

Annex 2: Format for preparing Brief Document

State / Union Territory: _____ Goa

Name and address of person(s) compiling this information _____ CSIR NIO

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)

Sarzora Lake (सारझोरा तळे)

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

Village Sarzora, Salcete Taluka

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

South Goa

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

Latitude: From 15°13'02.88" N to 15°13'13.85" N

Longitude: From 74°00'10.97" E to 74°00'25.60" E

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

Comunidade of Sarzora, Goankar's, and Water Resource Department (WRD)

Section 2: Site Characteristics

- 2.1 Area of wetland/wetlands category (ha): 10 ha

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

Category	Subcategory
✓ 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 floodplain <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: 3m

2.4 Elevation (above mean sea level) 35 m

2.5 Water regimes

a) Main source of water (tick all applicable)

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

☐ Others, please specify- Natural springs

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

☐ Notknown

2.6 Climatic setting

- a) Annual Rainfall- 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) 63.49 ha [Ref.paras32-34of the guidelines on wetlands]

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

Forests	<u>61.67%</u>
Plantation	<u>0%</u>
Agriculture	<u>0.71%</u>
Settlements (Rural)	<u>0%</u>
Settlements (Urban)	<u>0%</u>
Industrial	<u>0%</u>

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

Section 3: Biodiversity

3.1 Notable plant species present in wetland

Acacia
Matti (Crocodile bark tree)
Cashew

3.2 Notable animal species present in wetland

Euploea core (Common Crow), *Danaus genutia* (Striped Tiger Orange Butterfly), Golden Jackals
Herpestes edwardsi (Indian Grey Mongoose), *Fowlea piscator* (Checkered Keelback), *Haliastur indus* (Brahminy kite), *Hirundo smithii* (Wire tailed swallow), *Charadrius dubius* (Little ringed plover), *Vanellus indicus* (Red wattled lapwing), *Pavo* sp. (India peafowl), *Ardea purpurea* (Purple heron), *Microcarbo niger* (Little cormorant), *Ardeola grayii* (Pond heron), *Ploceus philippinus* (Baya weaver), *Alcedo atthis* (Common Kingfisher).

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

Panthera pardus (Leopard)

Pavo sp. (India peafowl)

3.4 Major plant invasive aliens pieces

3.5 Major animal invasive alien species

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 checked="" type="checkbox"/> Yes No	Mainly for drinking purpose indirectly by wells.
Source of water for agriculture	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For Paddy fields, local vegetables like lady's finger, watermelon etc.
Fisheries	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Earlier, fish used to be harvested and auctioned in the month of May
Cultivation of aquatic food plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
For buffalo wallowing and use of domesticated animals	Yes <input checked="" type="checkbox"/> No	
Medicinal plants	Yes <input checked="" type="checkbox"/> No	
Is a recreational site	Yes <input checked="" type="checkbox"/> No	
Buffering communities from extreme events as floods and storms	Yes <input checked="" type="checkbox"/> No	
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	During monsoon, flooding occurs due to heavy rainfall and through sluice gate, the water passes to paddy field. Replenishes water table.
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. Natural purification of the water takes place as the water body continuously receives percolated water.
Has significant cultural and religious values	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is a site for recreation and tourism	Yes <input checked="" type="checkbox"/> No	
Supports noteworthy plants species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Acacia, Matti (Crocodile bark tree), Cashew.
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Leopard, foxes, mongoose, checkered keelback
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Migratory birds are observed in month of October.
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fishes found in lake such as tigur
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	Earlier fishing was carried out and fish was auctioned with Govt. / Sarpanch (Panchayat) permission.
Fishing 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	
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 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 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 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 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 domestic use	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	Not directly used, but water is withdrawn from the wells that are fed by the water from the lake.
Withdrawal of water for agriculture or fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	Paddy fields and vegetables by local people.
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 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 type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	
Pollution	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" 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 checked="" type="checkbox"/> Potential	Fishing is carried out at commercial scale
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 checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Silt level has increased and requires de-silting and minor restoration
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	Prohibited	Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	WRD/ Agriculture dept.	Statutory approval required
Harvesting of resources (living / non-living)	Regulated	<input checked="" type="checkbox"/> Wetland / boundary <input checked="" type="checkbox"/> Zone of influence	Mid	Village Panchayat	Only traditional activities to continue for the local people
Grazing	Prohibited	<input checked="" type="checkbox"/> Wetland / <input checked="" type="checkbox"/> Zone of influence		Animal husbandry & State Forest Dept.	Statutory approval required

