ANNEX

ANNEX PIIB 9-1

BIOLOGICAL SURVEY IN ILOG-HILABANGAN RIVER

(1) Survey routes

The survey routes were selected as shown in Figure below.

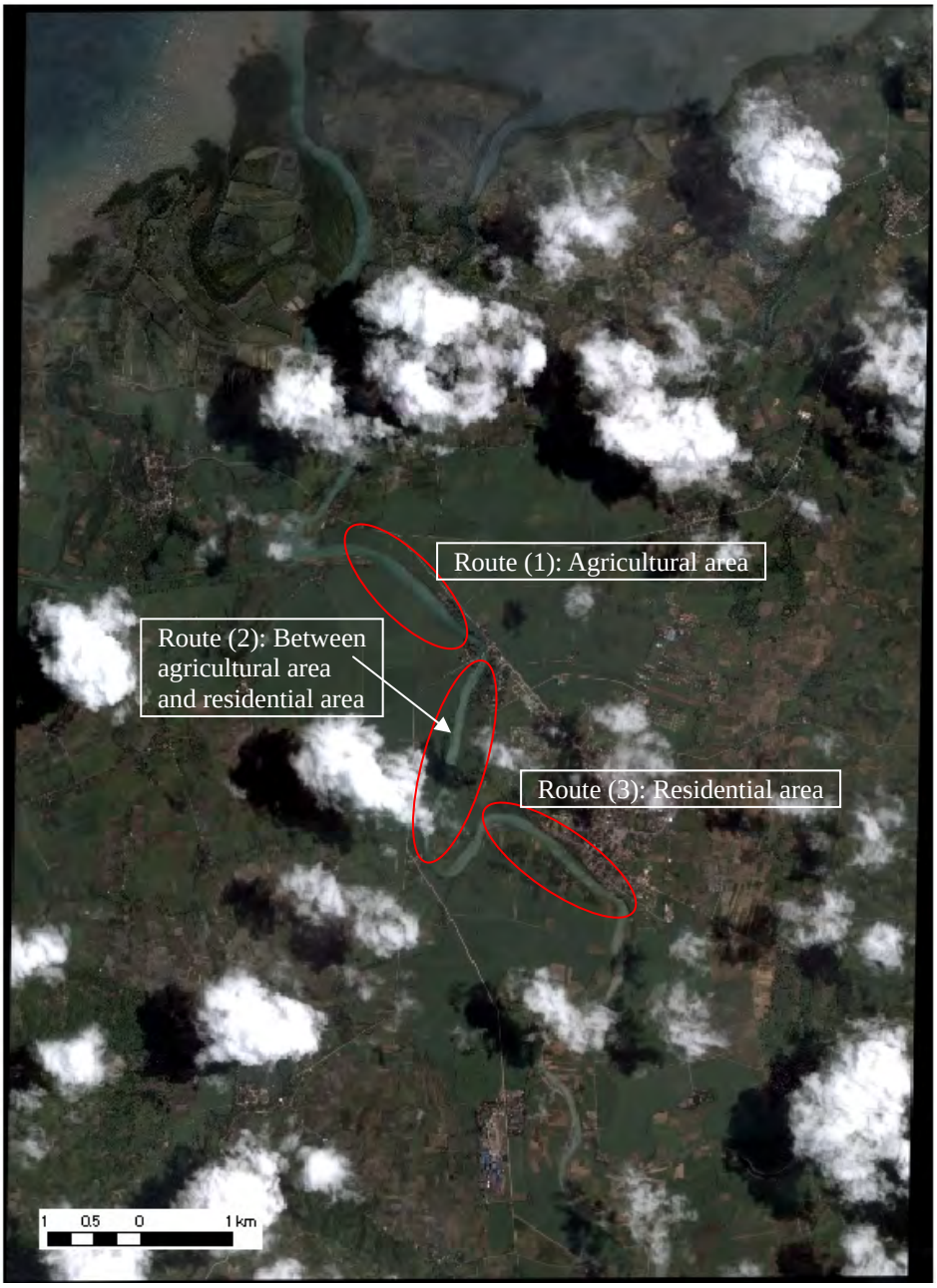

Figure 1 Survey routes

(2) Survey methodology

The survey was conducted based on 1) the eye-checking on the habitats/signs and 2) interview to the local residents.

(3) Collected data

(a) Flora

Generally, the project site was noted to be predominantly composed of residential abode, with commercial and built up areas. Areas along the river banks were found to have secondary growth of plant cover composed of grasses, shrubs, trees and some areas were planted with backyard vegetables.

Table 1.1 shows the plant species identified along the survey routes established in the Ilog-Hilabangan River sites along with their economic importance or uses. Most plant species found in the project sites have medicinal uses and their leaves and fruits are edible for human consumption.

Table 1.1 Collected Species in the Project Site (Flora)

Family	Common Name	*Scientific Name*	Uses
Tree species			
Fabaceae	Acacia (Rain Tree)	*Samanea saman*	Timber, shade
Muntingiaceae	Aratilis	*Muntingia calabura*	Fruits edible, leaves for tea, bark and leaves with medicinal uses, firewood
Poaceae	Kawayan (Bamboo)	*Phyllostachys sp.*	Timber, ornamental, food, with medicinal uses, fiber is used to make paper; used for fence-making, bridges, toilets, walking sticks, canoes, tableware, decorative artwork carving, furniture, chopsticks, food steamers, toys, bicycles, hats, and martial arts weaponry, including fire arrows, flame throwers and rockets
Myrtaceae	Bayabas (Guava)	*Psidium guajava*	Food, barks and leaves with medicinal uses, wood used for tool handle
Fabaceae	Camachile (Jungle jalebi)	*Pithecellobium dulce*	Food, bark with tannin, with medicinal uses
Palmae	Coconut	*Cocos nucifera*	Food, , leaves for roof thatch, midrib for brooms, source of oil, and flowers with medicinal uses
Annonaceae	Guyabano	*Annona muricata*	Food, timber and firewood, with medicinal uses
Fabaceae	Ipil ipil aka “Miracle Tree” due to its many uses	*Leucaena leucocephala*	High fodder value for ruminants; in cropping system, used as contour strips as erosion control; capable of producing a large volume of medium-light hardwood for fuel charcoal; used for parquet flooring and small furniture as well as for paper pulp; useful as windbreaks and firebreaks;
Ebenaceae	Mabolo/Kamagong (Velvet apple)	*Diospyros blancoi*	Food, timber (an endangered tree species and protected by Philippine law)
Anacardiaceae	Mangga (mango)	*Mangifera indica*	Food, wood for carving, leaves and bark with medicinal uses
Meliaceae	Neem tree	*Azadirachta indica*	Medicinal uses: pest and disease control, oil extract for cosmetic oils; important for its anti-desertification properties and possibly as a good carbon dioxide sink

Family	Common Name	*Scientific Name*	Uses
Common vegetation cover			
Convolvulaceae	Kangkong	*Ipomaea aquatica*	A common vegetable in Asian cuisine
Fabaceae	Centro	*Centrosema pubescens*	Grazed pastures in mixture with a grass, legume -only protein bank, cut-and-carry. Potential also as soil cover
Fabaceae	Karikuy-ritkuk	*Desmodium sp.*	Used for long-term pastures although it rarely persists permanently. It is also used in irrigated pastures, for conservation as hay and silage , for cut-and-carry systems, and as ground cover where the abundant leaf fall and slow decomposition result in a deep duff layer under the plants.
Fabaceae	Malabalatong	*Flemingia sp.*	Most commonly used in contour hedgerows for erosion control
Fabaceae	Madre de cacao	*Gliricidia sp.*	Living fences/hedges, cut and carry feed for ruminants, alley farming, protein banks, green manure , support, shade, honey, rodenticide, medicinal, firewood
Fabaceae	Makahiya	*Mimosa pudica*	With medicinal uses
Poaceae	Kulape	*Axonopus compressus*	Used as a permanent pasture, ground cover and turf in moist, low fertility soils, particularly in shaded situations
Poaceae	Humidicola or korniva	*Brachiaria humidicola*	Good for pasture and grazing, also as ground cover for control of erosion and weeds. Good nematode control.
Poaceae	Cogon grass	*Imperata cylindrica*	Uses include paper-making, thatching and weaving into mats and bags. However, its most common usefulness may be seen in its medicinal properties which include astringent, febrifuge, diuretic, tonic and styptic action; also used for grazing purposes
Poaceae	Guinea grass	*Panicum maximum*	Long term pasture if fertility maintained. Ideal for cut-and-carry, although bristly types may cause discomfort to forage collector. Suited to agroforestry due to shade tolerance. Reasonably palatable when mature, providing good roughage for use in conjunction with urea molasses licks. Has been used successfully for making silage and hay.
Poaceae	Talahib	*Saccharum spontaneum*	With medicinal uses

(b) Fauna

Based on field investigation and interviews, the following table presents the different identified fauna in Ilog-Hilabangan River.collected.

Table 1.2 Collected Species in the Project Site (Fauna)

Common Name	*Scientific Name*	Class
Biya	*Gobius criniger*	Actinopterygii
Tilapia	*Oreochromis sp.*	Actinopterygii
Dalag	*Channa striata*	Actinopterygii
Hito	*Clarias sp.*	Actinopterygii
Gourami	*Trichogaster sp.*	Actinopterygii
Barn Swallow	*Hirundo rustica*	Aves
Philippine Bulbul	*Hypsipetes philippinus*	Aves
Pygmy Swiftlet	*Collocalia sp.*	Aves
Tree sparrow/Maya	*Passer montanus saturatus*	Aves
Fruit bats	*Ptenochirus jagorii*	Mammalia
Ricefield rat	*Rattus argentiventer*	Mammalia
Shrew	*Crocidura grayi*	Mammalia
Gecko/Tuko	*Gekko gecko*	Reptilia
House lizard	*Hemidactylus frenatus*	Reptilia
Philippine Cobra	*Naja philippinensis*	Reptilia
Sawa/reticulated python	*Pythin riticulatus*	Reptilia
Brown Snake	*Lamprophis sp.*	Reptilia
Frog	*Rana*	Amphibia
Toad	*Bufo marinus*	Amphibia

ANNEX PIIB_9-2

WATER QUALITY ANALYSIS (ILOG-HILABANGAN)

(1) Sampling points

The sampling points are shown below.

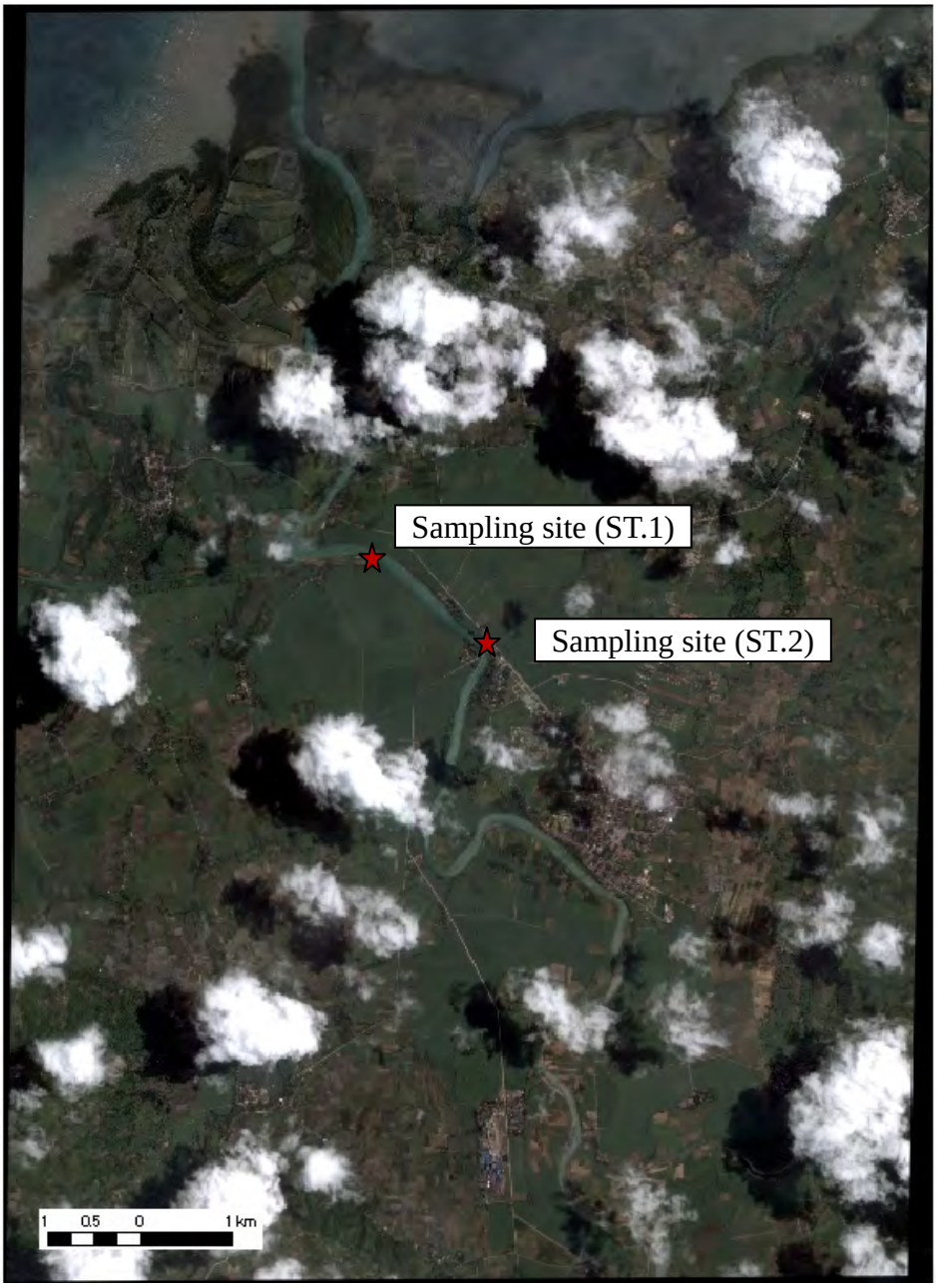

Figure 1 Sampling sites

(2) Collected data

The summary of the data is shown as below.

Table 1.1 Summary of Sampling Data (heavy metals)

(Unit: ppm)

Analysis	Sample 1 (ST.1)	Sample 2 (ST.2)	Class C waters	Method detection Limit
Total Mercury	<0.0001	<0.0001	0.002	0.0001
Total Arsenic	<0.02	<0.02	0.05	0.02
Total Cadmium	<0.01	<0.01	0.01	0.01
Total Chromium	0.01	<0.005	0.05 (hexavalent)	0.005
Total Lead	<0.01	<0.01	0.05	0.01
Total Cyanide	<0.01	<0.01	0.05	0.01

Source: JICA Study Team

The sampling analysis data sheets are shown below.

FROM :CESM FAX NO. :72749558 Sep. 28 2009 06:01PM P7

Results of Analyses

CRL-SN-09-1990
Page 1 of 6

Customer : Center for Environmental Studies and Management, Inc.
Address : Unit 206, UAG Building, Ortigas Ave., Greenhills, San Juan, Metro Manila
Attn. : Bethela Castro - Del Nero

Customer's Project : Disaster Risk Management - Ilog-Hilabangan River Basin

Date Sampled : 16-Jul-09
Date Received : 21-Jul-09
Matrix, Units : Water, mg/L
Analysts : TPS / JBC

IH ST-1 water (%)

Lab. No. : 25078-07
Sample I.D. : ST 1 071609 IH H_2O

Analyses	Dates of Analyses	Results, as received	MDL	DLR
AS - Cold Vapor (Total Mercury)	07/24/09	< 0.0001	0.0001	0.0001
Colorimetry - SDDC (Total Arsenic)	07/27/09	< 0.02	0.02	0.02
Flame AAS (Total Cadmium)	07/23/09	< 0.01	0.01	0.01
Flame AAS (Total Chromium)	07/27/09	0.01	0.005	0.005
Flame AAS (Total Lead)	07/23/09	< 0.01	0.01	0.01

MDL = Method Detection Limits
DLR = Detection Limits for Reporting (MDL x Dilution Factor)
References: Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 21st Edition.
Test Methods for Evaluating Solid Wastes, Vol 1A, USEPA, Third Edition / 1988 Annual Book of ASTM Standards, Volume 11.01
Varian / Perkin Elmer Analytical Methods, Flame Atomic Absorption Spectrophotometry

Reviewed By: Chas C. Arroyo, Laboratory Manager, PRC License No.: 6701 Date:

Approved By: Maria Carmela Q. Capule, Laboratory Director, PRC License No.: 7663 Date:

CRL Environmental Corporation
▪ Sales Office: Unit 609 Cityland 10 Tower 1 * 6815 H.V. dela Costa, Ayala Ave., North * Makati City, Philippines 1226
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▪ Laboratory: Bldg. 2, Berthaphil Compound 1, Berthaphil Inc. Industrial Park
Jose Abad Santos Ave., CFZ Clarkfield Pampanga, Philippines
Tel.:(6345) 599-3943 * (6345) 499-6529 * (632) 299-5826 * Fax (6345) 599-3963

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Result of Analysis

CRL-SN-09-1990
Page 2 of 6

Customer : Center for Environmental Studies and Management, Inc.
Address : Unit 206, UAG Building, Ortigas Ave., Greenhills, San Juan, Metro Manila
Attn. : Bethela Castro - Del Nero

Customer's Project : Disaster Risk Management - Ilog-Hilabangan River Basin

Date Sampled : 16-Jul-09
Date Received : 21-Jul-09
Date Analyzed : 04-Aug-09
Matrix, Unit : Water, mg/L
Analyst : ESG

J-H ST-1 water (2/2)

Lab. No. : 25078-08
Sample I.D. : ST 1 071609 IH H_2O CN

Analysis	Result, as received	MDL	DLR
Distillation - ISE (Total Cyanide)	< 0.01	0.01	0.01

MDL = Method Detection Limit
DLR = Detection Limit for Reporting (MDL x Dilution Factor)
Reference: Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 21st Edition.

Reviewed By: _____ Date: 8/17/09
Chas C. Arroyo
Laboratory Manager
PRC License No.: 6701

Approved By: _____ Date: 8/17/09
Maria Carmela Q. Capule
Laboratory Director
PRC License No.: 7663

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FROM :CESM FAX NO. :72749558 Sep. 28 2009 06:03PM P10

Results of Analyses

CRL-SN-09-1990
Page 4 of 6

Customer : Center for Environmental Studies and Management, Inc.
Address : Unit 206, UAG Building, Ortigas Ave., Greenhills, San Juan, Metro Manila
Attn. : Bethela Castro - Del Nero

Customer's Project : Disaster Risk Management - Ilog-Hilabangan River Basin

Date Sampled : 16-Jul-09
Date Received : 21-Jul-09
Matrix, Units : Water, mg/L
Analysts : TPS / JBC

I-H ST-2 water (1/2)

Lab. No. : 25078-10
Sample I.D. : ST 2 071609 IH H_2O

Analyses	Dates of Analyses	Results, as received	MDL	DLR
AAS - Cold Vapor (Total Mercury)	07/24/09	< 0.0001	0.0001	0.0001
Colorimetry - SDDC (Total Arsenic)	07/27/09	< 0.02	0.02	0.02
Flame AAS (Total Cadmium)	07/23/09	< 0.01	0.01	0.01
Flame AAS (Total Chromium)	07/27/09	< 0.005	0.005	0.005
Flame AAS (Total Lead)	07/23/09	< 0.01	0.01	0.01

MDL = Method Detection Limits
DLR = Detection Limits for Reporting (MDL x Dilution Factor)
References: Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 21st Edition.
Test Methods for Evaluating Solid Wastes, Vol 1A, USEPA, Third Edition
Varian / Perkin Elmer Analytical Methods, Flame Atomic Absorption Spectrophotometry

Reviewed By: _____ **Date:** 7/28/09
Chas C. Arroyo
Laboratory Manager
PRC License No.: 6701

Approved By: _____ **Date:** 7/28/09
Maria Carmela O. Capule
Laboratory Director
PRC License No.: 7663

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Result of Analysis

CRL-SN-09-1990
Page 5 of 6

Customer : Center for Environmental Studies and Management, Inc.
Address : Unit 206, UAG Building, Ortigas Ave., Greenhills, San Juan, Metro Manila
Attn. : Bethela Castro - Del Nero

Customer's Project : Disaster Risk Management - Ilog-Hilabangan River Basin

Date Sampled : 16-Jul-09
Date Received : 21-Jul-09
Date Analyzed : 04-Aug-09
Matrix, Unit : Water, mg/L
Analyst : ESG

I-H ST-2 water (2/2)

Lab. No. : 25078-11
Sample I.D. : ST 2 071609 IH H_2O CN

Analysis	Result, as received	MDL	DLR
Distillation - ISE (Total Cyanide)	< 0.01	0.01	0.01

MDL = Method Detection Limit
DLR = Detection Limit for Reporting (MDL x Dilution Factor)
Reference: Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 21st Edition.

