DAMS / IRRIGATION PROJECTS ENVIRONMENTAL IMPACT MANAGEMENT AND MONITORING PLAN

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures ☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost	Monitoring Parameters/ Implementation	REMARKS
LAND				
☑ Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	☑ See attached proof of compatibility with land use ☑ Limit project activities to what is compatible to the land use ☐ Others, specify	Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	

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☐ Land tenure / compatibility issue	Identify Land Tenure /compatibility issues: ☐ CARP ☐ CADC/ CADT/ CALC/ CALT ☐ ROW ☐ Informal settlers ☐ Ecologically sensitive or protected area ☐ Others, specify	☐ Obtain the following clearances/ permits from concerned agencies: ☐ Resettlement Plan prepared ☐ Provide relocation/disturbance compensation packages ☐ Ensure participation of IPs in consultations and dialogues ☐ MOA prepared/signed ☐ Provide adequate buffer ☐ Others, specify	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with LGU or appropriate agencies ☐ Others, specify	
☐ Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: ☐ Forestland ☐ Marshland ☐ Grassland ☐ Mangrove ☐ Wetland ☐ Others, specify	☑ Comply with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit ☑ Limit land clearing as much as possible ☑ Provide temporary fencing for vegetation that will be retained ☑ Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting) ☐ Others, specify	☑ Annual inspection of area replanted/ re-vegetated ☐ Others, specify	

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		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Change in surface landform/ topographyterrain/ slope ☐ Soil Erosion	Slope: ☐ Flat (0-3%) ☐ Gently sloping to rolling (3-18%) ☐ Steep (>18%) Is the project site located in an area identified by MGB/ PAG-ASA/ PHIVOLCS as hazard prone? ☐ Yes ☐ No	Considering the natural hazards and climate projections in the area: ☐ Employ appropriate erosion control and slope protection measures ☐ Designate a Spoils Storage Area, with topsoil set aside for later use and allow maximum re-use of spoils ☐ Construct during dry season ☐ Stabilize embankment with grasses or other soil cover ☐ Conduct Engineering Geological and Geo-hazard Assessment (EGGA) and implement corresponding recommendation ☐ Others, specify	☐ Regular inspection of slope protection measures in erosion-prone areas ☐ Regular inspection for new eroded areas near the site ☐ Others, specify	

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Building of structures and improper solid waste disposal leading to: ☐ Impairment of visual aesthetics ☐ Devaluation of land values	Solid Waste Management Scheme in the area: ☐ SLF ☐ MRF ☐ Composting ☐ Regular Collection of Solid Wastes Presence of visually significant landforms/landscape/structures? ☐ Yes ☐ No	☐ Implement recovery, re-use and recycling of waste materials ☐ Provide receptacles / bins for solid wastes ☐ Set up temporary fence around the construction area ☐ Implement proper segregation, collection and disposal of domestic wastes in designated areas ☐ Implement proper collection, labeling and storage of hazardous waste ☐ Coordinate with the municipal / city waste collectors ☐ Engage third party company for waste collection ☐ Implement landscaping and other beautification measures ☐ Provide adequate buffer ☐ Compensate adjacent property owners ☐ Others, specify	☑ Daily inspection of waste handling including segregation in waste/recycling bins ☑ Weekly inspection of waste accumulation and disposal ☐ Regular inspection of landscaping and other beautification activities ☐ Regular monitoring of buffer zones ☑ Regular monitoring for presence/absence of complaints from adjacent property owners ☑ Others, specify	
WATER				
☐ Increased siltation due to project activities ☐ Water quality degradation ☐ Others, specify	Specify nearest water body:	☑ Set up proper and adequate sanitary facilities ☑ Ensure strict observance of proper waste handling and disposal and proper sanitation including by the contractors and its workers (if any)	Regular (ocular) inspection of: ☐ Drainage/canal systems ☐ Wastewater treatment facility (i.e., grease trap, septic tank, etc.	

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		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	Distance to nearest water body: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Size of population using receiving surface water: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Classification of nearest water body : ☐ Freshwater: ☐ AA, ☐ A, ☐ B, ☐ C, ☐ D ☐ Marine/ coastal water: ☐ SA, ☐ SB, ☐ SC, ☐ SD Current Water Use: ☐ Fishery ☐ Tourist Zone / Park ☐ Recreational ☐ Industrial ☐ Agricultural ☐ Others, specify:	☐ Provide wastewater treatment facility (e.g., septic tank, oil and water separator, etc.) ☐ Set up silt trap/settling ponds to minimize downstream siltation ☐ Others, specify	☐ Water body for turbidity and/or silted condition and for floating wastes or debris Regular ambient water monitoring for the following: ☐ TSS concentration — ☐ Annual, ☐ Semi-annual, ☐ Quarterly	