Discharge of treated sewage/ effluent / wastewater	Prohibited	✓Wetland <input type="checkbox"/> 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	Prohibited	✓Wetland <input type="checkbox"/> 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 ✓Zone of influence	Low	Agriculture Dept./ Forest Dept./ Village Panchayat	For local people
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 activity	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Approval required in zone of Influence
3. Extraction of soil, mud, rocks for commercial purpose	Prohibited	✓Wetland ✓Zone of influence		Panchayat/ Corporation/ Municipality	Approval required

Section 8: Activities Proposed to be permitted

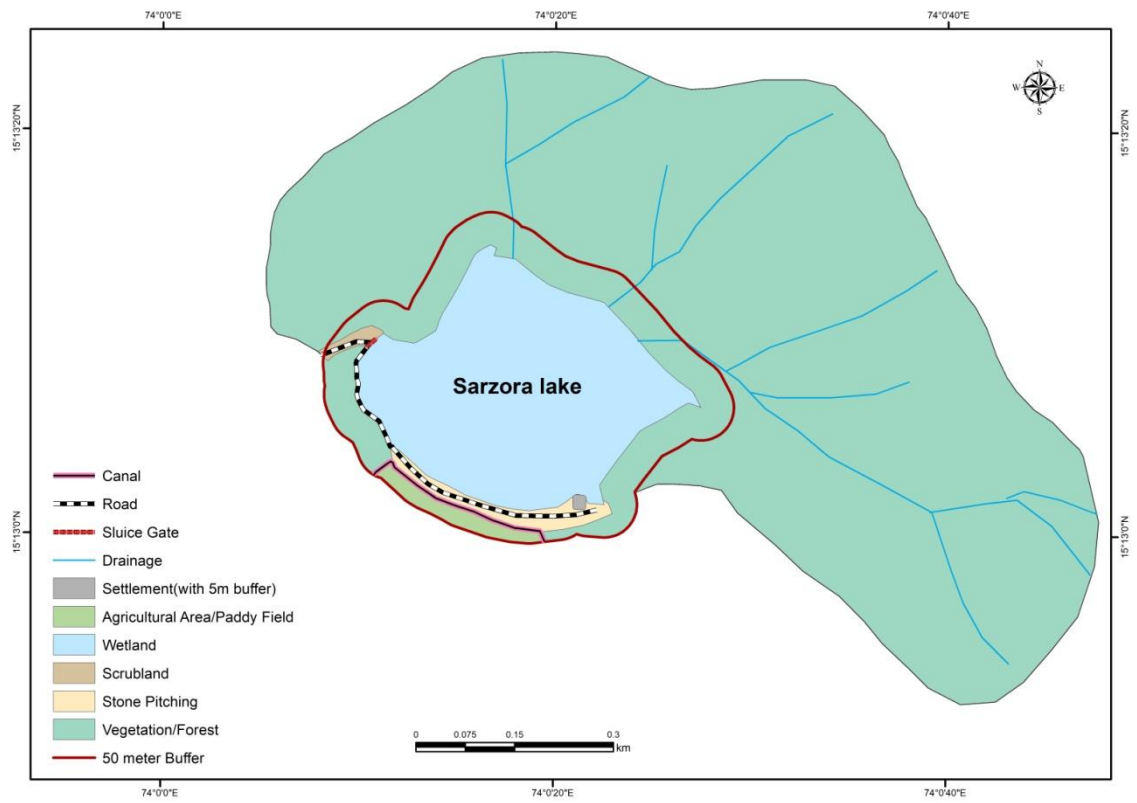
Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
Traditional fish harvest.	✓	✓Wetland <input type="checkbox"/> Zone of influence	Fishing allowed by local villagers so as to increase revenue of village
Traditional paddy field	✓	✓Wetland <input type="checkbox"/> Zone of influence	
Bird watching site.	✓	✓Wetland <input type="checkbox"/> Zone of influence	Migratory birds seen in October month
Planting of fruit bearing trees	✓	<input type="checkbox"/> Wetland ✓Zone of influence	Locals want to plant fruit bearing trees around lake to keep monkeys and wild animals from entering village

