

An urban river on a gasping state: Dilemma on priority of science, conscience and policy

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Abstract

'Adi Ganga' or 'Tolly's Nullah' is designated as the only urban river as almost for the full length of its flow it is passing across one of the world's most congested and densely populated metropolis i.e. Kolkata (erstwhile Calcutta). Presently it is serving the urban habitants not as a river but as a sewer carrying the filth and dirt created by people around, particularly by the illegal squatter occupiers dwelling on its banks. Once the river was juvenile and had a glorious past. But unfortunately its suffocation has been triggered by the detrimental human activities and short-sighted decisions of the policy makers.

Key words: urban river water, urban transport, squatter population, environmental degradation, policy matters.

Introduction:

Human settlements next to rivers are the most favoured sites of habitation. Time transforms the natural environment into towns and cities. Urbanization comes at the cost to rivers. As the cities grow and develop they have been heavily degraded to enable development, carry waste, supply drinking water and facilitate transport and industry. Effects of urbanization on river are diverse.

Present study on 'Adi Ganga' has passed many stages of transformation but mostly with negative effects. It could have been a sustainable urban drainage on long-term approaches. But political interferences and indifferent attitude of the administration has led it towards a bleak destination.

'Adi (old) Ganga' is a fascinating urban 'heritage' river that fulfills a long cultural and economic heritage in the state of West Bengal in India. The channel is situated mainly in Kolkata from 88°30'00"E to 88°19'00"E and from 22°33'00"N to 22°33'00"N longitude and latitudinal (Fig. 1). This natural channel flows across southern part of Kolkata and despite the fact of its heavy pollution it is congruently being considered as sacred. At present it is suffocating a lot due to many detrimental anthropogenic activities.

To understand its present status one could delve in its previous physio-cultural conditions. The physical backdrop suggests that it has branched out from River Bhagirathi-Hughli (which itself is a de-branched deltaic channel of River Ganga or Ganges (Fig. 2). Part of it is known as 'Tolly's Nullah'. The easterly flight of River Ganga has gradually transformed it into a moribund channel. In the 17th century this moribund channel was excavated by Major William Tolly to rejuvenate the closed down trade between Kolkata and far eastern region (present Bangladesh). Various trade items used to flow through it as commercial trade items.

It is an irony that the past human activities once rejuvenated this natural channel from its moribund condition and at present the detrimental human activities have victimized the river to an undesirable suffocating condition. Construction of numerous shanties built by the illegal occupiers migrated from Bangladesh (erstwhile East Pakistan) are daily using this dirty water and the channel flows as a sewer where the waste materials and dirt are being dumped relentlessly. According to the version of a social activist it is "a 15-km toilet dispenser" (Fig. 3).

Likewise administrative authority has obstructed its free flow of water by constructing metro railway pillars right onto its bed.

In the name of 'development' and 'transport' the people now are losing a cheaper mode of transport, a checkered cultural landscape, an ecological balance of the region and above all the esthetic fervor of its surroundings.

Present discourse has tried to highlight the natural behaviour (*natural science*) of this deltaic off-shoot channel (*Adi Ganga*), common peoples' attitude and interaction (*conscience*) with it and Government's perspective on *policy* making and implementation in relation with it.

