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Water under threat

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There are many factors that influence water resources both at the global and at the national levels. Climate change is one of these factors. Countries that have more water storage capacity are less affected by climatic shocks as compared to those that have less capacity. This is the major reason that keeps Pakistan in the list of most vulnerable countries.

According to the Food and Agricultural Organization (FAO), Pakistan can barely store 30 days of water in the Indus Basin Irrigation System (IBIS). The Indus basin covers 65 percent of the territory, comprising the provinces of Punjab, Sindh and Khyber Pakhtunkhwa and the eastern part of Balochistan. The Indus basin has a large groundwater aquifer covering a gross command area of 16.2 million hectare.

Pakistan is one of those water scarce countries that have low storage capacity. Consequently, the flood water brought massive destruction almost each year. According to recent statistics, Pakistan is included in the list of water stressed countries where the threat is 'extremely high', placed at number 32, and will only have 104 million acre feet in the year 2025 as against its requirements of 135 million acre feet (including drinking water) in the same year. The country will have a shortfall of 31 million acre feet in the year 2025.

At present, the water indicators are not encouraging. The total internal renewable water resources are 55 (in km³/year) which is low when compared to India 1446, Iran 128.5, China 2 813, Nepal 198.2 and Bhutan 78 (in km³/year). The total external renewable water resources of Pakistan are 191.8 (in km³/year) which are lower compared to India (464.9). The total surface water of Pakistan is 239.2 km³/year, which is lower compared to China with 2739 km³/year. Similarly, the long-term average annual precipitation for Pakistan is 494 mm, which is 1170 mm per year in India.

In the year 2014, the total renewable water resources per capita of Pakistan were 1333 m³/inhab per year; this is low when compared with India at 1508, Iran with 1746 and China at 1993 m³/inhab per year. Furthermore, in 2014, Pakistan had the highest dependency ratio (77.71 percent) as compared to India with 30.52 percent, China 0.96 percent and Iran 6.77 percent. This ratio shows the percent of total renewable water resources that originate outside the country.

According to an FAO report generated on January 14, 2016, in the year 2008, agricultural water withdrawal – which is the annual quantity of self-supplied water withdrawn for irrigation, livestock and aquaculture purposes – was 172.4 109 m³/year showing that agriculture is the major consumer of our water resources; more than 90 percent of water is used for irrigation purposes.

The total agricultural water managed area was 21240 thousand hectares in which the total area equipped for irrigation was 19990 thousand hectares and non-equipped flood recession cropping area was 1250 thousand hectares.

Similarly, full control harvested irrigated area was 21452 thousand hectares in which the area under temporary crops was 20657 thousand hectares and area under permanent crops was 795 thousand hectares. The cropping intensity was also noted as 111.3 percent. The cropping intensity is low as compared to India (which stands at 140.1 percent).

Under the Indus Waters Treaty (1960) between India and Pakistan, it is estimated that 170.27 km³/year is reserved for inflow from India into Pakistan. However, additional steps need to be taken such as increasing water storage capacity through constructing mega dams, revising the cropping pattern to lessen the burden on water resources etc. It is also necessary to devise and implement both short- and long-term water policies which will help us going out from the water crisis.

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