

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Executive Summary

- A. Project Title : Rehabilitation of Imbang Grande –Tagubong-Gemumua Agahon - Agtabo Farm To Market Road
- B. Project Location : Passi City, Province of Iloilo
- C. Project Proponent : Provincial Government of Iloilo and City Government of Passi
- D. Implementing Unit : Iloilo Provincial Government through the Provincial Engineer’s Office
- E. Project Beneficiaries : 19,187 population M= 9,983 ; F= 9,204; 4,080 households

The social and environmental safeguards (SES) is one of the support activities of the Philippine Rural Development Program (PRDP) to ensure that the subprojects to be implemented are not only technically, economically and financially viable, but are also environmentally and socially sound and sustainable.

The SES operates according to the provisions of the Philippine Environmental Impact Statement Law (Presidential Decree 1586), the Philippine Indigenous Peoples Rights Act (Republic Act 8371), the Right of Way Acquisition Law (Republic Act 8974) and their implementing rules and regulations and the operational policies of the World Bank on Environmental Assessment (Operational Policy/Bank Policy 4.01), Natural Habitats (Operational Policy/Bank Policy 4.04), Pest Management (Operational Policy 4.09), Indigenous Peoples (Operational Policy/Bank Policy 4.10) and Involuntary Resettlement (Operational Policy/Bank Policy 4.12).

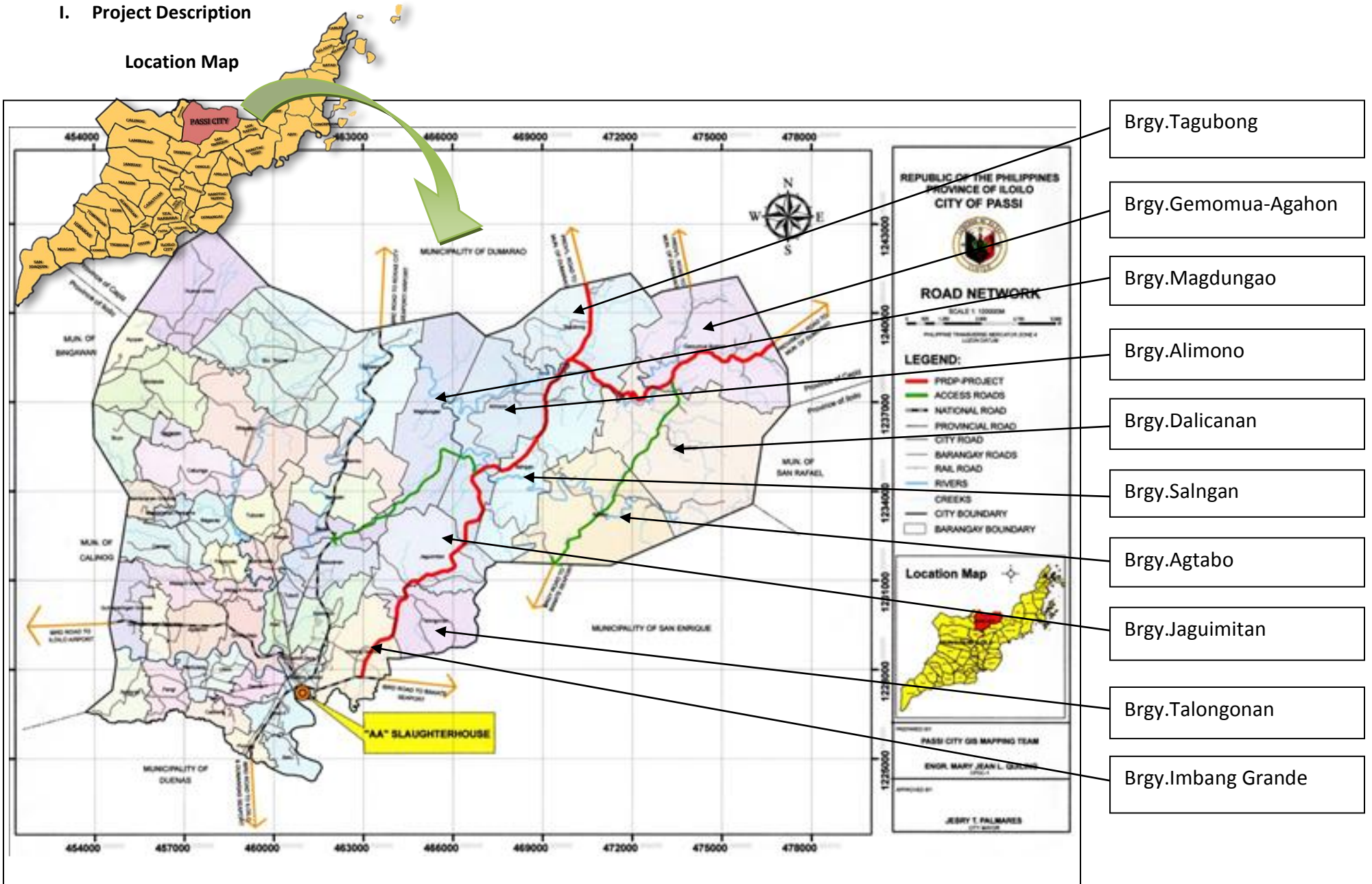
Aimed at ensuring that the people and the environment are not adversely affected by the projects, the proposed subproject undergone environmental screening conforming to the environmental guidelines. As part of project implementation it was determine if construction activities will cause displacement and will affect persons such that appropriate resettlement, compensation and rehabilitation plans in accordance to land acquisition, resettlement and rehabilitation framework are being formulated for the project affected persons. Moreover, the proposed subproject determined project affected rural communities, particularly involving the indigenous peoples and communities through Field Based Investigation, which was conducted by the NCIP. Several barangay public consultations were also conducted in the ten barangays within the road influence area.

The subproject undergone rapid environmental and social assessments as part of the feasibility study. The environmental and social assessments (which form part of the feasibility study reports) contained sufficient information about the environmental and social conditions of the subproject site, which was conducted through total enumeration in all barangays within the road influence area.

The proponent prepared the Environmental and Social Management or Mitigation Plans (ESMPs), which outlined the minimum information requirements of the Environmental and Social Assessments in the Subproject Feasibility Study Report. The ESMP was submitted as part of the project proposal package along with the Feasibility Study reports and other safeguards documentary requirements.

I. Project Description

Location Map



1.1 Project Location and Area

The proposed rehabilitation of Imbang Grande –Tagubong-Gemumua Agahon - Agtabo Farm to Market Road is located in Passi City, Iloilo.

The proposed concreting of road will begin at the junction of the national highway connecting Passi City and the municipalities of San Enrique and San Rafael. The road traverses Barangays Imbang Grande, Jaguimitan, Salngan, Alimono, Tagubong up to the boundary of the municipality of Dumarao, Capiz. It will branch – out from Barangay Tagubong to Barangay Gemumua–Agahon to Barangays Dalicanan and Agtabo.