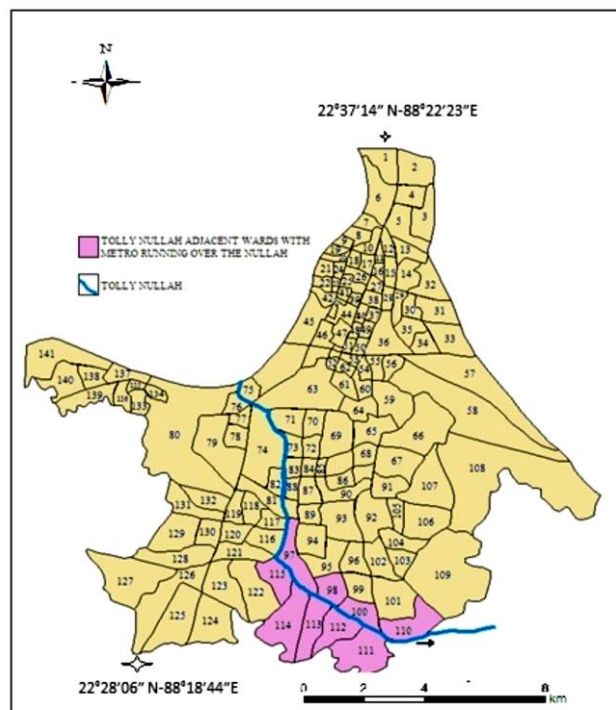


Fig. 1: Location of the study area
(Ref. Das, Dhali & Biswas)



Fig. 2: 'Adi Ganga' – point of origin from Hughli River



Fig.3: The shanties on the bank



Fig. 4: Metro Railways pillars
(Photos by author)

A. Natural behaviour (science) of the river:

The river is at present in a gasping state. Its stagnation is prominent in its urban stretch only where it is popularly known as *Tolly's nullah*. Progress of urbanization has refused to accept its natural behaviour and grabbed it to turn it into a mere filthy '*nullah*' (a narrow sewer line). But it was navigable till the first half of the 20th century, after which encroachment, siltation, garbage dumping and '*development*' slowly decreased its drainage capacity.

In the deltaic part of Bengal the main water of Ganga River in the past had selected many channels by turn to flow through it. These channels are the distributaries of Ganga. Throughout past centuries the main water flow has shifted many times due to the easterly flight of the main river Ganga. The easterly flight of the main river has many geomorphic and geo-tectonic reasons. Slope of this world's largest delta is from west to east. These channels or distributaries of Ganga remained juvenile until the main volume of water selected another channel to shift over there. '*Adi Ganga*', hence, is one of such distributaries through which once the main volume of water used to flow. Gradually the river has declined. But water is still flowing due to its connection with Hughli River (the main distributary of Ganga River) from where it has debranched and tidal flow has kept it alive for years. Presently the river is lying in a moribund state as Ganga is flowing through Padma River in Bangladesh.

In the deltaic sector of any river, when the terrain is extremely flat, the channels tend to create meanders and sinuosity. We find formation of ox-bow lakes and '*chars*' (small riverine islands) inside the channels as the flow becomes slow and volume of water insufficient. It cannot drag its eroded materials further down. As a result these are deposited there inside its valley. '*Adi Ganga*' being a tidal channel gets its eroded material from the Hughli River. In the past years the silt was less as the flow was good. But later due to changed conditions and anthropogenic interference its deterioration augmented. The effect of tide was noticed even up to a few kilometres inside. We find a road, parallel to '*Adi Ganga*', has been named as '*Ganga-joara road*' (*joar (in Bengali) is tide*) is at a point some fifteen kilometers downstream. But unfortunately this tidal flow now faintly exists there. The upper reach of the river (from where the channel has been originated from Hughli River) is now polluted and this stretch of the channel is showing marked choking and siltation.

A river in the deltaic and flood plain region needs some space on its both sides as its meanders. This may be called a river's *playground*. Hence, the bank dwellers need to leave that space to build their houses. In '*Adi Ganga*' no such space is given to fulfill this action. In an already densely populated urban area, like Kolkata, perhaps the bank strips was the only vacant land where these poor illegal migrants could move in. It is also for the reason that this land is not anyone's private property. As their number increased over time government find them luscious potential voters and hence no one interfered with their occupancy. Due to lack of planning, as these encroachers started their living, the water front soon turned into a drain and the channel lost its free '*playground*' interrupting its natural behaviour.

