/26/factory worker, Fe/17/studio worker	9,400	F. Own	Private	Semi-conc.
162	C	Tanza	Bucal	M/30	C.G.	M/30	4	1	M/30/driver	6,000	R. Own	Private	Semi-conc.
163	C	Rosario	Tejeros Conven.	Fe/46	C.G.	Fe/46	4	1	Fe/46/small store	3,000	R. Own	F. Own	Semi-conc.
164	C	Rosario	Tejeros Conven.	Fe/54	H.S.G.	M/23	13	2	Fe/54/laundry&manicure, M/23/laborer	9,000	R. Own	Gov't	Scrap
165	C	Rosario	Tejeros Conven.	Fe/83	L.E.S.	Fe/83	1	1	Fe/83/sewing	500	R. Own	Gov't	Semi-conc.
166	C	Tanza	Bucal	Fe/?	H.S.G.	Fe/?	5	1	Fe/?/factory worker	3,000	F. Own	Private	Semi-conc.
167	C	Tanza	Bucal	Fe/25	H.S.G.	Fe/25	6	1	Fe/25/nuts selling	2,000	R. Own	Others	Semi-conc.
168	C	Tanza	Biwas	Fe/29	H.S.G.	M/39	10	3	Fe/29/manicure, M/39/driver, M/18/service crew	24,000	F. Own	Private	Semi-conc.
169	C	Tanza	Biwas	Fe/61	L.E.S.	Fe/30	9	2	Fe/61/sewing, Fe/30/electronics,	6,000	R. Own	R. Own	Semi-conc.
170	C	Gen. Trias	Tejero	M/29	C.G.	M/29	8	3	M/29/tile worker, M/24/factory worker, M/20/factory worker	23,000	F. Own	Private	Concrete
171	C	Gen. Trias	Tejero	M/33	Others	Fe/30	5	2	M/33/video games, Fe/30/territory coordinator	11,000	R. Own	F. Own	Concrete
172	C	Tanza	Bucal	Fe/43	H.S.G.	M/46	7	3	Fe/43/manicure, M/46/const. worker, Fe/18/factory worker	8,500	R. Own	Private	Semi-conc.
173	C	Rosario	Tejeros Conven.	M/21	L.H.S.	M/43	4	3	M/21/factory worker, M/43/factory worker, Fe/35/factory worker	26,200	F. Own	F. Own	Concrete
174	C	Gen. Trias	Tejero	Fe/43	C.G.	Fe/43	7	1	Fe/43/?	7,000	F. Own	Private	Concrete
175	C	Gen. Trias	Tejero	M/82	L.E.S.	M/82	9	-	-	-	R. Own	R. Own	Semi-conc.

176	C	Gen. Trias	Tejero	Fe/49	E.S.G.	Fe/49	6	2	Fe/49/egg selling&factory worker, Fe/25/operator	7,500	R. Own	F. Own	Concrete
177	C	Gen. Trias	Tejero	Fe/40		Fe/40	1	1	Fe/40/sewing	2,500	R. Own	F. Own	Semi-conc.
178	C	Rosario	Tejeros Conven.	M/37	L.C.	M/37	5	1	M/37/selling	9,000	R. Own	F. Own	Semi-conc.
179	C	Rosario	Tejeros Conven.	M/27	H.S.G.	M/29	15	6	M/27/canteen crew, M/29/factory worker, M/24/factory worker, M/18/canteen crew M/18/canteen crew, M/27/canteen crew	44,000	Relative		Concrete
180	C	Gen. Trias	Tejero	M/53	E.S.G.	M/54	5	2	M/53/selling, M/54/agent	11,000	R. Own	F. Own	Concrete
181	C	Gen. Trias	Tejero	Fe/28	L.H.S.	M/35	3	1	M/35/driver	4,000	R. Own	F. Own	Scrap
182	C	Gen. Trias	Tejero	Fe/42	L.E.S.	M/41	5	2	Fe/42/farming, M/41/driver	7,500	R. Own	F. Own	Scrap
183	C	Gen. Trias	Tejero	Fe/33	E.S.G.	M/36	5	1	M/36/driver	5,000	R. Own	F. Own	Scrap
184	C	Gen. Trias	Tejero	Fe/39	H.S.G.	M/35	6	1	M/35/dispatcher	5,000	R. Own	F. Own	Scrap
185	C	Gen. Trias	Tejero	Fe/30	L.C.	M/30	3	1	M/30/electrician	8,500	F. Own	F. Own	Scrap
186	I	Bacoor	Sineguelasan	Fe/20	H.S.G.	Fe/28	8	2	Fe/20/assist. agent, , Fe/28/agent coordinatorr	8,000	Relative	Private	Concrete
187	I	Bacoor	Sineguelasan	Fe/35	L.C.	M/35	10	4	Fe/35/selling, M/35/waiter, Fe/25/teacher, Fe/27/teacher	27,000	F. Own	Private	
188	I	Bacoor	Banalo	M/44	L.C.	M/44	8	2	M/44/fishing,Fe/20/operator	9,000	R. Own	Others	Semi-conc.
189	I	Bacoor	Banalo	M/35	C.G.	M/35	7	1	M/35/net making	500	R. Own	F. Own	Semi-conc.
190	I	Bacoor	Sineguelasan	Fe/42	L.E.S.	Fe/42	6	3	Fe/42/laundry, M/19/selling, M/17/selling	7,000	R. Own	F. Own	Semi-conc.
191	I	Bacoor	Banalo	Fe/60	L.E.S.	Fe/60	7	1	Fe/60/helper	2,000	R. Own	F. Own	Scrap
192	I	Bacoor	Sineguelasan	Fe/60	L.E.S.	M/67	3	3	Fe/60/scavenging, M/67/?, Fe/24/?	9,000	R. Own		Scrap
193	I	Bacoor	Sineguelasan	Fe/24	L.H.S.	M/23	7	2	Fe/24/fish vendor, M/23/const. worker	5,800	R. Own	F. Own	Semi-conc.
194	I	Bacoor	Banalo	Fe/54	E.S.G.	M/58	7	3	Fe/54/selling&buying, M/58/selling, M/29/delivery	2,300	R. Own	F. Own	Scrap
195	I	Bacoor	Banalo	Fe/43	L.C.	M/38	5	2	Fe/43/fishing, M/38/policeman	21,000	R. Own	Others	Concrete
196	I	Bacoor	Banalo	M/47	E.S.G.	M/47	6	2	M/47/fishing, Fe/47/?	900	R. Own	F. Own	Scrap
197	I	Bacoor	Sineguelasan	Fe/32	H.S.G.	M/37	8	1	M/37/security guard	10,000	R. Own	F. Own	Concrete
198	I	Bacoor	Banalo	M/42	H.S.G.	M/42	5	2	M/42/fishing, Fe/37/manicure	5,600	R. Own	F. Own	Semi-conc.
199	I	Bacoor	Banalo	Fe/63	L.E.S.	M/18	6	1	M/18/maintenance	4,000	R. Own	F. Own	Scrap
Total							1,120	367					
Average							5.69	1.90					

Note: 1) The above table was prepared by selecting the most representative 199 affected households from among the total sampled interviewees of 277.

2) River: I: Imus River, S: SanJuan River, C: Canas River

3) Tejero Conven.: Tejero Convention

4) Education: L..E..S: less elementary school, E.S.G.: elementary school graduate, L.H.S: less high school, H.S.G.: high school graduate, L..C.: less college, C.G.: college graduate

5) Ownership: R. Own: respondent own, F. Own: family own, Gov't: government own, Relative: relative own, Landlord: landlord own, Private: other private individual's own

6) Family Head: the biggest earner among family members is assumed to be family head. When income of each family member is unknown, respondent is assumed to be family head.

Table 2 (1) Family Income Distribution of Riverbank Residents (total households)

Data of Interview Survey (199 samples)

Res. No.	Total Family Income (P/month)	Family Size	Per Capita Income(P/month)	Remarks
1	7,800	7	1,114	
2	5,000	4	1,250	
3	7,000	4	1,750	
4	11,000	8	1,375	
5	-	4	-	No response
6	25,500	5	5,100	
7	30,000	6	5,000	
8	8,000	2	4,000	
9	40,000	8	5,000	
10	4,000	4	1,000	
11	4,000	4	1,000	
12	11,000	9	1,222	
13	11,000	3	3,667	
14	8,700	10	870	
15	6,600	4	1,650	
16	15,000	8	1,875	
17	6,000	3	2,000	
18	2,500	7	357	
19	5,600	3	1,867	
20	7,500	6	1,250	
21	5,000	9	556	
22	2,900	6	483	
23	2,500	4	625	
24	-	2	-	No response
25	15,600	7	2,229	
26	10,000	6	1,667	
27	8,000	3	2,667	
28	10,500	4	2,625	
29	24,000	12	2,000	
30	-	17	-	No response
31	-	15	-	No response
32	35,000	2	17,500	
33	30,000	7	4,286	
34	10,000	2	5,000	
35	8,000	4	2,000	
36	8,000	4	2,000	
37	12,000	7	1,714	
38	10,000	3	3,333	
39	15,000	5	3,000	
40	6,000	7	857	
41	13,000	12	1,083	
42	18,000	7	2,571	
43	12,000	8	1,500	
44	7,000	3	2,333	
45	6,000	5	1,200	
46	5,000	4	1,250	
47	11,000	5	2,200	
48	15,000	3	5,000	
49	3,500	7	500	
50	6,000	4	1,500	
51	20,000	7	2,857	
52	6,000	4	1,500	
53	37,000	9	4,111	
54	42,000	10	4,200	

Per Capita Income Distribution

Sequence	Total Family Income (P/month)	Family Size	Per Capita Income(P/month)
1	200	3	67
2	500	7	71
3	1,500	15	100
4	900	6	150
5	500	3	167
6	1,000	5	200
7	2,000	7	286
8	2,450	8	306
9	2,300	7	329
10	2,000	6	333
11	2,500	7	357
12	2,600	7	371
13	2,000	5	400
14	2,500	6	417
15	3,000	7	429
16	1,800	4	450
17	2,900	6	483
18	500	1	500
19	1,000	2	500
20	2,000	4	500
21	3,500	7	500
22	7,900	15	527
23	5,000	9	556
24	4,000	7	571
25	3,000	5	600
26	4,800	8	600
27	2,500	4	625
28	4,000	6	667
28	6,000	9	667
30	6,000	9	667
31	9,000	13	692
32	3,000	4	750
33	3,000	4	750
34	3,000	4	750
35	3,000	4	750
36	4,000	5	800
37	8,000	10	800
38	4,900	6	817
39	5,800	7	829
40	5,000	6	833
41	6,000	7	857
42	8,700	10	870
43	7,000	8	875
44	7,000	8	875
45	8,160	9	907
46	5,600	6	933
47	3,800	4	950
48	2,000	2	1,000
49	4,000	4	1,000
50	4,000	4	1,000
51	4,000	4	1,000
52	4,000	4	1,000
53	4,000	4	1,000
54	5,000	5	1,000

55	60,000	5	12,000	
56	17,500	2	8,750	
57	8,000	10	800	
58	18,000	9	2,000	
59	-	6	-	No response
60	7,200	5	1,440	
61	1,000	2	500	
62	200	3	67	
63	2,450	8	306	
64	11,000	4	2,750	
65	4,000	2	2,000	
66	6,500	4	1,625	
67	6,000	4	1,500	
68	30,000	6	5,000	
69	22,000	3	7,333	
70	5,500	4	1,375	
71	7,700	5	1,540	
72	4,800	8	600	
73	10,000	-	-	No response
74	5,600	6	933	
75	15,000	5	3,000	
76	19,500	8	2,438	
77	6,480	3	2,160	
78	36,528	5	7,306	
79	12,600	6	2,100	
80	8,760	5	1,752	
81	7,200	4	1,800	
82	3,000	7	429	
83	10,800	6	1,800	
84	17,000	7	2,429	
85	3,800	4	950	
86	4,000	4	1,000	
87	13,000	5	2,600	
88	10,000	4	2,500	
89	-	8	-	No response
90	12,000	6	2,000	
91	21,000	6	3,500	
92	15,500	5	3,100	
93	23,000	4	5,750	
94	6,200	4	1,550	
95	10,500	4	2,625	
96	8,500	4	2,125	
97	10,800	6	1,800	
98	12,000	2	6,000	
99	500	3	167	
100	6,000	5	1,200	
101	2,500	6	417	
102	6,000	9	667	
103	3,000	4	750	
104	4,000	4	1,000	
105	6,000	-	-	No response
106	3,000	4	750	
107	-	8	-	No response
108	22,460	7	3,209	
109	-	2	-	No response
110	7,000	3	2,333	
111	1,800	4	450	
112	29,000	4	7,250	
113	6,100	3	2,033	

55	7,000	7	1,000
56	8,000	8	1,000
57	13,000	12	1,083
58	13,000	12	1,083
59	7,800	7	1,114
60	5,600	5	1,120
61	9,000	8	1,125
62	3,500	3	1,167
63	7,000	6	1,167
64	9,400	8	1,175
65	6,000	5	1,200
66	6,000	5	1,200
67	6,000	5	1,200
68	8,500	7	1,214
69	11,000	9	1,222
70	5,000	4	1,250
71	5,000	4	1,250
72	7,500	6	1,250
73	7,500	6	1,250
74	7,500	6	1,250
75	10,000	8	1,250
76	4,000	3	1,333
77	5,500	4	1,375
78	11,000	8	1,375
79	7,200	5	1,440
80	11,520	8	1,440
81	6,000	4	1,500
82	6,000	4	1,500
83	6,000	4	1,500
84	6,000	4	1,500
85	7,500	5	1,500
86	9,000	6	1,500
87	12,000	8	1,500
88	7,700	5	1,540
89	6,200	4	1,550
90	6,500	4	1,625
91	18,000	11	1,636
92	6,600	4	1,650
93	5,000	3	1,667
94	10,000	6	1,667
95	12,000	7	1,714
96	7,000	4	1,750
97	7,000	4	1,750
98	10,500	6	1,750
99	8,760	5	1,752
100	7,200	4	1,800
101	9,000	5	1,800
102	10,800	6	1,800
103	10,800	6	1,800
104	5,600	3	1,867
105	15,000	8	1,875
106	4,000	2	2,000
107	6,000	3	2,000
108	8,000	4	2,000
109	8,000	4	2,000
110	12,000	6	2,000
111	18,000	9	2,000
112	24,000	12	2,000
113	6,100	3	2,033

114	7,000	4	1,750	
115	18,000	11	1,636	
116	7,000	8	875	
117	9,000	3	3,000	
118	23,640	8	2,955	
119	-	8	-	No response
120	6,500	2	3,250	
121	2,000	5	400	
122	11,520	8	1,440	
123	2,600	7	371	
124	8,500	4	2,125	
125	15,500	5	3,100	
126	7,500	6	1,250	
127	15,000	7	2,143	
128	-	3	-	No response
129	5,000	3	1,667	
130	1,500	15	100	
131	12,000	3	4,000	
132	14,000	4	3,500	
133	7,000	2	3,500	
134	9,000	6	1,500	
135	18,000	8	2,250	
136	4,000	7	571	
137	7,900	15	527	
138	14,000	4	3,500	
139	10,200	5	2,040	
140	8,160	9	907	
141	16,000	7	2,286	
142	4,900	6	817	
143	8,000	3	2,667	
144	3,000	4	750	
145	4,000	5	800	
146	17,000	6	2,833	
147	13,000	12	1,083	
148	5,000	2	2,500	
149	4,000	4	1,000	
150	7,000	8	875	
151	10,500	6	1,750	
152	3,500	3	1,167	
153	13,000	5	2,600	
154	6,000	5	1,200	
155	2,000	2	1,000	
156	2,000	4	500	
157	6,500	3	2,167	
158	1,000	5	200	
159	10,500	5	2,100	
160	9,000	1	9,000	
161	9,400	8	1,175	
162	6,000	4	1,500	
163	3,000	4	750	
164	9,000	13	692	
165	500	1	500	
166	3,000	5	600	
167	2,000	6	333	
168	24,000	10	2,400	
169	6,000	9	667	
170	23,000	8	2,875	
171	11,000	5	2,200	
172	8,500	7	1,214	

114	10,200	5	2,040
115	10,500	5	2,100
116	12,600	6	2,100
117	8,500	4	2,125
118	8,500	4	2,125
119	15,000	7	2,143
120	6,480	3	2,160
121	6,500	3	2,167
122	11,000	5	2,200
123	11,000	5	2,200
124	11,000	5	2,200
125	15,600	7	2,229
126	18,000	8	2,250
127	16,000	7	2,286
128	7,000	3	2,333
129	7,000	3	2,333
130	24,000	10	2,400
131	17,000	7	2,429
132	19,500	8	2,438
133	2,500	1	2,500
134	5,000	2	2,500
135	10,000	4	2,500
136	18,000	7	2,571
137	13,000	5	2,600
138	13,000	5	2,600
139	10,500	4	2,625
140	10,500	4	2,625
141	8,000	3	2,667
142	8,000	3	2,667
143	27,000	10	2,700
144	11,000	4	2,750
145	8,500	3	2,833
146	17,000	6	2,833
147	20,000	7	2,857
148	23,000	8	2,875
149	44,000	15	2,933
150	23,640	8	2,955
151	9,000	3	3,000
152	9,000	3	3,000
153	15,000	5	3,000
154	15,000	5	3,000
155	15,500	5	3,100
156	15,500	5	3,100
157	22,460	7	3,209
158	6,500	2	3,250
159	10,000	3	3,333
160	7,000	2	3,500
161	14,000	4	3,500
162	14,000	4	3,500
163	21,000	6	3,500
164	11,000	3	3,667
165	8,000	2	4,000
166	12,000	3	4,000
167	37,000	9	4,111
168	21,000	5	4,200
169	42,000	10	4,200
170	30,000	7	4,286
171	10,000	2	5,000
172	15,000	3	5,000

173	26,200	4	6,550	
174	7,000	7	1,000	
175	-	9	-	No response
176	7,500	6	1,250	
177	2,500	1	2,500	
178	9,000	5	1,800	
179	44,000	15	2,933	
180	11,000	5	2,200	
181	4,000	3	1,333	
182	7,500	5	1,500	
183	5,000	5	1,000	
184	5,000	6	833	
185	8,500	3	2,833	
186	8,000	8	1,000	
187	27,000	10	2,700	
188	9,000	8	1,125	
189	500	7	71	
190	7,000	6	1,167	
191	2,000	7	286	
192	9,000	3	3,000	
193	5,800	7	829	
194	2,300	7	329	
195	21,000	5	4,200	
196	900	6	150	
197	10,000	8	1,250	
198	5,600	5	1,120	
199	4,000	6	667	

173	30,000	6	5,000
174	30,000	6	5,000
175	40,000	8	5,000
176	25,500	5	5,100
177	23,000	4	5,750
178	12,000	2	6,000
179	26,200	4	6,550
180	29,000	4	7,250
181	36,528	5	7,306
182	22,000	3	7,333
183	17,500	2	8,750
184	9,000	1	9,000
185	60,000	5	12,000
186	35,000	2	17,500
Total	1,971,298		
Average	10,598		2,158

Note: Above table was prepared by excluding no response data

Table 2 (2) Family Income Distribution of Riverbank Residents (woman-head households)

Per Capita Income Distribution

Sequence	Total Family Income (P/month)	Family Size	Per Capita Income(P/month)
1	200	3	67
2	500	3	167
3	1,000	5	200
4	2,000	7	286
5	2,000	6	333
6	500	1	500
7	2,000	4	500
8	3,500	7	500
9	7,900	15	527
10	5,000	9	556
11	4,000	7	571
12	3,000	5	600
13	6,000	9	667
14	6,000	9	667
15	3,000	4	750
16	5,600	6	933
17	3,800	4	950
18	2,000	2	1,000
19	4,000	4	1,000
20	4,000	4	1,000
21	7,000	7	1,000
22	8,000	8	1,000
23	3,500	3	1,167
24	7,000	6	1,167
25	9,400	8	1,175
26	6,000	5	1,200
27	11,000	9	1,222
28	7,500	6	1,250
29	7,500	6	1,250
30	6,200	4	1,550
31	6,500	4	1,625
32	18,000	11	1,636
33	7,000	4	1,750
34	10,800	6	1,800
35	12,000	6	2,000
36	8,500	4	2,125
37	15,000	7	2,143
38	11,000	5	2,200
39	16,000	7	2,286
40	17,000	7	2,429
41	2,500	1	2,500
42	10,000	4	2,500
43	13,000	5	2,600
44	10,500	4	2,625
45	8,000	3	2,667
46	11,000	4	2,750
47	17,000	6	2,833
48	20,000	7	2,857
49	9,000	3	3,000
50	15,500	5	3,100
51	7,000	2	3,500
52	14,000	4	3,500
53	25,500	5	5,100
54	29,000	4	7,250
55	36,528	5	7,306
56	17,500	2	8,750
57	60,000	5	12,000
Total	566,928		
Average	9,946		2,080

Note: Above table was prepared by excluding no response data

Table 3 Household Conditions of Tenant Farmers

No.	Location		Respondent		No. of Family Member		Farm Area (ha)	Respondent Income (P/month)		Other Family Income (P/month)	Total Family Income (P/month)	Farm Income Ratio (Harvested/Total)	Per Capita Family Income (P/month)	Income Sources of Other Family Member
	Municipality	Barangay	Sex/Age	Education	Total	Earner		Harvested	Other Sources					
1	Gen. Trias	Bacao II	M/33	H.S.G.	4	2	0.015	0	0	4,000	4,000	0.00	1,000	M/33/pan maker,
2	Gen. Trias	Bacao II	M/51	L.E.S.	8	2	2.1	8,333	0	1,400	9,733	0.86	1,217	M/28/tricycle driver
3	Gen. Trias	Bacao II	M/46	L.H.S.	6	2	2.1	8,333	0	10,000	18,333	0.45	3,056	Fe/41/retail seller
4	Imus	Malagansang	Fe/70	C. G.	5	1	2	4,167	0	0	4,167	1.00	833	
5	Imus	Malagansang	M/65	H.S.G	6	1	3	833	3,334	0	4,167	0.20	694	
6	Imus	Malagansang	M/71	E.S.G	3	1	1.5	2,500	0	0	2,500	1.00	833	
7	Imus	Malagansang	Fe/26	H.S.G	7	1	0.5	550	1,742	0	2,292	0.24	327	
8	Imus	Malagansang	Fe/49	L.E.S.	7	1	1	167	1,083	0	1,250	0.13	179	
9	Imus	Malagansang	M/38	L.H.S.	4	1	2	2,667	666	0	3,333	0.80	833	
10	Imus	Paliko	Fe/42	C.G	2	2	1	0	0	2,500	2,500	0.00	2,500	Fe/15/factory worker
11	Imus	Anabu I-G	M/37	E.S.G	4	2	3	1,250	0	8,000	9,250	0.14	2,313	Fe/36/domestic helper
12	Imus	Malagansang	M/65	H.S.G.	3	1	1.5	417	0	0	417	1.00	139	
13	Imus	Malagansang	Fe/41	H.S.G.	5	1	0.5	2,083	0	0	2,083	1.00	333	
14	Imus	Malagansang	Fe/22	L.H.S.	4	2	3	500	7,833	1,000	9,333	0.05	2,333	Fe/22/tenant
15	Imus	Malagansang	M/55	V.S.G.	2	1	2.7	1,250	1,250	0	2,500	0.50	1,250	
16	Imus	Malagansang	M/60	E.S.G.	5	2	7	1,688	7,687	6,000	15,375	0.11	3,075	M/60/driver
17	Imus	Malagansang	M/51	L.H.S.	1	1	4	650	5,200	0	5,850	0.11	5,850	
18	Imus	Anabu II-B	M/62	L.E.S.	5	2	4	2,083	834	0	2,917	0.71	583	Fe/28/engineer
19	Imus	Anabu I-G	M/57	E.S.G	3	2	4.5	0	4,167	8,000	12,167	0.00	4,056	M/29/factory worker
20	Kawit	Batong Dalig	M/57	L.E.S.	2	2	1	150	0	600	750	0.20	375	Fe/45/maid
21	Imus	Malagansang	M/67	E.S.G.	8	2	4	-	-	-	-	-	-	M/38/hospital director
22	Imus	Malagansang	M/25	C.G	3	1	2	417	1,250	0	1,667	0.25	556	
Total					97	33	52.42	38,038	35,046	41,500	114,583	8.76		
Average					4.41	1.5	2.38	1,811	1,669	1,976	5,456	0.42	1,540	

Note: 1) L.E.S.:less elementary school, E.S.G.: elementary school graduate, L.H.S. less high school, H.S.G.: high school graduate, C.G.: college graduate, V.S.G.: vocational school graduate

2) Number of Eaner: number of the working member for farming is assumed to be one person per one household.

3) 21 samples were used to calculate the average of the respondent income, other family income , total family income, farm income ratio and per capita family income since one tenant farmer had given no answer.

Table 4 Household Conditions of Tenant Fishpond Operator

No.	Location		Respondent		No. of Family Member		Pond Area (ha)	Respondent Income (P/month)		Other Family Income (P/month)	Total Family Income (P/month)	Fishpond Income Ratio (Harvested/Total)	Per Capita Family Income (P/month)	Income Sources of Other Family Member
	Municipality	Barangay	Sex/Age	Education	Total	Earner		Harvested	Other Sources					
1	Kawit	Wakas	M/68	H.S.G	9	-	0.55	-	-	-	-	-	-	
2	Kawit	Kaingin	M/48	E.S.G	5	-	1	-	-	-	-	-	-	
3	Kawit	Kaingin	M/44	L.E.S.	2	2	0.8	208	917	21,000	22,125	0.01	11,063	Fe/45/sari-sari store owner
4	Noveleta	San Rafael III	Fe/41	E.S.G	6	4	1.7	2,500	5,833	30,260	38,593	0.06	6,432	M/47/plumber, Fe/41/janitress, Fe/24/factory worker
5	Noveleta	San Rafael III	M/70	L.E.S.	3	3	3	667	7,666	6,500	14,833	0.04	4,944	Fe/35/factory worker, Fe/63/sari-sari store owner
6	Noveleta	San Rafael III	Fe/55	L.H.S.	4	3	2	350	350	13,200	13,900	0.03	3,475	M/34/carpenter, Fe/21/factory worker
7	Noveleta	San Rafael III	M/42	E.S.G.	7	3	1.7	1,667	6,666	6,600	14,933	0.11	2,133	Fe/factory worker, Fe/42/store owner
8	Noveleta	San Rafael III	M/64	L.E.S.	4	4	1	417	0	11,400	11,817	0.04	2,954	M/40/fisher man, Fe/38/const. worker, Fe/34/const.worker
9	Kawit	Kaingin	M/28	L.E.S.	3	1	1	1,667	0	0	1,667	1.00	556	
10	Noveleta	San Rafael III	Fe/60	E.S.G.	5	2	1	333	0	4,800	5,133	0.06	1,027	Fe/41/retail seller
11	Noveleta	San Rafael III	Fe/47	H.S.G	7	2	2	333	0	5,000	5,333	0.06	762	M/22/factory worker
12	Kawit	Kaingin	M/47	E.S.G.	6	1	6	167	666	0	833	0.20	139	
Total					61	25	21.75	8,309	22,098	98,760	129,168	1.62		
Average					5.08	2.5	1.81	831	2,210	9,876	12,917	0.16	3,348	

Note: 1) L.E.S.:less elementary school, E.S.G.: elementary school graduate, L.H.S. less high school, H.S.G.: high school graduate

2) Number of Eaner: number of the working member for fishpond operation is assumed to be one person per one household.

3) 10 samples were used to calculate the average of the number of earner, respondent income, other family income , total family income, fishpond income ratio and per capita family income since two tenant fishpond operators had given no answer.

Feasibility Study

Appendix 4-4

Results of Well Inventory Survey in F/S Study

Table 1 Well Inventory for I-1 Retarding Basin

Well No.	Location (GPS Coordinates)	Barangay	Ownership	Water Use	Estimated Depth (ft)	Drawdown Depth (m)	Distance from Site	Observations
1	N 14.39762 E 120.95206	Anabu 1-G	Marcela Paulme (one compound)	washing	60-80 ft	unknown	216m	w/ motorpump (jackpump)
2	N 14.39755 E 120.94997	Anabu 1-G	Anatolia Mabale	drinking, washing	70 ft	unknown	370m	manual
3	N 14.39711 E 120.94994	Anabu 1-G	Silvino Reyes	washing	60-80 ft	unknown	190m	manual
4	N 14.40073 E 120.95122	Anabu 1-G	Serapio Ilas	drinking, washing	30-60 ft	unknown	76.5m	w/ motorpump
5	*	Anabu 1-G	Honesto Gonzales	washing	30-60 ft	unknown	90m	manual

Notes:

1. Survey was conducted for the wells existing within the area of 500 m distance from the fringe of the project site
2. Date of survey: Sep. 19, 2008 for No.1 - No. 5 wells.

* unable to get GPS coordinates due to poor coverage and raining condition

Table 2 Well Inventory for B-4 Retarding Basin (1/2)

Well No.	Location (GPS Coordinates)	Barangay	Ownership	Water Use	Estimated Depth (ft)	Drawdown Depth (m)	Distance from Site	Observations
1	N 14.42214 E 120.94635	Buhay na Tubig	Reynaldo Bautista	washing, drinking	80-100 ft	unknown	48m	w/electric motorpump
2	N 14.42215 E. 120.94636	Buhay na Tubig	Martin Bautista	washing, drinking	80 ft	unknown	55m	w/ electric motorpump & small water tank
3	N 14.42216 E 120.94637	Buhay na Tubig	Silvino Bautista	washing, drinking	80 ft	unknown	58m	w/electric motorpump
4	N 14.42217 E 120.94638	Buhay na Tubig	Kag. Celso Bautista	drinking, washing	80 ft	unknown	64m	w/electric motorpump
5	N 14.42262 E 120.94589	Palico IV	Col. Caoili	carwash, washing	40-80 ft	unknown	117m	w/ electric motorpump & small water tank
6	N 14.42321 E 120.94570	Palico IV	Little House Design and Fabrics	washing	40-80 ft	unknown	180m	no motorpump defective gasket
7	N 14.42321 E 120.94603	Palico IV	Mr. Arana	drinking, washing	80-100 ft	unknown	170m	w/ motorpump water with foul smell
8A	N 14.42326 E 120.94633	Palico IV	Kee Seng II Lumber Hardware	washing	100 ft	approx. 30-40 ft	176m	no motorpump
8B	N 14.42343 E 120.94582	Palico IV	Kee Seng II Lumber Hardware	washing, drinking	100 ft	unknown	196m	w/ motorpump
9	N 14.42343 E 120.94576	Palico IV	Romeo Nonaillada	washing	40-80 ft	unknown	205m	w/ motorpump
10A	N 14.42381 E 120.94576	Palico IV	Allen Perfecto (apartment)	washing, drinking	100-120 ft	unknown	247m	w/motorpump
10B	N 14.42381 E 120.94577	Palico IV	Allen Perfecto (apartment)	washing, drinking	100-120 ft	unknown	250m	w/motorpump
11	N 14.42437 E 120.94582	Palico IV	Martin del Rosario	washing, drinking	80-100 ft	unknown	302m	w/motorpump
12	N 14.42458 E 120.94579	Palico IV	River Valley Purified Drinking Water	drinking, washing	120 ft	unknown	332m	w/motorpump& watertank, used for commercial drinking
13	N 14.42452 E 120.94634	Palico IV	Carolina Gutierrez	washing	60-80 ft	unknown	312m	no motorpump
14	N 14.42451 E 120.94627	Palico IV	Pasky Gripal	washing, drinking	100-120 ft	unknown	320m	w/motorpump & elevated watertank

to be continued

Table 2 Well Inventory for B-4 Retarding Basin (2/2)

Well No.	Location (GPS Coordinates)	Barangay	Ownership	Water Use	Estimated Depth (ft)	Drawdown Depth (m)	Distance from Site	Observations
15	N 14.42473 E 120.94643	Palico IV	Erminigilda Haynes	washing	100 ft	unknown	337m	w/ motorpump
16	N 14.42470 E 120.94649	Palico IV	unknown	drinking, washing	80-100 ft	unknown	327m	w/ motorpump & small watertank
17	N 14.42472 E 120.94683	Palico IV	Aquafer Purified Drinking Water	drinking, washing	100-120 ft	unknown	340m	w/ motorpump & watertank, used for commercial drinking
18	N 14.42482 E 120.94644	Palico IV	Bgy. Public Poso Project	washing	100 ft	unknown	347m	still working, it takes too many pumps to release water
19	N 14.41878 E 120.94797	Buhay na Tubig	Catalina De Quiroz	washing	30-40 ft	unknown	16m	no motorpump
20	N 14.41879 E 120.94819	Buhay na Tubig	Public Use	washing	60-80 ft	unknown	16m	no motorpump
21	N 14.41858 E 120.94819	Buhay na Tubig	Blue Circle Builders	washing	100 ft	unknown	45m	no motorpump
22	N 14.41837 E 120.94792	Buhay na Tubig	Queen of Angels Learning Center	washing	100-120 ft	unknown	65m	w/elevated watertank and motorpump
23	N 14.41837 E 120.94801	Buhay na Tubig	Queen of Angels Learning Center	washing	40-60 ft	unknown	70m	no motorpump flow of water: slow
24	N 14.41794 E 120.94717	Buhay na Tubig	Dominga Bernal	washing	60 ft	unknown	127m	w/ motorpump
25	N 14.41798 E 120.94717	Buhay na Tubig	Bernal Compound	washing	60 ft	unknown	119m	w/motorpump
26	N 14.41809 E 120.94713	Buhay na Tubig	Bernal Compound	washing	60 ft	unknown	118m	w/motorpump
27	N 14.41789 E 120.94869	Buhay na Tubig	Southills Animal Clinic	washing	40-60 ft	unknown	55m	no motorpump
28	N 14.41667 E 120.94836	Buhay na Tubig	Marky Manela	washing	120 ft	unknown	167m	w/ electric motorpump
29	N 14.41681 E 120.94805	Buhay na Tubig	#9163 name not given	washing	80 ft	unknown	117m	w/motorpump
30	N 14.41701 E 120.94749	Buhay na Tubig	Danny Manila (Public Use)	washing, drinking	60 ft	unknown	210m	no motorpump
31	N 14.41683 E 120.94756	Buhay na Tubig	Public Use	washing	100-120 ft	unknown	218m	no motorpump
32	N 14.41633 E 120.94788	Buhay na Tubig	Isla Verde HOA (public poso)	washing	100 ft	unknown	229m	no motorpump
33	N 14.41633 E 120.94763	Buhay na Tubig	Isla Verde HOA (public poso)	washing	100 ft	unknown	255m	no motorpump
34	N 14.41632 E 120.94741	Buhay na Tubig	Isla Verde HOA (public poso)	washing, drinking	100 ft	unknown	270m	no motorpump
35	N 14.41632 E 120.94763	Buhay na Tubig	Glen Cotillon	washing	80-100 ft	unknown	217m	no motorpump
36	N 14.41621 E 120.94779	Buhay na Tubig	Rowena Parungao	drinking, washing	120 ft		254m	no motorpump
37	N 14.41616 E 120.94855	Buhay na Tubig	ZA Advincula Trading Gravel and Sand	washing	80 ft		310m	w/motorpump

Notes:

1. Survey was conducted for the wells existing within the area of 500 m distance from the fringe of the project site
2. Date of survey: Aug. 21, 2008 for No.1 - No. 27 wells and Aug.. 27, 2008 for No.28 - No. 37 wells.
3. According to Gold Poumps Enterprises (well contractor), most wells/waterpumps located in the area of Bgy. Palico IV along Buhay na Tub road has an estimated depth of 100-120 ft or 6-7 pipes. While at the Barangay Buhay na Tubig area, most wells/waterpumps has an estima 120-140 ft depth or approximately 7 pipes were installed.

Table 3 Well Inventory for J-1 Retarding Basin (1/2)

Well No.	Location (GPS Coordinates)	Barangay	Ownership	Water Use	Estimated Depth (ft)	Drawdown Depth (m)	Distance from Site	Observations
1	N 14.42618 E 120.92751	Carsadang Bago 1	Amado Legaspi	drinking, washing	200 ft	8-12 meters	208m	no motorpump 4" pipes used
2	N 14.42631 E 120.92738	Carsadang Bago 1	Amado Legaspi	washing	30 ft	8-12 m	226m	
3	N 14.42685 E 120.92790	Carsadang Bago 1	private	washing, drinking	160 ft	unknown	274m	2" pipes used w/ injector
4	N 14.42698 E 120.92785	Carsadang Bago 1	private	washing	30-60 ft	unknown	289m	no motorpump
5	N 14.42723 E 120.92789	Carsadang Bago 1	private	washing	60-80 ft	unknown	316m	w/ motorpump
6	N 14.42739 E 120.92803	Carsadang Bago 1	orchidarium	washing, pandilig	10-30 ft	6 ft	332m	open shallow well
7	N 14.42739 E 120.92816	Carsadang Bago 1	private	washing, pandilig	30 ft	6 ft	327m	w/ pressure water tank enclosed motorpump
8	N 14.42713 E 120.92807	Carsadang Bago 1	#257 Bgy, CB1	washing	100-120 ft	unknown	304m	2" pipes used no motorpump
9	N 14.42718 E 120.92812	Carsadang Bago 1	Bgy. Well Project (for public use)	washing	30-60 ft	unknown	307m	abandoned some parts: missing
10	N 14.42685 E 120.92831	Carsadang Bago 1	private	drinking, washing	100-120 ft	unknown	265m	2" pipes used no motorpump
11	N 14.42716 E 120.92854	Carsadang Bago 1	#265 Bgy. CB1	drinking, washing	80-100 ft	unknown	290m	w/ filter & injector w/ motorpump
12	N 14.42576 E 120.93032	Carsadang Bago 1	Nancy Cuenca	washing	40-60 ft	unknown	156m	w/motorpump
13	N 14.42556 E 120.93038	Carsadang Bago 1	Rodrigo Madlangbayan	washing, drinking	80 ft	unknown	135m	w/ motorpump
14	N 14.42572 E 120.93046	Carsadang Bago 1	Marlyn Barotel	washing, drinking	40 ft	unknown	153m	w/motorpump
15	N 14.42583 E 120.92900	Carsadang Bago 1	Kag. Sayoc	washing, drinking	60 ft	unknown	135m	w/motorpump
16	N 14.42745 E 120.92859	Carsadang Bago 1	Ilano compound	washing	140-160 ft	unknown	320m	w/motorpump
17	N 14.42756 E 120.92872	Carsadang Bago 1	Dr. Dante Papa property	washing, drinking	120-140 ft	unknown	329m	w/motorpump & elevated watertank
18	N 14.42768 E 120.92872	Carsadang Bago 1	Filipina Vita	washing	40 ft	unknown	342m	no motorpump no more water
19	N 14.42769 E 14.92870	Carsadang Bago 1	Marlon Mercado compound	drinking, washing	80-100 ft	unknown	343m	w/motorpump & elevated watertank
20	N 14.42817 E 120.92852	Carsadang Bago 1	Pedro Papa compound	drinking, washing	80-100 ft	unknown	399m	w/manual & electric motorpump
21	N 14.42832 E 120.92857	Carsadang Bago 1	Nanay Dinay	washing	60-100 ft	unknown	414m	w/ motorpump
22	N 14.42862 E 120.92854	Carsadang Bago 1	Reynaldo Papa compound	washing	120-140 ft	unknown	448m	w/motorpump
23	N 14.42742 E 120.92799	Carsadang Bago 1	Herminia Lopez	washing, drinking	60-80 ft	unknown	337m	w/motorpump
24	N 14.42758 E 120.92787	Carsadang Bago 1	David Remulla	washing, drinking	60-80 ft	unknown	355m	no motorpump
25	N 14.42664 E 120.92768	Carsadang Bago 1	Ricardo Azucena	washing, drinking	100-110 ft	unknown	254m	no motorpump
26	N 14.42675 E 120.92780	Carsadang Bago 1	Lucia Ramirez	washing, drinking	100-110 ft	unknown	264m	no motorpump
27	N 14.42673 E 120.92760	Carsadang Bago 1	unknown	washing	40 ft	unknown	265m	no motorpump

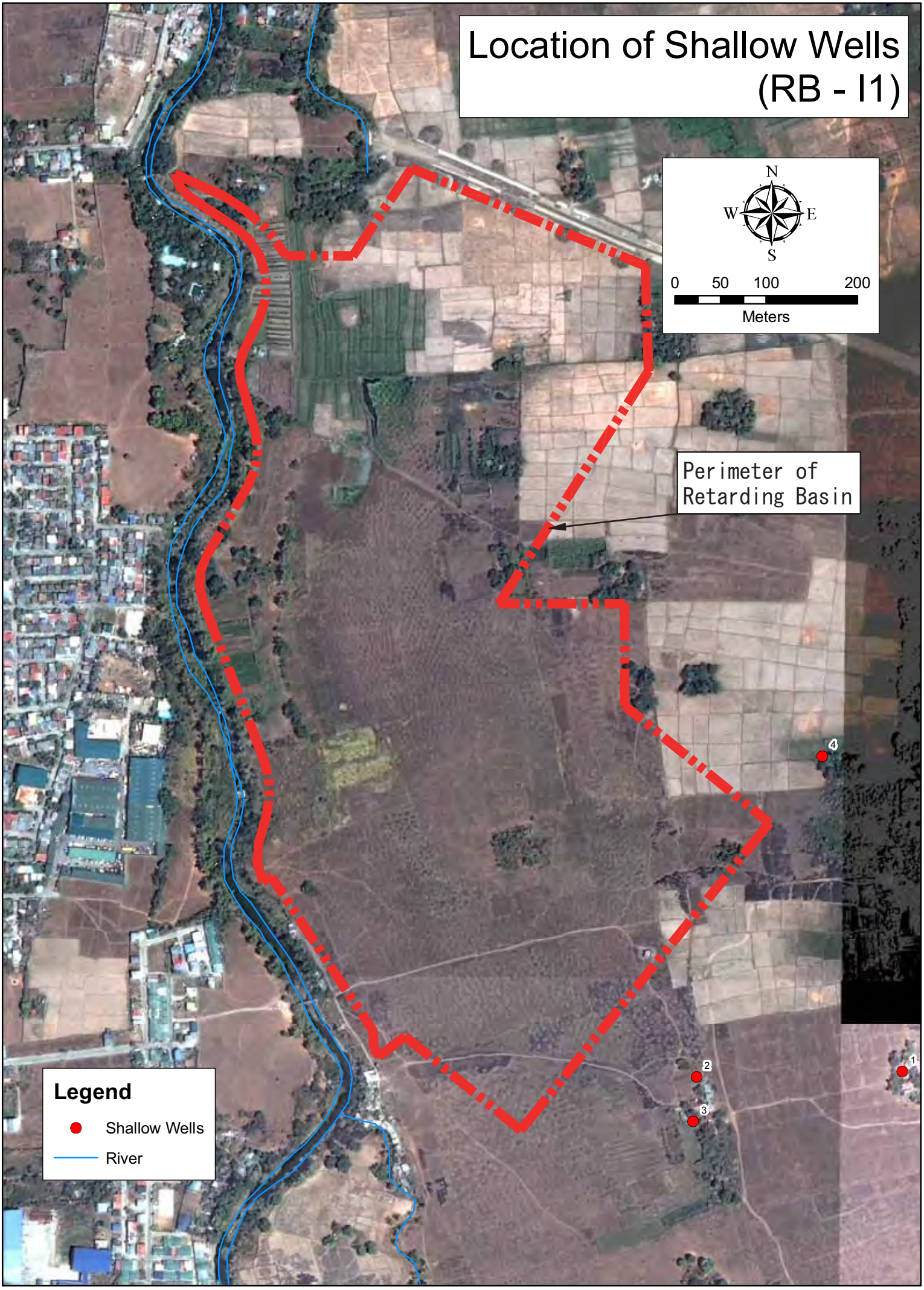
to be continued

Table 3 Well Inventory for J-1 Retarding Basin (2/2)

Well No.	Location (GPS Coordinates)	Barangay	Ownership	Water Use	Estimated Depth (ft)	Drawdown Depth (m)	Distance from Site	Observations
28	N 14.42691 E 120.92777	Carsadang Bago 1	Robert Ilas	washing	80 ft	unknown	282m	no motorpump
29	N 14.42758 E 120.92805	Carsadang Bago 1	Marissa Bosque	washing	80-100 ft	unknown	351m	w/motorpump
30	N 14.42780 E 120.92802	Carsadang Bago 1	Estelita Sapida	washing, drinking	120 ft	unknown	375m	w/motorpump
31	N 14.42801 E 120.92820	Carsadang Bago 1	Mathilde Olaes	washing	120-140 ft	unknown	390m	no motorpump
32	N 14.42543 E 120.92426	Carsadang Bago 2	Canaynay cmpd.	washing, drinking	80-100 ft	unknown	377m	no motorpump
33	N 14.42560 E 120.92770	Carsadang Bago 1	Cynthia Duave	washing, drinking	120-140 ft	unknown	141m	w/ motorpump
34	N 14.41751 E 120.93119	Bayan Luma III	Perly Cuenca	washing	80-100 ft	unknown	170m	no motorpump
35	N 14.41767 E 120.93137	Bayan Luma III	Danilo Verano	washing	60-80 ft	unknown	145m	no motorpump
36	N 14.416918 E 120.928358	Carsadang Bago 1	Felix Cuenca compound	washing	80 ft	unknown	227m	no motor pump

Notes:

1. Survey was conducted for the wells existing within the area of 500 m distance from the fringe of the project site
2. Date of survey: Aug. 13, 2008 for No.1 - No. 11wells and Sep. 8, 2008 for No.12 - No. 36 wells.


