

State / Union Territory: GoaName and address of person (s) compiling this information CSIR- NIO & GSWA**Section 1: Identification, Location and Jurisdiction**

- 1.1 Name of the Wetland (Alternative names, including in local language should be given in parenthesis after official name)

Batim Lake (बाति तळे)

- 1.2 Name of the Village(s), Municipal area(s)

Village Batim, Tiswadi Taluka

- 1.3 Name of the District(s) in which wetland is located

North Goa

- 1.4 Geographical coordinates (Latitude and Longitude, to degree, minutes and second)

Latitude: From 15°27'10.42"N to 15°26'54.89"N

Longitude: From 73°53'20.16"E to 73°53'39.71"E

- 1.5 Name of the Department/Agency which has jurisdiction over the wetland

Comunidade of Batim

**Section 2: Site Characteristics**

- 2.1 Area of wetland/wetlands category (ha): 26.56 ha (265561 Sq. Mtrs.)

- 2.2 Wetland type (Please tick appropriate categories and sub-categories)

Category	Subcategory
✓Natural(Inland)	<input type="checkbox"/> Permanent lakes <input checked="" type="checkbox"/> Seasonal/intermittent lakes <input type="checkbox"/> Permanent streams/creeks <input type="checkbox"/> Seasonal/ intermittent streams/creeks <input type="checkbox"/> Oxbow <input type="checkbox"/> River flood plain <input type="checkbox"/> Permanent fresh water marshes <input type="checkbox"/> Seasonal/ intermittent fresh water marshes <input type="checkbox"/> Shrub-dominated wetlands <input type="checkbox"/> Tree-dominated wetlands <input type="checkbox"/> Geothermal wetlands <input type="checkbox"/> Karst and other subterranean hydrological systems

<input type="checkbox"/> Natural(Coastal)	<input type="checkbox"/> Coastal lagoon <input type="checkbox"/> Estuary <input type="checkbox"/> Intertidal mud, sand or salt flats <input type="checkbox"/> Mangroves <input type="checkbox"/> Coral reefs
<input type="checkbox"/> Human-made	<input type="checkbox"/> Aquaculture pond <input type="checkbox"/> Tank <input type="checkbox"/> Saltpan <input type="checkbox"/> Dam /Reservoir

2.3 Depth (m) Maximum 2.5m

2.4 Elevation(m above mean sea level): 4m

2.5 Water regimes

a) Main source of water (tick all applicable)

☒ Rainfall    ☒ Groundwater    ☒ Catchment runoff    ☐ Direct / indirect inflow from river

☐ Others, please specify \_\_\_\_\_

b) Water permanence

☐ Mostly permanent    ☒ Mostly intermittent

c) Destination of water from wetland

☒ Feeds ground water    ☒ To downstream catchment    ☐ To river    ☐ To sea

d) Water pH

☐ Acid(<5.5)    ☒ Circum neutral (5.5–7.4)    ☐ Alkaline (>7.4)

☐ Not known

e) Water salinity

☒ Fresh (<0.5g/l)    ☐ Brackish (0.5 –30g/l))    ☐ Euhaline (30- 40g/l)

☐ Hypersaline (>40g/l)    ☐ Not known

f) Nutrient in water

☐ Eutrophic    ☒ Mesotrophic    ☐ Oligotrophic

☐ Not known

2.6 Climatic setting

- a) Annual Rainfall (mm) 2918mm
- b) Temperature (°C) Minimum 33°C Maximum 20°C
- c) Humidity (%) Minimum 67% Maximum 84%

2.7 Area of zone of influence (in ha) 222.11 ha (2221098 Sq. Mtrs.) [Ref.paras 32-34of the guidelines on wetlands]

2.8 Major land use within zone of influence (provide as approximate % of catchment area)

Table-I: Detailed LULC of influence zone and Batim Lake with 50m

Sl. No:	LULC (Batim Lake)	Influence Zone		50 meter Buffer	
		Area In Hectares	Percentage Area	Area in Hectares	Percentage Area
1	Water body	16.68	6.82	16.68	63.62
2	Agricultural land	21.89	8.95	1.14	4.35
3	Barren land	3.89	1.59	0.57	2.17
4	Vegetation/ Forest	189.19	77.37	3.45	13.16
5	Plantation	9.07	3.71	3.58	13.65
6	Settlements (with 5m Buffer)	3.81	1.56	0.8	3.05
	<b>Total</b>	<b>244.53</b>	<b>100</b>	<b>26.22</b>	<b>100</b>