Reviewed By: _____ Date: 8/6/09
Chas C. Arroyo
Laboratory Manager
PRC License No.: 6701

Approved By: _____ Date: 8/6/09
Maria Carmela C. Capule
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ANNEX PIIB_9-3

NOISE MEASUREMENT (ILOG-HILABANGAN)

(1) Sampling date/points

Conducted date: July 16, 2009

Sampling points: (Figure 1 Sampling sites)

(1) At the banks of the river along Barangay 9
(2) Along Camugao in Kabankalan
(3) At the Ilog Municipal Hall

The noise sampling stations were positioned at the nearest residential community to determine the possible impact of noise during the construction period.

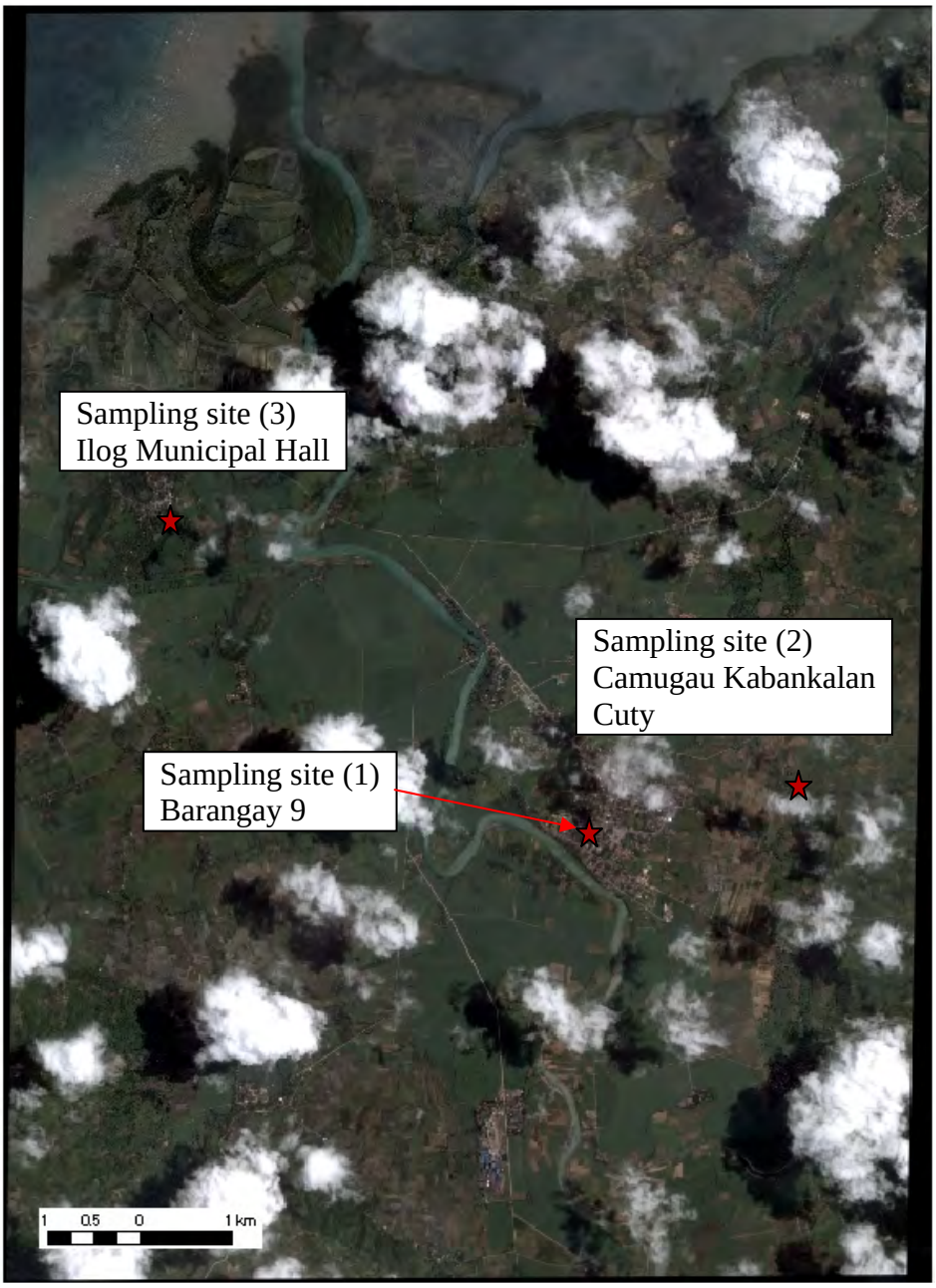


Figure 1 Sampling sites

(2) Measurement instrument

A precision type, digital sound level meter using the method prescribed in the implementing rules and regulations of PD 984. The instrument is also provided with an integral calibrator which is allows the instrument to be calibrated to 94dB. The minimum and maximum of continuous readings were recorded in each station. The median values were then taken and compared with the DENR noise standards based on the 1978 Rules and Regulations of PD 984.

(3) Collected data

The measurement result is shown as below.

Table 1 Results of Noise Sampling

Station	Distance	Time	Min. (dBA)	Max. (dBA)	Median (dBA)	DENR Std. (dbA)	Categogy of Area	Remarks
(ST.1) Barangay 9, Kabankalan City								
	10 meters from planed dike	Morning (6:40am)	45.5	70.3	57.9	50	Class AA	Exceeded
		Noon (3:00pm)	56	78.1	67.05	50	Class AA	Exceeded
		Evening (3:50pm)	57.3	76.3	66.8	50	Class AA	Exceeded
	15 meters from planed dike	Morning (7:00am)	40.9	70.2	55.55	55	Class A	Exceeded
		Afternoon (11:30am)	45.3	72	58.65	55	Class A	Exceeded
		Evening (4:20pm)	56.3	85.9	71.1	55	Class A	Exceeded
(ST.2) Camugao, Kabankalan City								
	10 meters	Morning (8:10am)	48.2	55	51.6	55	Class A	within
		Afternoon (1:40pm)	43.8	64	53.9	55	Class A	within
		Evening (5:10pm)	45.2	63	54.1	55	Class A	within
	20 meters	Morning (7:50am)	45.2	64.4	54.8	55	Class A	within
		Afternoon (2:00pm)	43.5	65.5	54.5	55	Class A	within
		Evening (5:20pm)	44.8	63	53.9	55	Class A	within
(ST.3) Ilog Municipal Hall								
	15 meters	Morning (8:50am)	44.3	55.5	49.6	55	Class A	Within
		Afternoon (2:40pm)	43.2	74.6	59.4	55	Class A	Exceeded
		Evening (6:00pm)	42.6	63.6	55.9	55	Class A	Exceeded
	15 meters	Morning (9:20am)	45.3	54.6	51.5	55	Class A	Within
		Afternoon (3:00pm)	50.6	70.3	56.9	55	Class A	Exceeded
		Evening (6:20pm)	43.2	67.3	54.3	55	Class A	Within

(4) Noise Standard

The country implements an Environmental Quality Standard for noise in general areas as outlined in Presidential Decree (PD) 984, or the Pollution Control Law of the Philippines. The noise standards specify the allowable level of noise based on category of area as outlined Table 2.

Table 2 Environmental Quality Standards for Noise in General Areas

Category of Area	Daytime	Morning & Evening	Nighttime
AA	50 dB	45 dB	40 dB
A	55 dB	50 dB	45 dB
B	65 dB	60 dB	55 dB
C	70 dB	65 dB	60 dB
D	75 dB	70 dB	65 dB

Source: Official Gazette, 1978 Implementing Rules and Regulations of P.D. 984.

Legend:

Category of Area is as follows:

AA - a section or contiguous area which require quietness such as area within 100 meters from school sites, nursery schools, hospitals, and special home for the aged.

A - a section or contiguous area primarily used for residential purposes.

B - a section or contiguous area primarily used as commercial area.

C - a section primarily reserved as a light industrial area.

D - a section primarily reserved as a heavy industrial area.

Division of 24-hour period is as follows:

Morning - 5:00 AM to 9:00 AM
Daytime - 9:00 AM to 6:00 PM
Evening - 6:00 PM to 10:00 PM
Nighttime- 10:00 PM to 5:00 AM.

ANNEX PIIB_9-4

LAND-SUE IN KABANAKALAN CITY

Table 1 Land-use in Kabankalan City

Land-use classification	Existing Condition : (1)		Proposed / Revised condition: (2)		(2). – (1)
	Area (has)	%	Area (has)	%	Area (has)
FOREST/PUBLIC LANDS					
Integrated Social Forestry	18,035.00	25.9	21,446.67	30.8	+3,411.67
Pasture Land	1,965.56	2.8	1,965.56	2.8	+0.00
Reservation	697.62	1.0	697.62	1.0	+0.00
Watershed	432.00	0.6	432.00	0.6	+0.00
Swamps and Marshes	136.00	0.2	136.00	0.2	+0.00
Alienable and Disposable	7,710.47	11.1	4,621.37	6.6	-3,089.10
Subtotal	28,976.65	(41.6)	29,299.22	(42.0)	+322.57
OTHER LAND CLASSIFICATION					
Agricultural Land	36,903.72	52.9	35,613.49	51.1	-1,290.23
Residential	2,370.12	3.4	2,658.64	3.8	+288.52
Commercial	101.80	0.1	106.80	0.2	+5.00
Industrial	1,143.91	1.6	1,725.85	2.5	+581.94
Utilities	239.29	0.3	331.50	0.5	+92.21
Subtotal	40,758.84	(58.4)	40,436.28	(58.0)	-322.56
Total	69,735.49	(100.0)	69,735.50	(100.0)	

Table 2 Crop-Wise Land use of agriculture Land in Kabankalan City

Crop land classification	Existing Condition		(Notes)	
	Area (has)	%	Area (has)	%
Sugarland with Irrigation	3,452.5440	11.3	15,187.6360	49.9
Sugarland without irrigation	11,735.0920	38.5		
Riceland with irrigation	780.0000	2.6	4,792.7800	15.7
Riceland without irrigation	4,012.7800	13.2		
Fishpond	802.9400	2.6		
Coconut	289.7000	1.0		
Nipa	56.3700	0.2		
Orchard	81.6500	0.3		
bamboo	483.4800	1.6		
Banana	234.3800	0.8		
cassava	17.4800	0.1		
Abaca	10.7700	0.0		
Corn Land	8,488.2021	27.9		
Total	30,445.3881	(100.0)		

ANNEX PIIB_9-5

PROFILE OF PEOPLE IN/AROUND THE PROJECT SITE

IN ILOG-HILABANGAN

(a) Location of respondents

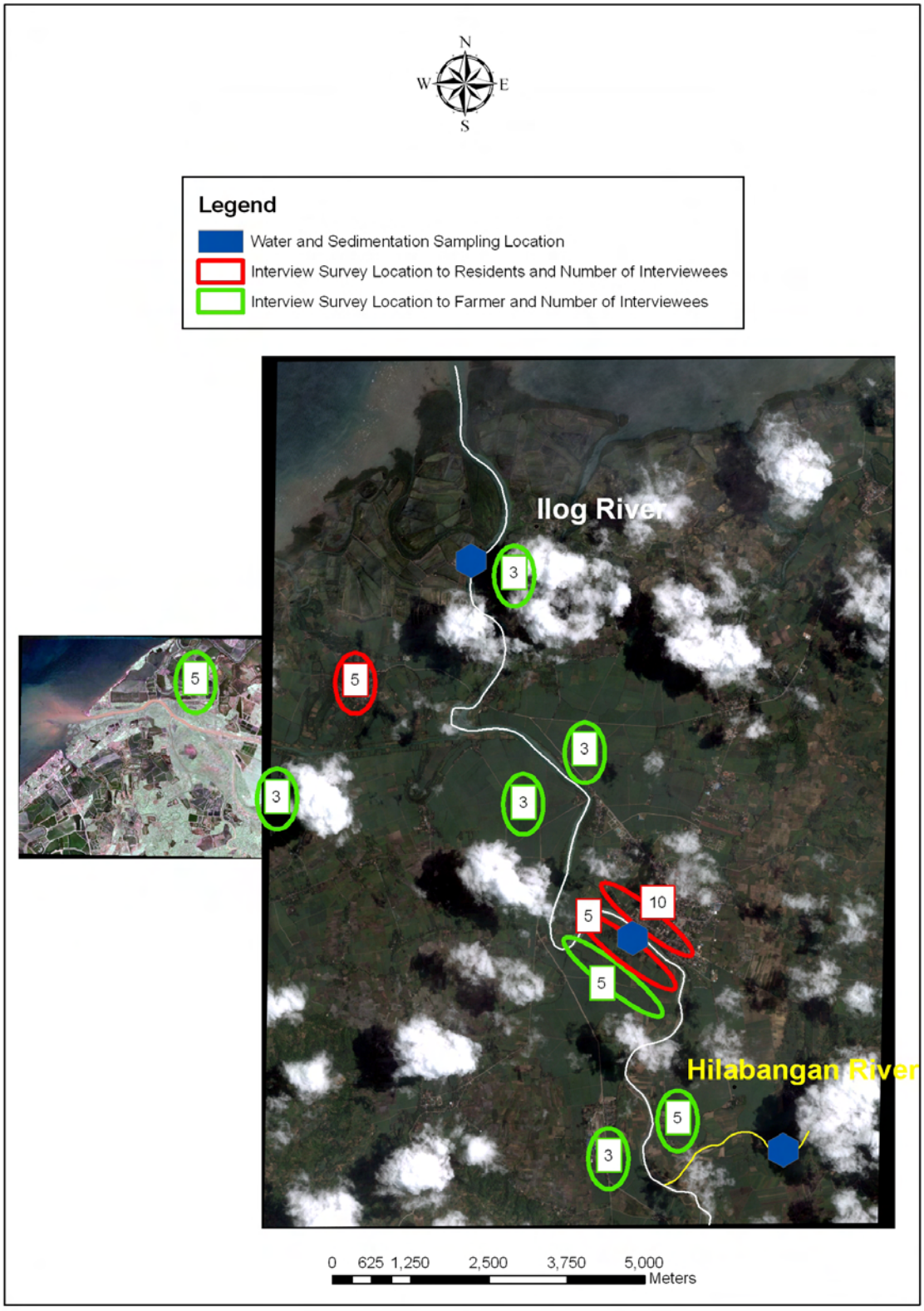
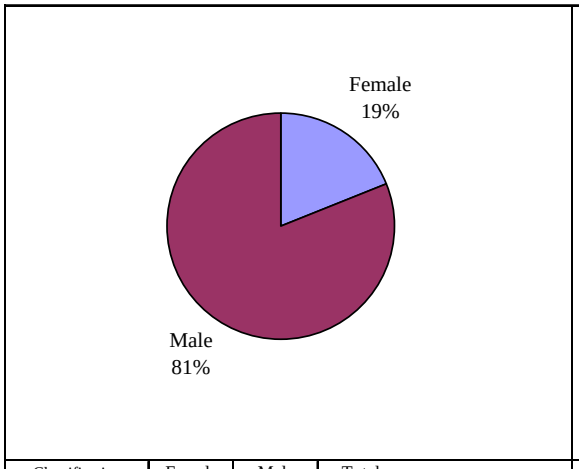
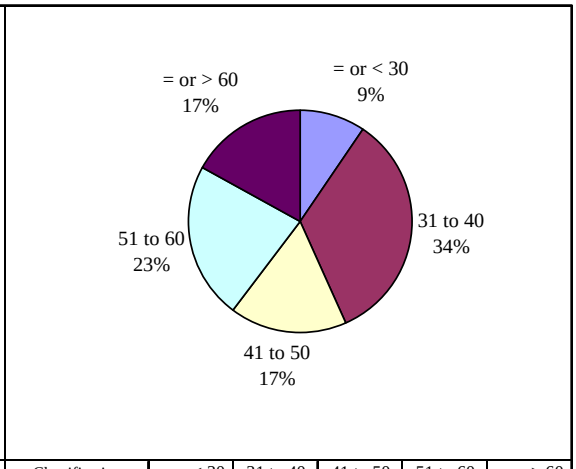


Figure 1 Location of Respondents

(b) Household (HH) heads and family

Gender and age of HH heads



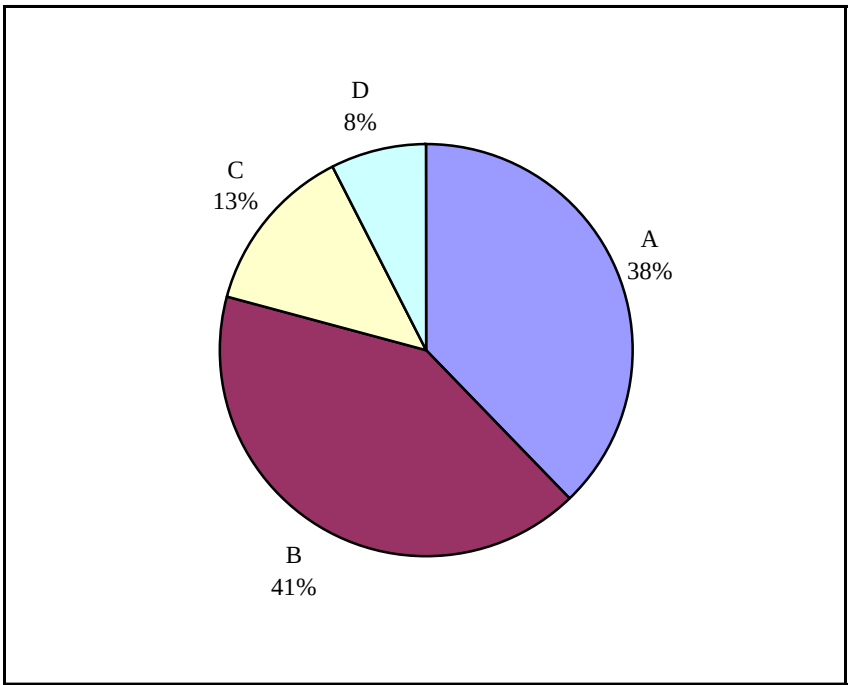


Classification	Female	Male	Total
No. of responds	10	43	53

Classification	= or < 30	31 to 40	41 to 50	51 to 60	= or > 60
No. of responds	5	18	9	12	9

