

Annex 2: Format for preparing Brief Document

State / Union Territory: Goa

Name 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)

Macazana Lake (मॅकॅझन तळे)

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

Village Macazana, Taluk Salcete

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

South Goa

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

Latitude: From 15⁰17'31.44" N to 15⁰17'15.31" N

Longitude: From 74⁰02'07.01" E to 74⁰02'21.42" E

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

Macazana Tenants Association

Section 2: Site Characteristics

2.1 Area of wetland (ha): 0.7 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 2

2.4 Elevation(m above mean sea level) 5

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 Paroda canal when water is less in the water body

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) 2.67 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 22.5 %

Plantation 0 %

Agriculture 5 %

Settlements (Rural) 0 %

Settlements (Urban) 0 %

Industrial 0 %

2.1 Map of wetland complex and zone of influence
(Enclosed as Annexure I – V and VI, VII with site photographs to this document)

Section 3: Biodiversity

3.1 Notable plant species present in wetland

Cocos nucifera (Coconut), *Tectona grandis* (Teak)

3.2 Notable animal species present in wetland

Whizling teels

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

3.4 Major plant invasive alien species

None

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	Water is used for paddy cultivation.
Fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fish cultivation is done by tenants.
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 wallowing by locals
Medicinal plants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Azardirecta indica</i> (Neem)
Is a recreational site	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Used for evening walks by locals
Buffering communities from extreme events as floods and storms	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water stored in the lake helps replenish ground water levels
Water purification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water gets purified as it percolates through the soil.
Acts as a sink for sediments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Provides de-silting, settling of silt from rainwater runoff
Has significant cultural and religious values	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Feast celebrated near cross and ganesh visarjan
Is a site for recreation and tourism	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bird watching site
Supports noteworthy plants species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Coconut, <i>Tectona grandis</i> (Teak)
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Whizling teels
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Migratory birds visit the lake especially during winter months
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Tiggur
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	
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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Paddy cultivation is done in core area of the water body during dry season.
Grazing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Grazing is done by cattle in the lake
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	Feast celebrated near cross and ganesh visarjan
Withdrawal of water for domestic use	<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 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	Water is used for paddy cultivation
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	Used for buffalo wallowing by locals
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 outflow	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input 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	
Unsustainable harvest of biological resources	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Mining	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	
Siltation	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	
Encroachment	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	
Spread of invasive species	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input 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	<input checked="" type="checkbox"/> Regulated <input type="checkbox"/> Prohibited	<input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	Tenants	
Harvesting of resources (living / non-living)	<input checked="" type="checkbox"/> Regulated <input type="checkbox"/> Prohibited	<input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	Tenants	
Grazing	<input checked="" type="checkbox"/> Regulated <input type="checkbox"/> Prohibited	<input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	Animal husbandry	
Discharge of treated sewage/ effluent / wastewater	<input type="checkbox"/> Regulated <input checked="" type="checkbox"/> Prohibited	<input checked="" type="checkbox"/> Wetland <input 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	<input type="checkbox"/> Regulated <input checked="" type="checkbox"/> Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence		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.	<input checked="" type="checkbox"/> Regulated <input type="checkbox"/> Prohibited	<input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	Tenants	Statutory approval required
Any other, please list 1. Disposal of solid waste/untreated sewage	<input type="checkbox"/> Regulated <input checked="" type="checkbox"/> Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence		Panchayat	Statutory national and state legislation applicable.
2. Construction activities	<input type="checkbox"/> Regulated <input checked="" type="checkbox"/> Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence		Panchayat	Approval required
3. Extraction of soil, mud, rocks for commercial purpose	<input type="checkbox"/> Regulated <input checked="" type="checkbox"/> Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence		Panchayat	Approval required

