Quantum Cleaning to Quantum Expenditure : Demystifying the Economics of Ganga Cleaning

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ABSTRACT

Ganga has been in limelight especially cleaning of Ganga from more than two decades. Hence this manuscript is an attempt to understand, characterize and evaluate the quantum of spending that have gone through in cleaning Ganga and its efficacy in terms of cleaning ratio. Cases after case are being filed, National Green Tribunal has also directed many a times trying to make Ganga cleaned. Extending through about 1,600 miles, the Ganges is also a pecuniary livewire and a vivacious lifeline for the country. The river bids water to about forty five percent of India's population across eleven 11 states, serving an estimated 900 million people. It is home to at least 170 species of animals and marine life, irrigates some 140 million acres of arable land in the basin alone, and contributes about fifty four percent of India's gross domestic product. The manuscript provides a fund allocation and spending semantic purview with respect to the pollution load and show cases crater gaps. The trends in spending to the cleaning are well represented and viable gaps filling is analysed, evaluated and characterised.

1. Introduction

The panacea to all the issues related with environmental resource management schemes is accountability, transparency and well defined responsibility coupled with financial autonomy. But the biggest irony is whether always the financial autonomy can deliver results when it comes to policy welfare, resource management shielded with rich culture and tradition, these words of context setting is enough to hint at the irony that the most precious and personified river of India has gone through over last couple of decades in terms of its cleaning. The Ganga is reflected

sacred by societies for providing the life-giving and life-sustaining aid for the milieu and ecosystem[1]. Currently, Ganga has been spun into a rotten stream critically polluted with abrasive sewage, industrial effluents and wastes, or agricultural runoffs, interrupted by colossal alteration of flows, and trespassed upon, parting a languid flow in places in slender month. Overall twenty seven main cities scrap heap zillions of litres of sewage and industrialised waste into the river every single day which is amplified with the

Figure 1 popularly called as Ganga Aarti at the banks of Ganga in Bihar[2]

faith that Ganga has self-cleansing properties and can intake any amount of contaminants. To battle against these comprehensive jumbled contributors list Ganga Action Plan was aligned even before two decades. Hence this manuscript is an attempt to demystify the quantum economics involved in cleaning of the Ganga. However Ganga Action Plan Stages I and II encountered with only little success. The major contributors of the reduced amount of success were failure on the government's part to internalise the larger public participation. The sewage pumps breakdown during the flood season frequently prolonged' impeding in entire drainage of the city's sewage into the river. On the other hand the treated effluents from STP caused health hazards, ruined crops and polluted groundwater[3]. The Ganga River Basin Authority had propelled the most ambitious project "Mission Clean Ganga 2009" with an allocated buffer fund of 150 billion estimating to around fifteen thousand crores in INR aimed at revamping and purifying the plants by the year 2020[4]. The above stated scripted plan enumerates the fact that no waste generated by municipal agglomerates will be allowed to discharge into the Ganga. In the background of these commitments this manuscript is an attempt to analyse and evaluate the quantum of money spent post year 2009.

2. Curated Economics of Cleaning Ganga

The National Mission on Clean Ganga MCG has a buffer allocation of 200 billion dollar amounting to twenty thousand crore INR which is funded by the central government and is of non-lapse nature and is spread across 290 projects[5]. The table 1, illustrates the quantum of allocation for various projects under the NMCG. In return, the government offers to contribute 40% of the capital costs upfront and disburse the rest

[1]Das, Subhajyoti. "Cleaning of the Ganga." Journal of the Geological Society of India 78, no. 2 (2011): 124.

[2]Picture courtesy- @Green Milieu_2018- https://greenmilieublog.wordpress.com/

[3]Mishra, Veer Bhadra. "The Ganga at Varanasi and a travail to stop her abuse." Current science (2005): 755-763.

[4]Mallikarjun, Y. "Pollution levels in Ganga alarming." The Hindu, Sep 15 (2003): 2003.

