

**Annex 2: Format for preparing Brief Document**

State / Union Territory: Goa

Name and address of person (s) compiling this information CSIR- NIO & GSBB

**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)

Sulabhat Lake (सुलाभाट तळें)

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

Agassaim village, Tiswadi taluka

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

North Goa

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

Latitude: From 15°26'21.97" N to 15°26'13.67" N

Longitude: From 73°53'53.46" E to 73°54'03.89" E

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

Agassaim Village panchayat, Water Resource Department (WRD)

**Section 2: Site Characteristics**

2.1 Area of wetland/wetlands category(ha): 5.4 ha

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

Category	Subcategory
<input checked="" type="checkbox"/> Natural(Inland)	<input checked="" type="checkbox"/> Permanent lakes <input 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 freshwater marshes <input type="checkbox"/> Seasonal/ intermittent freshwater 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 5-6

2.4 Elevation (m above mean sea level) 3

2.5 Water regimes

a) Main source of water (tick all applicable)

Rainfall     Groundwater     Catchment run off     Direct / indirect inflow from river

Others please specify \_\_\_\_\_

b) Water permanence

Mostly permanent     Mostly intermittent

c) Destination of water from wetland

Feeds groundwater     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 20°C Maximum 33°C
- c) Humidity (%) Minimum 67% Maximum 84%

2.7 Area of zone of influence(in ha) 4.34 ha [Ref.paras32-34of the guidelines on wetlands]

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

Forests/vegetation	<u>97.7</u> %
Plantation	<u>0</u> %
Agriculture	<u>0</u> %
Settlements (Rural)	<u>0</u> %
Settlements (Urban)	<u>0</u> %
Industrial	<u>0</u> %

(Detailed LULC of influence zone and 50m buffer is given in Table-I below)

2.9 Map of wetland complex and zone of influence  
(Enclosed as Annex I –V and VI with site  
photographs to this document)

### Section 3: Biodiversity

3.1 Notable plant species present in wetland

Nymphaeaceae (Water lily), *Eichornia crassipes* (water hyacinth), *Nymphoides indica*

3.2 Notable animal species present in wetland

Freshwater terrapin

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

3.4 Major plant invasive alien species

3.5 Major animal invasive alien species

#### Section 4: Ecosystem services

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (upto 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	Paddy field during summer by the local people
Fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Traditional fishery is carried out by the village people by angling
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	Used for buffalo bathing in the water body.
Medicinal plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is a recreational site	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Used for ganesh idol visarjan
Buffering communities from extreme events as floods and storms	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	During monsoon, the water from the hills directly flows into the water body and prevents flooding in surrounding areas
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	It helps in replenish the ground water levels
Water purification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtering of water and at certain height, water remains throughout the year.
Acts as a sink for sediments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Heavy sediment deposition in the water body and natural purification of the water takes place as the water body continuously receives percolated water.
Has significant cultural and religious values	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Ganesh idol Visarjan
Is a site for recreation and tourism	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	It is a tourist place and planning to start boating in the water body.
Supports noteworthy plants species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Nymphaeaceae, <i>Eichornia crassipes</i> , <i>Nymphoides indica</i>
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Freshwater terrapin
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Earlier many migrant birds come to this lake but now the diversity of birds has reduced due to anthropogenic disturbance.
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The life cycle of fishes is supported in this water body.
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 (upto 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	Small scale fishing done by locals.
Fishing 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	
Harvest of plants (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	Lotus is harvested by the local people
Harvest of plants under lease from government department	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Religious practices	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Ganesh idol Visarjan in the water body
Withdrawal of water for domestic use	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
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	There is sluice gate for the water flow to the agricultural field.
Bathing or wallowing of domestic animals	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Plying of boats	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not assessed	Proposed to start small scale boating in the water body
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 outflow	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Pollution	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Sound pollution due to anthropogenic disturbance.
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	

**Section 7: 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	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	Medium	WRD	Statutory approval required
Harvesting of resources (living / non-living)	Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence			
Grazing	Regulated	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	Medium	Animal husbandry	
Discharge of treated sewage/ effluent / wastewater	Prohibited	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence		State Public Works Department	Statutory national and state legislation applicable.

