

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)

Xeldem Lake (शेलडे तळे)

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

Village Quepem, Quepem Taluka, Quepem Municipal area

- 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°14'42.24"N to 15°14'44.39"N

Longitude: From 74°05'26.51"E to 74°05'27.07"E

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

Quepem Village Panchayat, Quepem Municipality

Section 2: Site Characteristics

- 2.1 Area of wetland/wetlands category(ha): 0.2 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 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 1.5m

2.4 Elevation (above mean sea level) 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 _____

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) 2918 mm
- b) Temperature(°C): Minimum 33°C Maximum 20°C
- c) Humidity (%): Minimum 67 % Maximum 84 %

2.7 Area of zone of influence(in ha): 6 ha [Ref.para32-34of the guidelines on wetlands]

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

Forests 3.3 %

Plantation 0 %

Agriculture 83.4 %

Settlements (Rural) 0 %

Settlements (Urban) 0 %

Industrial 0 %

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

2.9 Map of wetland and zone of influence

(Enclosed as Annexure I –V and VI with site photographs to his document)

Section 3: Biodiversity

3.1 Notable plant species present in wetland

Pandanus sp. (Kevda plant), *Pistia* sp., *Hydrilla* sp., Ferns

3.2 Notable animal species present in wetland

Bubulcus ibis (Cattle egret), *Dicrurus macrocercus* (Black drongo), *Metopidius indicus* (Bronze winged jacana), *Vanellus indicus*, (Red wattled lapwing), *Hirundo smithii* (Wire tailed swallow) *Threskiornis melanocephalus*, (Black headed ibis) *Porphyriopolioccephalus* (Grey headed swamphen) *Ardeola* sp. (Pond heron), *Plegadis falcinellus* (Glossy ibis), *Euphlyctis* sp. (Skittering frog)

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

3.4 Major plant invasive alien species

Pistia sp.

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	Used for paddy cultivation in adjoining fields.
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	Extensive buffalo bathing and wallowing is observed.
Medicinal plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
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	During monsoon, water floods into the entire basin to this lake thereby storing all the rain water preventing flooding.
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water remains throughout the year in one part of the entire basin thereby helping in ground water recharge. The rest of the water is percolated and helps ground water recharge
Water purification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water received from upstream and influence zone.
Acts as a sink for sediments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sediment and excess nutrients are trapped in the water body basin
Has significant cultural and religious values	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
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	<i>Pandanus tectorius</i> (Kevda plant) and Ferns.
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Plegadis falcinellus</i> (Glossy ibis) <i>Threskiornis melanocephalus</i> (Black headed ibis).
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bird watching point due to presence of migratory bird.
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Guppies and Skittering frog.
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Not presently observed
Grazing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	In summer, water body is used as grazing ground for buffalos and cows.
Religious practices	<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 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 water for domestic purpose.
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 in adjoining paddy fields.
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	Bathing and wallowing of buffalo and cow within the water body is observed
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 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	Littering garbage should be prohibited
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 checked="" type="checkbox"/> Zone of influence	High	Water Resource Department	Statutory approval required
Harvesting of resources (living / non-living)	Regulated	<input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Zone of influence	Mid	State Fishery Department	

Grazing	Regulated	✓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 ✓Zone of influence	Mid	Fishery, Agriculture & Horticulture Department	Traditional activities may continue
Any other, please list Disposal of solid waste/ untreated sewage	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Statutory national and state legislation applicable
Construction activities	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Approval required
Extraction of soil, mud, rocks for commercial purpose	Prohibited	✓Wetland ✓Zone of influence	High	Panchayat/ Corporation/ Municipality	Approval required

