

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)

Durga Lake (दुर्गा तळे)

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

Village Chinchinim, Salcete Taluka

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

South Goa

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

Latitude: From 15°11'23.39" N to 15°11'51.79" N

Longitude: From 73°58'52.75" E to 73°59'27.16" E

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

Water Resource Department (WRD), Chinchinim - Deussua Panchayat

Section 2: Site Characteristics

2.1 Area of wetland/wetlands category (ha): 24.85 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 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 1.5m

2.4 Elevation(m above mean sea level) 3 m

2.5 Water regimes

a) Main source of water (tick all applicable)

Rainfall  Groundwater  Catchment runoff  Direct / indirect inflow from river (Sal)

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

Not known

2.6 Climatic setting

- a) Annual Rainfall 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) 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>      </u> % |
| Plantation          | <u>      </u> % |
| Agriculture         | <u>      </u> % |
| Settlements (Rural) | <u>      </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

*Nymphaea* sp. (Water lily), *Calotropis gigantean* (Crown flower), *Ficus racemosa* (Indian fig tree), *Ixora* sp., *Rauvolfia serpentina* (Indian snakeroot)

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#### 3.2 Notable animal species present in wetland

*Egretta garzetta* (Little egret), *Vanellus indicus* (Red wattled lapwing), *Ceryle rudis* (Pied kingfisher), *Microcarbo niger* (Little cormorant), *Hirundo rustica* (Barn swallow) *Haliastur indus* (Brahminy kite), *Ardeo lagrayii* (Pond heron), *Charadrius dubius* (Little ringed plover) *Ardea purpurea* (Purple heron), *Pavo* sp. (Indian Peafowl), *Milvus migrans* (Black kite), *Butorides striata* (Striated heron), *Columba livia* (Rock pigeon), *Anas acuta* (Pintail), *Ardea alba* (Great egret), *Sterna aurantia* (River tern), Golden Jackals.

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

*Sterna aurantia* (River tern)

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3.4 Major plant invasive alien species

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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 (upto 50 words for each category)
Source of drinking water for people living and around	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Secondary- if the lake dries out the water in the wells dries out
Source of water for agriculture	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Paddy fields and Vegetable farm
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	Used for buffalo wallowing
Medicinal plants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Brahmi leaves (Rhue)
Is a recreational site	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bird watching and local fishing.
Buffering communities from extreme events as floods and storms	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water flow is controlled by sluice gate during monsoon season
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	At certain level, 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	Silt and sediments settles during monsoonal runoff
Has significant cultural and religious values	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	River side used for Ganapati visarjan- crossing near sluice gate.
Is a site for recreation and tourism	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bird watching
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	Otters, Crocodiles and jackals.
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Birds visit during winter.
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Earlier community fishing by local people without any lease.
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 type="checkbox"/> No <input type="checkbox"/> Not assessed	Cattles grazing is a major issue for vegetable cultivation.
Grazing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	Causing harm to traditional agriculture practices.
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	Ganapati visarjan is carried out
Withdrawal of water for domestic use	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	For agriculture and cattle farming.
Withdrawal of water for agriculture or fisheries	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
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	Within the area of the water body.
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 checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Inflow of water is from river Sal
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	
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 checked="" type="checkbox"/> Medium <input 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 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	<input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence		Water Resource Department (WRD), Forest dept and Agriculture dept. and Panchayat.	Suggestion by locals- No development should take place
Harvesting of resources (living / non-living)	Prohibited	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence		Agriculture dept., Forest dept.	
Grazing	Regulated	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	High	Animal husbandry.	

