

## ANNEX E-1

Department of Agriculture  
Philippine Rural Development Project

### TEMPLATE FOR RURAL/FARM-TO-MARKET ROADS

Name of Road:	<b>Pinagwarasan to Lanot Road</b>
Location:	<b>Barangays Pinagwarasan/Taisan/Angas/Mangcamagong municipality of Basud and Barangays Matoogtoog/Hinipaan/Masalongsalong/Pambuhan/Tarum/Colasi/Hamoraon/Lalawigan/Lanot municipality of Mercedes</b>
Implementing LGU:	<b>Provincial Government of Camarines Norte</b>
Estimated number of beneficiaries:	<b>17,563 (male: 8,957 female: 8,606)</b>
New or Rehab:	<b>New</b>
Estimated Total Cost:	<b>Php 212,391,870.18</b>

Site and Design Consideration

1. The Road does not encroach into or traverse any declared protected area of natural habitat. It was constructed/opened by the municipal LGU's around 3 decades ago. Due to insufficient fund of concerned government agencies, a significant portion of the proposed project, up to now, remains graveled and earth roads.
2. To a certain extent, the road opening followed the DPWH standard, and therefore, its upgrading or rehabilitation will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.

**TABLE 18.** Environmental Issues and Mitigation

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Schedule of Mitigation Measure / Indicative Cost	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 topsoils [ ] Cut materials will consist mainly of hard rocks and are unlikely to generate significant sediments	[ ] Earthmoving/cutting of slopes to be done during dry months [x] Proper disposal and compaction of spoils [x] Re-use of removed/cut soil materials (Donate to concerned barangays excess soil after backfilling) [ ] No measures required	-Month 2 to Month 6	DED/POW; Contract	PEO: Technical assistance  Contractor: Implementation of mitigation  LGU SES Team: Monitoring of compliance

2. Potential contamination of surface and groundwater with oil/grease	<input checked="" type="checkbox"/> Waste oil and grease from equipment could contaminate surface water <input type="checkbox"/> There will be no or insignificant amount of waste oil/grease	<input checked="" type="checkbox"/> Proper handling and disposal of waste oil and grease	Day 1 up to last day of project implementation <b>Php30,000.00</b>	Contract	PEO: Technical Assistance  Contractor: _Implementation of mitigation  LGU SES Team: Monitoring of compliance
3. Potential contamination with human waste	<input type="checkbox"/> Construction workers would be temporarily housed in a base camp <input checked="" type="checkbox"/> Workers would be mostly locals and are expected to go home to their respective houses after works	<input checked="" type="checkbox"/> Set up adequate latrine/toilet facility at the base camp	Day 1 up to last day of project implementation / Php 50,000.00	Contract	Contractor
4. Potential disruption of traffic flow	<input checked="" type="checkbox"/> 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 <input type="checkbox"/> The construction will not affect daily movement of residents and farmers	<input checked="" type="checkbox"/> 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; <input type="checkbox"/> Undertake regular maintenance measures on the passable portions of the roads <input checked="" type="checkbox"/> No measures needed	Day 1 up to last day of project implementation / Php 10,000.00	Contract	PEO
5. Potential dust/mud nuisance during construction	<input checked="" type="checkbox"/> Roads could become powdery during dry days and muddy during rainy days of the construction period <input type="checkbox"/> Access road and/or the construction/rehabilitation works passes through a populated area <input type="checkbox"/> Access road and/or construction/rehabilitation does not pass through any populated area	<input checked="" type="checkbox"/> Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas <input checked="" type="checkbox"/> Set up speed limits for vehicles, especially within residential areas <input type="checkbox"/> No measures needed	Php 50,000.00  -Day 1 up to last day of project implementation	Contract	PEO: To provide technical assistance  Contractor: To implement mitigation measures  LGU SES Team: Monitoring of compliance

<p>6. Landslide/ erosion of exposed road sides resulting in sedimentation of waterways</p>	<p><input type="checkbox"/> The road will traverse a mountainous area necessitating deep cuts on mountainsides  <input checked="" type="checkbox"/> The exposed slopes will likely consist of highly erodible loose materials, particularly between stations:  8+200 – 8+210, 26+200 – 26+215, 32+000 – 32+ 040, 34+600 – 34+700, 34+850 – 34+890, 35+300 – 35+350, 35+440 – 35+ 500  <input type="checkbox"/> The cut slopes will be hard materials that would resist erosion  <input type="checkbox"/> The road passes through a relatively benign terrain, cuts will be minimal  <input type="checkbox"/> The rehabilitation work does not involve additional road cuts</p>	<p><input checked="" type="checkbox"/> Include slope protection works at the following stations:  8+200 – 8+210, 26+200 – 26+215, 32+000 – 32+ 040, 34+600 – 34+700, 34+850 – 34+890, 35+300 – 35+350, 35+440 – 35+ 500  <input checked="" type="checkbox"/> Bioengineering with geomat and cover crop  <input checked="" 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"/> Others _____)</p>	<p>-Month 2 to Month 6 / (cost included in the POW)</p>	<p>DED/POW   LGU Commitment Letter</p>	<p>PEO:   Prepare DED/POW   Contractor:   Construction of slope protection works and bio-engineering technologies   LGU SES Team:   Identification of species of plants suited for in the area and monitoring of compliance</p>
<p>7. Inadequate drainage resulting in flooding or ponding</p>	<p><input checked="" type="checkbox"/> The road will block runoff, resulting in flooding on one side of the road during rainy days.  <input type="checkbox"/> Drainage issues unlikely</p>	<p><input checked="" type="checkbox"/> Construction / Rehabilitation of Cross-drains in stations:  *3+930 – Rehab of bridge  *24+385- Const. of 38 LM spillway  *27+590 – Const. of 2 lane RCPC  *32+820-Rehab of spillway   <input checked="" type="checkbox"/> Regular operations and maintenance (O&amp;M)   <input type="checkbox"/> No measure required</p>	<p>(cost included in the POW)</p> <p>Yearly O&amp;M (a year after completion and every year thereafter / Php 450,000.00 per year)</p>	<p>DED   O&amp;M Plan   Applicable document</p>	<p>PEO:   Preparation of DED and technical supervision   Contractor:   To implement mitigation measures   PLGU or MLGU :   Fund allocation   BLGU and community: Monitoring of compliance</p>