2.9 Map of wetland and zone of influence (Enclosed as Annexure I- V and VI as site photographs to this document)

### Section 3: Biodiversity

#### 3.1 Notable plant species present in wetland

*Nymphaea alba* (Water lily), *Pistia stratiotes*, *Hydrilla* sp., *Salvinia* sp., Grasses

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#### 3.2 Notable animal species present in wetland

*Crocodylus palustris*, *Melanochelys trijuga* (Indian pond terrapin), *Nettapus coromandelianus* (Cotton pygmy goose), *Metopidius indicus* (Bronze winged jacana), *Microcabo niger* (Little cormorant), *Bubulcus ibis* (Cattle egret), *Hirundo smithii* (Wire tailed swallow), *Ardeola grayii* (Pond heron), *Alcedo atthis* (Common Kingfisher), *Dendrocygna javanica* (Lesser whistling Duck), *Lxobrychus sinesis* (Yellow Bittern), *Halistur Indus* (Brahminy kite), *Milvus migrans* (Black kite), *Porphyrio porphyrio* (Purple Moorhen), *Sarkidiornis melanotos* (Comb Duck), *Anas poecilorhyncha* (Spot-billed Duck), *Danaus chrysippus* (Plain tiger), *Euploea core* (Common crow), *Neptis hylas* (Common sailor)

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#### 3.3 Species of conservation significance (rare, endangered, threatened, endemic species)

*Crocodylus palustris*

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#### 3.4 Major plant invasive alien species

*Pistia stratiotes*, *Salvinia* sp.

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#### 3.5 Major animal invasive alien species

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#### Section 4: Ecosystem services

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (up to 50 words for each category)
Source of drinking water for people living and around	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Source of water for agriculture	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water is used for cultivation of paddy field
Fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Local body gives permission to the tenants association for fishing in the water body.
Cultivation of aquatic food plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
For buffalo wallowing and use of domesticated animals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Buffalo wallowing and bathing is observed.
Medicinal plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is a recreational site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Buffering communities from extreme events as floods and storms	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Three sluice gates are made along the periphery of the water body to control the flow of water from the lake.
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	At certain height, water remains throughout the year.
Water purification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Natural purification of the water takes place as the water body continuously receives percolated water.
Acts as a sink for sediments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	From Sediment, excess nutrients and chemicals flow off of the land, water body filter the run-off before it reaches open water. Sediment settles at the bottom after reaching an area with slow water flow.
Has significant cultural and religious values	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Holy cross (Religious place) at the periphery of the water body.
Is a site for recreation and tourism	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Supports noteworthy plants species	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Crocodylus palustris</i> , <i>Melanochelys trijuga</i> (Indian pond terrapin).
Site of high congregation of migratory water birds	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Guppies, Tigr & Pittol
Mining	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Any other, please list		

## Section 5: Pre-Existing Rights and Privileges

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively Impact the wetland's ecological health?	Brief description (up to 50 words for each category)
Community Fishing (without any lease or permission from government department)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Tenants association gives on lease for fishing
Fishing under lease from government department	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Local body gives permission to the tenants association for fishing in the water body
Harvest of plants(without any lease or permission from government department)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
Harvest of plants under lease from government department	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
Agriculture or horticulture within wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
Grazing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	In Post-monsoon, some part of water body dries up and the local people use it for grazing purpose
Religious practices	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
Withdrawal of water for domestic use	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Lake water is used by local people for domestic purpose.
Withdrawal of water for agriculture or fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Agriculture:- paddy fields and vegetables
Bathing or wallowing of domestic animals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	For grazing and wallowing of buffalo by villagers.
Plying of boats	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
Any other, please list here	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	

