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Riverfront Development Projects: The Potential Outcomes

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ASCON NADI Conversations Series-2
River Front Development Projects: The Potential Outcomes
Panellists
Dr. Prem Singh Rana
Chairman, Board of Governors, Construction Industry Development Council (CIDC), India.
Professor C. R Babu
Distinguished Professor of the Environment and Ecology at the School of Human Ecology, Ambedkar University, New Delhi
Many major cities of the world have mostly been developed along rivers. Riverfront Development Projects world wide have provided a major impetus to the economic and cultural life of these cities. However sustainability and maintaining ecological integrity while undertaking such development requires delicate balance in design.
This conversation will bring in experts from the fields of engineering , urban development and conservation to discuss some of the river front development projects in India , highlighting both their potential as well as the challenges they pose.
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Key Takeaways

- Any Riverfront development activity must take into account the cognizance of ecological sensitivity of river ecosystems.
- One of the best buffers for these projects can be the biodiversity parks and also botanical gardens.
- It is possible to have sewer-less cities. We are polluting the water bodies both through use and neglect. If we were to create a system where we could treat water at the point of pollution itself or as to close to the point of pollution as possible, we might be able to take a step forward in the right direction.
- India is only 32% urbanized and 68% is still rural. Our megacities are not sustainable. The future urbanization of the country should be in such a way that while 10% would remain in the village as that is where agriculture flourishes 90% of the people would have to come to the cities
- Urban forest can also become a part of the infrastructure development. Definition of urban infrastructure may well be anything and everything required for the city to sustain life and efficient functioning
- The proposal is to develop two large water bodies one upstream and one downstream of every major city so that the water can be stored and totally protect the river flowing within the confines of the city. Water can be taken from the upstream source as and when required while maintaining the micro water equilibrium and the water can then be discharged into the lake downstream after proper treatment
- Planned urbanization with rural ambience then there would be no degrading but upgrading of the total environment. Such planning would also be cost effective and least energy consuming with ample ecological balancing.
- No natural drainage system should be ever disturbed. Reservoirs have to be created in the plains which would provide water to different catchment areas

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Background

Riverfront is the land or property along a river or rivers. These are essentially projects that seek to alter the ecological and social scape of the river transforming them into an urban commercial space rather than protecting the natural, social and cultural landscape. Many of the ongoing river development projects lay emphasis on beautification of the rivers whereas riverfronts are treated as extensions of urban spaces which can be transformed into vibrant, throbbing and breathing spaces by prospective designers.

Historically, transporting goods by boat was the most expedient way of trading commodities. As a result, the riverfront was monopolized by warehouses where goods were stored awaiting riparian transportation. Eventually as trade and industry grew many factories were set up near the rivers, so as to be able to use the natural resource to facilitate production as well as to dispose waste and effluents directly into the water. Harmful chemicals got introduced into the waterways as a consequence and large bodies of water were polluted this way thereby contributing largely to the pollution menace in cities.

Traveling overland using animals and carts on tracks had been the norm before the advent of the combustion engine and the materials used to construct permanent roads. As road construction gathered speed, the need for boats and frigates to transport goods declined rapidly.

Riverfront Development Projects have both merits and demerits. Providing urban spaces for the growing population and subsequent development of the region is one point. But as a result, these rivers have narrowed far more than their actual breadth thus reducing the volume of water that they carry. Binding the rivers into narrowed concrete channels have effectively affected their flow

pattern that has impacted their flooding capacity and their aquatic life. Concrete in the riverbed also cuts off source of water in the river. Citing this as a probable negative outcome, many such projects seek to connect these rivers with the nearby waterways and canals so to avoid them from drying up.

Ecosystem stability is an important aspect of sustainability. Over time, the structure and function of a healthy riverine ecosystem should remain relatively stable, even in the face of adversity. If detrimental circumstances do alter the riverine ecosystem, it should be supported in a manner so that it can be put back on the path of recovery.

The purpose of this conversation would be to understand the pros and cons of riverfront development and how has it affected the natural ecology of the river. By understanding the debate between conservation and urbanization it will give us an opportunity to explore the methods and means to urbanize and conserve the environment at the same time.

Conversation Agenda

- 6:30- 6:40 PM: Opening Remarks
- 6:40 - 7:00 PM: Professor C. R Babu, Distinguished Professor of the Environment and Ecology at the School of Human Ecology, Ambedkar University, New Delhi
- 7:00-7:20 PM: Mr. Prem Singh Rana, Chairman, Board of Governors, Construction Industry Development Council (CIDC), India.
- 7:20-7:30 PM: Questions and Answers

Conversation Proceedings

Professor C. R Babu, Distinguished Professor of the Environment and Ecology at the School of Human Ecology, Ambedkar University, New Delhi

- Rivers are complex gross landforms that drain earth's surplus water and discharge into oceans/lakes and form an important component of hydrological cycle that regulates the climate and weather patterns.
- Any developmental activity that disrupts the ecological integrity makes the river systems unsustainable.

