

# Role/Need of Young Professionals in Dam Safety.



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# Why Dam Safety?

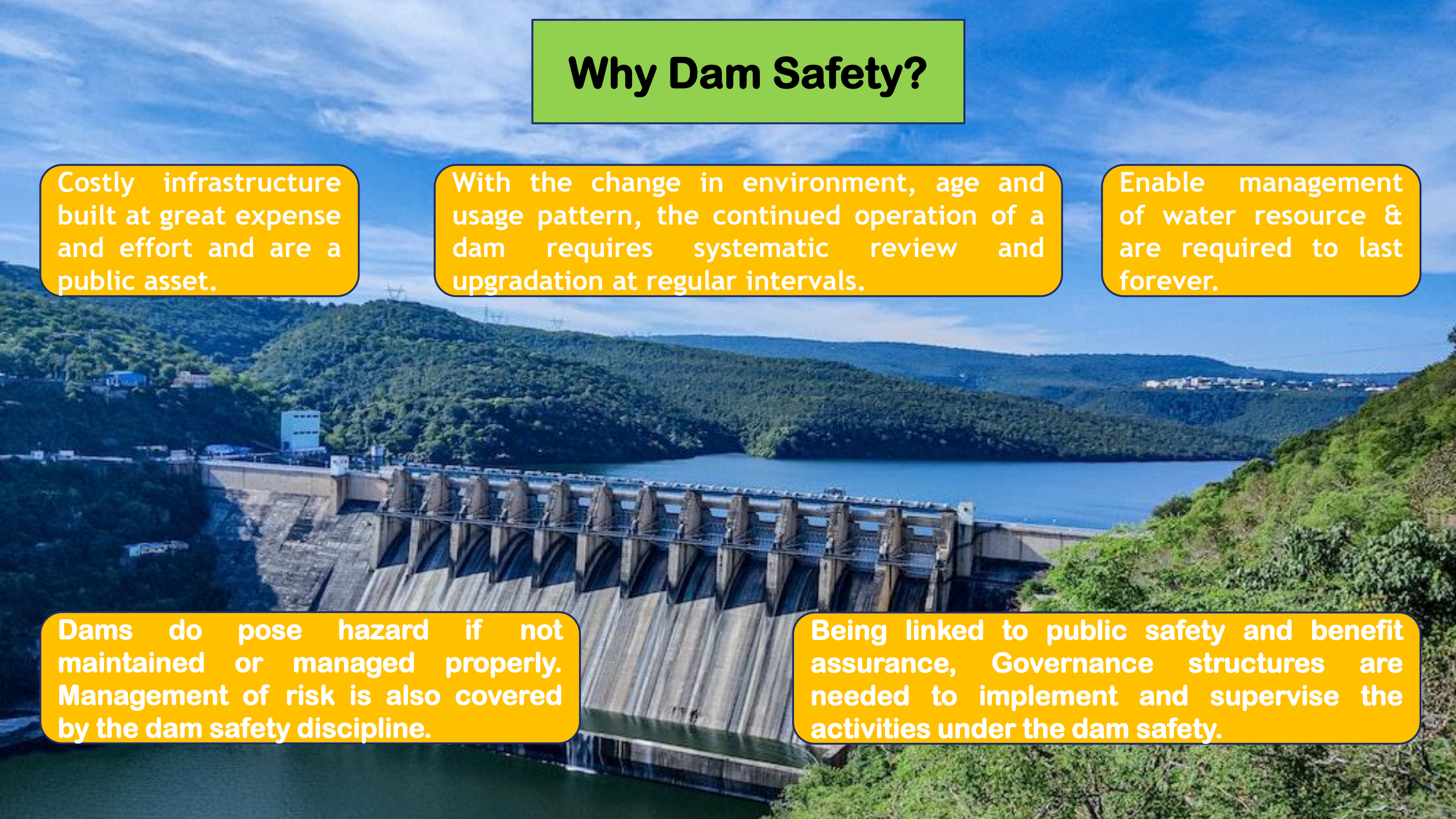
Costly infrastructure built at great expense and effort and are a public asset.

With the change in environment, age and usage pattern, the continued operation of a dam requires systematic review and upgradation at regular intervals.