Section 8: Activities Proposed to be permitted

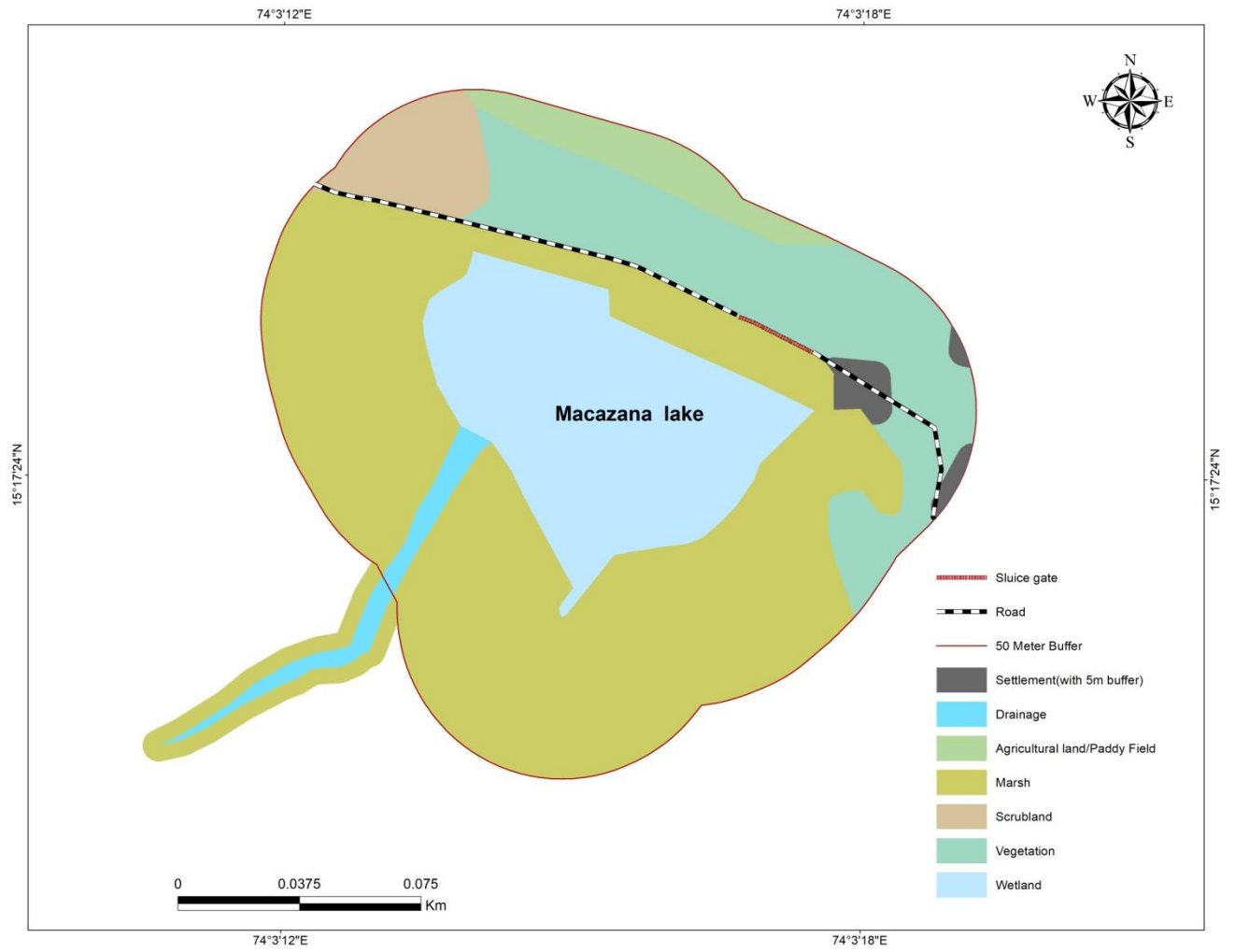
Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
Traditional Agriculture/ Paddy cultivation	✓	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	
Traditional fishery	✓	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	
Traditional Religious activities	✓	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	