Construction of boat jetties, and facilities for temporary use ,as pontoon bridges	Regulated	✓Wetland <input type="checkbox"/> Zone of influence	Medium	Tourism/ Forest Department	Max10 small boats Statutory approval required for new activities within the wetland boundaries and buffer.
Aquaculture, agriculture and horticulture activities within the wetland boundaries.	Regulated	✓Wetland ✓Zone of influence	Medium	Fisheries, Agriculture Department, Panchayat	Permission from authorities. Traditional activities may continue.
Any other, please list 1. Disposal of solid waste/untreated sewage	Prohibited	✓Wetland ✓Zone of influence			Statutory national and state legislation applicable.
2. Construction activities	Prohibited	✓Wetland ✓Zone of influence			Approval required in zone of influence
3. Extraction of soil, mud, rocks for commercial purpose	Prohibited	✓Wetland <input type="checkbox"/> Zone of influence			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	✓	<input type="checkbox"/> Wetland ✓Zone of influence	For local farmers
Traditional Religious activities	✓	✓Wetland <input type="checkbox"/> Zone of influence	Ganesh visarjan

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

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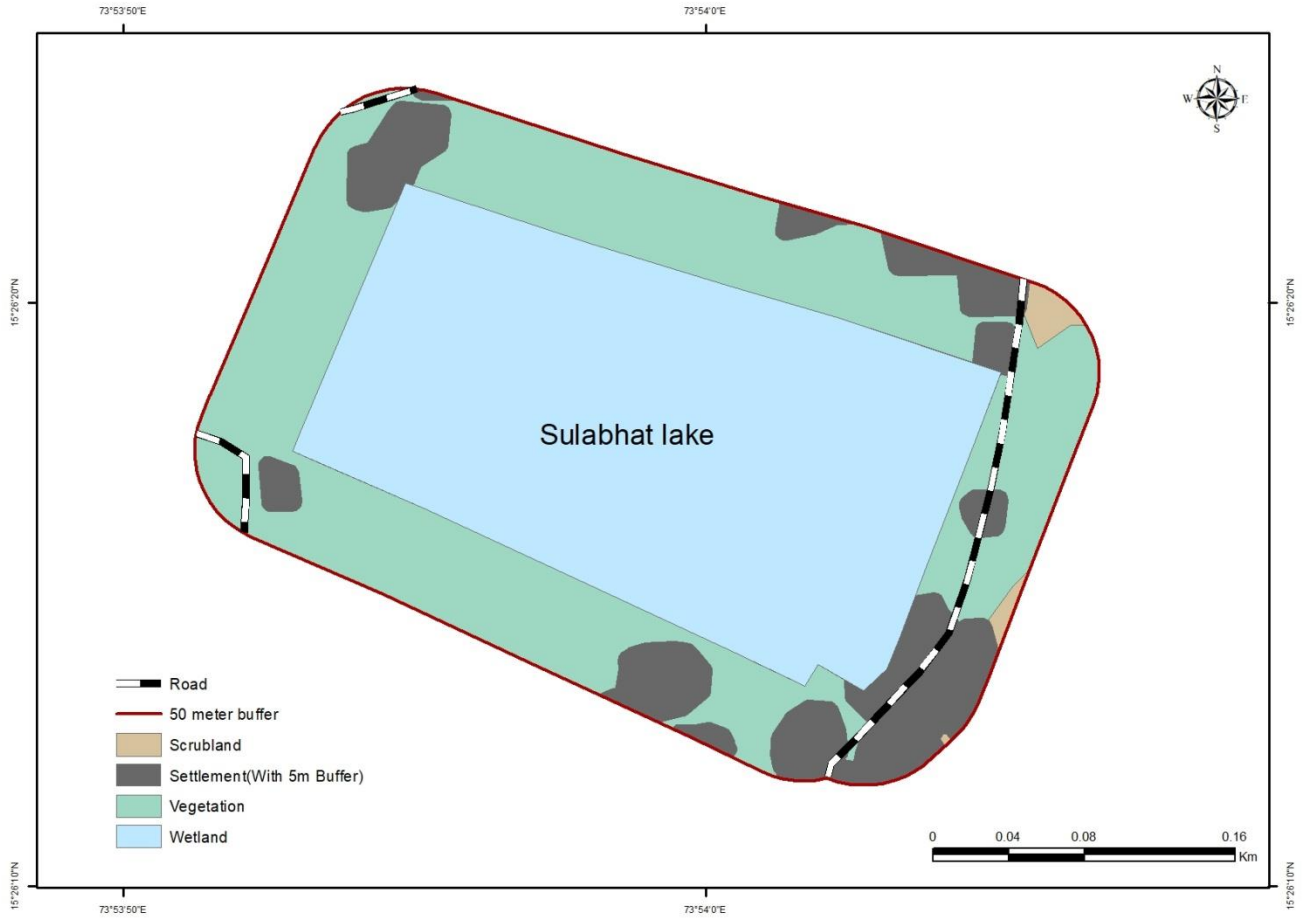
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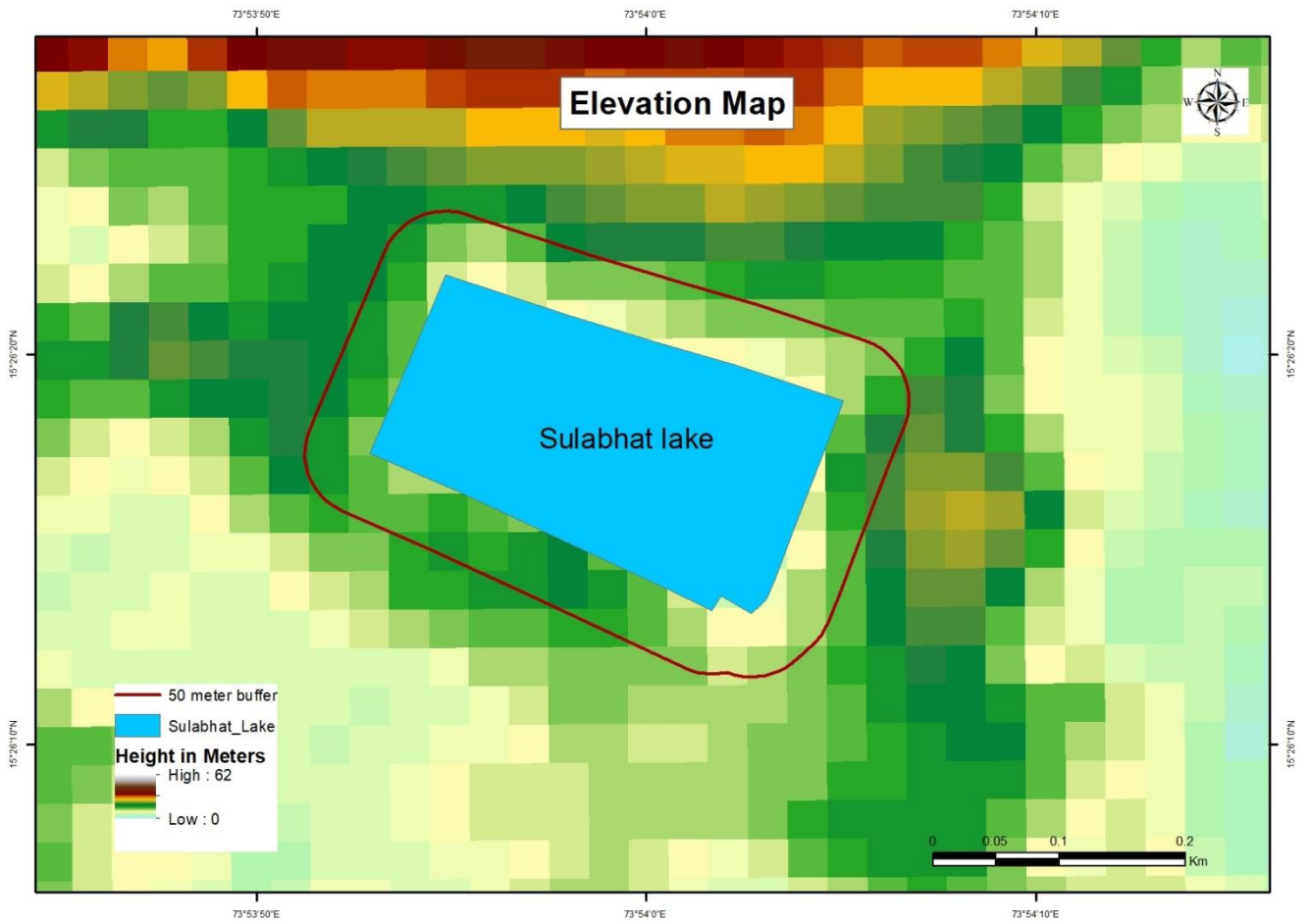
Table-I: LULC of Sulabhat Lake