Enable management of water resource & are required to last forever.

Dams do pose hazard if not maintained or managed properly. Management of risk is also covered by the dam safety discipline.

Being linked to public safety and benefit assurance, Governance structures are needed to implement and supervise the activities under the dam safety.





# Dam Safety - World



Most of the economically developed countries have dam safety assurance systems in place through enactments.

UK-Earliest ct in 1930, revised in 1975

Finland Act in 1984, revised in 2009

Spain 1967, 1994, 1996, latest 2007

Norway Act in 1981, revised 2010

France Largely renewed in 2007

Italy Original legislation 1933, latest revision 2007

Portugal Enacted 1968, latest revision 2007

USA National Dam Inspection Act 1972, National Dam Safety Program Act 1996

Australia ANCOLD guidelines (2003) used as basis by all the states for individual dam safety legislations

# Dam Safety - India

1975 - State Irrigation Ministers urge Central Government to establish dam safety services.

1979 – Dam safety Organisation created in Central Water Commission.

1982 – A standing committee on dam safety is constituted and provides an assessment of dam safety practices in India (1986).

1987 – National Committee on Dam Safety established (reconstituted from time to time).

1987-1989 UNDP assistance programme on design, dam safety and instrumentation is taken up jointly between CWC and states.

1991-1999 World Bank assisted Dam Safety Assurance and Rehabilitation Project taken up participated by CWC and Odisha, MP, Rajasthan and Tamil Nadu.

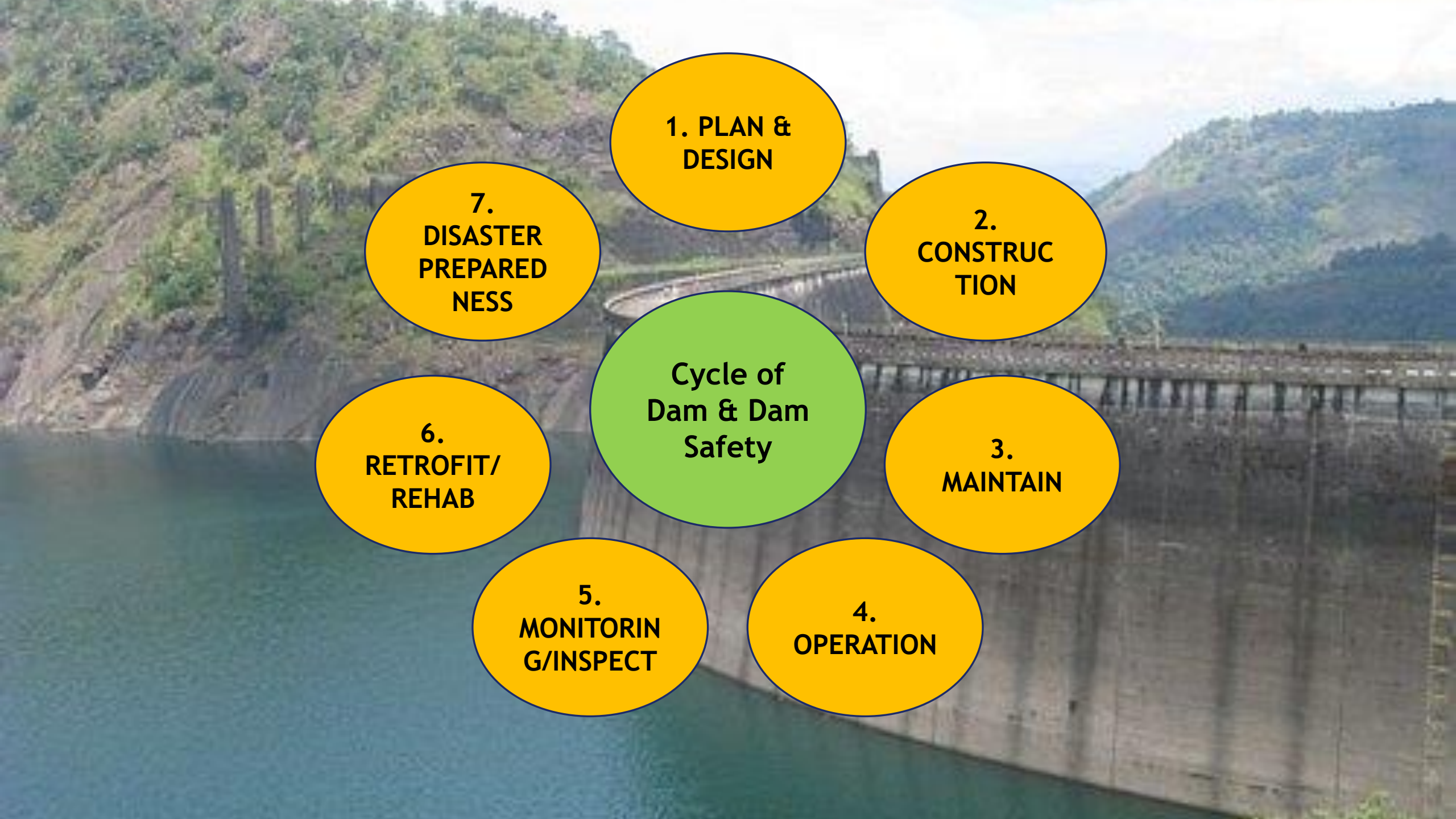
1987-2010 Formulation of Dam Safety legislation taken up at central level and examined with the states incorporating their suggestions and views.