[5]https://www.thehindu.com/opinion/op-ed/why-clean-ganga-project-has-a-long-way-to-go/article24575876.ece, August/September, 2018, , accessed August/September, 2018, https://www.thehindu.com/opinion/op-ed/why-clean-ganga-project:

— with a profit margin — over 15 years subject to performance indicators being met. The mission also has projects to clean the ghats, rid the river of biological contaminants and improve rural sanitation and afforestation.

Table 1 Year wise allocation to Ganga cleaning[6]

Year	Expenditure on NMCG (In Crores)
2009-2010	50.30
2010-2011	113.64
2011-2012	263.36
2014-2015	170.99
2015-2016	602.60
2016-2017	1062.81
Total	**2523.05**

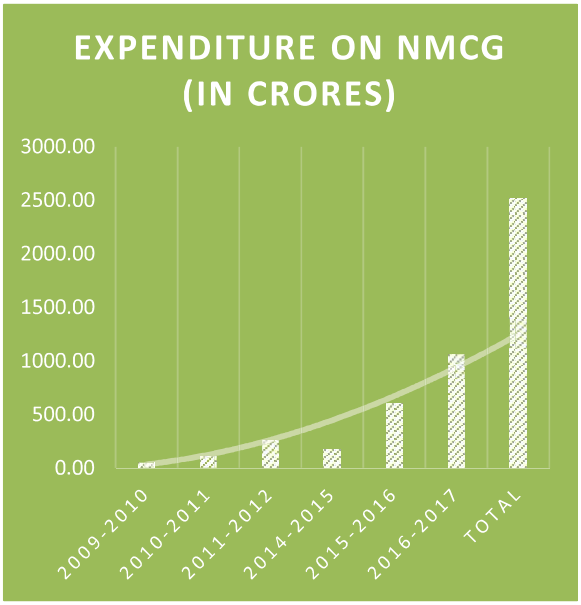

Figure 2 Graphical representation of the year wise allocation of the funds under NMCG

Majority of the pollution load is catapult around five major states i.e. from Uttarakhand in North, via Uttar Pradesh, Jharkhand, and Bihar to West Bengal in the east. As per estimates the pollution load is of 12000 million litres/ day out of which the current controlled treatment can abate around 4000 million litres/ day. Though the allocations and the funds tends to be huge sums, the harsh reality is that only 15 % of the allocated sum is being released in between 2014-18. The Ministry of Water Resources, River Development & Ganga rejuvenation has well scripted to funding gap through corporate contributions. It is estimated that through Clean Ganga Fund 255.02 crores has been funded[6]. As per National Green Tribunal, 2017 it was stratified that even after spending 900 crores for the same not even a single drop of Ganga was cleaned[7]. At Varanasi roughly around 30 million deceased human bodies are burnt each year resulting in 100t of ashes being dumped in the river per month. An electric crematorium was built under GAP, but had to close down after 6 months of operation due to air pollution problems[8].A CAG report has revealed that during 2016-17, the level of pollutants in the river across Uttar Pradesh, Bihar and Bengal was six to 334 times higher than the prescribed levels. With all these curated economics, the precursor to cleaning of Ganga is far too robust to be a gestured in article with blinkered arithmetic and statistics. Policy arrangements in India are perceived, assembled, and executed by

[6]https://www.thehindu.com/opinion/op-ed/why-clean-ganga-project-has-a-long-way-to-go/article24575876.ece, August/September, 2018, , accessed August/September, 2018, https://www.thehindu.com/opinion/op-ed/why-clean-ganga-project:

[7]Tare, Vinod, Purnendu Bose, and Santosh K. Gupta. "Suggestions for a modified approach towards implementation and assessment of Ganga action plan and other similar river action plans in India." Water Quality Research Journal 38, no. 4 (2003): 607-626.