Section 9: Listing of Available Scientific Resources Used

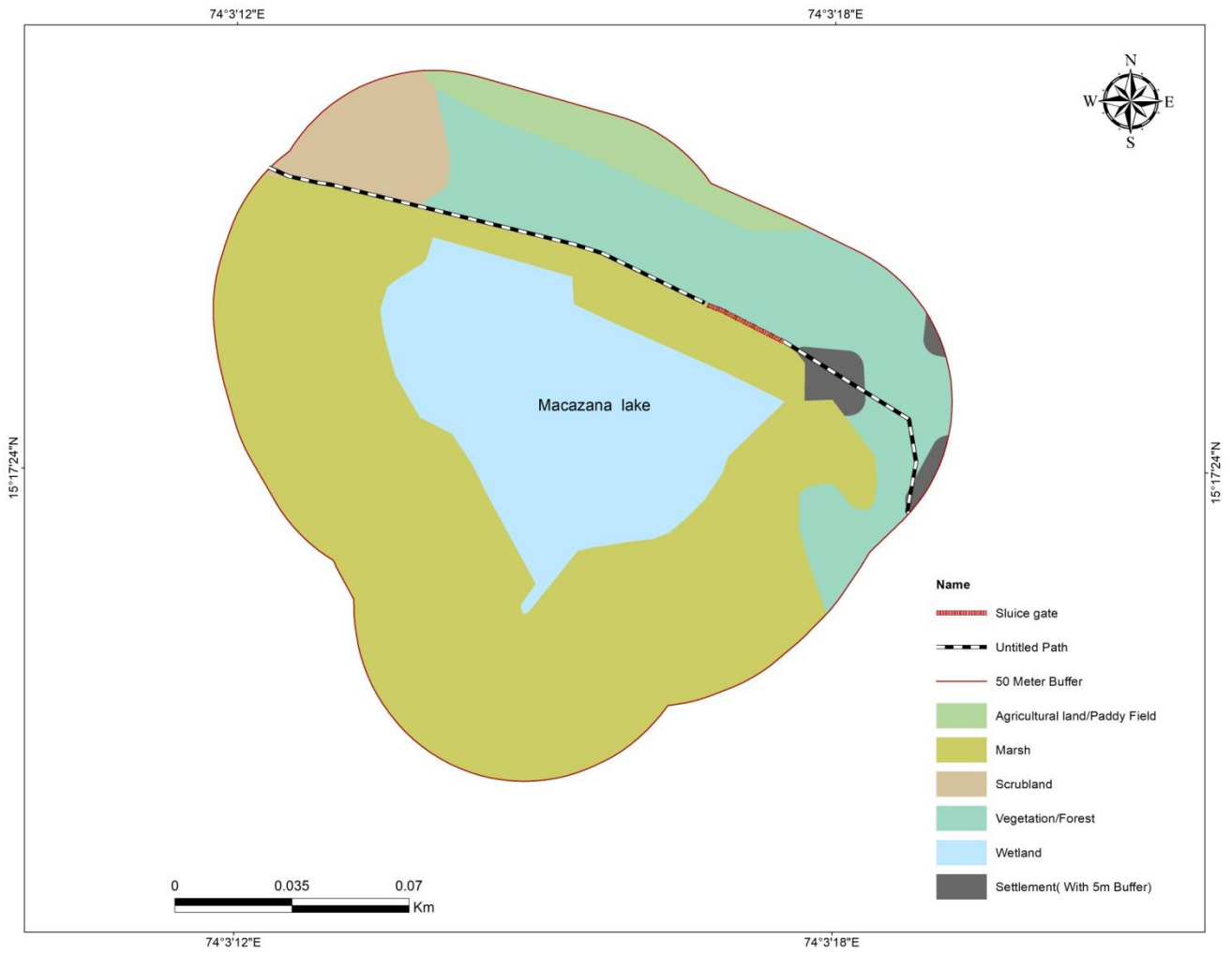
Table-I: LULC of Macazana Lake

Macazana Lake					
Sl.No:	LULC	Influence Zone		50 meter Buffer	
		Area(Hec)	Percentage Area	Area(Hec)	Percentage Area
1	Agricultural land	0.13	5	0.13	5.3
2	Vegetation	0.6	22.5	0.6	24.3
3	Scrubland	0.14	5	0.14	5.7
4	Marsh	1.8	67.5	1.6	64.7
	Total Area	2.67	100	2.47	100