Section 9: Listing of Available Scientific Resources Used

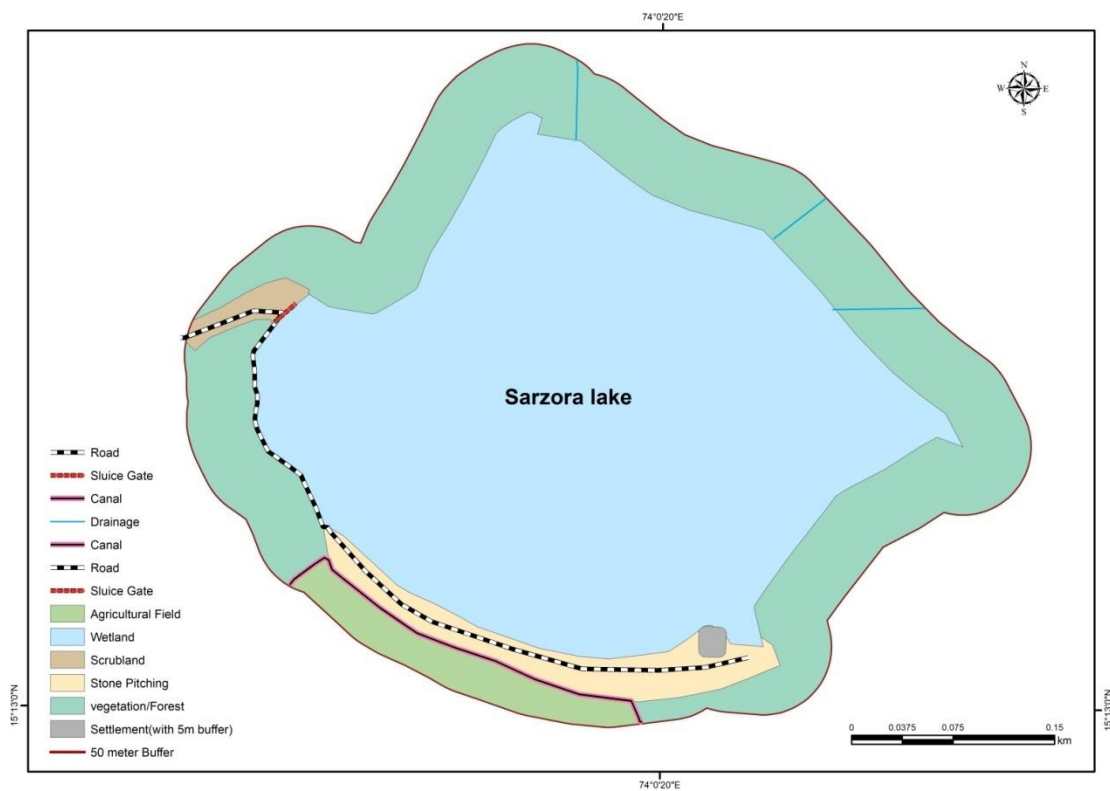
Table-I: LULC of Sarzora Lake

Sarzora Lake					
Sl.No:	LULC	Influence Zone		50 meter Buffer	
		Area(Hec)	Percentage Area	Area(Hec)	Percentage Area
1	Vegetation/Forest	61.67	97	6.25	77.54
2	Stone Pitching	0.92	1.5	0.9	11.17
3	Agricultural Field	0.719	1.2	0.72	8.93
4	Scrubland	0.19	0.3	0.19	2.36
Total Area		63.499	100	8.06	100

