

Diverse Notions of Water Security: A Preliminary Inquiry into Notions of Justice in Himalayan River Basin's Nuclear Ecosystem

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The policy brief focuses on multiple notions of water security in the context of Himalayan nuclear ecosystem. It explores the question as to whether time has come to adopt a UN treaty on the prohibition of nuclear reactors as well now that the UN Treaty on the Prohibition of Nuclear Weapons has come into force. The water footprint of 12, 241 nuclear weapons, 2, 000 nuclear tests including underwater testing and 495 nuclear reactors assumes significance for ensuring comprehensive water security in general and in the Himalayan region in particular. Out of the nine nuclear weapon owning countries, three are in this region. From among these three countries, China has 600, India has 180 and Pakistan has 170 nuclear warheads in their inventory. As of 2024, 31 countries worldwide are operating 417 nuclear reactors for electricity generation and 62 nuclear power reactors are under construction. India has 21 nuclear reactors, reactors are under construction and 4 reactors are in status suspended operation. In Bihar, under the Nuclear Power Mission announced in the Union Budget 2025-26, one nuclear reactor has been proposed at Rajauli in Nawada district.

Besides the one proposed in Bihar, the nuclear plant in Narora, Bulandsahar, Uttar Pradesh and the upcoming two units of nuclear plants in Rooppur, Pabna, Bangladesh have grave implications for water security and health security in the Ganga river basin. There are six operating nuclear power plants in Pakistan and one under construction. Two nuclear power reactors are under construction in Bangladesh. China has 57 nuclear power reactors and 29 are under construction.

The top three producers of nuclear electricity in 2023 were the US, China and France. The policy brief makes a case for tracking environmental and occupational exposure in civilian and non-civilian nuclear sites. It draws on the definition of “nuclear material” and “nuclear damage” in India’s Civil Liability for Nuclear Damage Act, 2010 and water and waste related provisions under the Atomic Energy Act, 1962. It is essential for effective preventive policy interventions to factor in water footprint of civilian and non-civilian nuclear activities to ensure comprehensive water security of human and non-human beings beyond anthropocentric national security narrative around it. This policy brief makes a case for preventing any nuclear incident which may induce point source non-point source of radioactive contamination in surface, ground water bodies, and other water resources. It makes a case for study of the impact of nuclear contaminated water on human beings, animals, plants and crops. It stresses the necessity for legal remedy based on independent assessment factoring in World Health Organisation (WHO), agreement with the International Atomic Energy Agency (IAEA). In this backdrop, the policy brief provides an outline for Himalayan river basin security which is essential for ensuring complete justice from the perspective of environmental security, food security, epidemiological security, and security of life.