Location of Shallow Wells
(RB - I1)
N
W
E
S
0
50
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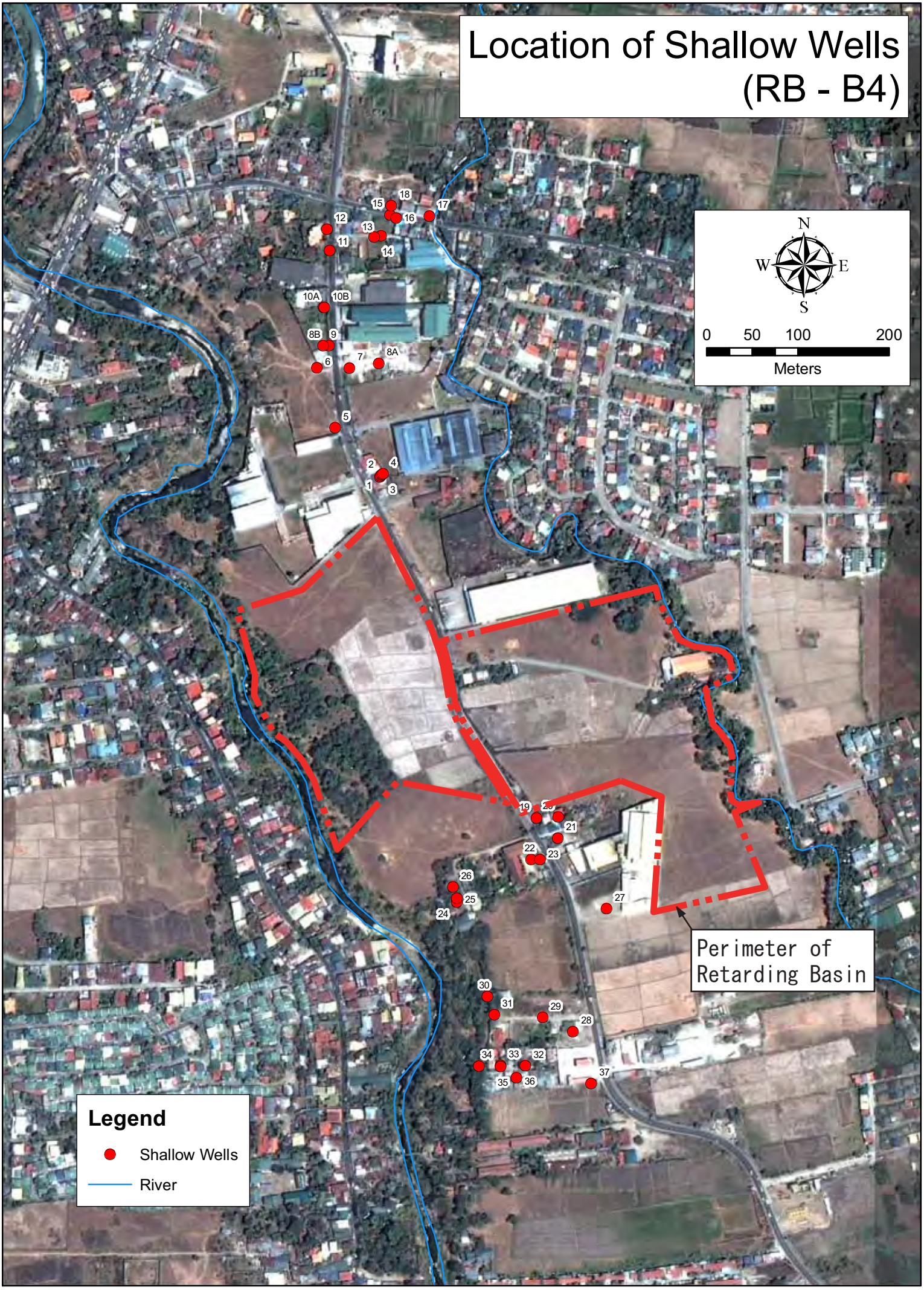
Meters
Perimeter of
Retarding Basin
4
2
3
1
Legend
Shallow Wells
River


Location of Shallow Wells
(RB - B4)
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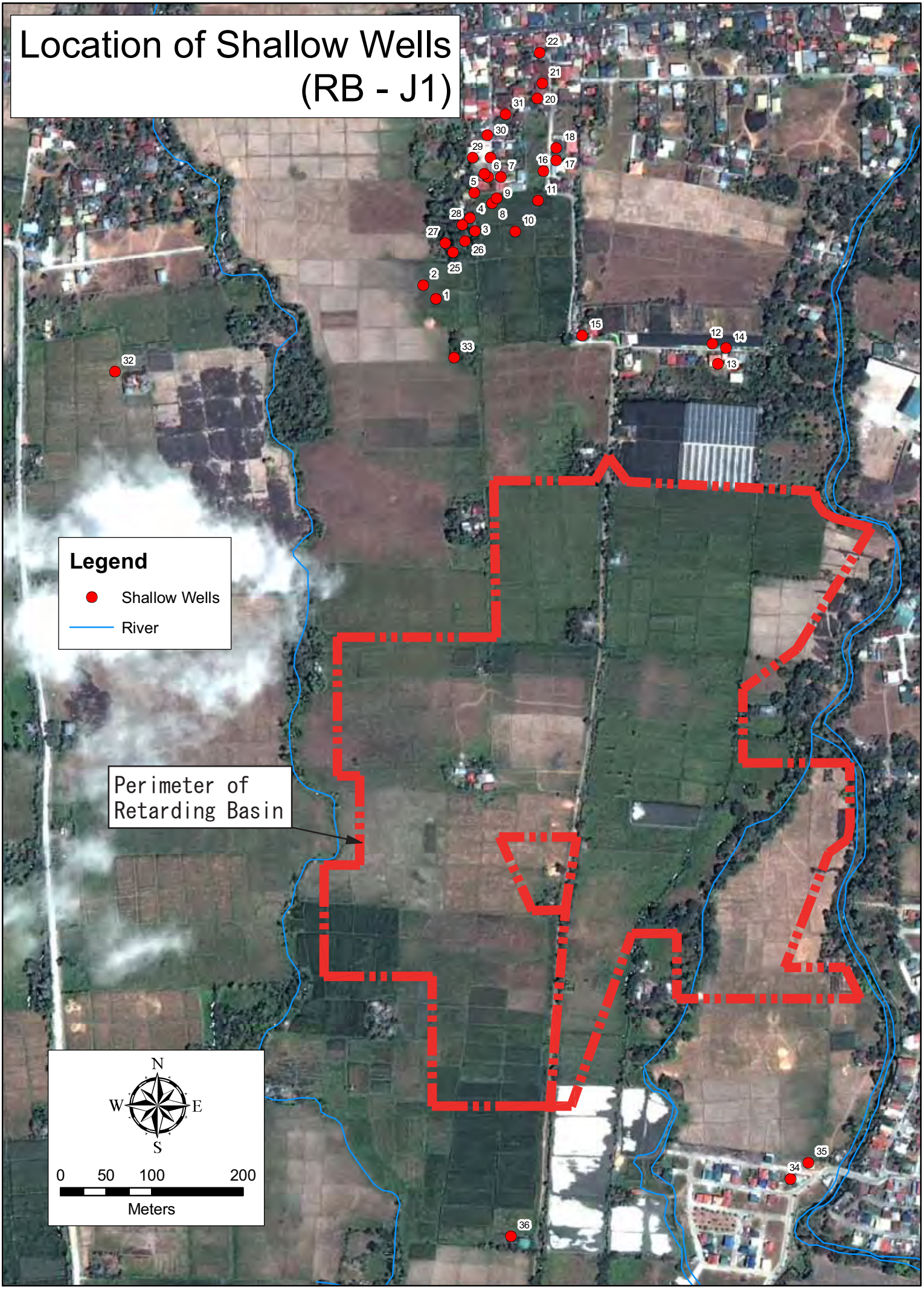
Meters
Perimeter of
Retarding Basin
Legend
Shallow Wells
River


Location of Shallow Wells
(RB - J1)
Legend
Shallow Wells
River
Perimeter of
Retarding Basin
N
W
E
S
0
50
100
200
Meters

Appendix 4-5

Results of Traffic Volume Observation

Table 1 Observation Station: A

Road Name/Location: Anabu I-A road , near by I-1 project site in Bgy. Anabu-I Road Conditions: Two lanes, 5 m width, Concrete/asphalt pavement with partially gravel

Date of Survey: September 24, 2008

Time	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
6- 7 am	18	19	31	36	7	8	35	38	3	2	2	1	8	6	0	0	12	19
7-8 am	20	24	26	43	8	0	30	36	4	3	6	7	1	0	0	0	43	36
8-9 am	26	33	16	25	0	1	15	19	0	3	9	9	1	3	0	0	29	29
9-10 am	42	34	13	27	3	2	19	22	3	1	11	9	2	4	0	0	29	31
10-11 am	27	36	25	21	1	0	22	26	4	6	5	6	2	2	0	0	33	27
11-12 pm	27	20	12	12	4	2	14	15	2	6	7	8	3	7	0	0	15	13
12-1 pm	27	36	17	14	2	0	14	23	4	2	11	16	2	5	0	0	22	19
1-2 pm	31	32	12	19	2	0	13	16	4	3	12	13	4	2	0	0	16	27
2-3 pm	40	29	27	25	2	3	11	11	3	3	12	13	3	1	0	0	13	18
3-4 pm	20	33	30	23	0	0	18	15	1	0	16	11	3	2	0	0	16	25
4-5 pm	25	24	38	30	5	2	10	18	2	2	4	12	5	4	0	0	33	34
5-6 pm	23	18	45	24	0	2	19	18	0	0	9	11	4	2	0	0	39	34
6-7 pm	14	20	20	32	1	1	11	13	0	0	2	2	2	0	0	0	28	32
7-8 pm	28	20	26	21	1	2	24	16	0	0	3	0	0	2	0	0	27	31

West Bound (WB) = Going towards Imus Aguinaldo Highway and Anabu I-A passing thru I1 site Anabu I-G

East Bound (EB) = Going towards Buhay na Tubig, Pasong Buaya, Daang-Hari and SM Molino

Observations:

1. Pedicabs waiting for passengers causes slight traffic from 6 am onwards
2. Some colorum jeepneys, vans and tricycles were spotted
3. No gutters and/or pedestrian pathwalk and some parts of the road are partially damaged
4. Almost 100 to 150 meters of unfinished road from Bridge to I-1 site Anabu I-G
5. Traffic is moving smoothly and there were no recorded road accidents
6. Some garbage trucks of Imus were using the road as an alternative road going to dumpsite in Pasong Buaya
7. Some passenger jeepneys and multicabs utilized the road as an alternative road going to SM Molino, Pasong Buaya and Daang-Hari

Table 2 Observation Station: B

Road Name/Location: Buhay na Tubig road near by B-4 project site in Bgy. Buhay na Tubig Road Conditions: Two lanes, 6 m width, Concrete/asphalt pavement

Date of Survey: September 29, 2008

TIME	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	NW	SE	NW	SE	NW	SE	NW	SE	NW	SE	NW	SE	NW	SE	NW	SE	NW	SE
6- 7 am	103	107	107	117	87	97	92	107	7	11	28	37	11	19	0	0	112	115
7-8 am	65	60	149	81	99	104	119	108	4	3	20	16	2	14	0	0	113	73
8-9 am	78	61	156	86	100	101	114	108	4	2	26	25	3	10	0	0	81	62
9-10 am	86	68	156	117	112	97	104	121	8	2	23	28	4	12	0	0	111	77
10-11 am	82	84	145	120	112	94	102	123	5	4	29	35	13	8	0	0	69	64
11-12 pm	99	71	117	122	87	98	127	130	4	5	21	29	6	10	0	0	67	69
12-1 pm	59	69	110	77	83	90	112	119	3	5	27	24	8	9	0	0	56	65
1-2 pm	99	78	130	97	86	78	105	96	3	2	33	38	6	5	0	0	84	72
2-3 pm	81	73	128	120	80	99	114	110	4	4	22	26	8	8	0	0	79	80
3-4 pm	57	72	100	106	77	71	105	107	2	5	33	25	4	8	0	0	47	78
4-5 pm	85	89	120	145	85	95	173	175	3	9	25	33	8	15	0	0	55	94
5-6 pm	68	114	100	184	98	98	207	187	3	3	29	28	11	20	0	0	86	118
6-7 pm	73	103	99	197	96	119	187	232	4	1	14	9	14	5	0	0	73	102
7-8 pm	49	122	94	203	73	95	233	229	9	1	7	7	10	9	0	0	48	96

North West Bound (NW) = Going towards Imus Aguinaldo Highway passing thru B-4 site, Buhay na Tubig

South East Bound (SE) = Going towards SM Molino, Camella Homes and Pag-Asa

Observations:

1. Bicycles and pedestrians are constantly seen passing thru Buhay na Tubig road
2. Many colorum jeepneys, vans and tricycles were spotted
3. No gutters and/or pedestrian pathwalk and some parts of the road are partially damaged due to flooding
4. Traffic is moving smoothly and there were no recorded road accidents

Table 3 Observation Station: C

Road Name/Location: Bayan Luma - Bucandala road in Bgy. Bucandala Road Conditions: Two lanes, 6 m width, Concrete/asphalt pavement

Date of Survey: October 3, 2008

Time	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
6- 7 am	95	80	88	83	75	147	229	354	2	4	8	10	5	11	1	1	73	117
7-8 am	52	104	43	101	81	133	424	441	0	2	19	13	1	5	0	0	114	199
8-9 am	79	103	45	91	67	97	334	349	7	5	25	22	1	4	0	0	98	154
9-10 am	91	111	36	64	73	91	288	294	1	10	43	25	3	2	0	0	110	127
10-11 am	91	93	38	82	69	73	330	312	11	5	25	27	3	1	0	0	105	103
11-12 pm	65	76	44	85	76	82	295	268	4	11	25	25	3	3	0	0	76	90
12-1 pm	76	57	39	67	71	64	261	276	3	4	21	22	1	3	0	0	68	83
1-2 pm	66	81	63	83	69	77	247	267	7	8	30	26	1	7	0	0	91	116
2-3 pm	93	92	60	64	71	75	283	297	8	4	29	25	2	2	0	0	82	104
3-4 pm	53	87	43	97	61	78	259	290	14	4	22	28	0	1	0	0	64	113
4-5 pm	86	64	64	70	64	77	300	320	7	6	21	34	3	6	0	0	117	117
5-6 pm	61	76	62	70	57	75	209	359	3	2	10	16	6	4	0	0	161	144
6-7 pm	71	58	84	64	133	81	327	260	2	2	11	16	2	4	1	0	168	107
7-8 pm	75	55	114	61	94	113	354	359	2	13	7	10	4	1	0	0	171	110

West Bound (WB) = Aguinaldo hi-way passing thru Bayan Luma 8 & 9, Bucandala 1 & 3 to Dasmariñas Bayan

East Bound (EB) = Bucandala 1 & 3 passing thru Bayan Luma 8 & 9 to Aguinaldo hi-way

Observations:

1. Some colorum jeepneys, vans and tricycles were spotted
2. No truck ban, Big trucks usually enter the road even on rush hours that causes heavy traffic
3. Heavy traffic starts at 5:20 PM towards Bucandala intersection due to undisciplined jeepney and tricycle drivers
4. Heavy traffic starts at 5:38 PM going towards Aguinaldo hi-way due to big trucks and counter-flowing of some undisciplined drivers
5. According to some residents, traffic in the area usually happens in afternoon and during rush hours
6. Dump trucks, trailers and hauler trucks causes heavy traffic

Table 4 Observation Station: D

Road Name/Location: NIA road near by J-1 project site in Bgy. Carsadang Bago II Road Conditions: Two lanes, 6 m width, Concrete pavement

Date of Survey: October 7, 2008

Time	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
6- 7 am	25	22	25	11	0	0	69	60	2	0	5	2	1	0	0	0	31	33
7-8 am	33	17	22	16	0	0	73	70	0	1	3	7	2	2	0	0	56	49
8-9 am	20	29	30	29	1	1	92	111	3	0	3	9	0	0	0	0	47	42
9-10 am	26	19	19	17	0	1	72	90	1	3	12	17	1	0	0	0	40	48
10-11 am	30	34	19	17	0	0	113	88	1	2	10	10	6	1	0	0	49	33
11-12 pm	23	19	17	14	0	0	79	66	2	4	11	3	1	3	0	0	36	37
12-1 pm	9	8	13	10	0	1	28	31	0	2	3	7	4	0	0	0	15	14
1-2 pm	20	16	19	15	0	0	46	44	1	2	10	8	0	0	0	0	39	21
2-3 pm	23	18	14	13	0	0	33	43	0	0	11	8	0	0	0	0	34	26
3-4 pm	22	13	13	16	0	1	57	62	4	2	12	11	1	1	0	0	32	25
4-5 pm	24	31	12	10	1	1	62	62	1	1	10	14	1	0	0	0	34	36
5-6 pm	41	25	24	28	2	2	108	107	0	5	17	10	1	1	0	0	54	59
6-7 pm	25	26	26	19	0	3	102	109	0	0	3	6	0	1	0	0	36	49
7-8 pm	29	23	24	22	0	0	101	104	0	0	4	8	0	0	0	0	42	40

North Bound (NB) = Bucandala NIA road to Carsadang Bago (J1 site)

South Bound (SB) = Bucandala to Malagasang to Dasmariñas, Cavite

Observations:

1. Less volume of vehicles passing thru NIA road bucandala to carsadang bago due to Imus Day, classes in elementary and high school were suspended
2. Pedicabs waiting for passengers as well as pedestrians can cause moderate to heavy traffic in the bucandala intersection
3. Moderate to heavy traffic will likely occur in the afternoon (12:00 pm & 5:00 pm) mainly because of the closing of school hours in Imus National High School located just near the Bucandala road intersection

Table 5 Traffic Volume of Flow 1 of Aguinaldo Highway at Station E

Observation Station: E

Location: Intersection of Aguinaldo Highway and Buhay na Tubig road

Road Conditions: Aguinald Highway: four lanes, 12-15 m width, concrete/asphalt pavement, Buhay na Tubig road: two lanes, 6 m, concrete/asphalt pavement

Date of Survey: October 10, 2008

TIME	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	NB	EB	NB	EB	NB	EB	NB	EB	NB	EB	NB	EB	NB	EB	NB	EB	NB	EB
6- 7 am	165	11	225	9	190	61	35	12	3	1	15	1	109	0	110	0	177	0
7-8 am	159	23	323	9	242	70	21	6	8	0	34	3	35	0	83	0	276	4
8-9 am	148	2	278	12	209	39	23	9	18	0	22	5	22	0	102	0	154	2
9-10 am	116	11	195	9	150	30	17	11	32	0	39	5	11	4	70	0	80	4
10-11 am	113	14	236	14	184	37	11	6	19	1	43	3	8	1	92	0	76	0
11-12 pm	163	14	239	11	163	43	19	10	28	0	40	3	8	5	0	0	91	6
12-1 pm	143	6	185	11	146	19	11	6	20	0	23	1	5	11	44	0	45	2
1-2 pm	155	12	235	13	156	44	17	10	44	0	44	3	8	2	60	0	113	5
2-3 pm	168	17	282	13	164	45	18	8	25	1	56	9	16	0	59	0	121	2
3-4 pm	209	4	307	20	192	62	42	13	16	1	66	8	4	1	70	0	145	0
4-5 pm	130	15	175	0	120	50	0	0	12	2	50	6	2	0	67	0	50	0
5-6 pm	190	15	300	30	181	62	5	0	10	0	31	2	5	0	71	0	55	0
6-7 pm	112	6	120	26	89	48	2	0	4	0	14	0	11	5	41	0	53	0
7-8 pm	65	5	72	15	36	32	1	0	5	0	18	0	3	9	27	0	57	0

North Bound (NB) = Going towards Bacoor Cavite via Aguinaldo Highway to Manila

East Bound (EB) =From imus and Dasmariñas Cavite turning right towards Medical Center Imus(MCI), Palico IV and Brgy. Buhay na Tubig to SM Molino

Observations:

1. Slight to moderate traffic happens in the morning from 6 AM onwards going towards Bacoor to Manila
2. No Truck Ban
3. Trailers, Dump trucks and buses causes slight to moderate traffic
4. One way counterflowing traffic is in effect from Imus to Bacoor from 6 AM onwards
5. One way counterflowing traffic usually causes accidents to drivers and pedestrians during rush hours
6. No traffic light in the intersection only traffic enforcer on shifting schedule
7. Traffic is almost not moving trom Bacoor to Imus to Dasmariñas starting 6 PM onwards

Table 6 Traffic Volume of Flow 2 of Aguinaldo Highway at Station E

Observation Station: E

Location: Intersection of Aguinaldo Highway and Buhay na Tubig road

Road Conditions: Aguinald Highway: four lanes, 12-15 m width, concrete/asphalt pavement, Buhay na Tubig road: two lanes, 6 m, concrete/asphalt pavement

Date of Survey: October 10, 2008

TIME	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S	E to S	N to S
6- 7 am	46	103	70	115	92	137	7	8	7	17	24	46	11	24	0	42	30	58
7-8 am	7	91	12	142	91	146	5	14	0	9	5	38	0	5	0	50	4	92
8-9 am	7	139	11	180	77	123	6	18	0	9	6	58	1	13	0	84	1	97
9-10 am	16	128	23	200	62	196	3	12	3	6	11	63	1	15	0	49	3	94
10-11 am	16	159	23	196	46	148	0	21	1	13	10	67	0	7	0	59	4	92
11-12 pm	27	160	18	158	39	137	5	14	2	20	9	64	2	8	0	54	8	96
12-1 pm	21	148	56	192	80	182	18	20	3	39	16	76	9	15	0	63	17	85
1-2 pm	14	125	31	229	63	159	9	11	1	30	6	57	1	21	0	77	3	101
2-3 pm	38	177	52	260	46	195	11	15	3	22	17	73	0	11	0	70	5	123
3-4 pm	58	143	78	292	52	165	22	24	3	34	18	79	0	20	0	75	7	137
4-5 pm	47	143	27	139	23	93	12	13	3	20	18	34	4	17	0	81	7	108
5-6 pm	20	164	39	234	47	123	7	23	2	11	22	57	1	17	0	69	0	98
6-7 pm	22	83	33	94	14	49	7	11	2	7	8	17	3	9	0	32	9	117
7-8 pm	9	33	9	48	7	19	2	7	3	12	4	10	2	4	0	18	3	132

East to South (E to S)= Palico IV, Buhay na Tubig road turning left going towards Aguinaldo Highway Imus and Dasmariñas Cavite

North to Sound (N to S) = Manila, Bacoor going towards Imus Proper, Dasmariñas Cavite and Tagaytay

Passenger Jeepney (route)

1. SM Bacoor to SM Molino (Pag-Asa) vice-versa
2. Baclaran to Dasmariñas vice-versa
3. SM Bacoor to Pala-pala DDB vice-versa
4. Alabang-Zapote to Dasma Bayan vice-versa

Passenger Bus (route)

1. Pasay Taft to Indang, Trece Martires vice-versa
2. Lawton (Manila) to Tagaytay vice-versa
3. Pasay Taft to Nasugbu via Tagaytay vice-versa
4. Lawton to Nasugbu via Tagaytay vice-versa

Table 7 Traffic Volume of Flow 3 of Buhay na Tubig Road at Station E

Observation Station: E

Location: Intersection of Aguinaldo Highway and Buhay na Tubig road

Road Conditions: Aguinald Highway: four lanes, 12-15 m width, concrete/asphalt pavement, Buhay na Tubig road: two lanes, 6 m, concrete/asphalt pavement

Date of Survey: October 10, 2008

Time	Private Jeep/Cars				Passenger Vehicles				Trucks				Cars for Hire		Bus		Others	
	FX/Van/Jeep/AUV		SUV/Sedan/Cars		PUJ/Multicab		Tricycle/Pedicab		Big Trucks		Small Trucks		FX/Van/Taxi		PUB/Tourist		Single Motorbike	
	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E	E to N	N to E
6- 7 am	115	64	195	85	92	85	12	9	3	6	12	5	30	15	0	0	20	25
7-8 am	50	35	195	50	80	76	8	11	6	9	9	14	15	17	0	2	15	30
8-9 am	85	70	150	82	85	90	15	8	12	10	10	22	43	25	0	0	13	20
9-10 am	115	65	170	95	95	125	6	7	14	9	32	26	26	20	0	0	20	22
10-11 am	90	35	150	70	45	105	12	5	10	11	20	35	31	45	0	0	23	32
11-12 pm	55	35	100	65	50	65	11	6	9	7	18	8	16	20	0	0	12	8
12-1 pm	60	25	106	54	65	90	6	9	15	12	30	22	23	15	0	0	18	23
1-2 pm	115	40	155	85	75	115	7	8	19	11	17	29	23	10	2	0	14	26
2-3 pm	100	120	145	85	100	50	9	9	8	12	28	42	10	10	0	0	22	33
3-4 pm	92	92	110	85	70	51	5	4	9	6	21	44	5	0	0	0	14	21
4-5 pm	75	105	115	85	80	25	6	3	7	13	26	34	5	0	0	0	17	23
5-6 pm	106	145	103	182	71	42	2	3	8	2	16	19	18	5	0	0	40	27
6-7 pm	42	16	53	26	16	13	5	3	2	1	5	6	3	1	0	0	26	12
7-8 pm	27	12	29	28	18	14	2	1	1	1	4	7	2	4	0	0	14	9

East to North (E to N) = From Palico IV and Buhay na Tubig turning right towards Aguinaldo Highway Bacoor Cavite to Manila

North to East (N to E) = From Manila and Bacoor turning left towards Palico IV and Brgy. Buhay na Tubig Road

Appendix-5
Cost Estimate

Master Plan Study

Table A.5.C1 Cost Estimate of Construction Base Cost for Diversion Channel (for 5-year probable flood)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	3,986,070	6,928,605	3,885,577	7,898,775	2,049,935	198,541	24,947,504	Mobilization and etc.
Excavation	m3	29	60	0	0	7	1	188,000	5,528,587	11,342,893	12,492	49,968	1,403,121	170,150	18,507,211	
Embakment	m3	43	88	0	0	7	1	42,300	1,812,862	3,720,644	1,172	4,689	307,768	37,322	5,884,457	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	145,700	6,977,642	14,314,566	18,912	75,648	2,124,214	257,594	23,768,576	
Revetment	m3	4,018	7,155	5,013	7,236	3,295	383	2,040	8,196,394	14,596,301	10,226,243	14,760,750	6,721,654	781,371	55,282,713	
Road on Dike	m	625	771	2,076	3,312	1,031	123	2,200	1,374,602	1,695,239	4,566,375	7,286,345	2,268,828	271,668	17,463,058	
Bridge																
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	216	1,836,572	2,377,915	3,416,065	8,575,092	802,829	21,452	17,029,924	
Bridge-2 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	216	1,836,572	2,377,915	3,416,065	8,575,092	802,829	21,452	17,029,924	
Bridge-3 (B=10m)	m2	8,503	11,009	15,815	39,699	3,717	99	432	3,673,144	4,755,830	6,832,129	17,150,184	1,605,657	42,904	34,059,848	
Bridge-4 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	216	1,836,572	2,377,915	3,416,065	8,575,092	802,829	21,452	17,029,924	
Access Road																
Road-1 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-2 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-3 (B=10m)	m	867	1,084	2,815	4,660	1,491	179	80	69,326	86,688	225,218	372,831	119,314	14,327	887,702	
Road-4 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Temporary Works	%	20%	20%	20%	20%	20%	20%		6,643,450	11,547,675	6,475,962	13,164,626	3,416,559	330,902	41,579,174	
Total									43,846,771	76,214,653	42,741,350	86,886,529	22,549,290	2,183,953	274,422,546	
								Say	43,900,000	76,300,000	42,800,000	86,900,000	22,600,000	2,200,000	274,700,000	
Percentage									16.0%	27.8%	15.6%	31.6%	8.2%	0.8%	100.0%	
								Say	16%	28%	15%	32%	8%	1%	100%	

Table A.5.C2 Cost Estimate of Compensation Cost for Diversion Channel (for 5-year probable flood)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				100			20,000,000				20,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				47,460			4,746,000				4,746,000	
Built-up area	m2			3,000				33,900			101,700,000				101,700,000	
Others	m2			500				77,970			38,985,000				38,985,000	
Total									0	0	165,431,000	0	0	0	165,431,000	
								Say	0	0	165,500,000	0	0	0	165,500,000	

Table A.5.C3 Cost Estimate of Construction Base Cost for Diversion Channel (for 10-year probable flood)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	5,854,137	10,258,591	5,207,550	11,028,908	2,753,049	257,908	35,360,143	Mobilization and etc.
Excavation	m3	29	60	0	0	7	1	307,800	9,051,591	18,570,970	20,452	81,810	2,297,237	278,575	30,300,637	
Embakment	m3	43	88	0	0	7	1	42,300	1,812,862	3,720,644	1,172	4,689	307,768	37,322	5,884,457	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	265,500	12,714,921	26,084,538	34,462	137,849	3,870,822	469,397	43,311,989	
Revetment	m3	4,018	7,155	5,013	7,236	3,295	383	2,340	9,401,746	16,742,816	11,730,103	16,931,448	7,710,132	896,279	63,412,524	
Road on Dike	m	625	771	2,076	3,312	1,031	123	2,200	1,374,602	1,695,239	4,566,375	7,286,345	2,268,828	271,668	17,463,058	
Bridge																
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	336	2,856,890	3,698,979	5,313,878	13,339,032	1,248,845	33,370	26,490,993	
Bridge-2 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	336	2,856,890	3,698,979	5,313,878	13,339,032	1,248,845	33,370	26,490,993	
Bridge-3 (B=10m)	m2	8,503	11,009	15,815	39,699	3,717	99	672	5,713,779	7,397,958	10,627,757	26,678,064	2,497,689	66,739	52,981,986	
Bridge-4 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	336	2,856,890	3,698,979	5,313,878	13,339,032	1,248,845	33,370	26,490,993	
Access Road																
Road-1 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-2 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-3 (B=10m)	m	867	1,084	2,815	4,660	1,491	179	80	69,326	86,688	225,218	372,831	119,314	14,327	887,702	
Road-4 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Temporary Works	%	20%	20%	20%	20%	20%	20%		9,756,895	17,097,651	8,679,250	18,381,514	4,588,416	429,847	58,933,572	
Total									64,395,506	112,844,500	57,283,049	121,317,990	30,283,543	2,836,989	388,961,578	
								Say	64,400,000	112,900,000	57,300,000	121,400,000	30,300,000	2,900,000	389,200,000	

Table A.5.C4 Cost Estimate of Compensation Cost for Diversion Channel (for 10-year probable flood)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				135			27,000,000				27,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				57,260			5,726,000				5,726,000	
Built-up area	m2			3,000				40,900			122,700,000				122,700,000	
Others	m2			500				94,070			47,035,000				47,035,000	
Total									0	0	202,461,000	0	0	0	202,461,000	
								Say	0	0	202,500,000	0	0	0	202,500,000	

Table A.5.C5 Cost Estimate of Construction Base Cost for Diversion Channel (for 20-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	7,879,486	13,892,498	6,491,968	14,258,142	3,435,274	312,175	46,269,542	Mobilization and etc.
Excavation	m3	29	60	0	0	7	1	451,900	13,289,195	27,265,177	30,028	120,110	3,372,714	408,993	44,486,217	
Embakment	m3	43	88	0	0	7	1	42,300	1,812,862	3,720,644	1,172	4,689	307,768	37,322	5,884,457	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	409,600	19,615,939	40,241,909	53,167	212,667	5,971,709	724,162	66,819,551	
Revetment	m3	4,018	7,155	5,013	7,236	3,295	383	2,340	9,401,746	16,742,816	11,730,103	16,931,448	7,710,132	896,279	63,412,524	
Road on Dike	m	625	771	2,076	3,312	1,031	123	2,200	1,374,602	1,695,239	4,566,375	7,286,345	2,268,828	271,668	17,463,058	
Bridge															0	
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	471	4,004,747	5,185,176	7,448,919	18,698,464	1,750,612	46,777	37,134,696	
Bridge-2 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	471	4,004,747	5,185,176	7,448,919	18,698,464	1,750,612	46,777	37,134,696	
Bridge-3 (B=10m)	m2	8,503	11,009	15,815	39,699	3,717	99	942	8,009,494	10,370,351	14,897,837	37,396,929	3,501,225	93,554	74,269,391	
Bridge-4 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	471	4,004,747	5,185,176	7,448,919	18,698,464	1,750,612	46,777	37,134,696	
Access Road																
Road-1 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-2 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Road-3 (B=10m)	m	867	1,084	2,815	4,660	1,491	179	80	69,326	86,688	225,218	372,831	119,314	14,327	887,702	
Road-4 (B=5m)	m	312	385	1,038	1,656	516	62	80	24,993	30,823	83,025	132,479	41,251	4,939	317,510	
Temporary Works	%	20%	20%	20%	20%	20%	20%		13,132,477	23,154,164	10,819,946	23,763,570	5,725,456	520,291	77,115,904	
Total									86,674,345	152,817,481	71,411,645	156,839,560	37,788,012	3,433,920	508,964,963	
								Say	86,700,000	152,900,000	71,500,000	156,900,000	37,800,000	3,500,000	509,300,000	

Table A.5.C6 Cost Estimate of Compensation Cost for Diversion Channel (for 20-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				250			50,000,000				50,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				76,160			7,616,000				7,616,000	
Built-up area	m2			3,000				54,400			163,200,000				163,200,000	
Others	m2			500				125,120			62,560,000				62,560,000	
Total									0	0	283,376,000	0	0	0	283,376,000	
								Say	0	0	283,400,000	0	0	0	283,400,000	

Table A.5.C7 Cost Estimate of Construction Base Cost for River Channel Improvement (with Diversion Channel for 5-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	14,621	18,031	48,570	77,500	24,132	2,890	185,743	Mobilization and etc.
Heightening of Existing Road																
Road-1 (B=5m, L=390m)	m	312	385	1,038	1,656	516	62	390	121,840	150,260	404,747	645,835	201,101	24,080	1,547,862	
Temporary Works	%	20%	20%	20%	20%	20%	20%		24,368	30,052	80,949	129,167	40,220	4,816	309,572	
Total									160,828	198,343	534,266	852,502	265,453	31,785	2,043,178	
								Say	200,000	200,000	600,000	900,000	300,000	100,000	2,300,000	

Table A.5.C8 Cost Estimate of Compensation Cost for River Channel Improvement (with Diversion Channel for 5-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				25			5,000,000				5,000,000	
Land Purchasing											0				0	
along the River	m2			1,000				10,000			10,000,000				10,000,000	
Total									0	0	15,000,000	0	0	0	15,000,000	
								Say	0	0	15,000,000	0	0	0	15,000,000	

Table A.5.C9 Cost Estimate of Construction Base Cost for River Channel Improvement (with Diversion Channel of 10-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	1,457,344	2,555,748	1,602,104	3,438,047	750,422	91,567	9,895,233	Mobilization and etc.
Heightening of Existing Road (StA.5+800 - Sta.5+200)																
Road-1 (B=5m, L=390m)	m	312	385	1,038	1,656	516	62	390	121,840	150,260	404,747	645,835	201,101	24,080	1,547,862	
River Improvement (Sta.5+400 - Sta.6+000)																
Channel Excavation	m3	29	60	0	0	7	1	240,000	7,057,771	14,480,289	15,947	63,789	1,791,218	217,213	23,626,227	
Wet Stone Masonry Revetment	m3	286	309	1,367	1,934	853	103	2,350	672,109	726,316	3,212,930	4,544,733	2,004,388	243,063	11,403,539	
Gabion Mattress	m3	316	504	693	1,034	259	31	900	284,535	453,175	623,409	930,684	233,062	28,262	2,553,128	
Construction of Maintenance Road																
Right Bank (B=3m, L=600m)	m	127	197	323	308	59	7	600	76,201	118,084	193,814	184,909	35,481	4,032	612,521	
Installation of Parapet Wall (Sta.10+500 - Sta.12+300, L=1.8km)																
Concrete for Wall	m3	476	659	1,313	1,886	591	97	1,530	728,688	1,008,175	2,009,192	2,886,014	904,493	147,800	7,684,361	
Re-bar for Wall	kg	3	4	3	28	5	0	153,000	466,645	555,348	477,970	4,301,734	759,933	60,050	6,621,681	
Leveling Concrete	m3	243	286	798	1,719	205	22	216	52,576	61,862	172,265	371,307	44,345	4,665	707,019	
Pile Furnishing	m	236	236	887	2,069	0	0	6,300	1,489,600	1,489,600	5,586,000	13,034,000	0	0	21,599,200	
Pile Driving	m	190	358	104	268	44	5	6,300	1,194,570	2,254,792	654,596	1,687,386	279,498	33,893	6,104,735	
Temporary Works	%	20%	20%	20%	20%	20%	20%	1	2,428,907	4,259,580	2,670,174	5,730,078	1,250,704	152,612	16,492,055	
Total									16,030,786	28,113,228	17,623,149	37,818,517	8,254,645	1,007,237	108,847,563	
								Say	16,100,000	28,200,000	17,700,000	37,900,000	8,300,000	1,100,000	109,300,000	

Table A.5.C10 Cost Estimate of Compensation Cost for River Channel Improvement (with Diversion Channel of 10-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				85			17,000,000				17,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
along river	m2			1,000				18,500			18,500,000				18,500,000	
Farmland	m2			500				1,800			900,000				900,000	
Total									0	0	36,400,000	0	0	0	36,400,000	
								Say	0	0	36,400,000	0	0	0	36,400,000	

Table A.5.C11 Cost Estimate of Construction Base Cost for River Channel Improvement (with Diversion Channel of 20-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%	1	3,915,701	6,327,888	6,201,293	13,574,424	2,553,743	312,628	32,885,678	Mobilization and etc.
Heightening of Existing Road (StA.5+800 - Sta.5+200 of San Juan)																
Road-1 (B=5m, L=390m)	m	312	385	1,038	1,656	516	62	429	134,024	165,286	445,222	710,419	221,211	26,488	1,702,648	
River Improvement (Sta.5+400 - Sta.6+000 of San Juan)																
Channel Excavation	m3	29	60	0	0	7	1	288,000	8,469,325	17,376,347	19,137	76,547	2,149,462	260,655	28,351,473	
Wet Stone Masonry Revetmen	m3	286	309	1,367	1,934	853	103	2,820	806,531	871,579	3,855,516	5,453,680	2,405,265	291,675	13,684,247	
Gabion Mattress	m3	316	504	693	1,034	259	31	1,080	341,443	543,811	748,091	1,116,820	279,675	33,915	3,063,754	
River Improvement (Sta.6+000 - Sta.9+000 of San Juan)																
Channel Excavation	m3	29	60	0	0	7	1	144,000	4,234,663	8,688,173	9,568	38,274	1,074,731	130,328	14,175,736	
Wet Stone Masonry Revetmen	m3	286	309	1,367	1,934	853	103	6,426	1,837,862	1,986,088	8,785,654	12,427,428	5,480,935	664,648	31,182,614	
Gabion Mattress	m3	316	504	693	1,034	259	31	2,700	853,606	1,359,526	1,870,228	2,792,051	699,187	84,787	7,659,385	
Construction of Maintenance Road of San Juan River																
Right Bank (B=3m, L=600m)	m	127	197	323	308	59	7	600	76,201	118,084	193,814	184,909	35,481	4,032	612,521	
Installation of Parapet Wall (Sta.10+500 - Sta.12+300, L=1.8km of San Juan)																
Concrete for Wall	m3	476	659	1,313	1,886	591	97	1,989	947,294	1,310,627	2,611,949	3,751,819	1,175,841	192,140	9,989,670	
Re-bar for Wall	kg	3	4	3	28	5	0	198,900	606,638	721,953	621,362	5,592,254	987,913	78,065	8,608,185	
Leveling Concrete	m3	243	286	798	1,719	205	22	216	52,576	61,862	172,265	371,307	44,345	4,665	707,019	
Pile Furnishing	m	236	236	887	2,069	0	0	6,300	1,489,600	1,489,600	5,586,000	13,034,000	0	0	21,599,200	
Pile Driving	m	190	358	104	268	44	5	6,300	1,194,570	2,254,792	654,596	1,687,386	279,498	33,893	6,104,735	
Installation of Parapet Wall (StA.5+800 - Sta.7+300, L=2.5km of Ylang-Ylang)																
Concrete for Wall	m3	476	659	1,313	1,886	591	97	5,100	2,428,958	3,360,582	6,697,306	9,620,048	3,014,978	492,665	25,614,538	
Re-bar for Wall	kg	3	4	3	28	5	0	510,000	1,555,482	1,851,161	1,593,235	14,339,114	2,533,111	200,167	22,072,269	
Leveling Concrete	m3	243	286	798	1,719	205	22	600	146,045	171,838	478,513	1,031,408	123,179	12,959	1,963,943	
Pile Furnishing	m	236	236	887	2,069	0	0	17,500	4,137,778	4,137,778	15,516,667	36,205,556	0	0	59,997,778	
Pile Driving	m	190	358	104	268	44	5	17,500	3,318,250	6,263,312	1,818,323	4,687,183	776,383	94,148	16,957,598	
Temporary Works	%	20%	20%	20%	20%	20%	20%	1	6,526,169	10,546,479	10,335,489	22,624,040	4,256,239	521,046	54,809,463	
Total									43,072,716	69,606,764	68,214,228	149,318,667	28,091,176	3,438,905	361,742,454	
								Say	43,100,000	69,700,000	68,300,000	149,400,000	28,100,000	3,500,000	362,100,000	

Table A.5.C12 Cost Estimate of Compensation Cost for River Channel Improvement (with Diversion Channel of 20-year probable flood)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				200			40,000,000				40,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
along river	m2			1,000				28,500			28,500,000				28,500,000	
Farmland	m2			500				1,800			900,000				900,000	
Total									0	0	69,400,000	0	0	0	69,400,000	
								Say	0	0	69,400,000	0	0	0	69,400,000	

Table A.5.C13 Cost Estimate of Construction Base Cost for Imus River Channel Improvement (Partial)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	1,093,739	1,800,055	1,406,774	3,475,771	570,239	88,230	8,434,808	Mobilization and etc.
Earth Work																
Dredging	m3	29	60	0	0	7	1	120,000	3,528,885	7,240,144	7,974	31,895	895,609	108,606	11,813,114	
Embankment	m3	43	88	0	0	7	1	95,000	4,071,439	8,356,056	2,633	10,531	691,205	83,819	13,215,684	
Excavation	m3	34	70	0	0	10	1	16,000	545,133	1,118,357	1,425	5,700	160,057	19,409	1,850,081	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	25,000	1,197,262	2,456,171	3,245	12,980	364,484	44,199	4,078,342	
Revetment																
Concrete Block on Slope	m3	128	130	468	1,105	255	65	10,000	1,275,000	1,300,000	4,675,000	11,050,000	2,550,000	650,000	21,500,000	
Geotextile Sheet	m2	20	20	15	133	1	0	42,000	854,202	854,800	618,576	5,567,184	40,242	4,880	7,939,884	
Road Work																
Coastal Road (B=12m)	m	867	1,084	2,815	4,660	1,491	179	1,350	1,169,869	1,462,860	3,800,547	6,291,516	2,013,418	241,766	14,979,977	
Maintenance Road (B=3m)	m	127	197	323	308	59	7	2,000	254,005	393,612	646,046	616,364	118,270	13,441	2,041,737	
Parapet Wall Work (L=3,200m in total)																
Concrete for Wall	m3	476	659	1,313	1,886	591	97	2,720	1,295,445	1,792,310	3,571,897	5,130,692	1,607,988	262,755	13,661,087	
Re-bar for Wall	kg	3	4	3	28	5	0	272,000	829,591	987,286	849,725	7,647,528	1,350,992	106,756	11,771,877	
Leveling Concrete	m3	243	286	798	1,719	205	22	384	93,469	109,976	306,248	660,101	78,835	8,294	1,256,923	
Pile Furnishing	m	236	236	887	2,069	0	0	11,200	2,648,178	2,648,178	9,930,667	23,171,556	0	0	38,398,578	
Pile Driving	m	190	358	104	268	44	5	11,200	2,123,680	4,008,519	1,163,727	2,999,797	496,885	60,255	10,852,863	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	1,988,616	3,272,827	2,557,771	6,319,584	1,036,799	160,418	15,336,015	
Total									22,968,511	37,801,152	29,542,255	72,991,199	11,975,023	1,852,828	177,130,969	
								Say	23,000,000	37,900,000	29,600,000	73,000,000	12,000,000	1,900,000	177,400,000	

Table A.5.C14 Cost Estimate of Compensation Cost for Imus River Channel Improvement

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				90			18,000,000				18,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
along river	m2			1,000				9,000			9,000,000				9,000,000	
Farmland	m2			500				0			0				0	
Total									0	0	27,000,000	0	0	0	27,000,000	
								Say	0	0	27,000,000	0	0	0	27,000,000	

Table A.5.C15 Cost Estimate of Construction Base Cost for Imus River Channel Improvement (5-year Improvement)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	3,627,073	5,195,820	6,278,798	15,694,067	1,715,507	158,570	32,669,835	Mobilization and etc.
Earth Work																
Dredging	m3	29	60	0	0	7	1	120,000	3,528,885	7,240,144	7,974	31,895	895,609	108,606	11,813,114	
Embankment	m3	43	88	0	0	7	1	95,000	4,071,439	8,356,056	2,633	10,531	691,205	83,819	13,215,684	
Excavation	m3	34	70	0	0	10	1	16,000	545,133	1,118,357	1,425	5,700	160,057	19,409	1,850,081	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	25,000	1,197,262	2,456,171	3,245	12,980	364,484	44,199	4,078,342	
Revetment																
Concrete Block on Slope	m3	128	130	468	1,105	255	65	10,000	1,275,000	1,300,000	4,675,000	11,050,000	2,550,000	650,000	21,500,000	
Geotextile Sheet	m2	20	20	15	133	1	0	42,000	854,202	854,800	618,576	5,567,184	40,242	4,880	7,939,884	
Road Work																
Coastal Road (B=12m)	m	867	1,084	2,815	4,660	1,491	179	1,350	1,169,869	1,462,860	3,800,547	6,291,516	2,013,418	241,766	14,979,977	
Maintenance Road (B=3m)	m	127	197	323	308	59	7	2,000	254,005	393,612	646,046	616,364	118,270	13,441	2,041,737	
Parapet Wall Work (L=3,200m in total)																
Excavation	m3	29	60	0	0	7	1	50,000	1,470,369	3,016,727	3,322	13,289	373,170	45,253	4,922,131	
Concrete for Wall	m3	476	659	1,313	1,886	591	97	8,160	3,886,334	5,376,931	10,715,690	15,392,077	4,823,965	788,265	40,983,260	
Re-bar for Wall	kg	3	4	3	28	5	0	816,000	2,488,772	2,961,857	2,549,176	22,942,583	4,052,977	320,267	35,315,631	
Leveling Concrete	m3	243	286	798	1,719	205	22	1,152	280,406	329,929	918,745	1,980,304	236,504	24,882	3,770,770	
Pile Furnishing	m	236	236	887	2,069	0	0	33,600	7,944,533	7,944,533	29,792,000	69,514,667	0	0	115,195,733	
Pile Driving	m	190	358	104	268	44	5	33,600	6,371,039	12,025,558	3,491,181	8,999,391	1,490,655	180,765	32,558,589	
Bridge Replacement																
National Road	m2	8,503	11,009	15,815	39,699	3,717	99	1,200	10,203,177	13,210,639	18,978,137	47,639,400	4,460,159	119,178	94,610,689	
Bridge in Imus	m2	8,503	11,009	15,815	39,699	3,717	99	600	5,101,589	6,605,319	9,489,068	23,819,700	2,230,079	59,589	47,305,345	
Imus Bridge	m2	8,503	11,009	15,815	39,699	3,717	99	1,800	15,304,766	19,815,958	28,467,205	71,459,100	6,690,238	178,766	141,916,034	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	6,594,678	9,446,945	11,415,997	28,534,668	3,119,103	288,308	59,399,700	
Total									76,168,532	109,112,218	131,854,766	329,575,415	36,025,643	3,329,962	686,066,535	
								Say	76,200,000	109,200,000	131,900,000	329,600,000	36,100,000	3,400,000	686,400,000	

Table A.5.C16 Cost Estimate of Compensation Cost for Imus River Channel Improvement (2-year Improvement without On-site (5-year Improvement with On-site))

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				400			80,000,000				80,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
along river	m2			2,000				60,000			120,000,000				120,000,000	
Farmland	m2			500				0			0				0	
Total									0	0	200,000,000	0	0	0	200,000,000	
								Say	0	0	200,000,000	0	0	0	200,000,000	

Table A.5.C17 Cost Estimate of Construction Base Cost for Bacoor River Channel Improvement (Partial)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	2,319,430	4,492,641	1,945,604	6,505,563	971,503	175,057	16,409,799	Mobilization and etc.
Earth Work																
Dredging	m3	29	60	0	0	7	1	121,000	3,558,293	7,300,479	8,040	32,161	903,072	109,511	11,911,556	
Embankment	m3	43	88	0	0	7	1	310,000	13,285,749	27,267,131	8,591	34,365	2,255,511	273,515	43,124,863	
Excavation	m3	34	70	0	0	10	1	73,000	2,487,168	5,102,503	6,502	26,006	730,259	88,555	8,440,994	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	116,000	5,555,295	11,396,634	15,057	60,228	1,691,207	205,085	18,923,506	
Revetment																
Wet Stone Masonry(1:0.5)	m3	286	309	1,367	1,934	853	103	3,450	986,714	1,066,294	4,716,854	6,672,055	2,942,612	356,837	16,741,366	
Wet Stone Masonry(1:2.0)	m3	1,172	1,415	4,545	6,640	2,127	244	1,350	1,582,315	1,910,728	6,135,723	8,963,850	2,870,927	329,805	21,793,348	
Road Work																
Maintenance Road (B=3m)	m	127	197	323	308	59	7	8,000	1,016,019	1,574,447	2,584,185	2,465,455	473,078	53,763	8,166,947	
Sheet Pile Work																
Coping Concrete with P. Wall	m3	476	659	1,313	1,886	591	97	1,800	857,279	1,186,088	2,363,755	3,395,311	1,064,110	173,882	9,040,425	
Re-bar for Concrete	kg	3	4	3	28	5	0	180,000	548,994	653,351	562,318	5,060,864	894,039	70,647	7,790,213	
Steel sheet piles Type III	m	188	580	192	2,262	20	58	24,688	4,641,250	14,318,750	4,740,000	55,843,125	493,750	1,431,875	81,468,750	Furnishing & Driving
Bridge Replacement																
4-Bridge Replacement	m2	8,503	11,009	15,815	39,699	3,717	99	900	7,652,383	9,907,979	14,233,603	35,729,550	3,345,119	89,383	70,958,017	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	4,217,146	8,168,438	3,537,463	11,828,297	1,766,368	318,286	29,835,998	
Total									48,708,037	94,345,464	40,857,694	136,616,831	20,401,555	3,676,202	344,605,782	
								Say	48,800,000	94,400,000	40,900,000	136,700,000	20,500,000	3,700,000	345,000,000	

Table A.5.C18 Cost Estimate of Compensation Cost for Bacoor River Channel Improvement (Partial)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				60			12,000,000				12,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				30,000			3,000,000				3,000,000	
along river	m2			3,000				9,600			28,800,000				28,800,000	
Farmland	m2			500							0				0	
Total									0	0	43,800,000	0	0	0	43,800,000	
								Say	0	0	43,800,000	0	0	0	43,800,000	

Table A.5.C19 Cost Estimate of Construction Base Cost for Bacoor River Channel Improvement (2-year with On-site)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	7,104,557	13,619,678	9,618,239	40,875,019	2,947,232	783,723	74,948,447	Mobilization and etc.
Earth Work																
Dredging	m3	29	60	0	0	7	1	121,000	3,558,293	7,300,479	8,040	32,161	903,072	109,511	11,911,556	
Embankment	m3	43	88	0	0	7	1	310,000	13,285,749	27,267,131	8,591	34,365	2,255,511	273,515	43,124,863	
Excavation	m3	34	70	0	0	10	1	215,000	7,325,222	15,027,920	19,148	76,594	2,150,764	260,813	24,860,461	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	26,000	1,245,152	2,554,418	3,375	13,499	379,064	45,967	4,241,475	
Revetment																
Wet Stone Masonry(1:0.5)	m3	286	309	1,367	1,934	853	103	3,450	986,714	1,066,294	4,716,854	6,672,055	2,942,612	356,837	16,741,366	
Wet Stone Masonry(1:2.0)	m3	1,172	1,415	4,545	6,640	2,127	244	1,350	1,582,315	1,910,728	6,135,723	8,963,850	2,870,927	329,805	21,793,348	
Road Work									0	0	0	0	0	0	0	
Maintenance Road (B=3m)	m	127	197	323	308	59	7	24,000	3,048,058	4,723,341	7,752,554	7,396,366	1,419,234	161,289	24,500,842	
Sheet Pile Work																
Coping Concrete with P. Wall	m3	476	659	1,313	1,886	591	97	12,000	5,715,196	7,907,251	15,758,367	22,635,407	7,094,066	1,159,213	60,269,501	
Re-bar for Concrete	kg	3	4	3	28	5	0	1,200,000	3,659,959	4,355,673	3,748,788	33,739,092	5,960,260	470,980	51,934,752	
Steel sheet piles Type III	m	188	580	192	2,262	20	58	180,000	33,840,000	104,400,000	34,560,000	407,160,000	3,600,000	10,440,000	594,000,000	
Bridge Replacement																
8-Bridge Replacement	m2	8,503	11,009	15,815	39,699	3,717	99	6,460	54,927,105	71,117,271	102,165,637	256,458,769	24,010,523	641,572	509,320,877	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	12,917,376	24,763,051	17,487,708	74,318,216	5,358,603	1,424,950	136,269,904	
Total									149,195,697	286,013,234	201,983,024	858,375,393	61,891,868	16,458,177	1,573,917,392	
Say									149,200,000	286,100,000	202,000,000	858,400,000	61,900,000	16,500,000	1,574,100,000	

Table A.5.C20 Cost Estimate of Compensation Cost for Bacoor River Channel Improvement (2-year with On-site)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				250			50,000,000				50,000,000	
Land Purchasing											0				0	
Fishpond	m2			100				30,000			3,000,000				3,000,000	
along river	m2			3,000				46,000			138,000,000				138,000,000	
Farmland	m2			500							0				0	
Total									0	0	191,000,000	0	0	0	191,000,000	
Say									0	0	191,000,000	0	0	0	191,000,000	

Table A.5.C21 Cost Estimate of Construction Base Cost for Julian River Channel Improvement (Partial (2-year))

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	928,528	1,754,736	1,397,900	3,942,523	680,152	126,435	8,830,274	Mobilization and etc.
Excavation	m3	34	70	0	0	10	1	150,000	5,110,620	10,484,595	13,359	53,437	1,500,533	181,963	17,344,508	
Embankment	m3	43	88	0	0	7	1	50,000	2,142,863	4,397,924	1,386	5,543	363,792	44,115	6,955,623	
S.S.P. Type III Revetment	m	188	580	192	2,262	20	58	14,496	2,725,217	8,407,583	2,783,200	32,789,575	289,917	840,758	47,836,250	
Wet Stone Masonry-1	m3	286	309	1,367	1,934	853	103	4,667	1,334,685	1,442,330	6,380,286	9,025,002	3,980,345	482,678	22,645,326	
Coping Concrete	m3	476	659	1,313	1,886	591	97	350	166,693	230,628	459,619	660,199	206,910	33,810	1,757,860	
Wet Stone Masonry-2	m3	286	309	1,367	1,934	853	103	5,000	1,430,020	1,545,353	6,836,021	9,669,645	4,264,655	517,155	24,262,849	
Parapet Wall	m3	476	659	1,313	1,886	591	97	1,650	785,840	1,087,247	2,166,775	3,112,368	975,434	159,392	8,287,056	
Pile Furnishing	m	203	203	760	1,773	0	0	5,000	1,013,333	1,013,333	3,800,000	8,866,667	0	0	14,693,333	
Pile Driving	m	163	307	89	230	38	5	5,000	812,633	1,533,872	445,304	1,147,881	190,135	23,057	4,152,881	
Bridge Work	m2	8,503	11,009	15,815	39,699	3,717	99	160	1,360,424	1,761,418	2,530,418	6,351,920	594,688	15,890	12,614,759	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	1,688,233	3,190,428	2,541,637	7,168,224	1,236,641	229,882	16,055,045	
Total									19,499,088	36,849,449	29,355,905	82,792,986	14,283,201	2,655,136	185,435,764	
Say									19,500,000	36,900,000	29,400,000	82,800,000	14,300,000	2,700,000	185,600,000	

Table A.5.C22 Cost Estimate of Compensation Cost for Julian River Channel Improvement (Partial (2-year with On-site))

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				50			10,000,000				10,000,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
along river	m2			3,000				5,000			15,000,000				15,000,000	
Farmland	m2			500							0				0	
Total									0	0	25,000,000	0	0	0	25,000,000	
								Say	0	0	25,000,000	0	0	0	25,000,000	

Table A.5.C23 Cost Estimate of Construction Base Cost for Julian River Channel Improvement (5-year with On-site (2-year without On-site))

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	2,258,321	4,878,336	3,390,380	15,179,140	1,596,273	442,352	27,744,802	Mobilization and etc.
Excavation	m3	34	70	0	0	10	1	223,200	7,604,603	15,601,077	19,879	79,515	2,232,793	270,761	25,808,627	
Embankment	m3	43	88	0	0	7	1	73,800	3,162,866	6,491,336	2,045	8,181	536,957	65,114	10,266,500	
S.S.P. Type III Revetment	m	188	580	192	2,262	20	58	85,200	16,017,600	49,416,000	16,358,400	192,722,400	1,704,000	4,941,600	281,160,000	
Wet Stone Masonry-1	m3	286	309	1,367	1,934	853	103	6,336	1,812,121	1,958,272	8,662,605	12,253,374	5,404,171	655,339	30,745,882	
Coping Concrete	m3	476	659	1,313	1,886	591	97	3,360	1,600,255	2,214,030	4,412,343	6,337,914	1,986,339	324,580	16,875,460	
Re-bar	kg	3	4	3	28	5	0	336,000	1,024,788	1,219,588	1,049,661	9,446,946	1,668,873	131,874	14,541,730	
Wet Stone Masonry-2	m3	286	309	1,367	1,934	853	103	12,096	3,459,504	3,738,519	16,537,701	23,392,806	10,317,053	1,251,101	58,696,684	
Bridge Work	m2	8,503	11,009	15,815	39,699	3,717	99	640	5,441,695	7,045,674	10,121,673	25,407,680	2,378,751	63,561	50,459,034	
Wet Stone Masonry-3	m3	286	309	1,367	1,934	853	103	3,276	936,949	1,012,515	4,478,961	6,335,552	2,794,202	338,840	15,897,019	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%	1	4,106,038	8,869,701	6,164,327	27,598,437	2,902,314	804,277	50,445,094	
Total									47,424,740	102,445,049	71,197,974	318,761,945	33,521,726	9,289,400	582,640,832	
								Say	47,500,000	102,500,000	71,200,000	318,800,000	33,600,000	9,300,000	582,900,000	

Table A.5.C24 Cost Estimate of Compensation Cost for Julian River Channel Improvement (5-year with On-site (2-year without On-site))

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				250			50,000,000				50,000,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
along river	m2			3,000				25,000			75,000,000				75,000,000	
Farmland	m2			500							0				0	
Total									0	0	125,000,000	0	0	0	125,000,000	
								Say	0	0	125,000,000	0	0	0	125,000,000	