<b>Sulabhat Lake</b>			
<b>Sl.No:</b>	<b>LULC</b>	<b>50 meter Buffer</b>	
		<b>Area(Hec)</b>	<b>Percentage Area</b>
1	Scrubland	0.1	2.3
2	Vegetation	4.24	97.7
	<b>Total Area</b>	<b>4.34</b>	<b>100</b>

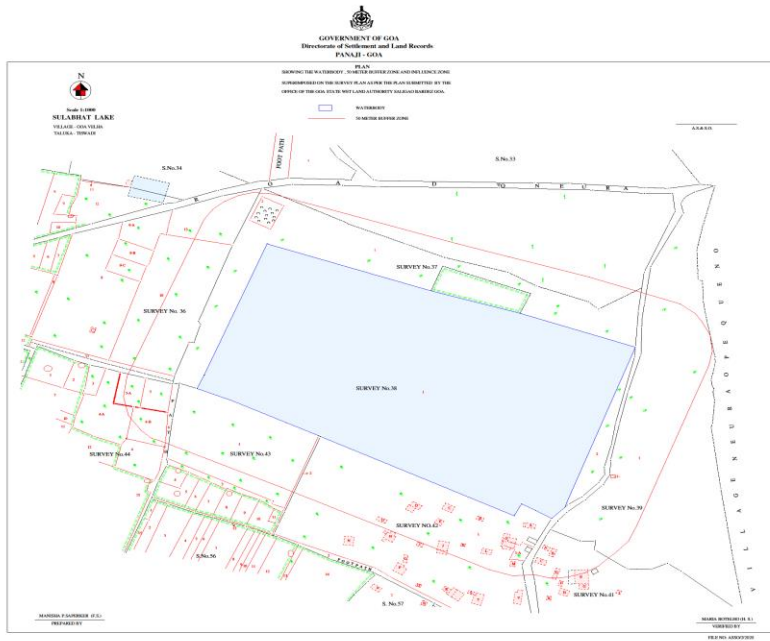
# Annexure-I: LULC of 50m buffer of Sulabhat Lake



Annexure-II: Elevation (DEM) map of Sulabhat Lake



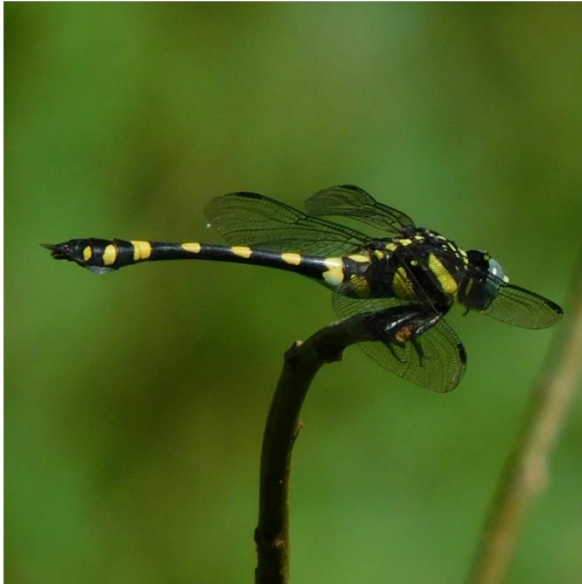
### Annexure-III: Survey map of Sulabhat Lake showing influence zone



Annexure-IV: Google image of Sulabhat Lake



Annexure-VI: Site photographs of Sulabhat Lake



Annexure-VII: Diversity of Sulabhat Lake