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	Prohibited	✓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.	Regulated	✓Wetland <input type="checkbox"/> Zone of influence	Mid	Agriculture, Fisheries and local body.	Regulated to some extent
Any other, please list	Prohibited	✓Wetland ✓Zone of influence		Municipality	Statutory national and state legislation applicable
1. Disposal of solid waste/ untreated sewage					
2. Construction activity	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 and paddy cultivation.	✓	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	
Traditional fishery	✓	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	
Traditional religious activities.	✓	<input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Zone of influence	

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

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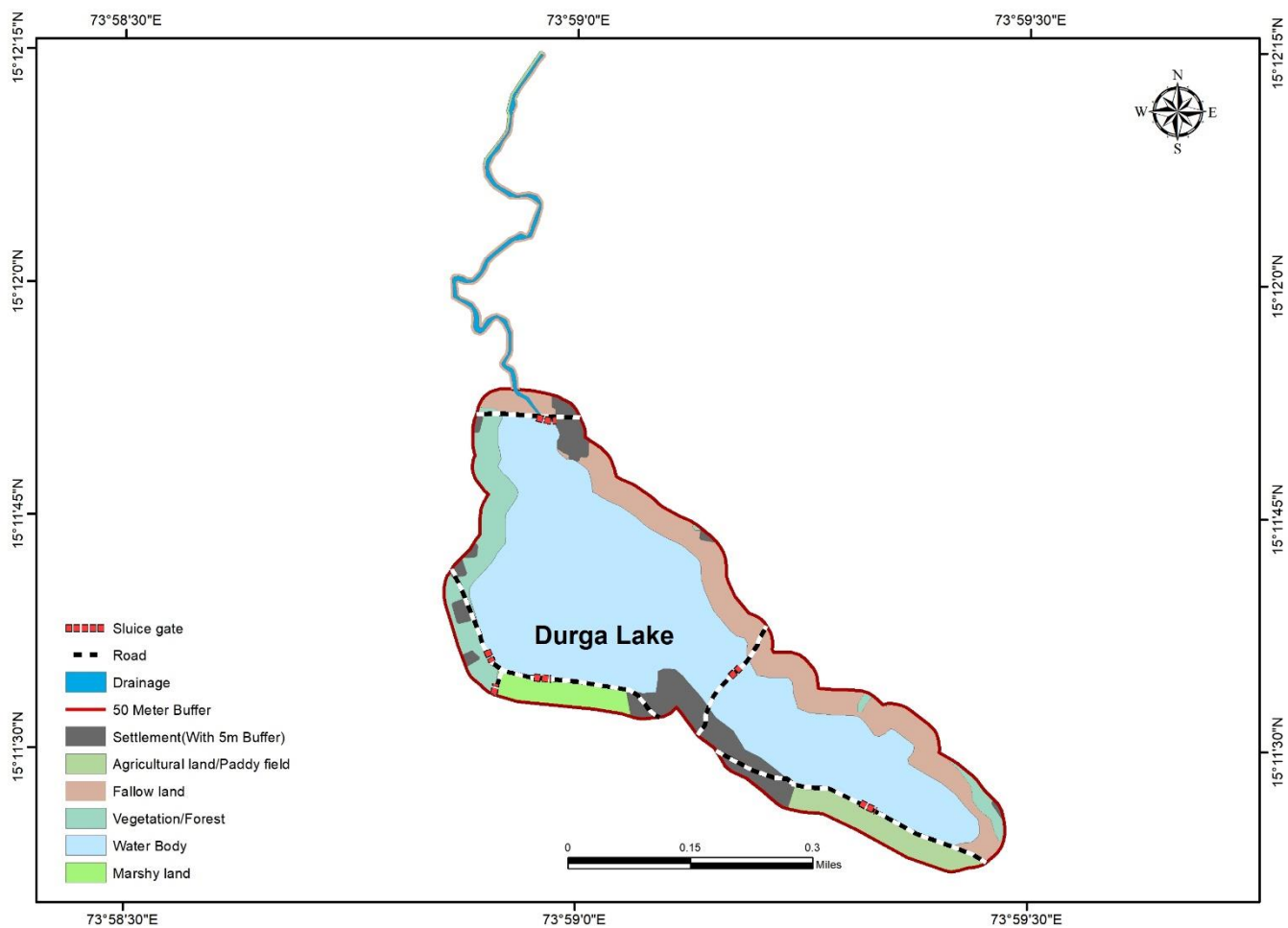
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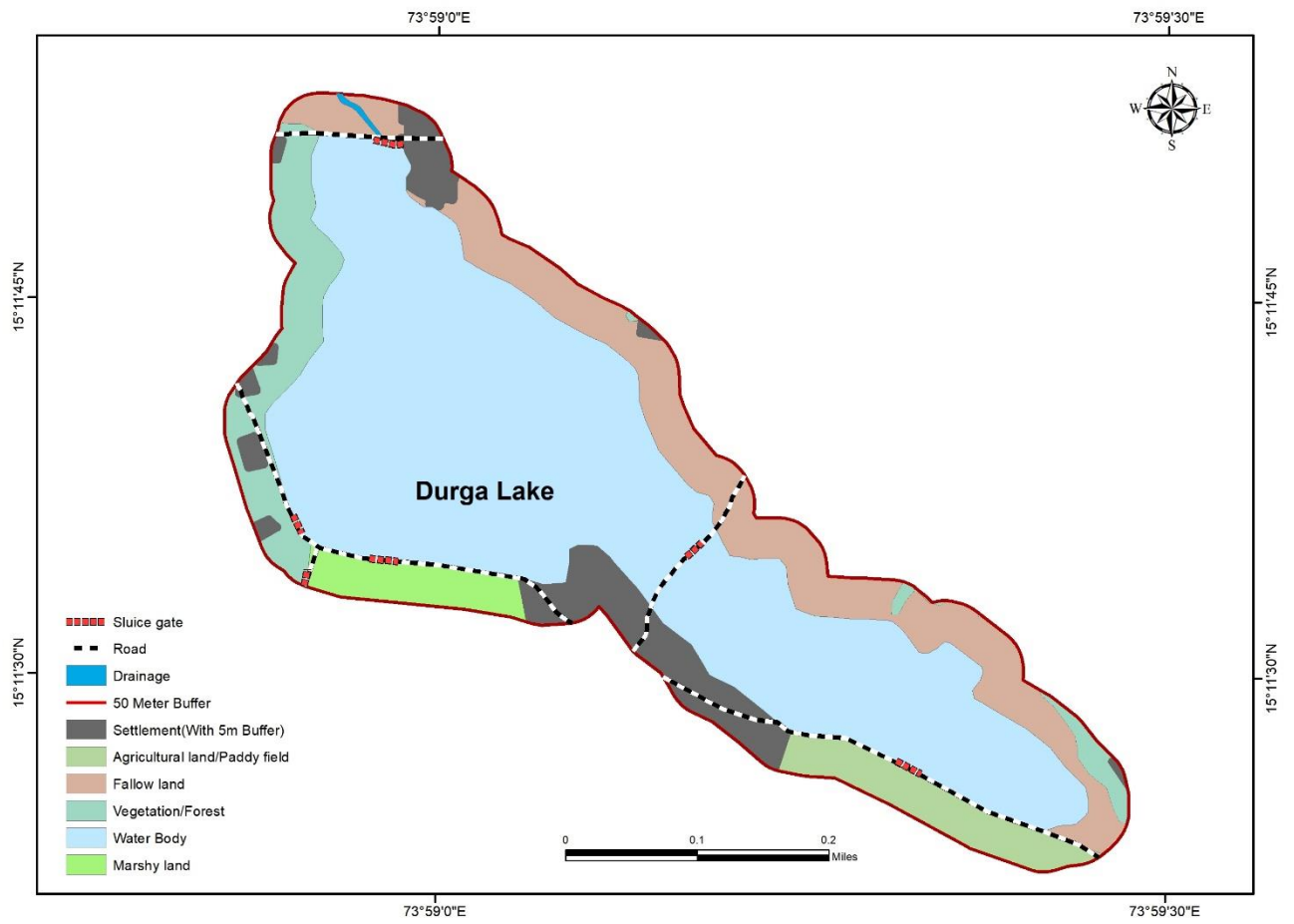
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Table-I: Area table of Durga Lake

