

**Mindanao Rural Development Project – Adaptable Loan Program II
Environmental Management Plan Template for Rural/Farm-to-Market Roads**

[Note: This template is designed to rapidly identify and assess the environmental issues and associated mitigation/management measures in Rural and Farm-to-Market Roads funded under MRDP2. This template consolidates all safeguards aspect of Communal Irrigation Subproject as found in various project documents. This document replaces the EMP checklist in Annex 38 of the RI Manual]

Name of Road: Improvement of Malalag-Mabay Seaside FMR
Location: Barangays Mabay & Malalag, Maitum, Sarangani Province
Implementing LGU: Local Government Unit of Maitum, Sarangani
Estimated number of beneficiaries: 8,201 Residents or 2,087 Households
New or Rehab: Rehabilitation
Estimated Total Cost: P 22,618,703.27

A. Site and Design Consideration

[Do not proceed with the Subproject preparation including this ESMP unless all items below are confirmed true.]

1. The Road does not encroach into or traverse any declared protected area of natural habitat (c.f. Loan Agreement: MRDP2 will not fund subprojects located inside a declared Protected Area);
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 *[The following are issues frequently associated with Farm to Market Roads. Issues include alleged/perceived impacts, potential impacts, health and safety and environmental risks. Entries in the “Assessment” column should describe or provide qualifications regarding the significance of the issues. Issues that are deemed critical or significant should have a corresponding entry in the “Mitigation” column. Entries in the “Instrument” column should indicate how and where in the measures will be implemented in the Subproject. Please feel free to add, delete or modify any of the items in the template. In preparing the EMP below refer to the Environmental and Social Assessment Section of the FS for specific safeguards issues and assessments]*

| Issue (Potential Impact) | Assessment (Sample assessments) | Mitigation Measure | Instrument of Implementation (POW, Contract, IDP, or O&M Plan)* |
|--|--|---|--|
| 1. Temporary increase in sedimentation during construction | [] 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 [] Proper disposal and compaction of spoils [x] No measures required | DED/POW; Contract |
| 2. Potential contamination of surface and | [] Waste oil and grease from equipment could contaminate surface | [x] Proper handling and disposal of waste oil and grease | Contract |

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|--|--|--|--|
| groundwater with oil/grease | water [x] There will be no or insignificant amount of waste oil/grease | | |
| 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 | Contract |
| 4. Potential disruption of traffic flow | [x] 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 [x] The construction will not 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 [] No measures needed | Contract |
| 5. 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 [] Access road and/or construction/rehabilitation does not pass through any populated area | [] 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 [] No measures needed | Contract |
| 6. Landslide/erosion of exposed road sides resulting in sedimentation of waterways | [] The road will not traverse a mountainous area necessitating deep cuts on mountainsides, particularly between stations: 0+183,1+060, 1+188, 1+400,1+660,2+100 and 2+220 | [] Include slope protection works at the following stations: (Specify the type/s of slope protection to be applied at each section: 0+082.40, 0+156, 0+183,0+373, 1+188, 1+690,and 1+930 | DED/POW Or (if budget does not permit) LGU Commitment Letter |

| Issue (Potential Impact) | Assessment (Sample assessments) | Mitigation Measure | Instrument of Implementation (POW, Contract, IDP, or O&M Plan)* |
|---|--|---|---|
| | (check DED for deep cuts)... <input type="checkbox"/> The exposed slopes will likely consist of highly erodible loose materials <input type="checkbox"/> The cut slopes will be hard materials that would resist erosion <input checked="" type="checkbox"/> The road passes through a relatively benign terrain, cuts will be minimal <input checked="" type="checkbox"/> The rehabilitation work does not involve additional road cuts | Consult with the Municipal Engineer: <input type="checkbox"/> Bioengineering with geomat and cover crop <input type="checkbox"/> Fast growing shrub species <input type="checkbox"/> Riprap <input type="checkbox"/> Gabions <input type="checkbox"/> Terracing <input type="checkbox"/> Concrete protection wall <input type="checkbox"/> Others _____) | |
| 7. Inadequate drainage resulting in flooding or ponding | <input 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 | <input type="checkbox"/> Installation of cross drain between stations: 0+082.40, 0+156, 0+183,0+373, 1+188, 1+690,1+930 <i>(per station line has 7 pieces pipe culvert with 910mm sizes.)</i> | DED |
| 8. Potential increase use of pesticides due to intensification of cash crop production in the area | <input checked="" type="checkbox"/> There is an ongoing IPM program of DA in the service area <input type="checkbox"/> Farmers in the service area have not been trained on IPM | <input checked="" type="checkbox"/> DA to continue to support IPM program <input type="checkbox"/> LGU to Coordinate with DA on IPM training | Capacity Building Plan O&M Plan; Capacity Building Plan |
| 9. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production | <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. <input checked="" type="checkbox"/> The road connects only lowland farms to the market | <input type="checkbox"/> DA to coordinate with LGU for the introduction of sustainable upland farming systems in the area <input checked="" type="checkbox"/> No measure required | O&M Plan; Capacity Building Plan |
| 10. Potential increased in encroachments of human activities | <input type="checkbox"/> The proposed road will improve human access to the nearby public forest, resulting in | <input type="checkbox"/> Coordinate with DENR for the enactment of ordinance deputizing the local community to | O&M Plan; Capacity Building Plan |

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|--|--|---|---|
| into the nearby public forest | increase slash and burn cultivation, illegal logging and poaching. [x] The proposed road does not improve access to a public forest | enforce forestry laws [x] No measure required | |
| 10. 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 | Contract |
| | [] Construction does not provide any local employment opportunities | [] No measures required | |
| 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 | Certification |
| 12. Potential damage to existing road due to hauling of quarry materials | [x] source of quarry materials is <u>4.5</u> km. Transportation of quarry materials from source to FMR will cause damage to existing FMR | [x] regular maintenance and repair of existing road | Contract |