

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

NAME OF SUB-PROJECT : REHABILITATION OF ALEGRIA – BUGHO FARM TO MARKET ROAD

LOCATION : ALEGRIA, CABADIANGAN, CANDASAG AND BUGHO

IMPLEMENTING LGU : PROVINCIAL GOVT. OF BOHOL

ESTIMATED NO. OF BENEFICIARIES : POPULATON: 1,475 (Male: 761 & Female: 714)
HOUSEHOLDS: 295

PROJECT CATEGORY : REHABILITATION OF EXISTING ROAD

ESTIMATED TOTAL COST : P 51,542,000.00

A. Site and Design Consideration

1. The Road does not encroach into or traverse any declared protected area of natural habitat.
2. 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 Measure	Schedule/ Duration of Implementation	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*	Responsible Unit
1. Temporary increase in sedimentation during construction	[x] Topography of the road alignment necessitate massive earthmoving and cutting of clayey or loose top soils	[] Earthmoving/ cutting of slopes to be done during dry months [x] Proper disposal and compaction of spoils.	During construction period	DED/ POW; Contract	Contractor
2. Potential contamination of surface and groundwater with oil/grease	[x] Waste oil and grease from equipment could contaminate surface water [x] There will be no or insignificant amount of waste oil/grease	[x] Proper handling and disposal of waste oil and grease	During construction period	Contract	Contractor
3. Potential contamination with human waste	[x] Construction workers would be temporarily housed in a base camp [x] Workers would be mostly locals and are expected to go home to their respective houses after works	[x] Set up adequate latrine/toilet facility at the base camp for non-local workers	During construction period	Contract	Contractor
4. Potential disruption of traffic flow	[x] The access road and/or segments to be rehabilitated is vital to daily activities of the residents and farmers and need to be kept open to traffic during construction.	[x] 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; [x] Undertake regular maintenance measures on the passable portions of the roads	During construction period	Contract	Contractor
5. Potential dust/mud nuisance during	[x] Roads could become powdery during dry days and muddy during rainy	[x] Undertake sprinkling of road (including access roads) during dry	During construction period	Contract	Contractor

construction	days of the construction period [x] Access road and/or the construction/ rehabilitation works passes through a non-thickly populated area	days, and filling up of potholes during rainy days, especially in residential areas [x] Set up speed limits for vehicles, especially within residential areas			
6. Landslide/ erosion of exposed road sides resulting in sedimentation of waterways	[x] The road will traverse a mountainous area necessitating deep cuts on mountainsides starting on km. 0 up to km. 3.5287. the project will be passing some rice paddies, some minor slopes and evenly elevated farmlands. [x] The cut slopes will be hard materials that would resist erosion	[x] Include slope protection works at the following stations: Sta. 0+040.00 to sta. 0+130.08, Sta. 0+132.78 to sta. 0+140.00, Sta. 0+180.00 to sta. 0+213.42, Sta. 0+216.12 to sta. 0+280.00, Sta. 0+440.00 to sta. 0+460.00, Sta. 0+540.00 to sta. 0+583.19, Sta. 0+585.86 to sta. 0+620.00, Sta. 0+670.00 to sta. 0+814.94, Sta. 0+817.64 to sta. 0+830.00, Sta. 0+860.00 to sta. 0+886.21, Sta. 0+888.91 to sta. 0+920.00, Sta. 1+000.00 to sta. 1+007.54, Sta. 1+010.24 to sta. 1+059.14, Sta. 1+061.84 to sta. 1+140.00, Sta. 1+180.00 to sta. 1+194.34, Sta. 1+197.04 to sta. 1+300.00, Sta. 1+356.21 to sta. 1+360.00, Sta. 1+400.00 to sta. 1+411.22, Sta. 1+413.92 to sta. 1+420.00, Sta. 1+781.35 to sta. 1+876.60, Sta. 2+020.00 to sta. 2+100.00,	During construction period	DED/POW Contract	Contractor