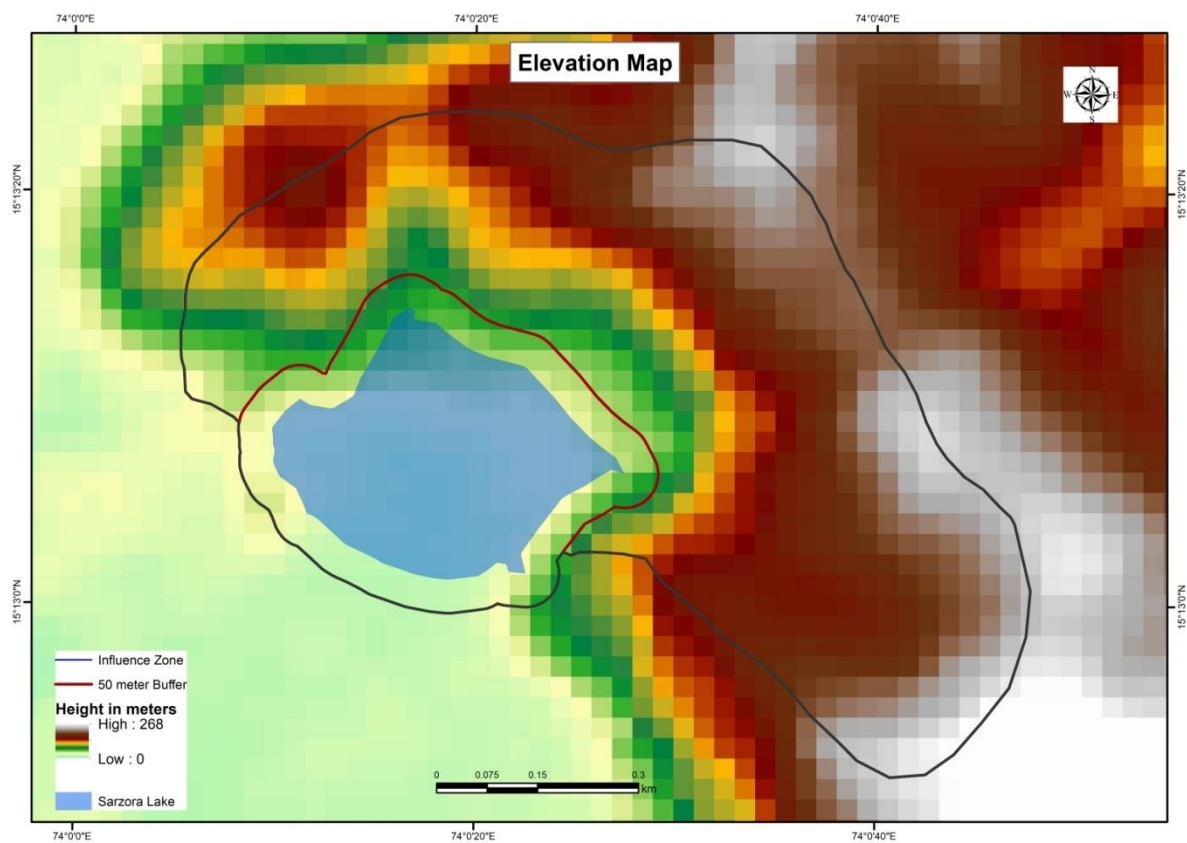
Annexure-I: LULC of the influence zone of Sarzora Lake