Apart from the detrimental actions of the bank dwellers government itself has taken the extreme decision to build up metro railway pillars right onto the bed of this paleo-channel. The action evidently has determined the slow sluggish flow of the channel which perhaps could lead it to the ultimate fate of full choke up. Environmentalists feel the construction of 300-odd pillars along the middle of '*Adi Ganga*' to support the Metro Railway viaduct from Tollygunge (about seven/eight kilometres from its place

of origin) to Garia (a point where metro railway has left the bed of 'Adi Ganga') further ruined the channel (Fig.4).

It is the heritage river of this city, a link to the glorious past of Bengali culture and civilization. Even several decades back it was used for transportation of goods. Once it was the connecting waterways with East Bengal (present Bangladesh). The natural behaviour of the river is linked up with the laws of nature. In a deltaic stage of it new land is created and extended by it. The natural processes remain incomplete, interrupted and the land remains immature as people left no space for it to breathe and play. Hence it suffocates and dies a premature death.

B. Human behaviour (conscience) and interaction with the river:

Human behavioural patterns depend on different perspectives that he either inherits or develops through his experiences. The perspectives do not necessarily depend on his education or economic status. Rather conscience of people is found to be interwoven with his socio-cultural background.

Broadly speaking there are two groups of people who are focused on two perspectives – (a) one is on the channel itself dealing with its past - its history and culture (heritage) and (b) the other is looking on its instant or short-term purpose fulfillment and commercial utility.

a) Heritage River perspective:

'Heritage' is an interwoven social, cultural and economic history of mankind of a place or a region with its physical surroundings that is being carried over long years and a river is perhaps the best example that can be cited that serves as a carrier of continuing 'heritage' of its surroundings. 'Adi Ganga', as we find, carries the 'heritage' of its surroundings for centuries.

(i) Citations in past literatures:

History of this polluted dying urban channel dates back to the literary work by *Bipradas Piplai* (1495) in his epic '*Manasamangal*' where he described the journey path of an eminent merchant along 'Adi Ganga' who flows past a number of places on his way. These places are at present prominent localities in the city of Kolkata. The description of *Bipradas Piplai* tallies to a large extent with *Van den Broucke's* map of 1660. *Broucke* in his map has depicted 'Adi Ganga' as a significant channel of Bhagirathi River that used to transport merchandises carried by traders throughout the year. The river was quoted in another epic '*Chandimangal*' by *Mukundaram* in 1575 and also in the epic '*Raymangal kabya*' by *Krishnaram* in the later part of eighteenth century.

(ii) Religious significance:

The channel has a religious significance as is discerned from its name. The name 'Adi Ganga' itself suggests that once the water of Ganga used to flow through its course as '*Bhagirathi River*' (a distributory of Ganga River and in the lower reaches it is known as '*Hughli*'). As '*Adi*' means '*ancient*', probably this was one of the oldest mediaeval paleo-channels of Bhagirathi River.

Location of '*Kali*' temple on the bank of 'Adi Ganga' in Kalighat since the mediaeval age was a sacred place to *Hindus*. Following the common belief that the sacred water of Ganga is flowing through this channel the pilgrims of '*Kali*' (Goddess Kali) temple in Kalighat used to take a sacred bath in the water of 'Adi Ganga' prior to their visit in the temple. Even the place of cremation is located near this temple. The irony of this custom is that even today the polluted water of the channel is considered as '*holy*' by many people.

(iii) Citations in old Maps and Records:

Quite a number of *Maps, Reports* and *Accounts* were prepared by the then eminent cartographers like Rennell, Buchanan, Johnson and others, endorse the fact that '*Adi Ganga*' within the period of fifteenth and seventeenth century was a juvenile stream carrying wind powered commodity vessels by traders and was a major trade route of the region. It was due to several reasons that within a period of five hundred years this economically viable channel silted up. Truly speaking, the trade of lower part of Bengal was mainly carried through Saraswati River and '*Adi Ganga*' and not through the main distributory Bhagirathi.

