



### THE STATE OF CLIMATE CHANGE SERVICES 2021: WATER – REPORT TAKEAWAYS

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*(Views expressed in the brief are those of the author, and do not represent those of ISSI)*

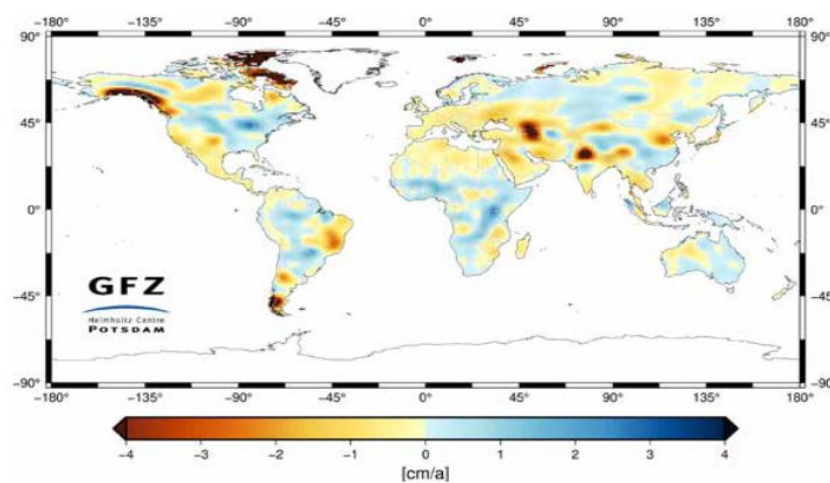
2021 STATE OF  
CLIMATE SERVICES  
WATER

The recently released report by the World Meteorological Organization, titled “The State of Climate Change Services 2021: Water” paints a grim picture of the issue of water availability around the globe. The report presents an eye-opening account about the decline in the annual water availability along with terrestrial water shortage. While more than 70 percent of the earth’s body is covered in water, yet only 0.5 percent is usable and fresh for human consumption. Water is the prime source for not only sustainable development but also a prerequisite for climate change compliance. With the disruptive weather patterns due to climate change and the unpredictability of water-related disasters such as monsoon and flash floods, drinkable water scarcity and contamination of water are the two most alarming water-related issues enough to bring about the existential crisis as well as increased competition for water, even conflict.<sup>1</sup>The report earmarks Pakistan along with other countries in Asia at risk due to the continuation of extreme, water-related events as well as displacements due to extreme rainfall and massive flooding.<sup>2</sup>

1 Water and The Global Climate Crisis: 10 Things You Should Know, UNICEF, 18 March 2021  
<https://www.unicef.org/stories/water-and-climate-change-10-things-you-should-know>

2 2021 State of Climate Services: Water, World Meteorological Organization,  
[https://library.wmo.int/doc\\_num.php?explnum\\_id=10826](https://library.wmo.int/doc_num.php?explnum_id=10826)

The report provides a stark reality check about the aggravated water scarcity globally and stresses it as a global crisis without distinguishing borders, impacting all developed and least developed nations. The report further highlights the constant increase in global population, human and naturally induced stressors as elements that are increasingly adding pressure on water resources.<sup>3</sup> In the past two decades, the world has seen an increase in Terrestrial Water Shortage (TWS) – a loss of 1cm per year bringing water resources under constant stress. While this may not seem much at a country-to-country level, its impact globally is of greater magnitude. Terrestrial water storage can be defined as the summation of all water on the land surface and in the subsurface including surface and zone soil moisture, groundwater, snow, ice, water stored in the vegetation, river, and lake water.<sup>4</sup>



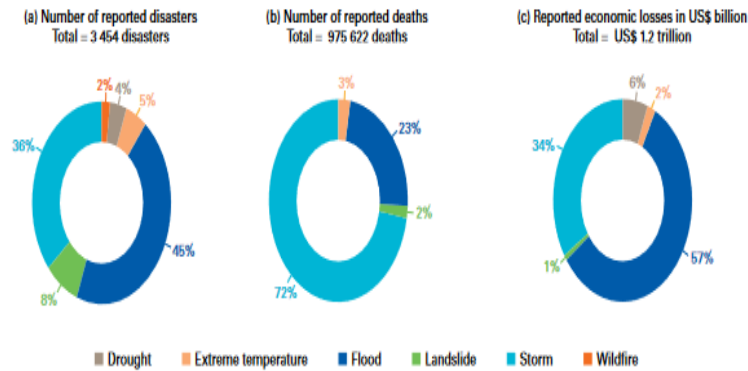
Source: 2021 State of Climate Services: Water

It further highlights that Asia continues to face extreme impacts from weather, water, and climate-related disasters especially floods in comparison to other regions with 3,454 recorded disasters, 1 million deaths, and economic losses of US\$ 1.2 trillion associated with weather, water, and climate-related hazard events.<sup>5</sup>

<sup>3</sup> 2021 State of Climate Services: Water, World Meteorological Organization, [https://library.wmo.int/doc\\_num.php?explnum\\_id=10826](https://library.wmo.int/doc_num.php?explnum_id=10826)

<sup>4</sup> Manuela Giroto and Matthew Rodell, "Terrestrial water storage," Extreme Hydroclimatic Events and Multivariate Hazards in a Changing Environment, Viviana Maggioni and Christian Massari (eds), Elsevier, 2019