[8]Roy, Aparna. "Ganga Won't Be Cleaned Even after 200 Years … Unless We Learn Why Generous Flows of Funds have failed so far." Https://blogs.timesofindia.indiatimes.com/toi-edit-page/ganga-wont-be-cleaned-even-after-200-years-unless-we-learn-why-generous-flows-of-funds-have-failed-so-far/. February 15, 2018. Accessed August 16, 2018.

different departments and agencies with diminutive discussion, not to mention synchronisation. The number-metrics of the Ganga cleaning which is too high to be curated through an economic bifurcation of the segmented opportunity cost of these schemes which still remains unanswered. As per some latest revelations from the Ministry of Water resources through an answer to the Rajya Sabha Question in 2018 stated that more than 40,000 million litres of waste enters to the major river, water bodies and even percolates into the ground every day. As per CPCB 61, 948 million litres of urban sewage is generated on a day to day basis, but the story unveils that the installed sewage treatments have only 38% remediation capacity[9]. The cut the long plethora of events in a crisp range of success that figures in the generic surface cleaning, is that around eleven skimmers have been stressed along the Ganga stretch cities and around 1.35 million toilets have been built along the rural areas of Ganga which is cutaneous to the fact these villages have almost 99% house hold toilets[10]. Now it is indeed the need of the hour to ask, speculate and answer the fact that is this quantum expenditure sufficient to tackle the issue that is growing larger and bigger as each day progresses. Unbridled urbanisation has impeded river Ganga no longer being just a cradle of water but a lotic dump yard in receipt of and conveying urban waste[11]. Before the section is presented with some more factual undertaking and the trends it is important to understand that why Quantum allocation or spending are not able to deliver proper results. As per a recent survey conducted by the Centre for Science and Environment the social perception that urbanisation has triggered the pollution load and the survey has some an imperative story to define i.e. around eighty percent of livelihood dependent communities and around fifty five percent of tourists have a convicted perception that ghats have no contribution to pollution discharge to the rivers.

3. Bridging the Gap between the Quantum Spending to Quantum cleaning-

The STP undoubtedly are the need of the hour but much narrowed thinking is clustered around the re-usability of these treated effluents from the sewage treatment plants. The enormous gap between the Cleaning Programmes and an exponential city infrastructure building needs to be addressed effectively. A decentralised cleaning module along the lines of centralised cleaning techniques can result in deep rooted viable results. The nudging economic aspirations and theories need to be side-lined while characterizing some of these robust river cleaning schemes. This will be able to solve a major junk of the issue. Availability of the sustained data along with variability definition can also help in taking forward the discussion for a more effective monitoring schedule and evaluation of the control measures. The cosmetic approach otherwise can be stated as pro development modules which have already

[9]Kumar, Sunil, Stephen R. Smith, Geoff Fowler, Costas Velis, S. Jyoti Kumar, Shashi Arya, Rakesh Kumar, and Christopher Cheeseman. "Challenges and opportunities associated with waste management in India." Royal Society open science 4, no. 3 (2017): 160764.

[10]Gupta, Nidhi, Pankaj Pandey, and Jakir Hussain. "Effect of physicochemical and biological parameters on the quality of river water of Narmada, Madhya Pradesh, India." Water Science 31, no. 1 (2017): 11-23.

[11]UPJN, UPPCB. "CPCB (2017) Assessment of pollution of drains carrying sewage/industrial effluent joining River Ganga and its tributaries." A joint report by Uttar Pradesh Jal Nigam (UPJN), Uttar Pradesh Pollution Control Board (UPPCB), Lucknow and Central Pollution Control Board (CPCB).

contributed and compromised the natural e-flow, need to be retraced by traditional wisdoms and age old retraction. Capping the use and convergence of the political economy of the water pricing needs to be categorized through an inter-disciplinary thrust and not through silo's decentralised approach. The endorsement that proper accounting, auditing and budgeting are to be well understood and implemented else the whole gamut of water consumption in real to that of the apparent losses would never ever be mapped nor channelized. Since rivers are not just a subject of economics but also caters anthropology and history which drives the sheer political economy with a blended characterization of the tradition and culture in India, a multifaceted approach which is adopted need to have bottom to top uptake and reform to actually equate the quantum spending and quantum cleaning equations.

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