Section 8: Activities Proposed to be permitted

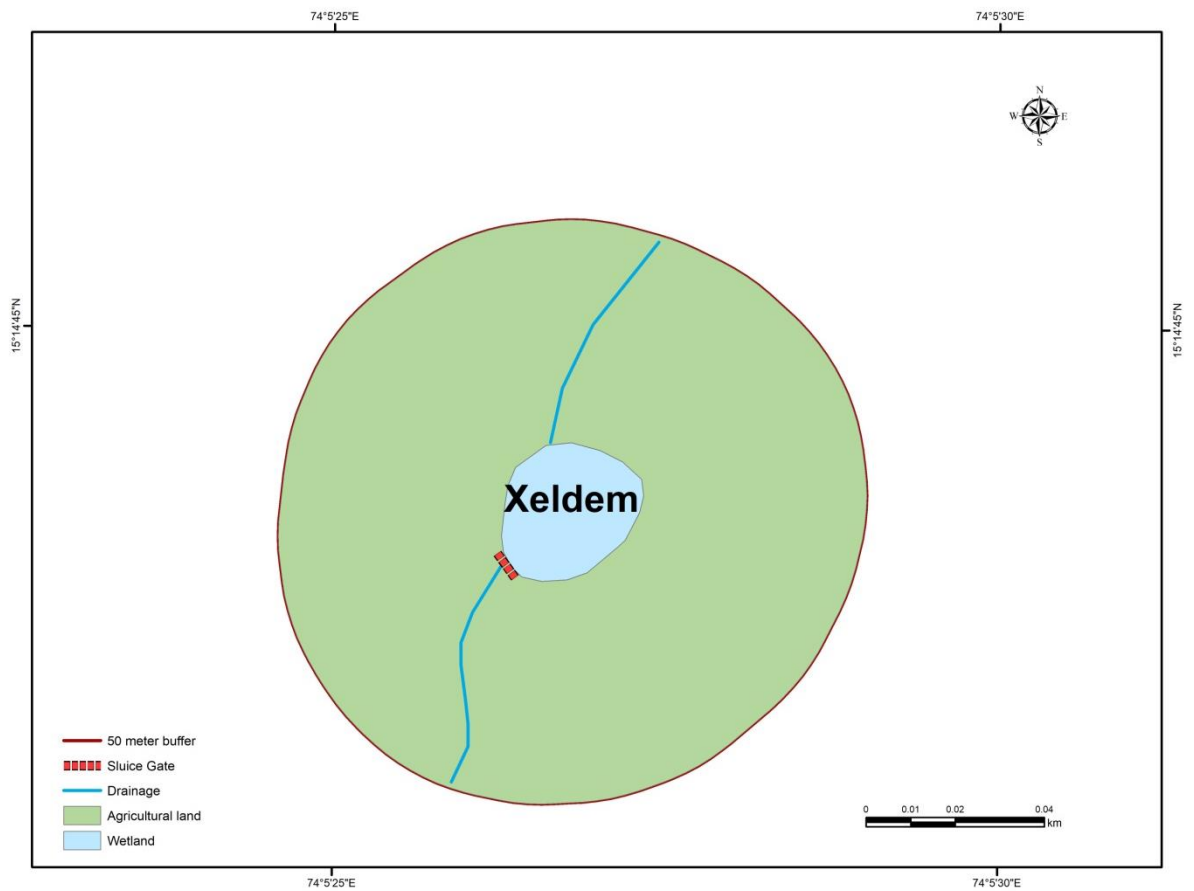
Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
Traditional Agriculture/ Paddy cultivation	✓	✓Wetland ✓Zone of influence	If revival of traditional practices is take-up by the locals.
As a playground in dry season	✓	✓Wetland ✓Zone of influence	

Section 9: Listing of Available Scientific Resources Used

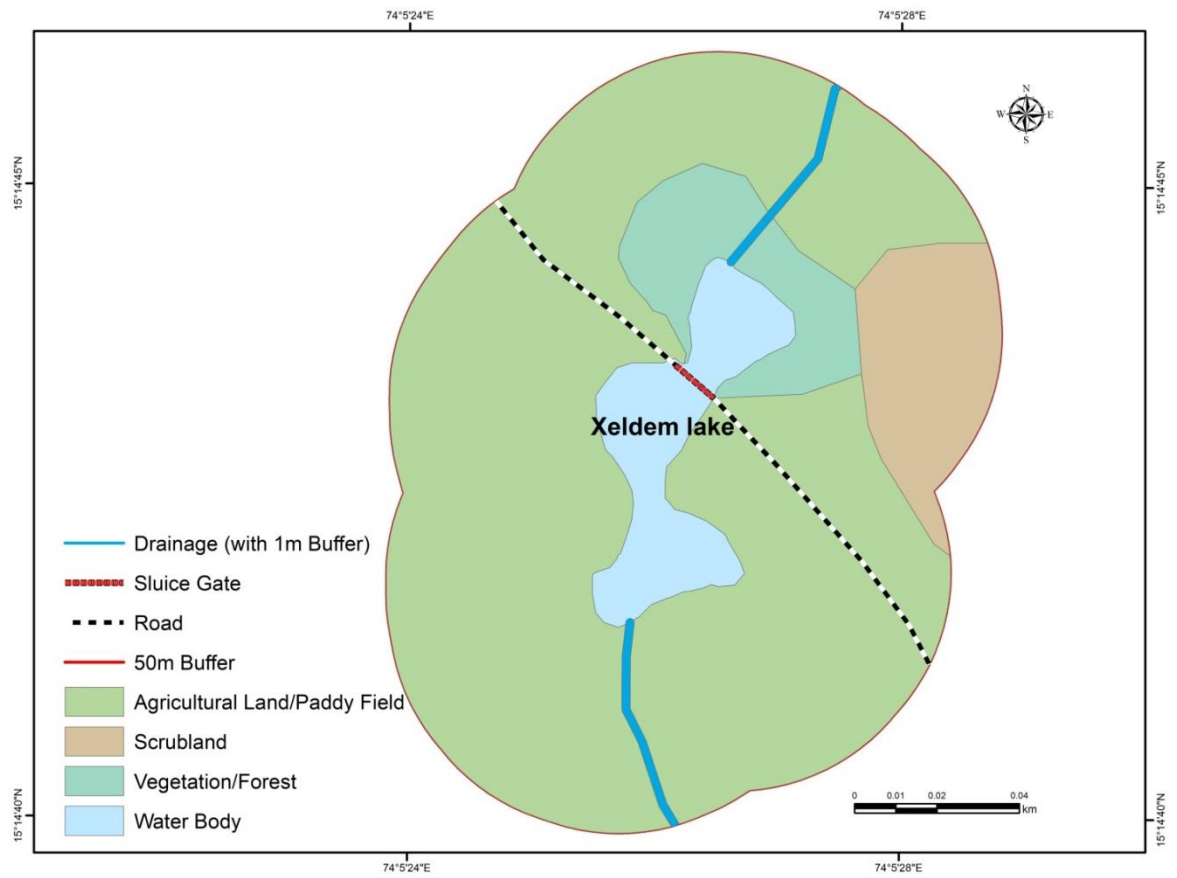
Table-I: Area table of LULC of Xeldem Lake

