

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)

Dhasi Lake (Dhashiche tollem, धाशिचे तळे)

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

Village Revora, Bardez 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°39'29.89" N to 15°39'32.82" N

Longitude: From 73°51'07.37"E to 73°51'09.52"E

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

Revora Village Panchayat, Bardez

Section 2: Site Characteristics

2.1 Area of wetland/wetlands category (ha) 0.5 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 flood plain <input type="checkbox"/> Permanent fresh water 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 8m

2.4 Elevation(m above mean sea level) 8.5 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 and because of this an upper wall is constructed by PWD department to store water, and in case of water deficit and unavailability of drinking water, it is pumped and supplied to the village people for domestic purpose.

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)

☐ Hyper saline(>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 33⁰C Maximum 20⁰C
- c) Humidity (%) Minimum 67% Maximum 84%

2.7 Area of zone of influence(in ha) 21.4 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>75.97</u> %
Plantation	<u>0</u> %
Agriculture	<u>0.37</u> %
Settlements (Rural)	<u>1.47</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 Annexure I- V and VI as site

photographs to this proposal)

Section 3: Biodiversity

3.1 Notable plant species present in wetland

Ficus benghalensis (Banyan tree), *Ficus religiosa* (Sacred fig), *Ficus racemosa* (Cluster Fig)

3.2 Notable animal species present in wetland

Fowlea piscator (Checkered keel back), Freshwater terrapin, *Papilio polytes* (Common Mormon), Freshwater shrimps Freshwater crab, *Poecilia reticulata* (Guppies), Tiggur fish, *Eurema* sp. (Butterfly), *Junonia atlites* (Grey pansy butterfly), *Merops leschenaultia* (Chestnut-headed Bee eater)

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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	In case of water deficit and unavailability of drinking water, it is pumped and supplied to the village people for domestic drinking purpose
Source of water for agriculture	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Water is used downstream mainly for cultivation of paddy fields and vegetables etc.
Fisheries	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
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 is observed downstream of the wetland
Medicinal plants	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Plants observed such as <i>Ficus benghalensis</i> (Banyan tree), <i>Ficus religiosa</i> (Sacred fig), <i>Ficus racemosa</i> (Cluster Fig) which are known for its medicinal properties.
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	Acts as a large reservoir for runoff water protecting the surrounding from possible floods
Ground water recharge	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	At certain level, standing 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. Provides de-silting, settling of silt from rainwater runoff and is responsible for clean water downstream
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	Annual Pooja of the temple is done by local people and Ganapati visarjan during Ganesh festival in the water body.
Is a site for recreation and tourism	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Supports noteworthy plants species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<ul style="list-style-type: none"> • <i>Ficus benghalensis</i> (Banyan tree) • <i>Ficus religiosa</i> (Sacred fig) • <i>Ficus racemosa</i> (Cluster Fig)
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<ul style="list-style-type: none"> • <i>Fowlea piscator</i> (Checkered keel back) • Freshwater 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	Water body supports the life cycle of guppies and tigur fish
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	5-6 years back, local people used to do fishing in the water body particularly in monsoon period.
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 type="checkbox"/> No <input checked="" type="checkbox"/> Not assessed	Medicinal plants are present but their utilization by traditional healers if any is 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" 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	Presence of Dhasi temple adjacent to the water body where once in a year there is religious function and Ganapati idol visarjan is done by the local people in the water body.
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	Local people use the water for domestic purpose. Earlier people used the water for drinking purpose. Cement tank is constructed by Public Work Department for water storage upstream of the water body.
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 mainly for agricultural like 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	Local people use the water downstream for buffalo wallowing and bathing.
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 checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	Only streams flow and rain water.
Pollution	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	Village Panchayat Revora, Bardez controls the water pollution through awareness. Cement wall is constructed along the periphery to protect the water body. Littering/ garbage is prohibited by village Panchayat.
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	Does not exist
Siltation	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	Only due to surface runoff
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 checked="" type="checkbox"/> Zone of influence	Mid	Water Resource Department	Statutory approval required. Withdrawal of water by already existing means may be continued.
Harvesting of resources (living / non-living)	Regulated	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	State Fishery Department	Only traditional activities to continue