Figure 2 Gender and age of HH Heads

Education of HH heads

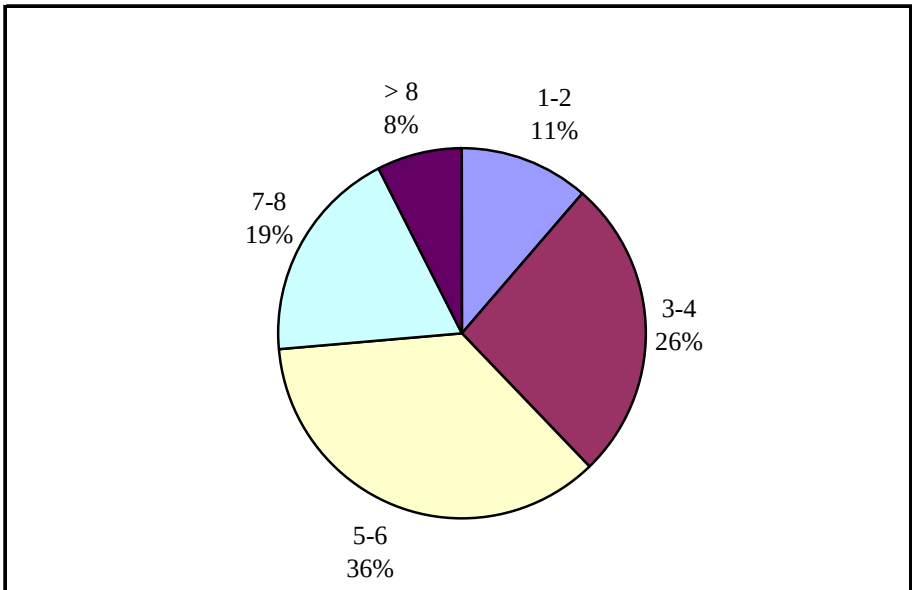


Classification	(A) Elementary level or graduate	(B) High school level or graduate	(C) Vocational/ diploma level or graduate	(D) College level or graduate	Total
No. of responds	20	22	7	4	53

Source: JICA Study Team

Figure 3 HH Heads Education

Family composition



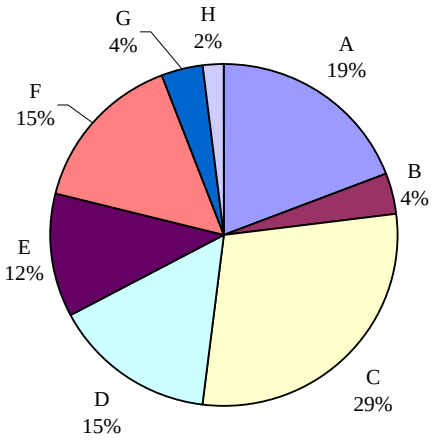
Classification (year)	1-2	3-4	5-6	7-8	> 8	total
No. of responds	6	14	19	10	4	53

Source: JICA Study Team

Figure 4 Total Numbers of family Members

(c) Economic condition

Income source of HH heads



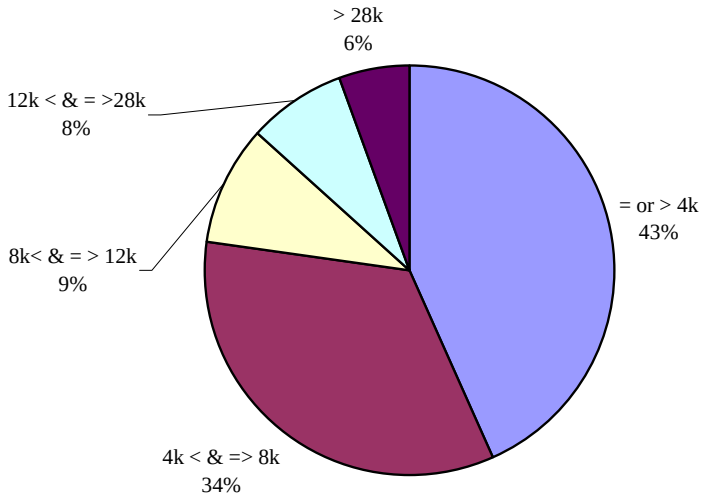
A: Employment *E: Technical/Machine works or Carpentry/Masonry/Construction*
B: Business/Sales *F: Casual workers*
C: Agriculture (farming) *G: Pension*
D: Fishing/Fish related activitie or Driving *H: No Source of Income*

Classification	A	B	C	D	E	F	G	H	Total
No. of responds	10	2	15	8	6	8	2	1	52

Source: JICA Study Team

Figure 5 Income Source of HH Heads

Family income



k: thousand Pesos

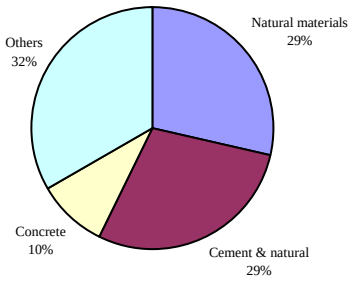
Classification	= or > 4k	4k < & => 8k	8k< & = > 12k	12k < & = >28k	> 28k	Total
No. of responds	23	18	5	4	3	53

Source: JICA Study Team

Figure 6 Family Income per Month of Respondents

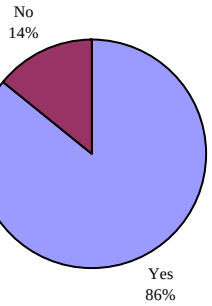
(d) Life condition of HHs

House size and material, Electricity, Water supply and Toilet location



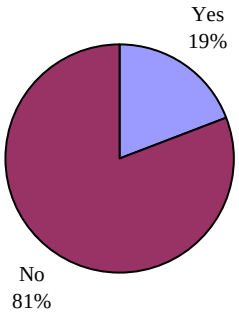
Housing materials

Classification	Natural materials	Cement & natural	Concrete	Others	Total
No. of responds	6	6	2	7	21



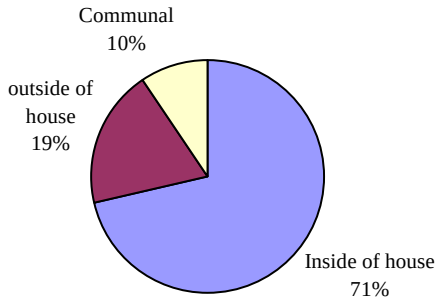
Electricity service connection

Classification	Yes	No	Total
No. of responds	18	3	21



Water service connection

Classification	Yes	No	Total
No. of responds	4	17	21



Location of the toilet used by the family

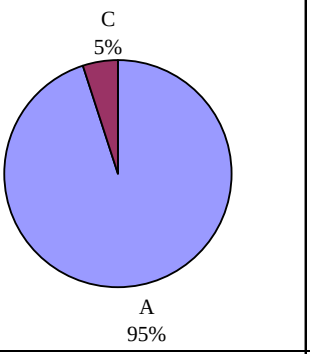
Classification	Inside of house	outside of house	Communal	Others	Total
No. of responds	15	4	2	0	21

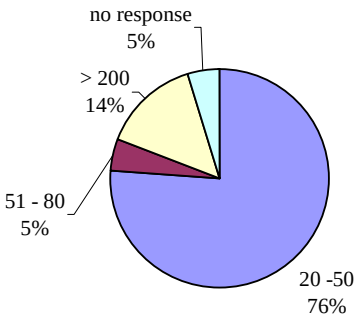
Source: JICA Study Team

Figure 7 Life Conditions of Residents of Kabankalan City

(e) Property

House ownership and size





[House own condition]
A: Family Owned
B: Owned by the Relative (Renting)
C: Owned by the Relative (Rent-Free)
D: Privately Owned (Renting)
E: Privately Owned (Rent-Free)
[House own condition]

[House area]

Classification	A	B	C	D	E	Total
No. of responds	19	0	1	0	0	20

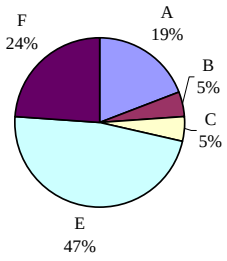
[House area]

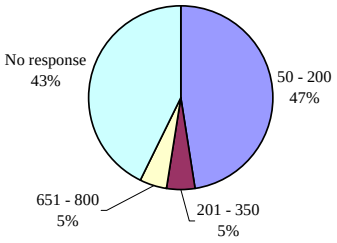
Classification (Unit:m^2)	20 -50	51 - 80	81 - 110	111 -140	141 - 170	171 - 200	> 200	no response	Total
No. of responds	16	1	0	0	0	0	3	1	20

Source: JICA Study Team

Figure 8 House ownership and size of Residents of Kabankalan City

Land ownership and size





[Lot own condition]
A: Family Owned
B: Owned by the Relative (Renting)
C: Owned by the Relative (Rent-Free)
D: Privately Owned (Renting)
E: Privately Owned (Rent-Free)
F: No Response
[House own condition]

[Lot area]

Classification	A	B	C	D	E	F	Total
No. of responds	4	1	1	0	10	5	20

[House area]

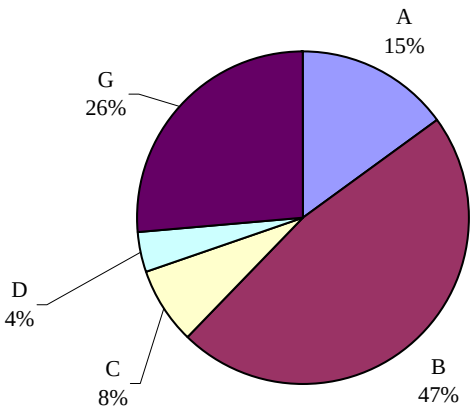
Classification (Unit:m^2)	50 - 200	201 - 350	351 - 500	501 - 650	651 - 800	801 - 950	951 - 1100	> 1100	No response	Total
No. of responds	10	1	0	0	1	0	0	0	9	21

Source: JICA Study Team

Figure 9 House ownership and size of Residents of Kabankalan City

(f) Opinion on the Project

Opinion on relocation



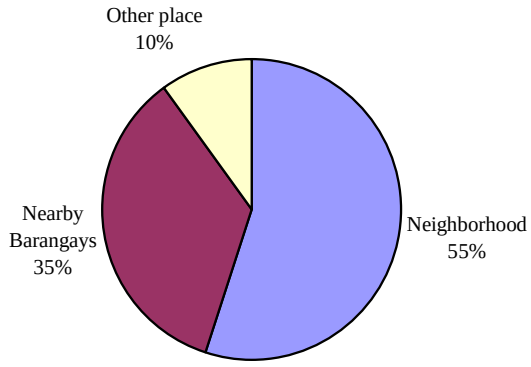
A: Agree
B: Agree, given an acceptable conditions
C: Agree, will follow the decisions of the LGUs
D: Suspending (need time & information)
E: Disagree
F: Other answer
G: No Response

	A	B	C	D	E	F	G	Total
Residents	4	12	4	1	0	0	0	21
Farmers	4	11	0	1	0	0	13	29
Fishermen	0	2	0	0	0	0	1	3
total	8	25	4	2	0	0	14	53

Source: JICA Study Team

Figure 10 Opinion on relocation

Relocation site



Classification	Neighborhood	Nearby Barangays	Other place	Total
No. of responds	11	7	2	20

Source: JICA Study Team

Figure 11 Opinion on relocation site

ANNEX PIIB_9-6

QUESTIONNAIRE FOR INTERVIEW SURVEY

ANNEX A
Questionnaire for Affected Households

QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SURVEY FOR THE PREPARATORY STUDY FOR SECTOR LOAN ON DISASTER RISK MANAGEMENT IN THE REPUBLIC OF THE PHILIPPINES

Magandang araw po sa inyo, ako po ay mula sa Center for Environmental Studies and Management, kasama ng grupo ng Japan International Cooperation Agency at CTI Engineering, International Co., Ltd na gumagawa ng pag-aaral tungkol sa ***Environmental and Social Impact Assessment Survey for the Preparatory Study for Sector Loan on Disaster Risk Management in the Republic of the Philippines****. Nais ko pong malaman ninyo na ang mga impormasyong ibibigay ninyo sa amin sa panayam na ito ay gagamitin po namin sa pag-aaral at ang inyong katauhan gayundin ang inyong mga sagot ay ituturing naming lihim. Sa inyo pong pagsagot, tandaan po nating walang tama o maling sagot, kinakailangan lamang po namin ang inyong matapat na kasagutan.*

Respondent No.

Interviewer: _____ Date of Interview: _____

Address of Interviewee: _____

Contact Number: _____

MGA TANONG PARA SA BAHAY LAMANG ANG APEKTADO NG PROYEKTO

Pangkalahatang Impormasyon (General Information)

1. Pangalan ng Respondent: _____
2. Edad: _____ Araw ng kapanganakan:_____ (mm/dd/year)
3. Kasarian: _____babae _____ lalaki (paki-tsek)
4. Katayuang Sibil: ____ binata/dalaga ____ may-asawa ____balo (paki-tsek)
5. Pinakamataas na antas ng pinag-aralan: _____
6. Pangunahing pinagkakakitaan/hanapbuhay: _____ (tukuyin)
7. Buwanang kita (Php) : _____

8. Iba pang pinagkakakitaan ng respondent:_____ Kita (Php): _____
9. Layo ng pinagtatrabahuhan: _____ Magkano ang pamasahe, ilang sakay? ____(kung angkop)
10. Saang katutubong grupo po kayo kabilang(kung angkop)? _____

Pangalan ng mga Kasama sa bahay	**Edad**	**Kasarian**	**Estado sibil**	**Antas ng pinag-aralan**	**Pangunahing Hanapbuhay /Pinagkakakitaan**	**Buwanang kita**	**Layo ng Trabaho/Lugar /Fare Cost**	**Iba pang pinag-kakakitaan**
(Head)								
Asawa								
Anak								
Anak								
Anak								
Anak								
Nakatatanda								
Mga May Kapansanan								
Kabuuang bilang ng miyembro ng pamilya:						Kabuuang kita ng pamilya:		

(Note to Enumerator: Ask specific level of education, source of income and income per month-then total the income on the space)

11. Anu-ano pa po ang mga uri ng hanapbuhay/pinagkakakitaan ang alam ninyong gawin bukod sa ginagawa ninyo sa kasalukuyan?
    _____
    _____
    _____
    _____
12. Anu-ano pong skills/kaalaman ang mayroon kayo ngayon?
    _____
13. Anu-ano pa pong skills/kaalaman ang gusto ninyong matutunan?
    _____

Struktura ng Bahay at Pamumuhay

14. Ang inyong bahay ay yari sa _____ pinagsama-samang materyales
    _____ bahagyang sementado (kahoy at semento)

_____ kabuuang bahay ay sementado

_____ iba pa (pakitukoy) _____

15. Pagmamay-ari ng lote/lupa at bahay:

Item	Kabuuang Sukat (m^2)[1]	Pag-aari ng pamilya[2]	Pag-aari ng Kamag-anak[3]		Pribadong Pag-aari[4]	
			Rental (Php/mon)	Walang Renta/Libre	Rental (Php/mon)	Walang Renta/Libre
Lupa						
Bahay						

1 Sa sukat ng bahay: Kabuuang *floor area*

2 Pag-aari ng kahit sinong miyembro ng pamilya na nakatira sa iisang bahay.

3 Pag-aari ng kamag-anak na hindi kasama sa bahay

4Hindi kaano-ano ang may-ari, pakitukoy ang dahilan kung bakit walang bayad ang pagpapagamit ng lote at bahay

16. Kung pag-aari ang bahay at lote,magkano ang aktuwal na halaga ng mga ito?

Lote (Php) _____ Bahay (Php)_____

Household Utilities

17. Kayo po ay konektado sa suplay ng kuryente? _____ oo _____ hindi, bakit po? _____ _____

18. Maari po bang malaman kung magkano ang huling pinagbayaran ninyo sa kuryente? _____ (Php), kung wala, bakit po? _____ _____

19. Kayo po ba ay konektado sa suplay ng tubig? _____ oo _____ hindi, bakit po? _____ _____

20. Maari po bang malaman kung magkano ang huling pinagbayaran ninyo sa tubig? _____ (Php),

kung wala, bakit po? _____ _____

21. Ang ginagamit na palikuran ng pamilya ay nasa:

_____ loob ng bahay (de-flush) _____ loob ng bahay (de-buhos)

_____ labas ng bahay, pamilya lamang ang gumagamit, ____(de-flush) _____(de-buhos)

_____ komunal; _____ (de-flush) _____ (de-buhos)

_____ iba pa, pakitukoy _____

Opinyon at Pananaw tungkol sa Proyekto

22. Nais po naming malaman kung nitong mga nakaraang taon/buwan ay nakaranas kayo ng pagbaha dito sa inyong lugar? _____ oo hindi_____

23. Kung oo, kailan ninyo po huling naranasan ang pagbaha? Kailan ninyo naman po naranasan ang pinakamalakas?

Pinakahuling naranasan: Taon ( ), Pangalan ng bagyo ( ), Taas ng baha mula sa lupa ( )cm
Pinakamalakas: Taon ( ), Pangalan ng bagyo ( ), Taas ng baha mula sa lupa ( )cm

24. Kung tatantiyahin, gaano po kataas ang baha?

_____ lampas bukong-bukong

_____ hanggang tuhod

_____ lampas tuhod

_____ iba pa, pakitukoy

25. Kinailangan ninyo po bang lumisan (*evacuate*) sa inyong tahanan dahil sa pagbaha?

_____oo _____hindi

26. Kung oo, saan kayo tumuloy?

_____ sa kamag-anak, katabing barangay

_____ sa kamag-anak, sa ibang bayan

_____ sa mga paaralan o evacuation centers

_____ iba pa, pakitukoy

27. Kung kakailanganin po na kayo ay lumipat ng lugar na tinutuluyan upang bigyang daan ang proyektong ito, kayo po ba ay:

_____Sang-ayon

_____Sang-ayon kung katanggap-tanggap ang mga kondisyon

_____Sang-ayon, (susundin ang desisyon ng Gobyerno, Pamunuan ng Barangay, Resulta ng Konsultasyon sa Komunidad at iba pa).

_____Pag-iisipan pa, kukuha ng mga impormasyon na makakatulong sa pag de-desisyon

_____Hindi sasang-ayon; pakitukoy ang dahilan _____
_____
_____
_____

_____ Iba pa, pakitukoy_____
_____

_____
_____

Para sa mga sumang-ayon:

28. Kung kayo ay bibigyan ng pagkakataon na pumili ng lugar na inyong lilipatan ito ay sa:

_____ kapitbahayan

_____ katabing barangay (na nasa bayan rin),pakitukoy_____

_____ sa ibang bayan, pakitukoy _____

_____ sa ibang lugar, pakitukoy _____

29. Sa inyong palagay, gaano kalayo ang magiging distansya ng relokasyon upang maiwasan ang problema sa trabaho o pagkakakitaan? (mga ilang sakay mula rito)

_____ walking distance

_____ isang sakay

_____ dalawang sakay

_____ tatlong sakay

_____ iba pa, pakitukoy

30. Kung sakaling mawalan kayo ng trabaho dahil sa paglipat, sasang-ayunan po ba ninyo ang pagpapalit ng trabaho?

_____ oo, posible na makahanap ako ng trabaho

_____ oo, kung makakatanggap ako ng sapat na bokasyunal na kaalaman mula sa gobyerno

_____ hindi madaling sabihin sa ngayon

_____ iba pang dahilan, pakitukoy_____

Magandang Araw at Maraming Salamat po!

NOTES:

ANNEX B
Questionnaire for Affected Tenants/Farmers

QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SURVEY FOR THE PREPARATORY STUDY FOR SECTOR LOAN ON DISASTER RISK MANAGEMENT IN THE REPUBLIC OF THE PHILIPPINES

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Tenant Farmer _____ Fish Cultivator _____ (paki-tsek)

Respondent No.