Table A.5.C25 Cost Estimate of Construction Base Cost for San Juan River Channel Improvement (Partial)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	1,284,385	2,197,076	1,100,833	3,024,337	633,192	105,490	8,345,314	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	191,000	5,616,809	11,523,897	12,691	50,766	1,425,511	172,865	18,802,539	
Embakment	m3	43	88	0	0	7	1	64,000	2,742,864	5,629,343	1,774	7,095	465,654	56,468	8,903,198	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	127,000	6,082,090	12,477,350	16,485	65,939	1,851,580	224,533	20,717,976	
Concrete Block Revetment	m3	128	130	468	1,105	255	65	19,700	2,511,750	2,561,000	9,209,750	21,768,500	5,023,500	1,280,500	42,355,000	
Geotextile Sheet for block	m2	20	20	15	133	1	0	100,000	2,033,815	2,035,238	1,472,800	13,255,200	95,814	11,619	18,904,486	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	4,000	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
Bridge																
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	420	3,571,112	4,623,724	6,642,348	16,673,790	1,561,056	41,712	33,113,741	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	1,000	286,004	309,071	1,367,204	1,933,929	852,931	103,431	4,852,570	
Temporary Works	%	10%	10%	10%	10%	10%	10%		2,335,246	3,994,684	2,001,514	5,498,795	1,151,258	191,801	15,173,298	
Total									26,972,086	46,138,606	23,117,491	63,511,078	13,297,035	2,215,300	175,251,596	
Say									27,000,000	46,200,000	23,200,000	63,600,000	13,300,000	2,300,000	175,600,000	

Table A.5.C26 Cost Estimate of Compensation Cost for San Juan River Channel Improvement (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				60			12,000,000				12,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000							0				0	
Others(Floodplain & Mangrove)	m2			500				85,000			42,500,000				42,500,000	
Total									0	0	54,500,000	0	0	0	54,500,000	
Say									0	0	54,500,000	0	0	0	54,500,000	

Table A.5.C27 Cost Estimate of Construction Base Cost for San Juan River Channel Improvement (for 5-year protection with on-site (2-year protection without On-site))

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	3,025,318	4,899,928	3,690,375	8,536,820	1,782,647	414,924	22,350,012	Mobilization and etc.
Sta.0+000-Sta.1+700																
Dredging	m3	29	60	0	0	7	1	191,000	5,616,809	11,523,897	12,691	50,766	1,425,511	172,865	18,802,539	
Embakment	m3	43	88	0	0	7	1	64,000	2,742,864	5,629,343	1,774	7,095	465,654	56,468	8,903,198	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	127,000	6,082,090	12,477,350	16,485	65,939	1,851,580	224,533	20,717,976	
Concrete Block Revetment	m3	128	130	468	1,105	255	65	19,700	2,511,750	2,561,000	9,209,750	21,768,500	5,023,500	1,280,500	42,355,000	
Geotextile Sheet for block	m2	20	20	15	133	1	0	100,000	2,033,815	2,035,238	1,472,800	13,255,200	95,814	11,619	18,904,486	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	4,000	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	420	3,571,112	4,623,724	6,642,348	16,673,790	1,561,056	41,712	33,113,741	
Sta.1+700-StA.5+800																
Excavation	m3	34	70	0	0	10	1	345,000	11,754,426	24,114,569	30,727	122,906	3,451,226	418,514	39,892,367	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	13,020	3,723,772	4,024,100	17,800,998	25,179,756	11,105,162	1,346,672	63,180,459	
Bridge-2 (B=12m)	m2	8,503	11,009	15,815	39,699	3,717	99	528	4,489,398	5,812,681	8,350,380	20,961,336	1,962,470	52,438	41,628,703	
Bridge-3 (B=12m)	m2	8,503	11,009	15,815	39,699	3,717	99	528	4,489,398	5,812,681	8,350,380	20,961,336	1,962,470	52,438	41,628,703	
Bridge-4 (B=20m)	m2	8,503	11,009	15,815	39,699	3,717	99	880	7,482,330	9,687,802	13,917,300	34,935,560	3,270,783	87,397	69,381,172	
Temporary Works	%	10%	10%	10%	10%	10%	10%		5,500,578	8,908,961	6,709,772	15,521,491	3,241,176	377,204	40,259,182	
Total									63,531,670	102,898,495	77,497,872	179,273,223	37,435,588	4,564,165	465,201,013	
Say									63,600,000	102,900,000	77,500,000	179,300,000	37,500,000	4,600,000	465,400,000	

Table A.5.C28 Cost Estimate of Compensation Cost for San Juan River Channel Improvement (for 5-year protection with on-site (2-year protection without On-site))

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				250			50,000,000				50,000,000	
Land Purchasing																
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				30,000			90,000,000				90,000,000	
Others(Floodplain & Mangrove)	m2			500				85,000			42,500,000				42,500,000	
Total									0	0	182,500,000	0	0	0	182,500,000	
Say									0	0	182,500,000	0	0	0	182,500,000	

Table A.5.C29 Cost Estimate of Construction Base Cost for Bacoor-3 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	70,396	95,030	153,918	406,223	40,381	5,026	770,974	Mobilization and etc.
Construction of Parapet Wall	m3	476	659	1,313	1,886	591	97	600	285,760	395,363	787,918	1,131,770	354,703	57,961	3,013,475	
Re-bar	kg	3	4	3	28	5	0	60,000	182,998	217,784	187,439	1,686,955	298,013	23,549	2,596,738	
Furnishing Pile	m	203	203	760	1,773	0	0	2,100	425,600	425,600	1,596,000	3,724,000	0	0	6,171,200	
Pile Driving	m2	163	307	89	230	38	5	2,100	341,306	644,226	187,028	482,110	79,856	9,684	1,744,210	
Installation of Flap Gate 610mm	No	11,067	11,210	10,029	90,261	406	49	4	44,268	44,838	40,116	361,044	1,622	197	492,086	
Temporary Works	%	10%	10%	10%	10%	10%	10%		127,993	172,781	279,850	738,588	73,420	9,139	1,401,771	
Total									1,478,321	1,995,622	3,232,269	8,530,690	847,995	105,556	16,190,453	
								Say	1,500,000	2,000,000	3,300,000	8,600,000	900,000	200,000	16,500,000	

Table A.5.C30 Cost Estimate of Compensation Cost for Bacoor-3 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				10			2,000,000				2,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				600			1,800,000				1,800,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	3,800,000	0	0	0	3,800,000	
								Say	0	0	3,800,000	0	0	0	3,800,000	

Table A.5.C31 Cost Estimate of Construction Base Cost for IT-2 Drainage Channel Improvement (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	584,290	925,521	996,583	1,764,752	513,049	54,385	4,838,581	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	60,000	1,764,443	3,620,072	3,987	15,947	447,804	54,303	5,906,557	
Embakment	m3	43	88	0	0	7	1	28,000	1,200,003	2,462,838	776	3,104	203,724	24,705	3,895,149	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	32,000	1,532,495	3,143,899	4,154	16,615	466,540	56,575	5,220,277	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	7,600	2,173,630	2,348,937	10,390,751	14,697,861	6,482,276	786,076	36,879,531	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	4,000	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
Bridge																
Bridge-1 (B=5m)	m2	8,503	11,009	15,815	39,699	3,717	99	400	3,401,059	4,403,546	6,326,046	15,879,800	1,486,720	39,726	31,536,896	
Piling																
Furnishing	m	203	203	760	1,773	0	0	120	24,320	24,320	91,200	212,800	0	0	352,640	
Driving	m	163	307	89	230	38	5	120	19,503	36,813	10,687	27,549	4,563	553	99,669	
Temporary Works	%	10%	10%	10%	10%	10%	10%		1,062,346	1,682,765	1,811,969	3,208,640	932,817	98,882	8,797,419	
Total									12,270,100	19,435,934	20,928,245	37,059,796	10,774,031	1,142,086	101,610,193	
Say									12,300,000	19,500,000	21,000,000	37,100,000	10,800,000	1,200,000	101,900,000	

Table A.5.C32 Cost Estimate of Compensation Cost for IT-2 Drainage Channel Improvement (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				30			6,000,000				6,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				3,000			9,000,000				9,000,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	15,000,000	0	0	0	15,000,000	
Say									0	0	15,000,000	0	0	0	15,000,000	

Table A.5.C33 Cost Estimate of Construction Base Cost for Dr-1 (Malamok) Drainage Channel Improvement (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	1,307,388	2,549,542	1,536,361	3,746,855	1,036,007	423,123	10,599,276	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	65,000	1,911,480	3,921,745	4,319	17,276	485,122	58,828	6,398,770	
Embakment	m3	43	88	0	0	7	1	45,000	1,928,577	3,958,132	1,247	4,988	327,413	39,704	6,260,061	
Small-Area Excavation	m3	34	70	0	0	10	1	29,000	988,053	2,027,022	2,583	10,331	290,103	35,179	3,353,271	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	49,000	2,346,633	4,814,096	6,360	25,441	714,389	86,631	7,993,550	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	2,260	646,369	698,500	3,089,881	4,370,680	1,927,624	233,754	10,966,808	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	4,000	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
Bridge																
Bridge-1 (B=7m)	m2	8,503	11,009	15,815	39,699	3,717	99	123	1,041,574	1,348,586	1,937,351	4,863,189	455,308	12,166	9,658,175	
Tidal Gate																
BxH=20x4.5m with Lock	m2	80,000	160,000	120,000	320,000	80,000	40,000	180	14,400,000	28,800,000	21,600,000	57,600,000	14,400,000	7,200,000	144,000,000	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		2,377,070	4,635,530	2,793,383	6,812,463	1,883,650	769,314	19,271,411	
Total									27,455,153	53,540,375	32,263,579	78,683,951	21,756,155	8,885,581	222,584,795	
Say									27,500,000	53,600,000	32,300,000	78,700,000	21,800,000	8,900,000	222,800,000	

Table A.5.C34 Cost Estimate of Compensation Cost for Dr-1 (Malamok) Drainage Channel Improvement (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				50			10,000,000				10,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				1,500			4,500,000				4,500,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	14,500,000	0	0	0	14,500,000	
Say									0	0	14,500,000	0	0	0	14,500,000	

Table A.5.C35 Cost Estimate of Construction Base Cost for Dr-2 (Malamok) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	305,676	502,399	431,189	811,043	241,845	25,269	2,317,420	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	0	0	0	0	0	0	0	0	
Embakment	m3	43	88	0	0	7	1	8,000	342,858	703,668	222	887	58,207	7,058	1,112,900	
Small-Area Excavation	m3	34	70	0	0	10	1	35,000	1,192,478	2,446,406	3,117	12,469	350,124	42,458	4,047,052	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	27,000	1,293,043	2,652,665	3,505	14,019	393,643	47,735	4,404,609	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	3,300	943,813	1,019,933	4,511,774	6,381,966	2,814,672	341,322	16,013,480	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7		0	0	0	0	0	0	0	
Bridge																
Bridge (B=7mx3Bridges)	m2	8,503	11,009	15,815	39,699	3,717	99	210	1,785,556	2,311,862	3,321,174	8,336,895	780,528	20,856	16,556,871	
									0	0	0	0	0	0	0	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		555,775	913,453	783,979	1,474,623	439,717	45,943	4,213,491	
Total									6,419,199	10,550,386	9,054,959	17,031,901	5,078,736	530,642	48,665,823	
								Say	6,500,000	10,600,000	9,100,000	17,100,000	5,100,000	600,000	49,000,000	

Table A.5.C36 Cost Estimate of Compensation Cost for Dr-2 (Malamok) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				20			4,000,000				4,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				1,000			3,000,000				3,000,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	7,000,000	0	0	0	7,000,000	
								Say	0	0	7,000,000	0	0	0	7,000,000	

Table A.5.C37 Cost Estimate of Construction Base Cost for Dr-3 Drainage Channel Improvement (Dredging Work)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	425,596	862,197	321,093	856,693	261,907	112,749	2,840,234	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	20,000	588,148	1,206,691	1,329	5,316	149,268	18,101	1,968,852	
Embakment	m3	43	88	0	0	7	1	46,500	1,992,862	4,090,070	1,289	5,155	338,327	41,027	6,468,729	
Small-Area Excavation	m3	34	70	0	0	10	1		0	0	0	0	0	0	0	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	26,500	1,269,098	2,603,541	3,440	13,759	386,353	46,851	4,323,042	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	0	0	0	0	0	0	0	0	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7		0	0	0	0	0	0	0	
Bridge																
Bridge (B=7mx3Bridges)	m2	8,503	11,009	15,815	39,699	3,717	99	0	0	0	0	0	0	0	0	
Tidal Gate																
BxHxn=3x3.6x9	m2	40,000	80,000	60,000	160,000	40,000	20,000	97	3,888,000	7,776,000	5,832,000	15,552,000	3,888,000	1,944,000	38,880,000	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		773,811	1,567,630	583,806	1,557,623	476,195	204,998	5,164,062	
Total									8,937,514	18,106,129	6,742,956	17,990,545	5,500,050	2,367,726	59,644,921	
								Say	9,000,000	18,200,000	6,800,000	18,000,000	5,600,000	2,400,000	60,000,000	

Table A.5.C38 Cost Estimate of Compensation Cost for Dr-3 Drainage Channel Improvement (Dredging Work)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			100,000				10			1,000,000				1,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000							0				0	
Others(Floodplain & Mangrove)	m2			500				6,000			3,000,000				3,000,000	
Total									0	0	4,000,000	0	0	0	4,000,000	
								Say	0	0	4,000,000	0	0	0	4,000,000	

Table A.5.C39 Cost Estimate of Construction Base Cost for Dr-4 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	998,350	2,015,330	961,426	2,564,424	713,599	329,167	7,582,298	Mobilization and etc.
Dredging	m3	29	60	0	0	7	1	90,000	2,646,664	5,430,108	5,980	23,921	671,707	81,455	8,859,835	
Embakment	m3	43	88	0	0	7	1	90,000	3,857,153	7,916,264	2,494	9,977	654,826	79,408	12,520,122	
Small-Area Excavation	m3	34	70	0	0	10	1		0	0	0	0	0	0	0	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	0	0	0	0	0	0	0	0	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	0	0	0	0	0	0	0	0	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7		0	0	0	0	0	0	0	
Bridge																
	m2	8,503	11,009	15,815	39,699	3,717	99	0	0	0	0	0	0	0	0	
Tidal Gate																
BxH=10x3.2 with Lock)	m2	80,000	160,000	120,000	320,000	80,000	40,000	64	5,120,000	10,240,000	7,680,000	20,480,000	5,120,000	2,560,000	51,200,000	
BxHxn=3x3.2x7	m2	40,000	80,000	60,000	160,000	40,000	20,000	67	2,688,000	5,376,000	4,032,000	10,752,000	2,688,000	1,344,000	26,880,000	
BxHxn=3x3.2x10	m2	40,000	80,000	60,000	160,000	40,000	20,000	96	3,840,000	7,680,000	5,760,000	15,360,000	3,840,000	1,920,000	38,400,000	
Temporary Works	%	10%	10%	10%	10%	10%	10%		1,815,182	3,664,237	1,748,047	4,662,590	1,297,453	598,486	13,785,996	
Total									20,965,349	42,321,940	20,189,948	53,852,912	14,985,585	6,912,516	159,228,250	
								Say	21,000,000	42,400,000	20,200,000	53,900,000	15,000,000	7,000,000	159,500,000	

Table A.5.C40 Cost Estimate of Compensation Cost for Dr-4 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				5			1,000,000				1,000,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				10,000			30,000,000				30,000,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	31,000,000	0	0	0	31,000,000	
								Say	0	0	31,000,000	0	0	0	31,000,000	

Table A.5.C41 Cost Estimate of Construction Base Cost for Dr-5 (Panamitan Upstream) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	430,688	788,804	425,799	619,383	310,730	36,615	2,612,019	Mobilization and etc.
Embakment	m3	43	88	0	0	7	1	1,440	61,714	126,660	40	160	10,477	1,271	200,322	
Excavation	m3	34	70	0	0	10	1	69,840	2,379,505	4,881,627	6,220	24,880	698,648	84,722	8,075,603	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	68,400	3,275,708	6,720,084	8,878	35,514	997,229	120,929	11,158,343	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	4,128	1,180,624	1,275,844	5,643,819	7,983,259	3,520,899	426,963	20,031,408	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	4,000	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
Bridge																
Bridge (B=7mxL7mx1Bridge)	m2	8,503	11,009	15,815	39,699	3,717	99	50	425,132	550,443	790,756	1,984,975	185,840	4,966	3,942,112	
									0	0	0	0	0	0	0	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		783,069	1,434,188	774,180	1,126,152	564,963	66,573	4,749,126	
Total									9,044,452	16,564,874	8,941,785	13,007,051	6,525,325	768,921	54,852,407	
								Say	9,100,000	16,600,000	9,000,000	13,100,000	6,600,000	800,000	55,200,000	

Table A.5.C42 Cost Estimate of Compensation Cost for Dr-5 (Panamitan Upstream) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Farmland	m2			500				5,000			2,500,000				2,500,000	
Built-up area	m2			3,000				5,000			15,000,000				15,000,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	17,500,000	0	0	0	17,500,000	
								Say	0	0	17,500,000	0	0	0	17,500,000	

Table A.5.C43 Cost Estimate of Construction Base Cost for Dr-8 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	230,474	412,836	325,289	672,542	191,040	51,577	1,883,757	Mobilization and etc.
Embakment	m3	43	88	0	0	7	1	4,000	171,429	351,834	111	443	29,103	3,529	556,450	
Excavation	m3	34	70	0	0	10	1	18,000	613,274	1,258,151	1,603	6,412	180,064	21,836	2,081,341	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	14,000	670,467	1,375,456	1,817	7,269	204,111	24,752	2,283,871	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	1,440	411,846	445,062	1,968,774	2,784,858	1,228,221	148,941	6,987,701	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	1,600	203,204	314,889	516,837	493,091	94,616	10,753	1,633,389	
Bridge																
Bridge (B=10mxL8mx1Bridge)	m2	8,503	11,009	15,815	39,699	3,717	99	80	680,212	880,709	1,265,209	3,175,960	297,344	7,945	6,307,379	
Tidal Gate (BxHxn=4x3mx3)	m2	40,000	80,000	60,000	160,000	40,000	20,000	36	1,440,000	2,880,000	2,160,000	5,760,000	1,440,000	720,000	14,400,000	
									0	0	0	0	0	0	0	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		419,043	750,610	591,435	1,222,803	347,346	93,775	3,425,013	
Total									4,839,948	8,669,547	6,831,076	14,123,379	4,011,845	1,083,107	39,558,902	
Say									4,900,000	8,700,000	6,900,000	14,200,000	4,100,000	1,100,000	39,900,000	

Table A.5.C44 Cost Estimate of Compensation Cost for Dr-8 Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				1			200,000				200,000	
Land Purchasing											0				0	
Farmland	m2			500							0				0	
Built-up area	m2			3,000							0				0	
Others(Fishpond & Mangrove)	m2			500				8,000			4,000,000				4,000,000	
Total									0	0	4,200,000	0	0	0	4,200,000	
Say									0	0	4,200,000	0	0	0	4,200,000	

Table A.5.C45 Cost Estimate of Construction Base Cost for Dr-9 (malimango) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	490,194	849,028	723,565	1,499,926	389,732	94,741	4,047,186	Mobilization and etc.
Embakment	m3	43	88	0	0	7	1	17,000	728,573	1,495,294	471	1,885	123,689	14,999	2,364,912	
Excavation	m3	34	70	0	0	10	1	36,500	1,243,584	2,551,251	3,251	13,003	365,130	44,278	4,220,497	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	19,500	933,864	1,915,814	2,531	10,125	284,298	34,475	3,181,107	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	3,100	886,612	958,119	4,238,333	5,995,180	2,644,086	320,636	15,042,966	
Road on Dike (B=3.0m)	m	127	197	323	308	59	7	3,400	431,808	669,140	1,098,278	1,047,819	201,058	22,849	3,470,953	
Bridge																
Bridge (B=7mxL15mx1Bridge)	m2	8,503	11,009	15,815	39,699	3,717	99	105	892,778	1,155,931	1,660,587	4,168,447	390,264	10,428	8,278,435	
Bridge (B=10mxL15mx1Bridge)	m2	8,503	11,009	15,815	39,699	3,717	99	150	1,275,397	1,651,330	2,372,267	5,954,925	557,520	14,897	11,826,336	
Tidal Gate (BxH =15x4.2m)	m2	40,000	80,000	60,000	160,000	40,000	20,000	63	2,520,000	5,040,000	3,780,000	10,080,000	2,520,000	1,260,000	25,200,000	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		891,262	1,543,688	1,315,572	2,727,138	708,604	172,256	7,358,521	
Total									10,294,073	17,829,595	15,194,855	31,498,448	8,184,382	1,989,560	84,990,913	
Say									10,300,000	17,900,000	15,200,000	31,500,000	8,200,000	2,000,000	85,100,000	

Table A.5.C46 Cost Estimate of Compensation Cost for Dr-9 (Malimango) Drainage Channel Improvement (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				30			6,000,000				6,000,000	
Land Purchasing											0				0	
Farmland	m2			500							0				0	
Built-up area	m2			3,000				8,000			24,000,000				24,000,000	
Others(Fishpond & Mangrove)	m2			500				8,000			4,000,000				4,000,000	
Total									0	0	34,000,000	0	0	0	34,000,000	
Say									0	0	34,000,000	0	0	0	34,000,000	

Table A.5.C47 Cost Estimate of Construction Base Cost for Dr-5 Drainage Channel (L=2.0km (Both Sides)) (as Base Cost of Ring Dike)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	380,570	665,268	571,527	776,764	382,986	46,344	2,823,460	Mobilization and etc.
Excavation	m3	34	70	0	0	10	1	25,000	851,770	1,747,433	2,227	8,906	250,089	30,327	2,890,751	
Dike Embakment	m3	43	88	0	0	7	1	53,500	2,292,863	4,705,779	1,483	5,931	389,257	47,203	7,442,517	
Hauling Earth Material (2-5km)	m3	48	98	0	1	15	2	28,500	1,364,879	2,800,035	3,699	14,797	415,512	50,387	4,649,310	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	6,650	1,901,927	2,055,320	9,091,907	12,860,628	5,671,991	687,816	32,269,589	
Maintenance Road (B=3.0m)	m	127	197	323	308	59	7	4,000.0	508,010	787,224	1,292,092	1,232,728	236,539	26,881	4,083,474	
									0	0	0	0	0	0	0	
Temporary Works	%	10%	10%	10%	10%	10%	10%		691,945	1,209,579	1,039,141	1,412,299	696,339	84,262	5,133,564	
Total									7,991,962	13,970,638	12,002,076	16,312,054	8,042,714	973,221	59,292,665	
for One Side									3,995,981	6,985,319	6,001,038	8,156,027	4,021,357	486,610	29,646,332	
for One Side per 1km									1,997,991	3,492,659	3,000,519	4,078,013	2,010,678	243,305	14,823,166	
Say									1,998,000	3,493,000	3,001,000	4,100,000	2,011,000	244,000	14,847,000	

Table A.5.C48 Cost Estimate of Construction Base Cost for Ring Dike-1 (excluding Cost of Coastal Dike)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	1%	1%	1%	1%	1%	1%		64,609	111,563	99,329	145,598	62,599	7,598	491,296	including Ring Dike Construction
Ring Dike Construction	m	1,998	3,493	3,001	4,100	2,011	244	3,000	5,994,000	10,479,000	9,003,000	12,300,000	6,033,000	732,000	44,541,000	
Parapet Wall									0	0	0	0	0	0	0	
Concrete	m3	476	659	1,313	1,886	591	97	70	33,339	46,126	91,924	132,040	41,382	6,762	351,572	
Re-bar	kg	3	4	3	28	5	0	7,000	21,350	25,408	21,868	196,811	34,768	2,747	302,953	
Pile Furnishing	m	203	203	760	1,773	0	0	700	141,867	141,867	532,000	1,241,333	0	0	2,057,067	
Pile Driving	m	163	307	89	230	38	5	700	113,769	214,742	62,343	160,703	26,619	3,228	581,403	
Slide Gate BxHx2=3x3mx2	m2	40,000	80,000	60,000	160,000	40,000	20,000	0	0	0	0	0	0	0	0	
Flap Gate 910mm dia.	nos.	14,965	15,202	13,522	121,697	676	82	2	29,929	30,404	27,044	243,394	1,352	164	332,287	
Temporary Works	%	2%	2%	2%	2%	2%	2%		126,685	218,751	194,764	285,486	122,742	14,898	963,326	including Ring Dike Construction
Total									6,525,547	11,267,861	10,032,271	14,705,365	6,322,462	767,397	49,620,904	
Say									6,600,000	11,300,000	10,100,000	14,800,000	6,400,000	800,000	50,000,000	

Table A.5.C49 Cost Estimate of Compensation Cost for Ring Dike-1 (including housing structures along coastal dike)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				20			4,000,000				4,000,000	
				200,000				80			16,000,000				16,000,000	
Land Purchasing																
Fishpond	m2			200				9,000			1,800,000				1,800,000	for Coastal Dike
Built-up area	m2			3,000				16,000			48,000,000				48,000,000	for Ring Levee
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	69,800,000	0	0	0	69,800,000	
Say									0	0	69,800,000	0	0	0	69,800,000	

Table A.5.C50 Cost Estimate of Construction Base Cost for Ring Dike-2 (excluding Cost of Coastal Dike)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	1%	1%	1%	1%	1%	1%	1	82,296	144,220	125,788	197,125	80,206	12,515	642,150	Mobilization and etc.
Ring Dike Construction	m	1,998	3,493	3,001	4,100	2,011	244	3,500	6,993,000	12,225,500	10,503,500	14,350,000	7,038,500	854,000	51,964,500	
Parapet Wall									0	0	0	0	0	0	0	
Concrete	m3	476	659	1,313	1,886	591	97	70	33,339	46,126	91,924	132,040	41,382	6,762	351,572	
Re-bar	kg	3	4	3	28	5	0	7,000	21,350	25,408	21,868	196,811	34,768	2,747	302,953	
Pile Furnishing	m	203	203	760	1,773	0	0	700	141,867	141,867	532,000	1,241,333	0	0	2,057,067	
Pile Driving	m	163	307	89	230	38	5	700	113,769	214,742	62,343	160,703	26,619	3,228	581,403	
Slide Gate BxHx2=3x3mx2	m2	40,000	80,000	60,000	160,000	40,000	20,000	18	720,000	1,440,000	1,080,000	2,880,000	720,000	360,000	7,200,000	
Flap Gate 910mm dia.	nos.	14,965	15,202	13,522	121,697	676	82	3	44,894	45,607	40,566	365,091	2,028	246	498,431	
Temporary Works	%	2%	2%	2%	2%	2%	2%		161,364	282,785	246,644	386,520	157,266	24,540	1,259,119	
Total									8,311,878	14,566,254	12,704,632	19,909,623	8,100,769	1,264,038	64,857,194	
								Say	8,400,000	14,600,000	12,800,000	20,000,000	8,200,000	1,300,000	65,300,000	

Table A.5.C51 Cost Estimate of Compensation Cost for Ring Dike-2 (including housing structures along coastal dike)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				70			14,000,000				14,000,000	
Land Purchasing																
Fishpond	m2			200				18,000			3,600,000				3,600,000	for Coastal Dike
Built-up area	m2			3,000				17,000			51,000,000				51,000,000	for Ring Levee
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	68,600,000	0	0	0	68,600,000	
								Say	0	0	68,600,000	0	0	0	68,600,000	

Table A.5.C52 Cost Estimate of Construction Base Cost for Ring Dike-3 (excluding Cost of Coastal Dike)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	1%	1%	1%	1%	1%	1%	1	52,247	91,122	78,296	109,034	52,300	6,346	389,345	Mobilization and etc.
Ring Dike Construction	m	1,998	3,493	3,001	4,100	2,011	244	2,600	5,194,800	9,081,800	7,802,600	10,660,000	5,228,600	634,400	38,602,200	
Parapet Wall									0	0	0	0	0	0	0	
Concrete	m3	476	659	1,313	1,886	591	97		0	0	0	0	0	0	0	
Re-bar	kg	3	4	3	28	5	0		0	0	0	0	0	0	0	
Pile Furnishing	m	203	203	760	1,773	0	0		0	0	0	0	0	0	0	
Pile Driving	m	163	307	89	230	38	5		0	0	0	0	0	0	0	
Slide Gate BxHx2=3x3mx2	m2	40,000	80,000	60,000	160,000	40,000	20,000		0	0	0	0	0	0	0	
Flap Gate 910mm dia.	nos.	14,965	15,202	13,522	121,697	676	82	2	29,929	30,404	27,044	243,394	1,352	164	332,287	
Temporary Works	%	0%	0%	0%	0%	0%	0%		0	0	0	0	0	0	0	
Total									5,276,976	9,203,326	7,907,940	11,012,428	5,282,251	640,910	39,323,832	
								Say	5,300,000	9,300,000	8,000,000	11,100,000	5,300,000	700,000	39,700,000	

Table A.5.C53 Cost Estimate of Compensation Cost for Ring Dike-2 (including housing structures along coastal dike)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				50			10,000,000				10,000,000	
Land Purchasing																
Fishpond	m2			200				14,000			2,800,000				2,800,000	for Coastal Dike
Built-up area	m2			3,000				12,000			36,000,000				36,000,000	for Ring Levee
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	48,800,000	0	0	0	48,800,000	
								Say	0	0	48,800,000	0	0	0	48,800,000	

Table A.5.C54 Cost Estimate of Construction Base Cost for BM-1 Drainage Main (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%	1	279,641	395,770	478,702	1,516,680	344,684	43,400	3,058,876	Mobilization and etc.
Construction of Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	2,750	4,714,084	6,553,186	7,630,315	26,033,153	5,749,773	614,925	51,295,435	
Road Re-construction (B=10)	m	625	771	2,076	3,312	1,031	123	500	312,410	385,282	1,037,813	1,655,987	515,643	61,743	3,968,877	
Tidal Gate	m2	40,000	80,000	60,000	160,000	40,000	20,000	7.5	300,000	600,000	450,000	1,200,000	300,000	150,000	3,000,000	
									0	0	0	0	0	0	0	
Temporary Works	%	5%	5%	5%	5%	5%	5%		266,325	376,923	455,906	1,444,457	328,271	41,333	2,913,216	
Total									5,872,459	8,311,161	10,052,735	31,850,277	7,238,371	911,401	64,236,404	
								Say	5,900,000	8,400,000	10,100,000	31,900,000	7,300,000	1,000,000	64,600,000	

Table A.5.C55 Cost Estimate of Compensation Cost for BM-1 Drainage Main Construction (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				2			400,000				400,000	
Land Purchasing											0				0	
Fishpond	m2			0							0				0	
Built-up area	m2			3,000				200			600,000				600,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	1,000,000	0	0	0	1,000,000	
								Say	0	0	1,000,000	0	0	0	1,000,000	

Table A.5.C56 Cost Estimate of Construction Base Cost for KDM-1 Drainage Main (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		469,898	798,964	1,006,915	3,263,279	626,236	111,220	6,276,513	Mobilization and etc.
SSP Revetment	m	188	580	192	2,262	20	58	9,375	1,762,500	5,437,500	1,800,000	21,206,250	187,500	543,750	30,937,500	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	5,880	1,681,703	1,817,335	8,039,160	11,371,503	5,015,234	608,174	28,533,110	
Coping Concrete	m3	476	659	1,313	1,886	591	97	350	166,693	230,628	459,619	660,199	206,910	33,810	1,757,860	
Re-bar	kg	3	4	3	28	5	0	35,000	106,749	127,040	109,340	984,057	173,841	13,737	1,514,764	
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	2,575	4,414,096	6,136,165	7,144,749	24,376,497	5,383,879	575,793	48,031,180	
Tidal Gate	m2	40,000	80,000	60,000	160,000	40,000	20,000	15	600,000	1,200,000	900,000	2,400,000	600,000	300,000	6,000,000	
Road Pavement	m2	62	77	208	331	103	12	3,500	218,687	269,697	726,469	1,159,191	360,950	43,220	2,778,214	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		447,521	760,918	958,967	3,107,885	596,416	105,924	5,977,631	
Total									9,867,848	16,778,249	21,145,219	68,528,862	13,150,966	2,335,630	131,806,773	
								Say	9,900,000	16,800,000	21,200,000	68,600,000	13,200,000	2,400,000	132,100,000	

Table A.5.C57 Cost Estimate of Compensation Cost for KDM-1 Drainage Main Construction (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
House Relocation	Nos			200,000				2			400,000				400,000	
Land Purchasing											0				0	
Fishpond	m2			100				8,000			800,000				800,000	
Built-up area	m2			3,000							0				0	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	1,200,000	0	0	0	1,200,000	
								Say	0	0	1,200,000	0	0	0	1,200,000	

Table A.5.C58 Cost Estimate of Construction Base Cost for KDM-2 Drainage Main (2-year)

Item	Unit	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Quantity	Equipment L/C	Equipment F/C	Material L/C	Material F/C	Labor L/C	Labor F/C	Total	Remarks
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		336,662	465,662	570,350	1,855,877	417,057	44,918	3,690,527	Mobilization and etc.
SSP Revetment	m	188	580	192	2,262	20	58	0	0	0	0	0	0	0	0	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	0	0	0	0	0	0	0	0	
Coping Concrete	m3	476	659	1,313	1,886	591	97	0	0	0	0	0	0	0	0	
Re-bar	kg	3	4	3	28	5	0	0	0	0	0	0	0	0	0	
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	3,575	6,128,309	8,519,142	9,919,409	33,843,098	7,474,705	799,403	66,684,066	
Tidal Gate	m2	40,000	80,000	60,000	160,000	40,000	20,000	0	0	0	0	0	0	0	0	
Road Pavement	m2	62	77	208	331	103	12	4,550	284,293	350,606	944,409	1,506,949	469,235	56,186	3,611,678	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		320,630	443,487	543,191	1,767,502	397,197	42,779	3,514,787	
Total									7,069,893	9,778,897	11,977,360	38,973,427	8,758,194	943,286	77,501,058	
								Say	7,100,000	9,800,000	12,000,000	39,000,000	8,800,000	1,000,000	77,700,000	

Table A.5.C59 Cost Estimate of Compensation Cost for KDM-2 Drainage Main Construction (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				0			0				0	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	0	0	0	0	0	
								Say	0	0	0	0	0	0	0	

Table A.5.C60 Cost Estimate of Construction Base Cost for NDM-1 Drainage Main (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		572,976	797,648	1,033,515	3,158,650	743,864	88,405	6,395,058	Mobilization and etc.
SSP Revetment	m	188	580	192	2,262	20	58	0	0	0	0	0	0	0	0	
Wet Stone Masonry	m3	286	309	1,367	1,934	853	103	1,505	430,436	465,151	2,057,642	2,910,563	1,283,661	155,664	7,303,118	
Coping Concrete	m3	476	659	1,313	1,886	591	97	0	0	0	0	0	0	0	0	
Re-bar	kg	3	4	3	28	5	0	0	0	0	0	0	0	0	0	
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	5,665	9,711,012	13,499,563	15,718,448	53,628,294	11,844,533	1,266,746	105,668,597	
Gate (BXH=3x3)	m2	40,000	80,000	60,000	160,000	40,000	20,000	9	360,000	720,000	540,000	1,440,000	360,000	180,000	3,600,000	
Road Pavement	m2	62	77	208	331	103	12	6,600	412,381	508,572	1,369,913	2,185,903	680,648	81,500	5,238,917	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		545,691	759,664	984,300	3,008,238	708,442	84,195	6,090,532	
Total									12,032,496	16,750,598	21,703,818	66,331,649	15,621,149	1,856,510	134,296,221	
								Say	12,100,000	16,800,000	21,800,000	66,400,000	15,700,000	1,900,000	134,700,000	

Table A.5.C61 Cost Estimate of Compensation Cost for KDM-1 Drainage Main Construction (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				10			2,000,000				2,000,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				1,200			3,600,000				3,600,000	
Others(Floodplain & Mangrove)	m2			1,000							0				0	
Total									0	0	5,600,000	0	0	0	5,600,000	
								Say	0	0	5,600,000	0	0	0	5,600,000	

Table A.5.C62 Cost Estimate of Construction Base Cost for RDM-1-4 Drainage Main (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		1,956,961	2,748,504	3,279,031	10,684,548	2,400,731	283,046	21,352,820	Mobilization and etc.
Box Culvert Concrete for RDM-1	m3	1,714	2,383	2,775	9,467	2,091	224	8,250	14,142,251	19,659,558	22,890,944	78,099,458	17,249,320	1,844,775	153,886,306	
Box Culvert Concrete for RDM-2	m3	1,714	2,383	2,775	9,467	2,091	224	4,600	7,885,376	10,961,693	12,763,435	43,546,364	9,617,803	1,028,602	85,803,274	
Box Culvert Concrete for RDM-3	m3	1,714	2,383	2,775	9,467	2,091	224	7,360	12,616,602	17,538,709	20,421,497	69,674,183	15,388,484	1,645,763	137,285,238	
Installation of Pipe Culvert	m	528	855	843	1,239	433	53	150	79,136	128,282	126,495	185,869	64,969	7,878	592,629	
Tidal Gate (BxHxn=3x2.5mx4)	m2	40,000	80,000	60,000	160,000	40,000	20,000	30	1,200,000	2,400,000	1,800,000	4,800,000	1,200,000	600,000	12,000,000	
Flap Gate (910mm)	Nos.	14,965	15,202	13,522	121,697	676	82	1	14,965	15,202	13,522	121,697	676	82	166,144	
Road Pavement	m2	62	77	208	331	103	12	21,400	1,337,113	1,649,005	4,441,838	7,087,626	2,206,951	264,259	16,986,793	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		1,863,772	2,617,622	3,122,887	10,175,760	2,286,410	269,568	20,336,019	
Total									41,096,176	57,718,575	68,859,649	224,375,505	50,415,343	5,943,974	448,409,221	
								Say	41,100,000	57,800,000	68,900,000	224,400,000	50,500,000	6,000,000	448,700,000	

Table A.5.C63 Cost Estimate of Compensation Cost for RDM-1-4 Drainage Main Construction (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				500			1,500,000				1,500,000	
Others(Floodplain & Mangrove)	m2			1,000							0				0	
Total									0	0	1,500,000	0	0	0	1,500,000	
								Say	0	0	1,500,000	0	0	0	1,500,000	

Table A.5.C64 Cost Estimate of Construction Base Cost for I-IT-2 Drainage Interceptor

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		119,970	166,131	201,171	661,618	148,095	15,925	1,312,910	Mobilization and etc.
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	1,288	2,207,048	3,068,083	3,572,375	12,188,249	2,691,939	287,897	24,015,590	
									0	0	0	0	0	0	0	
Road Pavement	m2	62	77	208	331	103	12	1,250	78,102	96,320	259,453	413,997	128,911	15,436	992,219	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		114,258	158,220	191,591	630,112	141,043	15,167	1,250,390	
Total									2,519,379	3,488,754	4,224,590	13,893,976	3,109,987	334,424	27,571,110	
								Say	2,600,000	3,500,000	4,300,000	13,900,000	3,200,000	400,000	27,900,000	

Table A.5.C65 Cost Estimate of Compensation Cost for I-IT-2 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
Built-up area	m2			3,000							0				0	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	0	0	0	0	0	
								Say	0	0	0	0	0	0	0	

Table A.5.C66 Cost Estimate of Construction Base Cost for I-Dr-5 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		572,957	794,059	953,736	3,160,683	705,498	75,778	6,262,711	Mobilization and etc.
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	6,440	11,039,527	15,346,370	17,868,810	60,964,910	13,464,924	1,440,043	120,124,583	
									0	0	0	0	0	0	0	
Road Pavement	m2	62	77	208	331	103	12	4,900	306,161	377,576	1,017,056	1,622,868	505,330	60,508	3,889,499	
Other Temporary Works	%	1%	1%	1%	1%	1%	1%		113,457	157,239	188,859	625,878	139,703	15,006	1,240,141	
Total									12,032,102	16,675,245	20,028,461	66,374,338	14,815,454	1,591,334	131,516,934	
								Say	12,100,000	16,700,000	20,100,000	66,400,000	14,900,000	1,600,000	131,800,000	

Table A.5.C67 Cost Estimate of Compensation Cost for I-Dr-5 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				3			600,000				600,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				2,000			6,000,000				6,000,000	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	6,600,000	0	0	0	6,600,000	
								Say	0	0	6,600,000	0	0	0	6,600,000	

Table A.5.C68 Cost Estimate of Construction Base Cost for I-Dr-6-1 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		1,271,469	1,762,876	2,108,314	7,015,043	1,563,532	167,839	13,889,074	Mobilization and etc.
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	13,800	23,656,129	32,885,079	38,290,306	130,639,093	28,853,408	3,085,806	257,409,821	
									0	0	0	0	0	0	0	
Road Pavement	m2	62	77	208	331	103	12	9,000	562,337	693,507	1,868,063	2,980,777	928,157	111,137	7,143,978	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		1,210,923	1,678,929	2,007,918	6,680,994	1,489,078	159,847	13,227,690	
Total									26,700,859	37,020,391	44,274,602	147,315,907	32,834,175	3,524,629	291,670,563	
								Say	26,800,000	37,100,000	44,300,000	147,400,000	32,900,000	3,600,000	292,100,000	

Table A.5.C69 Cost Estimate of Compensation Cost for I-Dr-6-1 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				5,000			15,000,000				15,000,000	
Others(Floodplain & Mangrove)	m2			1,000							0				0	
Total									0	0	15,000,000	0	0	0	15,000,000	
								Say	0	0	15,000,000	0	0	0	15,000,000	

Table A.5.C70 Cost Estimate of Construction Base Cost for I-Dr-6-2 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		2,046,160	2,835,165	3,412,532	11,286,665	2,521,143	270,877	22,372,543	Mobilization and etc.
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	11,040	18,924,903	26,308,063	30,632,245	104,511,274	23,082,726	2,468,645	205,927,857	
									0	0	0	0	0	0	0	
Road Pavement	m2	62	77	208	331	103	12	9,000	562,337	693,507	1,868,063	2,980,777	928,157	111,137	7,143,978	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		974,362	1,350,079	1,625,015	5,374,603	1,200,544	128,989	10,653,592	
Total									22,507,763	31,186,813	37,537,856	124,153,320	27,732,570	2,979,648	246,097,969	
								Say	22,600,000	31,200,000	37,600,000	124,200,000	27,800,000	3,000,000	246,400,000	

Table A.5.C71 Cost Estimate of Compensation Cost for I-Dr-6-2 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				1			200,000				200,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				3,000			9,000,000				9,000,000	
Others(Floodplain & Mangrove)	m2			1,000							0				0	
Total									0	0	9,200,000	0	0	0	9,200,000	
								Say	0	0	9,200,000	0	0	0	9,200,000	

Table A.5.C72 Cost Estimate of Construction Base Cost for I-Dr-9 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	5%	5%	5%	5%	5%	5%		1,858,070	2,596,748	3,103,602	10,190,404	2,283,424	260,311	20,292,559	Mobilization and etc.
Box Culvert	m3	1,714	2,383	2,775	9,467	2,091	224	9,785	16,773,567	23,317,428	27,150,047	92,630,690	20,458,739	2,188,015	182,518,485	
Gate (BXH=3x3m)	m2	40,000	80,000	60,000	160,000	40,000	20,000	9	360,000	720,000	540,000	1,440,000	360,000	180,000	3,600,000	
Road Pavement	m2	62	77	208	331	103	12	9,000	562,337	693,507	1,868,063	2,980,777	928,157	111,137	7,143,978	
Other Temporary Works	%	5%	5%	5%	5%	5%	5%		884,795	1,236,547	1,477,905	4,852,573	1,087,345	123,958	9,663,123	
Total									20,438,769	28,564,229	34,139,617	112,094,445	25,117,665	2,863,421	223,218,145	
								Say	20,500,000	28,600,000	34,200,000	112,100,000	25,200,000	2,900,000	223,500,000	

Table A.5.C73 Cost Estimate of Compensation Cost for I-Dr-9 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				10			2,000,000				2,000,000	
Land Purchasing											0				0	
Fishpond	m2			100							0				0	
Built-up area	m2			3,000				5,000			15,000,000				15,000,000	
Others(Floodplain & Mangrove)	m2			1,000							0				0	
Total									0	0	17,000,000	0	0	0	17,000,000	
								Say	0	0	17,000,000	0	0	0	17,000,000	

Table A.5.C74 Cost Estimate of Construction Base Cost for Appurtenant Facilities

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
Preparatory Work	L.S.	10%	10%	10%	10%	10%	10%		186,246	345,059	262,787	860,283	159,575	79,342	1,893,293	Mobilization and etc.
Tidal Gate (BxHxplaces=3x3mx4p)	m2	40,000	80,000	60,000	160,000	40,000	20,000	36	1,440,000	2,880,000	2,160,000	5,760,000	1,440,000	720,000	14,400,000	
Flap Gate 610mm	Nos	11,067	11,210	10,029	90,261	406	49	8	88,536	89,677	80,232	722,088	3,245	393	984,171	
Flap Gate 910mm	Nos	14,965	15,202	13,522	121,697	676	82	11	164,610	167,224	148,741	1,338,667	7,436	902	1,827,579	
Other Temporary Works	%	10%	10%	10%	10%	10%	10%		169,315	313,690	238,897	782,075	145,068	72,130	1,721,175	
Total									2,048,707	3,795,650	2,890,657	9,463,113	1,755,323	872,767	20,826,218	
								Say	2,100,000	3,800,000	2,900,000	9,500,000	1,800,000	900,000	21,000,000	

Table A.5.C75 Cost Estimate of Compensation Cost for I-IT-2 Drainage Interceptor (2-year)

Item	Unit	Equipment		Material		Labor		Quantity	Equipment		Material		Labor		Total	Remarks
		L/C	F/C	L/C	F/C	L/C	F/C		L/C	F/C	L/C	F/C	L/C	F/C		
House Relocation	Nos			200,000				0			0				0	
Land Purchasing											0				0	
Fishpond	m2			100				0			0				0	
Built-up area	m2			3,000							0				0	
Others(Floodplain & Mangrove)	m2			500							0				0	
Total									0	0	0	0	0	0	0	
								Say	0	0	0	0	0	0	0	

Table A.4.DE1 Annual Disbursement Schedule for River Overflow Flood Improvement (Imus River Basin) (5-year Protection) (F_I.2)