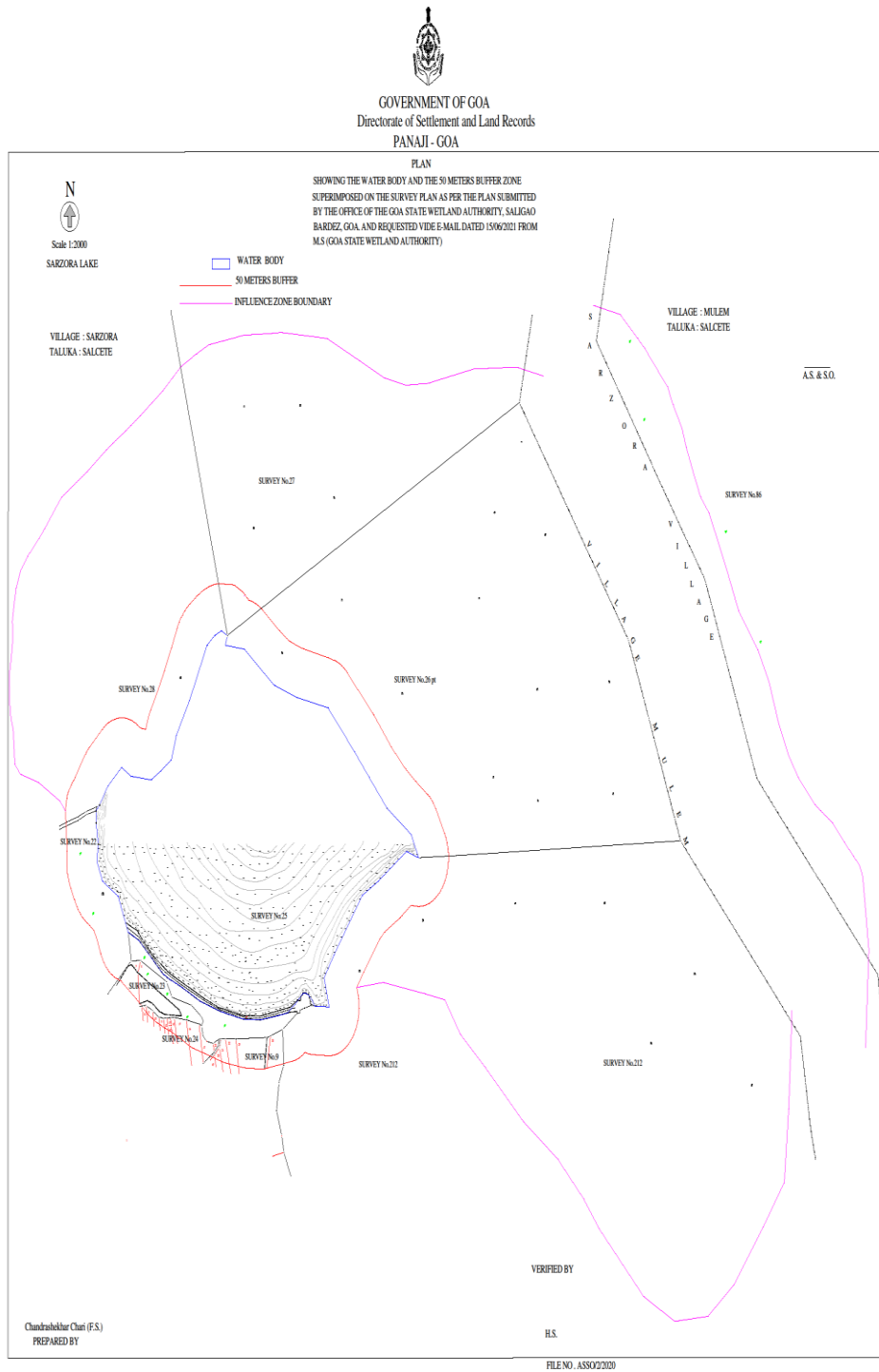
Annexure-II: LULC of 50m buffer of Sarzora Lake



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



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



Annexure-V: Google image of Sarzora Lake



Annexure-VI: Site photographs of Sarzora Lake