Grazing	Regulated	<input type="checkbox"/> Wetland ✓Zone of influence	Low	State Forest Department	
Discharge of treated sewage/ effluent / wastewater	Regulated	✓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	Prohibited	✓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. Construction activities/ untreated sewage	Prohibited	✓Wetland ✓Zone of influence	-	Panchayat/ Corporation/ Municipality	Statutory national and state legislation applicable
2. Disposal of solid waste/ untreated sewage	Prohibited	✓Wetland ✓Zone of influence	-	Panchayat/ Corporation/ Municipality	Approval required
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

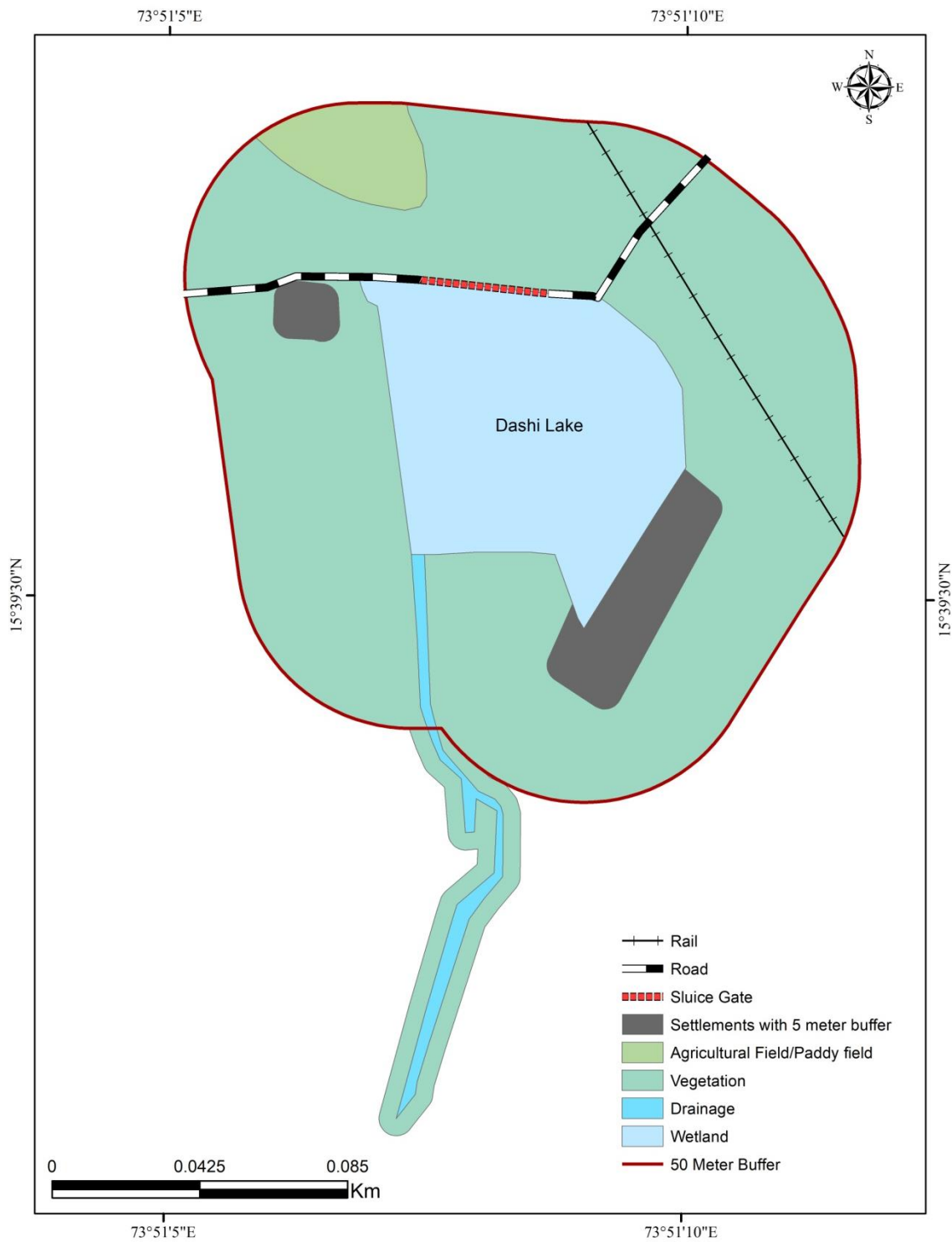
Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
Traditional Agriculture/ Paddy cultivation	✓	✓Wetland ✓Zone of influence	Water flows directly to the paddy fields.
Traditional Religious activities	✓	✓Wetland ✓Zone of influence	
Traditional fishing activities	✓	✓Wetland ✓Zone of influence	Hook and line fishery is carried out but not for commercial purpose.

