

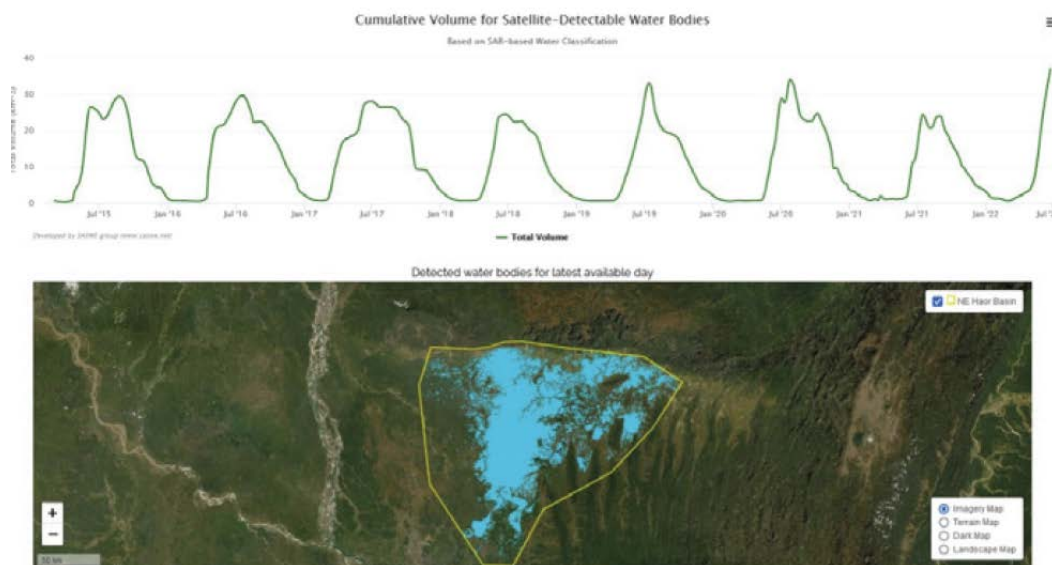
Turning Our Nation's Seasonal Lake Formation Cycle into a 42 billion Dollar Annual Industry

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Imagine a region where Nature's water is so bountiful that diverting a tiny amount does not undermine its regenerative capacity or impose any negative ecological consequence. There is such a region in Bangladesh that we now believe has the potential to become a revenue generating and sustainable water harvesting industry similar to sustainable forestry or sustainable aquaculture. However, in this case we are talking of at least a 40 billion/year USD industry for The People's Republic of Bangladesh.

We urge policy makers to take note of the idea and implement a feasibility study at the earliest convenience.

Until 2021, Bangladesh, notably Bangladesh Water Development Board (BWDB), had no technical capacity to track the volume storage of surface water resources of the country. All that changed with the introduction of satellite remote sensing of water levels, citizen science and lake gauging. Since 2021, BWDB, in collaboration with the University of Washington (USA), has been quantifying the total volume of surface water that drains through Bangladesh (see figure). Notably, in the Haor region of the Northeast, this satellite-based tracking has revealed that any given year Bangladesh receives anywhere from 20 km³ to 40 km³ surface water during the months of July-November from rainfall and runoff generated from transboundary (Indian) mountains. This amount is equivalent to 3 to 7 Kaptai Lakes. Such a large amount of water eventually drains downstream, mostly through Bhairab river, to the Bay of Bengal by January, while a lesser portion recharges the groundwater or is evaporated.



Satellite and gauge-based tracking of surface water volume by UW-BWDB technical collaboration

What is the 42 billion Dollar Idea?

Very simple. We propose an ecologically insignificant amount of only 1 km³ (5%-10%) of the 20km³-40km³ of surface water that is stored in the lakes of the Northeastern region to be siphoned off gradually over 3 months (September to November) to a water bottling plant. We argue that by August the lakes (or Haors) are all fully formed in the Northeastern region and from September through November, the surface water is of the highest quality requiring less treatment than at other times. The withdrawal of this surface water is proposed at several locations through a network of pipelines that eventually collect the water to the water bottling plant. A few of the potential locations for withdrawal are the Bhairab river, and three of the region's largest haors.

After diverting the water at the rate of 150 m³/s (cumecs), the water would be settled in ponds for removal of sediments, and then passed through filtration and finally through an Ultra-Violet (UV) disinfection process. Our back of the envelope calculations reveals that 1 km³ of treated surface water can produce 5 X 10¹¹ one-liter bottles at a very conservative operating efficiency of 50%.

Assuming that a one-liter bottle can sell for at least 10 Taka after factoring in costs for labor, packaging, shipment and distribution (note: market price for 250 ml water bottle is 20 Taka), the bottling plant should be able to generate at least **50 X 10¹¹ Taka** or **42 Billion USD** (at 120 Taka/USD exchange rate)