				1		2		3		4		5		6		7		8		9		10		11	
				1.0195	1.0507	1.03938025	1.10397049	1.059648165	1.159941794	1.080311304	1.218750843	1.101377375	1.280541511	1.122854233	1.345464965	1.144749891	1.413680039	1.167072514	1.485353617	1.189830428	1.560661045	1.213032121	1.63978656	1.236686247	1.722923739
Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	955	617	1,747	-	-	-	-	45	32	97	70	185	129	186	130	118	72	120	72	114	62	114	62	91	51
1.1 Package 1.1 (Imus R.)(5-year)	*332*	*241*	*573*	*-*	*-*	*-*	*-*	*32*	*24*	*50*	*37*	*60*	*44*	*55*	*42*	*19*	*14*	*30*	*21*	*30*	*21*	*30*	*21*	*25*	*18*
1.2 Package 1.2 (Bacoor R.)(2-year)	*481*	*282*	*763*	*-*	*-*	*-*	*-*	*12*	*9*	*47*	*33*	*59*	*38*	*64*	*42*	*99*	*58*	*84*	*48*	*47*	*22*	*47*	*22*	*23*	*11*
1.3 Package 1.3 (Julian)(5-year)	*256*	*156*	*411*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*67*	*46*	*67*	*46*	*-*	*-*	*6*	*3*	*37*	*19*	*37*	*19*	*43*	*22*
2. Price Escalation for CBC	*157*	*277*	433	-	-	-	-	3	5	8	15	19	36	23	45	17	30	20	35	22	35	24	39	22	37
Subtotal (1+2)	1,112	893	2,180	-	-	-	-	47	37	105	85	204	165	208	175	135	102	140	106	135	96	138	101	112	87
3. Physical Contingency for CBC	*61*	*48*	109	-	-	-	-	2	2	5	4	10	8	10	9	7	5	7	5	7	5	7	5	6	4
Subtotal (1+2+3)	**1,173**	**941**	**2,289**	**-**	**-**	**-**	**-**	**50**	**39**	**110**	**89**	**214**	**173**	**219**	**183**	**142**	**107**	**147**	**112**	**142**	**101**	**145**	**106**	**118**	**91**
B. Compensation Cost																									
1. Compensation Cost (CC)	0	791	791	-	-	-	18	-	86	-	141	-	186	-	167	-	51	-	64	-	78	-	-	-	-
2. Price Escalation for CC	0	252	252	-	-	-	2	-	14	-	31	-	52	-	58	-	21	-	31	-	44	-	-	-	-
Subtotal (1+2)	0	1,043	1,043	-	-	-	20	-	100	-	171	-	238	-	225	-	72	-	95	-	122	-	-	-	-
3. Physical Contingency for CC	0	52	52	-	-	-	1	-	5	-	9	-	12	-	11	-	4	-	5	-	6	-	-	-	-
Subtotal (1+2+3)	**0**	**1,095**	**1,095**	**-**	**-**	**-**	**21**	**-**	**105**	**-**	**180**	**-**	**250**	**-**	**236**	**-**	**76**	**-**	**100**	**-**	**128**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	25	25		-		0		2		3		5		5		2		3		3		2		1
2. Price Escalation for AC	0	10	10	-	-	-	0	-	0	-	1	-	1	-	2	-	1	-	1	-	1	-	1	-	1
Subtotal (1+2)	**0**	**35**	**35**	**-**	**-**	**-**	**0**	**-**	**2**	**-**	**4**	**-**	**6**	**-**	**6**	**-**	**3**	**-**	**4**	**-**	**4**	**-**	**3**	**-**	**2**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	171	109	280	-	-	32	20	43	27	16	10	16	10	16	10	16	10	16	10	11	7	5	3	5	3
2. Price Escalation for ESC	17	30	47	-	-	1	2	3	4	1	2	2	3	2	4	2	4	3	5	2	4	1	2	1	2
Subtotal (1+2)	188	139	327	-	-	33	22	45	31	17	12	18	13	18	14	18	14	19	15	13	11	6	6	7	6
3. Physical Contingency for ESC	9	7	16	-	-	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
Subtotal (1+2+3)	**197**	**146**	**343**	**-**	**-**	**35**	**24**	**48**	**33**	**18**	**13**	**19**	**14**	**19**	**14**	**19**	**15**	**20**	**16**	**13**	**11**	**7**	**6**	**7**	**6**
Total (A+B+C+D)	**1,370**	**2,217**	**3,763**	**-**	**-**	**35**	**45**	**97**	**179**	**128**	**286**	**233**	**443**	**238**	**440**	**161**	**201**	**167**	**232**	**155**	**244**	**152**	**115**	**125**	**100**
E. Value added Tax	0	286	286		-		7		20		28		50		52		34		35		32		32		27
Total (A+B+C+D+E)	**1,370**	**2,503**	**4,049**	**-**	**-**	**35**	**52**	**97**	**199**	**128**	**314**	**233**	**494**	**238**	**492**	**161**	**235**	**167**	**267**	**155**	**276**	**152**	**146**	**125**	**127**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE2 Annual Disbursement Schedule for River Overflow Flood Improvement (Imus River Basin) (10-year Protection) (F_I.2)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	1,088	695	1,783	-	-	-	-	36	28	152	107	200	134	215	139	165	97	121	73	92	50	50	32	56	35
1.1 Package 1.1 (Imus R.)(10-year)	*352*	*258*	*610*	*-*	*-*	*-*	*-*	*24*	*19*	*65*	*47*	*77*	*53*	*77*	*53*	*43*	*28*	*31*	*22*	*9*	*9*	*13*	*13*	*13*	*13*
1.2 Package 1.2 (Bacoor R.)(2-year)	*481*	*281*	*762*	*-*	*-*	*-*	*-*	*12*	*9*	*47*	*33*	*70*	*44*	*99*	*58*	*122*	*69*	*84*	*48*	*47*	*22*	*-*	*-*	*-*	*-*
1.3 Package 1.3 (Julian)(5-year)	*255*	*156*	*411*	*-*	*-*	*-*	*-*	*-*	*-*	*40*	*28*	*53*	*37*	*40*	*28*	*-*	*-*	*6*	*3*	*37*	*19*	*37*	*19*	*43*	*22*
2. Price Escalation for CBC	147	263	410	-	-	-	-	2	4	12	23	20	38	26	48	24	40	20	35	18	28	11	21	13	26
Subtotal (1+2)	1,235	958	2,192	-	-	-	-	38	32	164	130	220	171	242	187	189	137	142	108	110	78	61	53	69	61
3. Physical Contingency for CBC	62	48	110	-	-	-	-	2	2	8	7	11	9	12	9	9	7	7	5	5	4	3	3	3	3
Subtotal (1+2+3)	**1,297**	**1,005**	**2,302**	**-**	**-**	**-**	**-**	**40**	**34**	**173**	**137**	**231**	**180**	**254**	**196**	**198**	**144**	**149**	**113**	**115**	**82**	**64**	**55**	**73**	**64**
B. Compensation Cost																									
1. Compensation Cost (CC)	0	804	804	-	-	-	-	-	93	-	205	-	165	-	172	-	51	-	69	-	50	-	-	-	-
2. Price Escalation for CC	0	248	248	-	-	-	-	-	15	-	45	-	46	-	59	-	21	-	34	-	28	-	-	-	-
Subtotal (1+2)	0	1,052	1,052	-	-	-	-	-	108	-	250	-	211	-	231	-	73	-	103	-	78	-	-	-	-
3. Physical Contingency for CC	0	53	53	-	-	-	-	-	5	-	12	-	11	-	12	-	4	-	5	-	4	-	-	-	-
Subtotal (1+2+3)	**0**	**1,105**	**1,105**	**-**	**-**	**-**	**-**	**-**	**113**	**-**	**262**	**-**	**222**	**-**	**242**	**-**	**76**	**-**	**108**	**-**	**81**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	26	26		-		-		2		5		5		5		3		3		2		1		1
2. Price Escalation for AC	0	9	9	-	-	-	-	-	0	-	1	-	1	-	2	-	1	-	1	-	1	-	1	-	1
Subtotal (1+2)	**0**	**35**	**35**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**6**	**-**	**6**	**-**	**7**	**-**	**4**	**-**	**4**	**-**	**3**	**-**	**1**	**-**	**2**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	174	111	285	-	-	33	21	44	28	16	10	16	10	16	10	16	10	16	10	5	3	5	3	5	3
2. Price Escalation for ESC	17	31	49	-	-	1	2	3	4	1	2	2	3	2	4	2	4	3	5	1	2	1	2	1	3
Subtotal (1+2)	192	143	334	-	-	34	23	46	32	18	13	18	13	18	14	19	15	19	15	6	5	7	6	7	6
3. Physical Contingency for ESC	10	7	17	-	-	2	1	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
Subtotal (1+2+3)	**201**	**150**	**351**	**-**	**-**	**36**	**24**	**48**	**34**	**19**	**13**	**19**	**14**	**19**	**15**	**20**	**15**	**20**	**16**	**7**	**6**	**7**	**6**	**7**	**6**
Total (A+B+C+D)	**1,498**	**2,295**	**3,793**	**-**	**-**	**36**	**24**	**89**	**183**	**191**	**418**	**250**	**422**	**273**	**460**	**218**	**240**	**169**	**241**	**122**	**172**	**71**	**63**	**80**	**72**
E. Value added Tax	0	318	318		-		7		19		41		53		58		45		36		25		16		18
Total (A+B+C+D+E)	**1,498**	**2,614**	**4,111**	**-**	**-**	**36**	**31**	**89**	**202**	**191**	**459**	**250**	**475**	**273**	**518**	**218**	**286**	**169**	**277**	**122**	**197**	**71**	**79**	**80**	**90**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE3 Annual Disbursement Schedule for River Overflow Flood Improvement (Imus River Basin) (20-year Protection) (F_I.2)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	1,159	717	1,876	-	-	-	-	43	30	145	100	206	135	228	145	166	97	137	78	143	80	48	28	42	24
1.1 Package 1.1 (Imus R.)(10-year)	*423*	*280*	*703*	*-*	*-*	*-*	*-*	*31*	*22*	*81*	*55*	*92*	*61*	*92*	*61*	*34*	*21*	*34*	*21*	*29*	*19*	*18*	*12*	*12*	*8*
1.2 Package 1.2 (Bacoor R.)(2-year)	*481*	*281*	*762*	*-*	*-*	*-*	*-*	*12*	*9*	*25*	*17*	*60*	*37*	*96*	*56*	*132*	*76*	*84*	*48*	*72*	*39*	*-*	*-*	*-*	*-*
1.3 Package 1.3 (Julian)(5-year)	*255*	*156*	*411*	*-*	*-*	*-*	*-*	*-*	*-*	*40*	*28*	*53*	*37*	*40*	*28*	*-*	*-*	*18*	*9*	*43*	*22*	*31*	*16*	*31*	*16*
2. Price Escalation for CBC	158	273	430	-	-	-	-	3	5	12	22	21	38	28	50	24	40	23	38	27	45	10	18	10	17
Subtotal (1+2)	1,317	990	2,306	-	-	-	-	46	35	157	121	227	173	256	195	190	137	159	116	170	125	59	46	52	41
3. Physical Contingency for CBC	66	49	115	-	-	-	-	2	2	8	6	11	9	13	10	10	7	8	6	9	6	3	2	3	2
Subtotal (1+2+3)	**1,382**	**1,039**	**2,422**	**-**	**-**	**-**	**-**	**48**	**37**	**165**	**127**	**238**	**181**	**269**	**205**	**200**	**144**	**167**	**122**	**179**	**131**	**61**	**48**	**55**	**43**
B. Compensation Cost																									
1. Compensation Cost (CC)	0	868	868	-	-	-	74	-	94	-	252	-	190	-	134	-	52	-	41	-	31	-	-	-	-
2. Price Escalation for CC	0	237	237	-	-	-	8	-	15	-	55	-	53	-	46	-	21	-	20	-	18	-	-	-	-
Subtotal (1+2)	0	1,105	1,105	-	-	-	82	-	109	-	307	-	243	-	181	-	73	-	62	-	49	-	-	-	-
3. Physical Contingency for CC	0	55	55	-	-	-	4	-	5	-	15	-	12	-	9	-	4	-	3	-	2	-	-	-	-
Subtotal (1+2+3)	**0**	**1,160**	**1,160**	**-**	**-**	**-**	**86**	**-**	**115**	**-**	**322**	**-**	**255**	**-**	**190**	**-**	**77**	**-**	**65**	**-**	**51**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	27	27		-		1		2		5		5		5		3		3		3		1		1
2. Price Escalation for AC	0	10	10	-	-	-	0	-	0	-	1	-	1	-	2	-	1	-	1	-	1	-	0	-	0
Subtotal (1+2)	**0**	**37**	**37**	**-**	**-**	**-**	**1**	**-**	**2**	**-**	**6**	**-**	**7**	**-**	**7**	**-**	**4**	**-**	**4**	**-**	**4**	**-**	**1**	**-**	**1**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	185	115	300	-	-	35	22	46	29	17	11	17	11	17	11	17	11	17	11	6	4	6	4	6	4
2. Price Escalation for ESC	19	32	51	-	-	1	2	3	5	1	2	2	3	2	4	3	4	3	5	1	2	1	2	1	3
Subtotal (1+2)	204	147	351	-	-	36	24	49	33	19	13	19	14	20	14	20	15	20	16	7	6	7	6	7	6
3. Physical Contingency for ESC	10	7	18	-	-	2	1	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
Subtotal (1+2+3)	**214**	**155**	**369**	**-**	**-**	**38**	**25**	**52**	**35**	**20**	**14**	**20**	**14**	**20**	**15**	**21**	**16**	**21**	**17**	**7**	**6**	**7**	**6**	**8**	**6**
Total (A+B+C+D)	**1,597**	**2,391**	**3,988**	**-**	**-**	**38**	**111**	**100**	**188**	**185**	**469**	**258**	**458**	**289**	**417**	**221**	**241**	**189**	**207**	**186**	**192**	**69**	**56**	**63**	**51**
E. Value added Tax	0	335	335		-		8		21		39		54		61		46		39		39		15		13
Total (A+B+C+D+E)	**1,597**	**2,726**	**4,323**	**-**	**-**	**38**	**119**	**100**	**209**	**185**	**508**	**258**	**513**	**289**	**478**	**221**	**287**	**189**	**247**	**186**	**231**	**69**	**71**	**63**	**64**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE4 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (5-year Protection by Diversion) (F_S.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	373	232	605	-	-	-	-	5	3	3	2	26	15	49	30	72	44	94	59	94	59	26	17	5	3
1.4 Package 2 (San Juan) (5-year)	*373*	*232*	*605*	*-*	*-*	*-*	*-*	*5*	*3*	*3*	*2*	*26*	*15*	*49*	*30*	*72*	*44*	*94*	*59*	*94*	*59*	*26*	*17*	*5*	*3*
2. Price Escalation for CBC	60	108	168	-	-	-	-	0	1	0	0	3	4	6	10	10	18	16	29	18	33	6	11	1	2
Subtotal (1+2)	433	341	773	-	-	-	-	5	4	3	3	28	19	55	40	82	63	110	88	112	92	31	27	6	6
3. Physical Contingency for CBC	22	17	39	-	-	-	-	0	0	0	0	1	1	3	2	4	3	6	4	6	5	2	1	0	0
Subtotal (1+2+3)	**454**	**358**	**812**	**-**	**-**	**-**	**-**	**5**	**4**	**3**	**3**	**30**	**20**	**57**	**42**	**86**	**66**	**116**	**92**	**118**	**97**	**33**	**29**	**6**	**6**
B. Compensation Cost	0	0																							
1. Compensation Cost (CC)		229	229	-	-	-	-	-	13	0	13	1	46	0	46	-	46	-	32	-	32	-	-	-	-
2. Price Escalation for CC	0	87	87	-	-	-	-	-	2	0	3	0	13	0	16	-	19	-	16	-	18	-	-	-	-
Subtotal (1+2)	1	316	316	-	-	-	-	-	15	0	16	1	59	0	62	-	65	-	48	-	51	-	-	-	-
3. Physical Contingency for CC	0	16	16	-	-	-	-	-	1	0	1	0	3	0	3	-	3	-	2	-	3	-	-	-	-
Subtotal (1+2+3)	**1**	**332**	**332**	**-**	**-**	**-**	**-**	**-**	**16**	**0**	**17**	**1**	**62**	**0**	**65**	**-**	**68**	**-**	**51**	**-**	**53**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	8	8		-		-		0		0		1		1		2		2		2		0		0
2. Price Escalation for AC	0	4	4	-	-	-	-	-	0	-	0	-	0	-	0	-	1	-	1	-	1	-	0	-	0
Subtotal (1+2)	**0**	**12**	**12**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**2**	**-**	**3**	**-**	**3**	**-**	**1**	**-**	**0**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	60	37	97	-	-	11	7	11	7	4	2	4	2	4	2	7	5	7	5	4	2	4	2	4	2
2. Price Escalation for ESC	7	12	19	-	-	0	1	1	1	0	1	0	1	0	1	1	2	1	2	1	1	1	1	1	2
Subtotal (1+2)	67	50	116	-	-	12	8	12	8	4	3	4	3	4	3	9	7	9	7	4	4	5	4	5	4
3. Physical Contingency for ESC	3	2	6	-	-	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (1+2+3)	**70**	**52**	**122**	**-**	**-**	**12**	**8**	**12**	**8**	**4**	**3**	**4**	**3**	**4**	**3**	**9**	**7**	**9**	**7**	**5**	**4**	**5**	**4**	**5**	**4**
Total (A+B+C+D)	**525**	**754**	**1,278**	**-**	**-**	**12**	**8**	**18**	**29**	**8**	**23**	**35**	**87**	**62**	**112**	**95**	**143**	**125**	**153**	**123**	**157**	**38**	**34**	**11**	**10**
E. Value added Tax	0	112	112		-		2		4		2		7		13		20		27		27		8		2
Total (A+B+C+D+E)	**525**	**866**	**1,390**	**-**	**-**	**12**	**11**	**18**	**32**	**8**	**25**	**35**	**93**	**62**	**125**	**95**	**163**	**125**	**179**	**123**	**183**	**38**	**42**	**11**	**13**
	0	0																							

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE6 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basins) (10-year Protection by Diversion) (F_S.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
				1.0195	1.0507	1.03938	1.10397	1.059648	1.159942	1.080311	1.218751	1.101377	1.280542	1.122854	1.345465	1.14475	1.41368	1.167073	1.485354	1.18983	1.560661	1.213032	1.639787	1.236686	1.722924
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	522	341	862	-	-	-	-	2	2	2	2	27	17	63	40	63	40	100	64	137	87	118	79	9	9
1.4 Package 2 (San Juan) (10-year)	*522*	*341*	*862*	*-*	*-*	*-*	*-*	*2*	*2*	*2*	*2*	*27*	*17*	*63*	*40*	*63*	*40*	*100*	*64*	*137*	*87*	*118*	*79*	*9*	*9*
2. Price Escalation for CBC	90	173	263	-	-	-	-	0	0	0	0	3	5	8	14	9	17	17	31	26	49	25	50	2	6
Subtotal (1+2)	612	514	1,125	-	-	-	-	2	2	2	3	30	22	71	54	73	57	117	95	163	136	144	129	11	15
3. Physical Contingency for CBC	31	26	56	-	-	-	-	0	0	0	0	1	1	4	3	4	3	6	5	8	7	7	6	1	1
Subtotal (1+2+3)	**642**	**539**	**1,181**	**-**	**-**	**-**	**-**	**2**	**3**	**2**	**3**	**31**	**23**	**75**	**57**	**76**	**60**	**123**	**100**	**171**	**143**	**151**	**136**	**11**	**16**
B. Compensation Cost																									
1. Compensation Cost (CC)		328	328	-	-	-	-	-	12	0	16	1	41	0	41	-	69	-	74	-	74	-	-	-	-
2. Price Escalation for CC		137	137	-	-	-	-	-	2	0	4	0	12	0	14	-	29	-	36	-	41	-	-	-	-
Subtotal (1+2)		465	465	-	-	-	-	-	14	0	20	1	53	0	55	-	98	-	110	-	115	-	-	-	-
3. Physical Contingency for CC		23	23	-	-	-	-	-	1	0	1	0	3	0	3	-	5	-	5	-	6	-	-	-	-
Subtotal (1+2+3)	**0**	**489**	**489**	**-**	**-**	**-**	**-**	**-**	**15**	**0**	**21**	**1**	**56**	**0**	**58**	**-**	**103**	**-**	**115**	**-**	**121**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	12	12		-		-		0		0		1		1		2		2		3		2		0
2. Price Escalation for AC	0	6	6	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	2	-	1	-	0
Subtotal (1+2)	**0**	**18**	**18**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**2**	**-**	**4**	**-**	**5**	**-**	**3**	**-**	**0**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	83	55	138	-	-	16	10	16	10	5	3	5	3	5	3	5	3	8	5	8	5	8	5	8	5
2. Price Escalation for ESC	10	19	30	-	-	1	1	1	2	0	1	1	1	1	1	1	1	1	2	1	3	2	3	2	4
Subtotal (1+2)	94	74	167	-	-	16	11	17	12	6	4	6	4	6	5	6	5	9	8	9	8	9	8	10	9
3. Physical Contingency for ESC	5	4	8	-	-	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (1+2+3)	**98**	**78**	**176**	**-**	**-**	**17**	**12**	**17**	**12**	**6**	**4**	**6**	**5**	**6**	**5**	**6**	**5**	**10**	**8**	**10**	**8**	**10**	**9**	**10**	**9**
Total (A+B+C+D)	**742**	**1,123**	**1,863**	**-**	**-**	**17**	**12**	**20**	**30**	**9**	**28**	**38**	**84**	**81**	**122**	**82**	**171**	**132**	**226**	**180**	**277**	**161**	**148**	**21**	**25**
E. Value added Tax	0	163	163		-		3		4		2		8		17		18		29		40		37		6
Total (A+B+C+D+E)	**742**	**1,286**	**2,026**	**-**	**-**	**17**	**15**	**20**	**34**	**9**	**30**	**38**	**92**	**81**	**139**	**82**	**188**	**132**	**255**	**180**	**317**	**161**	**184**	**21**	**31**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE6 Annual Disbursement Schedule for River Overflow Flood Mitigation Improvement (San Juan River Basin) (20-year Protection by Diversion) (F_S.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	787	515	1,302	-	-	-	-	7	7	6	6	28	18	121	78	152	98	152	98	153	99	162	107	6	6
1.4 Package 2 (San Juan) (20-year)	*787*	*515*	*1,302*	*-*	*-*	*-*	*-*	*7*	*7*	*6*	*6*	*28*	*18*	*121*	*78*	*152*	*98*	*152*	*98*	*153*	*99*	*162*	*107*	*6*	*6*
2. Price Escalation for CBC	131	250	381	-	-	-	-	0	1	0	1	3	5	15	27	22	40	25	47	29	55	35	68	1	4
Subtotal (1+2)	918	765	1,683	-	-	-	-	7	8	6	7	31	24	136	105	174	138	177	145	182	154	197	175	7	10
3. Physical Contingency for CBC	46	38	84	-	-	-	-	0	0	0	0	2	1	7	5	9	7	9	7	9	8	10	9	0	1
Subtotal (1+2+3)	**964**	**803**	**1,767**	**-**	**-**	**-**	**-**	**7**	**8**	**7**	**8**	**33**	**25**	**143**	**110**	**183**	**145**	**186**	**152**	**191**	**162**	**207**	**183**	**8**	**11**
B. Compensation Cost	0	0																							
1. Compensation Cost (CC)	0	520	520	-	-	-	-	-	10	-	14	-	59	-	59	-	107	-	136	-	136	-	-	-	-
2. Price Escalation for CC	0	228	228	-	-	-	-	-	2	-	3	-	16	-	20	-	44	-	66	-	76	-	-	-	-
Subtotal (1+2)	0	748	748	-	-	-	-	-	12	-	17	-	75	-	79	-	152	-	202	-	212	-	-	-	-
3. Physical Contingency for CC	0	37	37	-	-	-	-	-	1	-	1	-	4	-	4	-	8	-	10	-	11	-	-	-	-
Subtotal (1+2+3)	**0**	**785**	**785**	**-**	**-**	**-**	**-**	**-**	**12**	**-**	**17**	**-**	**79**	**-**	**83**	**-**	**159**	**-**	**212**	**-**	**222**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	18	18		-		-		0		0		1		3		4		4		4		3		0
2. Price Escalation for AC	0	9	9	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	2	-	2	-	2	-	0
Subtotal (1+2)	**0**	**27**	**27**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**3**	**-**	**5**	**-**	**6**	**-**	**6**	**-**	**4**	**-**	**0**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	117	74	191	-	-	22	14	22	14	7	5	7	5	7	5	7	5	11	7	11	7	11	7	11	7
2. Price Escalation for ESC	14	26	40	-	-	1	1	1	2	1	1	1	1	1	2	1	2	2	3	2	4	2	4	3	5
Subtotal (1+2)	131	100	231	-	-	23	15	23	16	8	6	8	6	8	6	8	7	13	10	13	11	13	11	14	12
3. Physical Contingency for ESC	7	5	12	-	-	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Subtotal (1+2+3)	**138**	**105**	**243**	**-**	**-**	**24**	**16**	**24**	**17**	**8**	**6**	**8**	**6**	**9**	**7**	**9**	**7**	**13**	**11**	**14**	**11**	**14**	**12**	**14**	**12**
Total (A+B+C+D)	**1,102**	**1,720**	**2,822**	**-**	**-**	**24**	**16**	**32**	**37**	**15**	**31**	**41**	**111**	**151**	**203**	**191**	**316**	**200**	**380**	**205**	**401**	**221**	**200**	**22**	**24**
E. Value added Tax	0	241	241		-		5		7		3		9		32		41		43		45		50		5
Total (A+B+C+D+E)	**1,102**	**1,961**	**3,063**	**-**	**-**	**24**	**21**	**32**	**44**	**15**	**35**	**41**	**120**	**151**	**235**	**191**	**357**	**200**	**424**	**205**	**447**	**221**	**250**	**22**	**29**
	0	0																							

Notes : *1 It is estimated based on the work quantities.

*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion

*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost

*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost

*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)

*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE7 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (5-year Protection by Retarding Basin) (F_S.2)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	433	287	720	-	-	-	-	5	3	5	3	14	9	84	55	84	55	84	55	95	62	61	42	3	2
1.4 Package 2 (San Juan) (5-year)	*433*	*287*	*720*	*-*	*-*	*-*	*-*	*5*	*3*	*5*	*3*	*14*	*9*	*84*	*55*	*84*	*55*	*84*	*55*	*95*	*62*	*61*	*42*	*3*	*2*
2. Price Escalation for CBC	70	136	206	-	-	-	-	0	1	0	1	1	2	10	19	12	23	14	27	18	35	13	27	1	2
Subtotal (1+2)	503	422	925	-	-	-	-	5	4	5	4	16	11	94	74	96	78	97	82	113	96	74	69	4	4
3. Physical Contingency for CBC	25	21	46	-	-	-	-	0	0	0	0	1	1	5	4	5	4	5	4	6	5	4	3	0	0
Subtotal (1+2+3)	**528**	**443**	**972**	**-**	**-**	**-**	**-**	**5**	**4**	**5**	**4**	**17**	**12**	**98**	**78**	**100**	**82**	**102**	**86**	**119**	**101**	**78**	**73**	**4**	**4**
B. Compensation Cost																									
1. Compensation Cost (CC)		239	239	-	-	-	-	-	10	-	13	-	48	-	48	-	51	-	35	-	35	-	-	-	-
2. Price Escalation for CC		92	92	-	-	-	-	-	2	-	3	-	13	-	17	-	21	-	17	-	19	-	-	-	-
Subtotal (1+2)		331	331	-	-	-	-	-	11	-	16	-	61	-	64	-	72	-	51	-	54	-	-	-	-
3. Physical Contingency for CC		17	17	-	-	-	-	-	1	-	1	-	3	-	3	-	4	-	3	-	3	-	-	-	-
Subtotal (1+2+3)		**347**	**347**	**-**	**-**	**-**	**-**	**-**	**12**	**-**	**17**	**-**	**64**	**-**	**68**	**-**	**76**	**-**	**54**	**-**	**57**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	10	10		-		-		0		0		1		2		2		2		2		1		0
2. Price Escalation for AC	0	4	4	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	1	-	1	-	0
Subtotal (1+2)	**0**	**14**	**14**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**3**	**-**	**3**	**-**	**3**	**-**	**3**	**-**	**2**	**-**	**0**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	69	46	115	-	-	13	9	13	9	4	3	4	3	4	3	4	3	9	6	9	6	9	6	-	-
2. Price Escalation for ESC	8	16	24	-	-	1	1	1	1	0	1	0	1	1	1	1	1	1	3	2	3	2	4	-	-
Subtotal (1+2)	77	61	139	-	-	14	9	14	10	5	3	5	4	5	4	5	4	10	9	10	9	11	9	-	-
3. Physical Contingency for ESC	4	3	7	-	-	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	-	-
Subtotal (1+2+3)	**81**	**65**	**146**	**-**	**-**	**14**	**10**	**14**	**10**	**5**	**4**	**5**	**4**	**5**	**4**	**5**	**4**	**11**	**9**	**11**	**9**	**11**	**10**	**-**	**-**
Total (A+B+C+D)	**610**	**869**	**1,479**	**-**	**-**	**14**	**10**	**20**	**27**	**10**	**25**	**22**	**81**	**104**	**152**	**106**	**165**	**113**	**152**	**129**	**170**	**89**	**84**	**4**	**4**
E. Value added Tax	0	134	134		-		3		4		2		4		22		23		25		29		21		1
Total (A+B+C+D+E)	**610**	**1,003**	**1,613**	**-**	**-**	**14**	**13**	**20**	**31**	**10**	**27**	**22**	**85**	**104**	**174**	**106**	**188**	**113**	**177**	**129**	**199**	**89**	**105**	**4**	**5**
	0	0																							

Notes : *1 It is estimated based on the work quantities.

*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion

*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost

*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost

*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)

*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE8 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basins) (10-year Protection by Retarding Basin) (F_S.2)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	525	363	888	-	-	-	-	6	6	4	4	16	11	53	36	64	43	112	75	149	101	116	82	4	4
1.4 Package 2 (San Juan) (10-year)	*525*	*363*	*888*	*-*	*-*	*-*	*-*	*6*	*6*	*4*	*4*	*16*	*11*	*53*	*36*	*64*	*43*	*112*	*75*	*149*	*101*	*116*	*82*	*4*	*4*
2. Price Escalation for CBC	91	184	275	-	-	-	-	0	1	0	1	2	3	6	13	9	18	19	36	28	57	25	52	1	3
Subtotal (1+2)	616	546	1,162	-	-	-	-	7	7	5	5	17	14	59	49	73	61	131	111	178	157	140	134	5	7
3. Physical Contingency for CBC	31	27	58	-	-	-	-	0	0	0	0	1	1	3	2	4	3	7	6	9	8	7	7	0	0
Subtotal (1+2+3)	**646**	**574**	**1,220**	**-**	**-**	**-**	**-**	**7**	**8**	**5**	**6**	**18**	**14**	**62**	**52**	**77**	**64**	**138**	**117**	**187**	**165**	**147**	**141**	**6**	**8**
B. Compensation Cost	0	0																							
1. Compensation Cost (CC)		352	352	-	-	-	-	-	8	0	11	1	71	0	70	-	73	-	59	-	59	-	-	-	-
2. Price Escalation for CC		140	140	-	-	-	-	-	1	0	2	0	20	0	24	-	30	-	29	-	33	-	-	-	-
Subtotal (1+2)		491	491	-	-	-	-	-	10	0	14	1	90	0	95	-	103	-	88	-	92	-	-	-	-
3. Physical Contingency for CC		25	25	-	-	-	-	-	0	0	1	0	5	0	5	-	5	-	4	-	5	-	-	-	-
Subtotal (1+2+3)		**516**	**516**	**-**	**-**	**-**	**-**	**-**	**10**	**0**	**14**	**1**	**95**	**0**	**99**	**-**	**108**	**-**	**92**	**-**	**97**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	12	12		-		-		0		0		1		2		2		2		3		2		0
2. Price Escalation for AC	0	6	6	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	2	-	1	-	0
Subtotal (1+2)	**0**	**18**	**18**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**3**	**-**	**4**	**-**	**5**	**-**	**3**	**-**	**0**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	84	58	143	-	-	16	11	16	11	8	5	11	7	11	7	8	5	5	4	5	4	5	4	-	-
2. Price Escalation for ESC	9	17	26	-	-	1	1	1	2	1	1	1	2	1	3	1	2	1	2	1	2	1	2	-	-
Subtotal (1+2)	93	75	168	-	-	16	12	17	13	9	7	12	9	12	10	9	8	6	5	6	6	6	6	-	-
3. Physical Contingency for ESC	5	4	8	-	-	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	-	-
Subtotal (1+2+3)	**98**	**79**	**177**	**-**	**-**	**17**	**13**	**18**	**13**	**9**	**7**	**12**	**10**	**12**	**10**	**10**	**8**	**6**	**6**	**7**	**6**	**7**	**6**	**-**	**-**
Total (A+B+C+D)	**745**	**1,187**	**1,931**	**-**	**-**	**17**	**13**	**25**	**31**	**14**	**27**	**31**	**120**	**75**	**163**	**86**	**182**	**144**	**219**	**193**	**273**	**154**	**150**	**6**	**8**
E. Value added Tax	0	132	132		-		4		6		3		7		16		19		32		44		36		2
Total (A+B+C+D+E)	**745**	**1,319**	**2,063**	**-**	**-**	**17**	**16**	**25**	**37**	**14**	**30**	**31**	**127**	**75**	**180**	**86**	**201**	**144**	**251**	**193**	**317**	**154**	**186**	**6**	**10**
	0	0																							

Notes : *1 It is estimated based on the work quantities.

*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion

*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost

*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost

*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)

*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE9 Annual Disbursement Schedule for River Overflow Flood Mitigation Improvement (San Juan River Basin) (20-year Protection by Retarding Basin) (F_S.2)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																									
1. Construction Base Cost (CBC)	593	391	985	-	-	-	-	5	5	5	5	20	15	59	39	62	42	125	79	82	52	144	94	91	60
1.4 Package 2 (San Juan) (20-year)	*593*	*391*	*985*	-	-	-	-	*5*	*5*	*5*	*5*	*20*	*15*	*59*	*39*	*62*	*42*	*125*	*79*	*82*	*52*	*144*	*94*	*91*	*60*
2. Price Escalation for CBC	108	208	315	-	-	-	-	0	1	0	1	2	4	7	14	9	17	21	38	16	29	31	60	21	43
Subtotal (1+2)	701	599	1,300	-	-	-	-	6	6	6	7	21	19	67	53	71	59	145	118	98	81	175	153	112	103
3. Physical Contingency for CBC	35	30	65	-	-	-	-	0	0	0	0	1	1	3	3	4	3	7	6	5	4	9	8	6	5
Subtotal (1+2+3)	**736**	**629**	**1,365**	**-**	**-**	**-**	**-**	**6**	**7**	**6**	**7**	**23**	**20**	**70**	**55**	**75**	**62**	**153**	**124**	**102**	**85**	**184**	**161**	**118**	**108**
B. Compensation Cost	0	0																							
1. Compensation Cost (CC)	0	422	422	-	-	-	-	-	10	-	13	-	49	-	49	-	88	-	71	-	71	-	71	-	-
2. Price Escalation for CC	0	191	191	-	-	-	-	-	2	-	3	-	14	-	17	-	36	-	34	-	40	-	45	-	-
Subtotal (1+2)	0	614	614	-	-	-	-	-	12	-	16	-	63	-	66	-	124	-	105	-	111	-	116	-	-
3. Physical Contingency for CC	0	31	31	-	-	-	-	-	1	-	1	-	3	-	3	-	6	-	5	-	6	-	6	-	-
Subtotal (1+2+3)	**0**	**644**	**644**	**-**	**-**	**-**	**-**	**-**	**12**	**-**	**17**	**-**	**66**	**-**	**69**	**-**	**130**	**-**	**111**	**-**	**116**	**-**	**122**	**-**	**-**
C. Administration Cost Cost																									
1. Administration Cost (AC)	0	14	14		-		-		0		0		1		1		2		3		2		3		2
2. Price Escalation for AC	0	7	7	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	1	-	2	-	1
Subtotal (1+2)	**0**	**21**	**21**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**3**	**-**	**4**	**-**	**3**	**-**	**5**	**-**	**3**
D. Engineering Service Cost																									
1. Engineering Service Cost (ESC)	95	63	158	-	-	18	12	18	12	6	4	6	4	12	8	9	6	9	6	6	4	6	4	6	4
2. Price Escalation for ESC	11	21	31	-	-	1	1	1	2	0	1	1	1	1	3	1	2	1	3	1	2	1	3	1	3
Subtotal (1+2)	106	83	189	-	-	19	13	19	14	6	5	7	5	13	11	10	8	10	9	7	6	7	6	7	7
3. Physical Contingency for ESC	5	4	9	-	-	1	1	1	1	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0
Subtotal (1+2+3)	**111**	**87**	**198**	**-**	**-**	**19**	**14**	**20**	**14**	**7**	**5**	**7**	**5**	**14**	**11**	**11**	**9**	**11**	**9**	**7**	**6**	**8**	**7**	**8**	**7**
Total (A+B+C+D)	**847**	**1,382**	**2,229**	**-**	**-**	**19**	**14**	**26**	**33**	**13**	**30**	**29**	**92**	**84**	**138**	**85**	**204**	**164**	**248**	**110**	**211**	**192**	**295**	**125**	**118**
E. Value added Tax	0	188	188		-		4		6		3		7		18		19		36		24		43		29
Total (A+B+C+D+E)	**847**	**1,570**	**2,417**	**-**	**-**	**19**	**18**	**26**	**39**	**13**	**33**	**29**	**98**	**84**	**156**	**85**	**223**	**164**	**283**	**110**	**235**	**192**	**338**	**125**	**147**
	0	0																							

Notes : *1 It is estimated based on the work quantities.

*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion

*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost

*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost

*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)

*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE10 Annual Disbursement Schedule for River Overflow Flood Improvement (Imus River Basin) (5-year Protection) (F_I.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	955	573	1,528	-	-	-	-	-	-	64	44	138	96	194	121	115	66	139	79	139	79	129	70	37	19	-	-
1.1 Package 1.1 (Imus R.)(5-year)	*251*	*160*	*410*	-	-	-	-	-	-	*41*	*29*	*55*	*38*	*64*	*41*	*23*	*13*	*23*	*13*	*23*	*13*	*23*	*13*	-	-	-	-
1.2 Package 1.2 (Bacoor R.)(2-year)	*461*	*266*	*727*	-	-	-	-	-	-	*23*	*16*	*23*	*16*	*70*	*38*	*92*	*53*	*92*	*53*	*92*	*53*	*70*	*38*	-	-	-	-
1.3 Package 1.3 (Julian)(5-year)	*243*	*147*	*391*	-	-	-	-	-	-	-	-	*61*	*42*	*61*	*42*	-	-	*24*	*13*	*24*	*13*	*37*	*19*	*37*	*19*	-	-
2. Price Escalation for CBC	145	246	392	-	-	-	-	-	-	5	10	14	27	24	42	17	27	23	38	26	44	27	44	9	14	-	-
Subtotal (1+2)	1,100	819	1,920	-	-	-	-	-	-	69	54	152	122	218	163	131	94	162	117	166	123	156	114	45	33	-	-
3. Physical Contingency for CBC	55	41	96	-	-	-	-	-	-	3	3	8	6	11	8	7	5	8	6	8	6	8	6	2	2	-	-
Subtotal (1+2+3)	**1,155**	**860**	**2,016**	**-**	**-**	**-**	**-**	**-**	**-**	**73**	**56**	**160**	**129**	**229**	**171**	**138**	**98**	**171**	**123**	**174**	**129**	**164**	**120**	**48**	**34**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	675	675	-	-	-	62	-	62	-	137	-	96	-	113	-	45	-	88	-	73	-	-	-	-	-	-
2. Price Escalation for CC	0	214	214	-	-	-	6	-	10	-	30	-	27	-	39	-	18	-	43	-	41	-	-	-	-	-	-
Subtotal (1+2)	0	889	889	-	-	-	68	-	71	-	167	-	123	-	152	-	63	-	130	-	115	-	-	-	-	-	-
3. Physical Contingency for CC	0	44	44	-	-	-	3	-	4	-	8	-	6	-	8	-	3	-	7	-	6	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**934**	**934**	**-**	**-**	**-**	**71**	**-**	**75**	**-**	**176**	**-**	**129**	**-**	**160**	**-**	**66**	**-**	**137**	**-**	**120**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	22	22		-		1		1		2		3		4		2		3		3		2		1		-
2. Price Escalation for AC	0	9	9	-	-	-	0	-	0	-	1	-	1	-	1	-	1	-	1	-	2	-	1	-	0	-	-
Subtotal (1+2)	**0**	**31**	**31**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**3**	**-**	**4**	**-**	**6**	**-**	**3**	**-**	**5**	**-**	**5**	**-**	**3**	**-**	**1**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	153	92	244	-	-	29	17	29	17	10	6	15	9	14	9	14	9	10	6	10	6	10	6	13	8	-	-
2. Price Escalation for ESC	18	30	48	-	-	1	2	2	3	1	1	2	3	2	3	2	4	2	3	2	3	2	4	3	6	-	-
Subtotal (1+2)	170	122	292	-	-	30	19	30	20	10	7	17	12	16	12	16	12	11	9	11	9	12	9	17	14	-	-
3. Physical Contingency for ESC	9	6	15	-	-	1	1	2	1	1	0	1	1	1	1	1	1	1	0	1	0	1	0	1	1	-	-
Subtotal (1+2+3)	**179**	**128**	**307**	**-**	**-**	**31**	**20**	**32**	**21**	**11**	**7**	**18**	**12**	**17**	**12**	**17**	**13**	**12**	**9**	**12**	**9**	**12**	**10**	**17**	**15**	**-**	**-**
Total (A+B+C+D)	**1,334**	**1,953**	**3,288**	**-**	**-**	**31**	**92**	**32**	**97**	**83**	**243**	**178**	**274**	**246**	**348**	**155**	**180**	**182**	**273**	**186**	**263**	**176**	**133**	**65**	**50**	**-**	**-**
E. Value added Tax for Components	0	279	279		-		6		6		18		38		51		32		38		39		37		14		-
Total (A+B+C+D+E)	**1,334**	**2,232**	**3,566**	**-**	**-**	**31**	**98**	**32**	**103**	**83**	**260**	**178**	**312**	**246**	**400**	**155**	**212**	**182**	**311**	**186**	**302**	**176**	**170**	**65**	**63**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	1,322	1,082	2,404	0	0	106	87	106	87	132	108	132	108	132	108	132	108	132	108	132	108	106	87	106	87	106	87
2. Price Escalation for CBC	192	460	652	0	0	4	9	6	14	11	24	13	30	16	37	19	45	22	53	25	61	23	55	25	63	28	70
Subtotal (1+2)	1,515	1,542	3,057	-	-	110	96	112	100	143	132	146	139	148	146	151	153	154	161	157	169	128	142	131	149	133	157
3. Physical Contingency for Reg.P	76	77	153	-	-	5	5	6	5	7	7	7	7	7	7	8	8	8	8	8	8	6	7	7	7	7	8
Subtotal (1+2+3)	**1,590**	**1,619**	**3,209**	**-**	**-**	**115**	**100**	**118**	**105**	**150**	**138**	**153**	**145**	**156**	**153**	**159**	**161**	**162**	**169**	**165**	**177**	**135**	**149**	**137**	**157**	**140**	**165**
G. Value added Tax for Components	0	385	385		-		26		27		35		36		37		38		40		41		34		35		37
Grand Total (A+B+C+D+E+F+G)	**2,925**	**4,236**	**7,161**	**0**	**0**	**147**	**224**	**150**	**235**	**233**	**433**	**331**	**493**	**402**	**590**	**314**	**411**	**344**	**519**	**351**	**521**	**311**	**353**	**202**	**255**	**140**	**201**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE11 Annual Disbursement Schedule for River Overflow Flood Improvement (Imus River Basins) (10-year Protection) (F_I.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	963	580	1,543	-	-	-	-	-	-	66	46	142	98	196	123	115	66	139	79	139	79	129	70	37	19	-	-
1.1 Package 1.1 (Imus R.)(10-year)	*259*	*167*	*425*	-	-	-	-	-	-	*44*	*31*	*58*	*41*	*66*	*44*	*23*	*13*	*23*	*13*	*23*	*13*	*23*	*13*	-	-	-	-
1.2 Package 1.2 (Bacoor R.)(2-year)	*461*	*266*	*727*	-	-	-	-	-	-	*23*	*16*	*23*	*16*	*70*	*38*	*92*	*53*	*92*	*53*	*92*	*53*	*70*	*38*	-	-	-	-
1.3 Package 1.3 (Julian)(5-year)	*243*	*147*	*391*	-	-	-	-	-	-	-	-	*61*	*42*	*61*	*42*	-	-	*24*	*13*	*24*	*13*	*37*	*19*	*37*	*19*	-	-
2. Price Escalation for CBC	146	248	394	-	-	-	-	-	-	5	10	14	28	24	43	17	27	23	38	26	44	27	44	9	14	-	-
Subtotal (1+2)	1,109	828	1,937	-	-	-	-	-	-	72	56	156	126	221	166	131	94	162	117	166	123	156	114	45	33	-	-
3. Physical Contingency for CBC	55	41	97	-	-	-	-	-	-	4	3	8	6	11	8	7	5	8	6	8	6	8	6	2	2	-	-
Subtotal (1+2+3)	**1,165**	**870**	**2,034**	**-**	**-**	**-**	**-**	**-**	**-**	**75**	**59**	**164**	**132**	**232**	**174**	**138**	**98**	**171**	**123**	**174**	**129**	**164**	**120**	**48**	**34**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	693	693	-	-	-	66	-	66	-	129	-	97	-	119	-	50	-	81	-	81	-	5	-	-	-	-
2. Price Escalation for CC	0	222	222	-	-	-	7	-	11	-	28	-	27	-	41	-	21	-	39	-	45	-	3	-	-	-	-
Subtotal (1+2)	0	915	915	-	-	-	73	-	76	-	157	-	124	-	160	-	71	-	120	-	126	-	8	-	-	-	-
3. Physical Contingency for CC	0	46	46	-	-	-	4	-	4	-	8	-	6	-	8	-	4	-	6	-	6	-	0	-	-	-	-
Subtotal (1+2+3)	**0**	**961**	**961**	**-**	**-**	**-**	**76**	**-**	**80**	**-**	**165**	**-**	**130**	**-**	**168**	**-**	**74**	**-**	**126**	**-**	**132**	**-**	**9**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	22	22		-		1		1		2		3		4		2		3		3		2		1		-
2. Price Escalation for AC	0	9	9	-	-	-	0	-	0	-	1	-	1	-	2	-	1	-	1	-	2	-	1	-	0	-	-
Subtotal (1+2)	**0**	**31**	**31**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**3**	**-**	**4**	**-**	**6**	**-**	**3**	**-**	**4**	**-**	**5**	**-**	**3**	**-**	**1**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	154	93	247	-	-	29	17	29	17	10	6	10	6	14	9	14	9	14	9	14	9	10	6	10	6	-	-
2. Price Escalation for ESC	18	31	49	-	-	1	2	2	3	1	1	1	2	2	3	2	4	2	4	3	5	2	4	2	4	-	-
Subtotal (1+2)	172	124	296	-	-	30	19	31	20	10	7	11	7	16	12	17	12	17	13	17	14	12	10	12	10	-	-
3. Physical Contingency for ESC	9	6	15	-	-	2	1	2	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	-	-
Subtotal (1+2+3)	**181**	**130**	**311**	**-**	**-**	**32**	**20**	**32**	**21**	**11**	**7**	**11**	**8**	**17**	**12**	**17**	**13**	**18**	**14**	**18**	**14**	**12**	**10**	**13**	**10**	**-**	**-**
Total (A+B+C+D)	**1,345**	**1,992**	**3,337**	**-**	**-**	**32**	**97**	**32**	**102**	**86**	**235**	**175**	**274**	**249**	**360**	**155**	**189**	**188**	**267**	**192**	**280**	**176**	**142**	**60**	**46**	**-**	**-**
E. Value added Tax	0	281	281		-		6		6		18		38		52		32		39		40		37		13		-
Total (A+B+C+D+E)	**1,345**	**2,273**	**3,619**	**-**	**-**	**32**	**103**	**32**	**108**	**86**	**253**	**175**	**312**	**249**	**412**	**155**	**221**	**188**	**306**	**192**	**321**	**176**	**178**	**60**	**58**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	1,322	1,082	2,404	0	0	106	87	119	97	119	97	132	108	132	108	132	108	132	108	132	108	106	87	106	87	106	87
2. Price Escalation for CBC	192	460	652	0	0	4	9	7	16	10	21	13	30	16	37	19	45	22	53	25	61	23	55	25	63	28	70
Subtotal (1+2)	1,514	1,541	3,056	-	-	110	96	126	113	129	119	146	139	148	146	151	153	154	161	157	169	128	142	131	149	133	157
3. Physical Contingency for Reg.P	76	77	153	-	-	5	5	6	6	6	6	7	7	7	7	8	8	8	8	8	8	6	7	7	7	7	8
Subtotal (1+2+3)	**1,590**	**1,618**	**3,209**	**-**	**-**	**115**	**100**	**132**	**119**	**135**	**125**	**153**	**145**	**156**	**153**	**159**	**161**	**162**	**169**	**165**	**177**	**135**	**149**	**137**	**157**	**140**	**165**
G. Value added Tax for Components	0	385	385		-		26		30		31		36		37		38		40		41		34		35		37
Grand Total (A+B+C+D+E+F+G)	**2,935**	**4,277**	**7,212**	**0**	**0**	**147**	**230**	**165**	**257**	**221**	**409**	**328**	**493**	**405**	**602**	**314**	**420**	**350**	**514**	**357**	**539**	**311**	**361**	**198**	**250**	**140**	**201**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE12 Annual Disbursement Schedule for River Overflow Flood Mitigation Improvement (Imus River Basin) (20-year Protection) (F_I.3)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	999	605	1,604	-	-	-	-	-	-	50	35	120	83	125	86	128	80	185	110	139	79	129	70	124	62	-	-
1.1 Package 1.1 (Imus R.)(10-year)	*295*	*191*	*486*	-	-	-	-	-	-	*27*	*19*	*36*	*25*	*42*	*29*	*59*	*38*	*68*	*45*	*23*	*13*	*23*	*13*	*17*	*10*	-	-
1.2 Package 1.2 (Bacoor R.)(2-year)	*461*	*266*	*727*	-	-	-	-	-	-	*23*	*16*	*23*	*16*	*23*	*16*	*69*	*42*	*92*	*53*	*92*	*53*	*70*	*38*	*70*	*33*	-	-
1.3 Package 1.3 (Julian)(5-year)	*243*	*147*	*391*	-	-	-	-	-	-	-	-	*61*	*42*	*61*	*42*	-	-	*24*	*13*	*24*	*13*	*37*	*19*	*37*	*19*	-	-
2. Price Escalation for CBC	164	281	445	-	-	-	-	-	-	4	8	12	23	15	30	18	33	31	54	26	44	27	44	29	45	-	-
Subtotal (1+2)	1,163	885	2,049	-	-	-	-	-	-	54	42	132	106	141	116	146	114	216	164	166	123	156	114	153	106	-	-
3. Physical Contingency for CBC	58	44	102	-	-	-	-	-	-	3	2	7	5	7	6	7	6	11	8	8	6	8	6	8	5	-	-
Subtotal (1+2+3)	**1,222**	**930**	**2,151**	**-**	**-**	**-**	**-**	**-**	**-**	**57**	**44**	**138**	**112**	**148**	**122**	**153**	**119**	**226**	**172**	**174**	**129**	**164**	**120**	**161**	**112**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	741	741	-	-	-	31	-	31	-	110	-	121	-	157	-	83	-	114	-	80	-	14	-	-	-	-
2. Price Escalation for CC	0	264	264	-	-	-	3	-	5	-	24	-	34	-	54	-	35	-	55	-	45	-	9	-	-	-	-
Subtotal (1+2)	0	1,005	1,005	-	-	-	34	-	35	-	135	-	155	-	211	-	118	-	169	-	125	-	23	-	-	-	-
3. Physical Contingency for CC	0	50	50	-	-	-	2	-	2	-	7	-	8	-	11	-	6	-	8	-	6	-	1	-	-	-	-
Subtotal (1+2+3)	**0**	**1,055**	**1,055**	**-**	**-**	**-**	**35**	**-**	**37**	**-**	**141**	**-**	**163**	**-**	**222**	**-**	**124**	**-**	**178**	**-**	**131**	**-**	**24**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	23	23		-		0		0		2		3		4		3		4		3		2		2		-
2. Price Escalation for AC	0	10	10	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	2	-	2	-	1	-	1	-	-
Subtotal (1+2)	**0**	**34**	**34**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**2**	**-**	**4**	**-**	**5**	**-**	**4**	**-**	**6**	**-**	**5**	**-**	**3**	**-**	**3**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	160	97	257	-	-	30	18	30	18	5	3	10	6	10	6	10	6	10	6	10	6	15	9	15	9	15	9
2. Price Escalation for ESC	21	38	59	-	-	1	2	2	3	0	1	1	2	1	2	1	3	2	3	2	3	3	6	4	7	4	7
Subtotal (1+2)	181	135	316	-	-	31	20	32	21	5	4	11	8	11	8	11	9	12	9	12	9	18	15	19	16	19	16
3. Physical Contingency for ESC	9	7	16	-	-	2	1	2	1	0	0	1	0	1	0	1	0	1	0	1	0	1	1	1	1	1	1
Subtotal (1+2+3)	**190**	**141**	**331**	**-**	**-**	**33**	**21**	**33**	**22**	**6**	**4**	**12**	**8**	**12**	**9**	**12**	**9**	**12**	**9**	**12**	**10**	**19**	**16**	**19**	**16**	**20**	**17**
Total (A+B+C+D)	**1,412**	**2,160**	**3,572**	**-**	**-**	**33**	**57**	**33**	**60**	**62**	**192**	**150**	**286**	**159**	**357**	**166**	**256**	**239**	**366**	**186**	**275**	**183**	**162**	**181**	**131**	**20**	**17**
E. Value added Tax	0	298	298		-		6		7		13		32		35		35		50		39		38		37		4
Total (A+B+C+D+E)	**1,412**	**2,458**	**3,870**	**-**	**-**	**33**	**63**	**33**	**66**	**62**	**205**	**150**	**319**	**159**	**392**	**166**	**292**	**239**	**416**	**186**	**314**	**183**	**201**	**181**	**168**	**20**	**22**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	1,322	1,082	2,404	0	0	106	87	106	87	132	108	132	108	132	108	132	108	132	108	132	108	106	87	106	87	106	87
2. Price Escalation for CBC	192	460	652	0	0	4	9	6	14	11	24	13	30	16	37	19	45	22	53	25	61	23	55	25	63	28	70
Subtotal (1+2)	1,515	1,542	3,057	-	-	110	96	112	100	143	132	146	139	148	146	151	153	154	161	157	169	128	142	131	149	133	157
3. Physical Contingency for Reg.P	76	77	153	-	-	5	5	6	5	7	7	7	7	7	7	8	8	8	8	8	8	6	7	7	7	7	8
Subtotal (1+2+3)	**1,590**	**1,619**	**3,209**	**-**	**-**	**115**	**100**	**118**	**105**	**150**	**138**	**153**	**145**	**156**	**153**	**159**	**161**	**162**	**169**	**165**	**177**	**135**	**149**	**137**	**157**	**140**	**165**
G. Value added Tax for Components	0	385	385		-		26		27		35		36		37		38		40		41		34		35		37
Grand Total (A+B+C+D+E+F+G)	**3,002**	**4,462**	**7,464**	**0**	**0**	**148**	**189**	**151**	**198**	**212**	**378**	**303**	**500**	**315**	**582**	**324**	**491**	**401**	**624**	**352**	**532**	**318**	**384**	**318**	**360**	**160**	**223**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE13 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (5-year Protection by Diversion) (F_S.5_Diversion-5year)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	280	175	455	-	-	-	-	-	-	-	-	11	6	56	35	73	46	73	46	67	41	-	-	-	-	-	-
1.4 Package 2 (San Juan) (5-year)	*280*	*175*	*455*	-	-	-	-	-	-	-	-	*11*	*6*	*56*	*35*	*73*	*46*	*73*	*46*	*67*	*41*	-	-	-	-	-	-
2. Price Escalation for CBC	43	78	122	-	-	-	-	-	-	-	-	1	2	7	12	11	19	12	22	13	23	-	-	-	-	-	-
Subtotal (1+2)	323	253	576	-	-	-	-	-	-	-	-	13	8	63	47	83	65	85	68	80	65	-	-	-	-	-	-
3. Physical Contingency for CBC	16	13	29	-	-	-	-	-	-	-	-	1	0	3	2	4	3	4	3	4	3	-	-	-	-	-	-
Subtotal (1+2+3)	**340**	**266**	**605**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**13**	**9**	**66**	**49**	**87**	**68**	**89**	**72**	**84**	**68**	**-**	**-**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	223	223	-	-	-	-	-	-	-	-	-	45	-	67	-	67	-	45	-	-	-	-	-	-	-	-
2. Price Escalation for CC	0	85	85	-	-	-	-	-	-	-	-	-	13	-	23	-	28	-	22	-	-	-	-	-	-	-	-
Subtotal (1+2)	0	308	308	-	-	-	-	-	-	-	-	-	57	-	90	-	95	-	66	-	-	-	-	-	-	-	-
3. Physical Contingency for CC	0	15	15	-	-	-	-	-	-	-	-	-	3	-	5	-	5	-	3	-	-	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**323**	**323**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**60**	**-**	**95**	**-**	**99**	**-**	**70**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	7	7		-		-		-		-		1		2		2		2		1		-		-		-
2. Price Escalation for AC	0	3	3	-	-	-	-	-	-	-	-	-	0	-	1	-	1	-	1	-	1	-	-	-	-	-	-
Subtotal (1+2)	**0**	**10**	**10**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**2**	**-**	**3**	**-**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	45	28	73	-	-	8	5	8	5	1	1	3	2	4	3	4	3	4	3	6	3	6	3	-	-	-	-
2. Price Escalation for ESC	5	10	15	-	-	0	1	1	1	0	0	0	0	1	1	1	1	1	1	1	2	1	2	-	-	-	-
Subtotal (1+2)	50	37	88	-	-	9	6	9	6	2	1	3	2	5	4	5	4	5	4	7	5	7	6	-	-	-	-
3. Physical Contingency for ESC	3	2	4	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Subtotal (1+2+3)	**53**	**39**	**92**	**-**	**-**	**9**	**6**	**9**	**6**	**2**	**1**	**3**	**2**	**5**	**4**	**5**	**4**	**5**	**4**	**7**	**6**	**7**	**6**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**392**	**638**	**1,030**	**-**	**-**	**9**	**6**	**9**	**6**	**2**	**1**	**16**	**72**	**71**	**150**	**92**	**174**	**94**	**148**	**91**	**75**	**7**	**6**	**-**	**-**	**-**	**-**
E. Value added Tax for Components	0	84	84		-		2		2		0		3		15		20		20		20		2		-		-
Total (A+B+C+D+E)	**392**	**722**	**1,114**	**-**	**-**	**9**	**8**	**9**	**8**	**2**	**1**	**16**	**75**	**71**	**165**	**92**	**194**	**94**	**168**	**91**	**95**	**7**	**8**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,240**	**1,791**	**3,031**	**0**	**0**	**71**	**75**	**72**	**79**	**82**	**94**	**98**	**172**	**154**	**266**	**177**	**300**	**181**	**279**	**179**	**212**	**79**	**105**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE14 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basins) (10-year Protection by Diversion) (F_S.5_Diversion-10year)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	417	258	674	-	-	-	-	-	-	-	-	39	23	112	70	107	67	83	52	75	46	-	-	-	-	-	-
1.4 Package 2 (San Juan) (10-year)	*417*	*258*	*674*	-	-	-	-	-	-	-	-	*39*	*23*	*112*	*70*	*107*	*67*	*83*	*52*	*75*	*46*	-	-	-	-	-	-
2. Price Escalation for CBC	61	109	171	-	-	-	-	-	-	-	-	4	7	14	24	15	28	14	25	14	26	-	-	-	-	-	-
Subtotal (1+2)	478	367	845	-	-	-	-	-	-	-	-	43	30	125	94	123	94	97	77	89	72	-	-	-	-	-	-
3. Physical Contingency for CBC	24	18	42	-	-	-	-	-	-	-	-	2	1	6	5	6	5	5	4	4	4	-	-	-	-	-	-
Subtotal (1+2+3)	**502**	**385**	**887**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**46**	**31**	**132**	**99**	**129**	**99**	**102**	**80**	**94**	**76**	**-**	**-**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	294	294	-	-	-	-	-	-	-	-	-	88	-	88	-	88	-	29	-	-	-	-	-	-	-	-
2. Price Escalation for CC	0	106	106	-	-	-	-	-	-	-	-	-	25	-	30	-	36	-	14	-	-	-	-	-	-	-	-
Subtotal (1+2)	0	400	400	-	-	-	-	-	-	-	-	-	113	-	119	-	125	-	44	-	-	-	-	-	-	-	-
3. Physical Contingency for CC	0	20	20	-	-	-	-	-	-	-	-	-	6	-	6	-	6	-	2	-	-	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**420**	**420**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**119**	**-**	**125**	**-**	**131**	**-**	**46**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	10	10		-		-		-		-		2		3		3		2		1		-		-		-
2. Price Escalation for AC	0	4	4	-	-	-	-	-	-	-	-	-	0	-	1	-	1	-	1	-	1	-	-	-	-	-	-
Subtotal (1+2)	**0**	**14**	**14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**4**	**-**	**4**	**-**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	67	41	108	-	-	12	8	12	8	13	8	8	5	6	4	4	3	3	2	3	2	3	2	-	-	-	-
2. Price Escalation for ESC	6	11	17	-	-	0	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
Subtotal (1+2)	73	52	125	-	-	13	9	13	9	14	10	9	7	7	5	5	4	4	3	4	3	4	3	-	-	-	-
3. Physical Contingency for ESC	4	3	6	-	-	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Subtotal (1+2+3)	**77**	**55**	**132**	**-**	**-**	**14**	**9**	**14**	**9**	**15**	**10**	**10**	**7**	**7**	**5**	**5**	**4**	**4**	**3**	**4**	**3**	**4**	**4**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**578**	**874**	**1,452**	**-**	**-**	**14**	**9**	**14**	**9**	**15**	**10**	**55**	**159**	**139**	**232**	**134**	**237**	**106**	**132**	**98**	**81**	**4**	**4**	**-**	**-**	**-**	**-**
E. Value added Tax	0	122	122		-		3		3		3		11		29		28		23		21		1		-		-
Total (A+B+C+D+E)	**578**	**996**	**1,574**	**-**	**-**	**14**	**12**	**14**	**12**	**15**	**13**	**55**	**170**	**139**	**261**	**134**	**266**	**106**	**155**	**98**	**103**	**4**	**4**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,427**	**2,065**	**3,491**	**0**	**0**	**75**	**79**	**77**	**83**	**95**	**105**	**137**	**267**	**222**	**363**	**218**	**372**	**193**	**266**	**186**	**219**	**76**	**102**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE15 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (20-year Protection by Diversion) (F_S.5_Diversion-20year)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	648	399	1,047	-	-	-	-	-	-	-	-	84	51	177	109	161	99	130	80	97	60	-	-	-	-	-	-
1.4 Package 2 (San Juan) (20-year)	*648*	*399*	*1,047*	-	-	-	-	-	-	-	-	*84*	*51*	*177*	*109*	*161*	*99*	*130*	*80*	*97*	*60*	-	-	-	-	-	-
2. Price Escalation for CBC	94	165	259	-	-	-	-	-	-	-	-	8	14	22	38	23	41	22	39	18	34	-	-	-	-	-	-
Subtotal (1+2)	742	564	1,306	-	-	-	-	-	-	-	-	92	65	198	147	184	141	151	119	116	93	-	-	-	-	-	-
3. Physical Contingency for CBC	37	28	65	-	-	-	-	-	-	-	-	5	3	10	7	9	7	8	6	6	5	-	-	-	-	-	-
Subtotal (1+2+3)	**779**	**593**	**1,371**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**97**	**68**	**208**	**154**	**193**	**148**	**159**	**124**	**121**	**98**	**-**	**-**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	504	504	-	-	-	-	-	-	-	-	-	160	-	151	-	151	-	42	-	-	-	-	-	-	-	-
2. Price Escalation for CC	0	180	180	-	-	-	-	-	-	-	-	-	45	-	52	-	63	-	20	-	-	-	-	-	-	-	-
Subtotal (1+2)	0	684	684	-	-	-	-	-	-	-	-	-	204	-	203	-	214	-	62	-	-	-	-	-	-	-	-
3. Physical Contingency for CC	0	34	34	-	-	-	-	-	-	-	-	-	10	-	10	-	11	-	3	-	-	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**718**	**718**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**215**	**-**	**214**	**-**	**224**	**-**	**65**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	16	16		-		-		-		-		3		4		4		3		2		-		-		-
2. Price Escalation for AC	0	6	6	-	-	-	-	-	-	-	-	-	1	-	2	-	2	-	1	-	1	-	-	-	-	-	-
Subtotal (1+2)	**0**	**22**	**22**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4**	**-**	**6**	**-**	**6**	**-**	**4**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	104	64	168	-	-	19	12	19	12	14	8	14	8	10	6	10	6	9	6	9	6	-	-	-	-	-	-
2. Price Escalation for ESC	10	18	28	-	-	1	1	1	2	1	2	1	2	1	2	1	2	2	3	2	3	-	-	-	-	-	-
Subtotal (1+2)	114	82	195	-	-	20	13	21	14	15	10	15	11	11	8	11	8	11	8	11	9	-	-	-	-	-	-
3. Physical Contingency for ESC	6	4	10	-	-	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	-	-	-	-	-	-
Subtotal (1+2+3)	**120**	**86**	**205**	**-**	**-**	**21**	**14**	**22**	**15**	**15**	**11**	**16**	**11**	**11**	**8**	**12**	**9**	**11**	**9**	**11**	**9**	**-**	**-**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**898**	**1,418**	**2,316**	**-**	**-**	**21**	**14**	**22**	**15**	**15**	**11**	**113**	**298**	**220**	**382**	**205**	**387**	**170**	**202**	**133**	**110**	**-**	**-**	**-**	**-**	**-**	**-**
E. Value added Tax	0	189	189		-		4		4		3		23		46		43		36		29		-		-		-
Total (A+B+C+D+E)	**898**	**1,607**	**2,505**	**-**	**-**	**21**	**18**	**22**	**19**	**15**	**14**	**113**	**321**	**220**	**428**	**205**	**430**	**170**	**239**	**133**	**138**	**-**	**-**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,746**	**2,676**	**4,423**	**0**	**0**	**83**	**85**	**84**	**89**	**95**	**106**	**194**	**418**	**303**	**529**	**290**	**536**	**256**	**350**	**221**	**255**	**72**	**98**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE16 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (5-year Protection by Retarding Basin) (F_S.5_Retarding Basin-5year)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	380	250	630	-	-	-	-	-	-	-	-	28	16	95	62	89	59	70	47	57	37	40	28	-	-	-	-
1.4 Package 2 (San Juan) (5-year)	*380*	*250*	*630*	-	-	-	-	-	-	-	-	*28*	*16*	*95*	*62*	*89*	*59*	*70*	*47*	*57*	*37*	*40*	*28*	-	-	-	-
2. Price Escalation for CBC	59	112	171	-	-	-	-	-	-	-	-	3	5	12	22	13	25	12	23	11	21	9	18	-	-	-	-
Subtotal (1+2)	439	362	801	-	-	-	-	-	-	-	-	31	21	107	84	102	84	82	69	68	59	49	46	-	-	-	-
3. Physical Contingency for CBC	22	18	40	-	-	-	-	-	-	-	-	2	1	5	4	5	4	4	3	3	3	2	2	-	-	-	-
Subtotal (1+2+3)	**460**	**380**	**841**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**33**	**22**	**112**	**88**	**107**	**88**	**86**	**73**	**71**	**61**	**51**	**48**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	232	232	-	-	-	-	-	18	-	14	-	54	-	46	-	43	-	32	-	24	-	-	-	-	-	-
2. Price Escalation for CC	0	84	84	-	-	-	-	-	3	-	3	-	15	-	16	-	18	-	16	-	14	-	-	-	-	-	-
Subtotal (1+2)	0	316	316	-	-	-	-	-	20	-	17	-	70	-	62	-	61	-	48	-	38	-	-	-	-	-	-
3. Physical Contingency for CC	0	16	16	-	-	-	-	-	1	-	1	-	3	-	3	-	3	-	2	-	2	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**332**	**332**	**-**	**-**	**-**	**-**	**-**	**21**	**-**	**18**	**-**	**73**	**-**	**65**	**-**	**64**	**-**	**50**	**-**	**40**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	9	9		-		-		0		0		1		2		2		1		1		1		-		-
2. Price Escalation for AC	0	4	4	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	1	-	0	-	-	-	-
Subtotal (1+2)	**0**	**12**	**12**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**3**	**-**	**3**	**-**	**2**	**-**	**2**	**-**	**1**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	61	40	101	-	-	11	7	11	7	8	5	8	5	8	5	8	5	4	2	4	2	-	-	-	-	-	-
2. Price Escalation for ESC	6	11	17	-	-	0	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	-	-	-	-	-	-
Subtotal (1+2)	67	51	118	-	-	12	8	12	9	8	6	8	6	9	7	9	7	4	4	5	4	-	-	-	-	-	-
3. Physical Contingency for ESC	3	3	6	-	-	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-
Subtotal (1+2+3)	**70**	**53**	**123**	**-**	**-**	**12**	**9**	**13**	**9**	**9**	**6**	**9**	**7**	**9**	**7**	**9**	**7**	**5**	**4**	**5**	**4**	**-**	**-**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**531**	**777**	**1,308**	**-**	**-**	**12**	**9**	**13**	**31**	**9**	**24**	**42**	**103**	**121**	**164**	**117**	**162**	**91**	**129**	**76**	**107**	**51**	**49**	**-**	**-**	**-**	**-**
E. Value added Tax for Components	0	116	116		-		3		3		2		8		26		25		20		17		12		-		-
Total (A+B+C+D+E)	**531**	**893**	**1,424**	**-**	**-**	**12**	**11**	**13**	**33**	**9**	**26**	**42**	**111**	**121**	**189**	**117**	**187**	**91**	**150**	**76**	**124**	**51**	**61**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,379**	**1,962**	**3,341**	**0**	**0**	**74**	**79**	**75**	**104**	**89**	**119**	**123**	**208**	**204**	**291**	**201**	**293**	**177**	**261**	**164**	**241**	**123**	**158**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE17 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (10-year Protection by Retarding Basin) (F_S.5_Retarding Basin-10yea