- Riverfront is an upland located at some distance from embankment/floodplain of the river.
- Changes in the river systems have also been contributed to climate change
- During their course across the landmass, rivers give rise to a wide range of landforms that support rich biodiversity and generate a wide range of ecological services.
- The river-systems have many components with living organisms interacting with each other thereby forming different ecosystems.
- Riverfront development has different implications for various agencies for example real estate developers, tourist promoters, urban planners and industrialists.
- Humans have been altering the ecology of riverscapes to such an extent that the river systems have become miniscule leading to extinction of diverse flora and fauna and resulting in ecological disasters.
- In India in the name of riverfront development the rivers are made to flow between two RCC walls and all the flood plains are used for development of commercial spaces
- One of the worst examples of riverfront development is Vrindavan where the entire flood-plain is used for human settlements and some of the large complexes are located near the channel. Raw sewage is continuously being discharged in the upstream of bathing ghats while the ghats themselves receives sewage and solid waste material thereby rendering the ecosystem nearly dead.
- The DDA's river front project is aimed at rejuvenating and restoring the degraded and polluted urban 22-24 km stretch of the river Yamuna. The project does not promote any construction activity but essentially centres around restoration of the floodplain wetlands, marshes grasslands and forest communities. Creating people- friendly walking trails and other recreational zones for connecting the people and city to the river is also an integral part of the project.
- Restricted constructional activity is permitted outside the bund roads which serves as embankment of the river. Development of greenways along the embankments has also been proposed
- This can be achieved by developing a buffer zone between riverfront and the river system zone. These zones would provide the ecological integrity and allow the sustainability of both the systems.

- The best buffer zones are the Biodiversity Parks. They are unique landscapes/ riverscapes of wilderness that harbour natural heritage and provide much needed ecological integrity that contribute to the environmental sustainability of riverfront zone and river system zone.
- In fact, NGT ordered to establish Biodiversity Parks along the floodplains of rivers as a part of rejuvenation of rivers many states and National Mission on Clean Ganga also initiated establishment of Biodiversity Parks along the rivers.
- The need of the day is the active rejuvenation and restoration of riverine systems passing through urban centres. This can be effectively achieved through the establishment

Mr. Prem Singh Rana, Chairman, Board of Governors, Construction Industry Development Council (CIDC), India.

- We do need to protect our rivers and conserve the entire water ecosystem
- Micro-water equilibrium has to be maintained. From a village on to larger settlements including urban ones, it has been across the board process
- In earlier times the settlements were on higher grounds so the problem of drainage was greatly reduced. But when the settlements started growing right into the valleys the real problem began with the encroachment of the flood plains, the river beds and the drainage plains
- Ironically the river fronts and the rivers had to be tamed to protect development. This is how the concept of riverfront development came into existence
- Every major city that has flourished on the banks of a major river has controlled the river as is best suited to fulfill the parameters of development
- Taking the case of Delhi which is on the banks of a seasonal river Yamuna, it does not flow from end to end. Maximum volume of water flows only during the monsoons
- Only 22 kms of the stretch of Yamuna of a total of 1370 kms contributes 80% of the pollution
- There are two rivers Yamuna and Hindon which flow through and close to Delhi. So a thought was put into practice to develop some upstream lakes so as to be able to regulate the flow of water within the city limits and create a lake downstream so as to be able to regulate the ecosystem

- The thought when translated into actuals suggested that 3 reservoirs would be created in North of Delhi, North of Ghaziabad and then between Faridabad and Greater Noida.
- These would be a large reservoir that would store water during the monsoons and regulate the water levels otherwise also while the excess water is channelized into another reservoir situated in the North of Ghaziabad so that a bypass is also developed.
- The thought was that through this combination the flows could be effectively controlled while making the reservoir resources available thereby making way for the development of perpetual or perennial water bodies would recharge the entire area.
- A major thought behind this was to prevent any form of misuse of the 20kms of the river while allowing the vibrant ecosystem to flourish and convert it into a recreational area
- Now the question is about the kind of cities that there should be The idea was that 70% of the said population would be in the core cities while the remaining 20% would live in the suburbs
- The major considerations here would be about the size of these cities when the population of a city goes beyond 2-3 lakhs then the cost of living and the cost of maintaining shoots up.
- The ideal city size is one with a population of 2-3 lakhs. With increasing numbers, the real estate and land prices also rise simultaneously
- The urban planning concepts have been misused. The basic concept was to facilitate the supply of service land in a planned and coordinated manner at affectionate prices. But what happened instead we controlled the supply of service land for non- agricultural uses and created artificial scarcity and speculations
- If a network of cities with a population of 2-3 lakhs is created with rivers and railways as the main spine then the land prices would be affordable
- The purpose of a city is to create an aggregate for viable economic activity
- The need for integrated regional development through economic and infrastructure promotion is very important
- Key urban infrastructure requirement for a smart and efficient area are:
    - Transportation, water management, power supply, communication and effective waste management
    - Use of existing rail corridors efficiently will also help the cause

    - Not only the cities but the neighbourhood areas should also be self-sustained with each having its own water bodies which discharge only the treated water into the public consumption system
- Revival and improvement are two very important factors as was seen in the case of the river Sabarmati which had turned into a drain but post revival the scene is so different
- The district should be considered as a real viable unit where the integration of urban rural water and transport is efficiently maintained
- Though rural land expansion has not happened it us the urban land share which has grown exponentially. In India 51% of the land is under cultivation
- If we preserve 2% of the surface area as wetland or perpetual water bodies in the appropriate location and 5% in the urban areas then we can manage the ecosystem in a manner that we would not need high cost technologies. It just needs proper planning and execution


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