## Section 6: Present and Potential Threats

Threat	Degree	Present or Potential	Additional information, if any
Changes in water inflow and out flow	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	Only streams flow and rain water
Pollution	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Solid waste disposal is observed in the water body.
Unsustainable harvest of biological resources	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Mining	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Siltation	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Encroachment	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Spread of invasive species	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Any other, please list	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	

**Section7: Activities Proposed to be Prohibited (other than those listed in Rule 4(2)of Wetland Rules and Regulated**

Activity	Whether prohibited or regulated	Regulation within wetlands or zone of influence	If regulated, indicate the level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation / prohibition	Additional information, if any
Withdrawal of water / impoundment/diversion or any other hydrological intervention	Regulated	✓Wetland ✓Zone of influence	High	Water Resource Department	Statutory approval required
Harvesting of resources (living / non-living)	Regulated	✓Wetland ✓Zone of influence	Mid	State Fishery Department	Only traditional activities to continue
Grazing	Regulated	✓Wetland ✓Zone of influence	Low	State Forest Department	
Discharge of treated sewage/ effluent / wastewater	Prohibited	✓Wetland ✓Zone of influence	High	State Public Works Department	Statutory national and state legislation applicable
Construction of boat jetties, and facilities for temporary use ,as pontoon bridges	Regulated	✓Wetland ✓Zone of influence	High	State Public Works Department	Statutory approval required for new activities within the wetland boundaries and buffer
Aquaculture, agriculture and horticulture activities within the Wetland boundaries.	Regulated	✓Wetland <input type="checkbox"/> Zone of influence	Mid	Fishery, Agriculture, Horticulture Department	Traditional activities may continue
Any other, please list 1. Disposal of solid waste/ untreated sewage	Prohibited	✓Wetland ✓Zone of influence	High	Municipality	Statutory national and state legislation applicable
2. Construction activities	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Approval required
3. Extraction of soil, mud, rocks for commercial purpose	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Approval required

**Section 8: Activities Proposed to be permitted**



Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
Traditional Agriculture/ Paddy cultivation	✓	✓Wetland ✓Zone of influence	
Traditional fishery	✓	✓Wetland ✓Zone of influence	
Traditional Religious activities	✓	✓Wetland ✓Zone of influence	