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	474	315	789	-	-	-	-	-	-	-	-	34	19	131	88	95	63	95	63	83	57	36	25	-	-	-	-
1.4 Package 2 (San Juan) (10-year)	*474*	*315*	*789*	-	-	-	-	-	-	-	-	*34*	*19*	*131*	*88*	*95*	*63*	*95*	*63*	*83*	*57*	*36*	*25*	-	-	-	-
2. Price Escalation for CBC	73	140	213	-	-	-	-	-	-	-	-	3	5	16	30	14	26	16	31	16	32	8	16	-	-	-	-
Subtotal (1+2)	546	455	1,002	-	-	-	-	-	-	-	-	37	25	147	118	108	89	111	94	99	88	44	41	-	-	-	-
3. Physical Contingency for CBC	27	23	50	-	-	-	-	-	-	-	-	2	1	7	6	5	4	6	5	5	4	2	2	-	-	-	-
Subtotal (1+2+3)	**574**	**478**	**1,052**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**39**	**26**	**154**	**124**	**114**	**94**	**116**	**98**	**104**	**93**	**46**	**43**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	339	339	-	-	-	-	-	14	-	14	-	68	-	68	-	68	-	54	-	54	-	-	-	-	-	-
2. Price Escalation for CC	0	132	132	-	-	-	-	-	2	-	3	-	19	-	23	-	28	-	26	-	30	-	-	-	-	-	-
Subtotal (1+2)	0	470	470	-	-	-	-	-	16	-	17	-	87	-	91	-	96	-	80	-	84	-	-	-	-	-	-
3. Physical Contingency for CC	0	24	24	-	-	-	-	-	1	-	1	-	4	-	5	-	5	-	4	-	4	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**494**	**494**	**-**	**-**	**-**	**-**	**-**	**17**	**-**	**18**	**-**	**91**	**-**	**96**	**-**	**101**	**-**	**84**	**-**	**88**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	11	11		-		-		0		0		1		3		2		2		2		1		-		-
2. Price Escalation for AC	0	5	5	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	1	-	0	-	-	-	-
Subtotal (1+2)	**0**	**16**	**16**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**2**	**-**	**4**	**-**	**3**	**-**	**3**	**-**	**3**	**-**	**1**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	76	50	126	-	-	14	9	14	9	7	5	7	5	7	5	7	5	7	5	7	5	5	3	-	-	-	-
2. Price Escalation for ESC	8	15	24	-	-	1	1	1	2	1	1	1	1	1	2	1	2	1	2	1	3	1	2	-	-	-	-
Subtotal (1+2)	84	66	150	-	-	15	10	15	11	8	6	8	6	8	6	8	7	8	7	8	7	6	5	-	-	-	-
3. Physical Contingency for ESC	4	3	7	-	-	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Subtotal (1+2+3)	**88**	**69**	**157**	**-**	**-**	**16**	**11**	**16**	**12**	**8**	**6**	**8**	**6**	**8**	**7**	**9**	**7**	**9**	**7**	**9**	**8**	**6**	**5**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**662**	**1,057**	**1,719**	**-**	**-**	**16**	**11**	**16**	**29**	**8**	**24**	**48**	**125**	**163**	**231**	**122**	**204**	**125**	**193**	**113**	**191**	**52**	**50**	**-**	**-**	**-**	**-**
E. Value added Tax	0	145	145		-		3		3		2		10		35		27		28		26		12		-		-
Total (A+B+C+D+E)	**662**	**1,202**	**1,864**	**-**	**-**	**16**	**14**	**16**	**32**	**8**	**26**	**48**	**135**	**163**	**266**	**122**	**231**	**125**	**220**	**113**	**217**	**52**	**62**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,510**	**2,271**	**3,781**	**0**	**0**	**77**	**81**	**79**	**102**	**88**	**118**	**129**	**231**	**246**	**367**	**207**	**337**	**211**	**331**	**201**	**334**	**124**	**159**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE18 Annual Disbursement Schedule for River Overflow Flood Improvement (San Juan River Basin) (20-year Protection by Retarding Basin) (F_S.5_Retarding Basin-20year)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	519	347	866	-	-	-	-	-	-	-	-	23	13	84	55	104	69	104	69	104	69	101	70	-	-	-	-
1.4 Package 2 (San Juan) (20-year)	*519*	*347*	*866*	-	-	-	-	-	-	-	-	*23*	*13*	*84*	*55*	*104*	*69*	*104*	*69*	*104*	*69*	*101*	*70*	-	-	-	-
2. Price Escalation for CBC	86	169	255	-	-	-	-	-	-	-	-	2	4	10	19	15	29	17	34	20	39	22	45	-	-	-	-
Subtotal (1+2)	605	516	1,121	-	-	-	-	-	-	-	-	25	17	94	74	119	98	121	103	124	108	123	116	-	-	-	-
3. Physical Contingency for CBC	30	26	56	-	-	-	-	-	-	-	-	1	1	5	4	6	5	6	5	6	5	6	6	-	-	-	-
Subtotal (1+2+3)	**636**	**541**	**1,177**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**26**	**17**	**98**	**78**	**125**	**103**	**127**	**108**	**130**	**114**	**129**	**121**	**-**	**-**	**-**	**-**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	412	412	-	-	-	-	-	14	-	14	-	82	-	82	-	82	-	68	-	68	-	-	-	-	-	-
2. Price Escalation for CC	0	162	162	-	-	-	-	-	2	-	3	-	23	-	28	-	34	-	33	-	38	-	-	-	-	-	-
Subtotal (1+2)	0	574	574	-	-	-	-	-	16	-	17	-	105	-	111	-	116	-	102	-	107	-	-	-	-	-	-
3. Physical Contingency for CC	0	29	29	-	-	-	-	-	1	-	1	-	5	-	6	-	6	-	5	-	5	-	-	-	-	-	-
Subtotal (1+2+3)	**0**	**603**	**603**	**-**	**-**	**-**	**-**	**-**	**17**	**-**	**18**	**-**	**111**	**-**	**116**	**-**	**122**	**-**	**107**	**-**	**112**	**-**	**-**	**-**	**-**	**-**	**-**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	13	13		-		-		0		0		1		2		3		2		2		2		-		-
2. Price Escalation for AC	0	6	6	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	1	-	1	-	1	-	-	-	-
Subtotal (1+2)	**0**	**19**	**19**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**2**	**-**	**3**	**-**	**4**	**-**	**4**	**-**	**4**	**-**	**3**	**-**	**-**	**-**	**-**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	83	55	138	-	-	16	10	16	10	5	3	7	5	8	5	8	5	8	5	9	6	8	5	-	-	-	-
2. Price Escalation for ESC	9	18	27	-	-	1	1	1	2	0	1	1	1	1	2	1	2	1	3	2	3	2	3	-	-	-	-
Subtotal (1+2)	92	73	166	-	-	16	11	17	12	6	4	7	6	9	7	9	7	9	8	10	9	9	9	-	-	-	-
3. Physical Contingency for ESC	5	4	8	-	-	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-
Subtotal (1+2+3)	**97**	**77**	**174**	**-**	**-**	**17**	**12**	**17**	**13**	**6**	**4**	**8**	**6**	**9**	**7**	**9**	**8**	**10**	**8**	**11**	**10**	**10**	**9**	**-**	**-**	**-**	**-**
Total (A+B+C+D)	**733**	**1,240**	**1,973**	**-**	**-**	**17**	**12**	**17**	**30**	**6**	**23**	**34**	**136**	**108**	**205**	**134**	**236**	**137**	**226**	**141**	**239**	**139**	**133**	**-**	**-**	**-**	**-**
E. Value added Tax	0	162	162		-		3		4		1		7		23		29		30		32		32		-		-
Total (A+B+C+D+E)	**733**	**1,402**	**2,135**	**-**	**-**	**17**	**16**	**17**	**33**	**6**	**24**	**34**	**143**	**108**	**228**	**134**	**266**	**137**	**257**	**141**	**271**	**139**	**165**	**-**	**-**	**-**	**-**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	705	577	1,282	0	0	56	46	56	46	71	58	71	58	71	58	71	58	71	58	71	58	56	46	56	46	56	46
2. Price Escalation for CBC	103	245	348	0	0	2	5	3	7	6	13	7	16	9	20	10	24	12	28	13	32	12	30	13	33	15	37
Subtotal (1+2)	808	822	1,630	-	-	59	51	60	54	76	70	78	74	79	78	81	82	82	86	84	90	68	76	70	80	71	84
3. Physical Contingency for Reg.P	40	41	82	-	-	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	4
Subtotal (1+2+3)	**848**	**864**	**1,712**	**-**	**-**	**62**	**54**	**63**	**56**	**80**	**74**	**82**	**78**	**83**	**82**	**85**	**86**	**86**	**90**	**88**	**95**	**72**	**79**	**73**	**84**	**75**	**88**
G. Value added Tax for Components	0	205	205		-		14		14		18		19		20		20		21		22		18		19		19
Grand Total (A+B+C+D+E+F+G)	**1,581**	**2,471**	**4,052**	**0**	**0**	**79**	**83**	**80**	**104**	**86**	**116**	**116**	**239**	**191**	**329**	**219**	**372**	**223**	**368**	**229**	**387**	**211**	**263**	**73**	**102**	**75**	**107**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE19 Annual Disbursement Schedule for Inland Drainage Improvement (Partial Protection) (D1_Partial_without On-site)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																							
1. Construction Base Cost (CBC)	1,061	685	1,746	-	-	-	-	3	3	10	7	19	13	28	19	60	39	252	162	439	281	252	161
1.5 Package 3 (Inland Drainage)	*1,061*	*685*	*1,746*	*-*	*-*	*-*	*-*	*3*	*3*	*10*	*7*	*19*	*13*	*28*	*19*	*60*	*39*	*252*	*162*	*439*	*281*	*252*	*161*
2. Price Escalation for CBC	194	374	568	-	-	-	-	0	0	1	2	2	4	3	7	9	16	42	78	83	158	54	109
Subtotal (1+2)	1,255	1,060	2,315	-	-	-	-	3	3	11	9	20	17	32	26	68	55	294	240	522	439	305	270
3. Physical Contingency for CBC	63	53	116	-	-	-	-	0	0	1	0	1	1	2	1	3	3	15	12	26	22	15	14
Subtotal (1+2+3)	**1,318**	**1,113**	**2,430**	**-**	**-**	**-**	**-**	**3**	**3**	**11**	**9**	**21**	**18**	**33**	**27**	**72**	**58**	**309**	**252**	**548**	**461**	**320**	**284**
B. Compensation Cost																							
1. Compensation Cost (CC)	0	479	479	-	-	-	-	-	-	-	22	-	43	-	65	-	93	-	119	-	131	-	5
2. Price Escalation for CC	0	214	214	-	-	-	-	-	-	-	5	-	13	-	23	-	39	-	58	-	73	-	4
Subtotal (1+2)	0	693	693	-	-	-	-	-	-	-	27	-	56	-	88	-	132	-	177	-	204	-	9
3. Physical Contingency for CC	0	35	35	-	-	-	-	-	-	-	1	-	3	-	4	-	7	-	9	-	10	-	0
Subtotal (1+2+3)	**0**	**728**	**728**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**28**	**-**	**59**	**-**	**93**	**-**	**139**	**-**	**186**	**-**	**214**	**-**	**9**
C. Administration Cost Cost																							
1. Administration Cost (AC)	0	22	22		-		-		0		0		1		1		2		5		9		4
2. Price Escalation for AC	0	12	12	-	-	-	-	-	0	-	0	-	0	-	0	-	1	-	3	-	5	-	3
Subtotal (1+2)	**0**	**34**	**34**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**3**	**-**	**8**	**-**	**13**	**-**	**7**
D. Engineering Service Cost																							
1. Engineering Service Cost (ESC)	170	110	279	-	-	25	16	38	25	5	3	5	3	11	7	21	14	21	14	21	14	21	14
2. Price Escalation for ESC	21	39	60	-	-	1	2	2	4	0	1	1	1	1	2	3	6	4	7	4	8	5	9
Subtotal (1+2)	190	149	339	-	-	26	18	40	29	6	4	6	4	12	9	24	19	25	20	25	21	26	23
3. Physical Contingency for ESC	10	7	17	-	-	1	1	2	1	0	0	0	0	1	0	1	1	1	1	1	1	1	1
Subtotal (1+2+3)	**200**	**156**	**356**	**-**	**-**	**28**	**19**	**43**	**30**	**6**	**4**	**6**	**5**	**13**	**10**	**26**	**20**	**26**	**21**	**27**	**22**	**27**	**24**
Total (A+B+C+D)	**1,518**	**2,031**	**3,549**	**-**	**-**	**28**	**19**	**46**	**33**	**17**	**42**	**28**	**83**	**46**	**131**	**97**	**220**	**335**	**467**	**575**	**711**	**347**	**324**
E. Value added Tax	0	334	334		-		6		9		4		6		10		21		73		127		79
Total (A+B+C+D+E)	**1,518**	**2,365**	**3,883**	**-**	**-**	**28**	**25**	**46**	**43**	**17**	**46**	**28**	**89**	**46**	**141**	**97**	**241**	**335**	**540**	**575**	**838**	**347**	**403**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE20 Annual Disbursement Schedule for Inland Flood Improvement (2-year Protection) (D1_2-year_without On-site)

Cost Item	Amount			1		2		3		4		5		6		7		8		9		10	
				1.02	1.0507	1.04	1.10397	1.06	1.16	1.1	1.22	1.11	1.3	1.13	1.35	1.15	1.42	1.17	1.5	1.2	1.6	1.25	1.757123
				2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																							
1. Construction Base Cost (CBC)	2,493	1,582	4,074	-	-	-	-	1	1	115	72	248	156	418	267	528	334	359	230	428	271	395	250
1.5 Package 3 (Inland Drainage)(2-year)	*2,493*	*1,582*	*4,074*	*-*	*-*	*-*	*-*	*1*	*1*	*115*	*72*	*248*	*156*	*418*	*267*	*528*	*334*	*359*	*230*	*428*	*271*	*395*	*250*
2. Price Escalation for CBC	418	764	1,182	-	-	-	-	0	0	12	16	27	47	54	93	79	140	61	115	86	162	99	189
Subtotal (1+2)	2,911	2,345	5,256	-	-	-	-	1	2	127	87	275	203	472	360	607	475	420	346	513	433	494	440
3. Physical Contingency for CBC	146	117	263	-	-	-	-	0	0	6	4	14	10	24	18	30	24	21	17	26	22	25	22
Subtotal (1+2+3)	**3,056**	**2,462**	**5,519**	**-**	**-**	**-**	**-**	**2**	**2**	**133**	**92**	**289**	**213**	**496**	**378**	**638**	**499**	**441**	**363**	**539**	**455**	**519**	**462**
B. Compensation Cost																							
1. Compensation Cost (CC)	0	603	603	-	-	-	-	-	32	-	60	-	88	-	116	-	118	-	123	-	62	-	5
2. Price Escalation for CC	0	237	237	-	-	-	-	-	5	-	13	-	26	-	41	-	49	-	61	-	37	-	4
Subtotal (1+2)	0	840	840	-	-	-	-	-	37	-	73	-	114	-	157	-	167	-	184	-	98	-	9
3. Physical Contingency for CC	0	42	42	-	-	-	-	-	2	-	4	-	6	-	8	-	8	-	9	-	5	-	0
Subtotal (1+2+3)	**0**	**882**	**882**	**-**	**-**	**-**	**-**	**-**	**39**	**-**	**77**	**-**	**120**	**-**	**165**	**-**	**176**	**-**	**193**	**-**	**103**	**-**	**10**
C. Administration Cost Cost																							
1. Administration Cost (AC)	0	47	47		-		-		0		2		5		8		10		7		8		7
2. Price Escalation for AC	0	22	22	-	-	-	-	-	0	-	1	-	1	-	3	-	4	-	4	-	5	-	5
Subtotal (1+2)	**0**	**69**	**69**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**3**	**-**	**6**	**-**	**11**	**-**	**14**	**-**	**11**	**-**	**12**	**-**	**11**
D. Engineering Service Cost																							
1. Engineering Service Cost (ESC)	399	253	652	-	-	75	47	75	47	12	8	12	8	37	24	37	24	50	32	50	32	50	32
2. Price Escalation for ESC	51	94	145	-	-	3	5	4	8	1	2	1	2	5	8	6	10	8	16	10	19	12	24
Subtotal (1+2)	450	347	797	-	-	78	52	79	55	14	10	14	10	42	32	43	34	58	47	60	51	62	56
3. Physical Contingency for ESC	23	17	40	-	-	4	3	4	3	1	0	1	1	2	2	2	2	3	2	3	3	3	3
Subtotal (1+2+3)	**473**	**364**	**837**	**-**	**-**	**82**	**55**	**83**	**58**	**14**	**10**	**15**	**11**	**44**	**34**	**45**	**35**	**61**	**50**	**63**	**53**	**65**	**58**
Total (A+B+C+D)	**3,529**	**3,777**	**7,306**	**-**	**-**	**82**	**55**	**85**	**98**	**147**	**181**	**304**	**350**	**540**	**587**	**683**	**724**	**503**	**617**	**602**	**623**	**584**	**541**
E. Value added Tax	0	763	763		-		16		17		30		63		114		146		110		133		132
Total (A+B+C+D+E)	**3,529**	**4,540**	**8,069**	**-**	**-**	**82**	**71**	**85**	**116**	**147**	**211**	**304**	**414**	**540**	**701**	**683**	**870**	**503**	**727**	**602**	**757**	**584**	**673**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE21 Annual Disbursement Schedule for Inland Drainage Improvement (Partial Protection) (D1_Partial_with On-site)

Cost Item	Amount			1		2		3		4		5		6		7		8		9		10		11		12	
				1.0195	1.0507	1.03938	1.10397	1.05965	1.15994	1.08031	1.21875	1.10138	1.28054	1.12285	1.34546	1.14475	1.41368	1.16707	1.48535	1.18983	1.56066	1.21303	1.63979	1.23669	1.72292	1.2608	1.81028
				2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	930	590	1,520	-	-	-	-	-	-	59	38	59	38	73	47	133	85	184	117	184	117	125	79	65	41	47	28
1.5 Package 3 (Inland Drainage)	*930*	*590*	*1,520*	-	-	-	-	-	-	*59*	*38*	*59*	*38*	*73*	*47*	*133*	*85*	*184*	*117*	*184*	*117*	*125*	*79*	*65*	*41*	*47*	*28*
2. Price Escalation for CBC	159	296	455	-	-	-	-	-	-	5	8	6	11	9	16	19	35	31	57	35	66	27	50	16	29	12	23
Subtotal (1+2)	1,089	886	1,975	-	-	-	-	-	-	64	47	65	49	82	63	152	121	215	174	219	183	151	129	81	70	59	51
3. Physical Contingency for CBC	54	44	99	-	-	-	-	-	-	3	2	3	2	4	3	8	6	11	9	11	9	8	6	4	3	3	3
Subtotal (1+2+3)	**1,143**	**930**	**2,074**	**-**	**-**	**-**	**-**	**-**	**-**	**67**	**49**	**69**	**51**	**86**	**66**	**160**	**127**	**226**	**182**	**230**	**192**	**159**	**136**	**85**	**73**	**62**	**54**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	444	444	-	-	-	-	-	15	-	15	-	23	-	59	-	74	-	74	-	65	-	57	-	57	-	4
2. Price Escalation for CC	0	217	217	-	-	-	-	-	2	-	3	-	6	-	20	-	30	-	36	-	36	-	37	-	41	-	3
Subtotal (1+2)	0	661	661	-	-	-	-	-	18	-	19	-	29	-	80	-	104	-	109	-	102	-	94	-	99	-	7
3. Physical Contingency for CC	0	33	33	-	-	-	-	-	1	-	1	-	1	-	4	-	5	-	5	-	5	-	5	-	5	-	0
Subtotal (1+2+3)	**0**	**694**	**694**	**-**	**-**	**-**	**-**	**-**	**19**	**-**	**20**	**-**	**31**	**-**	**84**	**-**	**109**	**-**	**115**	**-**	**107**	**-**	**99**	**-**	**104**	**-**	**8**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	20	20		-		-		0		1		1		2		3		4		4		3		2		1
2. Price Escalation for AC	0	10	10	-	-	-	-	-	0	-	0	-	0	-	1	-	1	-	2	-	2	-	2	-	1	-	1
Subtotal (1+2)	**0**	**29**	**29**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**1**	**-**	**2**	**-**	**2**	**-**	**4**	**-**	**6**	**-**	**6**	**-**	**4**	**-**	**3**	**-**	**1**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	149	94	243	-	-	28	18	28	18	9	6	9	6	9	6	14	9	14	9	9	6	9	6	9	6	9	6
2. Price Escalation for ESC	18	34	52	-	-	1	2	2	3	1	1	1	2	1	2	2	4	2	4	2	3	2	4	2	4	2	5
Subtotal (1+2)	167	128	295	-	-	29	20	30	21	10	7	10	8	10	8	16	13	16	13	11	9	11	10	12	10	12	11
3. Physical Contingency for ESC	8	6	15	-	-	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	0	1	0	1	1	1	1
Subtotal (1+2+3)	**175**	**135**	**310**	**-**	**-**	**30**	**21**	**31**	**22**	**11**	**8**	**11**	**8**	**11**	**8**	**17**	**13**	**17**	**14**	**12**	**10**	**12**	**10**	**12**	**11**	**12**	**11**
Total (A+B+C+D)	**1,319**	**1,788**	**3,107**	**-**	**-**	**30**	**21**	**31**	**40**	**78**	**77**	**79**	**92**	**97**	**161**	**177**	**253**	**243**	**317**	**242**	**314**	**171**	**249**	**97**	**191**	**74**	**74**
E. Value added Tax for Components	0	286	286		-		6		6		16		17		21		38		53		53		38		22		17
Total (A+B+C+D+E)	**1,319**	**2,074**	**3,393**	**-**	**-**	**30**	**27**	**31**	**47**	**78**	**94**	**79**	**108**	**97**	**181**	**177**	**291**	**243**	**369**	**242**	**367**	**171**	**287**	**97**	**212**	**74**	**91**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	176	144	321	0	0	14	12	14	12	16	13	18	14	18	14	18	14	18	14	18	14	14	12	16	13	14	12
2. Price Escalation for CBC	26	62	88	0	0	1	1	1	2	1	3	2	4	2	5	3	6	3	7	3	8	3	7	4	9	4	9
Subtotal (1+2)	202	206	409	-	-	15	13	15	13	17	16	19	18	20	19	20	20	21	21	21	23	17	19	20	22	18	21
3. Physical Contingency for Reg.P	10	10	20	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Subtotal (1+2+3)	**212**	**217**	**429**	**-**	**-**	**15**	**13**	**16**	**14**	**18**	**17**	**20**	**19**	**21**	**20**	**21**	**21**	**22**	**22**	**22**	**24**	**18**	**20**	**21**	**23**	**19**	**22**
G. Value added Tax for Components	0	51	51		-		3		4		4		5		5		5		5		5		5		5		5
Grand Total (A+B+C+D+E+F+G)	**1,531**	**2,342**	**3,873**	**0**	**0**	**46**	**43**	**47**	**64**	**96**	**114**	**100**	**133**	**118**	**206**	**198**	**318**	**264**	**397**	**264**	**396**	**189**	**311**	**118**	**241**	**93**	**118**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Table A.4.DE22 Annual Disbursement Schedule for Urban Drainage Improvement (2-year Protection) (D1_2-year_with On-site)

Cost Item	Amount			2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
A. Construction Base Cost																											
1. Construction Base Cost (CBC)	2,377	1,498	3,875	-	-	-	-	-	-	106	65	106	65	142	88	263	163	465	294	465	294	359	229	254	164	218	137
1.5 Package 3 (Inland Drainage)(2-year)	*2,377*	*1,498*	*3,875*	-	-	-	-	-	-	*106*	*65*	*106*	*65*	*142*	*88*	*263*	*163*	*465*	*294*	*465*	*294*	*359*	*229*	*254*	*164*	*218*	*137*
2. Price Escalation for CBC	434	814	1,248	-	-	-	-	-	-	8	14	11	18	17	30	38	67	78	143	88	165	77	147	60	119	57	111
Subtotal (1+2)	2,811	2,312	5,123	-	-	-	-	-	-	114	79	116	83	159	119	301	230	543	436	553	459	436	376	314	283	275	247
3. Physical Contingency for CBC	141	116	256	-	-	-	-	-	-	6	4	6	4	8	6	15	12	27	22	28	23	22	19	16	14	14	12
Subtotal (1+2+3)	**2,952**	**2,428**	**5,379**	**-**	**-**	**-**	**-**	**-**	**-**	**120**	**83**	**122**	**87**	**167**	**125**	**316**	**242**	**570**	**458**	**581**	**482**	**458**	**394**	**330**	**297**	**289**	**260**
B. Compensation Cost																											
1. Compensation Cost (CC)	0	568	568	-	-	-	-	-	21	-	21	-	31	-	77	-	95	-	95	-	81	-	71	-	71	-	5
2. Price Escalation for CC	0	275	275	-	-	-	-	-	3	-	5	-	9	-	27	-	39	-	46	-	46	-	45	-	51	-	4
Subtotal (1+2)	0	843	843	-	-	-	-	-	24	-	25	-	40	-	104	-	134	-	141	-	127	-	116	-	122	-	9
3. Physical Contingency for CC	0	42	42	-	-	-	-	-	1	-	1	-	2	-	5	-	7	-	7	-	6	-	6	-	6	-	0
Subtotal (1+2+3)	**0**	**885**	**885**	**-**	**-**	**-**	**-**	**-**	**25**	**-**	**27**	**-**	**42**	**-**	**109**	**-**	**141**	**-**	**148**	**-**	**133**	**-**	**122**	**-**	**128**	**-**	**10**
C. Administration Cost Cost																											
1. Administration Cost (AC)	0	44	44		-		-		0		2		2		3		5		9		8		7		5		4
2. Price Escalation for AC	0	24	24	-	-	-	-	-	0	-	0	-	1	-	1	-	2	-	4	-	5	-	4	-	4	-	3
Subtotal (1+2)	**0**	**68**	**68**	**-**	**-**	**-**	**-**	**-**	**0**	**-**	**2**	**-**	**3**	**-**	**4**	**-**	**7**	**-**	**13**	**-**	**13**	**-**	**11**	**-**	**8**	**-**	**7**
D. Engineering Service Cost																											
1. Engineering Service Cost (ESC)	380	240	620	-	-	71	45	71	45	24	15	24	15	24	15	24	15	24	15	29	18	36	22	31	19	24	15
2. Price Escalation for ESC	48	89	137	-	-	3	5	4	7	2	3	2	4	3	5	3	6	4	7	5	10	8	14	7	14	6	12
Subtotal (1+2)	429	328	757	-	-	74	50	76	52	26	18	26	19	27	20	27	21	28	22	34	28	43	37	38	34	30	27
3. Physical Contingency for ESC	21	16	38	-	-	4	2	4	3	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	1	1
Subtotal (1+2+3)	**450**	**345**	**795**	**-**	**-**	**78**	**52**	**79**	**55**	**27**	**19**	**27**	**20**	**28**	**21**	**29**	**22**	**29**	**23**	**36**	**29**	**45**	**39**	**40**	**35**	**31**	**28**
Total (A+B+C+D)	**3,402**	**3,726**	**7,127**	**-**	**-**	**78**	**52**	**79**	**80**	**147**	**131**	**150**	**152**	**195**	**259**	**344**	**412**	**599**	**642**	**617**	**657**	**503**	**566**	**370**	**469**	**320**	**304**
E. Value added Tax	0	741	741		-		16		16		30		31		41		73		130		135		112		84		73
Total (A+B+C+D+E)	**3,402**	**4,466**	**7,868**	**-**	**-**	**78**	**68**	**79**	**97**	**147**	**161**	**150**	**183**	**195**	**300**	**344**	**485**	**599**	**772**	**617**	**793**	**503**	**678**	**370**	**553**	**320**	**377**
F. Construction of On-site Reg. Pond																											
1. Construction Base Cost (Reg.P.)	176	144	321	0	0	11	9	12	10	14	12	14	12	14	12	18	14	18	14	18	14	19	16	19	16	19	16
2. Price Escalation for CBC	28	68	96	0	0	0	1	1	2	1	3	1	3	2	4	3	6	3	7	3	8	4	10	5	11	5	13
Subtotal (1+2)	204	212	416	-	-	11	10	13	12	15	14	16	15	16	16	20	20	21	21	21	23	24	26	24	27	24	29
3. Physical Contingency for Reg.P	10	11	21	-	-	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Subtotal (1+2+3)	**215**	**223**	**437**	**-**	**-**	**12**	**10**	**14**	**12**	**16**	**15**	**16**	**16**	**17**	**16**	**21**	**21**	**22**	**22**	**22**	**24**	**25**	**27**	**25**	**29**	**26**	**30**
G. Value added Tax for Components	0	52	52		-		3		3		4		4		4		5		5		5		6		6		7
Grand Total (A+B+C+D+E+F+G)	**3,616**	**4,742**	**8,358**	**0**	**0**	**89**	**80**	**93**	**112**	**163**	**179**	**166**	**202**	**212**	**320**	**365**	**511**	**621**	**800**	**639**	**822**	**528**	**712**	**395**	**588**	**346**	**414**

Notes : *1 It is estimated based on the work quantities.
*2 1.95 % of all costs in foreign currency portion and 5.07 % of all costs in local currency portion
*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost
*C Project owner's expense for the management of the project, 7 % of the sum of construction cost and compensation cost
*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)
*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of October 31, 2007
- Conversion Rate US$ 1.00 = PhP. 43.95 = JpY. 114.67, JpY 1.00 = PhP. 0.3834

Feasibility Study

Table A.5.FS.UP.1 Unit Construction Cost/Price List (1/3)

Work Item		Unit Cost/Price			Remarks
Description	Unit	L/C	F/C	Total	
Earth Work					
Clearing and Grubbing	m2	8.2	13.6	21.8	
Removal and Stripping of Topsoil	m2	177.2	316.4	493.6	Stripping Thickness20cm, 1km houling
Excavation, Open Cut -1	m3	9.6	17.8	26.4	(Volume>50,000cu.m.) by Bulldozer (335HP)
Excavation, Open Cut -2	m3	13.7	27.1	40.9	(Volume<50,000cu.m.) by Bulldozer (215HP)
Excavation and Loading -1	m3	20.7	41.1	61.7	by Backhoe (1.5 cu.m.)
Excavation and Loading -2	m3	31.2	51.4	82.5	by Backhoe (0.63 cu.m.)
Excavation, Small Amount	m3	130.9	182.8	313.7	(Volume<100m^3/location) by Backhoe (0.2m^3)
Excavation, Manpower	m3	475.1	0.0	475.1	
Loading, Using Wheel Loader	m3	8.9	16.9	25.8	(2.80 cu.m.)
Loading, Using Backhoe -1	m3	15.9	31.6	47.5	(1.5 cu.m.)
Loading, Using Backhoe -2	m3	20.1	33.1	53.3	(0.63 cu.m.)
Hauling - 0.5 km -1	m3	14.1	26.1	40.2	Loaded by Backhoe (1.5 cu.m.)
Hauling - 1 km -1	m3	17.0	31.3	48.3	Loaded by Backhoe (1.5 cu.m.)
Hauling - 1.5 km -1	m3	19.8	36.5	56.3	Loaded by Backhoe (1.5 cu.m.)
Hauling - 2 km -1	m3	22.6	41.7	64.4	Loaded by Backhoe (1.5 cu.m.)
Hauling - 5 km -1	m3	42.2	77.9	120.1	Loaded by Backhoe (1.5 cu.m.)
Hauling - 10 km -1	m3	95.5	176.3	271.8	Loaded by Backhoe (1.5 cu.m.)
Hauling - 0.5 km -2	m3	24.7	45.7	70.4	Loaded by Backhoe (0.63 cu.m.)
Hauling - 1 km -2	m3	28.3	52.2	80.5	Loaded by Backhoe (0.63 cu.m.)
Hauling - 1.5 km -2	m3	31.8	58.7	90.5	Loaded by Backhoe (0.63 cu.m.)
Hauling - 2 km -2	m3	35.3	65.2	100.6	Loaded by Backhoe (0.63 cu.m.)
Hauling - 5 km -2	m3	59.9	110.5	170.5	Loaded by Backhoe (0.63 cu.m.)
Hauling - 10 km -2	m3	101.0	186.3	287.3	Loaded by Backhoe (0.63 cu.m.)
Spreading	m3	6.7	11.3	18.0	in Stockpile or Disposal Area
Sand Fill, in Wide Area	m3	686.7	103.2	789.9	
Sand Fill, in Small Area	m3	797.8	264.6	1,062.4	: V<100 cu.m./location
Backfill, in Wide Area by Bulldozer	m3	21.5	36.1	57.6	(with Excavated Material)
Backfill, about Structures and Services-1	m3	123.4	115.8	239.2	(with Excavated Material)
Backfill, about Structures and Services-2	m3	701.1	180.0	881.1	(with Purchased Sand)
Backfill, Common/Random	m3	61.0	66.2	127.2	(with Excavated Material)
Backfill/Filling with Cemented Soil	m3	180.4	68.9	249.3	(with Excavated Material)
Backfill, in Small Area	m3	155.6	191.0	346.6	: V<100m^3/location (with Excavated Material)
Dike Embankment	m3	45.1	89.4	134.5	(with Excavated Material)
Road Embankment	m3	75.2	148.9	224.2	(with Excavated Material)
Grass Sodding	m2	70.2	5.1	75.3	
Concrete Work					
Plastering with Cement Mortar	m2	161.6	45.0	206.6	Mortar (1:2) Plastering for Wall, t=12mm
Plastering with Non Shrinkage Mortar	m2	307.8	387.6	695.4	Non ShrinkageM (1:2), for Wall, t=12mm
Concrete Work for Reinforced Concrete-1	m3	1,088.8	2,146.9	3,235.7	Class-A, Concrete Pump Placing
Concrete Work for Reinforced Concrete-2	m3	1,216.6	2,038.3	3,254.9	Class-A, Manpower Placing
Concrete Work for Massive Concrete-1	m3	997.3	1,975.3	2,972.6	Class-B, Concrete Pump Placing
Concrete Work for Massive Concrete-2	m3	1,169.7	1,895.0	3,064.7	Class-B, Manpower Placing
Concrete Work for Small Structure-1	m3	1,167.1	2,207.0	3,374.1	Class-C, Concrete Pump Placing
Concrete Work for Small Structure-2	m3	1,529.5	2,098.4	3,628.0	Class-C, Manpower Placing
Concrete Work for R.C. Pile -1	m3	1,243.6	2,508.0	3,751.6	Class-E, Concrete Pump Placing
Concrete Work for R.C. Pile -2	m3	1,371.4	2,399.4	3,770.8	Class-E, Manpower Placing
Concrete Work for Leveling Concrete-1	m3	936.9	1,834.2	2,771.1	Class-F, Concrete Pump Placing
Concrete Work for Leveling Concrete-2	m3	1,109.2	1,754.0	2,863.2	Class-F, Manpower Placing
Concrete Work for Leveling Concrete-3	m3	2,213.4	1,526.9	3,740.2	Class-F, Using Concrete Mixer
Concrete Work for Concrete Block	m3	1,565.7	2,182.8	3,748.5	Class-D, Manpower Placing
Formwork F1 (for Large Sized Structure)	m2	425.5	48.8	474.3	
Formwork F2 (for Small Sized Structure)	m2	432.5	59.1	491.6	
Formwork for Leveling Concrete	m2	321.7	39.0	360.7	
Reinforcing Bar (Grade 60)	Ton	24,806.7	39,718.7	64,525.4	
Reinforcing Bar (Grade 40)	Ton	22,656.0	34,700.6	57,356.6	
Anchor Bar for Concrete Structures	Kg	262.5	159.4	421.9	Drilling (200mm), Mortar Grouting, and Setting of Anchor Bar D16 (L=300mm)
Staging/Scaffolding Work	m2	172.5	67.5	240.0	
Supporting/Scaffolding Work	m3	294.7	70.5	365.1	
Elastic Joint Filler	m2	324.1	737.7	1,061.8	Spply and Instll of Elastic Joint Filler, t=10mm
Painting on Concrete Surface	m2	167.8	116.0	283.8	
Water Stop, PVC W=200mm	m	120.3	490.4	610.7	

Table A.5.FS.UP.2 Unit Construction Cost/Price List (2/3)

Work Item		Unit Cost/Price			Remarks
Description	Unit	L/C	F/C	Total	
Piling Work					
Corrosion Proof Lining on Metal	m2	233.0	1,118.1	1,351.2	Epoxy Painting with Sandblast Preparation
Furnishing Steel Pipe Sheet Pile	Ton	7,632.2	68,690.0	76,322.2	(HAT 10H, 25H)
Furnishing Steel Sheet Pile	Ton	7,261.1	65,350.2	72,611.4	(II-w, III-w, IV-w)
Vibro-Hummer Piling of SSP Type IV-w	m2	155.1	242.4	397.5	on Land, L=7-9m
Steel Sheet Pile Type IIIA	m2	1,447.6	11,032.2	12,479.8	Furnishing and Driving
Steel Sheet Pile Type II	m2	1,214.3	9,114.4	10,328.7	Furnishing and Driving
Pulling Out of Steel Sheet Pile	m2	141.3	286.4	427.7	All Type
Furnishing Precast Concrete Pile	l.m	603.3	1,407.7	2,011.0	RC300mm x 300mm
Driving Precast Concrete Piles	l.m	498.6	1,017.7	1,516.3	450mm x 450mm, on Land
Temporary Steel Sheet Pile, Type II	m2	447.6	2,213.4	2,661.0	Furnishing and Driving
Temporary Steel Sheet Pile, Type IIIA	m2	514.7	2,636.0	3,150.7	Furnishing and Driving
Temporary Steel Sheet Pile, Type II-w	m2	391.1	2,496.6	2,887.8	Furnishing and Driving
Timber Pile (Cocont Trunk)	l.m	1,372.1	354.9	1,727.0	Furnishing and Driving
Timber Pile (Coconut Trunk)	l.m	1,404.9	426.1	1,830.9	Furnishing and Driving
Protection Work					
Gravel Bedding and Backfill	m3	864.3	203.3	1,067.6	
Cylindrical Gabion	m3	2,508.3	2,996.3	5,504.6	
Gabion Mattress, w/ Filter Cloth Bedding	m3	2,296.6	5,007.7	7,304.3	
Rock Fill, Type A & B (Cobble Stone)	m3	1,422.8	262.4	1,685.2	
Rock Fill, Type C (Boulder)	m3	1,422.8	262.4	1,685.2	
Riprap (Boulder, 30~50cm Dia.)	m3	1,487.9	247.3	1,735.2	
Sand Bag Rip-rap	m3	7,083.0	2,522.7	9,605.7	
Rubble Concrete/Rubble Stone Masonry	m3	1,617.4	858.4	2,475.8	
Stone Masonry/Wet Stone Masonry-1	m2	747.2	388.5	1,135.7	t=200mm
Stone Masonry/Wet Stone Masonry-2	m2	848.2	485.6	1,333.9	t=250mm
Supply and Place of PVC Weepholes	Pcs	120.1	463.5	583.6	with Filter Cloth
Metal Form for Concrete Blocks	m2	106.4	19.5	125.9	
Installation of Concrete Block Type I	Nos	425.9	627.3	1,053.2	
Installation of Concrete Block Type II	Nos	408.8	587.3	996.1	
Installation of Concrete Block Type III	Nos	393.4	551.4	944.8	
Gabion (KagoMatt), w/ Filter Cloth Bedding	m3	2,671.3	10,381.3	13,052.7	
Road Works					
Subgrade Preparation	m2	35.6	23.8	59.4	
Sub-base Course	m3	708.4	280.9	989.2	Sub-Base Course, Maximum Thickness of 1 Layer = 150mm
Base Course	m3	718.6	298.9	1,017.5	Base Course, Maximum Thickness of 1 Layer = 150mm
Portland Cement Concrete Pavement	m2	565.2	649.6	1,214.8	Paving with Ready Mixed Concrete (Class-A), t=230mm, by Manpower
Gravel Surfacing	m3	671.6	238.9	910.5	Gravel Pavement, t=200mm
Concrete Block Pavement	m2	862.2	760.8	1,622.9	
Asphalt Pavement	m2	204.0	462.3	666.3	t=50mm D:1800m2/day
Drainage					
Cement Mortar (1:3) of RC Pipe Culvert	m3	6,227.0	2,969.6	9,196.6	for Joint Collar
Installation of RC Pipe Culvert, 12"	l.m	287.7	371.6	659.4	300mm (12") Dia.
Installation of RC Pipe Culvert, 18"	l.m	389.4	577.3	966.7	460mm (18") Dia.
Installation of RC Pipe Culvert, 24"	l.m	545.8	884.4	1,430.2	610mm (24") Dia.
Installation of RC Pipe Culvert, 30"	l.m	737.0	1,283.1	2,020.1	760mm (30") Dia.
Installation of RC Pipe Culvert, 36"	l.m	966.1	1,728.2	2,694.3	910mm (36") Dia.
Installation of RC Pipe Culvert, 42"	l.m	1,251.2	2,304.1	3,555.3	1070mm (42") Dia.
Installation of RC Pipe Culvert, 48"	l.m	1,873.7	3,667.2	5,540.9	1220mm (48") Dia.
Installation of RC Pipe Culvert, 54"	l.m	2,038.6	4,052.1	6,090.7	1370mm (54") Dia.
Installation of RC Pipe Culvert, 60"	l.m	2,427.0	4,958.3	7,385.3	1520mm (60") Dia.
Installation of Flap Gate for 12"	set	13,656.1	83,480.3	97,136.4	300mm (12") Dia. Pipe
Installation of Flap Gate for 18"	set	16,611.8	110,081.1	126,692.9	460mm (18") Dia. Pipe
Installation of Flap Gate for 24"	set	19,899.5	138,752.3	158,651.7	610mm (24") Dia. Pipe
Installation of Flap Gate for 30"	set	27,308.0	192,028.8	219,336.8	760mm (30") Dia. Pipe
Installation of Flap Gate for 36"	set	32,376.8	222,412.4	254,789.2	910mm (36") Dia. Pipe
Installation of Flap Gate for 42"	set	76,138.7	615,350.8	691,489.5	1070mm (42") Dia. Pipe
Installation of Flap Gate for 48"	set	82,809.9	661,822.6	744,632.5	1220mm (48") Dia. Pipe
Installation of Flap Gate for 54"	set	97,846.6	797,152.9	894,999.5	1370mm (54") Dia. Pipe
Installation of Flap Gate for 60"	set	107,972.8	885,761.0	993,733.7	1520mm (60") Dia. Pipe
Structural and Miscellaneous Metal Works					
Metal Form for Concrete Columns/Blocks	m2	235.0	73.7	308.7	
Handrail	kg	29.3	46.3	75.6	Galvanized Pipe 50mm Dia. & 38mm Dia.
Structural Steelwork	kg	118.3	85.5	203.8	