Water routes of Kolkata apart from that along Hughli River and as intra city routes acted as sewer system for both domestic and industrial purpose. Excess monsoon water passed out from west to east direction following the natural slope of the topography and the city escaped hazardous water logging and street flood. Silted up '*Adi Ganga*' today is causing flood regularly at the time of high tides inundating the busy city roads.

(iv) Significance of Kolkata port and water routes including '*Adi Ganga*' in the past:

Kolkata metropolis as port used to play a major economic role in the whole of eastern India. Economic connections with it along water routes, in the form of trade, were a common practice even before the advent of East India Company in 1848.

Kolkata was trade-linked with Gauhati (Guwahati) in Assam only through river ways. Big boats used to take at least 6 to 7 weeks to reach the destination. As this U-shaped, long, time consuming route was dangerous for navigation during the monsoon months and as the situation demanded to bring commodities more frequently from Barishal in East Bengal (Bangladesh at present) and Sunderban region, Major William Tolly offered the government a proposal to find a short route through '*Adi Ganga*'. At that point of time this channel was totally lying in a moribund condition. He proposed to bear all costs to excavate this channel and revive it to a juvenile trade route from Kolkata to east Bengal and thereafter linking Assam through other channels. He started his mission in 1775 and completed it in 1777.

Prior to this situation '*Adi Ganga*' was entirely a natural channel. Major Tolly not only excavated this river channel but in addition to it he dug out a new straight canal route of about 20 kms long from Garia to Samukpota or Tarda port on the bank of the then juvenile River *Bidyadhari*. This entirely new route along with its previously existing one (from Hastings to Tarda) was named as '*Tolly's Nullah*' (canal).

The viewers of the group who look '*Adi Ganga*' as a heritage river strongly advocated in favour of rejuvenating it. Their opinion is to treat the channel as a part of nature with its free unobstructed flow of water and as a matter of conscience where the esthetic fervour and healthy condition of both could be maintained. Individual endeavour from environmentalist's point of view and some NGOs are taking initiatives to make the concerned people aware and even at times when needed went into the court of justice and law against any adverse decision made by the government.

b) Short-term purpose fulfillment and Commercial utility perspective:

Viewers of this group are both (i) common people and the (ii) respective administration. Here common people are mostly the bank dwellers of '*Adi Ganga*'. Both are responsible for the present unhealthy situation of the channel. Due to these unwanted anthropogenic detrimental activities the channel is silting up at faster rate and is getting more polluted.

(i) Common peoples' perspective:

It is a matter of interest to notice the dichotomy present in the peoples' mindset. It is the same people who are polluting the channel daily by depositing the filth and wastes inside treating it as sewage and turning it into a city's drain are the same persons who are daily cleaning their cooking utensils in the same water and are taking their 'holy' dip in its water at the time of taking bath.

Customarily the people who are attending the last ceremony at the burning *ghat* (river bank steps) at Kalighat are religiously considering it a sacred river (Ganga) and are using the same polluted water. Poverty and level of education cannot justify this dual state of mind.

After every big '*puja*' (worship to God) festival (annual) or after religious rituals (daily) is over at Kalighat temple a huge amount of solid wastes are deposited inside along with the immersion of the decorated idol. Recently government has taken steps to make the people aware of the water free of pollution and also to make them conscious of the sanctity of the channel. Government has displayed sign boards and hoardings on the over bridges of '*Adi Ganga*' at a number of places.

(ii) Government's perspective:

Kolkata grew population-wise and space-wise over years. The average total population along '*Adi Ganga*' is increasing gradually. From 2001 to 2011, the population increased by a rate of 3.86% to reach a number of about 37046 from 36330. The total population of the region is growing paralleling the population growth of Kolkata.