2010 – Dam Safety act first version tabled in Lok Sabha and discussed.

2017 – Modified Dam Safety legislation tabled in Lok Sabha and enacted in 2021.

2010 – till date – Dam Rehabilitation and Improvement Project taken up with states in phasel,II.





**1. PLAN &  
DESIGN**

**2.  
CONSTRUCTION**

**3.  
MAINTAIN**

**4.  
OPERATION**

**5.  
MONITORING/INSPECT**

**6.  
RETROFIT/  
REHAB**

**7.  
DISASTER  
PREPAREDNESS**

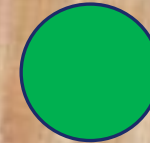
**Cycle of  
Dam & Dam  
Safety**



# Dam Safety Drivers - India

Dam Safety Act  
2021

REGULATION



Education  
Research and  
Development

CAPACITY  
BUILDING



Norms/guidelines  
Compliance  
Co-ordination

IMPLEMENTATION



Young Professional

# PARADIGM SHIFT

HYDROLOGY

GEOLOGY/  
GEOTECH

STRUCTURAL

So Much Scope for  
Youngsters in Dam Safety

MECHANICAL

ELECTRICAL

IT/COMPUTER

ENVIRONMENTAL

SOCIAL





**Capacity Building of Young Professionals  
working in this field.**

**Scope in  
Higher Studies**

**EDUCATION**

**R&D**

**Dam Engineering**

**Planning  
Designing  
Constructing  
Maintaining  
Retrofitting  
Decommissioning**

**Dam Safety**

**Site-Specific Hazard Assessment.  
Dynamic Decision Making.  
Sustained Field Investigations.  
Dam Instrumentation.  
Monitoring & Aging Analysis.  
Dam Break Analysis.  
Disaster Management.  
Surveillance and Protection.**

**Dam Studies**

**State-of-the-Art Technical Software  
Calibration with Field Investigations  
Scaled Model Laboratory  
Investigations  
Sedimentation  
Structural Distress  
Safety Standards**



# Knowledge Transfer at Workplace



Mentoring/guidance from senior



Peer learning at workplace





## Way Forward

**1.No alternative for experience - past/present experiences to be documented.**

**2.Proper amalgamation of seniors and youngsters in all teams related to different stages of dams and dam safety.**

**3.Need for sensitisation of all stakeholders (i.e common man) regarding the advantages of dams and hence the importance for dam safety.**