Section 9: Listing of Available Scientific Resources Used

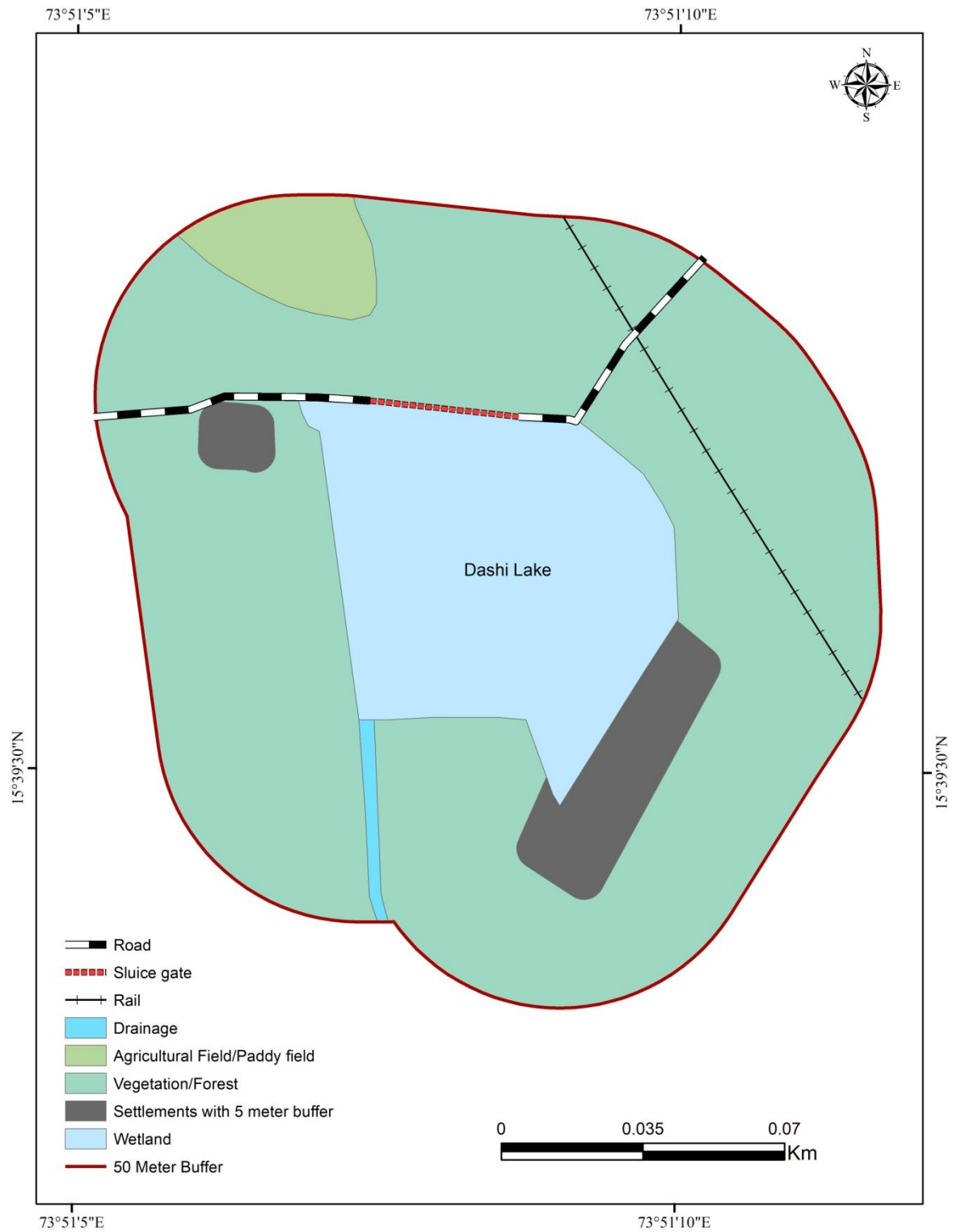
Table-I: Area table of LULC of Dashi Lake