Xeldem Lake			
Sl.No:	LULC	Influence Zone/ 50 meter Buffer	
		Area(Hec)	Percentage Area
1	Agricultural land	1.28	100
	Total Area	1.28	100

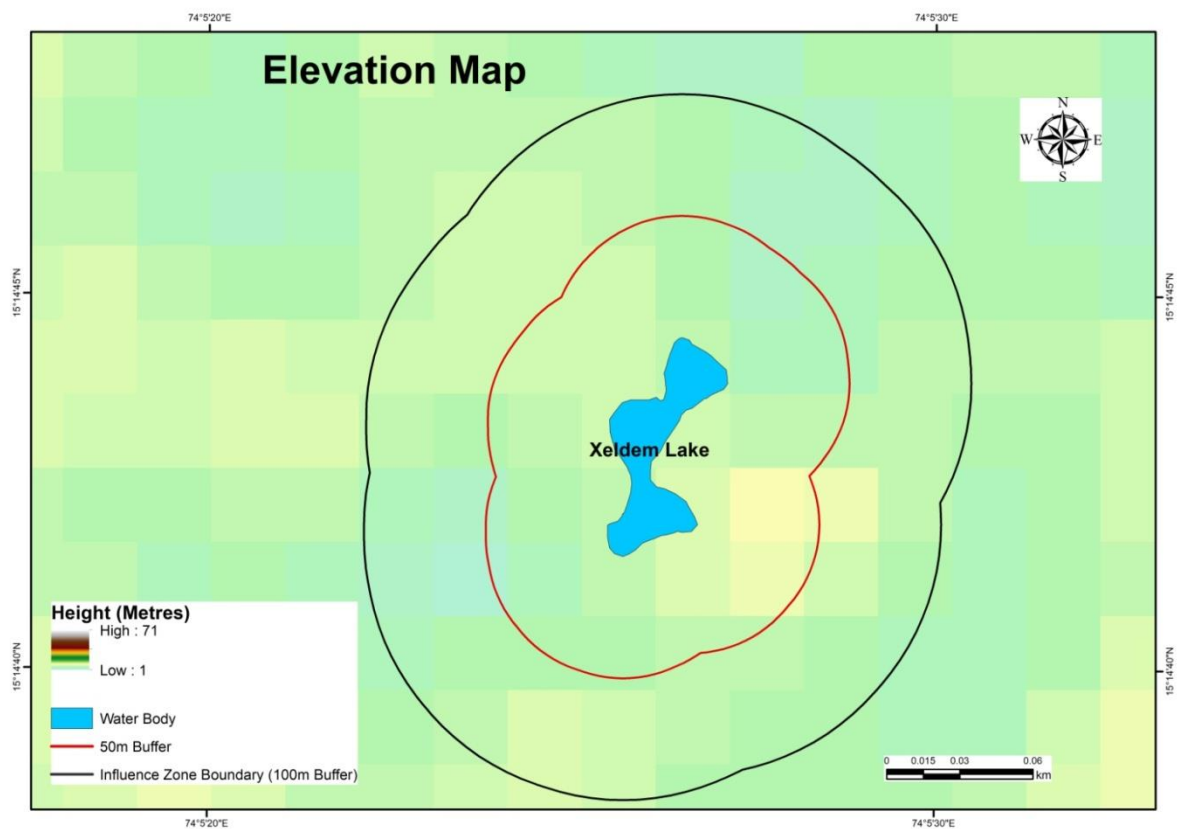
Annexure-I: LULC of the influence zone with elevation Contour of Xeldem Lake



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



Annexure III: Elevation (DEM) map of Xeldem Lake



[illegible]

Annexure-V: Google image of Xeldem Lake



Annexure-VI: Site photographs of Xeldem Lake