#### Section 9: Listing of Available Scientific Resources Used

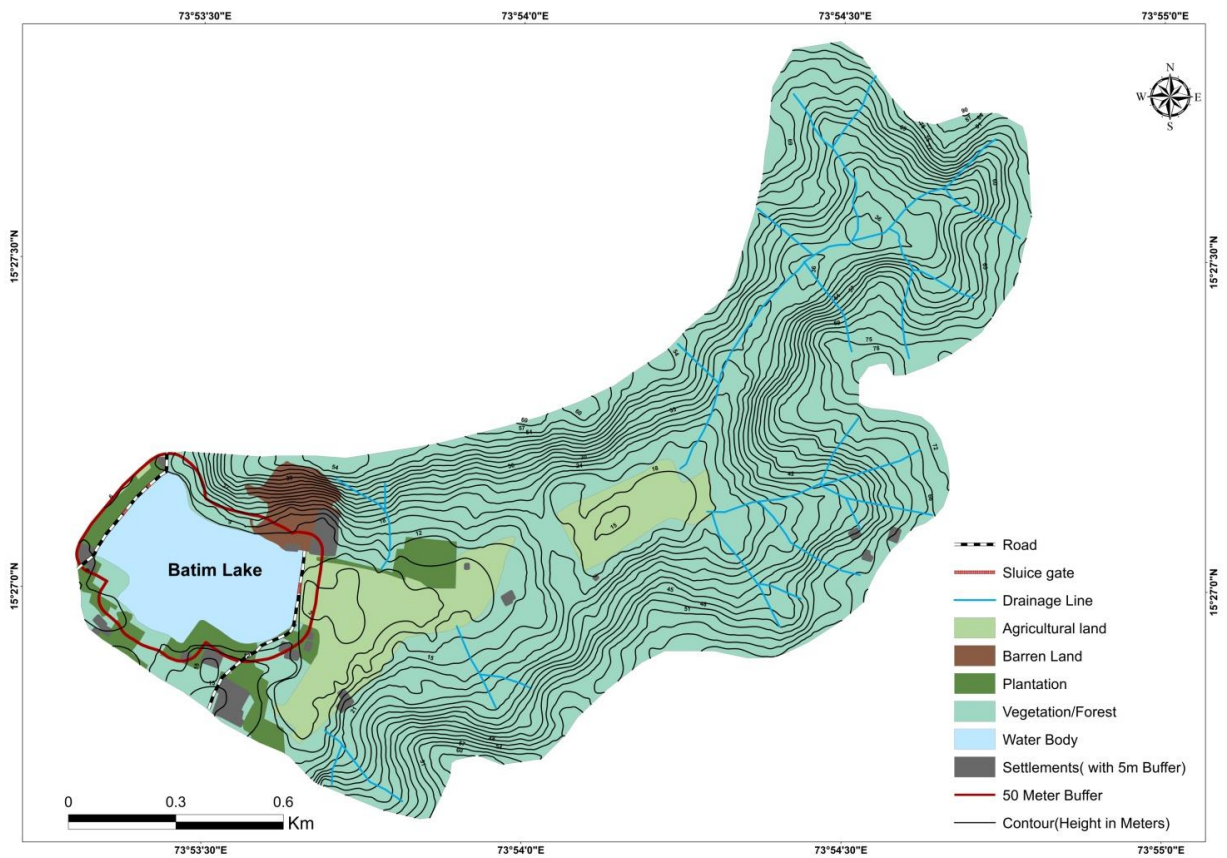
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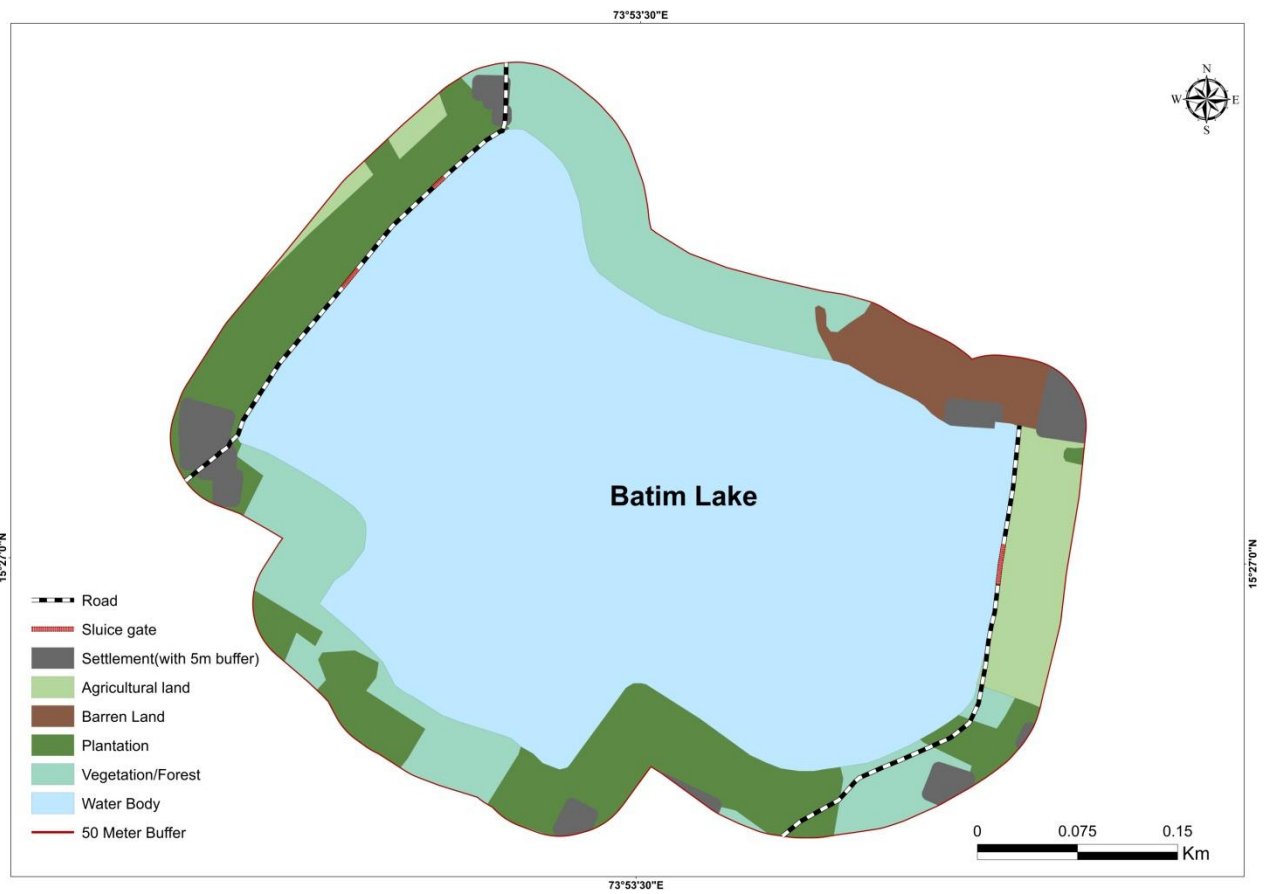