Dashi lake					
Sl.No:	LULC	Influence Zone		50 meter Buffer	
		Area(Hec)	Percentage Area	Area(Hec)	Percentage Area
1	Agricultural land	0.11	4.6	0.11	5
2	Vegetation	2.26	95.4	2.13	95
	Total Area	2.37	100	2.24	100

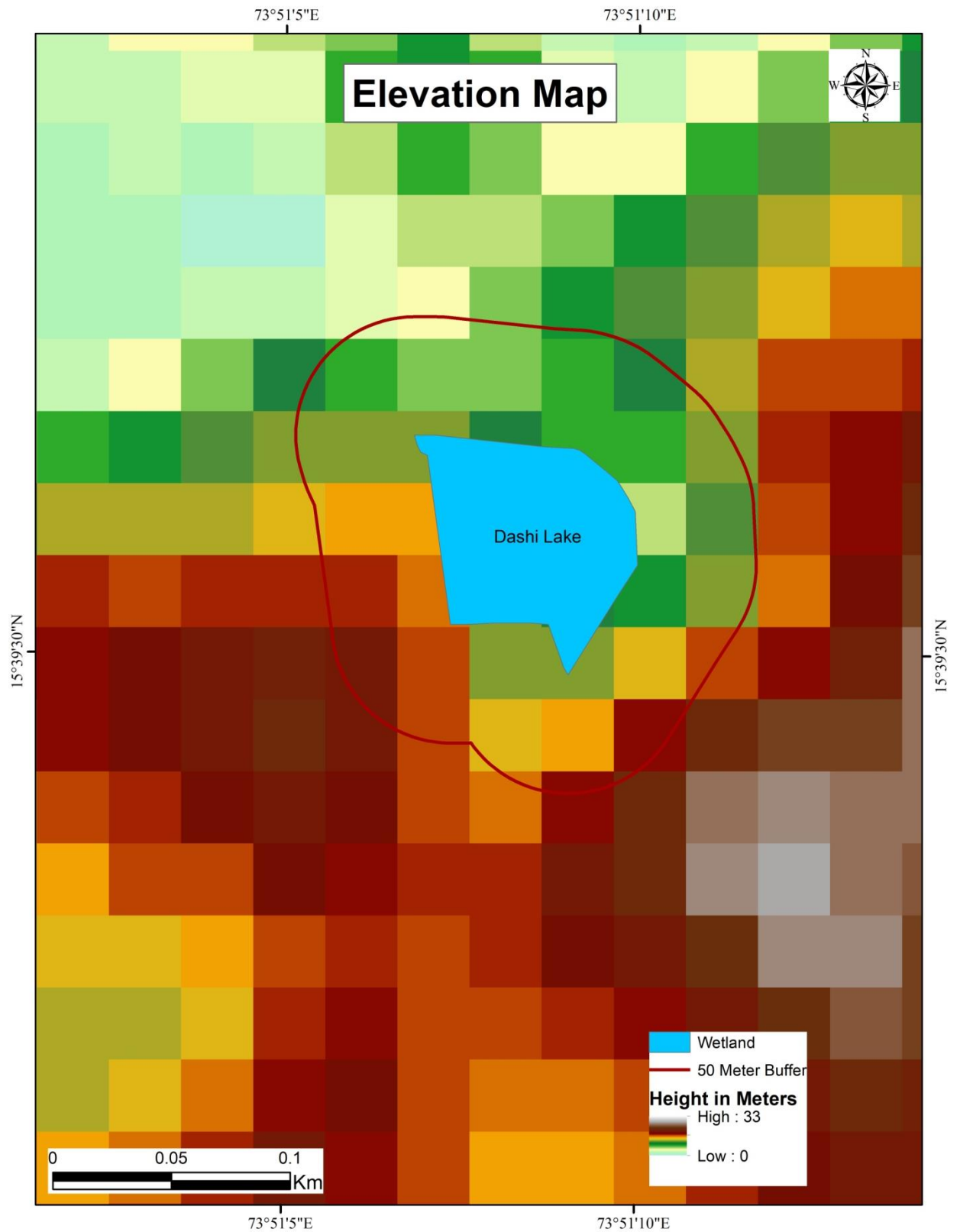
Annexure-I: LULC of the influence zone with elevation Contour of Dashi Lake