Table A.5.FS.UP.3 Unit Construction Cost/Price List (3/3)

Work Item Description	Unit	Unit Cost/Price L/C	 F/C	 Total	Remarks
Communal Facility					
Small Park for with					
Seesaw	set	12,000.0	3,000.0	15,000.0	
Swing & Slide	set	16,000.0	4,000.0	20,000.0	
Athletic Bar	set	14,400.0	3,600.0	18,000.0	
Small Resthouse	set	27,000.0	3,000.0	30,000.0	
Small Park/Playground Preparation	place	138,800.0	27,200.0	166,000.0	
Basketball Court					
Whole Court with Bench & Roof	court	2,400,000.0	3,600,000.0	6,000,000.0	
Whole Court with Roof and no bench	court	2,000,000.0	3,000,000.0	5,000,000.0	
Whole Court without Roof nor Bench	court	300,000.0	700,000.0	1,000,000.0	
Eco Natural Park & Community Pond					
Tree Planting	tree	450.0	50.0	500.0	
Carabao Grass	m2	74.4	5.6	80.0	
Bernuda Grass	m2	69.8	5.3	75.0	
Concrete Brick Paver	m2	371.0	329.0	700.0	6 inch thich
Athletic Field	L.S.	2,500,000.0	2,500,000.0	5,000,000.0	
Eco Park	ha	2,700,000.0	300,000.0	3,000,000.0	
Community Space	m2	90.0	210.0	300.0	Simple Asphalt Pavement

Table A.5.FS.C.1 Cost Estimation of Construction Cost for Imus Retarding Basin (1/2)

IMUS Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Earth Work							
Clearing and Grubbing	400,000	m^2	8.2	13.6	3,271,710	5,435,760	8,707,470
Excavation, Open Cut -1	1,960,000	m^3	9.6	17.8	18,779,983	34,963,016	53,742,998
Hauling - 2 km -1	1,577,600	m^3	22.6	41.7	35,687,635	65,850,125	101,537,760
Hauling - 5 km -1	394,400	m^3	42.2	77.9	16,645,352	30,713,677	47,359,030
Spreading	1,972,000	m^3	6.7	11.3	13,251,330	22,217,538	35,468,868
Dike Embankment	28,051	m^3	45.1	89.4	1,265,833	2,506,860	3,772,692
Grass Sodding	59,768	m^2	70.2	5.1	4,196,114	305,056	4,501,170
			Subtotal		*93,097,957*	*161,992,032*	*255,089,989*
Road Work (Macadam Pavement B=6.0m)							
Sub-base Course	3,293	m^3	708.4	280.9	2,332,879	924,977	3,257,856
Base Course	2,904	m^3	718.6	298.9	2,087,257	868,019	2,955,276
Asphalt Pavement	9,148	m^3	204.0	462.3	1,866,013	4,229,113	6,095,127
			Subtotal		*6,286,149*	*6,022,109*	*12,308,258*
B=10.0m Concrete Pavement							
Sub-base Course	0	m^3	708.4	280.9	0	0	0
Base Course	0	m^3	718.6	298.9	0	0	0
Asphalt Pavement	0	m^3	204.0	462.3	0	0	0
			Subtotal		*0*	*0*	*0*
Drainage Ditch (BxH=0.3m x 0.3m)							
Concrete Work for Small Structure-2	851	m^3	1529.5	2098.4	1,301,417	1,785,475	3,086,891
Concrete Work for Leveling Concrete-2	378	m^3	1109.2	1754.0	419,470	663,287	1,082,757
Formwork F2 (for Small Sized Structure)	7,091	m^2	432.5	59.1	3,066,502	419,077	3,485,578
Formwork for Leveling Concrete	945	m^2	321.7	39.0	304,126	36,879	341,005
			Subtotal		*5,091,514*	*2,904,717*	*7,996,232*
Drainage Sluice							
Concrete Work for Reinforced Concrete-1	630	m^3	1088.8	2146.9	685,936	1,352,461	2,038,397
Concrete Work for Leveling Concrete-2	55	m^3	1109.23958	1753.98496	60,663	95,924	156,588
Formwork F1 (for Large Sized Structure)	1,823	m^2	425.5	48.8	775,713	88,971	864,684
Formwork for Leveling Concrete	21	m^2	321.7	39.0	6,702	813	7,515
Supporting/Scaffolding Work	817	m^3	294.7	70.5	240,639	57,551	298,190
Installation of Flap Gate for 60"	2	nos	107972.8	885761.0	215,946	1,771,522	1,987,467
Steel Sheet Pile Type II	103	m^2	1214.3	9114.4	125,076	938,782	1,063,859
Reinforcing Bar (Grade 60)	63	ton	24806.7	39718.7	1,562,741	2,502,153	4,064,894
			Subtotal		*3,673,416*	*6,808,178*	*10,481,593*
Revetment Works							
Stone Masonry/Wet Stone Masonry-1	4,129	m^2	747.2	388.5	3,084,854	1,603,909	4,688,763
Gravel Bedding and Backfill	826	m^3	864.3	203.3	713,647	167,876	881,523
Concrete Work for Small Structure-2	43	m^3	1529.5	2098.4	66,471	91,195	157,666
Formwork F2 (for Small Sized Structure)	435	m^2	432.5	59.1	187,949	25,686	213,635
Reinforcing Bar (Grade 60)	4	ton	24806.7	39718.7	107,806	172,611	280,417
Rubble Concrete/Rubble Stone Masonry	0	m^3	1617.4	858.4	0	0	0
Gravel Bedding and Backfill	0	m^3	864.3	203.3	0	0	0
Concrete Work for Small Structure-2	0	m^3	1529.5	2098.4	0	0	0
Formwork F2 (for Small Sized Structure)	0	m^2	432.5	59.1	0	0	0
			Subtotal		*4,160,727*	*2,061,277*	*6,222,003*

Table A.5.FS.C.2 Cost Estimation of Construction Cost for Imus Retarding Basin (2/2)

IMUS Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Overflow Dike							
Gabion (KagoMatt), w/ Filter Cloth Bedding	2,669	m^3	2671.3	10381.3	7,130,845	27,712,216	34,843,060
Subtotal					*7,130,845*	*27,712,216*	*34,843,060*
Others							
Concrete Work for Reinforced Concrete-1	0	m^3	1088.8	2146.9	0	0	0
Concrete Work for Leveling Concrete-1	0	m^3	936.9	1834.2	0	0	0
Formwork F1 (for Large Sized Structure)	0	m^2	425.5	48.8	0	0	0
Formwork for Leveling Concrete	0	m^2	321.7	39.0	0	0	0
Staging/Scaffolding Work	0	m^2	172.5	67.5	0	0	0
Supporting/Scaffolding Work	0	m^3	294.7	70.5	0	0	0
Reinforcing Bar (Grade 60)	0	ton	24806.7	39718.7	0	0	0
Subtotal					*0*	*0*	*0*
Total					*119,440,608*	*207,500,528*	*326,941,136*
Communal Facility							
Small Park/Playground Preparation	3	place	138800.0	27200.0	416,400	81,600	498,000
Clearing and Grubbing	50000	m^2	8.2	13.6	408,964	679,470	1,088,434
Whole Court without Roof nor Bench	2	nos	300000.0	700000.0	600,000	1,400,000	2,000,000
Tree Planting	150	tree	450.0	50.0	67,500	7,500	75,000
Athletic Field	1	field	2,500,000	2,500,000	2,500,000	2,500,000	5,000,000
Eco Park	2	ha	2,700,000	300,000	5,400,000	600,000	6,000,000
Community Space	20000	m^2	90	210	1,800,000	4,200,000	6,000,000
Subtotal					*11,192,864*	*9,468,570*	*20,661,434*
Grand Total					*130,633,472*	*216,969,098*	*347,602,570*

Table A.5.FS.C.3 Cost Estimation of Construction Cost for Bacoor Retarding Basin (1/2)

BACOOR Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Earth Work							
Clearing and Grubbing	130,000	m^2	8.2	13.6	1,063,306	1,766,622	2,829,928
Excavation, Open Cut -1	560,000	m^3	9.6	17.8	5,365,709	9,989,433	15,355,142
Hauling - 2 km -1	432,800	m^3	22.6	41.7	9,790,573	18,065,374	27,855,947
Hauling - 5 km -1	108,200	m^3	42.2	77.9	4,566,499	8,426,014	12,992,513
Spreading	541,000	m^3	6.7	11.3	3,635,380	6,095,177	9,730,557
Dike Embankment	18,810	m^3	45.1	89.4	848,830	1,681,026	2,529,856
Grass Sodding	21,251	m^2	70.2	5.1	1,491,952	108,464	1,600,416
			Subtotal		*26,762,249*	*46,132,110*	*72,894,358*
Road Work (Macadam Pavement B=6.0m)							
Sub-base Course	2,399	m^3	708.4	280.9	1,699,421	673,814	2,373,235
Base Course	2,116	m^3	718.6	298.9	1,520,494	632,322	2,152,816
Asphalt Pavement	6,664	m^3	204.0	462.3	1,359,326	3,080,762	4,440,088
			Subtotal		*4,579,241*	*4,386,897*	*8,966,138*
B=10.0m Concrete Pavement							
Sub-base Course	1,169	m^3	708.4	280.9	827,737	328,194	1,155,931
Base Course	616	m^3	718.6	298.9	442,717	184,111	626,828
Portland Cement Concre	2,280	m^3	565.2	649.6	1,288,738	1,481,046	2,769,784
			Subtotal		*2,559,192*	*1,993,351*	*4,552,543*
Drainage Ditch (BxH=0.3m x 0.3m)							
Concrete Work for Small Structure-2	934	m^3	1529.5	2098.4	1,428,612	1,959,981	3,388,593
Concrete Work for Leveling Concrete-2	415	m^3	1109.2	1754.0	460,468	728,114	1,188,582
Formwork F2 (for Small Sized Structure)	7,784	m^2	432.5	59.1	3,366,211	460,036	3,826,246
Formwork for Leveling Concrete	1,038	m^2	321.7	39.0	333,850	40,483	374,334
			Subtotal		*5,589,141*	*3,188,614*	*8,777,755*
Drainage Sluice							
Concrete Work for Reinforced Concrete-1	233	m^3	1088.8	2146.9	253,356	499,543	752,899
Concrete Work for Leveling Concrete-2	17	m^3	1109.2	1754.0	19,143	30,270	49,413
Formwork F1 (for Large Sized Structure)	530	m^2	425.5	48.8	225,372	25,849	251,221
Formwork for Leveling Concrete	12	m^2	321.7	39.0	3,829	464	4,293
Supporting/Scaffolding Work	233	m^3	294.7	70.5	68,736	16,439	85,175
Installation of Flap Gate for 60"	1	nos	107972.8	885761.0	107,973	885,761	993,734
Steel Sheet Pile Type II	90	m^2	1214.3	9114.4	109,484	821,754	931,238
Reinforcing Bar (Grade 60)	23	ton	24806.7	39718.7	577,212	924,191	1,501,403
			Subtotal		*1,365,105*	*3,204,272*	*4,569,377*
Revetment Works							
Stone Masonry/Wet Stone Masonry-1	1,362	m^2	747.2	388.5	1,017,562	529,061	1,546,623
Gravel Bedding and Backfill	272	m^3	864.3	203.3	235,402	55,375	290,777
Concrete Work for Small Structure-2	14	m^3	1529.5	2098.4	21,926	30,081	52,007
Formwork F2 (for Small Sized Structure)	143	m^2	432.5	59.1	61,996	8,473	70,469
Reinforcing Bar (Grade 60)	1	ton	24806.7	39718.7	35,561	56,937	92,498
Rubble Concrete/Rubble Stone Masonry	2,972	m^3	1617.4	858.4	4,806,159	2,550,736	7,356,895
Gravel Bedding and Backfill	3,474	m^3	864.3	203.3	3,002,103	706,206	3,708,309
Concrete Work for Small Structure-2	354	m^3	1529.5	2098.4	541,628	743,085	1,284,714
Formwork F2 (for Small Sized Structure)	3,541	m^2	432.5	59.1	1,531,473	209,295	1,740,769
			Subtotal		*11,253,811*	*4,889,250*	*16,143,061*

Table A.5.FS.C.4 Cost Estimation of Construction Cost for Bacoor Retarding Basin (2/2)

BACOOR Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Overflow Dike							
Gabion (KagoMatt), w/ Filter Cloth Bedding	1,172	m^3	2671.3	10381.3	3,131,377	12,169,300	15,300,677
	Subtotal				*3,131,377*	*12,169,300*	*15,300,677*
Others							
Concrete Work for Reinforced Concrete-1	1,006	m^3	1088.8	2146.9	1,095,162	2,159,333	3,254,495
Concrete Work for Leveling Concrete-1	37	m^3	936.9	1834.2	34,463	67,471	101,933
Formwork F1 (for Large Sized Structure)	1,468	m^2	425.5	48.8	624,595	71,639	696,234
Formwork for Leveling Concrete	17	m^2	321.7	39.0	5,379	652	6,031
Staging/Scaffolding Work	717	m^2	172.5	67.5	123,697	48,437	172,134
Supporting/Scaffolding Work	448	m^3	294.7	70.5	132,062	31,584	163,646
Reinforcing Bar (Grade 60)	60	ton	24806.7	39718.7	1,497,039	2,396,955	3,893,994
	Subtotal				*3,512,397*	*4,776,071*	*8,288,467*
	Total				*58,752,512*	*80,739,864*	*139,492,376*
Communal Facility							
Small Park/Playground Preparation	1	place	138800.0	27200.0	138,800	27,200	166,000
Clearing and Grubbing	0	m^2	8.2	13.6	0	0	0
Whole Court without Roof nor Bench	1	nos	300000.0	700000.0	300,000	700,000	1,000,000
Tree Planting	100	tree	450.0	50.0	45,000	5,000	50,000
Athletic Field	0	field	2,500,000	2,500,000	0	0	0
Eco Park	1	ha	2,700,000	300,000	2,700,000	300,000	3,000,000
Community Space	10000	m^2	90	210	900,000	2,100,000	3,000,000
	Subtotal				*4,083,800*	*3,132,200*	*7,216,000*
Grand Total					*62,836,312*	*83,872,064*	*146,708,376*

Table A.5.FS.C.5 Cost Estimation of Construction Cost for Julian Retarding Basin (1/2)

Julian Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Earth Work							
Clearing and Grubbing	270,000	m^2	8.2	13.6	2,208,404	3,669,138	5,877,542
Excavation, Open Cut -1	1,125,000	m^3	9.6	17.8	10,779,327	20,068,057	30,847,384
Hauling - 2 km -1	808,000	m^3	22.6	41.7	18,278,150	33,726,484	52,004,634
Hauling - 5 km -1	202,000	m^3	42.2	77.9	8,525,257	15,730,636	24,255,893
Spreading	1,010,000	m^3	6.7	11.3	6,786,939	11,379,165	18,166,104
Dike Embankment	114,735	m^3	45.1	89.4	5,177,592	10,253,720	15,431,312
Grass Sodding	58,819	m^2	70.2	5.1	4,129,509	300,214	4,429,723
			Subtotal		*55,885,177*	*95,127,414*	*151,012,592*
Road Work (Macadam Pavement B=6.0m)							
Sub-base Course	4,078	m^3	708.4	280.9	2,888,812	1,145,402	4,034,214
Base Course	3,597	m^3	718.6	298.9	2,584,657	1,074,871	3,659,528
Asphalt Pavement	11,328	m^3	204.0	462.3	2,310,691	5,236,926	7,547,616
			Subtotal		*7,784,160*	*7,457,198*	*15,241,359*
B=10.0m Concrete Pavement							
Sub-base Course	0	m^3	708.4	280.9	0	0	0
Base Course	0	m^3	718.6	298.9	0	0	0
Portland Cement Concre	0	m^3	565.2	649.6	0	0	0
			Subtotal		*0*	*0*	*0*
Drainage Ditch (BxH=0.3m x 0.3m)							
Concrete Work for Small Structure-2	1,189	m^3	1529.5	2098.4	1,818,459	2,494,830	4,313,289
Concrete Work for Leveling Concrete-2	528	m^3	1109.2	1754.0	586,122	926,806	1,512,928
Formwork F2 (for Small Sized Structure)	9,908	m^2	432.5	59.1	4,284,799	585,573	4,870,371
Formwork for Leveling Concrete	1,321	m^2	321.7	39.0	424,953	51,531	476,484
			Subtotal		*7,114,333*	*4,058,739*	*11,173,072*
Drainage Sluice							
Concrete Work for Reinforced Concrete-1	469	m^3	1088.8	2146.9	510,459	1,006,473	1,516,932
Concrete Work for Leveling Concrete-2	35	m^3	1109.2	1754.0	38,569	60,988	99,557
Formwork F1 (for Large Sized Structure)	1,067	m^2	425.5	48.8	454,077	52,081	506,158
Formwork for Leveling Concrete	24	m^2	321.7	39.0	7,714	935	8,650
Supporting/Scaffolding Work	470	m^3	294.7	70.5	138,488	33,121	171,609
Installation of Flap Gate for 60"	2	nos	107972.8	885761.0	215,946	1,771,522	1,987,467
Steel Sheet Pile Type II	180	m^2	1214.3	9114.4	218,968	1,643,507	1,862,476
Reinforcing Bar (Grade 60)	23	ton	24806.7	39718.7	577,212	924,191	1,501,403
			Subtotal		*2,161,433*	*5,492,819*	*7,654,252*
Revetment Works							
Stone Masonry/Wet Stone Masonry-1	3,284	m^2	747.2	388.5	2,453,600	1,275,701	3,729,300
Gravel Bedding and Backfill	657	m^3	864.3	203.3	567,613	133,524	701,137
Concrete Work for Small Structure-2	35	m^3	1529.5	2098.4	52,869	72,533	125,403
Formwork F2 (for Small Sized Structure)	346	m^2	432.5	59.1	149,489	20,430	169,919
Reinforcing Bar (Grade 60)	3	ton	24806.7	39718.7	85,746	137,290	223,035
Rubble Concrete/Rubble Stone Masonry	2,494	m^3	1617.4	858.4	4,033,445	2,140,639	6,174,084
Gravel Bedding and Backfill	2,779	m^3	864.3	203.3	2,402,188	565,083	2,967,271
Concrete Work for Small Structure-2	206	m^3	1529.5	2098.4	315,083	432,278	747,361
Formwork F2 (for Small Sized Structure)	2,060	m^2	432.5	59.1	890,909	121,754	1,012,664
			Subtotal		*10,950,942*	*4,899,232*	*15,850,173*

Table A.5.FS.C.6 Cost Estimation of Construction Cost for Julian Retarding Basin (2/2)

Julian Retarding Basin *Major* Work Description	Quantity	Unit	Unit Cost		Total Cost		
			L/C	F/C	L/C	F/C	Total
Overflow Dike							
Gabion (KagoMatt), w/ Filter Cloth Bedding	3,191	m^3	2671.3	10381.3	8,525,402	33,131,808	41,657,210
	Subtotal				*8,525,402*	*33,131,808*	*41,657,210*
Others							
Concrete Work for Reinforced Concrete-1	2,522	m^3	1088.8	2146.9	2,746,495	5,415,272	8,161,767
Concrete Work for Leveling Concrete-1	240	m^3	936.9	1834.2	224,855	440,216	665,072
Formwork F1 (for Large Sized Structure)	8,208	m^2	425.5	48.8	3,492,669	400,596	3,893,266
Formwork for Leveling Concrete	120	m^2	321.7	39.0	38,603	4,681	43,284
Staging/Scaffolding Work	8,208	m^2	172.5	67.5	1,415,572	554,306	1,969,879
Supporting/Scaffolding Work	10	m^3	294.7	70.5	2,947	705	3,651
Reinforcing Bar (Grade 60)	151	ton	24806.7	39718.7	3,754,341	6,011,190	9,765,531
	Subtotal				*11,675,482*	*12,826,966*	*24,502,449*
	Total				*104,096,930*	*162,994,176*	*267,091,106*
Communal Facility							
Small Park/Playground Preparation	1	place	138800.0	27200.0	138,800	27,200	166,000
Clearing and Grubbing	0	m^2	8.2	13.6	0	0	0
Whole Court without Roof nor Bench	1	nos	300000.0	700000.0	300,000	700,000	1,000,000
Tree Planting	100	tree	450.0	50.0	45,000	5,000	50,000
Athletic Field	0	field	2,500,000	2,500,000	0	0	0
Eco Park	1	ha	2,700,000	300,000	2,700,000	300,000	3,000,000
Community Space	10000	m^2	90	210	900,000	2,100,000	3,000,000
	Subtotal				*4,083,800*	*3,132,200*	*7,216,000*
Grand Total					*108,180,730*	*166,126,376*	*274,307,106*

Table A.5.FS.Com Compensation Cost

Retarding Basin / Item / Description	Quantity	Unit	Unit Cost (Php)	Total Cost (Php)	Remarks
Imus Retarding Basin					
House Relocation					
Informal Dwellers	7	house	100,000	700,000	inclusive of Livelihood Support
Tenant Farmer-1	7	house	350,000	2,450,000	Compensation House
Tenant Farmer-2	2	family	50,000	100,000	Livilihood Support
Farmer (Owner)	6	house	350,000	2,100,000	Compensation House exclusive of conpensation of land
Land Acquisition	390,000	m^2	800	312,000,000	
		Total		317,350,000	
Bacoor Retarding Basin					
House Relocation					
Informal Dwellers	2	house	100,000	200,000	inclusive of Livelihood Support
Tenant Farmer-1	2	house	350,000	700,000	Compensation House
Tenant Farmer-2	2	family	50,000	100,000	Livilihood Support
Owner	4	house	300,000	1,200,000	Compensation House exclusive of conpensation of land
Land Acquisition	125,000	m^2	800	100,000,000	
		Total		102,200,000	
Julian Retarding Basin					
House Relocation					
Informal Dwellers	16	house	100,000	1,600,000	inclusive of Livelihood Support
Tenant Farmer-1	18	house	350,000	6,300,000	Compensation House
Tenant Farmer-2	16	family	50,000	800,000	Livilihood Support
Farmer (Owner)	0	house	300,000	0	Compensation House exclusive of conpensation of land
Land Acquisition	280,000	m^2	800	224,000,000	
		Total		232,700,000	
Summary					
House Relocation				16,250,000	
Land Acquisition				636,000,000	
Grand Total				652,250,000	

Table A.5.FS.OM Operation and Maintenance Cost for Three (3) Retarding Basins

Item of O & M					Annual		Unit Cost		Cost			Remarks
General	Item	Description	Frequency	Unit Item	Q'ty	Unit	L/C	F/C	L/C	F/C	Total	
Inspection												
	Inspection	Conducted by Municipal Government	Monthly	Inspector	24		Salary				0	2 person x 12months
				Gasoline	120	litre	10	40	*1,200*	*4,800*	*6,000*	10litre x 12months
Maintenance												
	Preventive	Conducted by Municipal Government	Semiannually	Labor (Residential P.)	40	persons	200		8,000	0	8,000	Based on Bayanihan
				Small Truck	16	hours	195	455	3,120	7,280	10,400	2caro truck x 8hours x 2
				Leaders	16		Salary				0	
				Plastic Garbage Bag etc	2	L.S.	30000		60,000	0	60,000	
				Subtotal							*78,400*	
	Corrective (Removal of Sediment)	Conducted by Provincial Government or DPWH	Triennial	Excavation, Open Cut -1	30,000		10	18	287,449	535,148	822,597	15hectares x 0.2m
				Hauling - 2 km -1	30,000		23	42	678,644	1,252,221	1,930,865	15hectares x 0.2m
				Spreading	30,000		7	11	201,592	337,995	539,587	15hectares x 0.2m
					Annual				*389,228*	*708,455*	*1,097,683*	
	Corrective (Repari of Structure)	Conducted by Provincial Government or DPWH	As Required	1% of Masonry, Road and Gabion Work	1	L.S.	1,500,306	2,010,684	*1,500,306*	*2,010,684*	*3,510,991*	
Operation												
	In Flood	Personnel committed	6month contract	Personnel committed	12	months	3000	0	*36,000*	*0*	*36,000*	2 persons x 6 m
Grand Total									*1,926,735*	*2,723,939*	*4,729,074*	

Table A.5.FS.DS Annual Disbursement Schedule for Construction of Retarding Basins

Cost Item	Amount (mil. P)				1	1	1.02	1.06	1.0404	1.1236	1.061208	1.191016	1.082432	1.262477	1.104081	1.338226	1.126162	1.418519			
					2008		2009		2010		2011		2012		2013		2014				
	F.C.	L.C.		Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	Total		
		M&E	Labor																		
A. Construction Base Cost		80%	20%																		
1. Construction Base Cost (CBC)	506	261	65	832	0	0	0	0	64	45	168	110	161	101	113	70	0	0			832
1.1 Imus Retarding Basin	*234*	*113*	*28*	*375*	*0*	*0*	*0*	*0*	*23.4325*	*14.1082*	*82.01375*	*49.3787*	*70.2975*	*42.3246*	*58.58125*	*35.2705*	*0*	*0*	234.325	141.082	375
Imus Retarding Basin									*10%*	*10%*	*35%*	*35%*	*30%*	*30%*	*25%*	*25%*			100%	100%	
1.2 Bacoor Retarding Basin	*91*	*54*	*14*	*158*	*0*	*0*	*0*	*0*	*40.761*	*30.5375*	*49.819*	*37.3236*	*0*	*0*	*0*	*0*	*0*	*0*	90.58	67.861	158
Bacoor Retarding Basin									*45%*	*45%*	*55%*	*55%*							100%	100%	
1.3 Julian Retarding Basin	*181*	*94*	*23*	*298*	*0*	*0*	*0*	*0*	*0*	*0*	*36.207*	*23.4746*	*90.5175*	*58.6865*	*54.3105*	*35.2119*	*0*	*0*	181.035	117.373	298
Julian Retarding Basin											*20%*	*20%*	*50%*	*50%*	*30%*	*30%*			100%	100%	
2. Physical Contingency for CBC	25	13	3	42	-	-	-	-	3	2	8	6	8	5	6	4	-	-			41.6128
Subtotal (1+2)	531	274	69	874	-	-	-	-	67	47	176	116	169	106	119	74	-	-			
3. Price Escalation for CBC	40	65	16	121	-	-	-	-	3	6	11	22	14	28	12	25	-	-			121
Subtotal (1+2+3)	**571**	**339**	**85**	**994**	**0**	**0**	**0**	**0**	**70**	**53**	**187**	**138**	**183**	**134**	**131**	**99**	**0**	**0**			
B. Compensation Cost		100%	0%																		
1. Compensation Cost (CC)		644		644	-	-	-	51	-	108	-	214	-	225	-	46	-	-			643.9
Imus Retarding Basin		*313*		*313*							*50%*	*50%*	*50%*	*50%*					100%	100%	
					0	*0*	*0*	*0*	*0*	*0*	*0*	*156.575*	*0*	*156.575*	*0*	*0*	*0*	*0*	0	313.15	
Bacoor Retarding Basin		*102*		*102*			*50%*	*50%*	*50%*	*50%*									100%	100%	
					0	*0*	*0*	*51.05*	*0*	*51.05*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	102.1	
Julian Retarding Basin		*229*		*229*					*25%*	*25%*	*25%*	*25%*	*30%*	*30%*	*20%*	*20%*			100%	100%	
					0	*0*	*0*	*0*	*0*	*57.1625*	*0*	*57.1625*	*0*	*68.595*	*0*	*45.73*	*0*	*0*	0	228.65	
3. Physical Contingency for CC	0	32	0	32	-	-	-	3	-	5	-	11	-	11	-	2	-	-			32.195
Subtotal (1+2)	0	676	0	676	-	-	-	54	-	114	-	224	-	236	-	48	-	-			
2. Price Escalation for CC	0	138	0	138	-	-	-	3	-	14	-	43	-	62	-	16	-	-			138
Subtotal (1+2+3)	**0**	**815**	**0**	**815**	**0**	**0**	**0**	**57**	**0**	**128**	**0**	**267**	**0**	**298**	**0**	**64**	**0**	**0**			
C. Administration Cost Cost																					
1. Administration Cost (AC)	0	15		15		-		1		2		5		5		2		-			
2. Price Escalation for AC	0	3		3		-		0		0		1		1		1		-			
Subtotal (1+2)	**0**	**18**		**18**	**-**	**-**	**-**	**1**	**-**	**2**	**-**	**6**	**-**	**6**	**-**	**3**	**-**	**-**			
D. Engineering Service Cost		10%	90%																		
1. Engineering Service Cost (ESC)	80	5	48	133	-	-	15	10	20	13	15	10	15	10	15	10	-	-			
Detailed Design Service	*30*	*2*	*18*	*50*			*50%*	*50%*	*50%*	*50%*									100%	100%	
							15	10	15	10											49.801
Supervision Service	*50*	*3*	*30*	*83*					*10%*	*10%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*			100%	100%	
									5	3	15	10	15	10	15	10	-	-			83.006
2. Physical Contingency for ESC	4	0	2	7	-	-	1	0	1	1	1	0	1	0	1	0	-	-			6.64035
Subtotal (1+2)	84	6	50	139	-	-	16	10	21	14	16	10	16	10	16	10	-	-			
3. Price Escalation for ESC	5	1	10	16	-	-	0	1	1	2	1	2	1	3	2	4	-	-			16
Subtotal (1+2+3)	**89**	**7**	**60**	**155**	**0**	**0**	**16**	**11**	**22**	**16**	**17**	**12**	**17**	**13**	**17**	**14**	**0**	**0**			
Total (A+B+C+D)	**660**	**1,178**	**144**	**1,982**	**-**	**-**	**16**	**68**	**92**	**198**	**204**	**423**	**200**	**452**	**148**	**180**	**-**	**-**			
E. Value added Tax	0	138	0	138		-		3		19		42		42		31		-			
Total (A+B+C+D+E)	**660**	**1,316**	**144**	**2,120**	**-**	**-**	**16**	**72**	**92**	**218**	**204**	**466**	**200**	**493**	**148**	**212**	**-**	**-**			

Notes : *1 It is estimated based on the work quantities.

*2 2.00 % of all costs in foreign currency portion and 6.00 % of all costs in local currency portion

*3 Physical Contingency: 5 % of the sum of construction base cost, compensation cost and engineering service cost

*B Land acquisition and house evacuation cost

*C Project owner's expense for the management of the project, 1 % of the sum of construction cost and compensation cost

*D Cost for the construction supervision and etc. (D/D: 6% of CBC, S/V: 10% of CBC)

*E 12 % of the sum of construction base cost and engineering service cost

- Price Level as of September 30, 2008
- Conversion Rate US$ 1.00 = PhP. 46.979 = JpY. 105.904, JpY 1.00 = PhP. 0.4436

Appendix-6
Economic Evaluation

Table 1 Economic Evaluation for Imus River Channel Improvement with On-Site Flood Regulation Pond for Measure for 5-Year Flood

(Alternative: F_I.3 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	874	0			0
2004	-3			0	981	0			0
2005	-2			0	1,088	0			0
2006	-1			0	1,195	0			0
2007	Base Year			0	1,303	0	0	0	0
2008	1	0		0	1,410	0	0	0	0
2009	2	278		278	1,517	0	36	36	-241
2010	3	605		605	1,624	0	73	73	-532
2011	4	605		605	1,732	0	109	109	-496
2012	5	504		504	1,839	0	146	146	-359
2013	6	651		651	1,946	0	182	182	-468
2014	7	364		364	2,053	0	218	218	-145
2015	8	374		374	2,160	0	255	255	-119
2016	9	348		348	2,268	0	291	291	-57
2017	10	236		236	2,375	0	328	328	92
2018	11	172	13	185	2,482	2,284	364	2,648	2463
2019	12	172	13	185	2,589	2,486	401	2,886	2701
2020	13	0	13	13	2,696	2,696	437	3,133	3120
2021	14		13	13		2,696	437	3,133	3120
2022	15		13	13		2,696	437	3,133	3120
2023	16		13	13		2,696	437	3,133	3120
2024	17		13	13		2,696	437	3,133	3120
2025	18		13	13		2,696	437	3,133	3120
2026	19		13	13		2,696	437	3,133	3120
2027	20		13	13		2,696	437	3,133	3120
2028	21		13	13		2,696	437	3,133	3120
2029	22		13	13		2,696	437	3,133	3120
2030	23		13	13		2,696	437	3,133	3120
2031	24		13	13		2,696	437	3,133	3120
2032	25		13	13		2,696	437	3,133	3120
2033	26		13	13		2,696	437	3,133	3120
2034	27		13	13		2,696	437	3,133	3120
2035	28		13	13		2,696	437	3,133	3120
2036	29		13	13		2,696	437	3,133	3120
2037	30		13	13		2,696	437	3,133	3120
2038	31		13	13		2,696	437	3,133	3120
2039	32		13	13		2,696	437	3,133	3120
2040	33		13	13		2,696	437	3,133	3120
2041	34		13	13		2,696	437	3,133	3120
2042	35		13	13		2,696	437	3,133	3120
2043	36		13	13		2,696	437	3,133	3120
2044	37		13	13		2,696	437	3,133	3120
2045	38		13	13		2,696	437	3,133	3120
2046	39		13	13		2,696	437	3,133	3120
2047	40		13	13		2,696	437	3,133	3120
2048	41		13	13		2,696	437	3,133	3120
2049	42		13	13		2,696	437	3,133	3120
2050	43		13	13		2,696	437	3,133	3120
2051	44		13	13		2,696	437	3,133	3120
2052	45		13	13		2,696	437	3,133	3120
2053	46		13	13		2,696	437	3,133	3120
2054	47		13	13		2,696	437	3,133	3120
2055	48		13	13		2,696	437	3,133	3120
2056	49		13	13		2,696	437	3,133	3120
2057	50		13	13		2,696	437	3,133	3120
2058	51		13	13		2,696	437	3,133	3120
2059	52		13	13		2,696	437	3,133	3120
2060	53		13	13		2,696	437	3,133	3120
2061	54		13	13		2,696	437	3,133	3120
2062	55		13	13		2,696	437	3,133	3120
2063	56		13	13		2,696	437	3,133	3120
2064	57		13	13		2,696	437	3,133	3120
2065	58		13	13		2,696	437	3,133	3120
2066	59		13	13		2,696	437	3,133	3120
2067	60		13	13		2,696	437	3,133	3120
2068	61		13	13		2,696	437	3,133	3120
2069	62		13	13		2,696	437	3,133	3120
Total		4,307	692	4,999		139,594			158,848
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				2,312				11,437	9,125
EIRR									28.57%
B/C									4.95

Table 2 Economic Evaluation for Imus River Channel Improvement with On-Site Flood Regulation Pond for Measure for 10-Year Flood

(Alternative: F_I.3 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	1,145	0			0
2004	-3			0	1,279	0			0
2005	-2			0	1,413	0			0
2006	-1			0	1,547	0			0
2007	Base Year			0	1,681	0	0	0	0
2008	1	0		0	1,815	0	0	0	0
2009	2	282		282	1,949	0	45	45	-237
2010	3	616		616	2,083	0	90	90	-527
2011	4	613		613	2,217	0	135	135	-478
2012	5	504		504	2,351	0	180	180	-325
2013	6	651		651	2,485	0	225	225	-426
2014	7	364		364	2,619	0	269	269	-94
2015	8	374		374	2,753	0	314	314	-60
2016	9	348		348	2,887	0	359	359	11
2017	10	236		236	3,021	0	404	404	168
2018	11	172	13	185	3,155	2,905	449	3,354	3168
2019	12	172	13	185	3,289	3,158	494	3,652	3467
2020	13	0	13	13	3,423	3,423	539	3,962	3948
2021	14		13	13		3,423	539	3,962	3948
2022	15		13	13		3,423	539	3,962	3948
2023	16		13	13		3,423	539	3,962	3948
2024	17		13	13		3,423	539	3,962	3948
2025	18		13	13		3,423	539	3,962	3948
2026	19		13	13		3,423	539	3,962	3948
2027	20		13	13		3,423	539	3,962	3948
2028	21		13	13		3,423	539	3,962	3948
2029	22		13	13		3,423	539	3,962	3948
2030	23		13	13		3,423	539	3,962	3948
2031	24		13	13		3,423	539	3,962	3948
2032	25		13	13		3,423	539	3,962	3948
2033	26		13	13		3,423	539	3,962	3948
2034	27		13	13		3,423	539	3,962	3948
2035	28		13	13		3,423	539	3,962	3948
2036	29		13	13		3,423	539	3,962	3948
2037	30		13	13		3,423	539	3,962	3948
2038	31		13	13		3,423	539	3,962	3948
2039	32		13	13		3,423	539	3,962	3948
2040	33		13	13		3,423	539	3,962	3948
2041	34		13	13		3,423	539	3,962	3948
2042	35		13	13		3,423	539	3,962	3948
2043	36		13	13		3,423	539	3,962	3948
2044	37		13	13		3,423	539	3,962	3948
2045	38		13	13		3,423	539	3,962	3948
2046	39		13	13		3,423	539	3,962	3948
2047	40		13	13		3,423	539	3,962	3948
2048	41		13	13		3,423	539	3,962	3948
2049	42		13	13		3,423	539	3,962	3948
2050	43		13	13		3,423	539	3,962	3948
2051	44		13	13		3,423	539	3,962	3948
2052	45		13	13		3,423	539	3,962	3948
2053	46		13	13		3,423	539	3,962	3948
2054	47		13	13		3,423	539	3,962	3948
2055	48		13	13		3,423	539	3,962	3948
2056	49		13	13		3,423	539	3,962	3948
2057	50		13	13		3,423	539	3,962	3948
2058	51		13	13		3,423	539	3,962	3948
2059	52		13	13		3,423	539	3,962	3948
2060	53		13	13		3,423	539	3,962	3948
2061	54		13	13		3,423	539	3,962	3948
2062	55		13	13		3,423	539	3,962	3948
2063	56		13	13		3,423	539	3,962	3948
2064	57		13	13		3,423	539	3,962	3948
2065	58		13	13		3,423	539	3,962	3948
2066	59		13	13		3,423	539	3,962	3948
2067	60		13	13		3,423	539	3,962	3948
2068	61		13	13		3,423	539	3,962	3948
2069	62		13	13		3,423	539	3,962	3948
Total		4,331	698	5,030		177,204			202,079
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				2,328				14,439	12,110
EIRR									32.38%
B/C									6.20

Table 3 Economic Evaluation for Imus River Channel Improvement with On-Site Flood Regulation Pond for Measure for 20-Year Flood

(Alternative: F_I.3 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	1,305	0			0
2004	-3			0	1,452	0			0
2005	-2			0	1,599	0			0
2006	-1			0	1,747	0			0
2007	Base Year			0	1,894	0	0	0	0
2008	1	0		0	2,041	0	0	0	0
2009	2	305		305	2,188	0	48	48	-256
2010	3	702		702	2,336	0	97	97	-605
2011	4	676		676	2,483	0	145	145	-531
2012	5	506		506	2,630	0	193	193	-313
2013	6	652		652	2,777	0	242	242	-410
2014	7	366		366	2,925	0	290	290	-75
2015	8	376		376	3,072	0	339	339	-37
2016	9	349		349	3,219	0	387	387	38
2017	10	236		236	3,366	0	435	435	199
2018	11	180	14	194	3,514	3,234	484	3,718	3524
2019	12	180	14	195	3,661	3,515	532	4,047	3853
2020	13	0	14	14	3,808	3,808	580	4,389	4374
2021	14		14	14		3,808	580	4,389	4374
2022	15		14	14		3,808	580	4,389	4374
2023	16		14	14		3,808	580	4,389	4374
2024	17		14	14		3,808	580	4,389	4374
2025	18		14	14		3,808	580	4,389	4374
2026	19		14	14		3,808	580	4,389	4374
2027	20		14	14		3,808	580	4,389	4374
2028	21		14	14		3,808	580	4,389	4374
2029	22		14	14		3,808	580	4,389	4374
2030	23		14	14		3,808	580	4,389	4374
2031	24		14	14		3,808	580	4,389	4374
2032	25		14	14		3,808	580	4,389	4374
2033	26		14	14		3,808	580	4,389	4374
2034	27		14	14		3,808	580	4,389	4374
2035	28		14	14		3,808	580	4,389	4374
2036	29		14	14		3,808	580	4,389	4374
2037	30		14	14		3,808	580	4,389	4374
2038	31		14	14		3,808	580	4,389	4374
2039	32		14	14		3,808	580	4,389	4374
2040	33		14	14		3,808	580	4,389	4374
2041	34		14	14		3,808	580	4,389	4374
2042	35		14	14		3,808	580	4,389	4374
2043	36		14	14		3,808	580	4,389	4374
2044	37		14	14		3,808	580	4,389	4374
2045	38		14	14		3,808	580	4,389	4374
2046	39		14	14		3,808	580	4,389	4374
2047	40		14	14		3,808	580	4,389	4374
2048	41		14	14		3,808	580	4,389	4374
2049	42		14	14		3,808	580	4,389	4374
2050	43		14	14		3,808	580	4,389	4374
2051	44		14	14		3,808	580	4,389	4374
2052	45		14	14		3,808	580	4,389	4374
2053	46		14	14		3,808	580	4,389	4374
2054	47		14	14		3,808	580	4,389	4374
2055	48		14	14		3,808	580	4,389	4374
2056	49		14	14		3,808	580	4,389	4374
2057	50		14	14		3,808	580	4,389	4374
2058	51		14	14		3,808	580	4,389	4374
2059	52		14	14		3,808	580	4,389	4374
2060	53		14	14		3,808	580	4,389	4374
2061	54		14	14		3,808	580	4,389	4374
2062	55		14	14		3,808	580	4,389	4374
2063	56		14	14		3,808	580	4,389	4374
2064	57		14	14		3,808	580	4,389	4374
2065	58		14	14		3,808	580	4,389	4374
2066	59		14	14		3,808	580	4,389	4374
2067	60		14	14		3,808	580	4,389	4374
2068	61		14	14		3,808	580	4,389	4374
2069	62		14	14		3,808	580	4,389	4374
Total		4,528	753	5,281		197,153			224,088
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				2,456				15,967	13,512
EIRR									32.84%
B/C									6.50

Table 4 Economic Evaluation for Imus River Channel Improvement without On-Site Flood Regulation Pond for Measure for 5-Year Flood

(F_I.2 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	874	0	0
2004	-3			0	981	0	0
2005	-2			0	1,088	0	0
2006	-1			0	1,195	0	0
2007	Base Year			0	1,303	0	0
2008	1	0		0	1,410	0	0
2009	2	124		124	1,517	0	-124
2010	3	491		491	1,624	0	-491
2011	4	439		439	1,732	0	-439
2012	5	335		335	1,839	0	-335
2013	6	482		482	1,946	0	-482
2014	7	179		179	2,053	0	-179
2015	8	189		189	2,160	0	-189
2016	9	154		154	2,268	0	-154
2017	10	81		81	2,375	0	-81
2018	11	0	15	15	2,482	2,482	2467
2019	12	0	15	15	2,589	2,589	2574
2020	13	0	15	15	2,696	2,696	2681
2021	14		15	15		2,696	2681
2022	15		15	15		2,696	2681
2023	16		15	15		2,696	2681
2024	17		15	15		2,696	2681
2025	18		15	15		2,696	2681
2026	19		15	15		2,696	2681
2027	20		15	15		2,696	2681
2028	21		15	15		2,696	2681
2029	22		15	15		2,696	2681
2030	23		15	15		2,696	2681
2031	24		15	15		2,696	2681
2032	25		15	15		2,696	2681
2033	26		15	15		2,696	2681
2034	27		15	15		2,696	2681
2035	28		15	15		2,696	2681
2036	29		15	15		2,696	2681
2037	30		15	15		2,696	2681
2038	31		15	15		2,696	2681
2039	32		15	15		2,696	2681
2040	33		15	15		2,696	2681
2041	34		15	15		2,696	2681
2042	35		15	15		2,696	2681
2043	36		15	15		2,696	2681
2044	37		15	15		2,696	2681
2045	38		15	15		2,696	2681
2046	39		15	15		2,696	2681
2047	40		15	15		2,696	2681
2048	41		15	15		2,696	2681
2049	42		15	15		2,696	2681
2050	43		15	15		2,696	2681
2051	44		15	15		2,696	2681
2052	45		15	15		2,696	2681
2053	46		15	15		2,696	2681
2054	47		15	15		2,696	2681
2055	48		15	15		2,696	2681
2056	49		15	15		2,696	2681
2057	50		15	15		2,696	2681
2058	51		15	15		2,696	2681
2059	52		15	15		2,696	2681
2060	53		15	15		2,696	2681
2061	54		15	15		2,696	2681
2062	55		15	15		2,696	2681
2063	56		15	15		2,696	2681
2064	57		15	15		2,696	2681
2065	58		15	15		2,696	2681
2066	59		15	15		2,696	2681
2067	60		15	15		2,696	2681
Total		2,474	762	3,236		134,502	131,266
Applied Discount Rate: 10 % according to a regulation of the nation							
NPV				1,442		9,271	7,829
EIRR							28.47%
B/C							6.43

Table 5 Economic Evaluation for Imus River Channel Improvement without On-Site Flood Regulation Pond for Measure for 10-Year Flood

(F_I.2 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	1,145	0	0
2004	-3			0	1,279	0	0
2005	-2			0	1,413	0	0
2006	-1			0	1,547	0	0
2007	Base Year			0	1,681	0	0
2008	1	0		0	1,815	0	0
2009	2	125		125	1,949	0	-125
2010	3	503		503	2,083	0	-503
2011	4	450		450	2,217	0	-450
2012	5	338		338	2,351	0	-338
2013	6	485		485	2,485	0	-485
2014	7	183		183	2,619	0	-183
2015	8	193		193	2,753	0	-193
2016	9	156		156	2,887	0	-156
2017	10	83		83	3,021	0	-83
2018	11	0	16	16	3,155	3,155	3139
2019	12	0	16	16	3,289	3,289	3273
2020	13	0	16	16	3,423	3,423	3407
2021	14		16	16		3,423	3407
2022	15		16	16		3,423	3407
2023	16		16	16		3,423	3407
2024	17		16	16		3,423	3407
2025	18		16	16		3,423	3407
2026	19		16	16		3,423	3407
2027	20		16	16		3,423	3407
2028	21		16	16		3,423	3407
2029	22		16	16		3,423	3407
2030	23		16	16		3,423	3407
2031	24		16	16		3,423	3407
2032	25		16	16		3,423	3407
2033	26		16	16		3,423	3407
2034	27		16	16		3,423	3407
2035	28		16	16		3,423	3407
2036	29		16	16		3,423	3407
2037	30		16	16		3,423	3407
2038	31		16	16		3,423	3407
2039	32		16	16		3,423	3407
2040	33		16	16		3,423	3407
2041	34		16	16		3,423	3407
2042	35		16	16		3,423	3407
2043	36		16	16		3,423	3407
2044	37		16	16		3,423	3407
2045	38		16	16		3,423	3407
2046	39		16	16		3,423	3407
2047	40		16	16		3,423	3407
2048	41		16	16		3,423	3407
2049	42		16	16		3,423	3407
2050	43		16	16		3,423	3407
2051	44		16	16		3,423	3407
2052	45		16	16		3,423	3407
2053	46		16	16		3,423	3407
2054	47		16	16		3,423	3407
2055	48		16	16		3,423	3407
2056	49		16	16		3,423	3407
2057	50		16	16		3,423	3407
2058	51		16	16		3,423	3407
2059	52		16	16		3,423	3407
2060	53		16	16		3,423	3407
2061	54		16	16		3,423	3407
2062	55		16	16		3,423	3407
2063	56		16	16		3,423	3407
2064	57		16	16		3,423	3407
2065	58		16	16		3,423	3407
2066	59		16	16		3,423	3407
2067	60		16	16		3,423	3407
Total		2,516	777	3,293		170,739	167,446
Applied Discount Rate: 10 % according to a regulation of the nation							
NPV				1,467		11,770	10,303
EIRR							31.32%
B/C							8.02

Table 6 Economic Evaluation for Imus River Channel Improvement without On-Site Flood Regulation Pond for Measure for 20-Year Flood

(F_I.2 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	1,305	0	0
2004	-3			0	1,452	0	0
2005	-2			0	1,599	0	0
2006	-1			0	1,747	0	0
2007	Base Year			0	1,894	0	0
2008	1	0		0	2,041	0	0
2009	2	148		148	2,188	0	-148
2010	3	567		567	2,336	0	-567
2011	4	491		491	2,483	0	-491
2012	5	341		341	2,630	0	-341
2013	6	488		488	2,777	0	-488
2014	7	186		186	2,925	0	-186
2015	8	196		196	3,072	0	-196
2016	9	158		158	3,219	0	-158
2017	10	85		85	3,366	0	-85
2018	11	0	16	16	3,514	3,514	3497
2019	12	0	16	16	3,661	3,661	3645
2020	13	0	16	16	3,808	3,808	3792
2021	14		16	16		3,808	3792
2022	15		16	16		3,808	3792
2023	16		16	16		3,808	3792
2024	17		16	16		3,808	3792
2025	18		16	16		3,808	3792
2026	19		16	16		3,808	3792
2027	20		16	16		3,808	3792
2028	21		16	16		3,808	3792
2029	22		16	16		3,808	3792
2030	23		16	16		3,808	3792
2031	24		16	16		3,808	3792
2032	25		16	16		3,808	3792
2033	26		16	16		3,808	3792
2034	27		16	16		3,808	3792
2035	28		16	16		3,808	3792
2036	29		16	16		3,808	3792
2037	30		16	16		3,808	3792
2038	31		16	16		3,808	3792
2039	32		16	16		3,808	3792
2040	33		16	16		3,808	3792
2041	34		16	16		3,808	3792
2042	35		16	16		3,808	3792
2043	36		16	16		3,808	3792
2044	37		16	16		3,808	3792
2045	38		16	16		3,808	3792
2046	39		16	16		3,808	3792
2047	40		16	16		3,808	3792
2048	41		16	16		3,808	3792
2049	42		16	16		3,808	3792
2050	43		16	16		3,808	3792
2051	44		16	16		3,808	3792
2052	45		16	16		3,808	3792
2053	46		16	16		3,808	3792
2054	47		16	16		3,808	3792
2055	48		16	16		3,808	3792
2056	49		16	16		3,808	3792
2057	50		16	16		3,808	3792
2058	51		16	16		3,808	3792
2059	52		16	16		3,808	3792
2060	53		16	16		3,808	3792
2061	54		16	16		3,808	3792
2062	55		16	16		3,808	3792
2063	56		16	16		3,808	3792
2064	57		16	16		3,808	3792
2065	58		16	16		3,808	3792
2066	59		16	16		3,808	3792
2067	60		16	16		3,808	3792
Total		2,661	816	3,476		189,962	186,485
Applied Discount Rate: 15 % according to a regulation of the nation							
NPV				1,564		13,097	11,533
EIRR							31.67%
B/C							8.37

Table 7 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 5-Year Flood - Diversion Plan