The road influence area is bounded by the municipality of San Enrique in the southeast, the municipality of San Rafael in the east and the municipality of Dumarao in the north.

It covers ten (10) barangays, of which eight (8) are directly traverse by the proposed FMR sub-project and they are all the above-mentioned barangays. The remaining two (2) other barangays not directly traverse by the proposed road project are barangays Talongonan and Magdungao. The proposed road project runs almost parallel to the two national highways, namely Iloilo – Capiz national highway, which is an International Bank on Reconstruction Development (IBRD project and Passi City – San Enrique – San Rafael national highway which is part of the Strong Republic Nautical Highway.

1.2 Project Rationale

The Province of Iloilo is one of the identified recipients of the Department of Agriculture’s Philippine Rural Development Project (PRDP). The PRDP is a six-year World Bank funded program (2013-2018) designed to establish an inclusive, market-oriented and climate resilient agriculture and fisheries sector through strategic investments in priority commodity value chains. The program will partner with LGUs and private sector in providing key infrastructure, facilities, technology, and information that will raise incomes, productivity, and competitiveness in the countryside.

Typhoon Yolanda or internationally known as Typhoon Haiyan devastated the Province of Iloilo last November 8, 2013 and the City of Passi was one of the affected area. It significantly affected the city and its people. Several lives were lost and damages to property, infrastructure and livelihood of farmers were great. Recovery effort especially in the livelihood of the people is very important to normalize their lives. The government is doing what it can do but with meager resources it will take time before everything will be put to normal again.

Relative to this, the Iloilo Provincial Government had proposed for funding the rehabilitation of Farm-to-Market Road (FMR) along the Junction National Road (JNR) Asisig-Jaguimitan-Tagubong-Dumarao Road, Junction Provincial Road (JPR) Tagubong-Gemumua Agahon Road and JPR Gemumua Agahon-Dalicanan-Agtabo Road in Passi City or a total of 28.003 kilometers.

The Philippine Rural Development Project (PRDP) aims to have at least 5% increase in the annual real farm incomes of PRDP household beneficiaries, a 7 % increase in value of annual marketed output and 20% increase in number of farmer beneficiaries with improved access to DA services.

Specifically, the proposed rehabilitation of Imbang Grande –Tagubong-Gemumua Agahon - Agtabo Farm to Market Road aspires to rehabilitate a twenty eight kilometre and three meters (28.003 kms.) road that will connect Barangay Imbang-Grande, Passi City to the boundary of the Municipality of Dumarao, Capiz and Barangay Gemumua-Agahon to the Municipality of San Enrique, reduce travel time of commuters by 40%, reduce transport cost by 50% , increase traffic count by 60% within the program implementation

period, improve land use pattern through improved access to markets and input sources and attract more investors in the area through improved road condition.

1.3 Project Alternative

Project identification and prioritization was based on the priority commodity of the Province which was selected based on the commodity prioritization process based on PRDP guidelines on commodity prioritization criteria, wherein the Provincial Project Management and Implementation Unit (PPMIU) shortlisted and prioritized six commodities using these criteria: Suitability (20%); Market Potential (30%); Impact to the Poor (20%); and Number of Growers/Producers (30%). Out of the six commodities that were prioritized, swine ranked number one and this was one of the bases in project identification.

Thus, the proposed rehabilitation of farm to market road was identified in support to the swine industry in the project site as the priority commodity of the Province of Iloilo.

Furthermore, the project location was also prioritized and selected and it has to be within the following criteria: 1) A Typhoon Yolanda (Haiyan) stricken component city or municipalities in the province of Iloilo; 2) One of the top ten swine producing component city or municipalities in the province; and 3) Has a major and modern slaughter house within the vicinity of the component city or municipality where the proposed sub-project is located.

The barangays within the identified location were prioritized and selected to be the site of the proposed sub-project on the following criteria: 1) The barangay that produces the most number of heads of swine within the component city; and 2) Barangays that is contiguously located.

1.4 Project Component

The proposed project is the concreting of an existing 28.003 kilometer gravel provincial road with an existing width of 15 meters. The proposed project will have a total width of 10 meters or a carriageway of 5 meters plus shoulder of 1.50 meters both sides and 1 meter canal ditch both sides and pavement thickness of 9 inches (0.23 meter).

The project is composed of three road segments: Segment A is Junction National Road (JNR) Imbang Grande-Jaguimitan-Tagubong-Dumarao Road; Segment B is Junction Provincial Road (JPR) Tagubong-Gemumua Agahon Road and Segment C is JPR Gemumua Agahon-Dalicanan-Agtabo Road.

BARANGAYS DIRECTLY TRAVERSE BY THE FMR	SEGMENT A		SEGMENT B		SEGMENT C		TOTAL	
	Existing Gravel Road (km.)	Proposed Concrete Road (km.)	Existing Gravel Road (km.)	Proposed Concrete Road (km.)	Existing Gravel Road (km.)	Proposed Concrete Road (km.)	Existing Gravel Road (km.)	Proposed Concrete Road (km.)
Imbang Grande	1.76862	1.76862						
Talongonan	1.27745	1.27745						
Jaguimitan	3.35617	3.35617						
Alimono	2.85914	2.85914						
Salngan	3.14885	3.14885						
Tagubong	3.35277	3.35277	2.86851	2.86851				
Dalicanan			2.54581	2.54581				
Gemumua Agahon			2.24568	2.24568				
Dalicanan					2.6765	2.6765		
Agtabo					1.9035	1.9035		
TOTAL	15.763	15.763	7.66	7.66	4.580	4.580	28.003	28.003

Project Component	Segment A	Segment B	Segment C
Horizontal Road Alignment	<p>Segment A is an existing provincial road duly paved with aggregate materials; with exposed limestone, banica stone in some sections and existing 1,210 ln.m. of PCCP. It traverses along Barangays Imbang Grande, Talongonan, Jaguimitan, Salngan, Magdungao, Alimono and Tagubong and has a total length of 18.23 kms. which commence at the junction of Passi City-San Enrique National Road.</p>	<p>Segment B is also an existing provincial road with same road surface materials of segment A and has a total length of 9.140 kms. This road section commences at Brgy. Tagubong at Sta. 15+040 of JNR, Asisig-Jaguimitan-Tagubong-Dumarao Road (Segment A). The horizontal alignment of the road closely follows the existing road alignment with some modifications on sharp curves to provide ample sight distances and wider carriageway to provide enough space for opposing and passing vehicles. The minimum requirements for radii of the road's horizontal curvature are met; i.e. 120 meter on flat terrain; 55 meter on rolling terrain and 30 meter on mountainous terrain. Side slopes for cut and embankment section is maintained at a ratio of 1.50 horizontal to 1 vertical. To minimize erosion on embankments stone masonry slope protection measures shall be provided.</p>	<p>Segment C is also an existing provincial & Barangay road with same road surface materials of segment A & B and has a total length of 4.58 kms. This road section commences at Brgy. GemumuaAgahon at Sta. 4+501 of JPR, Tagubong-GemumuaAgahon Road (Segment B).</p>
Vertical Road Alignment	<p>The sub-projects courses through on a flat and rolling terrain.</p> <p>Some section on Segment A traverses into a mountainous terrain having a gradient of 13.60% with a minimum length of 20 meters.</p> <p>There is no massive downgrading that has occurred.</p>	<p>The sub-projects courses through on a flat and rolling terrain.</p> <p>There is no massive downgrading that has occurred.</p>	<p>The sub-projects courses through on a flat and rolling terrain.</p> <p>There is no massive downgrading that has occurred.</p>

