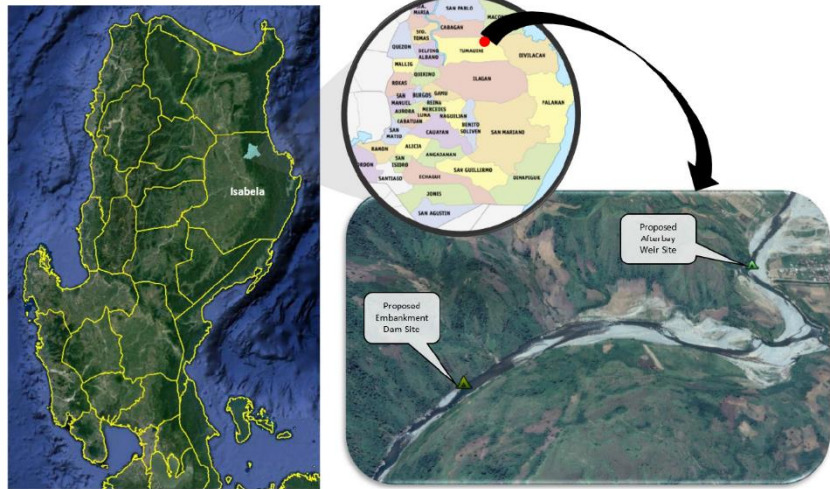


TUMAUNI RIVER MULTIPURPOSE PROJECT (TRMP) EXECUTIVE SUMMARY

Geographically, the proposed Tumauni River Multipurpose Project (TRMP) is located in Sitio Maguli, Brgy. Antagan I, Tumauni, Isabela within coordinates 121° 55' 52" East longitude and 17° 17' 32" North latitude. The project is designed to irrigate about 8,200 hectares within 32 barangays – 26 barangays of Tumauni, 3 barangays of Cabagan and 3 barangays of the City of Ilagan. The watershed area covers approximately 16,320 hectares within the proclaimed Tumauni Watershed Forest Reserved (TWFR), of which about 11,420 hectares overlaps with the Northern Sierra Madre Natural Park (NSMNP).



Location map of proposed TRMP

The project has three major phases:

- Pre-construction phase
- Construction phase
- Operation

Product and Capacity

The Dam:			
Height above Stream Bed	81.60 m	Eco-tourism area	1.0 ha
Crest Elevation	192.60 m asl	Reservoir	155.56 ha
Crest Length	340.00 m	The Irrigation System	
Crest Width	10.00 m	Length of Old (Right) Main canal	23.5 km
Base Width	490.00 m	Length of Old Lateral Canal	87.90 km
River Bed Elevation	111.00 m asl	Length of New Lateral Canal	5.00 km
Storage Capacity	43.43 M m ³	Confirmed Irrigation Service Area:	8,200 ha
Watershed/catchment Area	16,320.0 ha	Hydropower Potential (Secondary):	7,000 KW

IMPACT MITIGATION SUMMARY

Activities/ Environmental Aspect	Potential Impact	Options for Prevention or Mitigation or Enhancement
Pre-Construction Phase		
<ul style="list-style-type: none"> • Preparation of plans and detailed engineering 	People <ul style="list-style-type: none"> • Apprehension of affected communities on the 	<ul style="list-style-type: none"> • Conduct of intensive awareness campaign • Appropriate compensation and remuneration for the affected families • Geologic reevaluation of the dam site