(Alternative: F_S.5D 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	96	0			0
2004	-3			0	104	0			0
2005	-2			0	111	0			0
2006	-1			0	119	0			0
2007	Base Year			0	127	0	0	0	0
2008	1	0		0	134	0	0	0	0
2009	2	107		107	142	0	19	19	-87
2010	3	160		160	149	0	39	39	-121
2011	4	263		263	157	0	58	58	-205
2012	5	217		217	164	0	78	78	-140
2013	6	196		196	172	0	97	97	-99
2014	7	259		259	180	0	117	117	-142
2015	8	203		203	187	0	136	136	-67
2016	9	115		115	195	0	155	155	40
2017	10	91		91	202	0	175	175	84
2018	11	91	4	95	210	189	194	383	288
2019	12	91	4	95	217	206	214	420	325
2020	13	0	4	4	225	225	233	458	454
2021	14		4	4		225	233	458	454
2022	15		4	4		225	233	458	454
2023	16		4	4		225	233	458	454
2024	17		4	4		225	233	458	454
2025	18		4	4		225	233	458	454
2026	19		4	4		225	233	458	454
2027	20		4	4		225	233	458	454
2028	21		4	4		225	233	458	454
2029	22		4	4		225	233	458	454
2030	23		4	4		225	233	458	454
2031	24		4	4		225	233	458	454
2032	25		4	4		225	233	458	454
2033	26		4	4		225	233	458	454
2034	27		4	4		225	233	458	454
2035	28		4	4		225	233	458	454
2036	29		4	4		225	233	458	454
2037	30		4	4		225	233	458	454
2038	31		4	4		225	233	458	454
2039	32		4	4		225	233	458	454
2040	33		4	4		225	233	458	454
2041	34		4	4		225	233	458	454
2042	35		4	4		225	233	458	454
2043	36		4	4		225	233	458	454
2044	37		4	4		225	233	458	454
2045	38		4	4		225	233	458	454
2046	39		4	4		225	233	458	454
2047	40		4	4		225	233	458	454
2048	41		4	4		225	233	458	454
2049	42		4	4		225	233	458	454
2050	43		4	4		225	233	458	454
2051	44		4	4		225	233	458	454
2052	45		4	4		225	233	458	454
2053	46		4	4		225	233	458	454
2054	47		4	4		225	233	458	454
2055	48		4	4		225	233	458	454
2056	49		4	4		225	233	458	454
2057	50		4	4		225	233	458	454
2058	51		4	4		225	233	458	454
2059	52		4	4		225	233	458	454
2060	53		4	4		225	233	458	454
2061	54		4	4		225	233	458	454
2062	55		4	4		225	233	458	454
2063	56		4	4		225	233	458	454
2064	57		4	4		225	233	458	454
2065	58		4	4		225	233	458	454
2066	59		4	4		225	233	458	454
2067	60		4	4		225	233	458	454
2068	61		4	4		225	233	458	454
2069	62		4	4		225	233	458	454
Total		1,793	205	1,998		11,642			22,579
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				928				1,963	1,035
EIRR									19.37%
B/C									2.12

Table 8 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 10-Year Flood - Diversion Plan

(Alternative: F_S.5D 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	175	0			0
2004	-3			0	186	0			0
2005	-2			0	197	0			0
2006	-1			0	208	0			0
2007	Base Year			0	220	0	0	0	0
2008	1	0		0	231	0	0	0	0
2009	2	129		129	242	0	24	24	-105
2010	3	209		209	253	0	48	48	-161
2011	4	352		352	264	0	72	72	-280
2012	5	282		282	275	0	96	96	-186
2013	6	246		246	286	0	120	120	-126
2014	7	338		338	298	0	144	144	-195
2015	8	259		259	309	0	168	168	-92
2016	9	135		135	320	0	192	192	57
2017	10	105		105	331	0	216	216	110
2018	11	105	6	111	342	310	239	550	438
2019	12	106	6	112	353	337	263	600	489
2020	13	0	6	6	364	364	287	652	646
2021	14		6	6		364	287	652	646
2022	15		6	6		364	287	652	646
2023	16		6	6		364	287	652	646
2024	17		6	6		364	287	652	646
2025	18		6	6		364	287	652	646
2026	19		6	6		364	287	652	646
2027	20		6	6		364	287	652	646
2028	21		6	6		364	287	652	646
2029	22		6	6		364	287	652	646
2030	23		6	6		364	287	652	646
2031	24		6	6		364	287	652	646
2032	25		6	6		364	287	652	646
2033	26		6	6		364	287	652	646
2034	27		6	6		364	287	652	646
2035	28		6	6		364	287	652	646
2036	29		6	6		364	287	652	646
2037	30		6	6		364	287	652	646
2038	31		6	6		364	287	652	646
2039	32		6	6		364	287	652	646
2040	33		6	6		364	287	652	646
2041	34		6	6		364	287	652	646
2042	35		6	6		364	287	652	646
2043	36		6	6		364	287	652	646
2044	37		6	6		364	287	652	646
2045	38		6	6		364	287	652	646
2046	39		6	6		364	287	652	646
2047	40		6	6		364	287	652	646
2048	41		6	6		364	287	652	646
2049	42		6	6		364	287	652	646
2050	43		6	6		364	287	652	646
2051	44		6	6		364	287	652	646
2052	45		6	6		364	287	652	646
2053	46		6	6		364	287	652	646
2054	47		6	6		364	287	652	646
2055	48		6	6		364	287	652	646
2056	49		6	6		364	287	652	646
2057	50		6	6		364	287	652	646
2058	51		6	6		364	287	652	646
2059	52		6	6		364	287	652	646
2060	53		6	6		364	287	652	646
2061	54		6	6		364	287	652	646
2062	55		6	6		364	287	652	646
2063	56		6	6		364	287	652	646
2064	57		6	6		364	287	652	646
2065	58		6	6		364	287	652	646
2066	59		6	6		364	287	652	646
2067	60		6	6		364	287	652	646
2068	61		6	6		364	287	652	646
2069	62		6	6		364	287	652	646
Total		2,265	305	2,570		18,867			32,245
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,184				2,719	1,535
EIRR									20.24%
B/C									2.30

Table 9 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 20-Year Flood - Diversion Plan

(Alternative: F_S.5D 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	238	0			0
2004	-3			0	252	0			0
2005	-2			0	266	0			0
2006	-1			0	280	0			0
2007	Base Year			0	294	0	0	0	0
2008	1	0		0	309	0	0	0	0
2009	2	140		140	323	0	26	26	-114
2010	3	208		208	337	0	52	52	-156
2011	4	352		352	351	0	77	77	-274
2012	5	464		464	366	0	103	103	-360
2013	6	420		420	380	0	129	129	-291
2014	7	387		387	394	0	155	155	-233
2015	8	284		284	408	0	181	181	-104
2016	9	119		119	422	0	206	206	88
2017	10	91		91	437	0	232	232	141
2018	11	91	9	100	451	420	258	678	577
2019	12	91	9	101	465	449	284	733	632
2020	13	0	9	9	479	479	310	789	780
2021	14		9	9		479	310	789	780
2022	15		9	9		479	310	789	780
2023	16		9	9		479	310	789	780
2024	17		9	9		479	310	789	780
2025	18		9	9		479	310	789	780
2026	19		9	9		479	310	789	780
2027	20		9	9		479	310	789	780
2028	21		9	9		479	310	789	780
2029	22		9	9		479	310	789	780
2030	23		9	9		479	310	789	780
2031	24		9	9		479	310	789	780
2032	25		9	9		479	310	789	780
2033	26		9	9		479	310	789	780
2034	27		9	9		479	310	789	780
2035	28		9	9		479	310	789	780
2036	29		9	9		479	310	789	780
2037	30		9	9		479	310	789	780
2038	31		9	9		479	310	789	780
2039	32		9	9		479	310	789	780
2040	33		9	9		479	310	789	780
2041	34		9	9		479	310	789	780
2042	35		9	9		479	310	789	780
2043	36		9	9		479	310	789	780
2044	37		9	9		479	310	789	780
2045	38		9	9		479	310	789	780
2046	39		9	9		479	310	789	780
2047	40		9	9		479	310	789	780
2048	41		9	9		479	310	789	780
2049	42		9	9		479	310	789	780
2050	43		9	9		479	310	789	780
2051	44		9	9		479	310	789	780
2052	45		9	9		479	310	789	780
2053	46		9	9		479	310	789	780
2054	47		9	9		479	310	789	780
2055	48		9	9		479	310	789	780
2056	49		9	9		479	310	789	780
2057	50		9	9		479	310	789	780
2058	51		9	9		479	310	789	780
2059	52		9	9		479	310	789	780
2060	53		9	9		479	310	789	780
2061	54		9	9		479	310	789	780
2062	55		9	9		479	310	789	780
2063	56		9	9		479	310	789	780
2064	57		9	9		479	310	789	780
2065	58		9	9		479	310	789	780
2066	59		9	9		479	310	789	780
2067	60		9	9		479	310	789	780
2068	61		9	9		479	310	789	780
2069	62		9	9		479	310	789	780
Total		2,647	474	3,121		24,826			38,888
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,409				3,230	1,822
EIRR									19.87%
B/C									2.29

Table 10 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 5-Year Flood - Retarding Basin Plan

(Alternative: F_S.5R 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	96	0			0
2004	-3			0	104	0			0
2005	-2			0	111	0			0
2006	-1			0	119	0			0
2007	Base Year			0	127	0	0	0	0
2008	1	0		0	134	0	0	0	0
2009	2	114		114	142	0	19	19	-94
2010	3	168		168	149	0	39	39	-129
2011	4	267		267	157	0	58	58	-208
2012	5	219		219	164	0	78	78	-141
2013	6	279		279	172	0	97	97	-182
2014	7	307		307	180	0	117	117	-191
2015	8	262		262	187	0	136	136	-126
2016	9	121		121	195	0	155	155	34
2017	10	95		95	202	0	175	175	79
2018	11	93	5	98	210	191	194	385	287
2019	12	93	5	98	217	207	214	421	323
2020	13	0	5	5	225	225	233	458	453
2021	14		5	5		225	233	458	453
2022	15		5	5		225	233	458	453
2023	16		5	5		225	233	458	453
2024	17		5	5		225	233	458	453
2025	18		5	5		225	233	458	453
2026	19		5	5		225	233	458	453
2027	20		5	5		225	233	458	453
2028	21		5	5		225	233	458	453
2029	22		5	5		225	233	458	453
2030	23		5	5		225	233	458	453
2031	24		5	5		225	233	458	453
2032	25		5	5		225	233	458	453
2033	26		5	5		225	233	458	453
2034	27		5	5		225	233	458	453
2035	28		5	5		225	233	458	453
2036	29		5	5		225	233	458	453
2037	30		5	5		225	233	458	453
2038	31		5	5		225	233	458	453
2039	32		5	5		225	233	458	453
2040	33		5	5		225	233	458	453
2041	34		5	5		225	233	458	453
2042	35		5	5		225	233	458	453
2043	36		5	5		225	233	458	453
2044	37		5	5		225	233	458	453
2045	38		5	5		225	233	458	453
2046	39		5	5		225	233	458	453
2047	40		5	5		225	233	458	453
2048	41		5	5		225	233	458	453
2049	42		5	5		225	233	458	453
2050	43		5	5		225	233	458	453
2051	44		5	5		225	233	458	453
2052	45		5	5		225	233	458	453
2053	46		5	5		225	233	458	453
2054	47		5	5		225	233	458	453
2055	48		5	5		225	233	458	453
2056	49		5	5		225	233	458	453
2057	50		5	5		225	233	458	453
2058	51		5	5		225	233	458	453
2059	52		5	5		225	233	458	453
2060	53		5	5		225	233	458	453
2061	54		5	5		225	233	458	453
2062	55		5	5		225	233	458	453
2063	56		5	5		225	233	458	453
2064	57		5	5		225	233	458	453
2065	58		5	5		225	233	458	453
2066	59		5	5		225	233	458	453
2067	60		5	5		225	233	458	453
2068	61		5	5		225	233	458	453
2069	62		5	5		225	233	458	453
Total		2,017	285	2,302		11,645			22,278
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,042				1,964	922
EIRR									17.63%
B/C									1.88

Table 11 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 10-Year Flood - Retarding Basin Plan

(Alternative: F_S.5R 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	175	0			0
2004	-3			0	186	0			0
2005	-2			0	197	0			0
2006	-1			0	208	0			0
2007	Base Year			0	220	0	0	0	0
2008	1	0		0	231	0	0	0	0
2009	2	117		117	242	0	24	24	-93
2010	3	173		173	253	0	48	48	-126
2011	4	296		296	264	0	72	72	-224
2012	5	252		252	275	0	96	96	-156
2013	6	347		347	286	0	120	120	-227
2014	7	373		373	298	0	144	144	-230
2015	8	311		311	309	0	168	168	-144
2016	9	118		118	320	0	192	192	74
2017	10	92		92	331	0	216	216	124
2018	11	92	7	99	342	314	239	554	455
2019	12	92	7	99	353	339	263	602	504
2020	13	0	7	7	364	364	287	652	645
2021	14		7	7		364	287	652	645
2022	15		7	7		364	287	652	645
2023	16		7	7		364	287	652	645
2024	17		7	7		364	287	652	645
2025	18		7	7		364	287	652	645
2026	19		7	7		364	287	652	645
2027	20		7	7		364	287	652	645
2028	21		7	7		364	287	652	645
2029	22		7	7		364	287	652	645
2030	23		7	7		364	287	652	645
2031	24		7	7		364	287	652	645
2032	25		7	7		364	287	652	645
2033	26		7	7		364	287	652	645
2034	27		7	7		364	287	652	645
2035	28		7	7		364	287	652	645
2036	29		7	7		364	287	652	645
2037	30		7	7		364	287	652	645
2038	31		7	7		364	287	652	645
2039	32		7	7		364	287	652	645
2040	33		7	7		364	287	652	645
2041	34		7	7		364	287	652	645
2042	35		7	7		364	287	652	645
2043	36		7	7		364	287	652	645
2044	37		7	7		364	287	652	645
2045	38		7	7		364	287	652	645
2046	39		7	7		364	287	652	645
2047	40		7	7		364	287	652	645
2048	41		7	7		364	287	652	645
2049	42		7	7		364	287	652	645
2050	43		7	7		364	287	652	645
2051	44		7	7		364	287	652	645
2052	45		7	7		364	287	652	645
2053	46		7	7		364	287	652	645
2054	47		7	7		364	287	652	645
2055	48		7	7		364	287	652	645
2056	49		7	7		364	287	652	645
2057	50		7	7		364	287	652	645
2058	51		7	7		364	287	652	645
2059	52		7	7		364	287	652	645
2060	53		7	7		364	287	652	645
2061	54		7	7		364	287	652	645
2062	55		7	7		364	287	652	645
2063	56		7	7		364	287	652	645
2064	57		7	7		364	287	652	645
2065	58		7	7		364	287	652	645
2066	59		7	7		364	287	652	645
2067	60		7	7		364	287	652	645
2068	61		7	7		364	287	652	645
2069	62		7	7		364	287	652	645
Total		2,263	357	2,620		18,873			32,202
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,174				2,721	1,547
EIRR									20.69%
B/C									2.32

Table 12 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement with On-Site Flood Regulation Pond for Measure for 20-Year Flood - Retarding Basin Plan

(Alternative: F_S.5R 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from River Channel Improve-ment	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	238	0			0
2004	-3			0	252	0			0
2005	-2			0	266	0			0
2006	-1			0	280	0			0
2007	Base Year			0	294	0	0	0	0
2008	1	0		0	309	0	0	0	0
2009	2	119		119	323	0	26	26	-93
2010	3	140		140	337	0	52	52	-88
2011	4	259		259	351	0	77	77	-181
2012	5	305		305	366	0	103	103	-202
2013	6	434		434	380	0	129	129	-305
2014	7	405		405	394	0	155	155	-250
2015	8	335		335	408	0	181	181	-155
2016	9	118		118	422	0	206	206	88
2017	10	91		91	437	0	232	232	141
2018	11	91	8	99	451	416	258	674	575
2019	12	92	8	99	465	447	284	731	632
2020	13	0	8	8	479	479	310	789	781
2021	14		8	8		479	310	789	781
2022	15		8	8		479	310	789	781
2023	16		8	8		479	310	789	781
2024	17		8	8		479	310	789	781
2025	18		8	8		479	310	789	781
2026	19		8	8		479	310	789	781
2027	20		8	8		479	310	789	781
2028	21		8	8		479	310	789	781
2029	22		8	8		479	310	789	781
2030	23		8	8		479	310	789	781
2031	24		8	8		479	310	789	781
2032	25		8	8		479	310	789	781
2033	26		8	8		479	310	789	781
2034	27		8	8		479	310	789	781
2035	28		8	8		479	310	789	781
2036	29		8	8		479	310	789	781
2037	30		8	8		479	310	789	781
2038	31		8	8		479	310	789	781
2039	32		8	8		479	310	789	781
2040	33		8	8		479	310	789	781
2041	34		8	8		479	310	789	781
2042	35		8	8		479	310	789	781
2043	36		8	8		479	310	789	781
2044	37		8	8		479	310	789	781
2045	38		8	8		479	310	789	781
2046	39		8	8		479	310	789	781
2047	40		8	8		479	310	789	781
2048	41		8	8		479	310	789	781
2049	42		8	8		479	310	789	781
2050	43		8	8		479	310	789	781
2051	44		8	8		479	310	789	781
2052	45		8	8		479	310	789	781
2053	46		8	8		479	310	789	781
2054	47		8	8		479	310	789	781
2055	48		8	8		479	310	789	781
2056	49		8	8		479	310	789	781
2057	50		8	8		479	310	789	781
2058	51		8	8		479	310	789	781
2059	52		8	8		479	310	789	781
2060	53		8	8		479	310	789	781
2061	54		8	8		479	310	789	781
2062	55		8	8		479	310	789	781
2063	56		8	8		479	310	789	781
2064	57		8	8		479	310	789	781
2065	58		8	8		479	310	789	781
2066	59		8	8		479	310	789	781
2067	60		8	8		479	310	789	781
2068	61		8	8		479	310	789	781
2069	62		8	8		479	310	789	781
Total		2,389	391	2,780		24,821			39,223
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,231				3,229	1,998
EIRR									22.73%
B/C									2.62

Table 13 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 5-Year Flood - Diversion Plan

(F_S.3 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	96	0	0
2004	-3			0	104	0	0
2005	-2			0	111	0	0
2006	-1			0	119	0	0
2007	Base Year			0	127	0	0
2008	1	0		0	134	0	0
2009	2	22		22	142	0	-22
2010	3	81		81	149	0	-81
2011	4	159		159	157	0	-159
2012	5	117		117	164	0	-117
2013	6	115		115	172	0	-115
2014	7	207		207	180	0	-207
2015	8	131		131	187	0	-131
2016	9	8		8	195	0	-8
2017	10	5		5	202	0	-5
2018	11	0	5	5	210	210	205
2019	12	0	5	5	217	217	212
2020	13	0	5	5	225	225	220
2021	14		5	5		225	220
2022	15		5	5		225	220
2023	16		5	5		225	220
2024	17		5	5		225	220
2025	18		5	5		225	220
2026	19		5	5		225	220
2027	20		5	5		225	220
2028	21		5	5		225	220
2029	22		5	5		225	220
2030	23		5	5		225	220
2031	24		5	5		225	220
2032	25		5	5		225	220
2033	26		5	5		225	220
2034	27		5	5		225	220
2035	28		5	5		225	220
2036	29		5	5		225	220
2037	30		5	5		225	220
2038	31		5	5		225	220
2039	32		5	5		225	220
2040	33		5	5		225	220
2041	34		5	5		225	220
2042	35		5	5		225	220
2043	36		5	5		225	220
2044	37		5	5		225	220
2045	38		5	5		225	220
2046	39		5	5		225	220
2047	40		5	5		225	220
2048	41		5	5		225	220
2049	42		5	5		225	220
2050	43		5	5		225	220
2051	44		5	5		225	220
2052	45		5	5		225	220
2053	46		5	5		225	220
2054	47		5	5		225	220
2055	48		5	5		225	220
2056	49		5	5		225	220
2057	50		5	5		225	220
2058	51		5	5		225	220
2059	52		5	5		225	220
2060	53		5	5		225	220
2061	54		5	5		225	220
2062	55		5	5		225	220
2063	56		5	5		225	220
2064	57		5	5		225	220
2065	58		5	5		225	220
2066	59		5	5		225	220
2067	60		5	5		225	220
Total		844	262	1,105		11,224	10,119
Applied Discount Rate: 10 % according to a regulation of the nation							
NPV				470		775	305
EIRR							14.15%
B/C							1.65

Table 14 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 10-Year Flood - Diversion Plan

(F_S.3 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	175	0	0
2004	-3			0	186	0	0
2005	-2			0	197	0	0
2006	-1			0	208	0	0
2007	Base Year			0	220	0	0
2008	1	0		0	231	0	0
2009	2	30		30	242	0	-30
2010	3	99		99	253	0	-99
2011	4	194		194	264	0	-194
2012	5	151		151	275	0	-151
2013	6	182		182	286	0	-182
2014	7	329		329	298	0	-329
2015	8	208		208	309	0	-208
2016	9	13		13	320	0	-13
2017	10	9		9	331	0	-9
2018	11	0	7	7	342	342	335
2019	12	0	7	7	353	353	346
2020	13	0	7	7	364	364	357
2021	14		7	7		364	357
2022	15		7	7		364	357
2023	16		7	7		364	357
2024	17		7	7		364	357
2025	18		7	7		364	357
2026	19		7	7		364	357
2027	20		7	7		364	357
2028	21		7	7		364	357
2029	22		7	7		364	357
2030	23		7	7		364	357
2031	24		7	7		364	357
2032	25		7	7		364	357
2033	26		7	7		364	357
2034	27		7	7		364	357
2035	28		7	7		364	357
2036	29		7	7		364	357
2037	30		7	7		364	357
2038	31		7	7		364	357
2039	32		7	7		364	357
2040	33		7	7		364	357
2041	34		7	7		364	357
2042	35		7	7		364	357
2043	36		7	7		364	357
2044	37		7	7		364	357
2045	38		7	7		364	357
2046	39		7	7		364	357
2047	40		7	7		364	357
2048	41		7	7		364	357
2049	42		7	7		364	357
2050	43		7	7		364	357
2051	44		7	7		364	357
2052	45		7	7		364	357
2053	46		7	7		364	357
2054	47		7	7		364	357
2055	48		7	7		364	357
2056	49		7	7		364	357
2057	50		7	7		364	357
2058	51		7	7		364	357
2059	52		7	7		364	357
2060	53		7	7		364	357
2061	54		7	7		364	357
2062	55		7	7		364	357
2063	56		7	7		364	357
2064	57		7	7		364	357
2065	58		7	7		364	357
2066	59		7	7		364	357
2067	60		7	7		364	357
Total		1,215	373	1,588		18,186	16,598
Applied Discount Rate: 10 % according to a regulation of the nation							
NPV				665		1,256	591
EIRR							15.51%
B/C							1.89

Table 15 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 20-Year Flood - Diversion Plan

(F_S.3 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	238	0	0
2004	-3			0	252	0	0
2005	-2			0	266	0	0
2006	-1			0	280	0	0
2007	Base Year			0	294	0	0
2008	1	0		0	309	0	0
2009	2	42		42	323	0	-42
2010	3	114		114	337	0	-114
2011	4	242		242	351	0	-242
2012	5	206		206	366	0	-206
2013	6	301		301	380	0	-301
2014	7	551		551	394	0	-551
2015	8	345		345	408	0	-345
2016	9	17		17	422	0	-17
2017	10	11		11	437	0	-11
2018	11	0	11	11	451	451	439
2019	12	0	11	11	465	465	454
2020	13	0	11	11	479	479	468
2021	14		11	11		479	468
2022	15		11	11		479	468
2023	16		11	11		479	468
2024	17		11	11		479	468
2025	18		11	11		479	468
2026	19		11	11		479	468
2027	20		11	11		479	468
2028	21		11	11		479	468
2029	22		11	11		479	468
2030	23		11	11		479	468
2031	24		11	11		479	468
2032	25		11	11		479	468
2033	26		11	11		479	468
2034	27		11	11		479	468
2035	28		11	11		479	468
2036	29		11	11		479	468
2037	30		11	11		479	468
2038	31		11	11		479	468
2039	32		11	11		479	468
2040	33		11	11		479	468
2041	34		11	11		479	468
2042	35		11	11		479	468
2043	36		11	11		479	468
2044	37		11	11		479	468
2045	38		11	11		479	468
2046	39		11	11		479	468
2047	40		11	11		479	468
2048	41		11	11		479	468
2049	42		11	11		479	468
2050	43		11	11		479	468
2051	44		11	11		479	468
2052	45		11	11		479	468
2053	46		11	11		479	468
2054	47		11	11		479	468
2055	48		11	11		479	468
2056	49		11	11		479	468
2057	50		11	11		479	468
2058	51		11	11		479	468
2059	52		11	11		479	468
2060	53		11	11		479	468
2061	54		11	11		479	468
2062	55		11	11		479	468
2063	56		11	11		479	468
2064	57		11	11		479	468
2065	58		11	11		479	468
2066	59		11	11		479	468
2067	60		11	11		479	468
Total		1,830	566	2,395		23,915	21,520
Applied Discount Rate: 10 % according to a regulation of the nation							
NPV				984		1,652	668
EIRR							14.47%
B/C							1.68

Table 16 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 5-Year Flood - Retarding Basin Plan

(F_S.2 5-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	96	0	0
2004	-3			0	119	0	0
2005	-2			0	141	0	0
2006	-1			0	164	0	0
2007	Base Year			0	186	0	0
2008	1	0		0	209	0	0
2009	2	25		25	231	0	-25
2010	3	85		85	254	0	-85
2011	4	164		164	277	0	-164
2012	5	122		122	299	0	-122
2013	6	191		191	322	0	-191
2014	7	216		216	344	0	-216
2015	8	167		167	367	0	-167
2016	9	8		8	389	0	-8
2017	10	5		5	412	0	-5
2018	11	0	6	6	434	434	428
2019	12	0	6	6	457	457	450
2020	13	0	6	6	479	479	473
2021	14		6	6		479	473
2022	15		6	6		479	473
2023	16		6	6		479	473
2024	17		6	6		479	473
2025	18		6	6		479	473
2026	19		6	6		479	473
2027	20		6	6		479	473
2028	21		6	6		479	473
2029	22		6	6		479	473
2030	23		6	6		479	473
2031	24		6	6		479	473
2032	25		6	6		479	473
2033	26		6	6		479	473
2034	27		6	6		479	473
2035	28		6	6		479	473
2036	29		6	6		479	473
2037	30		6	6		479	473
2038	31		6	6		479	473
2039	32		6	6		479	473
2040	33		6	6		479	473
2041	34		6	6		479	473
2042	35		6	6		479	473
2043	36		6	6		479	473
2044	37		6	6		479	473
2045	38		6	6		479	473
2046	39		6	6		479	473
2047	40		6	6		479	473
2048	41		6	6		479	473
2049	42		6	6		479	473
2050	43		6	6		479	473
2051	44		6	6		479	473
2052	45		6	6		479	473
2053	46		6	6		479	473
2054	47		6	6		479	473
2055	48		6	6		479	473
2056	49		6	6		479	473
2057	50		6	6		479	473
2058	51		6	6		479	473
2059	52		6	6		479	473
2060	53		6	6		479	473
2061	54		6	6		479	473
2062	55		6	6		479	473
2063	56		6	6		479	473
2064	57		6	6		479	473
2065	58		6	6		479	473
2066	59		6	6		479	473
2067	60		6	6		479	473
Total		983	311	1,294		23,890	22,596
Applied Discount Rate: 10 % according to a regulation of the nation.							
NPV				544		1,644	1,101
EIRR							20.40%
B/C							3.02

Table 17 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 10-Year Flood - Retarding Basin Plan

(F_S.2 10-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	175	0	0
2004	-3			0	186	0	0
2005	-2			0	197	0	0
2006	-1			0	208	0	0
2007	Base Year			0	220	0	0
2008	1	0		0	231	0	0
2009	2	29		29	242	0	-29
2010	3	92		92	253	0	-92
2011	4	191		191	264	0	-191
2012	5	154		154	275	0	-154
2013	6	255		255	286	0	-255
2014	7	280		280	298	0	-280
2015	8	217		217	309	0	-217
2016	9	13		13	320	0	-13
2017	10	9		9	331	0	-9
2018	11	0	8	8	342	342	334
2019	12	0	8	8	353	353	346
2020	13	0	8	8	364	364	357
2021	14		8	8		364	357
2022	15		8	8		364	357
2023	16		8	8		364	357
2024	17		8	8		364	357
2025	18		8	8		364	357
2026	19		8	8		364	357
2027	20		8	8		364	357
2028	21		8	8		364	357
2029	22		8	8		364	357
2030	23		8	8		364	357
2031	24		8	8		364	357
2032	25		8	8		364	357
2033	26		8	8		364	357
2034	27		8	8		364	357
2035	28		8	8		364	357
2036	29		8	8		364	357
2037	30		8	8		364	357
2038	31		8	8		364	357
2039	32		8	8		364	357
2040	33		8	8		364	357
2041	34		8	8		364	357
2042	35		8	8		364	357
2043	36		8	8		364	357
2044	37		8	8		364	357
2045	38		8	8		364	357
2046	39		8	8		364	357
2047	40		8	8		364	357
2048	41		8	8		364	357
2049	42		8	8		364	357
2050	43		8	8		364	357
2051	44		8	8		364	357
2052	45		8	8		364	357
2053	46		8	8		364	357
2054	47		8	8		364	357
2055	48		8	8		364	357
2056	49		8	8		364	357
2057	50		8	8		364	357
2058	51		8	8		364	357
2059	52		8	8		364	357
2060	53		8	8		364	357
2061	54		8	8		364	357
2062	55		8	8		364	357
2063	56		8	8		364	357
2064	57		8	8		364	357
2065	58		8	8		364	357
2066	59		8	8		364	357
2067	60		8	8		364	357
Total		1,239	386	1,625		18,186	16,562
Applied Discount Rate: 10 % according to a regulation of the nation.							
NPV				678		1,256	578
EIRR							15.33%
B/C							1.85

Table 18 Economic Evaluation for San-Juan and Ylang-Ylang Rivers Channel Improvement without On-Site Flood Regulation Pond for Measure for 20-Year Flood - Retarding Basin Plan

(F_S.2 20-Year Flood)

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from River Channel Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	238	0	0
2004	-3			0	252	0	0
2005	-2			0	266	0	0
2006	-1			0	280	0	0
2007	Base Year			0	294	0	0
2008	1	0		0	309	0	0
2009	2	42		42	323	0	-42
2010	3	114		114	337	0	-114
2011	4	220		220	351	0	-220
2012	5	184		184	366	0	-184
2013	6	393		393	380	0	-393
2014	7	448		448	394	0	-448
2015	8	345		345	408	0	-345
2016	9	17		17	422	0	-17
2017	10	11		11	437	0	-11
2018	11	0	11	11	451	451	439
2019	12	0	11	11	465	465	454
2020	13	0	11	11	479	479	468
2021	14		11	11		479	468
2022	15		11	11		479	468
2023	16		11	11		479	468
2024	17		11	11		479	468
2025	18		11	11		479	468
2026	19		11	11		479	468
2027	20		11	11		479	468
2028	21		11	11		479	468
2029	22		11	11		479	468
2030	23		11	11		479	468
2031	24		11	11		479	468
2032	25		11	11		479	468
2033	26		11	11		479	468
2034	27		11	11		479	468
2035	28		11	11		479	468
2036	29		11	11		479	468
2037	30		11	11		479	468
2038	31		11	11		479	468
2039	32		11	11		479	468
2040	33		11	11		479	468
2041	34		11	11		479	468
2042	35		11	11		479	468
2043	36		11	11		479	468
2044	37		11	11		479	468
2045	38		11	11		479	468
2046	39		11	11		479	468
2047	40		11	11		479	468
2048	41		11	11		479	468
2049	42		11	11		479	468
2050	43		11	11		479	468
2051	44		11	11		479	468
2052	45		11	11		479	468
2053	46		11	11		479	468
2054	47		11	11		479	468
2055	48		11	11		479	468
2056	49		11	11		479	468
2057	50		11	11		479	468
2058	51		11	11		479	468
2059	52		11	11		479	468
2060	53		11	11		479	468
2061	54		11	11		479	468
2062	55		11	11		479	468
2063	56		11	11		479	468
2064	57		11	11		479	468
2065	58		11	11		479	468
2066	59		11	11		479	468
2067	60		11	11		479	468
Total		1,773	566	2,339		23,915	21,576
Applied Discount Rate: 10 % according to a regulation of the nation.							
NPV				956		1,652	696
EIRR							14.74%
B/C							1.73

Table 19 Economic Evaluation for Inland Drainage Improvement with On-Site Flood Regulation Pond for Measure for 2-Year Flood - Full Scale Case

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from Inland Drainage Improve-	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	221	0			0
2004	-3			0	232	0			0
2005	-2			0	244	0			0
2006	-1			0	255	0			0
2007	Base Year			0	267	0	0	0	0
2008	1	0		0	278	0	0	0	0
2009	2	142		142	290	0	2	2	-140
2010	3	209		209	301	0	4	4	-205
2011	4	660		660	313	0	6	6	-654
2012	5	927		927	324	0	8	8	-920
2013	6	941		941	336	0	10	10	-931
2014	7	941		941	347	0	12	12	-929
2015	8	944		944	359	0	13	13	-930
2016	9	420		420	371	0	15	15	-404
2017	10	44		44	382	373	17	390	346
2018	11	44	35	79	394	387	19	406	328
2019	12	44	35	79	405	402	21	423	344
2020	13	0	35	35	417	417	23	440	405
2021	14		35	35		417	23	440	405
2022	15		35	35		417	23	440	405
2023	16		35	35		417	23	440	405
2024	17		35	35		417	23	440	405
2025	18		35	35		417	23	440	405
2026	19		35	35		417	23	440	405
2027	20		35	35		417	23	440	405
2028	21		35	35		417	23	440	405
2029	22		35	35		417	23	440	405
2030	23		35	35		417	23	440	405
2031	24		35	35		417	23	440	405
2032	25		35	35		417	23	440	405
2033	26		35	35		417	23	440	405
2034	27		35	35		417	23	440	405
2035	28		35	35		417	23	440	405
2036	29		35	35		417	23	440	405
2037	30		35	35		417	23	440	405
2038	31		35	35		417	23	440	405
2039	32		35	35		417	23	440	405
2040	33		35	35		417	23	440	405
2041	34		35	35		417	23	440	405
2042	35		35	35		417	23	440	405
2043	36		35	35		417	23	440	405
2044	37		35	35		417	23	440	405
2045	38		35	35		417	23	440	405
2046	39		35	35		417	23	440	405
2047	40		35	35		417	23	440	405
2048	41		35	35		417	23	440	405
2049	42		35	35		417	23	440	405
Total		5,314	1,115	6,429		13,674			8,063
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				2,824		1,509			-1,200
EIRR									5.43%
B/C									0.53

Table 20 Economic Evaluation for Inland Drainage Improvement without On-Site Flood Regulation Pond for Measure for 2-Year Flood - Full Scale Case

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from Inland Drainage Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	221	0	0
2004	-3			0	232	0	0
2005	-2			0	244	0	0
2006	-1			0	255	0	0
2007	Base Year			0	267	0	0
2008	1	0		0	278	0	0
2009	2	119		119	290	0	-119
2010	3	191		191	301	0	-191
2011	4	635		635	313	0	-635
2012	5	905		905	324	0	-905
2013	6	919		919	336	0	-919
2014	7	918		918	347	0	-918
2015	8	921		921	359	0	-921
2016	9	393		393	371	0	-393
2017	10	23		23	382	380	358
2018	11	0	35	35	394	394	359
2019	12	0	35	35	405	405	370
2020	13	0	35	35	417	417	382
2021	14		35	35		417	382
2022	15		35	35		417	382
2023	16		35	35		417	382
2024	17		35	35		417	382
2025	18		35	35		417	382
2026	19		35	35		417	382
2027	20		35	35		417	382
2028	21		35	35		417	382
2029	22		35	35		417	382
2030	23		35	35		417	382
2031	24		35	35		417	382
2032	25		35	35		417	382
2033	26		35	35		417	382
2034	27		35	35		417	382
2035	28		35	35		417	382
2036	29		35	35		417	382
2037	30		35	35		417	382
2038	31		35	35		417	382
2039	32		35	35		417	382
2040	33		35	35		417	382
2041	34		35	35		417	382
2042	35		35	35		417	382
2043	36		35	35		417	382
2044	37		35	35		417	382
2045	38		35	35		417	382
2046	39		35	35		417	382
2047	40		35	35		417	382
Total		5,023	1,053	6,076		12,858	6,782
Applied Discount Rate: 10 % according to a regulation of the nation.							
NPV				2,691		1,500	-1,190
EIRR							5.16%
B/C							0.56

Table 21 Economic Evaluation for Inland Drainage Improvement with On-Site Flood Regulation Pond for Measure for 2-Year Flood - Partial Scale Case

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit to Be Derived			Cash Balance
		Construction Base Cost	OM Cost	Total		Benefit Derived from Inland Drainage Improve-	Benefit Derived from On-Site Works	Economic Benefit in Total	
2003	-4			0	140	0			0
2004	-3			0	147	0			0
2005	-2			0	154	0			0
2006	-1			0	161	0			0
2007	Base Year			0	168	0	0	0	0
2008	1	0		0	176	0	0	0	0
2009	2	72		72	183	0	2	2	-70
2010	3	108		108	190	0	4	4	-105
2011	4	393		393	197	0	6	6	-387
2012	5	416		416	204	0	8	8	-408
2013	6	426		426	211	0	10	10	-417
2014	7	426		426	218	0	12	12	-415
2015	8	429		429	225	0	13	13	-415
2016	9	86		86	232	0	15	15	-71
2017	10	32		32	240	232	17	249	217
2018	11	24	14	38	247	242	19	261	223
2019	12	24	14	38	254	251	21	272	234
2020	13	0	14	14	261	261	23	284	270
2021	14		14	14		261	23	284	270
2022	15		14	14		261	23	284	270
2023	16		14	14		261	23	284	270
2024	17		14	14		261	23	284	270
2025	18		14	14		261	23	284	270
2026	19		14	14		261	23	284	270
2027	20		14	14		261	23	284	270
2028	21		14	14		261	23	284	270
2029	22		14	14		261	23	284	270
2030	23		14	14		261	23	284	270
2031	24		14	14		261	23	284	270
2032	25		14	14		261	23	284	270
2033	26		14	14		261	23	284	270
2034	27		14	14		261	23	284	270
2035	28		14	14		261	23	284	270
2036	29		14	14		261	23	284	270
2037	30		14	14		261	23	284	270
2038	31		14	14		261	23	284	270
2039	32		14	14		261	23	284	270
2040	33		14	14		261	23	284	270
2041	34		14	14		261	23	284	270
2042	35		14	14		261	23	284	270
2043	36		14	14		261	23	284	270
2044	37		14	14		261	23	284	270
2045	38		14	14		261	23	284	270
2046	39		14	14		261	23	284	270
2047	40		14	14		261	23	284	270
2048	41		14	14		261	23	284	270
2049	42		14	14		261	23	284	270
Total		2,435	460	2,895		8,558			6,482
Applied Discount Rate: 10 % according to a regulation of the nation.									
NPV				1,313		944			-253
EIRR									8.13%
B/C									0.72

Table 22 Economic Evaluation for Inland Drainage Improvement without On-Site Flood Regulation Pond for Measure for 2-Year Flood - Partial Scale Case

(million Pesos)

Calendar Year	Year in Order	Economic Cost			Annual Economic Benefit	Benefit Derived from Inland Drainage Improve-ment	Cash Balance
		Construction Base Cost	OM Cost	Total			
2003	-4			0	140	0	0
2004	-3			0	147	0	0
2005	-2			0	154	0	0
2006	-1			0	161	0	0
2007	Base Year			0	168	0	0
2008	1	0		0	176	0	0
2009	2	51		51	183	0	-51
2010	3	93		93	190	0	-93
2011	4	158		158	197	0	-158
2012	5	398		398	204	0	-398
2013	6	417		417	211	0	-417
2014	7	416		416	218	0	-416
2015	8	418		418	225	0	-418
2016	9	267		267	232	0	-267
2017	10	37		37	240	236	199
2018	11	0	15	15	247	247	232
2019	12	0	15	15	254	254	239
2020	13	0	15	15	261	261	246
2021	14		15	15		261	246
2022	15		15	15		261	246
2023	16		15	15		261	246
2024	17		15	15		261	246
2025	18		15	15		261	246
2026	19		15	15		261	246
2027	20		15	15		261	246
2028	21		15	15		261	246
2029	22		15	15		261	246
2030	23		15	15		261	246
2031	24		15	15		261	246
2032	25		15	15		261	246
2033	26		15	15		261	246
2034	27		15	15		261	246
2035	28		15	15		261	246
2036	29		15	15		261	246
2037	30		15	15		261	246
2038	31		15	15		261	246
2039	32		15	15		261	246
2040	33		15	15		261	246
2041	34		15	15		261	246
2042	35		15	15		261	246
2043	36		15	15		261	246
2044	37		15	15		261	246
2045	38		15	15		261	246
2046	39		15	15		261	246
2047	40		15	15		261	246
Total		2,255	453	2,707		8,047	5,340
Applied Discount Rate: 10 % according to a regulation of the nation.							
NPV				844		415	-429
EIRR							7.98%
B/C							0.49

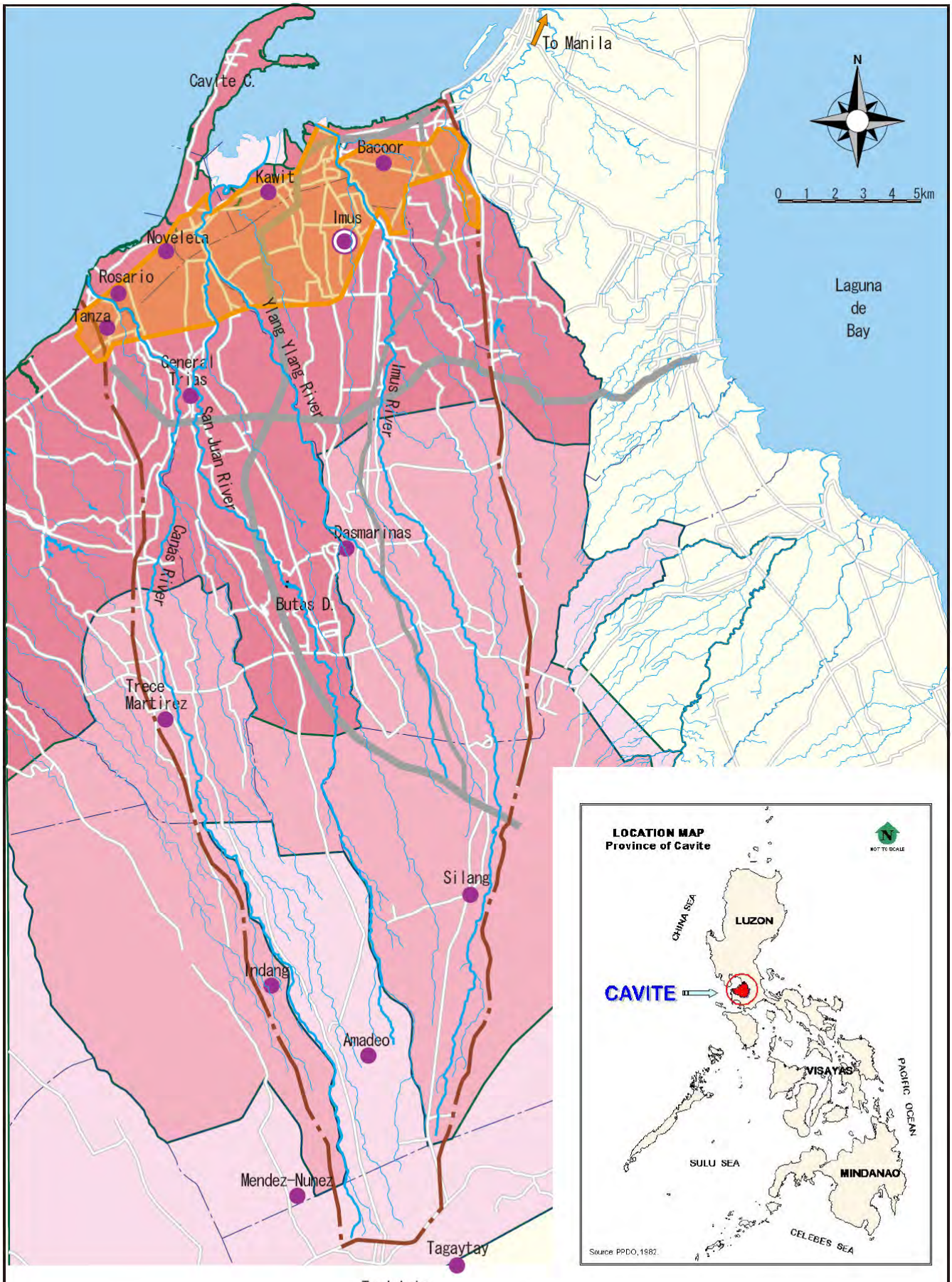
Appendix-7
Training Manual for Clean-up of Waterway

THE STUDY
ON
COMPREHENSIVE FLOOD MITIGATION FOR
CAVITE LOWLAND AREA
IN THE REPUBLIC OF THE PHILIPPINES

Community Based Disaster Management

Training Manual

July 2008



LOCATION MAP

Table of Contents

1. Project Background

In the 1990s, Cavite aggressively took the challenge of achieving the industrial development competing with other provinces in Southern Tagalog Region and even in the whole country. Started as a province that solely depends on agriculture, Province of Cavite has expanded into a center for industrial and commercial development. The Province has assertively transformed itself to a highly commercialized province which is haven for number of industrial estates.

Cavite as a center for thriving commerce has a lot of business establishments aside from industries. Due to nearness to Metro Manila offering a lot of job opportunities, influx in population became the number one issue. Based on the study and researches, population growth directly affects the generation of solid waste of the province which is the most widespread threat land-based pollutant to the environment and may cause direct human health risks.

In the Study on Comprehensive Flood Mitigation for Cavite Lowland Area by Japan International Cooperation Agency (JICA), it was identified that one of the causes of flooding is due to clogging of solid waste in canals and rivers. Solid wastes are being dumped into the rivers from upstream to downstream along the riverbanks.

Under the Study, the implementation of non-structural measures for the remaining 5 target municipalities includes:

- Reviewing of existing laws and ordinances;
- Assessing and evaluating the policies and ordinances passed by the LGUs;
- Implementation of capacity building programs to enhance the knowledge and participation of the communities;
- Development of Information Education Materials (IEC) to effectively informed the general public about the swm and its contribution in flooding; and
- Implementation of on-the-ground projects to promote partnerships and involvement among key sectors specifically the communities.

All the above component of non-structural measures have been implemented between the Provincial Government of Cavite, JICA Study Team and the LGU's, because technical solutions alone may not be enough to overcome the challenges of Solid Waste Management (SWM), ensuring that good governance is part of environmental management options plus the ingredient of transparency and mass-based stakeholder participation.

This Training Manual on Community Based Disaster Prevention summarizes the experiences and findings acquired throughout the project activities conducted. While the manual simply presents the sequential arrangements of the training programme to be developed and the fruitful appendixes which present the core of the programme activities as samples for those who are to conduct similar activities in the Province near future.

Provincial Government of Cavite and JICA Study Team wish to thank all participants to the community-based disaster prevention activities during the Study Period.

2. About the Manual

Based on the baseline survey conducted under the JICA project, it was found out that the solid waste management is one of the major problems in most of the cities and municipalities of the Province considering the inadequate and poor collection of the local government, leaving waste uncollected in streets, burnt in the open air, drains and surface water, and dumped in waterways and vacant lands. Waste that has been dumped in waterways contributes to the heavy flooding in the lowland areas of Cavite. Inadequate sanitation is also quite common in most of the municipalities situated in lowland area, posing threats to human health and environment. Both solid waste management and sanitation as

identified during the community workshops conducted by JICA Study Team and the PG-ENRO are costly services, partly due to inefficiencies and a focus on large-scale solutions. The legitimate questions arises during the community workshops, is how we can deal with solid waste in an efficient, effective and sustainable manner.

Based on the conclusion of the baseline survey, pilot project activities were implemented first at the municipalities of Imus and Kawit, thereafter for the municipalities of Gen. Trias, Bacoor, Noveleta, Tanza and Rosario. The purpose of this manual is to gather all the information and lessons learned from the community workshops conducted in the municipalities, in which will serve as a tool and information for other communities or municipalities in the province, planning to do the same approach and strategy.

The Manual is also intended to assist the municipalities and barangay officials in preparing their solid waste management action program, execute the result of the Trainor's Training Seminar, educate the targeted community regarding waste minimization and proper management, and advocates the community on the implementation of the existing environmental laws and policies.

3. Baseline Survey

3.1 Background

Baseline Survey of the Communities in Cavite lowland area was conducted in order to understand the condition of the communities in flood disaster risk management and to obtain necessary information and data for the selection of the 2 Pilot Communities to conduct Community-based flood disaster management activities in the Study. From the Flood Damage and Social Survey conducted by the Study Team, a total of 12 communities (municipalities) in the study area have been identified as the target of the Baseline Survey.

3.2 Preparation of Questionnaire

The questionnaire survey was conducted for the local government officials to understand the characteristics of the communities. The main contents of the survey regarding the flood preparedness are as follows: 1) capacity to observe/warn flood risk, 2) capacity to determining to evacuate by themselves, 3) information dissemination capacity, 4) evacuation guidance capacity 5) flood management system readiness, 6) flood disaster risk awareness, 7) rescuing capacity after disaster and 8) flood fighting activity readiness. Moreover, other questions included relates to river management, control of river area, land use and solid waste. The prepared questionnaire is presented in **Annex I**.

3.3 Selection of Pilot Communities

Baseline Survey of the Communities in Cavite lowland area was conducted in order to understand the condition of the communities in flood disaster risk management and to obtain necessary information and data for the selection of the target communities as well as the 2 Pilot Communities. Analysis was made to the 12 "communities" based on the 4 criteria for Pilot Communities Selection as noted below:

Table 3.1 - Criteria for the Pilot Communities Selection

Criteria	Details
1) Preparedness of the community	- Prepared to flood disaster - Community has established disaster management system
2) River Maintenance	- Solid waste management program is available - NGOs are actively involved in river management, waste management and other environmental activities.
3) Control of River Area	- Non-existence of squatters along the river.
4) Land Use	- Land Use Plan available and is well implemented.

For the detailed analysis, please refer to the main report of the JICA study.

4. Scheduling of the Project

As noted above, the Pilot Project was first conducted for two municipalities , Imus and Kawit. Thereafter, it was expanded into the remaining 5 target municipalities of Novaleta, Bacoor, Rosario, General Trials and Tanza. Schedules of the preparation and implementation of the program are in the **Annex II.**

4.1 Trainers Training Stage

As indicated, in scheduling the community workshop, there are several issues which one should prepare in stages. First of all, and perhaps the most important one, is the preparation of the module for the trainers. Depending on the number of trainers required, modules for the trainers training should be developed and training programme should be conducted.

In the Project, two separate trainers training have been organized and conducted. The first trainers training was conducted for the trainers of the community workshop programme for Imus and Kawit municipalities. Based on these experiences, programme for the remaining 5 municipalities have been developed and trainers training have been implemented.

4.2 Implementation of Community Workshop

The second and perhaps the most important stage is the actual implementation of the workshop. It was observed that in order to have a good representative number of the selected community, it was vital to conduct the workshop during weekends, since

4.3 Evaluation and Assessment Stage
Once the entire programs are conducted, it is very important to review and evaluate the implementation, in order for the feedback obtained from the evaluation to be incorporated into the next implementation phase for further improvement. This training manual is the results of the evaluation and assessment conducted after the implementation of the Community Workshops held throughout the project Area.

5. Conduct of Trainers Training

In conducting the training, the following points were identified to be vital based on the experiences gained in several municipalities.

5.1 Guideline for the effective training

- Explain the “why” of training
- Be thoroughly prepared before the training
- Start the session on time
- Get the trainees’ attention before starting
- Learn voice-response
- Maintain eye contact with the trainees
- Teach at a moderate pace
- Emphasize WE and YOU rather than “I”
- Move about occasionally while teaching
- Use a medium of instruction clearly understandable to the trainees
- Call the trainees by their names
- Give psychological rewards

5.2 Guideline for listening skills
- Prepare yourself physically by standing or facing the speaker. This face-to-face attention also shows that you are interested in what is being said.
- Learn to watch the speaker’s non-verbal as well as verbal messages.

- Not decide from the speaker's appearance or delivery that what he or she has to is worthwhile.
- Listen for ideas and underlying feelings.
- Determine your own biases, if any, and allow for them
- Keep your mind on what the speaker is saying.

Do not interrupt immediately if you hear a statement that you feel is wrong.

- Try to see that the situation from the other person's point of view. This doesn't mean that you always have to agree.
- Do not try to have the last word. Listen to what is being said and then think about it.
- Make a conscientious effort to evaluate the logic and credibility of what you hear. We can think four times faster than we speak.

5.3 Controlling your audience

Remember to:

- Speak with authority. Assure your audience that you are informed – an expert on the subject.
- Make sure your comments are focused and logical.
- Use as many specific examples, anecdotes and facts as possible and appropriate.
- Be early.
- Be warm, "relate" to the audience.
- Show enthusiasm – if you are glad to be there, chances are your audience will be too.
- Be entertaining – but don't go overboard. Don't use the occasion to try out all your latest jokes.
- Show that you are comfortable, which will put your audience at ease as well.