<p>Drainage/Hydraulic</p>	<p>Lamunan River is the only river that crosses both sub-projects for Segment A it has two existing bridges; Steel Bridge at Sta.9+407 and RCDG Bridge at Sta. 14+816.</p> <p>Historically the river had not experienced flooding in the past.</p> <p>The road section has also existing RC Pipe Culverts which need to be repaired and replaced for sizes below 910mm in diameter.</p>	<p>The road segment has only one Steel Bridge at Sta. 0+560 and also three minor creeks which have three (3) existing Overflows.</p> <p>The overflows need to be repaired. The overflows has a dilapidated wing wall and apron slab, it also needs additional pipe culverts. It has an average discharged of 53 cu.m./sec. The road section also has existing RC Pipe culverts which need to be repaired and replaced for sizes below 910mm in diameter.</p> <p>Side cut and riprapping should also be done and road canal lining at steeps area to prevent landslide and erosion at Sta. 3+000 to 3+100 & Sta. 5+511 to 5+760.</p>	<p>The road segment has only one existing one (1) Reinforced Concrete Box Culvert. The overflow & RCBC needs to be repaired. The structures has a dilapidated wing wall and apron slab, it also needs additional pipe culverts. It has an average discharged of 53 cu.m./sec.</p> <p>The road section also has existing reinforced concrete pipe culverts which need to be repaired and replaced for sizes below 910mm in diameter.</p> <p>Side cut, riprapping (slope protection) done and road canal lining should also be done at steeps area to prevent landslide and erosion.</p>
<p>Structural Analysis-Pavement Thickness</p>	<p>The design pavement thickness is nine (9) inches or (0.23 meter), with a carriageway of 5 meters plus shoulder of 1.50 meters both sides with ditch canal of 1 meter both sides. It has aggregate base-course material of 0.20m thick on the carriage way and 0.40m on both shoulders. The design is based on AASHTO Rigid Pavement Structural Design Analysis and Average Daily Traffic > 200.</p>	<p>The design pavement thickness is nine (9) inches or (0.23 meter), with a carriageway of 5 meters plus shoulder of 1.50 meters both sides with ditch canal of 1 meter both sides. It has aggregate base-course material of 0.20m thick on the carriage way and 0.40m on both shoulders. The design is based on AASHTO Rigid Pavement Structural Design Analysis and Average Daily Traffic > 200.</p>	<p>The design pavement thickness is nine (9) inches or (0.23 meter), with a carriageway of 5 meters plus shoulder of 1.50 meters both sides with ditch canal of 1 meter both sides. It has aggregate base-course material of 0.20m thick on the carriage way and 0.40m on both shoulders. The design is based on AASHTO Rigid Pavement Structural Design Analysis and Average Daily Traffic > 200.</p>

1.5 Process/Technology Options

Production Process

Existing Condition	Proposed Modification
<p>With the current condition of the proposed road project (gravel road), high vehicle operating cost, high cost of transporting people and commodities, longer travel time, bad road condition that significantly influences road safety can be observed. Minimal and limited land utilization due to very expensive transportation cost can also be observed. The people in the barangays have no option as to the time they would like to transport their goods since the jeepneys have only two trips in a day</p>	<p>There is a need to close the gaps that were identified from the current road condition. These gaps can be addressed by constructing a concrete road that will traverse the entirety of the identified road segment. If the concrete road will be constructed the constraints that were identified will be addressed resulting in the following benefits; vehicle operating cost will be at the minimum, cost of transporting people and commodities will be reduced, travel time of economically active commuters and ordinary commuters will be lessened into half and travel time saved can be allocated in performing productive activities. Road safety may be insured, post-harvest losses due to hauling may be reduced and land use and land utilization trends may be improved.</p> <p>People in the area will be more flexible in their time management especially to the economically active commuters since there will be more vehicles that will ply the route and more trips will be available. More investments will come in and basic government services, especially in health and peace and order can easily be accessed. In cases of emergency health personnel and the police will have shorter response time and can easily reach any point within the road influence area.</p> <p>With the constraints addressed from the current road condition (without the project scenario) to the proposed road condition (with project scenario), There will be more business activities that will result to more employment and family income of the people in the area and will also increase agricultural production, farm inputs utilization will also increase, which will result to increase in revenue of Passi city and the neighboring towns, and improved economy of the area.</p>

The proposed sources and location of quarry materials such as sand, gravel and base course, borrow pits and construction materials are in Brgy. Pader, Dueñas, Brgy. Guiso, Calinog, Brgy. Daan-Banwa, Lambunao, Brgy. Cag-an, Anilao and Brgy. Gines, Passi City with a distance of more or less thirty (30) to forty five (45) kms. from the proposed project site. The City of Passi has also several hardware stores available with enough supply of construction materials that will be needed by the sub-project.

Handling of materials both aggregates and construction materials will be bought to from the sources and to be hauled to the project site. The availability of the materials is more than enough to complete the said project.

The Department of Public Works and Highways identified and issued certification as to the accreditation for quarry materials, dated July 21, 2014 and PENRO-Province of Iloilo issued a certification for the source of quarry materials, dated 12th day of August, 2014.

Location of Quarry	Distance to the Project Site (Kms.)	Type of Quarry Materials
Brgy. Gines Viejo, Passi City	23	Sand, Gravel, Base Course
Brgy. Pader, Dueñas	27	Sand, Gravel, Base Course
Brgy. Guiso, Calinog	30	Sand, Gravel, Base Course
Brgy. Daan-Banwa, Lambunao	45	Sand, Gravel, Base Course

Waste Management

Construction wastes e.g. sacks, cans, plastics, scrap lumbers will be properly segregated at source and will be regularly disposed to the City dumpsite/MRF and thrash cans will be provided in the project site.

The soils to be excavated from the embankment of the project site will be disposed to the identified dumping sites at the property owned by the City Government of Passi and different baranggays: back area of the City Hall, Barangay Salngan, Barangay Gemumua-Agahon and Barangay Dalicanan. This is supported by a certification of the City Mayor and concerned baranggay Captains issued on the 4th day of August, 2014.