Interviewer: _____ Date of Interview: _____

Address of Interviewee: _____

Contact Number: _____

TANONG PARA SA TENANT FARMERS/FISH CULTIVATORS (OFF-SITE)

Pangkalahatang Impormasyon (General Information)

31. Pangalan ng Respondent: _____ _____

32. Edad: _____ Araw ng kapanganakan:_____ (mm/dd/year)

33. Kasarian: _____babae _____ lalaki (pakitsek)

34. Katayuang Sibil: ____ binata/dalaga ____ may-asawa ____balo (paki-tsek)

35. Pinakamataas na antas ng pinag-aralan: _____

36. Pangunahing pinagkakakitaan/hanapbuhay: _____ (tukuyin)

37. Buwanang kita (Php) : _____

38. Iba pang pinagkakakitaan ng respondent:_____ Kita (Php): _____

39. Layo ng pinagtatrabahuhan: _____ Magkano ang pamasahe, ilang sakay? ____(kung angkop)

40. Saang katutubong grupo po kayo kabilang (kung angkop)?
_____

Pangalan ng mga Kasama sa bahay	**Edad**	**Kasarian**	**Estado sibil**	**Antas ng pinag-aralan**	**Pangunahing Hanapbuhay /Pinagkakakitaan**	**Buwanang kita**	**Layo ng Trabaho/Lugar /Fare Cost**	**Iba pang pinag-kaka kitaan**
(Head)								
Asawa								
Anak								
Anak								
Anak								
Anak								
Nakatatanda:								
Mga May Kapansanan								
Kabuuang bilang ng miyembro ng pamilya:						Kabuuang kita ng pamilya:		

(Note to Enumerator: Ask specific level of education, source of income and income per month-then total the income on the space)

41. Anu-ano pa po ang mga uri ng hanapbuhay/pinagkakakitaan ang alam ninyong gawin bukod sa ginagawa ninyo sa kasalukuyan?
_____
_____
_____
_____

42. Anu-ano pong skills/kaalaman ang mayroon kayo ngayon?
_____

43. Anu-ano pa pong skills/kaalaman ang gusto ninyong matutunan?
_____

44. ***Lawak ng Sakahan ng Magsasaka/Lawak ng Fishpond ng Fish Cultivator*** *(kabuuang sakahan/fishpond at apektadong parte ng sakahan/fishpond na pag-aari ng apektadong magsasaka/fish cultivator)*

Pakilagay ang mga impormasyong kinakailangan:

Kabuuang Sukat ng Sakahan/Fishpond (ha)			**Sukat ng Apektadong Sakahan/Fishpond (ha)**		
Pag-aari (Own-Operated)	**Inuupahan (Tenant)**	**Kabuuang sukat**	**Pag-aari (Own-Operated)**	**Inuupahan (Tenant)**	**Kabuuang sukat**

45. ***Crop Cultivation of Farmland/Fishpond*** *(apektadong sakahan/fishpond ayon sa uri ng pananim at fishpond species ng apektadong magsasaka/fish cultivator)*

Pakilagay ang mga impormasyong kinakailangan:

Pananim/Fishpond Species	**Lawak ng Apektadong Sakahan/Fishpond (ha)**	**Lawak ng Produktibong Sakahan/Fishpond kada Taon (ha)**			**Uri ng Pananim/Fishpond species**
		Kabuuang Lawak ng pinagkukunan ng Ani/Huli (kada anihan)	**Panahon ng pag-ani/Pag-huli kada taon**	**Kabuuan**	
Total					

Opinyon at Pananaw tungkol sa Proyekto

46. Nais po naming malaman kung nitong mga nakaraang taon/buwan ay nakaranas kayo ng pagbaha dito sa inyong lugar? _____ oo
hindi_____

47. Kung oo, kailan ninyo po huling naranasan ang pagbaha? Kailan ninyo naman po naranasan ang pinakamalakas?

Pinakahuling naranasan: Taon ( ), Pangalan ng bagyo ( ), Taas ng baha mula sa lupa ( )cm
Pinakamalakas: Taon ( ), Pangalan ng bagyo ( ), Taas ng baha mula sa lupa ( )cm

48. Kung tatantiyahin, gaano po kataas ang baha?

_____ lampas bukong-bukong

_____ hanggang tuhod

_____ lampas tuhod

_____ iba pa, pakitukoy

49. Kinailangan ninyo po bang lumisan (*evacuate*) sa inyong tahanan dahil sa pagbaha?

_____oo _____hindi

50. Kung oo, saan kayo tumuloy?

_____ sa kamag-anak, katabing barangay

_____ sa kamag-anak, sa ibang bayan

_____ sa mga paaralan o evacuation centers

_____ iba pa, pakitukoy

51. Kung sakaling maapektuhan ang inyong lupain upang bigyang daan ang proyektong ito, kayo po ba ay:

_____Sang-ayon

_____Sang-ayon kung katanggap-tanggap ang mga kondisyon

_____Sang-ayon, (susundin ang desisyon ng Gobyerno, Pamunuan ng Barangay, Resulta ng Konsultasyon sa Komunidad at iba pa).

_____Pag-iisipan pa, kukuha ng mga impormasyon na makakatulong sa pag de-desisyon

_____Hindi sasang-ayon; pakitukoy ang dahilan _____

_____

_____

_____

_____

_____ Iba pa, pakitukoy_____

_____

_____

_____

52. Sa inyong pananaw, kinakailangan ba na magbago kayo ng pinagkakakitaan dahil sa nasakop ng proyekto ang inyong sakahan/fishpond area?

_____ oo
_____ hindi

53. Kung oo, paano magiging possible ang pagpapalit ninyo ng trabaho?

_____ posibleng makahanap ng panibagong trabaho

_____ posible kung makakatanggap ako ng sapat na bokasyunal na kaalaman mula sa gobyerno

_____ posible na maipagpatuloy ang pagsasaka kung mayroon ulit magpapasaka ng kanilang lupa

_____ possible na maipagpatuloy ang kasalukuyang pagsasaka/pag-aalaga ng isda sa pamamagitan ng pagpapalit ng sistema na angkop sa magiging gamit ng lupa, ito'y kung sakaling makakatanggap ng tulong pinansyal mula sa gobyerno

_____ iba pang dahilan_____

_____

_____

_____

Magandang Araw at Maraming Salamat po!

ANNEX PIIB_9-7

SELF-SCREENING CHECKLIST (ILOG-HILABANGAN)

ANNEX 2-7a

SCOPING and PROCEDURAL SCREENING CHECKLIST FOR ENVIRONMENTAL IMPACT STATEMENT (EIS)

B. TECHNICAL SCOPING CHECKLIST [1]

NOTE: Attach list of issues raised by the attending community representatives during the Public Scoping (Annex 2-7c). Integrate the issues in the Technical Scoping Checklist below.

List of Key Environmental Issues		Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?	Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
		LS	LI	NR			Y	N			Y	N
1.0	THE LAND					THE LAND						
1.1	Land Use and Classification					Land Use and Classification						
1.1.1.	Change/Inconsistency in land use					Description of existing land use/zoning/ classification	√					
1.1.2.	Encroachment in Protected Area under NIPAS			√		Land Use Map *(include location of any ECAs and special land features)*	√					
1.1.3.	Encroachment in other ECAs			√								
1.2	**Geology/Geomorphology**					**Geology/Geomorphology**						
1.2.1.	Change in surface landform /topography/terrain/slope	√				Slope and Elevation Map		√				

[1] This table has two major columns: Key environmental issues to be addressed, and the Description of Environment (primary or secondary data) based on one or more environmental issues identified. There is no one-to-one correspondence between the potential issue columns to the left and the baseline information to the right. These columns are provided to ensure the EIA Study focuses on the most relevant environmental issues. **LS = likely significant, LI = likely insignificant, NR = nor relevant**. LS requires in depth quantitative analysis depending on the availability of mathematical methods. LI requires qualitative analysis. NR column is provided since there are listed impacts that may not be after all existent due to the nature of the project and location. During the EIA study, some project aspects may be discovered as significant and may be the basis of Additional Information in the review.

List of Key Environmental Issues		Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?	Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
		LS	LI	N R			Y	N			Y	N
1.2.2.	Change in sub-surface/ underground geomorphology (e.g. underground mining)			√		Regional/General Geological Map	√					
1.2.3.	Inducement of subsidence			√		Geological Cross-Sections		√				
1.2.4.	Inducement of landslides or other natural hazards			√		Sequence Stratigraphic Column of Rock Units		√				
1.2.5.						Geomorphological Map		√				
1.2.6.						g factor Contour Map for Rocks		√				
1.2.7.						Seismicity Map	√					
1.2.8.						Differential Settling Hazard Map		√				
1.2.9.						Bathymetric and Morphostructural Map		√				
1.2.10.						Results of Petrographic and Mineragraphic Analyses		√				
1.2.11.						Results of Geochemical Analyses of Rock Samples		√				
1.3	**Pedology**					**Pedology**						
1.3.1.	Soil Erosion					Summary of Soil Investigation Report on soil type and quality	√		Sediment soil sampling for heavy metals			
1.3.2.	Change in soil quality (e.g. in irrigation areas)					Laboratory Results of Soil Sample Analysis	√		ditto			
						Erodibility Potential		√				
1.4	**Terrestrial Biology**					**Terrestrial Biology**						
1.4.1.	Vegetation removal and loss of habitat			√		Flora and Fauna Species Inventory or Survey	√		Very general survey only			
1.4.2.	Threat to existence of important			√		Summary of Endemicity		√				

List of Key Environmental Issues		Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?		Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
		LS	LI	N R				Y	N			Y	N
	local species						/Conservation Status						
1.4.3.	Threat to abundance, frequency and distribution			√			Summary of Abundance, Frequency and Distribution		√				
1.4.4.	Hindrance to wildlife access			√			Site Observation/ Transect Walk Map		√				
2.0	**THE WATER**						**THE WATER**						
2.1	**Hydrology/Hydrogeology**						**Hydrology/Hydrogeology**						
2.1.1.	Change in drainage morphology	√					Topographic Map showing Drainage System	√					
2.1.2.	Change in stream, lake water depth		√				Regional Hydrogeologic Map		√				
2.1.3.	Reduction in stream volumetric flow	√					Streamflow Measurements/ Mean Monthly Flow Data	√					
2.1.4.	Inducement of flooding	√											
2.1.5.	Water resource competition			√			Flood Peaks, Volumes, frequency rating curves and Stormwater flow estimates	√					
2.1.6.	Reduction/Depletion of groundwater flow			√			Spring and Well Inventory and location map		√				
							Flow measurement location map		√				
2.2	**Oceanography**			√			**Oceanography**						
2.2.1.	Change in circulation pattern			√			Predicted Tides		√				
2.2.2.	Change in bathymetry			√			24-Hour Tidal Cycles		√				
2.2.3.							Surface Current System		√				
2.3	**Water Quality**						**Water Quality**						
2.3.1.	Groundwater pollution			√			Physico-Chemical Characteristics of Wells and Springs		√				

List of Key Environmental Issues		Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?	I	Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
		LS	LI	NR		I		Y	N			Y	N
2.3.2.	Stream water pollution		√				Physico-Chemical Characteristics of Inland Surface Waters	√		Presence of heavy metals			
2.3.3.	Lake water pollution			√			Physico-Chemical Characteristics of Coastal Waters		√				
2.3.4.	Marine water pollution			√			Bacteriological Characteristics of Wells and Springs		√				
							Bacteriological Characteristics of Inland Surface Waters		√				
							Bacteriological Characteristics of Coastal Waters		√				
							Sampling Site Map	√					
2.4	**Freshwater Ecology**						**Freshwater Ecology**						
2.4.1.	Threat to abundance, frequency and distribution of species						Abundance of ecologically and economically important species	√					
2.4.2.	Loss of important species						Presence of Pollution indicator Species	√					
2.4.3.	Loss of habitat						Sampling Site Map		√				
2.5	**Marine Ecology**						**Marine Ecology**						
2.5.1.	Threat to abundance, frequency and distribution						Abundance of ecologically and economically important species		√				
2.5.2.	Loss of important species						Presence of Pollution indicator Species		√				
2.5.3.	Loss of habitat						Marine Resource Map		√				
2.5.4.							Abundance/Densities/Distribution of mangroves, coral reefs, fishes, sea grasses, algae, seaweeds,	√		Mangrove map			

List of Key Environmental Issues	Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?		Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
	LS	LI	N R				Y	N			Y	N
						plankton, etc						
2.5.5.						Sampling Site Map		√				
3.0 THE AIR						**THE AIR**						
3.1 **Meteorology/Climatology**						**Meteorology/Climatology**						
3.1.1. Change in the local climate, e.g. local temperature		√				Monthly Average Rainfall of the Area	√					
3.1.2. Contribution to global greenhouse gas		√				Climatological Normals/Extremes	√					
						Wind Rose Diagrams		√				
						Frequency of Tropical Cyclones	√					
3.2 **Air Quality (& Noise)**						**Air Quality (& Noise)**						
3.2.1. Air pollution		√				Ambient concentrations of TSP, SO_x, NO_x, PM10, etc., 1-hour, 24-Hour Sampling	√		TSP, PM, SOx			
3.2.2. Increase in noise		√				Noise Levels	√					
						Sampling Station Map (air and noise)	√					
4.0 THE PEOPLE						**THE PEOPLE**						
4.1.1. Displacement of settler		√				Demography	√					
4.1.2. Change in land ownership		√				Settlement Map and Population Distribution Map	√					
4.1.3. Displacement of property		√				Population Growth Rate	√					
4.1.4. Right-of-way conflict		√				Number of Households and Household Size by Barangay	√					
						Summary of Demographic data per Barangay to be directly affected:	√					

List of Key Environmental Issues	Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant			a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?		Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
	LS	LI	N R				Y	N			Y	N
						Land Area, Population, Population Density, Main Sources of Income, Gender and Age Composition, Literacy, Highest Educational Attainment, Employment Status	√					
4.1.5. In-migration						Household Profile based on results of the Socio-Economic/Perception Survey	√					
4.1.6. Presence of Indigenous People						Indigenous Peoples	√					
4.1.7. Cultural Change						Health	√					
4.1.8. Threat to public health						Morbidity and Mortality Rates (Infants and Adults) from Direct Impact Areas	√					
4.1.9. Local benefits from the project						5-Year Trend in Morbidity and Mortality		√				
						Notifiable Diseases in the Area including Endemic Diseases		√				
						Local Health Resources (Government and Private)	√					
						Environmental Health and Sanitation Profile: water supply, human excreta mgt, waste mgt and disposal systems and food hygiene	√		Solid waste management system only			
4.1.10. Threat to delivery of basic services						Water Supply and Demand		√				
						Power Supply and Demand		√				
4.1.11. Traffic congestion						Transportation/Traffic situation		√				
SUMMARY/HIGHLIGHTS OF TECHNICAL SCOPING											For Procedural	

List of Key Environmental Issues	Relevance based on PD and Project Location[2] LS = Likely Significant; LI = Likely Insignificant; NR= Not Relevant	a) Basis of Assessment of Relevance; b) Proposed Method of Impact Assessment; c) Other Instructions per Project Phase?	Description of Environment	Required?		Proposed Methodology of Securing and Presenting Information; Other Considerations in EIA Study	Page in the EIA Document	Verified acceptable by EMB CH?	
	LS LI N R			Y	N			Y	N
	Considering all project activities and phases, select the most critical Environmental Aspects (major sources of most significant impacts)	List of Associated Most Significant Environmental Issues/Stressors	Agreed EIA Approach in Impact Assessment and Mitigation on key environmental aspects and impacts/issues	Remarks			Screening: Page in EIA Document	Screening: Verified Acceptable by EMB CH? Y	Screening: Verified Acceptable by EMB CH? N
1									
2									
3									

C. ENVIRONMENTAL RISK ASSESSMENT

If the project has the following:	Required Study/Report	Y	N
1. Facilities for the production or processing of organic or inorganic chemicals using: alkylation, amination by ammonolysis, carbonylation, condensation, dehydrogenation, esterification, halogenation and manufacture of halogens, hydrogenation,hydrolysis, oxidation, polymerization, sulphonation, desulphurization, manufacture and transformation of sulphur-containing compounds, nitration and manufacture of nitrogen-containing compounds, manufacture of phosphorus-containing compounds, formulation of pesticides and of pharmaceutical products, distillation, extraction, solvation	Risk Screening Study		√
2. Installations for distillation, refining or other processing of petroleum products.	Risk Screening Study		√
3. Installations for the total or partial disposal of solid or liquid substances by incineration or chemical decomposition	Risk Screening Study		√
4. Installations for the production or processing of energy gases, for example, LPG, LNG, SNG	Risk Screening Study		√
5. Installations for the dry distillation of coal or lignite	Risk Screening Study		√
6. Installations for the production of metals or non-metals by a wet process or by means of electrical energy	Risk Screening Study		√
7. Installations for the production of metals or non-metals by a wet process or by means of electrical energy	Risk Screening Study		√
8. Specific facilities or the use of certain processes listed in the **Risk Thresholds Table** below.	Risk Screening Study		√
9. Facilities that would use, manufacture, process or store hazardous materials in excess of **Level 1** threshold inventory in **Risk Thresholds Table** below.	Hazard Analysis Study, and Emergency/ Contingency Plan based on the study and worst-case scenario.	√	

If the project has the following:	Required Study/Report	Y	N
10 Facilities that would use, manufacture, process or store hazardous materials in excess of **Level 2** threshold inventory in **Risk Thresholds Table** below.	Quantitative Risk Assessment (QRA) and Emergency/Contingency Plan based on the QRA		√

Risk Thresholds Table

CATEGORY	LEVEL 1 (tons)	LEVEL 2 (tons)	CATEGORY	LEVEL 1 (tons)	LEVEL 2 (tons)
1. Explosives	10	50	7. Toxic substances (medium)	10	50
2. Flammable substances	5,000	50,000	8. Toxic substances (high)	5	20
3. Highly flammable substances	50	200	9. Toxic substances (very high)	0.2	1
4. Extremely flammable substances	10	50	10. Toxic substances (extreme)	0.001	0.1
5. Oxidizing substances	50	200	11. Unclassified (Type A)	100	500
6. Toxic substances (low)	50	200	12. Unclassified (Type B)	50	200

NEED FOR PUBLIC HEARING/CONSULTATION /SITE VISIT OR SITE/VALIDATION DURING EIA REVIEW	BASIS FOR RECOMMENDATION/DECISION
1) Proponent's Request	
2) EIARC Evaluation	
3) EMB Evaluation	

SCOPED BY: EIARC MEMBERS

NAME	EXPERTISE	SIGNATURE	NAME	EXPERTISE	SIGNATURE

EIA PERSONNEL REPRESENTATIVE DURING TECHNICAL SCOPING:		REPRESENTATIVE/S OF THE PROJECT PROPONENT:	
Signature over Printed name	Signature over Printed name	Signature over Printed name	Signature over Printed name
NOTED BY: EIAM Division Chief		REPRESENTATIVE/S OF THE EIA PREPARER:	
Signature over Printed name		Signature over Printed name	Signature over Printed name

ANNEX PIIB_9-8

COMPARISON BETWEEN CONTENTS OF EIA REPORT FOR CATEGORY "A" PROJECT IN FORMER JBIC GUIDELINE AND IEE REPORT IN PEIAS

COMPARISON BETWEEN CONTENTS OF JBIC GUIDELINE AND LARRIPP

Description of Category of JBIC Guideline

- Category A: i) Projects likely to have significant adverse impacts on the environment and society, ii) Projects with complicated impacts or unprecedented impacts, which are difficult to assess or which have a wide range of impacts or irreversible impacts, iii) Projects are required detailed EIA by related laws and the standards of the recipient governments.

- Category B: Their potential adverse impacts are less than those of Category A projects. Generally they are site-specific; few if any are irreversible; and in most cases normal mitigation measures can be designed readily.

- Category C: They are likely to have minimal or little adverse impacts.

- Category FI: The proposed project is categorized as FI if it satisfies all of following: i) JBIC's funding of the project is provided to a financial intermediary etc. ii) the selection and assessment of the actual sub-projects is substantially undertaken by such an institution only after JBIC's approval of the funding and therefore the sub-projects cannot be specified prior to JBIC's approval of funding (or assessment of the project), iii) those sub-projects are expected to have potential impact on the environment.

