Unravelling Atmanirbhar Bharat through water security and livelihood discourse

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Abstract

Water scarcity will be one of the world's most important challenges in the next years, given India's expanding population. Climate change would exacerbate the situation by causing severe droughts on the one hand and catastrophic floods on the other. Water security thus becomes an intricate issue for the nation to address. Water's interconnections and impact on livelihoods and economic growth cannot be overlooked in a developing country that is heavily reliant on monsoons and groundwater.

To better manage this essential resource, Atmanirbhar Bharat offers an opportunity to re-examine, re-think, and enhance our approach to water – one that not only meets immediate demands, but also recognizes its actual value in securing life and the economy.

The River Ganga spawns a huge economy along its banks, realizing the potential of which, a socioeconomic zone can be developed around it. Although the genesis of Namami Gange Programme is based on strengthening the pillars of sustainable development through the concept of Arth Ganga, there has to be perennial effort at micro-level to bring about a change at the macro level.

This would require a paradigm shift in the way individuals and communities interact with water. Multiple modalities of reliance on the environment, specifically water can help in understanding and managing natural resources and support targeting of policies towards the Sustainable Development Goals. This calls for realizing the value of water and adopting traditional wisdom of using available water efficiently, that would instantly guarantee self-reliance to citizens of every town and city at least in their minimal water needs, if not their entire needs.

Aligning with the creation of larger number of durable and livelihood assets including water conversation assets, the objective is to enhance public participation and motivate people in accelerating the pace of conservation strategies to attain economic efficiency, environmental sustainability and social equity.

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1. Water as a core sustainable resource

Without access to safe and clean water, the Sustainable Development Goals cannot be met. India, with a population of 17 percent and a landmass of 2.4 percent, has only around 4% of the world's fresh water resources.[1] Our issues are exacerbated by the enormous gap between our demand and supply. Higher water efficiency is required for this, or our survival and progress may be compromised. Water scarcity, according to statistics, is no longer a theoretical problem, but is becoming a reality. This can be attributed to inefficiencies in usage and demand management, a lack of source strengthening, climate impacts, and seasonal vulnerabilities. Water is currently used as a commodity, with around 84 percent going to agriculture, 4% to domestic consumption, and the rest to industry. We have neglected the greater ecological needs in order to meet these competing and complex water demands. This is in contrast to historic practices, in which a considerable amount of water was used to maintain ecosystem recharge, preserve landscapes, and trees, with important environmental, social, and economic advantages.

Realizing and implementing the fundamental function of water becomes a critical driver for a resilient and long-term recovery, allowing India to achieve Atmanirbhar, or self-sufficiency. Water's interconnections and impact on livelihoods, food, health, energy, and economic development are undeniable. Though not specifically stated, water's interconnections will have a substantial impact on the five pillars of the Self-Reliant, Resilient India Program. Access to water is critical to relieving poverty and making rural India self-sufficient. Given that 30 million children did not have access to toilet facilities[2] and 6.5 million did not have access to safe drinking water in schools, water is also crucial to the success of large-scale public programmes targeting health and child education. Initiatives aimed at improving public health under the Atmanirbhar Bharat vision, such as supporting grassroots health organizations, health labs, and the construction of specialist hospital blocks, may not be entirely effective unless India improves citizens' access to safe and clean water.

Climate change and extreme weather events have already harmed agricultural yields and productivity, threatening around 40% of grain production. Small and marginal farmers (those with less than two hectares of land) make up 86.2 percent [3] of all farmers in India, yet they only hold 47.3 percent of the cropland. They are especially vulnerable since they have limited access to resources (agricultural inputs) that would allow them to continue producing.

Water security is crucial for agriculture, livelihood, and food security in India because of the country's reliance on monsoons and groundwater. The essential impetus for farm recovery procedures, decreasing vulnerabilities, and establishing resilient food systems will come from public-private partnerships to aid water conservation and source strengthening programmes aimed at assisting these marginalised farmers.