		Sta. 2+280.00 to sta. 2+320.00, Sta. 2+440.00 to sta. 2+472.25, Sta. 2+474.95 to sta. 2+625.49, Sta. 2+628.19 to sta. 2+660.00, Sta. 2+740.00 to sta. 2+760.00, Sta. 0+330.00 to sta. 0+380.00, Sta. 2+060.00 to sta. 2+140.00, Sta. 3+020.00 to sta. 3+039.29, Sta. 3+041.99 to sta. 3+480.00 except on minor slopes, however slope protection to be applied at each section are already checked and included in the DED & POW <input type="checkbox"/> Bioengineering with geomat and cover crop <input type="checkbox"/> Fast growing shrub species <input checked="" type="checkbox"/> Riprap <input type="checkbox"/> Gabions <input type="checkbox"/> Terracing <input type="checkbox"/> Concrete protection wall <input type="checkbox"/> installation of canal linings			
7. Inadequate drainage resulting in flooding or ponding	<input checked="" type="checkbox"/> The road will block runoff, water resulting in flooding on one side of the road during rainy days.	<input checked="" type="checkbox"/> Installation of Cross drain (RCPC)910mm. dia. 7 lm, with straight headwall w/apron on left side and straight headwall w/catch basin on the right side along stations: sta.0+131.43, sta. 0+214.77, sta. 0+584.54, sta. 0+660.77, sta. 0+816.29, sta. 0+887.89, sta. 1+008.89, sta.	During construction period	DED POW Contract	Contractor

		1+060.49, sta. 1+195.69, sta. 1+354.66, sta. 1+412.57, sta. 1+780.00, sta. 2+473.60, sta. 2+626.84 & sta. 3+040.84			
8. Potential increase use of pesticides due to intensification of cash crop production in the area	[x] There is an ongoing IPM program of DA in the service area	[x] DA to continue to support IPM program [x] LGU shall have to Coordinate with DA on continuous IPM training	After construction period	Capacity Building Plan O&M Plan; Capacity Building Plan	LGU-MAO/OPA
9. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production	[x] The proposed road will connect to the market an upland/hilly area where farmers are currently practicing erosive farming techniques. The road could help accelerate the denudation of the upland/hillsides rendering them unproductive in a few years.	[x] DA to coordinate with LGU for the introduction of sustainable upland farming systems in the area [x]Expansion of agricultural production will be restricted within agriculture development zone [x] enforcement of local laws	After construction period	O&M Plan;	LGU-MAO
10. Potential increased in encroachments of human activities into the nearby public forest	[x] The proposed road will improve human access to the nearby public forest, resulting in increase slash and burn cultivation, illegal logging and poaching.	[x] Coordinate with DENR for the enactment of ordinance deputizing the local community to enforce forestry laws [x]Expansion of agricultural production will be restricted in agri development zone [x] enforcement of local laws	After construction period	O&M Plan; Capacity Building Plan	DENR-LGU PAMB
11. Local employment	[x] Construction will provide local employment opportunities	[x] Hiring priority shall be given to qualified local residents; Implement RI Manual on local hiring	During construction period	Contract	CONTRACTOR-LGU PESO
12. Conversion	[x] Quarry site is	[x] Quarry	During	DPWH	PPMIU

of Land-use/natural habitat due to quarry	existing and proven as a good source of quarry materials	materials will be procured at existing DPWH accredited quarry sites	construction period	Contract	
13. Potential damage to existing road due to hauling of quarry materials	[x] Transportation of quarry materials from source to FMR will cause damage to existing roads.	[x] PEO shall enhance regular maintenance and repair of portions of PR which may be affected	During construction period	Contract	PEO-LGU
14. Possible noise pollution during construction	[x]Use of cement mixers and other various heavy equipment and dump trucks can be observed during construction	[x]Activities must be conducted during daytime only so as not to disturb the rest hours of the people in the community	During construction period	Contract	CONTRACTOR
15. Solid Waste Management	[x]The project will not only generate air, water & noise pollution but so as with solid waste	[x] The proponent shall establish a temporary MRF in Barangay Bagtic where the Solid Waste are keep prior to its final disposal.	During construction period	Contract	CONTRACTOR,BLGU
16. Signboards & Billboards	[x]The project pauses danger to the people passing in the construction site	[x] Provide guidance and safety measures to the community by installing warning signboard in strategic sites of the project and install also project billboard at both end of the project	During construction period	Contract POW	CONTRACTOR
	[x] There are sections of the road which are accident prone areas and government offices/other institutions are built along or near the road	[x] Permanent road safety and warning signs should be installed in accident prone areas, government offices and institutions built along or near the road	During construction period	Contract POW	CONTRACTOR
17. Livelihood Assistance to Women Organization	Women in the influence are has no income since they have no livelihood.	MLGU will provide livelihood assistance under the Livestock Dispersal program.	After construction period		MLGU
18. Clearing and grubbing of obstructions within the	[x] Relocation/transfer of housing units of families presently	[x] Assist the families to access Shelter Assistance [x] Facilitate	Before construction period		BLGU/MLGU