<ul style="list-style-type: none"> • Securing of permits and clearances • Identification and compensation negotiation 	<p>environmental and social impacts of the project</p> <ul style="list-style-type: none"> • Fear of displacement of affected residents • Fear on the occurrence of flash floods in case the dam will collapse 	
Construction Phase		
<ul style="list-style-type: none"> • Earthworks, construction activities such as dam, irrigation canals and access/service roads and movements of heavy equipment to the construction sites 	<p>Land</p> <ul style="list-style-type: none"> • Change in surface landform • Accelerated soil erosion and siltation • Contamination of surface water 	<ul style="list-style-type: none"> • Planting of trees or re-vegetation of critical areas to soil erosion • Provision of drainage system to accommodate surface runoff • Proper maintenance and regular inspection of vehicle and construction equipment to avoid oil spills • Maintenance of supply of spill control materials • Proper training of workers for spill prevention and containment • Proper scheduling of works related to soil movements
	<p>Air and noise</p> <ul style="list-style-type: none"> • Change on air quality • Greenhouse Gas (GHG) and particulate emissions • Increased noise levels 	<ul style="list-style-type: none"> • Covering haulage trucks during transport • Control dust by regularly water spraying of roads especially those passing through residential areas • Improve efficiency of heavy equipment engines and other vehicles through regular check to avoid excessive noise • Restoration of degraded areas to serve as carbon sink areas • Proper maintenance of other equipment and vehicles being used during construction works
	<p>People and their socio-economic activities</p> <ul style="list-style-type: none"> • Loss of Livelihood • Creation of employment that will result to influx of migrants. • Increase social services and business opportunities • Occupational health and safety hazards of workers 	<ul style="list-style-type: none"> • Provide livelihood options to affected families • Prioritize hiring qualified workers within the barangay and municipality • Improve tax collection for better delivery of basic services to the affected communities • Regular orientation and training of workers on proper safety measures • Availability of First Aid kit at all times • Proper management of solid waste materials following the provisions of RA 9003
<ul style="list-style-type: none"> • Land Clearing, Grading and Earthmoving operations 	<p>Land</p> <ul style="list-style-type: none"> • Loss of vegetative cover • Degradation of habitat of flora and fauna • Excessive soil erosion • Siltation of the downstream river channel 	<ul style="list-style-type: none"> • Planting of trees and re-vegetation of landslide prone areas i.e., cut and fill, roadside, etc. • Identify habitat of flora and fauna to be avoided during construction works • Proper scheduling of earth movement works (during summer period) in critical areas to lessen the gravity of soil erosion

	<p>Water</p> <ul style="list-style-type: none"> • Effect on water quality • Water contamination • Siltation of the river systems 	<ul style="list-style-type: none"> • Maintain appropriate easement for all construction activities • Proper storage of waste materials, oil grease, etc. to avoid spillage • Proper maintenance of equipment and good storage facilities • Proper scheduling of earthmoving works
Operation Phase		
Operation of the irrigation system	<p>Land</p> <ul style="list-style-type: none"> • Degradation of critical areas (landslide and soil erosion prone areas) • Accelerated soil erosion • Siltation of river channel in downstream areas • Soil contamination • Loss of vegetative cover 	<ul style="list-style-type: none"> • Continuous planting and re-vegetation of critical areas • Implementation of soil erosion control measures both structural measures and vegetative engineering • Proper management of solid waste materials • Proper storage liquid waste (used oil, etc.)
	<p>Water</p> <ul style="list-style-type: none"> • Soil erosion and siltation • Destruction of habitat of fresh water organism • Water contamination due spillage of waste materials 	<ul style="list-style-type: none"> • Establishment of sediment control measures • Provide suitable equipment, facilities and precautions to eliminate to discharge of any contaminants • Proper maintenance of the irrigation systems structures (embankments, canals, etc.)
	<p>Air Quality</p> <ul style="list-style-type: none"> • Dust • Greenhouse gas 	<ul style="list-style-type: none"> • Provisions of dust respirators • Proper maintenance of equipment and vehicles • Plant trees
	<p>People (Development Impact)</p> <ul style="list-style-type: none"> • Influx of migrant due to availability of employment opportunities • Increased in business opportunities. • Increased local government revenue. 	<ul style="list-style-type: none"> • Prioritize hiring of local workers • Conduct livelihood trainings for the local communities • Pay taxes to local government to flow back for social services • Create the local communities as social buffer of the watershed
	<p>Occupational health and safety hazards</p>	<ul style="list-style-type: none"> • Safety measures in place to prevent diseases • Provide safety trainings • Medical aid • Equip health stations with the needed medical facilities • Train local health workers