Hughli River being located to the western side of the city the spatial expansion cannot further be progressed towards its left bank. Eastward expansion too has partially been obstructed by the existence of wetlands and crisscrossed creeks and canals. As the metropolis progressed longitudinally peoples' movement within the city became hazardous. Moreover, due to the unplanned nature of the city roads at many places are narrow and fail to suffice the need of easy and smooth transport. Road space covers only 3% in Kolkata which is the sole cause of traffic congestion in the peak hours in a metropolis. Though different modes of transport exist here public transport is operative in the form of bus, tram (street cars) and railways. The railways that cater the people are circular railways and metro railways. Private cars are larger in number and day by day are increasing. Considering the shape of the city metro railways is by far the most effective and popular transport system. Metro railway faces no traffic jam situation as a major portion of its transit is lying underground (from Dum Dum station in the north to Tollygunge station in the south). This also covers the whole of the city longitudinally. Its controversy with the channel '*Adi Ganga*' begins when it comes out from its underground transit at Tollygunge station, a point from where the pillars were constructed on its bed.

'*Adi Ganga*' thus has been degraded over the years with successive administrations turning a blind eye to the assault on what was once a key transport link in the city and large parts of South 24-Parganas. The state government had in 1998 said in a report to the high court of Kolkata that 40,000 people had been living in shanties set up by encroaching on the banks of the channel.

As many as 7,851 illegal structures had been identified along a 15.5-km stretch of the waterway (from Hastings – its source point up to Garia – the left point of the channel), including 90 temples, 69 godowns and 12 cattle sheds.

Environmentalists feel the construction of 300-odd pillars along the middle of '*Adi Ganga*' to support the Metro Railway viaduct from Tollygunge to Garia further ruined the channel.

The green lobby, however, is hopeful that the ancient waterway can be restored if the central and the state government took an 'active interest' in the matter.

Whatever be the views of the lobbies and the environmental activists, to some commuters the present metro railway has made their journey smooth and comfortable even if it is at the cost of a living viable water channel. Hence despite the fact that metro railways has changed the immediate environment and ecology but to the common men it has put a positive impact by offering itself as the busiest transport transit in the city. These prove the ignorance and indifferent attitude of the people of a heritage river. Their conscience does not prick when a lively water channel is gasping to breathe its last breath perhaps. It is not the future but the present gain is counted.

In a study on the behavioural pattern of bank dwellers of 'Adi Ganga' by Das, Dhali and Biswas some observations have revealed. The authors on the basis of their survey found that being attracted by the faster movement accessibility of the metro railways - "*The population density here is increasing rapidly as well as their standard of living.... Due to the construction of metro a greater number of populations have migrated from different states of the country..... The per capita income of the region is rising to the occupational development which is also aiding to the economical up rise of the region.*"

C. Government policy and perspective: :

So far a number of plans and project-schemes have been undertaken by the government that is spanned over a long period of time. The major objective was to *maintain* the channel flow.

These are in brief as follows:

- The *Master Plan of 1925* recommended construction of trunk drains and major drainage facilities in the Tollygunge area as also design and construction of secondary sewerage and drainage facilities within the same area. It proposed construction of 23 drainage systems of which *Tolly's Nullah* was one, along with 18 sewerage zones.
- *The Irrigation and Waterways Department* proposed for excavation by manual labour in the upper reaches but it had two difficulties: firstly, the dry water has to be pumped out over cross dams and secondly, these may create stagnancy of water in the *Nullah* which would encourage in mosquito breeding. So, modern, scientific mechanized dredging all along the clogged canal will be a better option.
- *Central Pollution Control Board* while studying the degradation of the river Ganga pointed out the factors like sewage outfalls, bank side defecation, garbage and carcass dumping, discharge of untreated or inadequately treated industrial effluents, non-biodegradable toxic pollutants, pesticides runoff. Based on this *Ministry of Environment and Forest* in February 1985 declared the model programme for inland water quality enhancement under *Central Ganga Authority* named as - '*Ganga Action Plan*' (GAP).
- *Tolly's Nullah* was included in its fold in Phase II. For abatement of pollution in *Tolly's Nullah* the projects undertaken were- a) Total length of the canal to be desilted was 15.5 km from *Tolly's Nullah* and 3 km from Chetla boat canal. b) Total length of sewer to be laid is 11 km. c) 8 more lifting stations were proposed. d) It also included solid waste management in the area through onsite storage, collection and disposal. But these attempts failed miserably.
- The *Kolkata Municipality Development Authority (KMDA)*, the nodal authority of GAP in West Bengal has drawn up a development scheme under the Center's Ganga Action Plan. Main objectives of the scheme are implementing scientific,