Table 1 Comparison between contents of EIA report for category "A" project in JBIC guideline and IEE report in PEIAS

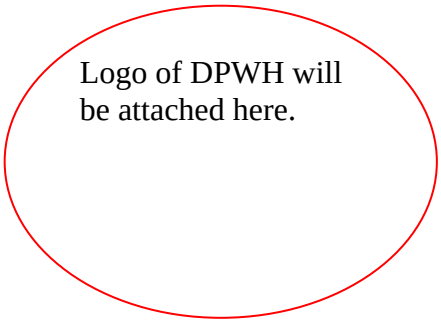
JBIC Guideline	IEER in PEIAS	Difference
[Executive Summary] - discusses concisely significant findings and recommended actions.	[Project Description Report] Background, process and methodology of assessment, study team composition, study schedule are described.	Non
[Policy, legal and administrative framework] discusses the policy, legal and administrative framework within which the EIA report is to be carried out	[Political, regal and administrative Framework] Philippine EIA System (PEIAS) follows DAO-37/1996, Environment study is carried out under PEIAS	EIS report does not require the item, but it is described by the Project Description Report.
[Project description] - describes the proposed project and its geographic, ecological, social and temporal context, including any off-site that may be required (e.g. dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). - Indicates the need for any resettlement or social development plan. - Normally includes a map showing the project site and the area affected by the project.	[Project Description] - Necessity of project - Alternatives - Project site - Other project near the project site - Summary of phase-wise activities	None

JBIC Guideline	IEER in PEIAS	Difference
[Baseline data] - Assesses the dimensions of the study area and describes relevant physical, biological and socio-economic conditions, including all changes anticipated before the project commences. - Additionally, takes into account current and proposed development activities within the project area but not directly connected to the project. - Data should be relevant to decisions about project site, design, operation, or mitigatory measures - The section indicates accuracy, reliability and sources of the data.	[Baseline data] - Describe physical, biological environment conditions, cultural, socio-economical conditions and regal framework - Include alternative without project	None
[Environmental Impacts] - Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. - Identifies mitigation measures and any negative environmental impacts that cannot be mitigated. - Explores opportunities for environmental enhancement. - Identifies and estimates the extent and quality of available data, essential data gaps and uncertainties associated with predictions - Specifies topics that do not require further attention.	[Environmental impacts] - Predicts impacts on each project phase - Summarizes evaluation specific impacts; water, soil and air conditions - Evaluates specific socio-economy and cultural impacts	None
[Analysis of alternatives] - Systematically compares feasible alternatives to the proposed project site, technology, design and operation including the "without project" situation in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training and monitoring requirements. - For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. - States the basis for selecting the particular project design proposed and offers justification for recommended emission levels and approaches to pollution prevention and abatement.		The comparison of alternatives is considered by the content of basic information.

JBIC Guideline	IEER in PEIAS	Difference
[EMP] - Describes mitigation, monitoring and institutional measures to be taken during construction and operation to eliminate adverse impacts, offset them, or reduce them to acceptable levels.	[EMP] - Prepares the matrix, which includes mitigation measures, management cost estimation and responsibility. - Includes records of discussion with stakeholders. - Includes monitoring plan (if any), counter measures for unpredictable accidents, and responsible organization and minutes of agreement.	None
[Consultation] - Record of consultation meetings, including consultations for obtaining the informed views of the affected people, local NGOs and regulatory agencies.	[Stakeholders meeting] -All data/notes are attached to the main report.	
None	[Recommendation] - Write recommendation based on results of assessments for IEE targets projects. - DENR will tale attention on these contents such as, list of mitigation measures to predicted impacts, prediction after taking measures.	JBIC guideline does not include recommendation.
Source: Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and social Considerations, April 2002		

Table 2 Comparison between contents of JBIC guideline and LARRIPP

JBIC Guideline	LARRIPP	Difference
Appropriate consideration must be given to vulnerable social groups, such as women, children, the elderly, the poor, and ethnic minorities, all of whom are susceptible to environmental and social impact and who may have little access to the decision-making process within society.	The consideration for the women, elderly is described in Chapter V as: "The women, elderly who are among the PAPs shall likewise be consulted and mobilized to participate in the consultation meeting, and discussed with them the socio-cultural implication of the Resettlement Action Plan.".	LARRIPP adverts the importance of participation in the consultation ,meeting s and discussion the RAP only,
The project proponents, etc. must make efforts to enable the people affected by the project, to improve their standard of living, income opportunities and production levels, or at least to restore them to pre-project levels.	LARRIPP describes as "iv. (skills training and other development activities) equivalent to PhP15, 000 per family per municipality will be provided in coordination with other government agencies, if the present means of livelihood is no longer viable and the PAF will have to engage in a new income activity." in Chapter III A. 4. e.	None.
Appropriate participation by the people affected and their communities must be promoted in planning, implementation and monitoring of involuntary resettlement plans and measures against the loss of their means of livelihood.	The consideration for the women, elderly is described in Chapter V as: "The women, elderly who are among the PAPs shall likewise be consulted and mobilized to participate in the consultation meeting, and discussed with them the socio-cultural implication of the Resettlement Action Plan.".	LARRIPP does not advert to the participation of PAPs to the planning. The monitoring results shall be report to PAPs but their participation is not.
Projects must comply with laws, ordinances and standards relating to environmental and social considerations established by the governments that have jurisdiction over the project site (including both national and local governments). They are also to conform to environmental and social consideration policies and plans of the governments that have jurisdiction over the project site.	LARRIPP describes in Chapter V. A.4 as "if also in this case they (PAPs) do not agree, the DPWH will promptly seek the services of Land Bank, DBP or an independent appraiser to determine the fair market value". And the possibility of difference between the BIR zonal valuation and the fair market value shall be explained to PAPs at the beginning.	None.
People to be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported by the project proponents, etc. in timely manner.	LARRIPP writes clearly as "Owners of structures who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership."	There is no description of assistance for the informal settlers.
In cases where sufficient monitoring is deemed essential for the achievement of appropriate environmental and social considerations, such as the projects for which mitigation measures should be implemented while monitoring their effectiveness, project proponents must ensure that project plans include monitoring plans which are feasible.	The objectives, scope, contents are described in Chapter VIII of LARRIPP. The monitoring is classified by the internal monitoring (by ESSO) and the external monitoring (by external institutions). The frequency, framework, etc. are described in detail.	None.



TERMS OF REFERENCE OF A ENVIRONMENTAL IMPACT ASSESSMENT (EIA) & RESETTLEMENT ACTION PLAN (RAP)

SECTOR LOAN FOR DISASTER RISK MANAGEMENT IN THE REPUBLIC OF THE PHILIPPINES

January 2010 (temporary)

1.0 DEFINITONS OF TERMS

"The Project" means the whole development of disaster risk management project as specified in Section 2.0.
"The Project Area" means the whole project site consisting of the infrastructure as dikes, and river dredging sites as specified in Section 2.1 & 2.2.
"The Study" means a study of a study of Environmental Impact Assessment (EIA) and Resettlement Action Plan (RAP) for the Project.
"The Study Area" means the area to be affected environmentally and socially surrounding areas of infrastructures in the Project Area.
"The Client" means the Department of Public Works and Highway (DPWH).
"The Consultant" means a consultancy awarded by the DPWH for the Study.
"Japan Bank for International Cooperation (JBIC)" means a former Japanese governmental bank, which used to be in charge of bilateral official development assistance (ODA) loans and has merged into "New JICA" since 1 October 2008.
"**JICA Study Team**" means a team of experts assigned for a former JICA-funded study on the Project.
"Project-Affected Persons (PAPs)" mean persons to be affected by the Project including the residents to be relocated, and owners losing their property and residents to be disturbed by negative impacts caused by the Project.
"Resettlers" mean direct PAPs who are going to be resettled by the project.

2.0 THE PROJECT

The Project will be undertaken in the Municipality of Ilog and Kabankalan City of Region VI in Negros Island. The project area consists of 18 km along the Ilog River. The location of the Project is shown in Annex 1 General Plan of the Project.

2.1 THE PROJECT AREA

The Project Area is shown in Annex 1 General Plan of the Project, and the project components as shown in Table 1.

Table 1 Project Components in the Project Area

Component	Length (m)	Height/ Depth (m)	Width (m)	Volume (m3)	Location
Dike(1)_Right Bank at Kabankalan	5,600	1~3m	Crown: 6m	265 thousands	K.City
Dike(2)_Left Bank at Sugarcane Mill	2,750	2~4m	Crown: 6m	275 thousands	K.City
Dike(3)_Right Bank at Hilabangan	1,000	1~2m	Crown: 6m	60 thousands	K.City
Excavation (1)	-	-	-	200 thousands	K.City
Excavation (2)	-	-	-	150 thousands	K.City
Excavation (3)	-	-	-	150 thousands	K.City
Raising of Road (Existing/New)	3,300	1~4m	Crown: 6m	250 thousands	M.I
Dredging (1) (Old Ilog River)	6.5km	0~2m	Bed 50~100	500 thoudsand	M.I
Dredging (2) (New River)	5.0km	0~2m	Bed 50~100	800 thoudsand	M.I
Total (Embankment)	12,650	1~4m	Crown: 6m	850 thousands	
(Excavation/Dredging)	-			1,800 thoudsand	

K.City: Kabankalan City, M.I: Municipality of Ilog
Source : JICA Study Team

2.2 THE PROJECT COMPONENTS

The Project components are listed below. The components are preliminarily designed by the JICA Study Team which is planned to be finalised by January 2010.

1. New construction of dike (1) along New Ilog River in Kabankalan City. 0.5 kms of the dike is a SPP type with concrete surface protection and sheet piles. 5.6 kms of the dike is an earth type with concrete surface protection;
2. New construction of dike (2) along New Ilog River in Kabankalan City. Totally 1.0 km of the dike is an earth type with concrete surface protection and sheet piles;
3. New construction of dike (3) surrounding a factory located left side of New Ilog River in Kabankalan City. Totally 1.95 kms of dike is an earth type.
4. Excavation along New Ilog River. The excavation areas are divided into three (3) places. Totally 27.7 has at sugarcane fields;
5. Dredging New Ilog River along Kabankalan City and Municipality Ilog. The width is 50~100m and volume of excavated soil is 800,000 m^3.
6. Dredging Old Ilog River along Municipality Ilog. The width is 50~100m and volume of excavated soil is 500,000 m^3.

3.0 THE STUDY

3.1 THE STUDY AREA

The Study Area includes the Project Area and the entire affected area by the Project

3.2 OBJECTIVES OF THE STUDY

The objectives of the Study is to comply with the DENR Administrative Order No.30 Series of 2003 (DAO 03-30) (Revised Procedure Manual 2007) and Land Acquisition, Resettlement, Rehabilitation and Indigenous Peoples' Policy (LARRIPP) of 2007 which require that a project proponent carries out an EIA and RAP study before project implementation. During the study, the Consultant(s) shall be guided by those and must comply with the provisions contained therein.

The Consultant (s) shall meet the requirements of the former Japan Bank for International Cooperation (JBIC) Guidelines for Confirmation of Environmental and Social Considerations which are available which is attached as Annex 3.

Both of the above requirements are geared towards ensuring that the Project is implemented in an environmentally and socially sustainable manner so that maximum benefits are realised. Under the Study, special considerations will be taken to ensure that social issues are not forgotten by carrying out a Social Impact Assessment study to that will be an integral part of the main EIA study report.

The Consultant shall also prepare a Resettlement Action Plan (RAP) based on the national laws and regulations as well as all other relevant laws and guidelines, such as the JBIC Guidelines for Confirmation of Environmental and Social Considerations, the Asian Development Bank's Handbook on Resettlement, and the World Bank's Involuntary Resettlement Sourcebook.

The EIA study and RAP shall therefore be prepared in accordance with these terms of reference as well as all relevant legislation and guidelines listed above.

4.0 SCOPE OF THE STUDY

4.1 REQUIREMENTS FOR EIA STUDY

I. Reviewing Relevant Legal Documents

The Consultant(s) shall review a) the policy and legal framework governing implementation of the Project, as well as b) any international conventions and treaties that may be applicable, c) national and regional plans and d) any other relevant documents pertaining to the Project. The results of the review shall be clearly described and organised in an EIA report.

II. Descriptions of the Baseline Data

The Consultant(s) shall address the relevant baseline data of the Study Area which has been generated based on the DENR Administrative Order No.30 Series of 2003 (DAO 03-30) (Revised Procedure Manual 2007) and other supporting legislations and regulations in Philippines. This should include followings:

a) Descriptions of the existing environment likely to be affected by the Project; and

b) Supporting data such as the secondary data as well as the primary data including the results of the measurement surveys, field reconnaissance and hearings of the Study Area and should cover biophysical, social economic and cultural environments for both on site and off site impacts.

The baseline data of these items listed below shall be collected and described, but not limited to: -

A. The Land – most of the modules under Land will be sourced from secondary data except those under Soil / Pedology

   a. Land Use/classification and associated Terrestrial Biology (flora and fauna) – Land use and classification shall be sourced from the Comprehensive Land Use Plans of Kabanakalan City and Municipality of Ilog. Flora and fauna will only be of secondary importance since the projects are to be located in urban and urban industrial areas where the encroachment of human habitat has precluded any kind of endangered or important species other than those domesticated or planted by man.

   b. Relevant aspects of Geology which will explain the geohazards

   c. Geomorphology (i.e. land forms/topography/slope/ terrain) which explains the limitations or nature of the land use and distribution of population and nature of and vegetation/wildlife

   d. Pedology (main soil type and quality) which rationalize/explain and lend support to the land use, population and biota profile – Pedological studies will again be secondary.

B. The Water – Water studies are frequently a mixture of primary and secondary data. The water sampling in the site in order to determine the baseline data which will be compared to the monitoring results.

   a. Hydrology and Hydrogeology – This data will come from the project engineers tasked with the design and modeling of the flood control measures. Data on changes on stream depths and stream flows due to the excavation, dredging, and quarrying activities should be available.

   b. Water Quality –This study has already sampled water for heavy metal content but sample water for other parameters shall be conducted as follows:

      (Parameters): BOD (5-Day 20ºC) (mg/L), DO (Dissolved Oxygen) (mg/L), TDS (Total Dissolved Solids) 8mg/L), TSS (Total Suspended Solids) (mg/L), Temperature (ºC), Oil/Grease (mg/L), and pH

      (Sampling points): Four (4) sampling points shown in Annex 2. The sampling points are located at the downstream of construction as Sample-1 & 2, at the middle of planed dike (1) and excavations as Sample-4, and at the upper steam the Project as Sample-6.

      (Sampling time): Twice a day (low/high tide), once in each season of rainy and dry. Totally four (4) times per sample point shall be conducted.

c. Freshwater Biology – freshwater biology would focus on fish species. This can be conducted by the secondary data.

d. Salty water intrusion study – The salty water intrusion has been occurred in the Study Area. The river dredging is expected to expand it. In The Study, baseline data shall be collected and qualitative assessment shall be conducted.

(Confirmation of affected area): The current range of salty water intrusion shall be determined by at least five (5) sampling places as Sample-1 to 5 in Annex-2.

(Parameter): Concentration of salt shall be surveyed.

(Timing): Once for each tide (low and high), once for each season (rainy and dry) at each sampling place

(Sampling): At surface and middle in depth for each sampling place

(Confirmation of river water use): The river water is used for pumping irrigation on the sugarcane fields along the river during dry season. They use river water during the low tide. It is required to determine the pumping area, frequency of pumping, and amount of usage of water. This can be conducted by interview survey and the results shall be shown as a water distribution map.

(Assessment): Based on the collected baseline data, qualitative assessment shall be conducted with interview to specialists of NGOs and secondary data such as the study results or achievements of river improvement constructions of the similar place.

(Simulation): If the results of assessment will show high possibility of sever impact on the Study Area by the salty water intrusion, the Consultant(s) shall discuss it with the Client and shall follow the decision.

C. The Air – The project will emit deleterious substances into the air during the construction phase, where dust from construction and emissions from construction vehicles will be expected.

a. Meteorology – the meteorology of the surrounding area, including climate and the number of typhoons that pass through per year will be discussed but all of this will be secondary data in nature, taken from the local meteorological forecasting agency and from studies of the project site

b. Air Quality – It shall be conducted to collect primary or secondary air quality data. The air pollution is expected during the construction phase. Therefore, the baseline data will be used for comparison with the monitoring results during the construction.

(Parameters): PM10, TSP, CO, NOx, and Sox.

(Sampling points): One sampling point for each planed dike construction place, excavation place, and river side of dredging place.

(Sampling time): Once, 24 hours per place

D. The People

Demography (secondary data) and etc: The baseline data on following parameters shall be collected and described.

a. Population (population in the area & demographic patterns);
b. Livelihood Activities;
c. Existing Social Infrastructure (schools, churches, health facilities, social centres and halls, shopping centres, etc.);
d. Community Structures;
e. Employment Rate and Types of Engagement;
f. Income Sources and Distribution;
g. Historical and Cultural Heritage Sites;
h. Communication Network;
i. Number of Project Beneficiaries;
j. Number of People Expected to be Relocated from the construction sites;
k. Number of Households whose Lands are Expected to be Affected by the Project (No resettlement expected); and
l. Presence of Indigenous people

E. The Pollution

a. Noise: The filed survey data by the JICA Study Team can be used as secondary data.

III. Impact Identification, Evaluation and Mitigation Measures

The potential impacts on/of parameters studied in the previous section of II. Descriptions of the Baseline Data shall be identified and evaluated during each of the three stages of the project cycle (planning and design, construction and operation). Both direct and indirect impacts, on site and off site, short-term and long-term, and cumulative impacts on both the social, cultural and the biophysical environments should be considered. The significance of the potential positive and negative impacts shall be identified by the criteria and mitigation measures for such negative impacts shall be established. Impacts to be studied include but not limited to:

1) Impacts on River Water Quality and Salty Water Intrusion:
   - Impacts of discharged water from the construction places; and
   - Impacts caused by the salty water intrusion (as described in previous section);
2) Impact on Residents health by the construction
   - Impacts of Air pollution by the construction activities; and
   - Impacts of Noise/vibration by the construction activities

3) Impacts on Livelihood:
   - Impacts on river water use by local residents; and
   - Impacts on fisheries by local residents

IV. Alternative Consideration

Alternatives of the Project in terms of the site, design and technologies including "without-project" shall be identified and examined, and the justification for the selected alternatives shall be described.

IV. Preparation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)

For EMP and EMoP, feasible and cost effective methods shall be proposed. The Consultant(s) shall also analyse the capability of the client to mitigate and monitor the anticipated environmental impacts and where possible propose relevant capacity building programs for implementation of the EMP and EMoP. The analysis of capacity shall also assess the local community's capacity for implementation of the proposed project including any recommended mitigation measures as well as the existing institutional framework and structures for ensuring sustainable agricultural development and production.

1) EMP:
   - An Environmental Management Plan (EMP) for mitigating adverse environmental and social impacts identified. The plan should provide parameters to be mitigated, countermeasures, responsibility of the actions, budgets for such mitigation measures.
   - In developing the EMP, the Consultant(s) shall make reference to and ensure compliance with the various regulations such as water quality, solid waste and other provisions of relevant laws and regulations guiding environmental management and matters of human health and welfare.
2) EMoP:
   - An Environmental Monitoring Plan (EMoP) for monitoring significant adverse environmental and social impacts shall be identified. The plan shall provide parameters to be monitored, monitoring methods and frequency, sampling parameters, locations & intervals, responsibility of the actions, reporting system, and budgets for monitoring.
   - In developing the EMoP, the Consultant(s) shall make reference to and ensure compliance with the various regulations such as water quality, solid waste and other provisions of relevant laws and regulations guiding environmental monitoring and matters of human health and welfare.

4.2 REQUIREMENTS FOR RAP STUDY

1) Collect and review relevant laws and regulations for compensations and resettlement.
2) Identify the number of 1) resettlers and 2) Project Affected Persons (PAPs) whose land is acquired but not resettled by conducting a census survey with tagging issued by DPWH (Cut-of-Date). Prepare the inventory list of the potential resettlers and land owners to be affected. The list shall include, but not limited to, the names of the head of the residents' households and/or land holders, the addresses, locations on the map and photos of the affected structures. The survey method and output shall be proposed by the Consultant(s) and approved by the Client before conducting the survey.
3) A socio-economic survey of a sample of 100% of the resettlers. The number of houses which will be relocated is estimated as 75. Establish a baseline of incomes & expenditures, occupational and livelihood pattern, use of resources, arrangements for use of common property, social organization, leadership patterns, community organizations, and cultural parameters. The survey method and output shall be proposed by the Consultant(s) and approved by the Client before conducting the survey.