1.6. Project Size

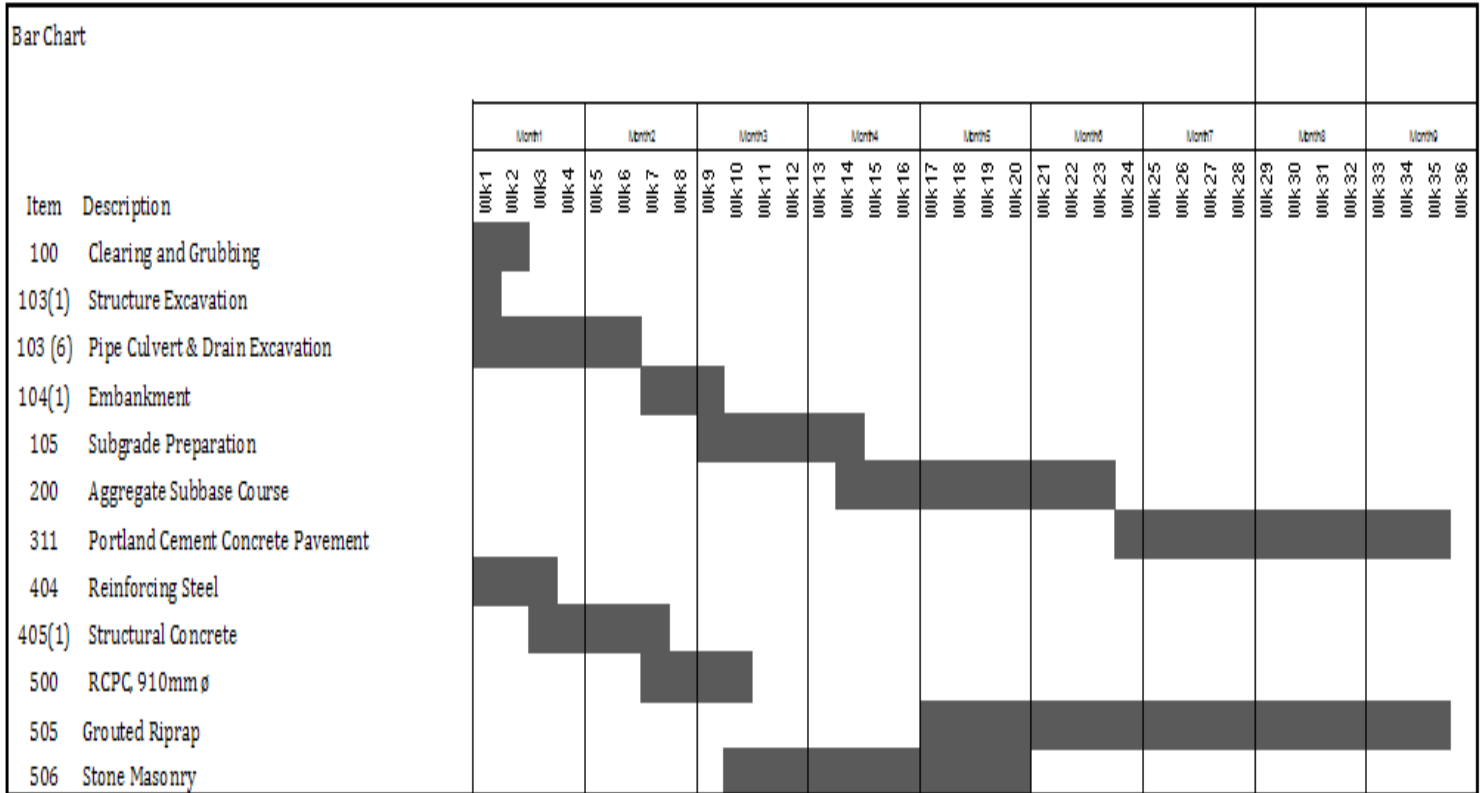
The proposed project has a total length of 28.003 kilometer. Its existing width is 15 meters while the proposed project will have a total width of 10 meters or a carriageway of 5 meters plus shoulder of 1.50 meters both sides and 1 meter canal ditch both sides and pavement thickness of 9 inches (0.23 meter).

Road Segment	Length (Kms.)		Width (meters)		Thickness (inches)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Segment A (Imbang Grande-Jaguimitan-Tagubong Road)	15.763	15.763	15	10	Gravel Road	9
Segment B (Gemumua Agahon-Tagubong Road)	7.660	7.660	15	10	Gravel Road	9
Segment C (Gemumua Agahon-Dalicanan-Agtabo Road)	4.580	4.580	15	10	Gravel Road	9
Total	28.003	28.003	15	10	Gravel Road	9

1.7. Implementation Plan

ACTIVITIES/MILESTONES	TARGET DATE
1. Pre –Implementation/Construction Phase	
1.1 Issuance of Executive Order Creating Provincial Management Implementation Unit (PPMIU)	25-Oct-13
1.2 Approval and signing of Memorandum of Agreement (MOA)	20-Aug-14
1.3 Submission of Project Proposal to Philippine Rural Development Project-Regional Project Coordination Office (PRDP-RPCO)	5-May-14
1.4 Validation of proposed project	4-Jun-14
1.5 Preparation/Approval of Feasibility Study (FS) by PLGU	4-Jun to 4-Jul-14
1.6 Preparation of Detailed Engineering Design (DED)	4 Jun to 4-Jul-14
1.7 Preparation of Social and Environmental Safeguard Compliance Documents	4 Jun to 4-Jul-14
1.8 Preparation of Bidding Documents, Operation and Maintenance Plan and Implementation Management Agreement (IMA)	2-Sep-14
1.9 PLGU Endorsement of FS/DED/Bid Docs/IMA to RPCO	5-Sep-14
1.10 FS/DED/Bid Docs/IMA endorsed for Regional Project Advisory Board (RPAB) approval	25-Sep-14
1.11 FS/DED/Bid Docs/IMA approval by RPAB/World Bank	5-Dec-14
1.12 No Objection Letter 1 (NOL1) issuance on FS/DED/Bid Docs/IMA	15-Dec-14
2. Implementation (Procurement) Phase	
2.1 Preparation and conduct of pre-procurement conference	18-Dec-14
2.2 Placement of advertisement of PLGU-BAC	27-Dec-14
2.3 Conduct pre-bid conference	15-Jan-15
2.4 Conduct of Bidding (Opening & evaluation of bids by PLGU-BAC)	27-Jan-15
2.5 Submission of bid evaluation to RPCO by PLGU-BAC	3-Feb-15
2.6 RPCO review of bid evaluation report and endorse to WB/PSO for NOL 2	17-Feb-15
2.7 WB/PSO Issuance of NOL 2 (Bid Evaluation Report)	19-Mar-15
3. Implementation (Construction) Phase	
3.1 Contract awarding	26-Mar-15
3.2 PLGU Issuance of Notice to Proceed for Contract Implementation	10-Apr-15
3.3 Pre-construction conference	17-Apr-15
3.4 Construction	Feb.-Oct-15
3.5 LGU final inspection	Nov-15
3.6 Completion and Issuance of Certificate of Completion	Nov-15
4. Post Construction Phase	
4.1 Preparation of project completion report	Dec-15
4.2 Closing of LGU accounts	Jan-Mar-15

The total project duration is 266 calendar days with expected start of project on the first week of January 2015 and the rehabilitation will end on the last week of September 2015.