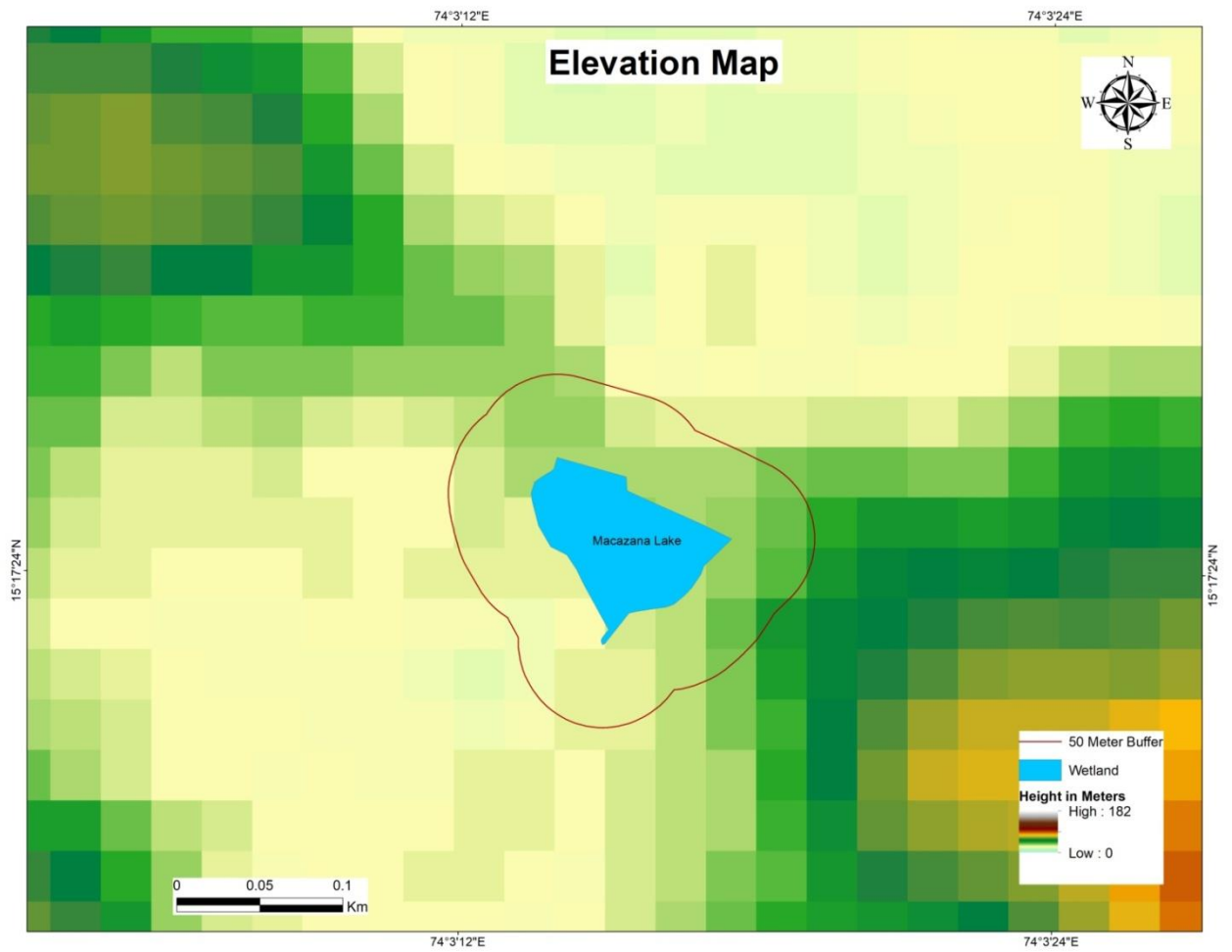
Annexure-I: LULC of the influence zone of Macazana Lake