innovative technological plans, taking up preventive actions, creating public awareness, participation and concentrating on operational maintenance aspect. It excavated the canal to desired level to cope with the increased drainage discharge into the canal due to rapid urbanization of the adjoining areas and also took up construction of bridges, lining of embankments.

- In 1990s the *project CUDP-III* was completed with the funds (about 19.9 crore was allocated) provided by CMDA.
- With the help of *Asian Development Bank, KEIP* and *KMSWA* tried to implement few developmental schemes for the stretch with the allocated fund of Rs. 117.276 crore, which did not work out as planned.
- *National River Conservation Directorate* approved Rs. 29 crore and the State government also allotted Rs.6 crore more for revitalizing the *Tolly's Nullah* in 1996. The Calcutta High Court ordered to complete the work within eighteen months but it never materialized. Dredging and silt clearing was done at times but was restricted to the upper reaches.
- *Institute of Environment Studies and Wetland Management (IESWM)* has been asked to explore the possibility of restoring Garia-Kamalgaji length of '*Adi Ganga*' under the National River Conservation Project and connect it with *Tolly's Nullah*.
- *Calcutta Environmental Management Strategy Action Plan (CEMSAP)* undertook the latest plan in 1997, which is a joint collaboration between State governments' Environment Department and a British agency. It conducted a survey and gave suggestions like merging the canal with Bidyadhari-Piyali river system, constructing lock gates. It recommended constructing a circular canal by further extending the canal from Samukpota for 11 km to join it with Bhangore canal. This can become a new attraction for the tourists and also help in navigation.
- In 2000, the *Urban Development* department of West Bengal government also emphasized the need of rejuvenating the canal by mechanized and manual dredging.
- Under *City Environment Plan* Phase I and II, from 2003-25 a huge amount has been allotted for drainage, sewage and sanitation of the area.
- *Calcutta Port Trust, State Irrigation Department and K.M.C.* together have chalked out a blueprint of Rs. 50 crore project for rejuvenation and beautification of the *Tolly's Nullah* and Chetla Boat Canal. The scheme will be a part of '*Mission Clean Ganga 2020*'.

But the crores spent on excavation and de-siltation the canal has literally gone down the drain. Because of silt deposition in *Tolly's Nullah* backflow of water through sewers during high tides in areas where either the lock gates are kept open or there are no such gates suffer from temporary water logging.

Litigations/Acts/protests against government's policies:

Some noteworthy litigations are cited and discussed here that were being filed in the court of law either by individuals or by NGOs. Some bloggers in their respective websites also protested against the actions of the government particularly at the time of metro railway construction.

➤ High court judgement based on five documents (Acts of five Departments) by one individual social worker and environment activist Shri. Subhas Dutta versus Union of India and others on 16th April, 2001. Where it is described as Public Interest Litigation asking to restrain from extending it on the project of construction of Metro Rail through the river bed of '*Adi Ganga*'.