1.8 Manpower

Associated in the implementation of this project is the generation of jobs. Skilled and unskilled laborers are needed to complete the project. Skilled laborers are defined as a worker which requires a special skills, acquired skills or knowledge while unskilled laborers which does not requires a special skills or knowledge of the job at all.

The PLGU will make sure that 40% of skilled laborers and 60% of unskilled laborers will be coming from the beneficiary barangays or nearby barangays within the municipality.

The sub project implementation will be hiring a maximum of 29 unskilled laborers/workers where 60% will be coming from the subproject area. The work that will be assigned will include the installation of drainage facilities, clearing/cutting of bushes/trees and heavy equipment helpers.

A maximum of 28 skilled laborers will be hired for the sub project implementation, 40% of which will be coming from the subproject areas. They will be assigned as team leaders for various works.

Manpower Utilization Schedule		Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7				Month 8				Month 9					
		00k1	00k2	00k3	00k4	00k5	00k6	00k7	00k8	00k9	00k10	00k11	00k12	00k13	00k14	00k15	00k16	00k17	00k18	00k19	00k20	00k21	00k22	00k23	00k24	00k25	00k26	00k27	00k28	00k29	00k30	00k31	00k32	00k33	00k34	00k35	00k36		
Project Engineer																																							
Materials Engineer																																							
Foreman		2	2	1	1		1	1		1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2		
Instrument man(Survey)																																							
Bulldozer Operator		2	2				2	2	2																														
Backhoe Operator		3	3					1																															
Payload Operator										2	2															2	2	2	2	2	2	2	2	2	2	2	2		
Road Grader Operator							2	2		3	3	3	3	3	3	2	2	2	2	2	2	2	2	2															
Road Roller Operator										2	4	4	4	4	4	3	3	3	3	3	3	3																	
Dump Truck Driver		2	2							3	3																												
Water Truck Driver										2					1	1	1	1	1	1	1					2	2	2	2	2	2	2	2	2	2	2	2		
Transit Mixer Driver																										5	5	5	5	5	5	5	5	5	5	5	5		
One Bagger Mixer Operator						1	1			1	1	1	1	1	1	1	1	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Concrete Vibrator Operator						1	1																			2	2	2	2	2	2	2	2	2	2	2	2		
Concrete Cutter Operator																														2	2	2	2	2	2	2	2		
Plate Compactor Optr.																										2	2	2	2	2	2	2	2	2	2	2	2		
Batching Plant																																							
Bar Cutter Operator		1	1	1																						5	5	5	5	5	5	5	5	5	5	5	5		
Bar bender		1	1	1																																			
Mason						2	2			1	1	1	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Carpenter						2	2	2	2	2	2	2																											
Steelman		2	2	2						1	1	1	1																										
Total Skilled Labor		13	13	7	7	6	2	10	18	18	14	12	12	12	12	11	11	15	15	15	15	13	9	9	26	26	26	26	28	28	28	28	28	28	28	28	0		

Survey Aides		2	2																																		
Bulldozer Helper		2	2							2	2	2																									
Backhoe Helper		3	3								1																										
Payload Helper																										2	2	2	2	2	2	2	2	2	2	2	2
Road Grader Helper										2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	2												
Road Roller helper										2	4	4	4	4	4	3	3	3	3	3	3	3															
Dump Truck Helper		2	2							3	3																										
Water Truck Helper																		1	1	1	1	1	1	1	1					2	2	2	2	2	2	2	2
Transit Mixer Helper																										5	5	5	5	5	5	5	5	5	5	5	5
One Bagger Mixer Helper																																					
Concrete Vibrator Helper																																					
Concrete Cutter helper																																					
Plate Compactor Helper																																					
Batching Plant																																					
Bar Cutter																																					
Bar bender																																					
Laborers		2	2	8	8	8	8	12	12	12	12	10	10	10	10	10	10	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Unskilled Labor		11	11	8	8	8	8	16	26	26	26	29	29	29	29	27	27	41	41	41	41	38	31	31	55	55	55	55	57	57	57	57	57	57	57	57	0
Total Manpower Required		24	24	15	15	14	10	26	44	44	33	29	29	29	29	27	27	41	41	41	41	38	31	31	55	55	55	55	57	57	57	57	57	57	57	57	0

1.9 Indicative Project Investment

The total project cost is Php264,013,218.94, wherein 80% of the total project cost or Php211,210,575.15 will be financed by the World Bank, 10% of the total project cost or Php26,401,321.89 will come from the Government of the Philippines (GoP) through the Department of Agriculture and the remaining 10% or Php26,401,321.89 will be shared by the Local Government Unit (Province of Iloilo and City of Passi).

Total Project Cost	Funding Sources and Cost Sharing		
	Government of the Philippines		Local Government Unit
	WB Loan Proceeds (80%)	National Government (10%)	Province of Iloilo and City of Passi (10%)
Php 264,013,218.94	Php 211,210,575.15	Php 26,401,321.89	Php 26,401,321.89

II. Analysis of Key Environmental Impacts

2.1 Land Use and Classification

The present vegetative cover of Passi City comprises of natural fragmented forest and brush land. The forest is generally located at the rolling to moderately steep areas. The open areas are cultivated with wide range of agricultural crops. Alienable and disposable lands are generally use for agriculture. Low lying areas are planted with rice, cash crops and coconut, bamboo and orchard. Corn and sugar are usually planted in the undulating to rolling areas. Areas with lower slope are devoted to agriculture and built up areas. Below is the breakdown of land cover:

Vegetation (Has.)	PASSI CITY
Residual Forest	904.21
Grassland	264.81
Cultivated area	1.310.05
Perennial cropland	317.68
Total	2,796.75

Bird species in the area are those species commonly found in brush lands and grasslands such as Maya, sunbirds and robins. The dwindling bird life community is a direct consequence of the absence of appreciable forest covers in the area and the threat of human population over the years.

There are no endemic flora and fauna species with high vulnerability risk existing in the area.

The project area is typical of a provincial setting where calmness of nature can be felt. There are no considerable structures, monuments or Physical Cultural Resources that are present that could be affected by the project.

Passi City's landscape is dominated by rolling to moderately steep hills and narrow valley plains, with a slope mostly from 0-18 percent and more than 200 meters above sea level respectively. There are areas that are moderately sloping to relatively flat stretch along the riparian zone going down to urban areas.

