

Making Dams Safer

Is there a need for a national framework for investing in Dam safety?

One of India's largest hydro development projects, the Narmada Dam in Gujarat, has received the final clearance from the Narmada Control Authority (NCA) giving a go ahead to the Gujarat government to close the Sardar Sarovar Dam (SSD) gates on the Narmada river. This marks the completion of the project, almost 56 years after the dam's foundation was laid by the then Prime Minister in 1961. Perhaps it is time to think of the various ways of reducing the risk of extreme events like earthquakes, droughts or floods on projects such as the SSD.

These risk reduction activities can be led by the National Disaster Management Authority (NDMA) which plays the key role in guiding national investments for disaster risk

reduction (DRR) activities across India. Similarly, this effort can also be complemented by the Gujarat State Disaster Management Authority (GSDMA) which builds the resilience of the citizens of Gujarat to the various disaster risks faced by them. The draft Dam Safety Bill is being finalized by the Ministry of Water Resources, of Government of India.

The NCA permitted increasing the dam's height by lowering of 30 sluice gates and impounding of water in the reservoir upto its Full Reservoir Level (FRL) of EL 138.68 metres.

The latest move by NCA will lead to completion of the project and will result in an increase in the dam's storage capacity from 1565 million cubic metres (MCM) to 5740 MCM

and also lead to a rise in hydro power generation from current 1300 MW to 1450 MW.

The water audit (use for agriculture, industrial and domestic purposes) can provide useful findings for future risk reduction actions for the National Water Development Agency (NWDA) and other water institutions.

Gujarat should share the lessons -on how to move faster, and effectively - from this 56-years of hydro development journey which can be useful for the fast expanding Indian Rivers Inter-link project and for making it ecosystem based.

This additional storage of SSD would irrigate about 8 lakh hectares of land, mostly in water starved areas in Saurashtra and North Gujarat. It is now time to think of more measures needed to protect irrigation and arrest water starvation in these areas. Further, this increased storage level can have long term benefits in providing effective balance to deal with flood and drought situations in the catchment areas.

About one crore people would get assured drinking water and irrigation facilities. The SSD would primarily meet the water requirement of drought prone and desert areas of Gujarat, Madhya Pradesh and Rajasthan. In some ways SSD is one of the biggest anti-drought and anti-desertification measures in India.

The time has come to protect SSD, the life line of Gujarat, from all kinds of disaster risks, including that of floods and earthquakes by

Reducing Disaster Risk

Water: There is a total of 28 million acre feet water of Narmada in SSD. The state wise distribution is thus: 18.25 MAC to Madhya Pradesh, 9 MAC to Gujarat, 0.5 MCA to Rajasthan and 0.25 MAC to Maharashtra. How to protect this water flow from floods and drought?

Electricity: Total 1450 MW hydro power to be generated at the dam site by SSD. Madhya Pradesh gets lion's share with 57 % total power to be generated, Maharashtra gets second largest portion of 27 % and Gujarat gets 16 % of power. What can be done to reduce flood, cyclone, and earthquake risk faced by this hydro-power grid?

Canal Network: Total 71,747 km long canal network of SSD spread in over 20 districts in Gujarat. So far, the authorities have completed 47104 km long network, which means 66 % works stand completed. Who will reduce risks of disasters faced by these canals?

Project Affected Villages: Total 244 villages in Madhya Pradesh, Maharashtra and Gujarat have been affected, submerged fully or partially due to SSD. From these villages, 46840 families have been resettled and rehabilitated with compensation by the authorities. What measures are needed to make these families and villages resilient to disaster and climate risks?

considering the recommendations of the national authorities and the Sendai Framework.

The Environment Sub-group of NCA chaired by union secretary of environment and forest had reviewed implementation of environment safeguard measures and recommended lowering down of the gates for completion of the project. The disaster risk faced by the dam and canals need to be assessed and reduced.

The Resettlement and Rehabilitation sub-group chaired by the Union Secretary of Social Justice & Empowerment had also reviewed the rehabilitation and resettlement of project affected families as per the Narmada Water Disputes Tribunal (NWDI) Award and the Supreme Court order was delivered in February 2017. The next step is to build the resilience of these families to the disaster risks they face.

As the SSD project stands completed after 56 years of its inception, perhaps it is time for a little introspection. We should introspect on how to make the SSD resilient to the various climate and disaster risks so that the gains that it delivers to the people are safeguarded. What is needed is a framework to reduce disaster risks faced by SSD. Under the leadership of NCA, GSDMA, and NDMA, the SSD can become India's first SFDRR compliant dam.

Dam Safety Measures in India

Close to 80% of India's 5,198 large dams are over 25 years old and are confronted with safety challenges. Many experts believe that the wear and tear along with the sub-par maintenance of these dams is jeopardizing their safety. The most worrying are those dams that lie in high seismic zones and can be destroyed by medium to high intensity earthquakes. In this context, it is essential to review the safety

measures and policies in place to protect the big dams and economic growth of India.

The Central Water Commission (CWC), which is the apex organisation for water resources management, in 2006, asked the states to come up with an emergency action plan for large dams and laid down guidelines for that purpose. The ministry of water resources, too, in 2011 came up with crisis management plans for states to handle dam related contingencies and asked them to set up dam safety organisations. So far, half of the states have complied with the directions of the water resources ministry.

The government has prepared a draft law for ensuring dam safety and has circulated to the states. CWC is running a six year Dam Rehabilitation and Improvement Project with financial support from the World Bank. It covers 5% of the unsafe dams spread across seven states. This scheme needs to be extended to include all the unsafe dams in the country and it needs to

be continued even after its scheduled culmination of 2018.

Needless to say disaster preparedness needs to be an integral part of these safety measures to prevent any mishaps. Ministry of Water Resources, River Development and Ganga Rejuvenation with the financial support from the World Bank has embarked upon a six year Dam Safety Rehabilitation and Improvement Project (DRIP) in the year 2012. Under this project, comprehensive rehabilitation and improvement of 225 large dams are carried out in seven States. In addition, institutional reforms and strengthening of regulatory measures related to safe and financially-sustainable dam operations are carried out. The seven states where the project is being implemented are: Jharkhand, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, and Uttarakhand. A national framework for investing in dam safety will make India's dams and related economic growth safer. ■

- AIDMI Team

Global Humanitarian Assistance Report 2017

India can not isolate itself from the global humanitarian assistance, its impact, and its thinking as India itself is more and more actively reaching out to the victims of natural and extreme climate events in its neighbourhood. The latest Global Humanitarian Assistance Report (GHAR) 2017 offers both, lessons for India to take on its humanitarian agenda, as well as what India should avoid. Flexibility of financing is a key to higher impact and channelling funding through local people and organisations is a proven way to better performance. ■