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	☐ Distance of project area to the nearest well used: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Use of nearest well: ☐ Drinking/Domestic ☐ Industrial ☐ Agricultural ☐ Others: ☐			☐
☐ Competition in water use ☐ Depletion of water resources	Size of population using proposed water source: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Available/nearest water source. ☐ Deepwell ☐ Water district/LGU ☐ Surface water ☐ Others, specify	☐ Implement rainwater harvesting and similar measures as an alternative source of water ☑ Observe water conservation measures ☐ Carefully select project site to avoid disruption of traditional water uses ☑ Obtain Water Permit from NWRB ☑ Improve efficiency of water supply and distribution system ☐ Implement community ponds and similar measures as alternative water source and options for fish cultivation	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regular monitoring for occurrences of water shortages ☐ Others, specify	☐

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		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
		☑ Increase, when practical, storage capacities of water supply structures for resilience to greater climate variations and extremes ☐ Use drought resistant species which require less water input and hence have less impact on water tables ☑ Modify irrigation techniques, including amount, timing or technology ☑ Improve water management to prevent water logging, erosion and leaching ☐ Modify crop calendars and/or implement seasonal climate forecasting (e.g., timing or location of cropping activities) ☐ Others, specify		

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		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Increased occurrence of flooding	Is the project site located in an area identified by MGB/ PAG-ASA as flood prone? ☐ Yes ☐ No	☐ Use appropriate design for project facilities ☐ Implement appropriate drainage system ☐ Regularly remove debris and other materials that may obstruct water flow ☐ Use appropriate technology (e.g., raised hand-pumps) to protect drinking water from flood contamination ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regular monitor of increased frequency of flooding ☐ Others, specify	
AIR / NOISE				
Air quality degradation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Is the wind direction blowing towards the nearest community most of the year? ☐ Yes ☐ No	☐ Properly operate and maintain all emission sources (e.g., vehicles, pumps, generator, etc.) ☐ Install, when applicable, the appropriate air pollution control device/s ☐ Strictly enforce good housekeeping practices ☐ Control vehicle speed to lessen suspension of road dust ☐ Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents ☐ Use covered vehicles to deliver materials that may generate dust ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints Regular (ocular) inspection of: ☐ Absence of white or black smoke from vehicles, power generator, etc. ☐ Presence of truck cover during deliveries	

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		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Nuisance due to noise generation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all noise sources (e.g., vehicles, pumps, generator, etc.) ☐ Install, when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) ☐ Implement appropriate operating hours ☐ Provide adequate buffer and/or planting of trees ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☐ Regular monitoring of buffer zones ☐ Quarterly monitoring of noise level	
PEOPLE				

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	REMARKS
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Displacement of residents including indigenous people in the project site and within its vicinity ☐ Enhanced employment and/or livelihood opportunities ☐ Reduced employment and/or livelihood opportunities ☐ Increased revenues for LGU ☐ Disruption/Competition in delivery of public services (e.g., education, peace and order, etc.) ☐ Enhanced delivery of public services (e.g., education, peace and order, etc.) ☐ Increase in traffic volume and worsening of traffic flow	Size of population of host barangay/s: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000persons ☐ >5,000person ☐ Indigenous People Size: Classification of host barangay: ☐ Urban ☐ Rural ☐ Employment/Livelihood Opportunity Rate in the host Municipality: ☐ High ☐ Low Description:	☐ Provide relocation/disturbance compensation packages ☑ Prioritize local residents for employment ☑ Promptly pay local taxes and other financial obligations ☑ Regular coordination with LGU ☐ Conduct prior consultation and coordination to minimize disruption of daily domestic activities and to ensure respect for IP rights and cultural practices ☐ Ensure participation of IPs in consultations and dialogues ☐ Provide appropriate traffic/warning signs, lighting, etc ☐ Others, specify	☑ Presence/Absence of complaints ☑ Regular coordination with LGU ☐ Others, specify	
☐ Impacts on community health and safety ☐ Others, specify	Available services within/near the host barangay: ☐ Schools (e.g. elementary, high school, college) ☐ Health facilities (e.g., clinics,	☑ Regularly coordinate with LGU ☐ Provide appropriate warning signs, lighting and barricades, whenever practicable ☑ Observe proper housekeeping ☐ Provide on-site medical services for	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with LGU	

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☐	hospitals, etc.) ☐ Peace and order (e.g., police outpost, Brgy. Tanod, etc.) ☐ Recreation and sports facilities ☐ Others, specify ☐	any emergency. ☐ Participate in public awareness programs on health and safety ☐ Implement appropriate safety programs for both community and workers ☐ Others, specify ☐	☑ Regular submission of reports to concerned agency ☐ Others, specify ☐	☐
☐ Destruction/disturbance of physical cultural resources. *(✓ if project site has been identified to have such by NM, NHCP, NCAA and LGUs)*	Physical Cultural resources within the vicinity of the project site ☐	☐ Implement appropriate protocols based on NM, NHCP, NCAA and LGU guidelines including those for chance finds (if any). Specify: ☐	☐ Regular coordination with NM, NHCP, NCAA and LGU	☐