<sup>5</sup> 2021 State of Climate Services: Water, World Meteorological Organization, [https://library.wmo.int/doc\\_num.php?explnum\\_id=10826](https://library.wmo.int/doc_num.php?explnum_id=10826)



**Figure:** Distribution of (a) number of disasters, (b) number of deaths and (c) economic losses by hazard type and by decade in Asia<sup>6</sup>

The report ends with drawing six strategic recommendations;

1. Adoption of integrated water and climate policies by joining a new Water and Climate Coalition,
2. Filling data gaps on the country capacity for climate change services in water,
3. Co-develop and operationalize climate services for better monitoring and evaluation of socio-economic benefits of climate services,
4. fill the gaps in the data collection of key hydrological variables which underpin climate services
5. Invest in end-to-end drought and flood early warning systems, and
6. Invest in Integrated Water Resources Management (IWRM) as a solution to better manage water stress.

### Lessons for Pakistan:

In the past decade, Pakistan has witnessed an increased change in its monsoon patterns along with severe heat waves, droughts, and flash floods – primary red flags of Climate Change. Pakistan is not amongst the top carbon emitters; however, due to rising precipitation patterns and constant increases in temperatures, it is experiencing far-reaching hazardous impacts. While Pakistan is one of the most proactive countries to address the issue of climate change under the United Nations SDGs, it still has to work more efficiently to overcome the clean water and sanitation goal of the SDG

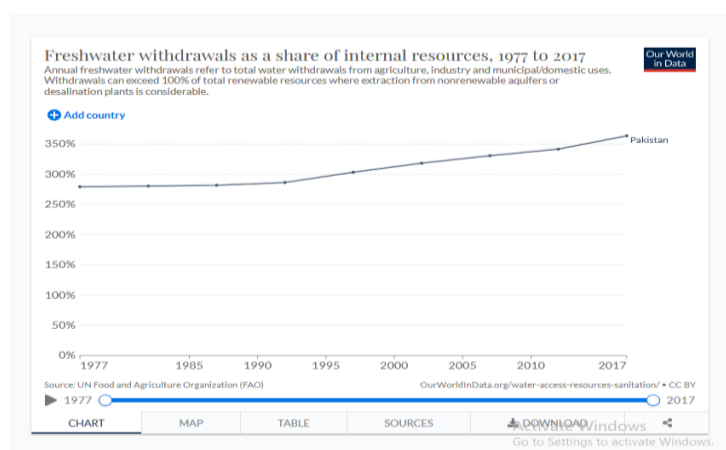
<sup>6</sup> WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019), World Meteorological Organization, WMO-No 1267, [https://library.wmo.int/doc\\_num.php?explnum\\_id=10769](https://library.wmo.int/doc_num.php?explnum_id=10769)

by 2030 by multiplying its efforts to meet the target. In the past thirty years, Pakistan has seen a number of climate disasters, resulting in 11 000 fatalities and \$20 billion losses to the economy.<sup>7</sup>

Disaster Type	Events Count	Total Deaths	Total affected (million people)	Damage (million US\$)
Drought	1	143	2.2	247
Extreme temperature	15	2759	0.08	18
Floods	75	11 104	64.3	19 911.3
Storm	18	1 424	2.2	1 710.9

**Table:** Climate-related disaster in Pakistan since 1989-2018, Country Profile Pakistan, Climate Analytics

Similarly Integrated Water Resources Management (IWRM) is another area where Pakistan must make progress to slow if not diminish the worst effects of climate change including flooding, drought, and devastating heat waves. Pakistan is already facing issues regarding water availability and is stepping into water scarcity. Moreover, it has reached extremely high levels of water stress as its freshwater withdrawals have been on a constant rise paired with unsustainable water extraction and use from existing water sources. Being a lower riparian and arid country it is imperative for Pakistan to formulate ways to overcome the issue of water scarcity by not only addressing the issue of climate but also by looking into ways for efficient water storage. Similarly, an integrated approach by the public and private sectors is crucial to improve the swelling water scarcity crisis in order to effectively address the issue.



**Graph:** Annual Freshwater Withdrawals<sup>8</sup>

<sup>7</sup> Country Profile Pakistan, Climate Analytics, 2019, <https://climateanalytics.org/media/decarbonisingasia2019-profile-pakistan-climateanalytics.pdf>

<sup>8</sup> Water Use and Stress, Pakistan, Our World in Data, <https://ourworldindata.org/water-use-stress>

The government needs to put concentrated efforts to control as well as improve the water situation keeping in mind the alarming crisis situation the report picks on. With the drying of river basins in Pakistan, there soon will be a situation where water will become a luxury only affordable by a few. The report highlights water as an under-recognized existential threat that can lead to conflicts throughout the globe and Pakistan is no exception. The time is of essence and need for a robust formulation of a national water policy with an integrated approach and effort from all the provinces. Moreover, under the umbrella of an overarching national water policy, different methodologies can be utilized to deal with the current and future issues of water scarcity and areas that are already hydro-stressed. Equally important is to educate the masses to save and conserve water as well as raise awareness among the policymakers that Climate Change is a security and existential threat that needs appropriate and quick action.