   The sample questionnaire format of the socio-economic survey shall be attached in Annex 4, and the Consultant(s) shall prepare the questionnaire format based on the sample, and the questionnaire shall be approved by the Client before conducting the survey.
4) Compile the collected data of the socio-economic survey with MS Excel and analyse the data to prepare a Resettlement Action Plan (RAP).
5) The RAP for the people to be relocated from the proposed sites where any related-infrastructures are to be built such as dikes, excavation areas shall be prepared in accordance with the Philippines laws and regulations and the Japan Bank for International Cooperation (JBIC) Guidelines for Confirmation of Environmental & Social Considerations referring the World Bank Operational Policy 4.12 of Involuntary Resettlement. The compensation and livelihood assistance programmes for the land owners who are not resettled but their land will be acquired shall be recommended in the same report as well.
6) The RAP shall consist of the results of the socio-economic survey, the entitlement matrix, livelihood restoration programme, the time frame, the implementation schedule, the internal and external monitoring plan, the budget for land acquisition and resettlement as specified in the sample Table of Content in Section 7.0.

4.3 PREPARATION OF JBIC ENVIRONMENTAL CHECKLISTS

The Consultant(s) shall confirm the items of the environmental checklists of the Japan Bank for JBIC Guidelines for Confirmation of Environmental & Social Considerations. The checklist of No. 21. (River and Channel Projects) shall be filled out by the Consultant(s). The checklist is shown in Annex-3.

4.4 REQUIREMENTS FOR PUBLIC CONSULTATION

In carrying out the EIA/RAP study, the consultant shall ensure that adequate public consultation is undertaken. This will be undertaken in accordance with (1) the DENR Administrative Order No.30 Series of 2003 (DAO 03-30) (Revised Procedure Manual 2007), and (2) JBIC Guidelines for Confirmation of Environmental & Social Considerations.

(Timing of public consultation for EIA study):

(1) At the scoping stage: The public consultation meetings at scoping stage were carried out by the JICA Study Team with DPWH.

(2) At the draft final report stage: The Consultant(s) shall conduct the public consultations for EIA study.

(Timing of public consultation for RAP study):

(1) At the scoping stage: The public consultation meetings at scoping stage were carried out by the JICA Study Team.

(2) At the draft final report stage: The Consultant(s) shall conduct the public consultations for RAP study.

(Place of public consultation): once at Kabankalan City and once at Municipality of Ilog.

The points of remember related the public consultation are described below:

1) The Consultant(s) will strictly follow the Revised Procedure Manual 2007 and the JBIC Guidelines for Confirmation of Environmental & Social Considerations;
2) As the JBIC Guidelines require, the public consultation for EIA explanation needs to be organized at least 2 stages during the Study, namely when scoping and preparing the draft EIA report and consultations regarding RAP needs to be held toward PAPs at least once during RAP preparation period;
3) As the Revised Procedure Manual 2007, at the scoping stage one public scoping with community (as same as public consultation meeting) is required.
4) The public consultation meetings shall be organised at locations accessible for any PAPs and interested parties;
5) The Consultant(s) shall ensure that the views of affected and interested parties are taken into consideration, especially requests and comments regarding environmental issues shall be reflected to the EIA report, and documentary

evidence of this such as the list of participants with their signatures, the minutes of meetings and pictures must be provided in the report;

6) The public in this study should include, but not limited to:
    - Local people likely to be affected by the proposed dike site;
    - Local farmers corporation and haciendas in the areas to be excavated;
    - Farmers/residents likely to be affected by the acquisition of land for the dikes;
    - LGUs (Local Government Units) in the Project Area among others;
    - Community-based NGOs specialised in the relevant fields, such as environment and social issues; and
    - Vulnerable groups such as the elderly, women, widows, youth, the poor and indigenous people, if any;
6) The methods of public consultation must be made explicit as well as the peoples consulted and their locations within the scheme; and
7) The methods, locations and frequency of public consultation shall be proposed by the Consultant(s) and approved by the Client before organizing the meetings.

5.0 SCHEDULE AND REPORTING

The tentative schedule of the Study is shown in Figure 1. The Consultant(s) shall carry out the works as stipulated in the TOR diligently with due consideration of time and its impact on the entire project cost.

An inception report will be submitted within 2 weeks after signing of contract while the interim, draft final and final reports will be presented within each quarter of the proposed project period. The exact date of the report submission to the Client shall be specified by the Client with the inception report.

Five (5) CDs and thirty-five (35) copies of the reports shall be submitted to the Project Manager at the agreed dates of submission.

The final RAP report shall be submitted at the end of the Study to the General Manager, DPWH-ESSO, The finalized RAP report shall be submitted by the Consultant(s) to the DPWH no later than the end of July 2010 so that the DPWH is able to submit the IEE (or EIA) report to the EMB-DENR by the end of July 2010, allowing sufficient time for EMB-DENR to review the IEE (or EIA) and RAP report for its approval by the end of October 2010.

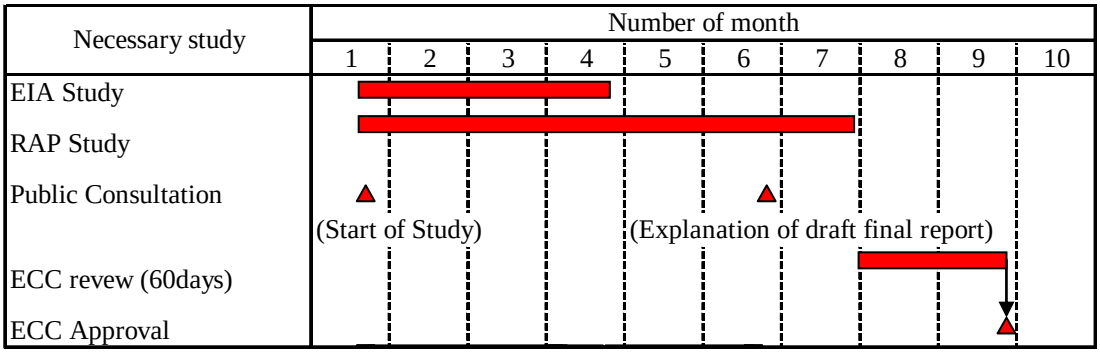


Figure 1 Tentative Study Schedule (to be prepared)

6.0 PROPOSED EXPERTS

To execute the EIA/RAP Study, a joint venture between two or more International or local registered and operating, experienced in the RAP of the river improvement projects shall be selected on the basis of competitive bidding. Key staff in the technical complement may include but not limited to the following:

- Environmental Specialist (Team Leader);
- Natural Environment Specialist;
- Sociologist/Public Consultation Expert;
- Economic/Financial Analyst/Land Valuer registered at the Ministry of Lands;
- Water and Sanitation Specialist;
- Hydro-geologist

The Consultant(s) is/are expected to assess the capacity requirement on the basis of expected outputs as explained in the TOR.

7.0 OUTPUT - (SAMPLE CONTENTS OF THE RAP REPORTS)

(1) EIA Report

The EIA report shall be submitted together with a non-technical summary.

- Executive Summary
- Introduction
- Project Location, Description, and Activities including the Budget
- Relevant Legislative & Regulatory Framework
- Existing Environmental & Social Situation
- Identification & Description of Anticipated Environmental & Social Impacts
- Description of Alternatives including No Action Alternative and the Proposed Action
- Proposed Mitigation Measures for Significant Environmental & Social Impacts
- Environmental Management Plan
- Environmental Monitoring Plan
- Results of the Public Consultation Meetings

- Gaps in Knowledge and Uncertainties which were Encountered in Compiling the Report.
- Conclusion and Recommendations
- Bibliography of All Literature Reviewed
- Appendices

(1) Specialised Studies (e.g. a water quality survey report, salty water intrusion study report and any other measurement survey reports); and

(2) Any Other Detailed Reference Materials, including Minutes of Public Consultations

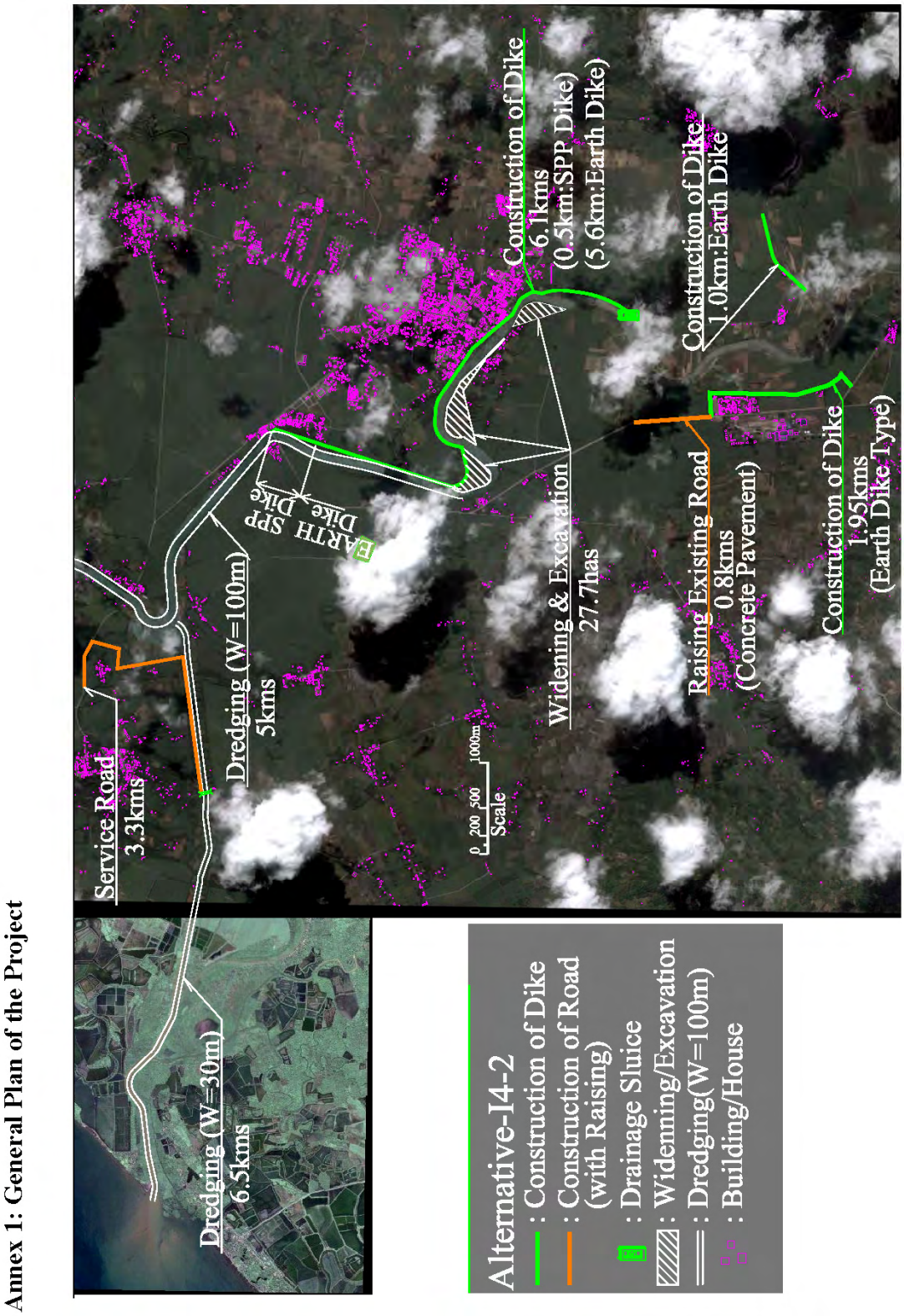
(2) RAP Report

- Executive Summary
  Introduction
- Project Location, Description, and Activities including the Budget:
- Relevant Legislative & Regulatory Framework
- Scope of Land Acquisition and Resettlement
- Measures to Minimise Land Acquisition and Losses
- Socio-economic Features of the Project Affected Persons (PAPs)
- Resettlement Policy and Entitlement Matrix including the Details of the Compensations and Livelihood Assistance Programmes/Livelihood Restoration Programme
- Recommendations on the Resettlement Site(s)
- Implementation Arrangement
- Implementation Schedule
- Monitoring and Supervision
- Grievance Redress
- Cost Estimate
- Results of the Public Consultation Meetings
- Gaps in Knowledge and Uncertainties which were Encountered in Compiling the Report.
- Conclusion and Recommendations
- Bibliography of All Literature Reviewed
- Appendices

(1) Specialised Studies (e.g. an inventory survey report, socio-economic survey report and any other surveys conducted); and

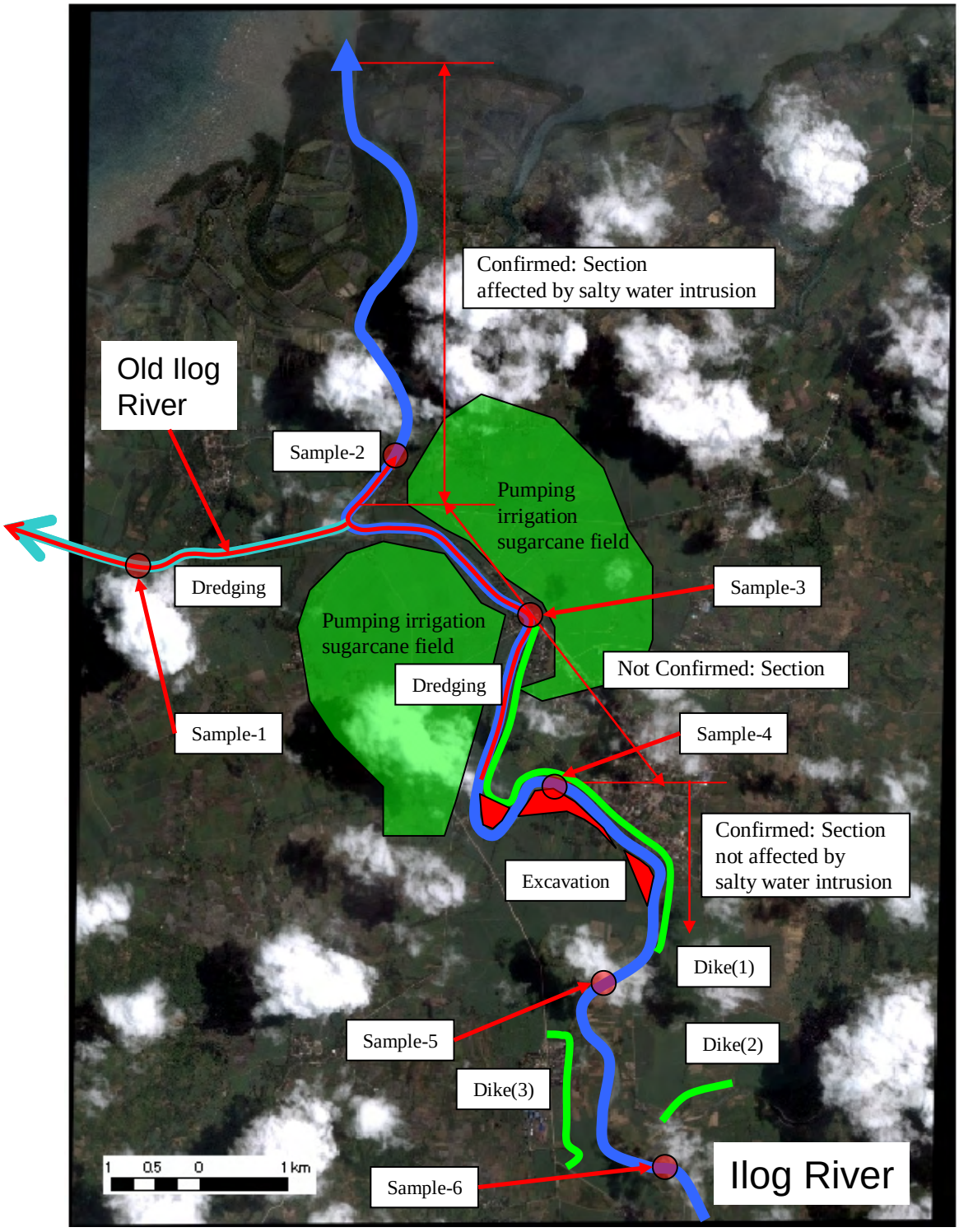
(2) Any Other Detailed Reference Materials

Annex 1: General Plan of the Project



Annex 1: General Plan of the Project

Annex 2: Sampling Points Map



Annex 3:JBIC Checklist for River Improvement Project

Environmental Checklist:21. River and Channel Projects

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	① Have EIA reports been officially completed? ② Have EIA reports been approved by authorities of the host country's government? ③ Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? ④ In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	
	(2) Explanation to the Public	① Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? ② Are proper responses made to comments from the public and regulatory authorities?	
2 Mitigation Measures	(1) Water Quality	① Are considerations given to water pollution of the surrounding water bodies, such as rivers and groundwater by the effluents or leachates from irrigation ponds? Are adequate use/disposal standards for chemicals, such as fertilizers and agrochemicals established? Is a framework established to increase awareness of the standards among farmers? ② Do effluents and ambient water quality of the surrounding water bodies comply with the country's effluent standards and ambient water quality standards?	
	(2) Soil Contamination	① Is there a possibility that impacts in irrigated lands, such as salinization of soils will result? ② Are adequate measures taken to prevent soil contamination of irrigated lands by agrochemicals, heavy metals and other hazardous substances?	
	(3) Subsidence	① In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	
3 Natural Environment	(1) Protected Areas	① Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	
3 Natural Environment	(2) Ecosystem	① Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? ② Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? ③ If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? ④ Is there a possibility that the amount of water (e.g., surface water, groundwater)	

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
		used by the project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms? ⑤ Is there a possibility that installation of structures, such as intake weirs will block the movement of the migratory fish species (such as salmon, trout and eel that move between rivers and the sea for spawning)? Are adequate measures taken to reduce the impacts on these species?	
4 Social Environment	(1) Resettlement	① Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? ② Is adequate explanation on relocation and compensation given to affected persons prior to resettlement? ③ Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? ④ Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? ⑤ Are agreements with the affected persons obtained prior to resettlement? ⑥ Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? ⑦ Is a plan developed to monitor the impacts of resettlement?	
4 Social Environment	(2) Living and Livelihood	① Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? ② Are proper allotments, such as water rights allotment in the project area made? Is there a possibility that the allotments will result in inequitable distribution or usurpation of water rights and available resources? ③ Is there a possibility that the amount of water used (surface water, groundwater) by the project will adversely the downstream fisheries and water uses? ④ Is there a possibility that water-borne or water-related diseases (e.g., schistosomiasis, malaria, filariasis) will be introduced? Is adequate consideration given to public health education, if necessary?	
	(3) Heritage	① Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?	
	(4) Landscape	① Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
5 Others	(1) Impacts during Construction	① Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? ② If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? ③ If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? ④ If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?	
	(2) Monitoring	① Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? ② Are the items, methods and frequencies included in the monitoring program judged to be appropriate? ③ Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? ④ Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	
6 Note	Reference to Checklist of Other Sectors	① Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects including large areas of deforestation). ② For the projects including construction of large-scale weirs, reservoirs, and dams, where necessary, pertinent items described in the Dams and Reservoirs checklist should also be checked.	
	Note on Using Environmental Checklist	① If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan' experience).

