

## Environmental and Social Management Plan

Name of Road:	Upgrading of Cuco – BagongSilangFMR
Location:	Pasacao, Camarines Sur
Implementing LGU:	Provincial Government of Camarines Sur
Estimated number of beneficiaries:	2,637
New or Rehab:	Upgrading
Estimated Total Cost:	P 50,674,067.21

### 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

#### *Environmental and Social Management Plan*

Issue	Assessment	Mitigation Measure	Schedule/ Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
1. Temporary increase in sedimentation during construction	[x] Topography of the road alignment necessitate massive earthmoving and cutting of clayey or loose topsoil	[x] Earthmoving/ cutting of slopes, if possible be done during dry months [x] Proper disposal and compaction of spoils	300 days construction period	DED/ POW; Contract Follow the terms and conditions in the contract	Contractor PEO MENRO LGU
2. Potential contamination of surface and groundwater with oil/grease	[x] Waste oil and grease from equipment could contaminate surface water	[x] Proper handling and disposal of waste oil and grease	330 days from start of project plus 1 month after construction	Contract Follow the terms and conditions in the contract	Contractor MENRO LGU
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	[x] Set up adequate latrine/toilet facility at the base camp	300 days construction period	Contract Maintain the cleanliness/ maintenance of the facilities	Contractor PPMIU LGU MHU monitor

	home to their respective houses after work										
4. Potential disruption of traffic flow	[x]The construction will not overly affect daily movement of residents and farmers	[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	300 days construction period	Contract Follow the terms and conditions in the contract	Contractor PEO LGU BLGU						
5. Potential Destruction of Existing Road	[x] The access roads or segments will be the passage of heavy equipment during construction. [x] Existing road as conveyance during construction	[x] Load limits must be emphasized if damage will not be avoided, repair should be borne by the contractor [x] Look for detour or other way	300 days construction period	Contract Follow the terms and conditions in the contract	Contractor PEO PPMIU						
6. Potential dust/mud nuisance during construction	[x]Roads could become powdery during dry days and muddy during rainy days of the construction period [x] Access road and/or the construction/ rehabilitation works passes through a populated area [x]Access road and/or construction/ rehabilitation does not pass through any populated area	[x] Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas [x]Set up speed limits for vehicles, especially within residential areas	300 days construction period	Contract	Contractor PEO MLGU BLGU						
7. Landslide/ erosion of exposed road sides resulting in sedimentation of waterways	[x] The road will traverse a mountainous area necessitating deep cuts on mountainsides	[x ] Include slope protection works at the following stations:  <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Left</td> <td style="text-align: center;">Right</td> </tr> <tr> <td style="text-align: center;">1+692-1+760</td> <td style="text-align: center;">0+140-0+167</td> </tr> <tr> <td style="text-align: center;">1+920-2+000</td> <td style="text-align: center;">1+692-1+760</td> </tr> </table>	Left	Right	1+692-1+760	0+140-0+167	1+920-2+000	1+692-1+760	300 days construction period	DED/ POW; Contract - it is within the proposed budget	Contractor PEO PPMIU Monitor Validate -strictly follow the
Left	Right										
1+692-1+760	0+140-0+167										
1+920-2+000	1+692-1+760										

	[x] The exposed slopes will likely consist of highly erodible loose materials	2+130-2+220      2+140-2+200 3+270-3+340      2+460-2+520 4+300-4+380      3+280-3+340 4+640-4+652      3+800-3+860 4+890-4+940      4+000-4+050 5+030-5+080      4+100-4+190 5+030-5+080      4+300-4+380 5+320-5+380      4+890-4+940 5+470-5+500      5+040-5+080 5+840-5+920      5+320-5+380 6+000-6+030      5+475-5+500 6+340-6+400      5+800-5+820 6+430-6+460      5+820-5+878 6+520-6+550      6+020-6+060 6+830-6+980      6+340-6+380 6+830-6+980      6+430-6+460 7+080-7+150      6+830-6+980  7+080-7+170 7+375-7+400			terms and conditions
		[x] Bioengineering with cover crop [x] Fast growing shrub species [x] Riprap [x] Terracing (SALT) [x] Concrete protection wall			
8. Inadequate drainage resulting in flooding or ponding	[x] The road will block runoff, resulting in flooding on one side of the road during rainy days.	[x] Installation of cross drain, line canals, slope protection at stations:  Line Canals: Left                      Right 2+200-2+440      0+140-0+160 2+560-2+660      2+600-2+660 3+080-3+200      3+000-3+140 3+380-3+480      3+180-3+260 3+380-3+480      3+880-3+920 3+600-3+640      4+380-4+510 3+880-3+940      4+780-4+880 4+020-4+060      5+220-5+270 4+780-4+880      5+520-5+600 5+220-5+270      5+640-5+685 5+520-5+600      5+700-5+760 5+700-5+760      6+220-6+300 5+900-6+100      6+700-6+800 6+220-6+340      7+130-7+180 6+720-6+800      7+300-7+380 7+050-7+080      7+460-7+580 7+130-7+170      7+650-7+690 7+300-7+380      7+940-7+980 7+460-7+580	300 days construction period	DED/Contract  -strictly follow the terms and conditions of the contract	Contractor PEO PPMIU  -monitor/evaluate
		RC Pipes 0+160-1 line      -complete 1+720              -complete 1+740              -down stream 2+380              -complete 2+925.53-1 line      -complete(CB) 3+280              -complete 3+579.21-1 line      -complete 3+735-1 line      -complete 3+842.9-1 line      -complete 4+040-1 line      -complete 4+640              -complete			

