

WHAT, WHY, HOW AND WHO of RESTORATION FRAMEWORK for Waterbodies



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WHAT TO RESTORE?

[What is a Waterbody? And Which Waterbodies to Restore?]

- Are Ponds and Lakes which dry completely in summer are Waterbodies?

Recently, Najafgarh Jheel in Haryana was reported to be Private Land, not a water body.

- Are Fishponds Waterbodies?

- Are Ponds & Lakes different from Wetlands?

They are not so legally, unless notified under the Wetland Rules 2017.

In case of Basai (& three other cases), the NGT said " the revenue records described the area in question as a 'waste Land' and it was never, even till today, identified as wet land by the Central Wetlands Regulatory Authority and so notified by the Central Government" under Wetland Rules 2010."

So, they cease to be waterbodies and lose protection / restoration.

WHAT TO RESTORE?

[What is a Waterbody? And Which Waterbodies to Restore?]

- How to inventorise them?

Remote Sensing? SOI Topo Sheets? Revenue records?

WRIS records about 8 lakh waterbodies; States report very different numbers
e.g., Rajasthan 79527 against 43841 in WRIS; Tripura 189790 vs 131 in WRIS

- How old? What is the baseline year for existence?
Numerous are permanently lost - Irretrievably

- All or selected ones? What is the basis of selection?

- Small OR Large – How small? How Large?

(less than 0.5 acre?) WRIS has counted waterbodies up to 0.01 ha)

- Urban or Peri-Urban or Rural??

- How is the boundary of waterbody defined and determined?

Restoration Planning

How to diagnose degradation and assess its level?

Problems actual or perceived

Area – reduction in size/ water spread

Depth - reduction

Water duration – seasonality

Vegetation – submerged, emergent, algae. Exotics

Fauna – changes with time; undesirable species

Water quality- unfit for which use

Wastes in water, along margins, surroundings

What should be the reference point?

To what previous state do we plan to restore a waterbody?

Restoration Planning

WHY TO RESTORE (Purpose or Goal)

What is the purpose of restoration?

- Water in it (irrigation; domestic use; drinking?)
- Storm water storage/ flood prevention
- Groundwater recharge
- Fish
- Recreation/ boating
- Birds – migratory/ other wildlife
- Other benefits – grass, reed, lotus, singhara, makhana
- Religious / Cultural

Prioritization of Uses or Use-based Categorisation

Criteria for deciding use(s) – Present or Past or Potential

What were the earlier hydrological conditions?

Can they be restored?

Restoration Planning

Identification of causative factors

Area – encroachment, Obstruction to inflow

Depth siltation – natural vs garbage dumping

Water duration – abstraction, inflow reduction

Vegetation – depth, nutrients, introduction

Water quality- direct use, sewage, agricultural, industrial

Linkages with hydrology

Setting the Goal

Desired functions and values to be restored

Requirements of specific hydrological regimes

Potential for restoration of required hydrological regimes

If mismatch, Resetting the restoration goals

Other interventions may be required

HOW TO RESTORE

Depends upon the problem and the goal; & above all the hydrology: inflows and outflows, seasonal water level changes and turnover time; Shape of basin and mixing pattern; sediment-water interaction

Ex situ measures

Restoring hydrology (e.g., removal of flow obstructions)

Area restoration (encroachments/waste dumps)

Pollution prevention (controlling all kinds of wastes),

Silt prevention (shore line, surroundings and wider catchment

only nature-based solutions /re-naturalisation

In situ measures

Water quality

Biological manipulation

Area/Depth and Sediments (dredging)

Chemicals and exotic organisms NOT to be used

WHO TO RESTORE

Four Ministries involved at the Central level, with different aims & focus:

Ministry of Water Resources (Jal Shakti)

Ministry of Environment, Forests & Climate Change

Ministry of Urban Development

Ministry of Rural Development

Water being a State Subject, the States have different Depts

Panchayat Raj institutions have a right and responsibility

Questions to be addressed are:

Who owns the water body? (property right regime)

Who controls the water body? Irrigation, Fisheries, Power, Tourism, PWD, PHED, Urban Local Bodies; Industry,

Who uses the water body & its resources?

Acc. to Supreme Court decision, Water bodies are 'Commons'

Water bodies are multi-use systems but multiplicity in governance has to be resolved.



Thank You