**4.Promoting/advertising amongst youth, the wide range of career opportunities available in dam safety.**

**5.Capacity building of already existing professionals in this field.**

**6.Encouraging higher studies and research in this field.**



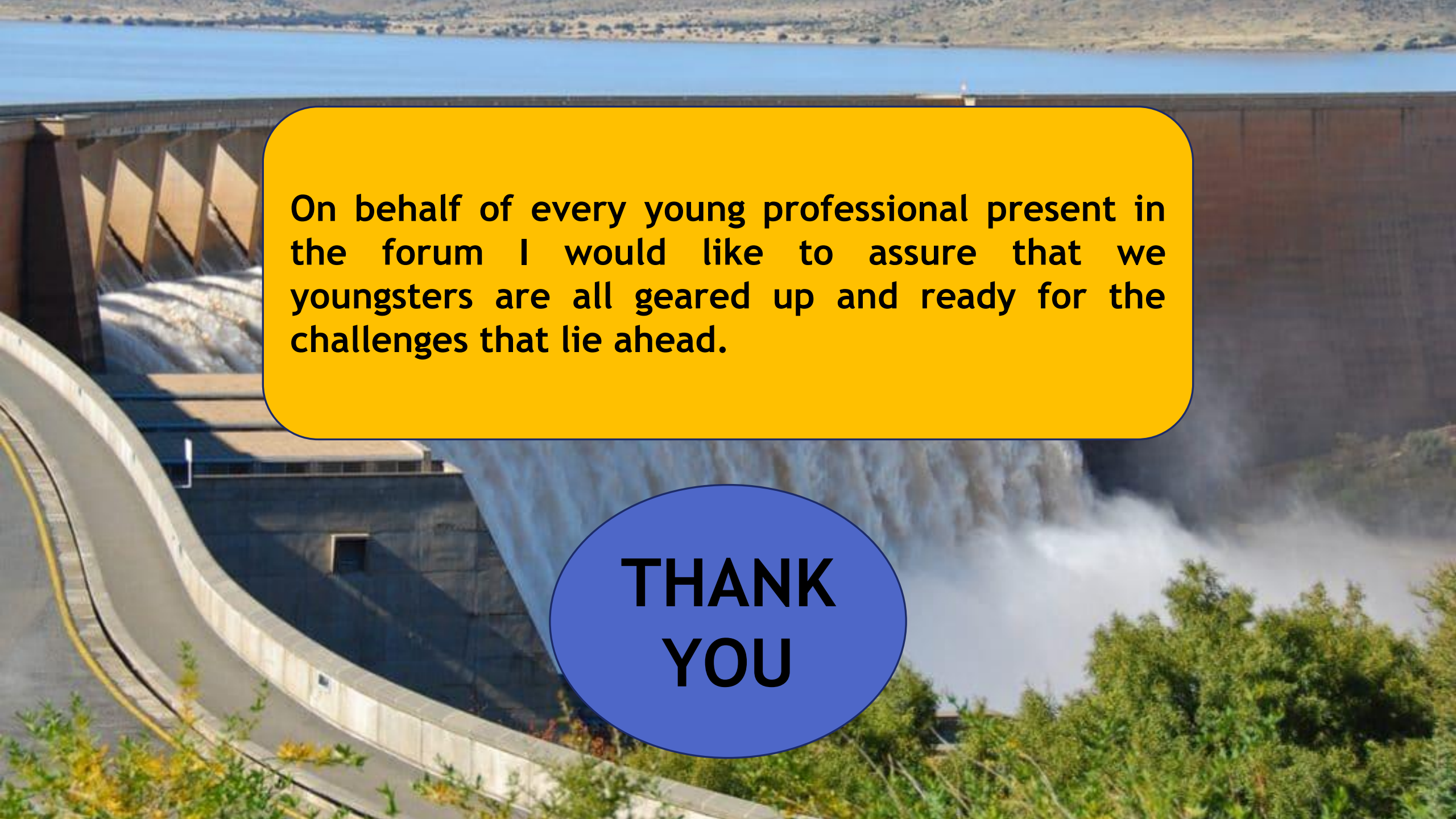
## Suggestions...

1. To include/invite some school/students to any such international/national level conference so as to develop some curiosity amongst them regarding this field.

2. On behalf of INCOLD-YPF, would like to conduct a series of workshops in collaboration with all the organizations working in this field to facilitate knowledge/experience transfer/sharing at young professional level and also upgrade technical competency.

3. Would invite all young professionals to be a part of INCOLD-YPF.





**On behalf of every young professional present in the forum I would like to assure that we youngsters are all geared up and ready for the challenges that lie ahead.**

**THANK  
YOU**