The physical feature of the project area (from Barangay Imbang Grande to Gemumua-Agahon) can be described as undulating- rolling to moderately steep with the highest elevation at 170 meters above sea level and 7.6 percent slope reckoned from the highest point of the existing provincial road located at Barangay Tagubong. The area is vegetated with grass, varieties of trees, and agricultural crops like rice, vegetables and perennial crops. The rolling areas are planted with sugar and the moderately sloping is planted with corn.

Generally, the soil type distribution in these areas regardless of land area classification is clay and loam. The Alimodian Clay loam is found in Barangays of Imbanggrande, Jaguimitan, Magdungao, Alimono, Salngan and Talonganan; Faraon clay in portion of Brgys. Jaguimitan, Tagubong, Magdungao, Alimono and Talonganan; AlimodianBtac. Complex found in Barangays Agtabo, Delicanan and portion of Brgys. Tagubong while the Luciana loam is found in the upper part of Gemomua Agahon.

The loamy soil contains retains lots of water, but also drains enough water. Clay soil is referred to as "heavy soil" because it has a very small particles with tiny pore spaces in which the soil absorbs and retains more water. This makes the soil poorly aerated and poorly drained. Clay has poor drainage in the soil. It tends to compact and become cloddy when it is tilled, walked on, or worked when it is wet. Clay loam is a soil mixture that contains more clay than other types of rock or minerals. The soil tends to be heavy, because they are so dense. When the soil is very wet, it swells to retain water that makes it difficult to work with.

Passi City belongs to the third type climate region, characterized by no distinct dry and wet season. Though it does not belong to the typhoon belt areas, it is affected by typhoons that occasionally visit the province.

2.2 Water

The headwaters of the Lamunan river is in the mountainous parts of Brgy. Magdungao, Brgy. Tagubong, Brgy. GemomuaAgahaon and Brgy. Dalicanan with Pinangliwan creek, Agbariri creek, Batuyanan Creek, Binaliwan Creek, Putdan Creek, Magsiping Creek and MabangSapa Creek as its major tributaries. The water from the creeks drains to the lamunan river passing three (3) overflows and 2 bridges from brgy. Gemomuaagahon to Brgy.Salngan.

The south balabago resources, Inc. (SBRI), a private water system company, are managing water drawn from the aquifer of Barangays Bacuranan and Sablogon. Presently they are serving 9 barangays with 1,962 household consumers.

Generally, flood prone areas are confined in riparian zones when creeks and river overflows. Since the terrains of the sites are mostly steep to sloping, the water usually runs to the rice fields and on lowlands. A canal is recommended for drainage in areas where there is surface run off coming from a steep slope.

2.3 People

2.3.1 Project Beneficiaries

The project beneficiaries are the residents of the ten (10) barangays within the Road Influence Area (RIA), 40.3% are farmers, 36.8% are farm laborers, 3.7% are drivers of various vehicles in the area, 2.6% are public school teachers, and 16.6% are swine retailers, store owners, private employees, security guards, waiters, welders and other jobs. The proposed sub-project has long been the dream and desire of the people in the area. The road section which serves as the lifeline in transporting their farm produce and farm inputs.

Several barangay public consultations were conducted in the ten (10) barangays within the RIA. It was attended by the majority of the people that will be affected by the project. The people expressed their desire to have a concrete road that would make the transportation of their goods easier and cheaper for them. It has been their desire for decades.

Subsequently, the people were consulted if they agree that the project be constructed in their place. In response, they express their support and approval by raising their hands. All who attended raised their hands as a manifestation of their support and approval. The barangay officials passed a resolution of support relative to the project.

2.3.2 Indigenous Cultural Community/Indigenous Peoples (ICC/IP)

The site of the proposed Farm to Market Road – Sub –Project is not situated within or will pass through any Ancestral Domain. It will not affect any extant IP/ICC community. There are identified Indigenous People locally known as “Ati” in the RIA located in barangay Salngan, Passi City. There are nine (9) persons that were identified but they are not permanent residents of the barangay. They are considered as temporary residents, they work as farm-laborers and they only visit barangay Salngan whenever the harvest season of sugarcane is on. They are permanent residents of Barangay Nagpana in the Municipality of Barotac Viejo in the northern part of the Province of Iloilo. The “Ati” were also present during the barangay consultation that was conducted last June 30, 2014 at nine O’clock in the morning. It was attended by about 150 residents of the barangay. The PRDP and the proposed FMR-SP were presented to them as the solution for their decade long problem of bad road. The “Ati” are part of those present during the consultation that manifested their approval and support to the proposed FMR-SP.

The Iloilo Provincial Government had submitted to NCIP all the required documents needed prior to the conduct of FPIC. A pre- field based investigation was conducted by the personnel of National Commission on Indigenous People (NCIP) the project staff of the Province of Iloilo before conducting the Field Based Investigation (FBI) in Brgy. Salngan, Iloilo which was attended by the nine (9) IPs beneficiaries.

2.3.3 Site and Right-of-Way acquisition

The proposed sub-project is along an existing provincial road. The existing provincial road has a road formation width of fifteen (15) meters and has been existence and is being used by the residents for decades. There is no new portion of the proposed sub-project that a right-of-way acquisition will still have to be done.

2.3.4 Damage to standing crops, houses and/or properties

The road formation width of the proposed sub-project is ten (10) meters, which is less than the existing provincial road formation width of fifteen (15) meters. The proposed sub-project will involve the rehabilitation of the existing provincial road. During the rehabilitation activity no damage to standing crops, houses and/or properties will occur since rehabilitation will only limit to ten (10) meters wide.

However a total of 717 fruit trees that will be affected by the project as shown in the result of the Inventory and Entitlement of Project Affected Persons survey. The Community Environment and Natural Resources Officer (CENRO) based in the Municipality of Barotac Nuevo which has jurisdiction over the City of Passi has issued a Cutting Tree Permit for the trees that will affected by the project. The City of Passi will be responsible to cut the trees and the lumber will be given to the owner of the trees to settle for the entitlement. At the same time all the owners of the trees has executed Waiver of Quit Claim for the trees to be cut.

No. Project Affected Persons (PAPs)

No. of Households	Total Landholdings Sq. m.	No. of fruit trees lost	Total Entitlement (in pesos)
29	4,416,622	717	71,395.00

2.3.5 Physical displacement of persons

There will be no physical displacement of persons, or relocation of houses of farmers/ residents during the rehabilitation of the proposed sub-project since all structures are observed to be standing outside the road formation often (10) meters. No structures were observed to have encroached inside the road formation width of the existing provincial road of fifteen (15) meters.

2.3.6 Economic displacement of persons

There will be no economic displacement of persons along the proposed sub-project since the road formation width of the sub-project which is ten (10) meters is within the existing fifteen meters wide road formation width.