road right of way	situated within the road ROW	transfer of houses/reusable house materials through BAYANIHAN SYSTEM			
	[x] Sparse tree vegetation and planted trees, mostly Gmelina and Mahogany along the road will have to be cut	[x] cutting permits will be secured to facilitate approval for cutting of trees [x] Planting of 5 endemic tree seedlings and fruit bearing trees	[x] prior to construction [x] replenishment of trees, after construction		PLGU BLGU
	[x] electric posts are located within the required road ROW and have to be transferred	[x] Transfer of electric posts to be affected will be requested from BOHECO	Before construction		MLGU
	[x] Transfer of basketball court currently along the proposed road subproject is highly necessary as it will pose danger to both road users/motorists and basketball court users	[x] Transfer of the basketball court is a priority project of the barangay	After completion of road construction		BLGU
19. Grievance during construction	[x] Possible occurrence of complaints and appeal from dissatisfied clients/beneficiaries and project affected persons [x] Complaints and Issues can hamper the implementation of the project.	[x] Establish the GRM (BLGU, MLGU and PLGU) and designate focal person in each level who shall handle complaints and appeals [x] Ensure that proper procedures and protocol is observed in addressing complaints and appeals [x] Complaints and appeals shall be properly documented	During construction period	Grievance & Redress Mechanism	MLGU/ PPMIU/ RPCO/PSO
20. Possible discovery of artifacts, bones, and other objects of interest during construction of	[x] Discovery of artifacts bones and other objects of interest within 10 meter radius.	[x] Suspension of the activities and immediately report to the PLGU and RPCO SES Focal Person. [x] Chance Archeological/Paleo	During construction period	Chance Archeological/Paleontological Finds procedure	MLGU/ PPMIU/ RPCO/PSO

the road.		ntological Finds procedure will be incorporated in the briefing.			
21. Possible contamination of soil and water from the waste water of the batching plant operation.	Waste water from the operation of the batching plant will moderately contaminate the water and soil in the area.	Constant monitoring of the engineer in-charge on the operation of the batching plant.	During batching plant operation	Regular function of the field engineer assigned to the project	PPMIU

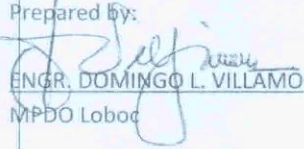
a. Environmental Impacts and Recommendations

With the foregoing assessed issues and concerns, it is highly recommended that the proposed mitigation measures shall have to be strictly followed.

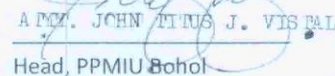
b. Provision for Amendments

The Environmental and Social Management Plan is subject for revision/amendments should unforeseen environmental and social issues and impacts requiring mitigation measures arise in the future.

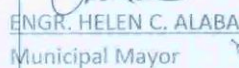
Prepared by:


ENGR. DOMINGO L. VILLAMO
MPDO Loboc

Adopted by:


ADM. JOHN TITUS J. VISBAL
Head, PPMIU Bohol

Noted by:


ENGR. HELEN C. ALABA
Municipal Mayor

Endorsed by:


HON. EDGARDO M. CHATIN
Governor