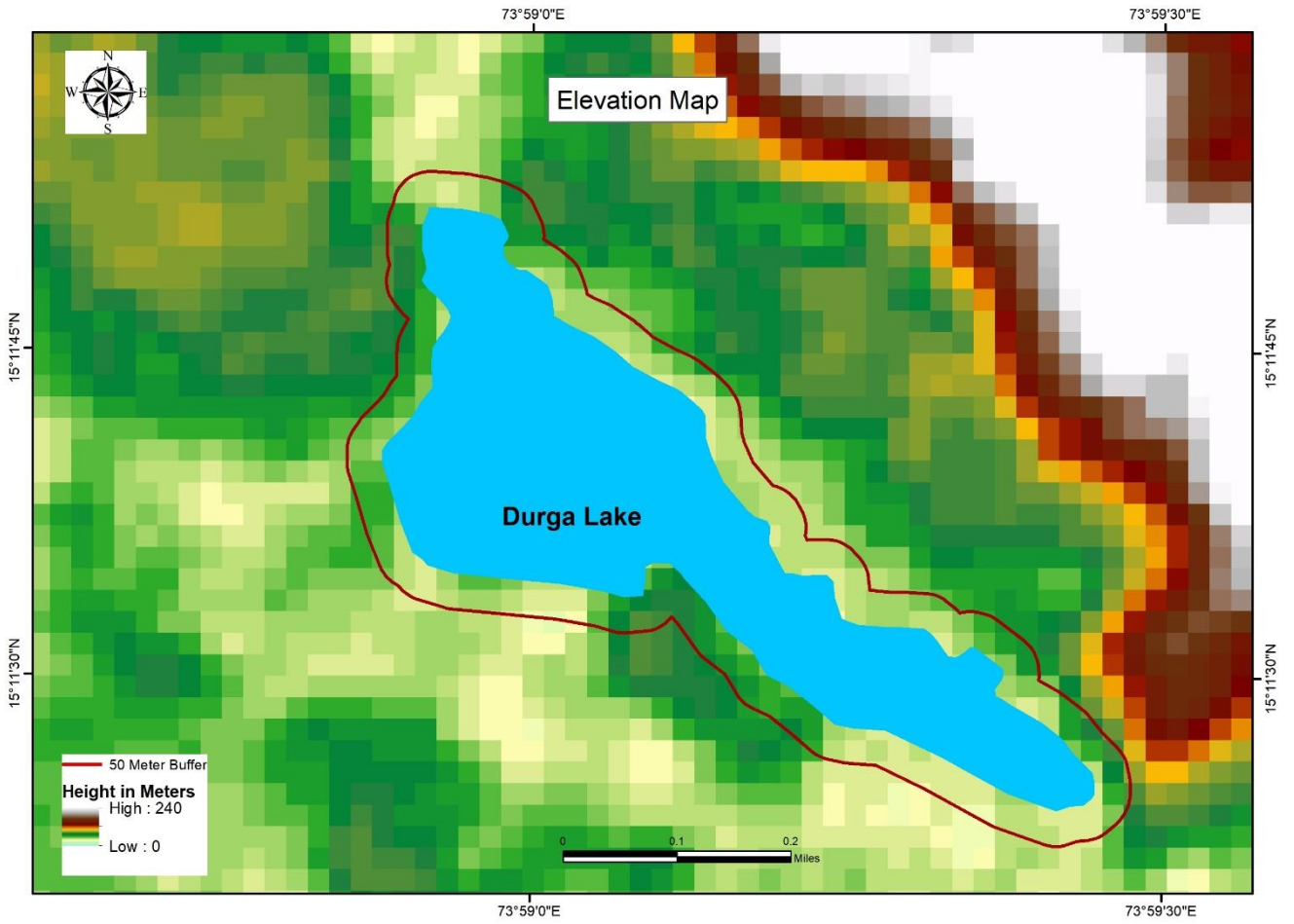
### Annexure-I: LULC of the influence zone of Durga Lake



## Annexure-II: LULC of 50m buffer of Durga Lake



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



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

Annexure-V: Google image of Durga Lake



Annexure-VI: Site photographs of Durga Lake

