

**Philippine Rural Development Project  
Environmental and Social Management Plan**

**Name of Road** : Construction /Rehabilitation of Bubong Cadapaan-Barit FMR  
**Location** : Brgy. Bubong Cadapaan-Barit, Balindong, Lanao del Sur  
**Implementing LGU** : Balindong Local Government Units  
**Estimated No. of Beneficiaries:** 1,535  
**New or Rehab** : New with rehab  
**Estimated Total Cost** : **Php 36, 123,530.25**

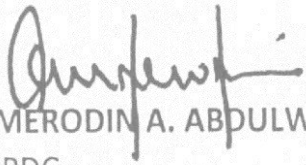
Issue	Assessment	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
1. Temporary increase in sedimentation during construction	<input type="checkbox"/> Topography of the road alignment necessitate massive earthmoving and cutting of clayey or loose top soils  <input type="checkbox"/> Cut materials will consist mainly of hard rocks and are unlikely to generate significant sediments	<input type="checkbox"/> Earthmoving/cutting of slopes to be done during dry months  <input type="checkbox"/> Proper disposal and compaction of spoils <input type="checkbox"/> No measures required	DED/POW; Contract
2. Potential contamination of surface and groundwater with oil/grease	<input 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 type="checkbox"/> Proper handling and disposal of waste oil and grease	Contract
3. Potential contamination with human waste	<input type="checkbox"/> Construction workers would be temporarily housed in a base camp  <input type="checkbox"/> Workers would be mostly locals and are expected to go home to their respective houses after works	<input type="checkbox"/> Set up adequate latrine/toilet facility at the base camp	Contract
4. Potential disruption of traffic	<input type="checkbox"/> The access road and/or segments to be	<input type="checkbox"/> Keep the road open to traffic flow and	Contract

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flow	<p>rehabilitated need is vital to daily activities of the residents and farmers and need to be kept open to traffic during construction</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/> The construction will not affect daily movement of residents and farmers</p>	<p>minimize disruptions along the access road and/or construction area; Provide adequate warning signs and traffic personnel when necessary;</p> <p><input checked="" type="checkbox"/> Undertake regular maintenance measures on the passable portions of the roads</p> <p><input type="checkbox"/> No measures needed</p>	
5. Potential dust/mud nuisance during construction	<p><input type="checkbox"/> Roads could become powdery during dry days and muddy during rainy days of the construction period</p> <p><input type="checkbox"/> Access road and/or the construction/rehabilitation works passes through a populated area</p> <p><input type="checkbox"/> Access road and/or construction/rehabilitation does not pass through any populated area</p>	<p><input type="checkbox"/> Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas</p> <p><input checked="" type="checkbox"/> Set up speed limits for vehicles, especially within residential areas</p> <p><input type="checkbox"/> No measures needed</p>	Contract
6. Landslide/erosion of exposed road sides resulting in sedimentation of waterways	<p><input type="checkbox"/> The road will traverse a mountainous area necessitating deep cuts on mountainsides, particularly between station ____ and ____, etc (check DED for deep cuts)...</p> <p><input type="checkbox"/> The exposed slopes will likely consist of highly erodible loose materials</p> <p><input type="checkbox"/> The cut slopes will be</p>	<p><input type="checkbox"/> Include slope protection works at the following stations: _____ _____</p> <p>..etc.. (Specify the type/s of slope protection to be applied at each section- Consult with the Municipal Engineer:</p>	DED/POW  Or (if budget does not permit) LGU Commitment Letter

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	<p>hard materials that would resist erosion</p> <p><input type="checkbox"/> The road passes through a relatively benign terrain, cuts will be minimal</p> <p><input type="checkbox"/> The rehabilitation work does not involve additional road cuts</p>	<p><input type="checkbox"/> Bioengineering with geomat and cover crop</p> <p><input type="checkbox"/> Fast growing shrub species</p> <p><input type="checkbox"/> Riprap</p> <p><input type="checkbox"/> Gabions</p> <p><input type="checkbox"/> Terracing</p> <p><input type="checkbox"/> Concrete protection wall</p> <p><input type="checkbox"/> Others _____)</p>	
<p>7. Inadequate drainage resulting in flooding or ponding</p>	<p><input type="checkbox"/> The road will block runoff, resulting in flooding on one side of the road during rainy days.</p> <p><input type="checkbox"/> Drainage issues unlikely</p>	<p><input type="checkbox"/> Installation of cross drain between station <b><u>0+0820</u></b> and <b><u>2+620</u></b> .</p>	<p>See detailed at DED</p>
<p>8. Potential increase use of pesticides due to intensification of cash crop production in the area</p>	<p><input type="checkbox"/> There is an ongoing IPM program of DA in the service area</p> <p><input type="checkbox"/> Farmers in the service area have not been trained on IPM</p>	<p><input type="checkbox"/> DA to continue to support IPM program</p> <p><input type="checkbox"/> LGU to Coordinate with DA on IPM training</p>	<p>Capacity Building Plan O&amp;M Plan; Capacity Building Plan</p>
<p>9. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production</p>	<p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> The road connects only lowland farms to the market</p>	<p><input type="checkbox"/> DA to coordinate with LGU for the introduction of sustainable upland farming systems in the area</p> <p><input type="checkbox"/> No measure required</p>	<p>O&amp;M Plan; Capacity Building Plan</p>

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10. Potential increased in encroachments of human activities into the nearby public forest	<input type="checkbox"/> The proposed road will improve human access to the nearby public forest, resulting in increase slash and burn cultivation, illegal logging and poaching.  <input type="checkbox"/> The proposed road does not improve access to a public forest	<input type="checkbox"/> Coordinate with DENR for the enactment of ordinance deputizing the local community to enforce forestry laws  <input type="checkbox"/> No measure required	O&M Plan; Capacity Building Plan
11. Local employment	<input type="checkbox"/> Construction will provide local employment opportunities	<input type="checkbox"/> Hiring priority shall be given to qualified local residents; Implement I – BUILD Manual on local hiring	Contract
	<input type="checkbox"/> Construction does not provide any local employment opportunities	<input type="checkbox"/> No measures required	

Prepared by:



AMERODIN A. ABDULWAHAB  
MPDC