III. Environmental/Ecological Risks Assessment

3.1 Drainage Situations and flooding potential

Generally, flood prone areas are confined in riparian zones when creeks and river overflows. Since the terrains of the sites are mostly steep to sloping, the water usually runs to the rice fields and on lowlands. A canal is recommended for drainage in areas where there is surface run off coming from a steep slope.

3.2 Impacts during Construction

Land development shall conform to the natural topography of the area – detailed topographic survey and elevation profiling shall be undertaken to arrive at sound schematic plan with less earth moving activities and preservation of grown trees.

Steep slope in construction areas shall be cut through benching method to minimize and stabilize the slope and mitigate soil erosion. A drainage canal shall be provided along the steep slope to lessen sedimentation discharge to creeks and streams. Enhancement of overflows will generate sedimentation, thus, a settling pond shall also be provided to address silt that would be carried by surface run-off.

Noise during construction phase is inherent to any construction work. Appropriate planning of construction schedules, such as the working hours, scheduling of hauling and delivery of materials will minimize noise emission. Residential type muffler shall be provided to all noise generating equipment to reduce noise. Moreover, maintenance and routine check up of the mufflers will be done regularly to increase its efficiency.

Dust generated in this particular activity ranges from insignificant to moderate; insignificant during rainy days or when the soil and masonry materials are wet and moderate during hot days or when the soil and masonry materials are dry and powdery.

Table 1 shows the expected noise level from the different equipment in dB(A) while Table 2 shows the DENR Standards for noise based on applicable dominant land use classification (section 78, Chapter IV, Article 1, NPCC Rules and regulations, 1978).

Table 1. Expected Noise Level from the Different Equipment in dB(A)

SOURCE	DISTANCE	FROM	SOURCE	(METER)	
	15	30	60	120	240
Front loader	75	69	62	57	51
Dumptruck	91	85	79	73	67
Concrete Mixer	82	76	70	64	58
Generator	78	72	66	60	54

Source: Environmental Impact assessment, Canter, 2nd Ed 1996

Table 2. DENR Standards for Noise, dB(A)

Class/Time	Daytime (0900H-1800H)	Morning (0500H-0900H) Evening (1800H-2200H)	Nighttime (2200H-0500H)
Class AA (Areas 100 m away from schools, church, hospitals, etc.)	50	45	40
Class A (Residential Areas)	55	50	45
Class B (Commercial Areas)	65	60	55
Class C (Light Industrial areas)	70	65	60
Class D (Heavy Industrial Areas)	75	70	65

3.3 Specific actions to minimize noise:

- Initial mufflers on all equipment as much as practicable and preventive maintenance should be undertaken monthly or as necessary.
- Construction activities shall be restricted from 7AM to 6PM at areas proximate to the houses to avoid disturbing their rest time.
- Impose speed limits to hauling trucks at 20 kph.
- Use and movement of heavy machinery should be minimized at night. Daytime hours should be optimized when conducting noise-generating activities.
- Trucks, construction equipment and heavy machinery should be fitted with exhaust muffler whenever possible.
- Workers shall be provided guidance on risk of hearing loss. They shall be required to wear earplugs and earmuffs around heavy equipment. Non-compliance should be strongly discouraged.
- Locations within a project site that are too noisy to conduct normal conversation would be considered risk areas. Signs should be posted identifying areas where noise protection should be worn at all times.

- Under no circumstances should persons be deliberately exposed to impulsive or continuous noise exceeding 140 dBA without protection.

All solid waste materials like woods, steel bars, plywood and other construction debris/leftovers will be placed at a proper location to be sorted and sold as scrap or taken to the material recovery facility/depot of the contractor. Garbage receptacles will be placed at all strategic places for proper waste disposal. Hauling of un-usable construction debris shall be coordinated with barangay officials for the collection, secondary segregation, and disposal.

IV. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

A. Site and Design Consideration

The road does not encroach or traverse any declared protected area or natural habitat.

The subproject will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.

B. Environmental Issues and Mitigation Measures

Issue (Potential Impact)	Assessment	Mitigation Measures	Schedule/Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
A. Pre-construction Phase					
1. Delivery of construction materials; transport of mechanical equipment to site	Construction wastes (e.g sacks, cans, plastic, scrap lumber and steel will have a moderate impact to the environment Dust and Noise pose a moderate impact to the environment	a. Segregation at source and regular disposal of construction residuals to the City dumpsite b. Collect cement sacks, excess steel bars and lumber for disposal to MRF c. Provide trash can in the project site d. Monitor littering of waste within the project site a. Limit works at daytime b. Decelerate trucks near busy intersection and narrow streets c. Proper supervision of filling and construction works d. Cover hauling trucks with canvass or any equivalent materials.	Pre-operation phase Pre –project phase, Implementation phase	By Contract	Contractor

Construction Phase					
1. Domestic wastes	The wastes generated by construction workers will have a moderate impact to the nearby environment Construction wastes will have a moderate impact	a. Segregation at source and regular disposal of residuals to the city dumpsite. b. Collect cement sacks, excess steel bars and lumber and place in the MRF	Construction phase	By contract	Contractor
2. Temporary increase in sedimentation	Alteration in identified landscape and elevation due to excavation to minimize the slope and mitigate soil erosion	a. Earthmoving/cutting of slopes to be done during dry months. b. Generated soil/spoil materials will be stockpiled in small mounds and buttressed appropriately with bunds and provided with drainage canal and siltation ponds. c. Slope should be planted with grasses to prevent erosion			
3. Potential Contamination of surface and ground water with oil and grease	Waste oil and grease from equipment could moderately contaminate surface water	a. Check equipment for leaks and repair as necessary b. Observe proper storage of fuel materials			
4. Potential contamination with human waste	Workers would be mostly locals and are expected to go home to their respective houses after work	a. Set up adequate toilet facility at the base camp		Contract	
5. Potential disruption of traffic flow	The access road and/or segments to be rehabilitated need is vital to daily activities of the residents and farmers and need to be kept open to traffic during construction	a. Keep the road open to traffic flow and minimize disruptions along the access road and/or construction area; Provide adequate warning signs and traffic personnel when necessary		Contract	

6. Potential dust/mud nuisance during construction	<p>Roads could become powdery during dry days and muddy during rainy days of the construction period</p> <p>>access road and/or the construction rehabilitation works passes through a populated area</p> <p>The road passes through a relatively benign terrain, cuts will be minimal</p>	<p>a. Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas</p> <p>b. Set up speed limits</p>		Contract	
7.Landslide/erosion of exposed road sides resulting in sedimentation of waterways		<p>a. Include slope protection works at the following stations</p> <p>b. Bioengineering with geomat with cover crop or grasses</p>			
8.Inadequate drainage resulting in flooding or ponding	The road will block run-off, resulting in flooding on one side of the road during rainy days	a. Installation of cross drain between station ___ and ____.			
9. Potential increase use of pesticide due to intensification of cash crop production in the area.	There is an on going IPM program of the IPG in the service area	a. Continuing IPM program of the province			
10.Potential Acceleration of denudation of the upland/hilly areas due to intensification of crop production	The proposed road will connect to the market an upland/hilly area where farmers are currently practicing erosive farming techniques.	a. The OPA will introduce sustainable upland farming systems in the area		Capacity building plan	