			Monthly and as soon as the need arises		
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 and OPAG in the service area [ ] Farmers in the service area have not been trained on IPM	[ x ] DA and OPAG to continue to support IPM program [ ] LGU to Coordinate with DA on IPM training	-continuing/ Php 50,000.00	Capacity Building Plan O&M Plan;	OPAg: Conduct of IPM Training  LGU SES Team: Monitoring of compliance
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. [ ] The road connects only lowland farms to the market	[x] DA to coordinate with LGU for the introduction of sustainable upland farming systems in the area  [ ] No measure required	Php 50,000.00	O&M Plan; Capacity Building Plan	DA: Conduct training on sustainable upland farming system  P/MLGU: To allocate fund  LGU SES Team: Monitoring of compliance
10. Potential increased in encroachments of human activities into the nearby public forest	[ ] The proposed road will improve human access to the nearby public forest, resulting in increase slash and burn cultivation, illegal logging and poaching. [x] The proposed road does not improve access to a public forest	[ ] Coordinate with DENR for the enactment of ordinance deputizing the local community to enforce forestry laws [x] No measure required		O&M Plan; Capacity Building Plan	
10. Local employment	[ x ] Construction will provide local employment opportunities [ ] Construction does not provide any local employment opportunities	[x] Hiring priority shall be given to qualified local residents; Implement RI Manual on local hiring [ ] No measures required	-entire project duration	Contract	Contractor
11. Conversion of Land-use/natural habitat due to quarry	[ ] the proposed quarry site is within a private land and need to convert existing land-use [x] Quarry site is	[ x ] Quarry materials will be procured to existing quarry sites	-entire project duration	Certification from DPWH and PENRO	PENRO/ DPWH

11. Conversion of Land-use/natural habitat due to quarry	[ ] the proposed quarry site is within a private land and need to convert existing land-use [x] Quarry site is existing and proven as a good source of quarry materials	[ x] Quarry materials will be procured to existing quarry sites	-entire project duration	Certification from DPWH and PENRO	PENRO/ DPWH
12. Potential damage to existing road due to hauling of quarry materials	[ x] There is a good source of quarry materials in Brgy. Pambuhan, Mercedes. [ ] Transportation of quarry materials from source to FMR will cause damage to existing FMR	[x] regular maintenance and repair of existing road	-one year after project implementation and every year thereafter / Php 450,000.00 per year	Contract	PEO/ DPWH
13. Possible cutting of large environmentally significant trees	[ x ] Removal of environmentally significant trees could pose hazards to the community especially in the event of storm surges and tsunamis	[ x ] Avoid cutting of environmentally significant trees  [x] If cutting cannot be avoided, replacement of 100 trees for every environmentally significant tree species and 50 trees for other tree species	-One week after cutting/ Php 158,080 * based from prevailing assess value of Php200/tree (bearing) *basic assumptions – 80% are bearing	- Contract - Environmental Management Plan (EMP)	LGU SES Team: Prepare and update environmental management plan  Contractor: Allocate fund for offset activities and /or just compensation
14. Possible damage to existing structures outside the 10-meter road requirement	[ x ] Existing irrigation canal, waiting sheds and purok monuments	[ x ] restore damage	-Immediately after damage *based from actual cost to be borne by the contractor	Contract / Restoration Plan	Contractor: To implement mitigation measures  LGU SES Team: Monitoring of compliance
15. Indirect impacts of the project to riverbanks, mangrove areas and marshlands	[ x ] Possible erosions on riverbanks and nearby river systems and other bodies of water  [ x ] possible damage to mangroves and marshlands	[ x ] Riverbank rehabilitation using the potential natural vegetation method  [ x ] mangrove reforestation	-Immediately after damage *based from actual cost to be borne by the contractor	Contract / Restoration Plan	LGU SES Team: Provide technical assistance and monitoring of compliance  Contractor: Implementation of mitigation