The Acts based on are –

- a) The Environment (Protection) Act, 1986

- b) Section 11 in The Railways Act, 1989
- c) The Railways Act, 1989
- d) The Judges (Protection) Act, 1985
- e) The Forest (Conservation) Act, 1980

a) The Environment (Protection) Act, 1986:

This Act extends to the whole of India. Here ‘*environment*’ covers water, air land and its interrelationship with human beings and all other living beings. ‘*environmental pollutant*’ means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment. As per this Act, Metro Railways and the bank dwellers have violated it by causing serious pollution in the channel water.

b) Section 11 in The Railways Act, 1989:

“Power of railway administrations to execute all necessary works.—Notwithstanding anything contained in any other law for the time being in force, but subject to the provisions of this Act and the provisions of any law for the acquisition of land for a public purpose or for companies..... “

“....a railway administration may, for the purposes of constructing or maintaining a railway— make or construct in or upon, across, under or over any lands, or any streets, hills, valleys, roads, railway, tramways, or any rivers, canals, brooks, streams or other waters, embankments, aqueducts, roads,wells, tube wells, dams, river training and protection works as it thinks proper....”

On the basis of this Act of 1989, Metro Railways has taken the privilege to construct piers on the river bed.

c) The Railways Act, 1989:

This is a Central Government Act clarifications of the different terms used and functions of the authority have been stated.

d) The Judges (Protection) Act, 1985:

In this Act, ‘Judge’ means not only every person who is officially designated as Judge, but also every person who is empowered by law.

e) The Forest (Conservation) Act, 1980:

In this Act – ‘*Restriction on the de-reservation of forests or use of forest land for non-forest purpose*’ has been clarified. It also states that ‘*.....any purpose other than re-forestation, but does not include any work relating or ancillary to conservation, development and management of forests and wild-life, namely, the establishment of check-postsand construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes.*’

An appeal was made to *National Green Tribunal*. —‘*Any person aggrieved, by an order or decision of the State Government or other authority made under section 2, on or after the commencement of the National Green Tribunal Act, 2010, may file an appeal to the National Green Tribunal established under section 3 of the National Green Tribunal Act, 2010, in accordance with the provisions of that Act.*’

➤ *National Green Tribunal Act, 2010 (NGT)* is an Act of the Parliament of India which enables creation of a special tribunal to handle the expeditious disposal of the cases pertaining to environmental issues. It draws inspiration from the India's constitutional provision of *Article 21*, which assures the citizens of India the right to a healthy environment.

➤ *National Green Tribunal, Eastern Zone Branch* (December, 2015) – Advocate applicants versus W.B. Pollution Control Board and others. Order was issued pointing out clearly that “*there are illegal activities going on which are polluting the*

river 'Adi Ganga' and obstructing the flow of water." Factors identified as follows - illegal hotels, solid waste dumps, permission from I&WW (Inland Water Ways Department), construction of metro railway piers in the bed of the river etc. The court ordered the Pollution Board to take efforts to clear out the matters immediately.

➤ *National Green Tribunal* (October, 2015) directed the state authorities to remove all shanties, cattle sheds and other unauthorised structures from the banks of the Adi Ganga between Hastings and Alipore within two weeks. "The tribunal, through this order, is also asking the Calcutta Municipal Corporation to take immediate steps to stop the discharge of untreated drain water, human waste falling to Adi Ganga and file a compliance report within four weeks." The tribunal asked the city police commissioner to "provide all sorts of assistance" to the state authorities and the CMC during the drive to remove the shanties and sheds.

Conclusion:

Kolkata metropolis is developing and will continue to develop but not at the cost of a natural resource like a flowing river. A flowing river has a great impact on human life. It is not the water itself but the biological lives it sustains, the economy that floats and moves, the ecology that balances the nature, the culture that pivots around or the society that grows and enriches from it.

If people are responsible for the detrimental acts it becomes the responsibility of the people only to rectify it. Metro construction could have been averted by constructing the pillars not inside the water but on its adjacent land. If at present this work is not possible the course of 'Adi Ganga' can be re-excavated for a free flow of water. This work can be done in a planned long-term basis if the bank dwellers can be evacuated and be re-settled elsewhere.

Peoples' conscience needs to work together and they have to abide by the laws of natural science. Government's policy is needed to protect the society on a long term perspective without doing any harm that the society has to carry through.

Development is desirable but not at the cost of turning a flowing water to a moribund state. Human conscience and effort could bring out the priority.

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