Atmanirbhar Bharat also emphasizes measures to assist in the stimulation of the manufacturing sector, notably to revitalize and revitalize Micro, Small, and Medium Enterprises (MSMEs) (MSMEs). MSMEs employ more than 90 percent of India's industrial workers, accounting for approximately 110 million employment.They place far too much reliance on the availability of a consistent and high-quality electrical supply. This supply, in turn, is contingent on water being available at all times. Water shortages forced 14 of the top 20 thermal utility providers to shut down at least once between 2013 and 2016.[4] This resulted in a USD 1.4 billion revenue loss for utilities, as well as economic and environmental consequences for MSMEs. Unlike their larger rivals, who have access to big captive power plants, smaller MSMEs rely on diesel generators to maintain a consistent supply.

However, there is a silver lining to this cloud of uncertainty: for the first time in history, we are living in the "Anthropocene" age, in which humans have enormous power over the environment and ecosystems. The decisions we make now will have long-term consequences for future generations. The COVID-19 epidemic has presented an opportunity to re-examine, re-think, and enhance our approach to water demands – to include not just current requirements, but also water's fundamental significance in securing ecosystems and the environment — inherent aspects affecting lifestyles throughout the world.

2. Significance of Ganga

Ganga, a river and a goddess are inseparable from majority of the Indians since time immemorial. "Arth Ganga" is, essentially the Meaning or Value of River Ganga or any other river. Now, if there be multiple meanings or values of anything, the "total meaning" or "total value" of the same must be considered to grasp the object in its entirety. Thus, "Arth Ganga" is the total value of River Ganga or any other river, that is the sum total of the river's tangible or economic values (which comprise of the goods and services provided by the river, such as water, sediment, nutrients, biodiversity, flood drainage, navigation, etc.) and intangible values (which are the river's physically unquantifiable attributes such as its aesthetic, mystical, spiritual, and other timeless qualities). These tangible and intangible values together comprise the

absolute value of the river, which is also its absolute meaning – Arth Ganga. Pursuant to the above, Ganga River is much more than the bio-physical extent of over 2,500 km of the main-stem river course, or over 1 million sq km of basin area, and represents the culture of rivers in Indian ethos and civilization. In physical form the river system has thousands of interconnected waterbodies including small drains, that become rivulets, which join to become higher order rivers, eventually merging with the main-stem of the Ganga river. The total Ganga River is therefore the entire network of small and large rivers that constitute the Ganga. Hence, the river development objective cannot be achieved by considering only the main-stem but will have to go down to the origin of all contributing lower order rivers. Therefore, in order to implement Arth Ganga successfully it is essential to take a bottom-up approach and integrate with the top-down policy framework. Since developmental imperatives have often been pitted against environmental concerns, and river conservation efforts have also faced this dilemma, it is important to resolve this dichotomy by embedding "Arth Ganga" in India's developmental narrative. To assess the same will need to get in depth of historic waterways. The majestic Ganga used to be a busy waterway for transporting goods and passengers till a century ago. Today stress upon revival of inland waterways transportation system and a new history is being scripted with the capacity augmentation of the national waterway –I, Ganga under the Jalmarg Vikas Project (JMVP) at a cost of Rupees 5369.18 Crores.[5] Three multimodal terminals at Varansi, Sahibganj in Jaharkhand and Haldiya in West Bengal along with other infrastructure have been established on route to facilitate cargo movement on the River Ganga. To energize the socioeconomic development along the banks of Ganga critical concept of Arth Ganga has been developed. *Arth Ganga* program with intention of inclusive growth and to play a pivotal role in improving the livelihoods of common people. Arth Ganga will provide simple logistics solutions for small farmers, fishery units, unorganized farm producing units, horticulturalists, florists and artisans to reach the nearest marketplace which would steer a massive economic revolution in the region generating substantial employment and realizing the potential of *Jeevandayni* Ganga in day to day life. This would ensure sustainable economic development in the entire region and equitable resource allocation by harnessing 3% of Gross Domestic Product or GDP. Construction and modernization of 62 community jetties is one of the major components of the project. These jetties would provide opportunity for small farmers and local artisans to transport their produce like Marigold from *Kaihti- Varanasi,* vegetable-dairy from *Ghazipur*, vegetables from *Munger*, banana and pan from *Hajipur-patna,* Jute crafts & vegetables from fruits& grains from *Bhagalpur* and fish from *Farraka* and *Nadia* through waterways in a cost effective and environment friendly way. The fairway development with modern river information system and state of the art hydrographic equip-