2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

Annex 4: Sample Questionnaire Format of the Socio-economic Survey

Socio-Economic Survey for PAPs to be Resettled

101	**SURVEY QUESTIONNAIRE IDENTIFICTION**	
	A. Survey Control Number	
	B. Date of Interview:	
	C. Place of Interview:	
	D. Name of Interviewer:	
	E. Checked by Supervisor:	
102	**BASIC PROFILE OF PAPs**	
	A. Name of Interviewee (only adult members above 18-year old):	
	B. Address of the Interviewee:	
	i Barangay:	
	ii Situ:	
	iii Street & Road Name:	
	C. Relation to Head of Family (Choose one) 1: Myself, 2: Wife, 3: Child, 4: Parent, 5: Other (Specify)	
	D. How many years have you been living here?	
	E. Is there any tenant in this house? If Yes, number of tenants?	
	F. How many years has/have the tenants(s) resided?	
	(For Illegal Occupant Only) G. How long are you planning to live here (in years)?	
	Profile of Head of Family:	
	H. Head of Family (Name)	
	I. Sex 1: Male, 2: Female	
	J. Age	
	K. Marital Status 1: Married, 2: Unmarried, 3: Others (e.g. Divorced, Separated, Specify)	
	L. Attainment Level of Education (Choose one) 1: Illiterate (either English or a local official language); 2: Can Read only (either English or a local official language); 3: Can Read and Write both (either English or a local official language); 4: Basic School (grade attended:); 5: High School (grade attended:); 6: University; 7: Post Graduate & Above; 8: Others (Specify);	
	M. Religion (Choose one) 1.Christian; 2.Muslim; 3.Hindu; 4.Buddhist; 5.Other (specify----------)	
	N. Total number of family members (including infants and children)	
	O. Total number of households in one (your) structure (e.g. if there are 2 households in one house, record 2)	
	P. Occupation (Choose all that apply) 1: Government/Public Sector; 2: Private Sector (employee); 3. Self-employed (Specify); 4: Farmer; 5: Casual Labour; 6: Unemployed; 7: Others (Specify)	
	(For those who check 3. Self-employed in above P.)	
	Q. Do you have license of the business?	
	R. How many workers are there?	

103 **LAND LIKELY TO BE LOST/AFFECTED**

A. Please give information on the land owned/occupied by your household and to be lost/affected by the Project.

Type of Land	Area (Sqm: m^2) of the land owned/occupied by your family	Area (Sqm: m^2) of the land to be lost/affected by the Project	Status of Land Holding (please choose number applicable from the list below)*
i. Residential land			
ii. Agricultural land (inc. paddy fields, farms and orchard)			
iii. Commercial land (e.g. shop)			
iv. Land for workshop			
v. Others (specify)			
Total Land			

* Status of Land Holding
1. With Certificate of Title (DEED)
2. Tenant
3. Illegal occupation
4. Uncertain
5. Others (specify)

104 **STRUCTURES LIKELY TO BE LOST/AFFECTED**

A. Please give information on structures owned/occupied by your household and **to be lost/affected by the Project**.

Type of Structures owned/occupied by your household	Status of ownership of the Structures (please choose number applicable from the list below)*1	Please check if the structure will be lost/affected by the Project
i. Residential building/house		
ii. Commercial *2		
iii. Residential + Commercial*2		
iv. Farm House		
v. Animal Shed/Poultry house		
vi. Boundary Wall/Fencing		
vii. Well/Hand pump		
viii. Graveyard/Crematorium Ground		
ix. Others (Specify)		

*1 Status of ownership of the Structure
1. Self-owned;
2. Public-owned structure for rental;
3. Private-owned structure for rental;
4. Group- or Community-owned:
5. Illegal owned/occupation
6. Uncertain ownership
7. Others (specify)

*2 Commercial structure

Please answer question below

(For those who check i. Residential building/house or iii Residential + Commercial in above A.)
Residential Building/House

B. What is the type of residential building/house owned/occupied by your household and likely to be affected? (Choose one)
1: Single detached one-storey; 2: Single detached two-storey;
3: Single detached three-storey or more; 4: Apartment/Row house duplex;
5: Muddy house; 6: Tents or tentative simple hut;
7: Others (specify)

C. **Take photos of the house appearance.**

D. Roof (Choose one)
1. Iron sheets; 2. Tiles; 3. Natural materials; 4. Concrete;
5. Asbestos; 6. Others (Specify)

E. Walls (Choose one)
1. All concrete; 2. Concrete and wood; 3. All wood; 4. Soil;
5.Natural materials; 6. Others (Specify)

F. Living Area/Floor Area (m^2) for residential part owned/occupied by your family

G. Living Area/Floor Area (m^2) for residential part to be lost/affected by the Project

	H. Number of rooms			
	I. Age of house (year)			
	(For those who check ii. Residential building/house or iii Residential + Commercial in above A.) **Commercial Structure**			
	J. Usage of Structure? (Choose all that apply) 1: Shop, 2: Storage/Warehouse, 3: Workshop, 4: Factory, 5: Office, 6: Others (Specify)			
	K. Floor Area (m^2) for commercial part owned/occupied by your family			
	L. Floor Area (m^2) for commercial part to be lost/affected by the Project			
	M. Age of structure (year)			
105	**HOUSEHOLD BUDGET**			
	Income			
	A. Sources of household income	Average Income in KShs		
		Daily	Monthly	Yearly
	a. Salary as employee 2: Private Service (employee); 3. Business (self-employed) (Specify); 4: Trading (self-employed) (Specify);			
	b. Self-employed business			
	c. Farming			
	d. Casual labour			
	e. Others (Specify)			
	Total Income			
	Assets			
	B. Vehicles: What vehicles do your family own? (Choose all applicable) 1. Bicycle; 2. Motorcycle; 3. Jeep/Car; 4. Truck; 5. Bus; 6. Others (Specify)			
	C. Agricultural Implements: What agricultural implements do your family own? (Choose all applicable) 1. Tractor; 2. Thresher; 3. Harvester; 4. Sprayer; 5. Pump set; 6. Electric pump; 7. Others (Specify)			
	D. Assets for economic activities (business and trading): If your family owns other assets being used for economic activities, please specify.			
	E. Household Items: What household items do your family own? (Choose all applicable) 1. TV; 2. Fridge; 3. Electric Cooker; 4. Electric Fan; 5. Microwave; 6. Radio; 7. Others (Specify)			
	F. Total Annual Saving (Pesos)			
	G. Have you taken any loan? 1: Yes, 2: No, 3: Don't know			
	H. If Yes, then please tell us the following:			

Name of the loan provider	Amount (in Pesos)	Re-paid (in Pesos)	Balance (in Pesos)
1. Bank			
2. Micro finance			
3. Relative/Friend			
4. Other (specify)			

106 **ACCESSIBILITIES**

B. Accessibilities of family members in normal conditions at present

	Status in Normal Conditions			
	Average Time per Trip (one-way) (minutes)	Frequency Once in 1: 1 Day 2: 2-3 days 3: 1 Week 4: 2 Weeks 5: 1 Month 6: 2 Months 7. 6 Months 8: 1 Year	Mode 1: Foot 2: Bicycle 3 Motor Bike 4: Car 5. Bus 6. Others (Specify)	Distance (one-way) (km)
District Development Committee				
Local Markets				
Workplace				
Basic School				
High School				
Farming Land				
Health Clinic				
Religious Center				

ACCESS TO UTILITTIES

B. Portable Water (Choose all applicable)
1: Hand-dug well (Private)
2: Hand-dug well (Common)
3: Pump well (Private)
4: Pump well (Common)
5: Piped Public Water Supply
6: Bought from Vendors (Water Kiosk)
7: Other Facilities (Specify)
8: Other Natural Water Resources (Specify)

C. Toilet Facilities (Choose main one)
1: Water-pond Toilet (Private)
2: Water-pond Toilet (Common)
3 : Pit Toilet (Private)
4 : Pit Toilet (Common)
5: Not Available

D. Access to Electricity
1: Power Line
2: Generator (Private)
3: Generator (Common)
4: Car Battery
5: Solar energy
6: Others (Specify)
7: Not Available

107 **PERCEPTION OF THE PROJECT**

Explanation on the Project by the Enumerator

C. Do you think the Project will provide economic benefit in the area?
1: Yes, 2: No, 3: No Comment

B. In your opinion, what kind of economic benefit would take place? (Choose all that apply)
1: Wage employment, 2: Business opportunity, 3: Industry establishment, 4: Others (specify)

108	**IMPACTS**	
	A. What social impacts are expected in relation to the land acquisition under the Project? (Choose all applicable) 1: Loss of residential building/house 2: Loss of agricultural plots, 3: Loss of crops, trees and fixed assets, 4: Loss of plots/fixed assets for businesses/trading; 5: Loss of businesses/trading activities, 6: Loss of sources of income and livelihoods, 7: Loss of access to working place, 8: Loss of access to public facilities and services, 9: Others (Specify)	
109	**INTENTION OF RESETTLEMENT AND REHABILITATION**	
	A. In case you are to be displaced by the Project, what difficulties do you expect in the resettlement? (Choose all applicable) 1: Find new income source, 2: Find new residential building/house, 3: Find new suitable farmland in the resettlement site, 4: Find new plots/fixed assets for business/trading 5: Difficulty in commuting to workplace 6: Find suitable school for child/children 7: Difficulty in commuting to school for child/children 8: Acclimatizing in the resettlement site, 9: Security in the resettlement site, 10: Access to markets 11: Access to public facilities and services (clinic, District Development Committee, etc.) 12: Access to utilities (water, toilet, electricity, etc.), 13: Other (Specify)	
	(For those whose residential building/house are to be affected) B. In case you are to be displaced by the Project, what would be your choice? (Choose all applicable, but not inconsistent) 1: Self relocation with payment of compensation 2: Project assisted resettlement with provision of plots/buildings 3: Others (specify)	
	C. Where would you like to resettle? (Choose one) 1: In the same community area 2: In the same district 3: The resettlement location does not matter 4: Others (specify)	
	D. Which way do you prefer to resettle? 1: Resettling with community members 2: Resettling without community members	
	(For those whose livelihood and income sources are to be affected) E. In case you are to be displaced by the Project, what would be your choice? (Choose all applicable, but not inconsistent) 1: Provision of new agricultural plot, 2: Provision of new plots/assets for economic activities (e.g. shop, workshop, office, etc.) 3: Training for self employment 4: Cash grant equivalent to loss 5: Others (specify)	
	D. What kind of assistance regarding resettlement and rehabilitation do you request/suggest for the Project Implementing Authority?	

APPENDICES

MINUTES OF THE MEETING
FIRST STAKEHOLDERS' MEETING
THE PREPARATORY STUDY FOR SECTOR LOAN ON
DISASTER RISK MANAGEMENT
Sangguniang Panlalawigan Session Hall
Kabankalan City, Negros Oriental, Region VI
May 22, 2009

ATTENDEES:

Government of Kabankalan City

1. Hon. Pedro P. QZayco, Jr.	-	City Mayor
2. Mr. Jeorge M Lagardo	-	SP Member
3. Mr. Eddie Yap	-	Info Office
4. Mr. Ricardo Regalla Jr.	-	Clerk
5. Eng. Rogelio Diaz	-	City Engr.
6. Ms. Virginia Espanola	-	SP Secretary
7. Mr. Higino Garaygay	-	City APM
8. Eng. Maila Nombre	-	Eng.I
9. Eng. Val G. Bachita	-	Eng.III
10. Mr. Rodrigo P. Cadigal	-	SP Member
11. Mr. Jepoy M. Dario	-	Sec. City
12. Engr. Roderick Cadigal	-	Eng.III
13. Eng. Randy F. Siason		

Government of Municipality of Ilog

1. Mr. Albert Magbato	-	MPDC
2. Mr.Aurelio E. Daguia Jr.	-	Bldg. Inspector
3. Mr. Isagani Glenogo	-	Draftman

DPWH

1. Eng. Grecile Christoper Damo-		DPWH-PMO-FCSEC
2. Eng. Danilo Peroy	-	DPWH Region VI
3. Eng. Valintin Iligan	-	DPWH Kabankalan City
4. Ms. Hermania F. Rivas	-	Negros 3rd DEO
5. Ms. Sofemia G. Arcon	-	Negros 3rd DEO
6. Ms. Arlene I. Mendoza	-	DPWH Kabankalan
7. Ms. Carmen Hazel Soberano	-	DPWH Kabankalan
8. Ms. Herminia F. Rivas	-	DPWH Kabankalan
9. Ms. Sofia G. Orcon	-	DPWH Kabankalan

Other Agency

1. Mr. Aquiles M. Zayco, Jr.	-	Kabankalan Water District
2. Mr. Joel A. Basiao	-	NIA Division Mngr.

JICA Study Team w/ Local Consultants

1. Kazuto SUZUKI	-	Structural Engineer
2. Dr. Lope R. Villanes	-	Institutional and Organization, O&M Specialist

Local Consultant Conducting IEE

1. Ms. Bethela Castro-DelNero - Env't Specialist, CESM

Academe / Religious / NGO's – Non-Government Organization / PO's – People's Organization

1. Mr. Ismael Baoma - NGO-ACIPI Ilog

Communities

1. None

Abbreviations

1. PPDO – Provincial Planning Development Office
2. PPDC – Provincial Planning Development Coordinators
3. PSWDO – Provincial Social Welfare and development Office
4. MPDO – Municipal Planning Development Office
5. MPDC – Municipal Planning Development Coordinators
6. MENRO – Municipal Environmental and Natural Resource Office
7. MSWDO – Municipal Social Welfare and Development Office
8. NWRB – National Water Resource Board

PROCEEDINGS:

The Stakeholder's Meeting formally started at around 1:30 in the afternoon with an Invocation led by Ms. Hermania F. Rivas, emcee. This was followed shortly by Opening Prayer and singing of the Philippine National Anthem led by Ms. Sofemia G. Arcon.

Ms. Rivas set the tone for the meeting by acknowledging the participants consisting of representatives from various national and local government institutions; city and municipal officials; Local Consultants representatives and JICA study team.

Participants were formally welcomed by the Hon. Sangguniang Panglungsod Board Member Jeorge Largado Beratio in behalf of City Mayor Pedro P. Zayco, Jr.

Brief of Engr. Grecile Christopher Damo, DPWH PMO-FCSEC

Engr. Grecile Christopher Damo of DPWH PMO-FCSEC made a brief address remark on the Sector Loan Project.

Presentation of Mr. Kazuto SUZUKI: The Preparatory Study for Sector Loan on Disaster Risk Management in the Republic of the Philippines

Mr. Kazuto SUZUKI of JICA Preparatory Study Team presented the Study contents and its progress based on the results in the Steering Committee Meeting dated April 28, 2009. Before Mr. SUZUKI, started his presentation he expressed his thanked to various government and organizations that has extended support to the Study since the very beginning and also to the participants.

Mr. SUZUKI mentioned that the study includes the conduct of Feasibility Study on the Ilog-Hilabangan River Flood Mitigation Project, which would concentrate into built-up areas,

such as city proper of Kabankalan City and Munipality of Ilog, based on the study to be conducted.

He continued his presentation about the current status of flood control projects conducted by DPWH during 33 years in the past. He addressed that some projects have induced the lowering benefit and effectiveness against flood resulting from (1) the Delay of Construction due to ROW acquisition procedure problem and Cost Overrun, and (2) Lack of O&M activities for river structures completed by such projects. In this connection, Mr. Suzuki emphasized that the cooperation and initiatives of LGUs in the Project are absolutely imperative for the Project, to wit; (1) due effort for ROW acquisition by the concerned LGUs, (2) harmonized Project implementation between DPWH and LGUs, and (3) development and enhancement of flood management capacity for concerned organizations.

According to Mr. SUZUKI, the study team also gathered some information regarding the existing river alignment and cross sectional shapes, land-use and development in the project site. Aside from this, he also reiterated the status or situation of the river channels, some major cause of flooding in the project site and the basic concept in formulating the mitigation plan including the proposed structural and non-structural measures to be presented in expected succeeding stakeholders' meetings.

With regards to the mitigation that needs to be undertaken, Mr. Suzuki conceived of that the study team would proposed the following: for non-structural measures (1) measures for river channel that includes community-based flood mitigation and restraint of illegal land occupation in the river area; (2) measures for basin that includes land use control and control of disorderly land development; and (3) measures for damage mitigation that includes development and dissemination of flood hazard map, establishment of evacuation and flood fighting & preparedness against flood and unification of related agencies for flood mitigation. And for the structural measures the team identified potential mitigation measures against flood and these are (1) widening of river channel improvement, (2) construction of flood protection dike, and (3) construction of dredging of riverbed.

Open Forum

An Open Forum was conducted after the presentations facilitated by Engr. Damo of DPWH. Some of the important concerns and issues raised during the open forum were the following:

1. **Question:** Can JICA guarantee a 100% flood protection by the constructing a structural measure that will secure a flood free built-up area? ***(Mr. Higino Garaygay – City Administrator, Kabankalan City)***

   Answers: Structural measures could not secure the safety against huge flood beyond flood protection level. Basically, the flood protection level would be more or less 10 – 25 years return period level. It depends on possibility of ROW acquisition and the budget assuredness. ***(Engr. Damo, DPWH and Mr. Kazuto SUZUKI, JICA Study Team)***

   This Project's objective though is to limit the flood occurrences and limit damages brought by flooding every year.

In addition, the Project should consider climate change phenomena. In this connection, it is essential that effective alleviation activities regarding non-structural measures together with structural measure. ***(Engr. Damo, DPWH)***

2. Question: The main cause of flood or overflowing of river water at Kabankalan area is due to the very small flow capacity in downstream stretches (Ilog Area). It is recommended to improve their sections. ***(Engr. Rogelio Diaz, City Engineer of Kabankalan City and other Officers)***

Answer: The causes of flood and the countermeasures will be clarified and elaborated throughout the F/S. The optimum option of mitigation measures will be proposed. ***(Engr. Damo, DPWH and Mr. Kazuto SUZUKI, JICA Study Team)***

The clogging of river sections has been caused by several reasons, such as estuary closure due to wave, huge sedimentation generating in mountain areas and erosion of bank soil due to fast velocity. Hence, integrated flood mitigation measure including watershed management in harmony with other agencies (DENR) and other considerations about non-structural measures are also essential. The study will be conducted from polyphonic points of view. ***(Engr. Damo, DPWH)***

3. Question: It is deemed that Governmental agencies have a right for exploration of the area within 3m easement from the river bank. However, the flood control/river improvement project would require the extra easement beyond 3m from existing river bank. Therefore, it is necessary to prepare budget for land acquisition. How does the City secure such huge cost for ROW acquisition? ***(Mr. Higino Garaygay, Administrator of kabankalan City)***

Answer: As with the case of Iloilo Flood Control Project, all budgets for land acquisition and compensation was shouldered by DPWH including site development works in relocation sites. DPWH also paid damages to structures that are destroyed. The Iloilo City Government was responsible for the preparation of relocation areas and cooperation and collaboration regarding the Information and Education Campaign (IEC) for the Project and negotiation with land owners together with DPWH. ***(Engr. Peroy, DPWH Region VI)***

In this connection, it is required to conclude a MOA between DPWH and LGUs concerned in this regard to each responsibility, in advanced, for proper progress and implementation of the Project as well as O&M activities. ***(Mr. Kazuto SUZUKI, JICA Study Team)***

These issues should be clarified in this Study and solved within a couple of years in advance of the commencement of the Project. ***(Engr. Damo, DPWH)***

4. **Question:** At present, there is one plan to construct irrigation/multipurpose dam in the upstream of Hilabangan River by NIA. The flood protection project should consider this irrigation dam project plan. ***(Mr. Joel A Basiao, NIA)***

   Answers: The construction of multipurpose dam project including function of flood control effect will contribute flood mitigation in downstream area. Such effectiveness could be considered as enhancement / countermeasures against climate change of flood protection level to be achieved by Sector Loan. Flood protection level under the Sector Loan could be minimized if the construction of the dam would be guaranteed by proponent agencies and concurrence by NEDA. ***(Engr. Damo, DPWH)***

   In regards to the construction of irrigation dam, it shall be discussed in the Negros Island Integrated Water Resources Management Council established in June, 2008 as well as this Sector Loan in line with other consideration, such as watershed management and reforestation plan. ***(Mr. Kazuto SUZUKI, JICA Study Team)***

5. **Remarks:** The Second Stakeholder Meeting will be held in July or August to show a more detailed and improved plan/s with environmental and social consideration. ***(Mr. Kazuto SUZUKI, JICA Study Team)***

Closing Remarks was given by Mr. Danilo Peroy of the Planning Chief of DPWH Region VI. He expressed his gratitude to the participants for the support it has extended to the Study and likewise encouraged the people to support the project.