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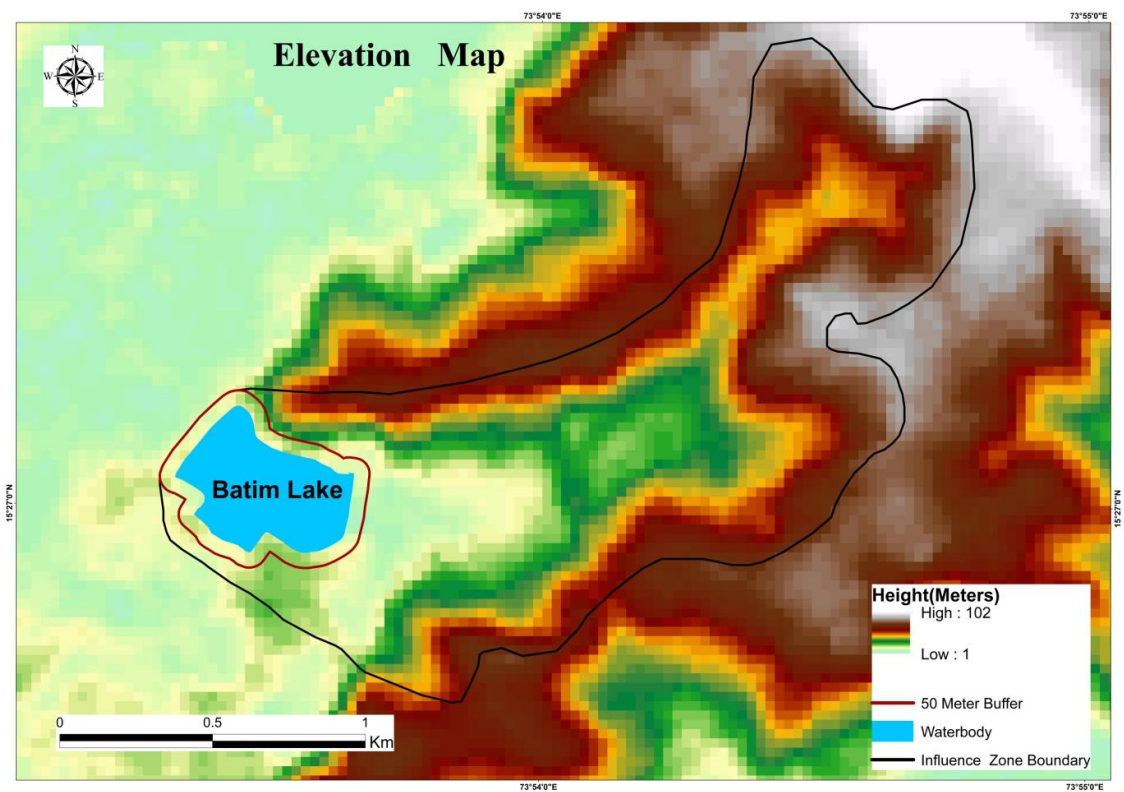
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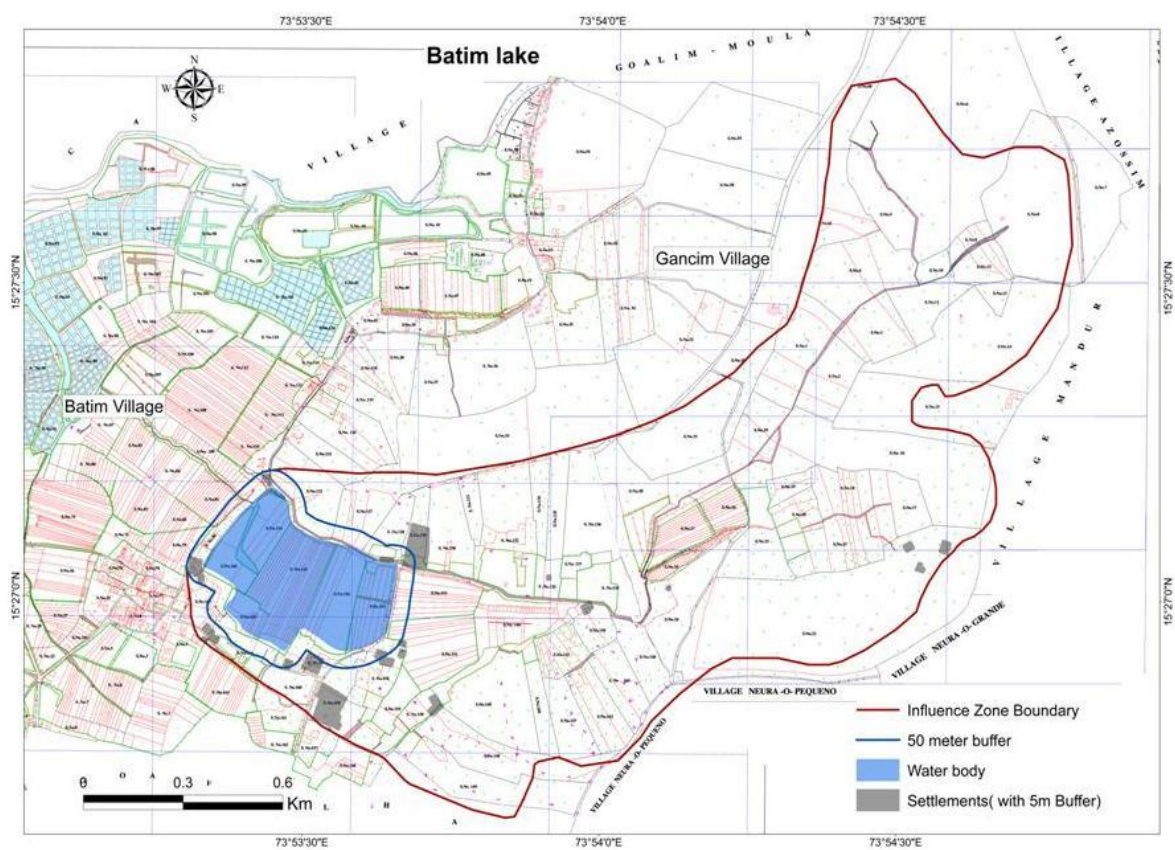
Annexure-II: LULC of 50m buffer of Batim Lake.



Annexure-III: Elevation (DEM) map of Batim Lake



Annexure-IV: Survey map of Batim Lake showing influence zone





Annexure-V: Google image of Batim Lake



Annexure-VI: Site photographs of Batim Lake