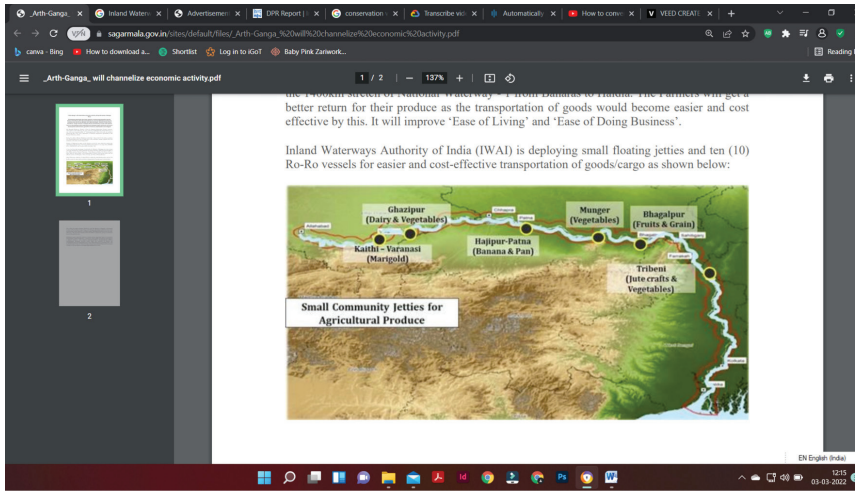

Figure 1: Location Map highlighting small communities jetties for agriculture produce. Source: https://pib.gov.in/

ment, would help the transportation of smaller vessels to and from the community jettis with much ease and higher safety. Construction of five pairs of Ro-Ro terminals at strategic locations (Buxar- Sarikota,

Bakhtiayar- Manhar, Khalgaon-Tintangaon, Samda Ghat- Manihari, Rajmahal-Manikshak) on NW-I would reduce the distance, time and cost of traveling and transporting goods and people in between the banks of the river, which would benefit the farmers in that particular region and they would get better return for their produce. Ganga has immense potential to boost river cruise tourism. Tourism circuits are being planned in Varanasi, Patna, Bhagalpur and Kolkata, where national and international tourists will be able to witness the historic religious, cultural and environmental heritage of India under the Arth Ganga program. Religious tourist circuits are also on the cards connecting Ganga Sagar, Belur Math, Dakshinaeshwar Temple, Parshnath Jain Temple and Kalighat Temple through the waterways. These developments under Arth Ganga would not only enhance domestic trade but will also act as a main conduit of connection with Nepal, Bangladesh, Bhutan and Myanmar by four thousand kilometers long waterways connecting a billion people in the region. India as a always supporting Nepal in its economic transformation. National Waterway - 1 would serve as a trilateral connection between Varanasi and Nautanwa (280 kilometers), Kaughat and Raxaul (204 kilometers), and Sahibganj and Biratnagar (233km). Previously, Nepal was connected to the ports of Kolkata and Visakhapatnam for cargo transportation. Inland Waterways, particularly NW-1, will now

be permitted under the Treaty for Cargo Transit[6] between the Governments of India and Nepal. It will reduce logistic costs while also decongesting the Kolkata Port. Over the next four to five years, Arth Ganga will generate an economic boost.

3. The way forward

The natural potential of any riverine ecosystem contributes to the overall value of ecosystem services. The total value that can be collected from the system before the ecological system collapses is its economic potential. In most circumstances, the entire economic potential will outweigh the biodiversity potential. However, the economic potential can only be fully realised if an ecological equilibrium is achieved. As a result, sustainable development policy must govern the scope of economic value extraction. This framework provides us with a concrete and formulaic instrument for directing all development efforts. The Ganga river system's development and conservation goals are depicted in the accompanying illustration. This is expected to become a model development code not just for other Indian river systems, but also for river systems all over the world.

To properly manage this vital resource, such as rivers, we need creative strategies and instruments that encourage good action. The new paradigm that promotes water security and its role in Atmanirbhar Bharat includes better water risk assessment, merging observation and data with satellite-based mapping, and quantifying indicators (e.g. livelihood, security, risk or poverty index). This includes better communicating different levels of risk and impact, putting people and their livelihoods at the centre of village-level water budgeting exercises, determining fair share using factual and evidence-based methods, and finally channelling newly gained awareness and community engagement into source strengthening and conservation measures.

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