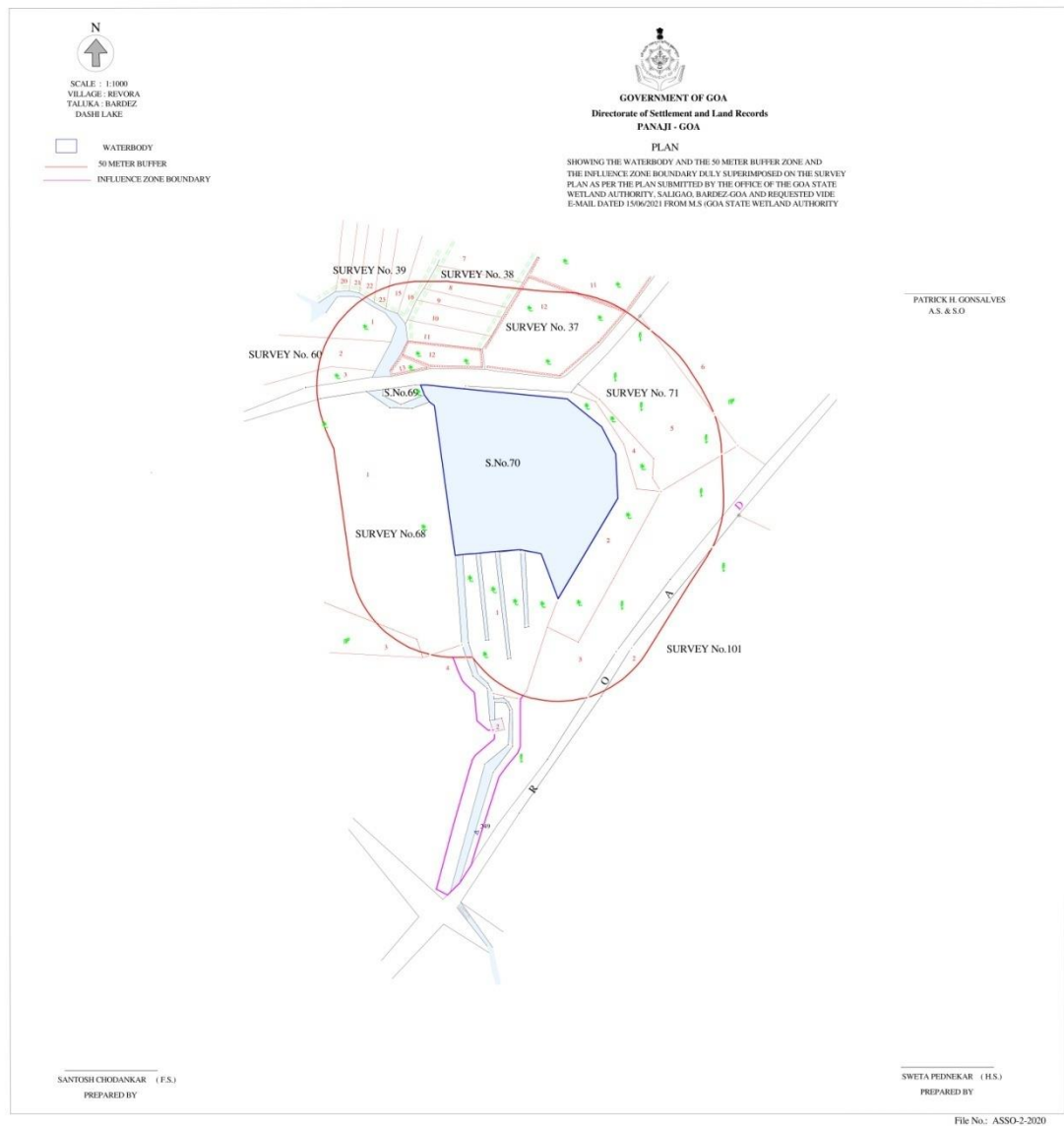
Annexure-II: LULC of 50m buffer of Dashi Lake



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



Annexure-IV: Survey map of Dashi lake showing influence zone



Annexure-V: Google image of Dhasi Lake



Annexure-VI: Site photographs of Dashi Lake