5.4 Controlling yourself

Remember NOT to:

- Show up at the presentation obviously unprepared and disorganized
- Jump from topic to topic. Focus your comments on a few key ideas, making sure to incorporate your key message points at every appropriate opportunity.
- Generalize. Use specific examples, anecdotes, and facts pertaining to the points you are making.
- Be late.
- Don't be cold or aloof
- Don't be dull or boring
- Don't alienate your audience by being unresponsive to their questions and comments.

6. Conduct of Community Workshops

The result of the community workshop in five (5) municipalities gave the Provincial Government and the JICA Study Team concrete knowledge why there is heavy flooding in the low lying areas of the province. The were 4 focus category identified by the communities that need to be improved both by the barangay and the local government in order to have a smooth sailing implementation and management of solid waste to prevent flooding and clogging of waterways.

The actual conduct of the Community Workshops will be very smooth, as long as the preparation stages are planned and implemented in detailed well in advance. Small tips which we learned during the implementation of the workshop are as follows:

6.1 Meeting Venue

Venue of the workshop should be considered carefully, in order for participants to be able to actively take part in the workshop. Venue should be a closed place to avoid noises and heat. In one meeting, the workshop was held in a "covered court outside of barangay hall." Too much noise as well as the heat distracted very much the participants to actively take part in the program.

It should also have enough space to host all expected participants. In another workshop, the venue space was too small and many participants had to stand outside of the meeting room. Make sure to

check the venue prior to the implementation of the workshop. Never assume the condition of venue without visiting the place in advance.

6.2 Programme

Programme of the workshop day should not be disturbed so much. As much as possible, the meeting should start on time in order for each presentation would have the planned time. Every person who would make presentation should be informed in advance of their time available, i.e. they should know the time allocated for their presentation. A sample of the workshop program is presented in **Annex III**.

6.3 Budget

Workshop activities would depend on the availability of budget. Available budget should confirmed well in advance in order for the workshops to be well planned. It is also important that the budget required for the workshop should be estimated by the persons in charge of the workshop, in order to have realistic estimates. Majority of the budget required are the materials to be used during the workshop. Furthermore, in some cases, venue of the workshop would also require budget. **Annex IV** presents the training module developed under the JICA Study, which includes materials to be used during the workshops.

7. Evaluation of the Activities

Once the project activities are all conducted, it is vital to conduct the assessment and evaluation of the activities held. This is particularly true for those activities which will be repeated again, in order for the lessons learned to be reflected back to the preparation and planning of the future activities.

For Imus and Kawit, The development and conduct of the project activities in Imus and Kawit were evaluated in terms of the factors indicated below.

Table 7.1 – Sample of Evaluation Indicators

1) Relevance -	Evaluate whether the Information and Education Campaign (IEC) activities are significant in the solid waste management and flooding programs in the two municipalities;
2) Effectiveness -	Evaluate how the results of the IEC program could contribute towards promoting appropriate solid waste disposal practices and minimize adverse effect on flooding;
3) Efficiency -	Evaluate adequacy of the quality and quantity of the IEC implemented;
4) Impact -	Evaluate the positive and negative impacts of the IEC campaigns in addressing solid waste and flooding; and
5) Sustainability -	Evaluate whether the IEC program and its consequent benefits would continue after the completion of the pilot activities.

Similarly, evaluation and assessment for the extension program, i.e. community workshop held in the five municipalities, assessment and evaluation forms were prepared and utilized during the final evaluation. The assessment and evaluation form is presented in **Annex V**.

8. Conclusion and Lessons Learned from the Activities

This manual recommended to scaled-up the lessons learned and positive experiences to other study site of the JICA Study Team or to other inundated communities within the 5 targeted municipalities which was not able to touch because of the short span of time. Likewise, indicators be formulated focusing on the policy or regulatory level, organizational or institutionalization level, operational or enforcement level, and performance level of the barangay and of the LGUs.

In the development of action plan, the local government should plan waste management in a strategic way not only take technical or financial-economic sustainability but also includes socio-cultural, environmental, institutional and political aspects that will influence the overall sustainability of waste management. Documentation of local initiatives and efforts made by the barangay is also recommended to have proper monitoring and evaluation of the study site.

Conclusion and lessons learned have been categorized into four issues: technical capacity, environmental awareness, financial/economic capability and social-cultural enhancement.

8.1 Technical Capacity

1. The local government must adapt systems adapted to the physical environment, as much as possible use bio-degradable materials;

2. The government (barangay and municipal) shall passed ordinance or resolution pertaining to proper waste management in lieu of R.A. 9003, and will mandate not to throw garbage to the adjacent rivers, creeks and other waterways to avoid clogging;

3. The government should provide other alternatives which is durable, of good quality, an has a long expected life time;

4. Based on the discussion with the barangay officials during the community workshop, most of them mentioned that, prioritizing the issues and development of working financial plan is one of their weaknesses. That is why often times, they still need the technical assistance of the municipal or provincial government to discuss with their constituents the details and implementation of the existing policies and ordinances for their municipality; and

5. In order to have a full participation of the general public to any activities and programs to be implemented by the local government, it is highly recommended to develop information campaign materials so as to inform or maximize the information dissemination in the target community.

8.2 Environmental Awareness

1. Most of the participants from 5 municipalities made mentioned that they often times throw their garbage and dead animals to the rivers and elsewhere because according to them the environmental awareness program of the local government is weak and not sustainable;

2. Dispose of remaining waste in a controlled manner, not just throwing to the nearby rivers or waterways;

3. Treat waste and recover resources as close to the source as possible to help the government lessen the volume of waste to be collected by the garbage collectors;

4. Protection of the river from landslide and overflowing doesn’t only mean proper waste management but also planting trees along the riverbanks;

5. Inner attitude (positive) must bring and exercise not only during or every workshop instead spread it and use it outside to be a good advocates;

6. All public officials should be a model in enforcing the proper waste management;

7. The government must provide mechanisms to involve all stakeholders in planning and implementation, specially weaker and underprivileged groups, and to increase their influence on decision-making;

8. Be responsible individual to know the plans and programs of the local government for environmental protection and conservation. Frequently ask questions and be an active partner; and

9. The local government and or barangay must have a continuous IEC program, by having a regular community meeting and seminar to inform their constituents about the updates and programs of the agency concerned and the participation necessary from the community.

8.3 Financial/Economic Capability

1. Analyze and plan financing at the system level. Do not isolate different specific operations since the costs of management may be incurred in one area while the benefits may be counted in another;

2. Quantify system costs and benefits fully and in consultation with stakeholders, these should include positive and negative externalities;

3. Base financial and economic decisions on full knowledge, complete information with transparency, accountability and participatory decision-making; and

4. Identify all possible tie-up sectors within the target area and spread responsibility for system financing and operations between them.

8.4 Social-Cultural Enhancement

1. Develop, pass and implement law which is fair to all strata of the population regardless of ethnic, cultural and religious or social background;

2. Communities will able to participate in decision-making on the level of the project development, and quality and required budget in a certain project or activity to be implemented by the local government;

3. Use management model or strategies that is acceptable to the communities with proper consultation with them; and

4. All negative attitudes towards environment must be thrown away.

Annex I
Sample Questionnaire Survey Sheet

A STUDY ON THE COMPREHENSIVE FLOOD MITIGATION FOR THE CAVITE LOWLAND AREA IN THE REPUBLIC OF THE PHILIPPINES

Questionnaire Survey Sheet for the Local Government Units (Community-Based Flood Management)

Sample No. LGU - _____

Respondent : _____ (Name of Respondent)

Date : *Month* _____ / *Day* _____ / *Year* _____

Position: _____

Name of Interviewer _____

Municipality : _____

Q1 Background Information: Mandated Function and Organizational Structure

1-1 What are the main activities of your office in relation to flood management? (e.g., coordination with MDCC, regular meeting, evacuation drills, etc.)

_____

_____

1-2 Organizational chart: __Available __Not available (to be provided in a separate sheet, if available):

1-3 What are the responsibilities of each department (division) and number of employees involved in flood management?

Division	Responsibilities/Tasks	Number of Employees

1-4 Are the staff involved in flood management technically equipped or have received training in disaster preparedness and response? If yes, please describe briefly the training provided.

_____

_____

Q2 Institutional and Legal Aspects of Flood Management

2-1 What legal instruments relevant to flood management and can influence public participation, are available in the municipality (e.g, disaster management laws, land use plans and ordinances that regulate development, building codes and environmental laws)?

_____

_____

2-2 Are these strictly enforced? __Yes __No
If no, why not? _____

2-3 In your municipality/community, who are the key leaders actively involved in flood disaster management? Please select all involved players.

- ☐ Municipal mayor
- ☐ Municipal disaster coordinating council (MDCC) officers
- ☐ Municipal fire fighting department
- ☐ Private companies and other organizations
- ☐ Non-governmental organizations and other volunteers.
- ☐ Others (please specify): _____
- ☐ There is no one actively involved in flood disaster in the community.

2-4 Do you keep in touch with the MDCC or any other disaster coordinating agencies, even during non-disaster periods? Please select one.

- ☐ Yes, we have regular contact and are prepared for disasters
- ☐ Yes, we keep in touch occasionally
- ☐ We only keep in touch when necessary
- ☐ We have not established communication with MDCC or other disaster coordinating agency

2-5 Do you coordinate with the provincial government or other nearby municipalities during the normal/non-disaster periods in order to establish communication and conduct disaster preparation activities with them? Please select one.

- ☐ Yes, we have regular contact and are prepared for disasters
- ☐ Yes, we keep in touch occasionally
- ☐ We only keep in touch when necessary

- ☐ We have not established communication with them

2-6 Based on the previous questions, if you have established links with MDCC or other disaster coordinating bodies and other LGUs, how are the respective roles and responsibilities delegated?

_____

_____

If there are no links , please cite the reason.

_____

_____

Q3 Disaster Preparedness, Relief, and Recovery Activities

3-1 How would you describe occurrences of flooding in the municipality in the recent years (e.g. worsened, more frequent, etc.)?

_____

_____

3-2 Do you have flood hazard map for your municipality/community?

- ☐ Yes and I have seen a detailed flood hazard map.
- ☐ Yes but it is not a detailed flood hazard map.
- ☐ I do not know because I have not seen any flood hazard map.
- ☐ We do not have flood hazard map.

3-3 In the next 5 years, what is the possibility of having a severe flood disasters causing loss of lives, damage to property and decreased purchasing and production power? Please select one.

- ☐ There is a large possibility of having flood disaster.
- ☐ There exists some possibility of having flood disaster.
- ☐ There exists low possibility of having flood disaster.
- ☐ There is no possibility of having flood disaster.
- ☐ I don't know.

3-4 Is there a flood management or an emergency preparedness plan being followed in the municipality? __Yes __No

If yes, how well are they followed?

- ☐ not at all
- ☐ only during some occasions of floods
- ☐ about half of the time
- ☐ almost all occasions

- □ almost all occasions with drills performed during non-flood season
- □ all occasions with drills performed all-year round

3-5 During the past 2-3 years, have you implemented any flood disaster related preparation activities in your municipality? Select all applicable.

- □ We have discussed within the municipality on what to do during flood
- □ We have conducted meetings and seminars on flood management
- □ We have designated a core group to lead the flood management
- □ We have a monitoring and inspection system to check the danger zones/hazardous areas against floods
- □ We keep ourselves informed of weather conditions such as rainfall and strength of the wind and wind direction as well as water level in the rivers.
- □ In order to determine evacuation center, we have searched for a high-elevation area
- □ For those companies and individual families in high-rise buildings, we have requested for their cooperation to accept evacuees during floods
- □ We have established a communication and early warning system
- □ We have established an evacuation system during floods
- □ We have established an evacuation system for the elderly and handicapped people during floods
- □ We have stockpiled emergency materials (e.g. sand bags, food, water, etc.) necessary during flood
- □ We have prepared (or currently preparing) flood hazard map
- □ We have made no preparations at all

3-6 How many people participate in above flood preparation exercises in your community? Please select one.

- □ Almost all community members participate
- □ Many of the community members participate
- □ About half of the community members participate
- □ Only some of the community members participate
- □ Nobody participates

3-7 In your municipality/community, which of the following drills do you organize? (Note that some drills may be organized by national or provincial agencies) Please select all applicable ones.

- □ Drills to operate communication equipment
- □ Drills to obtain and analyze data related to river (water level) and disaster situation
- □ Drills for residents to evacuate to higher buildings and evacuation centers
- □ Emergency flood-proofing drills such as sandbagging
- □ Drills to rescue people left in the households during the inundation
- □ Drills to evacuate residents and their belongings by boat

3-8 During the recent drills conducted, approximately how many people from your community participated? Please choose one.

- □ Almost all the community residents participated
- □ More than half of the residents have participated
- □ Approximately half of the residents participated
- □ Less than half of the residents participated.
- □ Only the key officials have participated.
- □ We have not conducted any drills

3-9 During the rainy season or heavy rainfalls which may induce flooding and flood damages, what initiatives has been undertaken in your community? Please select all applicable.

- □ Conducted inspection along rivers, creeks, river dikes and drainage facilities to check the risk of flood occurrences
- □ Obtained rain and other weather information from PAGASA
- □ Coordinated with the municipal disaster coordinating council
- □ Coordinated with other officials within the municipality
- □ If the situation is considered critical, officials in the municipality gather at Municipal office voluntary
- □ Collected hydrological information such as rainfall or water level of the surrounding area and the river system
- □ Conducted flood-proofing activities such as sandbagging works
- □ Relocated important belongings of the Municipality to higher grounds
- □ Issued warnings to the residents where flood may occur
- □ Others: please specify

  _____

3-10 What flood control and risk reduction related activities are currently undertaken (e.g. river cleaning program, information and education campaign for waste management)? (Name of the program/project and their principal features with list of sites and location map, if available)

_____

_____

_____

3-11 Who issues the warnings and evacuation orders?

_____

3-12 How are the issuance of warnings and evacuation orders decided (i.e., the determinants when evacuation is necessary)?

_____

_____

3-13 If you or any municipal official became aware that risk of flood occurrence is high, whom would you inform first? Please select the most appropriate one.

- ☐ Municipal government office
- ☐ MDCC or other disaster coordinating council
- ☐ Hospitals or welfare institution within the municipality
- ☐ National and provincial government offices

3-14 What means of communication would you use to inform all residents in the flood risk area at once? Please select all applicable in your community.

- ☐ Community wireless system receiver available in case of disaster in the community
- ☐ Community wireless system speaker or cable system. Land-line telephone.
- ☐ House-to-house visit of barangay officials to all community members.
- ☐ Individual telephone calls of barangay officials to all community members.
- ☐ Individual visit of municipality officials to all community members
- ☐ Siren, bells, and warning vehicles
- ☐ TV and/or radio
- ☐ Other means (please specify):
  _____

3-15 In case of the high possibility of flood occurrence, would your municipality or disaster coordinating council order residents in the flood-areas to evacuate? Please select one.

- ☐ Yes, we will definitely tell them to evacuate.
- ☐ We may tell them to evacuate.
- ☐ No, we may not tell them to evacuate.
- ☐ No, we cannot tell them to evacuate.

3-16 Describe the preparation for evacuation routes and evacuation places in your municipality. Please choose all applicable.

- ☐ Evacuation marshals have been appointed and trained to assist the residents
- ☐ A number of safe routes leading to the evacuation sites/shelters have been selected
- ☐ The evacuation sites are situated in high-ground, away from flood-prone areas
- ☐ The residents are informed of the location of the evacuation centers
- ☐ There are evacuation sites but the evacuees have to go there on their own

- ☐ There are no suitable evacuation centers in the community

3-17 Are the evacuation routes leading to the shelters appropriate and safe? Choose one

- ☐ Yes, there exists safe evacuation route.
- ☐ There are some dangerous areas or difficult-to-walk area in the designated evacuation route.
- ☐ There are few easy-to-walk areas in the designated evacuation route.
- ☐ There exist no safe evacuation route.

3-18 In case of flood occurrence, if the flood evacuation warning is issued to residents in flooded areas, how many people will actually be evacuating?

- ☐ Almost all residents in the flooded area
- ☐ Majority of the residents
- ☐ About half of the residents in the flooded area
- ☐ There will not be many people who will evacuate

3-19 If your community actually gets flooded, what are the activities you will perform in the first 3 days?

- ☐ Seek missing people
- ☐ Go around community and check whereabouts of the residents
- ☐ Check the whereabouts of the handicapped and elderly community residents and assist them
- ☐ Rescue the stranded people in the flooded area by boat
- ☐ Assist the people in the area by providing warm food and other necessities
- ☐ Assist the staff in the evacuation center
- ☐ Manage evacuation center
- ☐ Others (please specify): _____

3-20 What are the major problems/difficulties encountered in relation to flood management in the community?

_____

_____

_____

_____

3-21 Do you have any ideas, proposals, and/or requests that can enhance/improve the existing warning and evacuation system?

_____

_____

_____

3-22 What post-flood recovery and rebuilding activities are undertaken to assist the affected communities?

_____

_____

Q4 Budgetary Allocation// Resource Mobilization

4-1 How much is an annual budget for construction of flood management structures and disaster mitigation activities in last 5 years? (with breakdown, if available)

Year 2002 :	Pesos _____	Total	Pesos _____
Year 2003 :	Pesos _____	Total	Pesos _____
Year 2004 :	Pesos _____	Total	Pesos _____
Year 2005 :	Pesos _____	Total	Pesos _____
Year 2006 :	Pesos _____	Total	Pesos _____

4-2 How much is the average annual budget for disaster preparedness and relief activities?

(1) For disaster preparedness : Pesos _____/ year

(2) For relief activities : Pesos _____/ year

(3) Source of budget : _____

4-3 Aside from the local and national government allocations, are there any additional or supplementary sources of funds (or even non-monetary/in-kind support) for flood management programs?

_____

Q5 Existence of Non Government Organization (NGOs) in the Community

5-1 Are there any NGOs in the community involved actively community-based flood management activities? If yes, please provide the NGO name and their specific activities in the community.

_____

_____

5-2 Number of years of NGO operations:_____ years

5-3 Is the NGO working at the barangay level?

_____

5-4 Is the NGO involved in environmental activities? If so, please describe these activities.

_____

_____

Q6 Solid Waste Management

6-1 How are garbage disposed in the community?

_____

6-2 Is there a solid waste management plan in the community? If yes, what are the major components?

_____

_____

_____

6-3 If there is a solid waste management plan, was the plan implemented?_____

_____

6-4 What actions have been undertaken to control garbage disposal and dumping into the drainage and river systems?

_____

_____

_____

////////////////////////////////***Thank you very much for your cooperation***////////////////////////////////

Annex II
Sample of Program Schedules

Appendix II.1 Tentative Work Schedule for Pilot Project in Imus

No.	Activities/Projects	Resp.	Schedule	Oct 07	Nov 07	Dec 07	Jan 08	February 2008																																		
								F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F	S						
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	1					
A.	**IEC OF 26 Barangays along Riverbanks**																																									
1	Preparation of Module for Trainers' Training		Oct-07																																							
	1.2. Progress Monitoring	CCK																																								
2	Trainors' Training	SCC/SIRP	Nov-Dec 2007																																								
	2.1. Selection of Trainors	SIRP/SCC	Oct, 2007																																								
	2.2. Actual Training of Trainors	SCC	Nov-Dec 2007																																								
	2.3. Progress Monitoring	CCK																																									
3	Development of training materials per target group	SCC/SIRP	Jan-08																																								
	e.g. barangay leaders, residents, youth, mothers,																																									
	business sectors, schools, etc																																									
	- Progress Monitoring	CCK																																									
4	Conduct of actual IEC per target group	SCC/SIRP																																									
	4.1. Anabu 1-A, 1-C,1-E,1-F,1-G		Feb 2. 200																																								
	4.2. Anabu II-B, II-C, II-D, II-E,II-F		Feb 2. 2008																																								
	4.3. Palico 1,2,3,4		Feb.9, 2008																																								
	4.4. Poblacion I-A, I-B, II-A		Feb. 16, 2008																																								
	4.5. Tanzang Luma I,II,III,IV,V,VI		Feb. 23, 2008																																								
	4.6. Toclong I-C, II-A,II-B		March 1, 2008																																								
B	**Riverbank Enhancement**																																									
1	Establishment of nursery plant co-managed by	SCC/LGU/	Oct. 2007																																								
	community members	SIRP																																								
	- Progress Monitoring																																									
2	Tree Planting (simultaneously with the river clean	SCC/LGU/																																								
	2.1. Anabu 1-A, 1-C,1-E,1-F,1-G	SIRP	Feb 2. 200																																								
	2.2. Anabu II-B, II-C, II-D, II-E,II-F		Feb 2. 2008																																								
	2.3. Palico 1,2,3,4		Feb.9, 2008																																								
	2.4. Poblacion I-A, I-B, II-A		Feb. 16, 2008																																								
	2.5. Tanzang Luma I,II,III,IV,V,VI		Feb. 23, 2008																																								
	2.6. Toclong I-C, II-A,II-B		March 1, 2008																																								
C.	Monitoring & Evaluation of the Project for its	LGU/	March ,08																																								
	Effectiveness ans Sustainability	SCC/SIRP																																								

SIRP Save Imus River Project
SCC Sagip-ilog Cavite Council
CCK C. C. Keiyo
JICA Japan International Cooperation Agency Study Team
LGU Local Government Unit

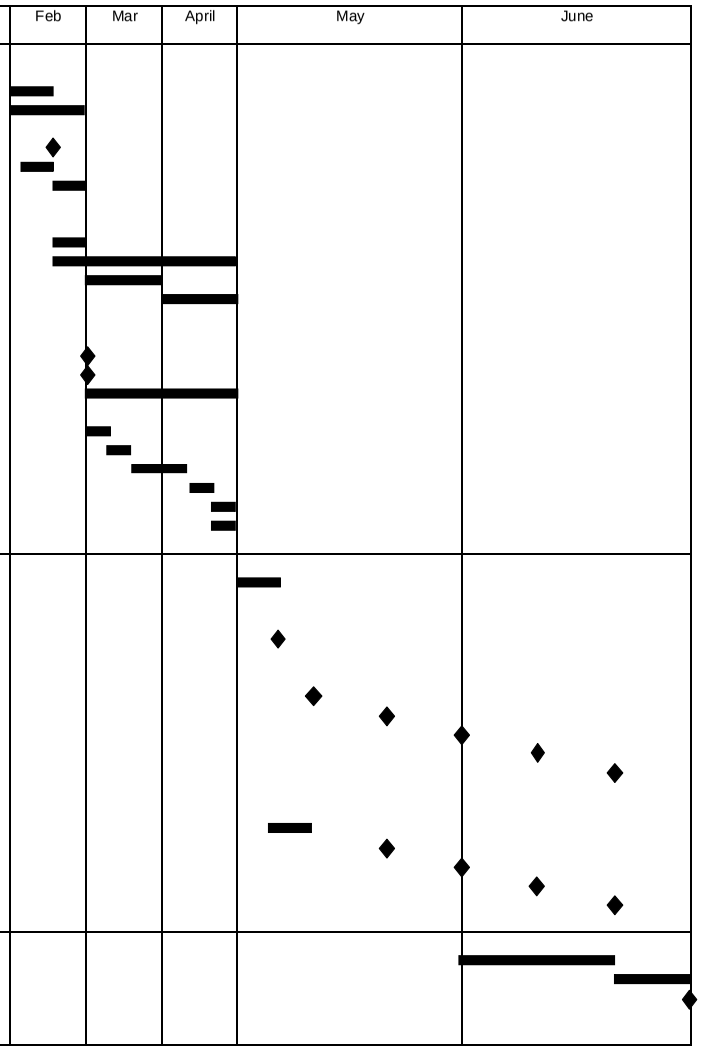
Appendix II.2 Tentative Work Schedule for Pilot Project in Kawit

No.	Activities/Projects	Resp.	Schedule	Oct 07	Nov 07	Dec 07	Jan 08	February 2008																																	
								F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F	S	S	M	T	W	TH	F						
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29					
1	Preparation of Module for Trainers' Training		Oct-07																																						
	1.1 Draft Module & Seminar Material Preparation	KSI	1-10 Oct '07																																						
	1.2 Review of Draft Module & Seminar Material	SICC	11-20 Oct '07																																						
	1.3 Finalization of Module/Seminar material	KSI	21-31 Oct '07																																						
	1.4 Progress Monitoring	CCK	Oct-07																																						
2	Preparation of Comic Reading Materials																																								
	2.1 Draft Design & Layout preparation	KSI	Nov. 2007																																						
	2.2 Review of Draft Design/Layout	SICC	Nov. 2007																																						
	2.3 Sample printing	KSI	Dec. 2007																																						
	2.4 Review of Sample Prints	SICC	Dec. 2007																																						
	2.5 Progress Monitoring	CCK	Nov/Dec 07																																						
3	Printing of Comics Reading materials	KSI/JICA	Jan-08																																						
	- Progress Monitoring	CCK																																						
4	Trainor's Training	KSI	Nov-Jan 08																																						
	- Continuous from Nov 07 to Jan 08																																							
	- Progress Monitoring	CCK																																						
5	Printing of Materials for Seminar Workshop	KSI/JICA	Jan-08																																						
	- Progress Monitoring	CCK																																						
6	Workshop/Seminar	KSI	Feb-08																																						
	- Assistance/Monitoring	SICC/CCK																																						
	February 4 - Marulas		Monday																																						
	February 7 - Kaingen and Poblacion		Thursday																																						
	February 11 - Wakas 1 & Wakas 2		Monday																																						
	February 14 - Sta. Isabel		Thursday																																						
	February 18 - Panamitan		Monday																																						
	February 21 - Gahak		Thursday																																						
	February 25 - Tabon 1,2 & 3		Monday																																						
	February 28 - Binakayan		Thursday																																						
7	Distribution of Comics reading Materials	KSI	Feb-08																																						
	- Distribution Monitoring	CCK																																						

KSI Kawit Sagip Ilog
SICC Sagip Ilog Cavite Council
CCK C. C. Keiyo
JICA Japan International Cooperation Agency Study Team

Appendix II.3 Tentative Work Schedule for Extension Project

ACTIVITIES	RESP	REMARKS
A. PREPARATION STAGE		
1. Project Formulation		
1.1 Team organized (provincial level), Discussed with PG-ENRO	PG-ENRO	Meeting (Food)
1.2 Preparation of the Concept	PG-ENRO	Kawit, Imus documents discussed.
1.3 Clustering of barangay's	LGU	
1.3.1 Discuss with PPDO/MENRO of 5 LGUs	PG-ENRO	Discussed on Feb 20 at Taal Vista
1.3.2 Prepare/Distribute Municipal Inundation Map	JICA	Distributed during the meeting
1.3.3 Obtain Representative Barangay Cluster	LGU, PG-ENRO	Receive from LGU by 29 Feb 08
2. Project Proposal Preparation		
2.1 Work plan and budget developed	PG-ENRO	
2.2 Funding secured from local and provincial government	PG-ENRO, LGU	
2.4 Presentation of Proposal to JICA HQ for approval	JICA	
2.5 Funding secured from JICA, LGU and Prov'l. Government	JICA	
3. Development of IEC Materials and Module		
3.0 Consultative meeting with LGUs on IEC Material/Module	PG-ENRO, LGU	
3.1 Explanation to LGUs on preparation of IEC Material/module by LGUs	PG-ENRO	
3.2 Preparation of IEC Materials	LGUs/PG-ENRO	To be guided by PG-ENRO
3.2.1 Training Module		
3.2.1a Review of past and present IEC activities on solid waste		
3.2.2b Conduct Training Needs Assessment (TNA)		
3.2.3d Development of training modules		
3.2.4e Logistical preparation		
3.2.2 Development and lay outing of leaflet	PG--ENRO, PIO	
3.2.3 Identification of Resource persons		
B. IMPLEMENTATION STAGE		
1. Briefing of Preparation Status to JICA	PG-ENRO	
2. Workshop/Seminar		
2.1 Training of Trainers on Community Workshop	PG-ENRO/LGU	5 reps per LGU
2.2 Community Workshop		
2.1.1 Tanza	LGU/Brgy	
2.1.2 Rozario	LGU/Brgy	
2.1.3 Noveleta	LGU/Brgy	
2.1.4 Bacoor	LGU/Brgy	
2.1.5 Gen Trias	LGU/Brgy	
3. Support to Oplan Linis		
3.1 Tanza - Printing of Leaflet		
3.2 Rosario - Simultaneous Barangay clean-up		
3.3 Noveleta - Mangrove Planting		
3.4 Bacoor - Barangay competition using recyclable materials		
3.5 Gen. Trias - Poster making contest (secondary school level)		
C. EVALUATION AND REPORTING		
1. Report submitted to PG-Enro	LGU	
2. Assessment, evaluation and recommendation	PG-ENRO	
3. Submission of Reports to JICA	JICA	



PG-ENRO Provincial Government - Environment and Natural Resources Office
LGU Local Government Units)
JICA Japan International Cooperaiton Agency/Study Team
Brgy Selected Barangay Cluster (Community Representative)

Annex III
Sample of Workshop Programs

The Study on Comprehensive Flood Mitigation for Cavite Lowland Area

Trainor's Training for Solid Waste Management

PROGRAMME

Day 1

Morning Session

08:00 – 08:30	Registration	
08:30 – 09:00	Invocation	
	National Anthem	
	Inspirational Message	Mr. Rolinio P. Pozas PG-ENRO
09:00 – 09:15	**Overview of the Project** Mr. Jun Matsumoto JICA Study Team	
09:15 – 10:30	**Module 1: Self Assessment: Who Am I for the Environment?** Ms. Emma Caparas	
10:30 – 10:45	Coffee Break	
10:45 – 12:00	**Module 2: Introduction on Solid Waste Management** Ms. Eva Pangilinan	
12:00 – 1:00	Lunch Break	

Afternoon Session

01:00 – 02:30	**Module 3: The Target Community** Ms. Anabelle L. Cayabyab	
02:30 – 02:45	Coffee Break	

02:45 – 04:30	**Module 4: Community Involvement** Ms. Anabelle L. Cayabyab
04:45 – 5:15	Summary

Day 2

Morning Session

08:00 – 09:30	**Module 5: Cash from Trash** Mr. Dong Torres and Ms. Emma Caparas
09:30 – 10:30	**Module 6: Development of Trainor's Action Plan** Ms. Anabelle L. Cayabyab and Mr. Jun Matsumoto - Overview on how to develop action plan - Sharing of experiences and lessons learned.
10:30 – 10:45	Coffee Break
10:45 – 12:00	**Module 6: Development of Trainor's Action Plan (cont'd)** - Group work on development of municipal action plan
12:00 – 01:00	Lunch

Afternoon Session

01:00 – 2:00	Summary **Closing Remarks** Mr. Jun Matsumoto

Ms. Anabelle L. Cayabyab
EMCEE

Annex IV
Trainer's Training Module on Solid Waste Management

Trainor's Training Module on Solid Waste Management

Produced by the Provincial Government of Cavite, and Study Team of Japan International Cooperation Agency (JICA), under the Study on Comprehensive Flood Mitigation for Cavite Lowland Area in the Republic of the Philippines. May 2008

Table of Contents

About the Module

The Solid Waste Management Module for the Trainer's is the result of the Master Plan Study on Comprehensive Flood Mitigation for Lowland Area of Cavite and the first and the second phase of implementing the non-structural measures.

Based on the baseline surveys, solid waste management is one of the biggest problems of the Local Government Units (LGU's). Management System according to the community is very poor specifically in terms of collection and disposal of garbage. Waste that has been dumped in waterways contributes to the heavy flooding in the lowland areas of Cavite. Since then, project activities were implemented first at the municipalities of Imus and Kawit, thereafter for the municipalities of General Trias, Bacoor, Noveleta, Tanza and Rosario

This guide provides a description and monitoring approaches covering not only proper waste management at the community or barangay level but also a series of interdisciplinary activities and support materials that focus on the often complicated technical approaches, empowering the environmental awareness of the environmental educators and emphasizing the policy issues related to solid waste management.

The guide is also intended to assist the local government in preparing their solid waste management action program, execute the result of the Trainer's Training Seminar, educate the targeted community regarding waste minimization and proper management, and advocates the community on the implementation of the existing environmental laws and policies. A tool to enhance the understanding of the trainer's on eco-governance through transparency, accountability and participatory decision-making.

Each module contains the detailed examination on the approaches and strategies, wrap-up activities for the groups to develop their skills in critical thinking, problem solving and decision-making to properly integrate with the target communities.

This Training Guide has 5 major modules:

- Module 1: Self Assessment: Who am I for the Environment?
  - Topic: What is My Responsibility?
- Module 2: Introduction on Solid Waste Management
  - Topic: Ecological Solid Waste Management Act
- Module 3: The Target Community
  - Topic 1: Strategies in Choosing the Target Community
  - Topic 2: My Contribution to Waste Generation and Reduction
- Module 4: Community Involvement
  - Topic 1: The Role of Individual
  - Topic 2: Choosing the Right Options in Solid Waste Management
  - Topic 3: My Commitment for Solid Waste Management
- Module 5: Development Trainer's Action Plan

The distinctive principles that need to be materialized in the 5 modules is to have a strong mass-based stakeholders involvement to promote transparency in the implementation and develop sense of ownership of the project by the stakeholders.

Background of the Study

In the 1990's Cavite aggressively took the challenge of achieving the industrial revolution competing with other provinces in Southern Tagalog Region and even in the whole country. Started as a province that solely depends on agriculture has expanded into a center for industrial and commercial development assertively transformed itself to a highly commercialized province which is haven for number of industrial estates.

Cavite as a center for thriving commerce has a lot of business establishments aside from industries. Due to nearness to Metro Manila offering a lot of job opportunities, influx in population became the number one issue.

Based on the study and researches, population growth directly affects the generation of solid waste of the province which is the most widespread threat land-based pollutant to the environment and may cause direct human health risks.

In the Study on Comprehensive Flood Mitigation for Cavite Lowland Area, it was identified that one of the causes of flooding is due to clogging of solid waste in canals and rivers. Solid wastes are being dumped into the rivers from upstream to downstream along the riverbanks.

Under the Study, the implementation of non-structural measures for the remaining 5 target municipalities includes:

- Reviewing of existing laws and ordinances;
- Assessing and evaluating the policies and ordinances passed by the LGUs;
- Implementation of capacity building programs to enhance the knowledge and participation of the communities;
- Development of Information Education Materials (IEC) to effectively informed the general public about the solid waste management and its contribution in flooding; and
- Implementation of on-the-ground projects to promote partnerships and involvement among key sectors specifically the communities.

All the above component of non-structural measures have been implemented among the Provincial Government of Cavite, JICA Study Team and the Municipal as well as Barangay officials, because technical solutions alone may not be enough to overcome the challenges of Solid Waste Management (SWM), ensuring that good governance is part of environmental management.

Module 1
Self Assessment: Who am I for the Environment?

Rationale

Accomplishment in any field depends on the attitudes, understanding, decisiveness and values with which the individual acts. The act of selling, winning on election, managing an organization, negotiating an agreement, or leading a group depend more for their success on the persons values, attitudes and decisiveness than on the skills which the individual possesses.

Objectives:

1. To pose the pivotal role of initiators/environmental educators in SWM; and
2. To get the full commitment of the participants as initiators/environmental educators.

Topic: *What's My Responsibility?*

There will be a 15 minute video presentation entitled ***"Letter Written in 2070"***. Participants will be given 15 minutes to answer the guide questions and 5 minutes to present their individual output.

Materials to be prepared:

Manila paper

Pentel pen

Paper

Pencil or ball pen

Audio visual equipment for video presentation

Guide Questions (15 minutes)**:**

1. What can you contribute to your barangay to avoid the same catastrophe as what you have seen in the video?
2. What do you think are your responsibilities as environmental educator?
3. Given your role in the community, up to what extent of commitment could you give as initiators?
4. Are you expecting something in return to your effort and initiative as initiators or environmental educators? What and Why?

Expected Output

1. Make participants realize their responsibilities as individual in the implementation of the program;

2. Participants committed to do their share and responsibilities for the environment; and

3. Participants to become active partner to advocate for the environment.

Module 2
Introduction to Solid Waste Management

Rationale

Today, legal regimes on SWM are being rapidly outdistanced by the accelerating pace and expanding scale of impacts on the environmental base of development. Human laws must be reformulated to keep human activities in harmony with the unchanging and universal laws of nature. There is an urgent need to recognize and respect the reciprocal rights and responsibilities of individuals and governments regarding SWM and to reinforce existing methods and develop new procedures for avoiding and resolving the challenges of SWM.

Module 2, discusses the new improve methods of policy implementation covering the three broad categories of policy instruments to address solid waste management:

1. policies that seek to harness the power of public information and participation; and
2. regulations and quantitative restrictions; and

In this module, the participants will take into consideration their pivotal role in addressing the never ending issues in solid waste management and on the other hand, for the local government realize if they will choose the use of regulation or force and or regulation plus force.

Objectives

1. To increase awareness of the participants more specifically the community on solid waste management;
2. To provide the participants with a knowledge on solid waste management concepts and issues;
3. To identify safer alternatives for some household hazardous products.

Topic: *Ecological Solid Waste Management Act*

With the progress of civilization, the waste generated became a more complex nature. The air not only gets more and more polluted but the earth itself became more polluted with the generation of non-bio-degradable solid waste. The increase in population and utilization was also largely responsible for the increase in solid waste.

Solid waste management is not just the responsibility of the government or our top local leaders. We must take part and do our share in saving the environment, since we are also a culprit to the country's garbage problem.

What is R.A. 9003?

Republic Act 9003 or the Ecological Solid Waste Management Act of 2000 was signed into law on January 26, 2001. The Law stressed out that solid waste must be reduced at source; recyclable materials must be recovered; and remaining waste, after recyclable and biodegradable materials have been separated and used, is to be disposed of properly.

Behind the R.A. 9003

1. Goals
2. Types of waste
3. The 3 R''s
4. The 5 Es
5. Penalties and sanctions
6. The Material Recovery Facility (MRF)

Materials

Different kind of household products

Copies of Table 1

Ball pen or pencil

Manila paper

Pentel pen

Group Activity (40 minutes)**:**

The participants will be grouped according to their municipality and will be given 30 minutes to answer the Table 1. Each group will be given 5 to 10 minutes to present their group output.

1. The facilitator will bring different kind of household products which the participants will identify 3 to 4 substances that they suspect might have harmful effects.

2. Read the label on each product. Set as much information about the product available.

3. For each product, list the ingredients, potential health effects, and possible substitutions. (Fill the table below).

Table 1 - Possible Substitutions for Household Toxics Worksheet

Product	Ingredients	Possible Effects	Substitutes

Module 3

The Target Community

Rationale

Every manager needs sufficient data to decide on what actions he or she is going to undertake to resolve a certain issue. Assessment is one of the major tools in identifying the status and qualities of a certain area.

In this module, the participants will be tasked to assess the environmental and physical characteristics of the target community in terms of population, standard of living, degree of solid waste management problem, plans and programs of the barangay or LGU regarding solid waste management, level of participation of the community and others.

Objectives:

1. Participants will be able to describe and analyze the solid waste situation in their communities;
2. Participants will be able to identify the solid waste management needs of the community; and
3. Participants will be able to find out the contributing factors in the current waste situation.

Topic 1: *Strategies in Choosing the Target Community*

Choosing the target community for pilot site requires a quality and logical analysis especially in terns of population, demography, culture and attitude of the people to be able to attain the proper and accurate management planning, high level of community involvement and right program implementation.

This topic seeks to build the skills of the participant in analyzing and assessing their community especially in terms of environmental issues from a local community to a global perspective. And likewise, identify the possible solutions and their contribution as key player for environmental management.

Materials

Manila paper

Pentel pen

Paper

Ball pen or pencil

Copies of Table 2

Group Activity (25 minutes)

1. The facilitator will discuss the importance of assessment and the steps on how to assess the target community for IEC implementation.

2. The participants will be grouped according to their municipality and will be given 20 minutes to answer the guide questions and Table 2. For the presentation of group work, 15 minutes will be allocated.

   Guide Questions:

   a. Why do we need to assess the proposed barangay?

   b. Identify the issues and problems of improper SWM?

   c. In your identified issues and problems what are the contributory factors?

   d. What are the needs of your community regarding the SWM?

Table 2 - Assessing the Proposed Target Community/Barangay

Characteristics	Issues on Solid Waste	Causes	Threats	Solutions/ Mitigations	Opportunities

Topic 2: My Contribution to Waste Generation

The design of this topic maybe modified to incorporate plenary activities between technical inputs and actual experiences of the participants on solid waste management. Assessment of the past and existing LGU activities, identification of issues and challenges of SWM and public participation and preliminary analysis of the result of the Study on Comprehensive Flood Mitigation for Cavite Lowland Area will be discussed.

It is possible also to integrate Module 2 with Module 3, where one of the objectives is the same and there are no planned intervening activities between the two modules.

Materials

Manila paper

Colored cartolina cut into several shapes

Pentel pen

Copies of My Garbage Can Diary

Ball pen or pencil

Paste or double adhesive tape

Group Activity (35 minutes)

My Garbage Can Diary

Copy of My Garbage Can Diary (Figure 1) will be distributed for each group in which they will make a list of the items the participants discard each day from Monday to Sunday. After listing the generated waste for the week, answer they will answer the guide questions. To complete the task, participants will be given 20 minutes.

1. During the time you bought the listed items, did you evaluate each one as to cost, convenience, durability, and environmental impact?

2. Did you notice how many pieces you thrown away?

3. Are you buying for the content or for the container or packaging?

4. Are you eating less process foods or less preservative?

5. In buying products did you consider if it is recyclable or non-biodegradable?

6. After using the plastic bags, what did you do, reuse it again or just throw it away?

7. In buying products are you always looking for the recyclable symbol or with the word *"recyclable or re usable"*?

For the group presentation, each group will be given manila paper to draw their garbage can diary and also cartolina (cut into several shapes) in which the listed items they identify in My Garbage Can Diary will be pasted. The group will be given 15 minutes to present their output.

Figure 1. My Garbage Can Diary (for group work)

Module 4
Community Involvement

Community involvement plays a vital role in improving environmental management. As political leaders respond to public demands for action to address environmental issues, actions such as information disclosure, community pressure and public participation are crucial in creating the political will to take effective action.

Building effective public participation is not necessarily easy to achieve. It requires new partnerships between governments, NGOs, community groups and other stakeholders. Tools need to be developed to help the poor to express themselves. As participatory approaches require new ways to carry out pilot projects and new funding mechanisms, they require capacity-building in the community-based management. Despite these daunting tasks, the evidence to date suggests that investing in public participation can pay large dividends in effective environmental management.

The final and perhaps most important consideration in designing regulations are credibility and sanctions. If regulations are not enforced then there is little incentive for firms and individuals to obey them. As such, when government environmental policies are not credible, then they will not meet their goals. In terms of sanctions for noncompliance, usually environmental legislation stipulates penalties that are either too weak (a small fine, for instance, which firms will happily pay rather than having to install abatement equipment) or too strong (closing the offending plant, creating strong political pressure for it to be reopened). Penalties for noncompliance must be proportionate and fair.

This module introduces the main ingredient of effective project implementation – **the public participation.** In many cases, the government's failure to achieve a successful project implementation is caused by weak linkages with the communities. People were not properly informed before and during the implementation of a certain project. A good environmental governance should have the characteristics of the three key elements: transparency, accountability and participatory decision-making.

Objectives:

1. Make the community understand their role in the project;

2. Provide the participants on the importance of proper management and connection with the communities as a support to decision making with regard to solid waste management; and

3. To establish partnership and governance between government and communities through transparency, accountability and participatory decision-making.

Topic 1. *The Role of Individual*

We only have ONE MOTHER EARTH
too precious to destroy
long after we're gone,
Earth must go on LIVING.

Tin-tin Bersola

The topic discusses the most meaningful and potent strategy in sustaining any environmental programs – the public participation. To attain the desired goal and outcome, we must encourage the individual to participate in any community environmental programs geared towards community development.

Engaging the Public

I. What is Public Participation?

II. What is need to be done to have a successful public involvement?

III. Three Key Element in Environmental Governance

- Transparency
- Accountability
- Participatory Decision-Making

Making Informed Choices

I. Increase the Role of the Scientific Community and the stakeholders

II. Recognizing the Rights and Responsibilities

Topic 2. *Choosing the Right Options in Solid Waste Management*

The proper, safe, cheap and environmentally waste disposal is becoming a major societal issue in the whole world because for example in the case of the Philippines many landfills are closing and others no longer meet the more substantial environmental restrictions.

Based in R.A. 9003, at the municipal level open dumping are now not allowed to operate due to its direct impact in the environment, for example the leachate that directly infiltrates into the soil.

In this topic, participants will be tasked to identify the action that need to be undertaken by the government and by the sector to mitigate if not solve the issue of solid waste management given the attitude of NIMBY or Not In My Backyard.

Materials

Copy of Figure 2

Copy of Table 3

Manila paper

Pentel pen

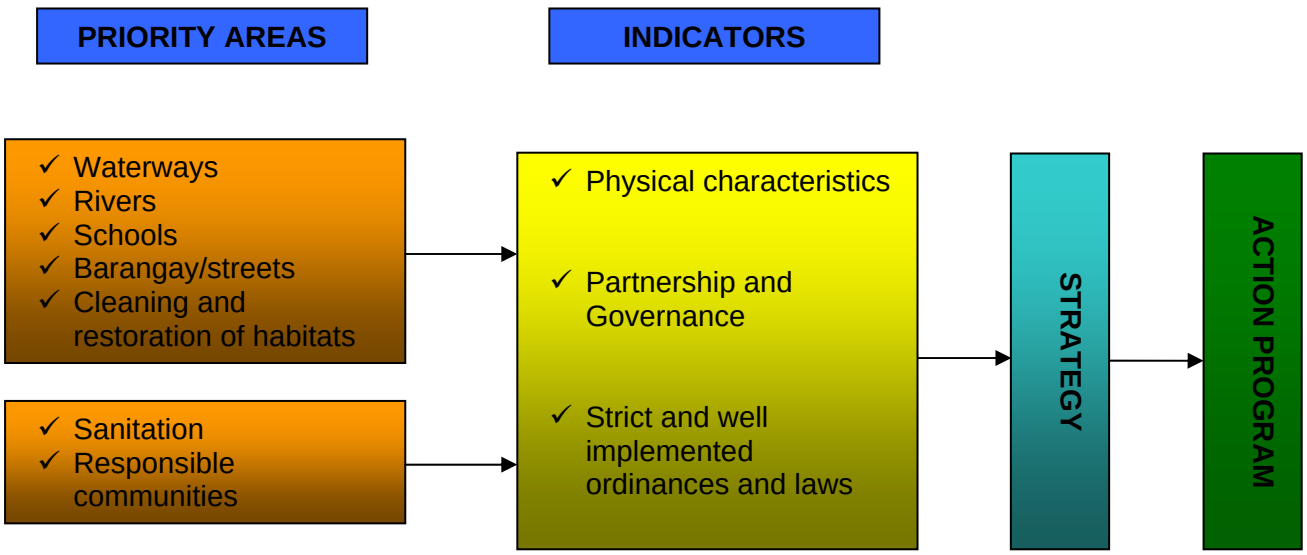
Ball pen or pencil

Paper

Group Activity (30 minutes)

The same groupings will be used to accomplish the group activity in this topic. In connection to Figure 3 the participants will be tasked to identify some possible programs or activities that are necessary to be implemented by the LGUs at the community level given the budgetary constraints, time and some hindrances to implement SWM.

Figure 2. Defining Activities and Projects



Topic 3. My Commitment for Solid Waste Management

Topic 3 focused on the strategy on how to get the full commitment of the participants in IEC for solid waste management at community level, exercising the essence of volunteerism.

In this topic, participants will be given a leaf made of sticker in which they will write their full name and the commitment that they could give as environmental educators or as one of the Trainer's for IEC on SWM. After writing their commitment they will paste their leaf in the Partnership Tree for Solid Waste Management.

The Partnership Tree for SWM will signify the full vow of the participants to be a key and active partner of the government as environmental educators or initiators.

Materials

Leaf made of Sticker

Tarpaulin of the "Partnership Tree for SWM"

Figure 3 - Partnership Tree for Solid Waste Management

Module 5
Development of Action Plan

Objectives:

1. To develop a two-month action plan in implementing the IEC and on-the-ground projects; and

2. To formulate methods and strategies in the implementation of Action Plan at the community level.

Ranking Action Programs

Review existing capacities for implementation

- Actions which local government and the communities can handle

- Action which will require assistance including

  a.) Training and capacity building

  b.) Technical Assistance and support

  c.) Livelihood opportunities and support

Budgetary Requirements

- Public Funds (LGU)
- Provincial Government
- JICA
- Private Sector
- Other donors

Materials

Copy of Table 3

Sample layout of IRR Tarpaulin of R.A. 9003

Ball pen or pencil

Manila paper

Pentel pen

Table 3. Defining timetable and financing for implementation of priority activities and projects
Year 2008

Action Program	Performance Targets	Time (Month)	Budget	Institution Responsible

Suggestions:

1. Make a slide presentation every module;
2. Make a draft program/invitation for the Trainer's of Training;
3. Suggested venue;
4.

Module Approach

Participants will be tasked to do a role playing on how to handle the negative attitude or acceptability of the community regarding the improper waste management. Given the existing situation of your community (attitude, culture, klase ng buhay. How you will convince the community to get involve and be a partner…

In many cases, the government's failure to achieve a successful project implementation is caused by weak linkages with the communities. People were not properly informed before and during the implementation of a certain project.
Building partnerships or linkages mobilizes the resources and energies of various players and sectors towards achieving a common goal.

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Annex V
Assessment and Evaluation Form

The Study on Comprehensive Flood Mitigation for Cavite Lowland Area

Assessment and Evaluation Form for the Community Workshop Conducted in the Municipalities of Gen. Trias, Tanza, Rosario, Noveleta and Bacoor

The Provincial Government of Cavite through PG-ENRO and JICA Study Team prepared the assessment and evaluation form to assess and determine in which areas the LGUs have strengths and weaknesses during the Community Workshop conducted in the municipalities of Gen. Trias, Tanza, Rosario, Noveleta and Bacoor.

This assessment guide will help both the province and the LGUs set achievable goals and prioritize key action plans to significantly evaluate the environmental performance more specifically on Solid Waste Management (SWM); intended to provide a set of examples to assess environmental program's status on SWM; prioritize goals; and assist in the development of an action plan; and collect baseline data. It may not, however, identify all possible opportunities in solving the flooding problem in the area due to solid waste but will probably give an indicator on what necessary action will be undertaken for pollution prevention and regulatory compliance.

In answering the guide questions, if you do not know the answer to a question, do not guess, instead, skip the question so as not to bias your results. Unanswered questions will be counted as missed to give you a better indication for your areas of weakness. Likewise, information that will be gathered in this form will enable you to document results and report successes.

To answer the question put check in the box provided and use other sheet if necessary.		
A. Implementation of Community Workshop		
1. Based on the lessons learned during the Trainor's Training Seminar in Puerto Azul, was your team able to deliver the Module on Solid Waste Management?	Yes	No
2. In your community workshop, was the team able to meet the expected or targeted output?	Yes	No
3. Were you able to develop a work plan for the sustainability and continuity of activities and programs for solid waste management and for the protection of the nearby rivers even without the JICA support?	Yes	No
4. Is there a sustainability or continuity program planned by your municipality and your barangay?	Yes	No

5. Are you satisfied with the performance of the target community you selected (in terms of level of participation, awareness, etc.)	Yes	No
6. Did the community actively participate during the discussion?	Yes	No
7. Are you willing to be evaluated if the workplan you answered in item no. 3 was implemented?	Yes	No
8. Are you still willing or planning to do the same workshop and strategies in choosing the target community?	Yes	No
9. Did you encounter problem(s) during the preparation and implementation?	Yes	No
10. With regards to the provincial Government and JICA Study Team did they meet your expectation? If no, why?	Yes	No
11. Do you have any suggestions to improve the training course and the workshop itself? If yes, what are your suggestions?	Yes	No
	Yes	No
B. Policy		
12. After the community workshop, do you have a waste management policy set for barangay level? When is your plan to process or implement it?	Yes	No
13. For the next one or two years are you planning to conduct pollution prevention, source reduction and environmental commitment at LGU and barangay levels?	Yes	No
14. Does your municipality have any swm municipal wide goals related to pollution prevention efforts, including but not limited to:		
❖ Waste volume reduction efforts	Yes	No
❖ Waste toxicity reduction efforts	Yes	No
❖ Solid waste segregation at Barangay level	Yes	No

15. Are you planning to have an Environmental Preferable Purchasing Policies and procedures that will assess and encourage the opportunities to use reusable items?	Yes	No
C. Education		
16. During the community workshop, what lessons did you gather which could be replicated to other LGUs or barangay's within your locality?	Yes	No
17. Will your municipality provide the same information strategy in schools and to other sectors?	Yes	No
18. After the community workshop, is proper waste management part of the employees and barangay officials job description in the near future?	Yes	No
19. Do you communicate your environmental success (in lieu of the past CW) with the community?	Yes	No
20. Do you have planned to share policies and procedures with other sectors?	Yes	No
21. Does your Department or municipality planned to develop more IEC materials which could actually target the household level?	Yes	No