

# DAM SAFETY ACT 2021

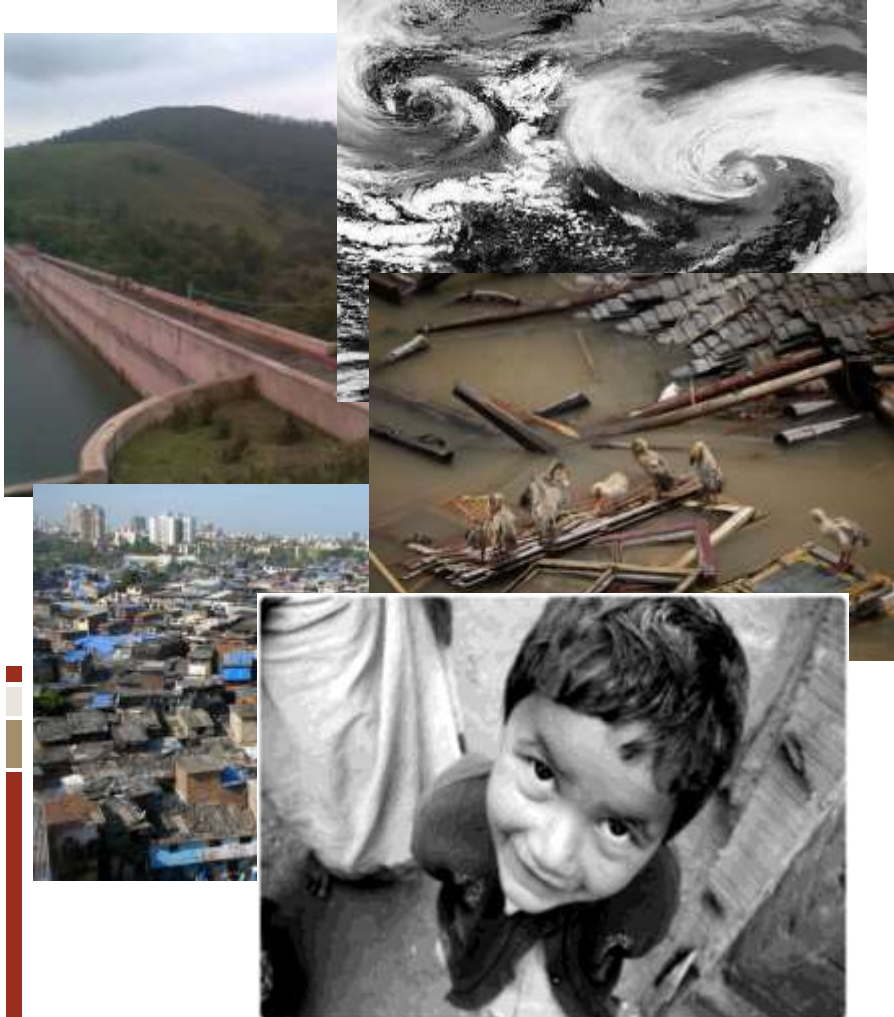
## Dam Owner's Perspective & Way Forward

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# Need for Dam Safety



Ageing Dam Infrastructure

Factoring the Climate Change

Increased Potential for Loss of Lives

Increased Potential of Economic Loss

Potential for Environmental Impact

Building the Stakeholder Relationship

Interstate Ramifications

International Ramifications

# Institutional Framework under DSA2021



## ➤ NCDS:

- Think tank for dam safety
- Chair + 10 Members (from State Govts. and dam safety specialists)
- 11 Functions listed in First Schedule

Focus of national bodies on generic issues of nationwide relevance

## ➤ NDSA:

- Regulatory body for implementation of dam safety policies and protocols
- Chair + 5 Members (from Union Govt.)
- 32 Functions listed in Second Schedule
- Resolve issues between SDSOs, or SDSO & dam owner – Decision binding
- SDSO: for implementation of DSA2021

## ➤ SCDS:

- State specific
- Chair + 13 Members (from State Govt(s) and dam safety specialists)
- 13 Functions listed in Second Schedule

## SDSO:

A separate organization, headed by CE (if 30 or more dams) or SE reporting to the technical head of Department

# Duties & Functions under DSA2021

## SDSO

- Surveillance, inspections, and monitoring
- Investigations
- Hazard classification
- Log book/ database
- Dam failure & dam incidents
- Instructions on safety/ remedial measures
- Operational parameters of distressed dams
- Certify fitness for dam filling

## Dam Owner

- Funds for repair & maintenance
- Technical documentation
- Qualification/ experience of staff
- Cost of investigation
- Investigation/ design/ construction by accredited agencies
- Initial filling criteria/ plan
- Dam safety unit
- Pre & post monsoon inspections
- Dam instrumentation
- Hydrometro./seismological stations

# Emergency Action Plan / Disaster Mgmt. under DSA2021

## Obligation of Owner

- Establish hydro-metro. network & inflow forecasting system
- Establish emergency warning system
- Disseminate flood information
- Assistance to NDSA on early warning system
- Carry out risk assessment study (5 yrs)
- RA update at regular intervals

## Emergency Action Plan

- EAP before initial filling (..5 yrs)
- EAP update at regular intervals
- Scope of EAP
- Conditions for putting EAP in action
- Consultations for coordination and transparency
- Assistance to disaster management authorities

## Comprehensive Dam Safety Evaluation

- CDSE by independent panel of experts – First CDSE in **5 yrs.**
- Compulsory in case of major modification/ unusual condition/ extreme event
- Report of CDSE to SDSO
- SDSO to ensure recommended remedial measures in time.
- Unresolved matter between independent panel and dam owner to be referred to SDSO; further issues to NDSA

## Offences/ Penalties

- Offence: if (a) obstructing an officer in discharge of his functions; (b) refusal to comply with directions
- Punishment: imprisonment up to one year, or fine, or both; in case of loss/ danger to life, imprisonment may extend to two years
- In case of offence by Government Department, HOD deemed guilty
- Cognizance of offence only on complaint by Govts./ NCDS/ NDSA/ SCDS/ SDSO.