	The road could help accelerate the denudation of the upland/ hillsides rendering them unproductive in a few years.			Capacity building plan	
11. Potential increased in encroachments of human activities into the nearby forest	The proposed road will improve human access to the nearby public forest, resulting in increased slash and burn cultivation	a. DENR will deputize the local community to enforce forestry laws		O & M Plan, capacity building Plan	
12. Local employment	Construction will provide local employment opportunities	Hiring priority shall be given to qualified local residents		Contract	

V. Environmental Compliance Monitoring

Compliance with the environmental safeguards requirements and ESMP measures by the subproject proponent and any actual environmental and social issues associated with the subproject that may crop up during the course of subproject preparation, construction and operation will be periodically monitored. The subproject proponent is required to submit every month a Compliance and Impact Monitoring Report to the RPCO using the form below:

Department of Agriculture
Philippine Rural Development Program

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN COMPLIANCE MONITORING

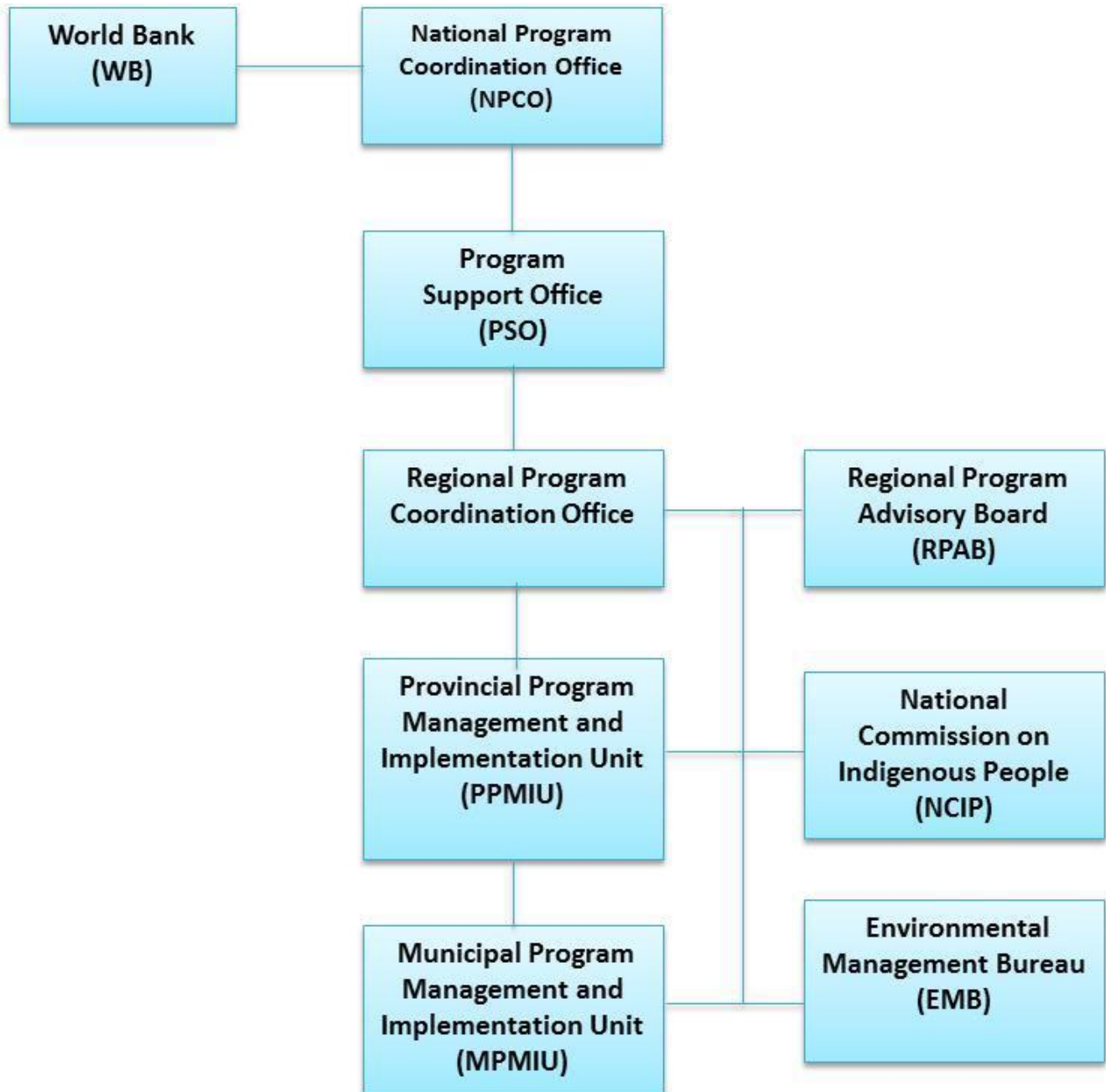
Component: _____ Project No. _____
 Name of Subprojects: _____ Region: _____
 Location of Subprojects: _____
 Status of Subprojects: _____

ISSUES (POTENTIAL IMPACT)	MITIGATING MEASURES	SCHEDULE / DURATION OF MITIGATING MEASURES	Compliance Progress Indicator	Status of Compliance				MEANS OF VERIFICATIONS/ REMARKS	Factors Affecting Safeguards Compliance	Actions Needed
				Overall Target	Target As of the Reporting Period	Actual As of the Reporting Period	Variance			

Prepared by: _____
PPMIU

VI. Institutional Plan for EMP Implementation

ENVIRONMENTAL AND SOCIAL SAFEGUARDS INSTITUTIONAL ARRANGEMENT



The Provincial Program Management and Implementation Unit (PPMIU) was created per Executive Order No. 156, series of 2013 to oversee the implementation of the project. The PPMIU have as its members, the Provincial Planning and Development Officer (PPDO), the Provincial Engineer or anyone who is an engineer by profession, and the Provincial Environmental Officer or anyone who is an environmental practitioner or has an environment assessment/management background or has undergone basic training in environmental safeguards.

The PPMIU shall:

- Help MLGU comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Forward all monthly, quarterly and annual Safeguards Compliance and Impact Monitoring Reports to RPCO

Prepared by:



MILA S. DELLOMO
Planning Officer III/
PRDP-PPMIU Secretariat

Submitted by:



RAUL N. BANIAS, MD, MPA
Provincial Administrator
PRDP-PPMIU Chairperson

Concurred/Approved by:



ARTHUR D. DEFENSOS, SR.
Governor