Finally, Hon. City Mayor Pedro P. Zayco, Jr. had expressed his gratitude and support for the JICA project.

Prepared by:

Kazuto SUZUKI
Structural Engineer
JICA Preparatory Study Team

(1st Revision)
Revised by

(2nd Revision)
Revised by

Approved by

MINUTES OF THE MEETING
SECOND STAKEHOLDERS' MEETING
THE PREPARATORY STUDY FOR SECTOR LOAN ON
DISASTER RISK MANAGEMENT
Sangguniang Panlalawigan Session Hall
Kabankalan City, Negros Oriental, Region VI
August 7, 2009

ATTENDEES:

Government of Kabankalan City

1. Mary Jo R. Gacho	-	Kabankalan Water District
2. Jesse Tanmoya Jr.	-	CPDC Kabankalan
3. Higino Garaygay	-	City ADU
4. Pedro Zayco Jr.	-	City Mayor
5. Andy F. Siason	-	City Engr.
6. Raul Jr.	-	SB Member
7. Reno Ladesma	-	Ecec. Asst III
8. R. Cajague	-	Kabankalan AID
9. Alexander Elicana	-	Kabankalan LLAE II
10. Ma. Corazon M. Torres	-	Clerk
11. Adeliza A. Tomarro	-	Kabankalan City
12. Sofemia G. Arcon	-	Clerk III
13. Arlene L. Mendieta	-	Kabankalan City
14. Jeorge M. Largado	-	Kabankalan City
15. Ma. Virginia G. Espanola	-	Acting SP Secretary
16. Crispin Raenin	-	Acctng Officer
17. Engr. Zandro Perez	-	City Engr.
18. John Alduen G. Behigay	-	SP Office Kabankalan City

Government of Municipality of Ilog

1. Isagani Gleivogo	-	Draftman/Municipality of Ilog
2. A. Daguia, Jr.	-	Ilog Municipality
3. Juliever A. Genovia	-	Engr. AID Ilog Municipality
4. Lyneth B. Robliza	-	SB Secretary

DPWH

1. Danilo M. Peroy	-	OIC-DPWH Region II
2. Grecile Christopher Damo	-	Engr. III DPWH-FCSEC
3. Philip F. Menez	-	Project Director, DPWH-MFCDPII
4. Milette T. Huilar	-	Engr. II DPWH-3rd NOED
5. Valentine B. Iligan Jr.	-	Engr. II DPWH-3rd NOED
6. Haydee S. Alunan	-	DPWH
7. Ma. Lucila C. Pinero	-	Egnr. III DPWH Region VI
8. Teresito E. Gargaritao	-	Engr. II DPWH-VI
9. Andronino Hulguin Jr	-	DPWH-Kabankalan
10. Val E. Tachib	-	Engr. III DPWH-VI
11. Herminia F. Rivas	-	Admin Officer DPWH-3rd NOED
12. Emilio Gastaza	-	DPWH Driver

Other Agency

1. Ramon L. Maleriado - DENR- CDA-II
2. Wenifredo Pestano - NIA ASST. ENGR.

JICA Study Team w/ Local Consultants

3. Kazuto SUZUKI - Structural Engineer
4. Antonio P. Basilio - JICA Consultant
5. Edilberto B. Damaua - JICA Consultant

Local Consultant Conducting IEE

2. Ms. Bethela Castro-DelNero - Env't Specialist, CESM
3. Aldwin Camance - CESM-Team Leader

Academe / Religious / NGO's – Non-Government Organization / PO's – People's Organization

2. Pastor Roger Selarito - Ilog Baptist Church
3. Ismael Bachita - ACIDI

Communities

2. None

Abbreviations

9. PPDO – Provincial Planning Development Office
10. PPDC – Provincial Planning Development Coordinators
11. PSWDO – Provincial Social Welfare and development Office
12. MPDO – Municipal Planning Development Office
13. MPDC – Municipal Planning Development Coordinators
14. MENRO – Municipal Environmental and Natural Resource Office
15. MSWDO – Municipal Social Welfare and Development Office
16. NWRB – National Water Resource Board
17. CPDC- City Planning and Development Council

PROCEEDINGS:

The Stakeholder's Meeting formally started at around 1:30 in the afternoon with invocation followed by the Philippine National Anthem. It is followed by the presentation of the project by the JICA Preparatory Study Team.

Mr. Kazuto Suzuki of the JICA Preparatory Study Team presented the basic concepts of structural measures and the required activities for the implementation to LGUs. He discussed about the basic concept of flood control measures protecting only the core areas, its precise concept and structural alternative. He also emphasized the required responsibilities and activities of the LGU should the project will be implemented and this will be entered into a Memorandum of Agreement (MOA) between the said LGU and DPWH. The MOA will contain the responsibilities of the LGU in land acquisition and relocation activities, establishment of Disaster Risk Management Committee, setting up of a Query Window,

modification of Comprehensive Land Use Plan, livelihood programs for relocated families, operation and maintenance activities and execution of non-structural measures.

Engr. Aldwin Camance of the Environmental Study Team presented the progress of the environmental and social survey for the project. He discussed the project planning cycle, the legal framework of the Philippine Environmental Impact Assessment (PEIA), the social acceptability and public participation of affected stakeholders, as well as the legal basis of resettlement under the Philippine Law System. He presented the objective of the study and the scope of the environmental survey. He also gave a brief overview on the different factors that contributes to the occurrence of flooding especially in a river ecosystem.

Dir. Philip F. Menez, the Project Director of DPWH, explained what the sector loan is all about and how Kabangkalan was chosen as one of the first river systems for this project.

Open Forum

An Open Forum was conducted after the presentations facilitated by Ms. Ma. Lucila Pinero. Some of the important concerns and issues raised during the open forum were the following:

***Concerm 1*:**

Question:
From the City Admin Office

Since the sector loan finances only the protection of the core areas or the populated built-up areas and according to the proposed design only the Poblacion side will be protected, how about the protection of the sugar cane plantation and factories on the opposite side of the river? Flood waters might go into Sugarcane mills. There is also a plan to put up a bio-ethanol plant and other sugar mills. That side is composed of 4 barangays. Although composed mostly of sugar cane plantation, there are also legal residents in that area. Is there any other option on the design and can it still be revised? How will it be affected by the height of dike/wall opposite it?

Answers:
Mr. Kazuto Suzuki

He recognizes the importance of sugar cane plantations and factories as very important source of income for Kabangkalan. Thus, we will take into consideration the protection of these sugarcane factories. But the priority for sector loan is the “core areas”, meaning the built up and heavily populated areas of the city. After the protection of the most important areas (the core areas of Kabankalan and Ilog), then we can decide to protect other structures like factories. Should there be sufficient budget, protection of farmlands and factories will be included in the flood mitigation design subject to Sector Loan conditionalities and proper consensus with the concerned stakeholders and agencies. This will be discussed with DPWH and the final decision will be presented in the 3rd Stakeholder’s Meeting.

Engr. Aldwin Camance:

It's a policy decision to prioritize core areas since these areas are most affected. We shall also look at non-structural techniques in mitigation measures. We don't have unlimited funds that will answer all problems but areas that are most affected can be relieved. It means this project focuses only on the protection of most affected areas where the majority will benefit. Also, there are non-structural measures that should be implemented i.e. evacuation and disaster risk management plan, reforestation, etc. Also due to high erosion rate of the river, every some years or so, further dredging now and then will be needed.

Engr. Grecile Christopher Damo:

He recognizes that constructing a higher dike along the core areas will affect the opposite side of the river. Therefore a possible mitigation is the excavation and dredging of the riverbed to compensate the volume of water going into that area, as well as relocating households that are prone to high flooding.

He also said that there will come a point that the dike gets damaged and can not hold as much flood. That is why one must not feel so safe. Vigilance is vital in proper maintenance of the dike.

Concern 2:

Question

Can the small waterways be also widened to mitigate the flooding problems of the other side of Ilog.

Answer:

Mr. Kazuto Suzuki:

This Sector Loan is for the main river, but will evaluate the gravity of problems with the drainage/waterways system. If conditions proves that these matters are really worse, then they will consider it in the design.

Philip F. Menez, MFCDP-PMO II Project Director:

We are only in the concept, planning and preparatory stage, that is why we are having these Consultation Meetings so that we can get the inputs of the affected stakeholders. Depending on the availability of funds, total costs and if within the criteria of the Sector Loan, these inputs will be evaluated and considered in the final detailed design of the project.

Wrap- Up by Engr. Grecile Christopher Damo:

The considerations in designing the flood control structures for the Ilog-Hilabangan River are a) the delineation of most flooded areas, b) the river capacity was calculated and c) dike proposal. These concept designs are presented to the stakeholders in these stakeholders meeting for approval. He then further encourages for more insights and cooperation from the group in the succeeding meetings. If there are

proposals, recommendations and additional inputs, it has to be put in writing. They will study further and conceptualize the best possible design which will not gravely affect the farmlands and houses on other side of the river so as not to bring serious damage to the main livelihood of Kabankalan and Ilog. Priority is to protect populated areas and all the inputs and suggestions of the people will be considered as long as it is still within the budget.

Closing Remarks by Philip F. Menez, MFCDP-PMO II Project Director

Pre-construction stage: Delineation of responsibility will be entered into a MOA between LGU and DPWH which will cover areas of concern outside of the loan.

He assured the crowd that JICA will evaluate and audit the project.

Before the crowd dismissed, Mr. Kazuto Suzuki showed the proposed design of the flood mitigation structural measures using an Aerial Photography to better explain the concept of the proposed design.

Prepared by:

Kazuto SUZUKI
Structural Engineer
JICA Preparatory Study Team

(1st Revision)
Revised by

(2nd Revision)
Revised by

Approved by

MINUTES OF THE MEETING
THIRD STAKEHOLDERS' MEETING
THE PREPARATORY STUDY FOR SECTOR LOAN ON
DISASTER RISK MANAGEMENT
Sangguniang Panlalawigan Session Hall
Kabankalan City, Negros Oriental, Region VI
September 30, 2009

ATTENDEES:

Government of Kabankalan City

1. Mary Jo R. Gacho	-	Kabankalan Water District
2. Jesse Tanmoya Jr.	-	CPDC Kabankalan
3. Ma. Corazon M. Torres	-	Clerk-Kabankan City
4. Arlene L. Mendieta	-	Kabankalan City
5. Jeorge M. Largado	-	Kabankalan City
6. Ma. Virginia G. Espanola	-	Acting SP Secretary
7. Val G. Bachita	-	LGU-Kabankalan City
8. Rommel M. Casuyon	-	LGU-Kabankalan City
9. Ma. Elena B. San Jose	-	PEMO
10. Natalia Joquino	-	PEMO
11. Boy G. Nacumalan	-	Kabankalan City
12. Jose M. Dumaguete	-	Kabankalan City
13. Roger V. Gatague	-	CEO
14. Felix Carollo	-	Kabankalan City
15. Delia O. Anacan	-	Vice Mayor Kabankalan City

Government of Municipality of Ilog

1. Lyneth B. Robliza	-	SB Secretary
2. Izagani Almaiz	-	SB Ilog Municipality
3. Salvador Gavian	-	LGU-Ilog
4. Catherine T. Kagada	-	MSWD-Ilog

DPWH

13. Danilo M. Peroy	-	OIC-DPWH Region II
14. Valentine B. Iligan Jr.	-	Engr. II DPWH-3rd NOED
15. Ma. Lucila C. Pinero	-	Egnr. III DPWH Region VI
16. Herminia F. Rivas	-	Admin Officer DPWH-3rd NOED
17. Emilio Gasataya	-	DPWH Driver
18. Sofia G. Arcon	-	DPWH-Kabankalan
19. Vidla A. Hitalia	-	DPWH-3rd NOED
20. Jose Gifredo V. Cahilig, Jr.	-	DPWH-3rd NOED
21. Bernardino Gallego	-	DPWH-3rd NOED
22. Elsie V. Sabay	-	DPWH-3rd NOED
23. Alejandro Sosa	-	DPWH-MFCPDII
24. Gerard G. Dungue	-	DPWH-Kabankalan

Other Agency

3. Ramon L. Maleriado	-	DENR- CDA-II
4. Ramon L. Maleriado	-	DROCK/Rescue

5. Romeo Villianueva - DROCK/Rescue
6. Jim B. Penaranda - DROCK/Rescue
7. Romeo A. Dionzon - DROCK/Rescue

JICA Study Team

6. Hideki IMAI - Environmental and Social Expert
7. Makoto MITSUKURA - River Planning

Local Consultant Conducting IEE

4. Ms. Bethela Castro-DelNero - Env't Specialist, CESM
5. Aldwin Camance - CESM-Team Leader
6. Benet F. Del Rosario - CESM

Academe / Religious / NGO's – Non-Government Organization / PO's – People's Organization

4. Ismael Bachita - ACIDI
5. Ptr. Roger G. Selarte - ACIDI

Communities

3. None

Abbreviations

18. PPDO – Provincial Planning Development Office
19. PPDC – Provincial Planning Development Coordinators
20. PSWDO – Provincial Social Welfare and development Office
21. MPDO – Municipal Planning Development Office
22. MPDC – Municipal Planning Development Coordinators
23. MENRO – Municipal Environmental and Natural Resource Office
24. MSWDO – Municipal Social Welfare and Development Office
25. NWRB – National Water Resource Board
26. CPDC- City Planning and Development Council
27. PEMO- Provincial Environment and Management Office

Proceedings:

The Kabankalan third (3rd) stakeholders meeting dated September 30, 2009 was held in Kabankalan Sangguniang Bayan Hall. Pastor Roger G. Silarte from Ilog Baptist church led the opening prayer while Ms. Ma. Corazon Torres headed the singing of the national anthem.
Welcoming remarks were given by Kabankalan Vice Mayor Delia Anacan. In the same way, she introduced prominent members of city council such as committee chairman on the environment, Mr. George Larkado together with Mr. Severino and Mr. Dumaguete.
The Vice Mayor afterwards acknowledged the presence of Mr. Hideki Imai, the environmental specialist of JICA study team and Engr. Makoto Mitsukura, the River Planning Engineer from CTI. Others who were also mentioned were Engr. Aldwin Camance from CESM, Engr. Alejandro Sosa from the DPWH Central Office and Engr. Viola Hitalia, the OIC - District Engineer.

The Planning Engineer, Makoto Mitsukura described the Flood inundation results through satellite images of Kabankalan and Ilog. The land use plan for future conditions was also presented, revealing agricultural areas and sugar fishpond areas. Furthermore, flood inundation results based on 2, 5, 10, 25 year probability studies were exhibited for flood projections.

Engr. Makoto Mitsukura then reported to have referred to a JICA Master Plan in 1990 flood control for this project. Many modifications have been developed and considered in this study, including the widening of the Kabankalan River and construction of dike.

Also stemming from this plan were proposed alternatives. One is to create ring dike enclosing core areas. Mr. Mitsukura stressed the minimization of flood damage in Ilog and Kabankalan. Subsequently, he proposed three dike systems and non-structural measures in the delineation of areas. Another important matter that needed to be discerned was the number of houses to be relocated and disposal site of dredged soil. For his concluding remark, he urged the need for a MOA between LGU and DPWH that straightens out issues of responsibilities, relocation, operation and maintenance.

The next speaker, Engr. Aldwin Camance opted to elucidate the previous presentation in detail. He explained build up areas in Kabankalan and the upcoming land use. Flood projections for 2, 5, 10, 25 year periods were also clarified .

Furthermore, Engr. Aldwin Camance discussed the 27.7 hectares that must be acquired from the 3 haciendas (San Lucas, Las Soriaga and Biarin) and also the widening and dredging of the river. With this, he made an assurance that other areas would remain the same if not better. Since the goal of the project is the protection of core areas and the budget is limited, not everyone shall be completely protected.

Question and Answer Portion:

Question 1:

There is so much water that comes to Ilog.

Answer

Ilog is a natural catchment basin. But our goal is to protect core areas of the city/town, that's why we need to dredge.

Question 2

Councilor Almaiz of Ilog:

When rainy days come we encounter flood since we have a low level elevation. But we have a proposal. We could accommodate the volume of water as long as the outlet is widened and deepened. If the two (2) exits (namely the channel and portion of Malabong) will be fixed, then we might not experience flooding anymore.

Answer

Engr. Aldwin Camance:

One of the main objectives of the sector loan is the protection of built up or core areas. For Ilog, the best design is to put a ring dike around the Ilog Poblacion, which is the main core area, so that the town hall, the residences and school will be protected.

Engr. Alejandro Sosa (DPWH Central Office):

The study was based on the 1990 Master Plan. During that time the channel was functioning and there was no severe flood problem in Ilog. I do not know if JICA considered that design. It already became silted. So we should consider your recommendations if it has not been included yet in the study.

Engr. Makoto Mitsukura:

JICA Study Team considered the Old-Ilog River improvement because it was also considered in M/P study in 1990. In the M/P, the Old-Ilog improvement was not selected due to economic efficiency.

Engr. Aldwin Camance:

The main Ilog-Hilabangan River is wide and the Old-Ilog River channel is very narrow. It can't hold this much water that is why it wasn't considered. Another concern is the issue of maintenance. There shall be an extreme siltation along the smaller channel, so there should be dredging every now and then. The question is, can the Ilog LGU afford the maintenance responsibility,

Engr. Makoto Mitsukura:

According to our analysis of Ilog River it has a discharge of 3700 cubic meters. And the other has only 200 to 300 cubic meters. The flowing ability is 500 to 1000m3/s. So even if the Old-Ilog River is improved, the contribution to the flood mitigation is relatively small. That is why we did not propose river improvement of Old-Ilog River.

Question

Councilor Almaiz of Ilog:
Clogging is caused by the mangrove particularly the nipa. We will make an ordinance that shall not allow people to plant mangroves along river banks.
If that is the case we might as well let everyone in Ilog suffer. We must protect everyone or no one.

Answer

Engr. Alejandro Sosa:
So there are 3 alternatives to protect Ilog and Kabankalan. If you compare with or without situation, the inundation area will improve. In alternative 3 we protect the core areas while making sure other areas shall not get worse.

Councilor Almaiz of Ilog:
You can build the ring dike but you must also widen the channels and creeks in Malabong and Consuelo area of Ilog.

Engr. Alejandro Sosa:

This is a valid concern. We can look into the proposal and include widening of channels if it can be still accommodated and as long as the costs permits. But the Ilog LGU will still have a counterpart in the operation and maintenance, which will be signed in a MOA.
JICA pays only for the study. But the operation and maintenance is not part of the loan. Please be noted that the sector loan has conditionalities such as issues of right of way, operation and maintenance. So we should also consider the capability of the LGUs.

Question

Councilor Almaiz:

When we have agreed and settled the designs and the loan is approved, I'd like to ASK ANS SUGGEST to please start where the clogging is located. Please start the groundwork in Ilog.

City planning and coordination of the city:

I suggest that some of the comments would be included in the study. Try to consider what has happened the last 18 years. We may have other options.

Answer

Engr. Aldwin Camance:

The final configuration shall not stray from this. They made this study with the goal of protecting core areas.
We did soil sampling and the contaminants are not that significant. There are traces of Chromium and Arsenic in sediments but they are not too high to become "solid waste".

CLOSING REMARKS

Engr. Alejandro Sosa gave the closing remarks and emphasized on conditionality. Projects must not encounter right of way problems. This must be verified in the field and there must be information disseminations.

Conclusion:

There was no major opposition to the proposed Sector Loan Project. In fact, the project is very much welcomed and appreciated and the people want it to start as soon as possible. The only concern the people of Ilog and Kabangkalan is for the JICA Study Team to reconsider their design in a way that instead of putting a ring dike, clear, widen, and dredge the Old Ilog River instead.

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