Compensation !

# Develop 'Work-in-Progress' Approach

- Need to develop work-in-progress approach, due to:
  - dynamic nature of a dam's own health;
  - impermanence of its surroundings;
  - flux in perceptions & sensitivity of society
- Completed and fully operational dams are yet susceptible to new developments (distress/hazard)
- Even if dynamic conditions do not alter failure probabilities (or rehabilitation measures limit it), the risks may still undergo upward revisions
- Very high safety standards are in place...yet institutional capacity for enforcement is lacking

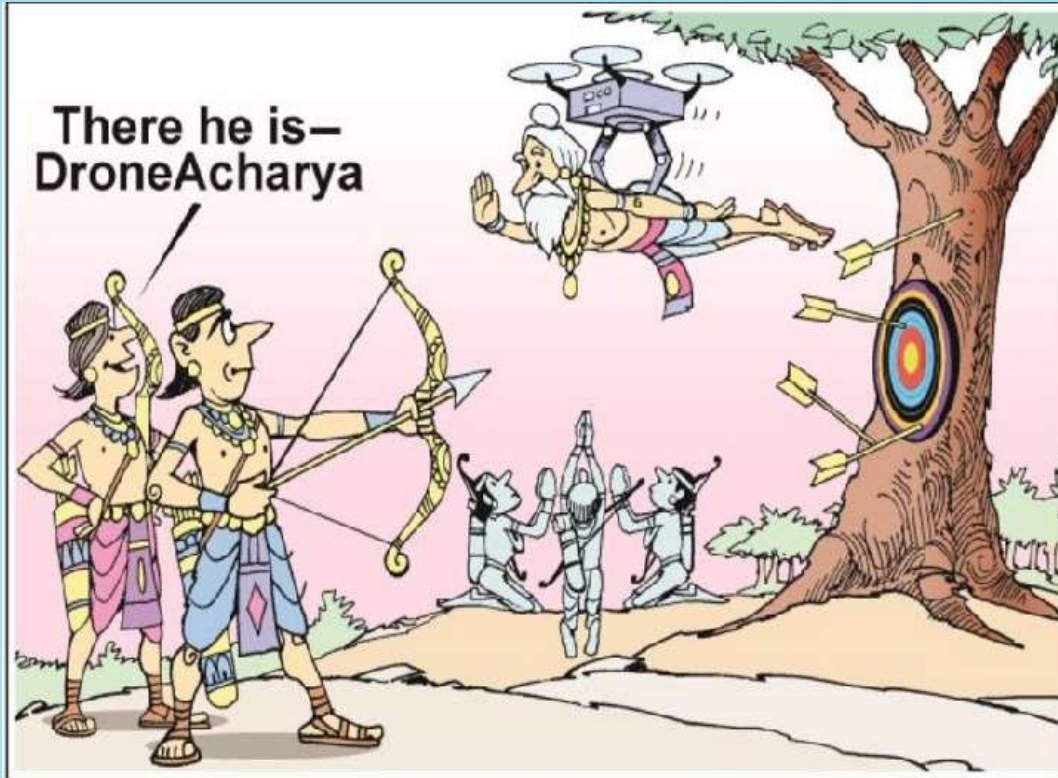


**Way Forward**



# Technology & Innovations

- Investigations
- Design & Analysis
- Constr. Material
- Constr. Methodology
- Instrumentation
- Data gathering, Analysis & Archiving
- IT and IOT



**Way Forward**



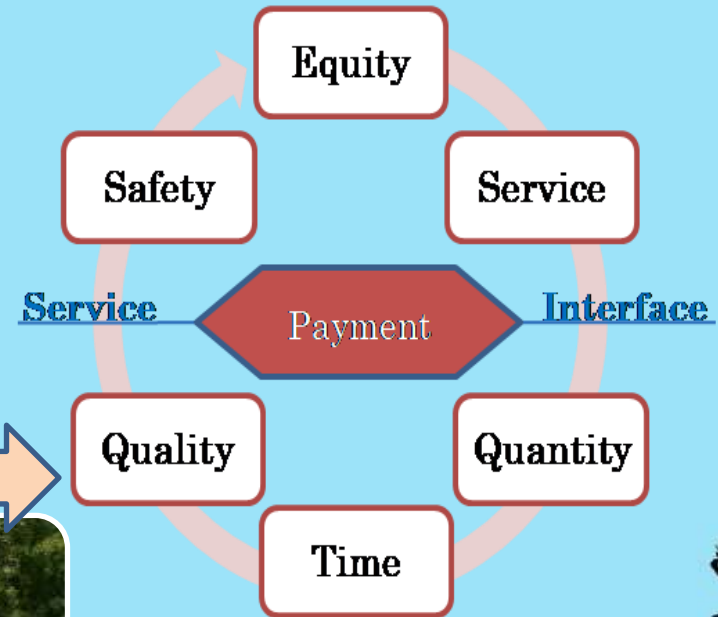
# New Organizational Framework

Thanks



Organization purpose

Sustainable Operation



3-Tier State Institutional Arrangement



Water Reserves Company (WRC)



Water Transmission Company (WTC)



Water Utilities Company (WUC)



Way Forward