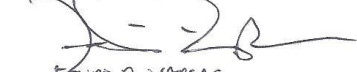
		4+655.19-1 line -complete 4+934.97-1 line -complete 5+350.17 -complete 5+480+5+812.19-1 line -complete 6+453.38-2lines -complete 6+540-1 line -complete 6+866.26-1 line -complete 7+450-1 line -complete 7+660-1 line -complete 7+981.05-1 line -complete			
9. Potential increase use of pesticides due to intensification of cash crop production in the area	[x] There is an ongoing IPM program of DA/PAO in the service area	[x] DA/PAO to continue to support IPM program	Year round	Capacity Building Plan O&M Plan; Capacity Building Plan	PPMIU/ DA-RFO Technical and Skills training
10. 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. [x]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] introduction of SALT  [x] Technical training on the upland rice, crops and livestock [x] Facilitate access to financing/ grant agencies [x] Provision of livelihood assistance for upland farmers [x] Riprap	2 months prior to project completion  After project completion	O&M Plan; Capacity Building Plan	PPMIU DA-RFO  -SALT training of residents
11. Potential increase 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 increased 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] Introduction of SALT	Year round	O&M Plan; Capacity Building Plan DENR	PPMIU CENRO -IEC - alternative livelihood provided

12. Local employment	[x] Construction will provide local employment opportunities	[x] Hiring priority shall be given to qualified local residents; Implement I-BUILD Manual on local hiring	300 days	Contract -Follow terms and Conditions	PPMIU/ BLGU M&E
13. Disposal of excess excavation	[x] There will be excess excavated materials	[x] Disposal sites have been identified [x] Authority from lot owner secured	60 days	Contract	PEO
14. Road Safety and safety of workers during construction	[x] Workers may be exposed to hazardous conditions and other work-related risks	[x] Personal protective equipment should be provided to workers as part of the protocol [x] Provisions of traffic personnel at both ends of the FMR.	300 days	Contract	Contractor PPMIU PEO M&E
15. Road signs Installation near schools and sheer portions	[x] Some portions of the road necessitate installation of road signs	[x] Installation of appropriate roads signs as necessary	300 days	Contract	Contractor PPMIU PEO M&E
16. Construction noise mitigation	[x] Heavy Equipments will entail a lot of noise during construction	[x] Activities will be confined to daytime	300 days	Contract	Contractor
17. Livelihood Assistance	[x] Beneficiaries lack source of income	[x] Livelihood Assistance given to PAPs	Post Construction Phase	Memorandum of Agreement	PPMIU To facilitate livelihood projects to PAPs
18. Possible discovery of artifacts, bones and other objects of interest during construction of the processing plant	[x] Discovery of artifacts, bones and other objects of interest within the 10 meter radius [x]Discovery of artifacts, bones and other objects of interest outside the 10 meter radius	[x] Suspension of the activities and immediately report to he PLGU and RPCO SES Focal Person	During construction period	Contract/ Chance Finds Procedure	Contractor/ PPMIU/ RPCO
19. Conflict between project implementers and other stakeholders/ Grievance during implementation	[x] There is an acceptable Grievance Redress Mechanism in place	[x]The project implementers o ensure that all grievances are properly addressed	Before and during project implementation	Grievance Redress Mechanism framework Contract	PPMIU/ Contractor


Prepared by:


  
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Adopted by PPMIU

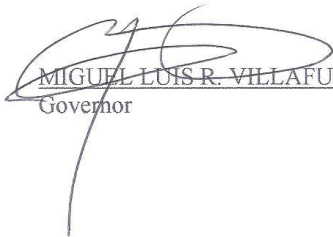
  
FELIPE D. VARELA  
PPMIU Head

Noted by the local community:

  
EDWARD M. NOIA  
Barangay Captain

  
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Barangay Captain

Endorsed by:

  
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