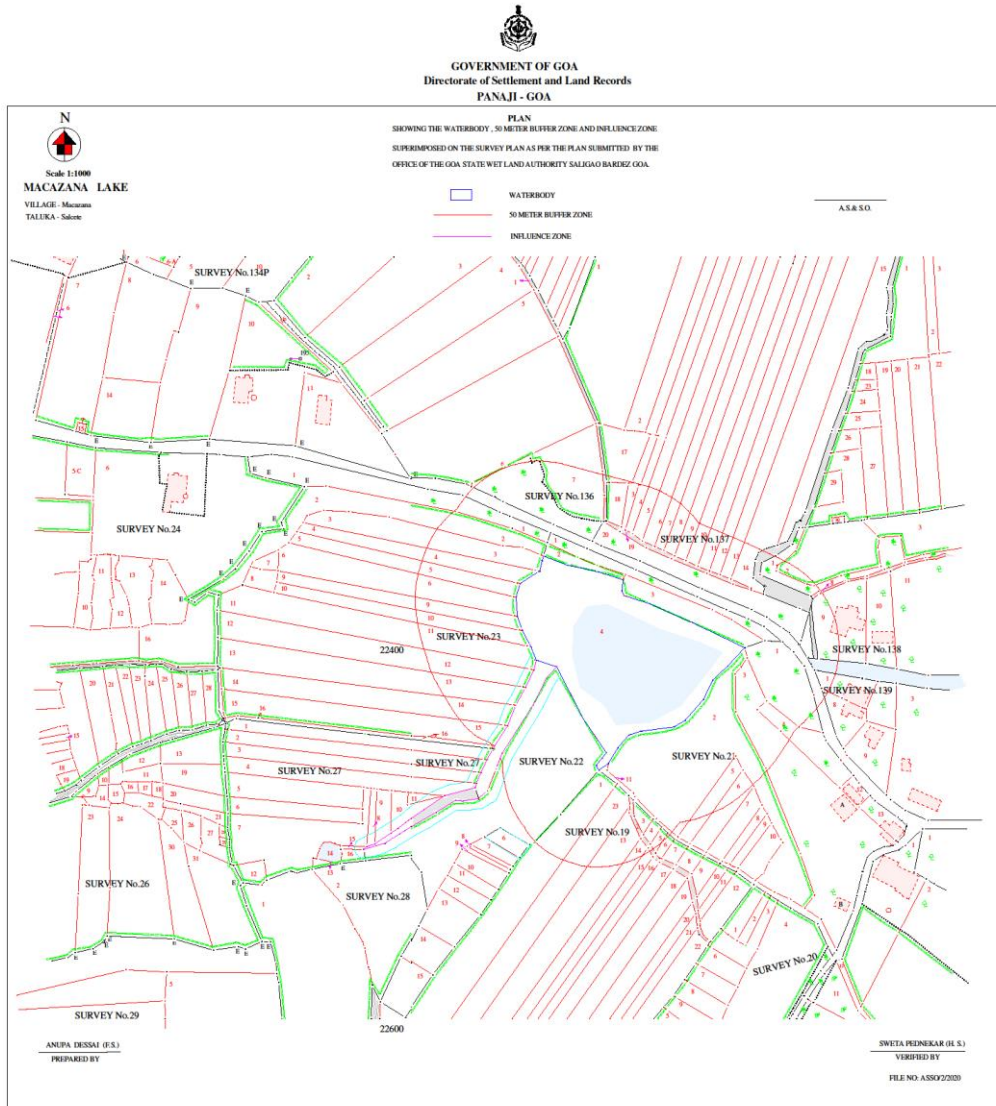
Annexure-II: LULC of 50m buffer of Macazana Lake



Annexure-III: Elevation (DEM) of Macazana Lake



Annexure-IV: Survey Map of Macazana Lake showing influence zone



Annexure-V: Google image of Macazana Lake



Annexure-VI: Site Photographs of Macazana Lake



Annexure-VII: Diversity of Macazana Lake

