National Waterways in Odisha: a new wave of Ecological Destruction

On 5th May 2015, the Central Government introduced the National Waterways Bill in the Parliament. The main purpose of the Bill is to declare 101 stretches of rivers in the country as National Waterways. Considering that till date, we have had only five "National" waterways, each being declared so under its own special Act of Parliament, the intention to go for 101 new waterways indicates a hugely ambitious program. Not only will new waterways be promoted, but there are also plans to hugely expand the five existing national waterways. One of the existing waterways, National Waterway No. 5 (NWW5) will also affect the Mahanadi basin, whereas one of the proposed waterways NWW60, is essentially along the Mahanadi river, extending from Paradip in the delta all the way the Sambalpur barrage.

National Waterways

River and canals have been used for transport and navigation since time immemorial in the country. At times, the Government has also undertaken systematic development of these. In the Constitution, inland waterways figure in all three lists – State, Concurrent and Central lists - of the Seventh Schedule. By default it is the responsibility and power of the state government to develop and regulate inland waterways. But as per Entry 24 of the List 1 of the Constitution, the Central Government has powers related to " Shipping and navigation on inland waterways, declared by Parliament by law to be national waterways, as regards mechanically propelled vessels; the rule of the road on such waterways.". Thus, the Parliament has to explicitly declare a waterway as "national" following which its development – as regards mechanically propelled vessels – comes under the purview of the central government.

The first such waterway to be declared "National" was the Allahabad to Haldia stretch of the Ganga – Bhagirathi-Hoogly, in 1986. NWW2 – along the Brahmaputra was declared in 1988, the West Coast Canal was declared NWW3 in 1993, and in 2008, the East Coast Canal integrated with Brahmani river and Mahanadi delta rivers (588 km) was declared NWW5. In the same year - Kakinada- Puducherry canals along with Godavari and Krishna rivers (1078 km) was declared NWW4. Yet, only the first three have seen some development. [1]

Bigger Plans

However, the scope of the plans is much beyond these 106 NWW (5 earlier ones and 101 new ones). First, there is a plan to link many of the national waterways to each other, to roads and railways and to major ports. This scheme is being called the Integrated National Waterways Transportation Grid. [2]

Second, the government has initiated two equally ambitious projects of Dedicated (Rail) Freight Corridors. There are plans to connect the NWWs with these freight corridors.

National Waterways in Odisha

The National Waterway Number 5 (NWW5) starts from Geonkhali near Haldia port in the estuary of Hooghly river of West Bengal. It passes through Hijli Tidal Canal till Rasulpur river in West Bengal. From Rasulpur river to Charbatia in Odisha it passes through the Odisha Coast Canal. Both these canals (Hijli Tidal Canal and Odisha Coast Canal) together are known as the East Coast Canal. The construction works of the canal started during 1880-81 and the canal was fully opened for traffic during 1888. However after development of rail and road transport the use of this waterway was reduced. NWW5 will recondition – desilt, deepen – the stretch of East coast canal from Geonkhali to Charbatia. From Charbatia this waterway will go through the Matai River which meets River Dhamra near port Dhamra in the Brahmani river delta system. From Dhamra port to Paradip port the waterway goes through Brahmani River till Mangalgadi. [3] From Mangalgadi it will go through Hansua, Karnasi and Mahanadi Rivers along the coastline of Bay of Bengal, through Hatamundai reserved forest area and onward to Paradip. From Mangalgadi the Waterway goes inland all the way to Talcher through river Brahmani. There will be seven terminals on this water way. The map below shows the route of the NWW5.

Figure 1: Map showing National Waterway no. 5 [4]

In addition to NWW5 there will be a National Waterway Number 60 which will start from Paradip port on the coast and go up to the Sambalpur barrage along the Mahanadi river. This waterway will be 425 km long. This NWW60 will be connected with the NWW5 through Paradip. The satellite image below shows the two waterways, NWW5 and NWW60 together. (Line in blue shows alternative route proposed).

Figure 2: Google image showing National Waterway no.5 and 60.

At the moment, work has not begun on the NWW60. However, work has begun on the NWW5, with the Inland Waterways Authority of India preparing a prefeasibility report, and approaching the Ministry of Environment, Forest and Climate Change (MoEFCC) for conducting Environment Impact Assessment for the stretch between Pankapal/ Jokadia to Dhamra-Paradip. Subsequent TOR has been sanctioned by MoEFCC on 12th Jan 2015.

Impacts of the Waterways

The waterways will involve huge interference in the sensitive ecosystems of the delta as well as the Mahanadi and Brahmani rivers. There will be activities like widening and deepening of canals and rivers, large scale dredging, construction of barrages, landing sites, locks and gates etc. All these will have many impacts on the local ecosystem, livelihoods and communities. The operation of the waterways will also have its own impacts.

Barrages to maintain water level

The stretch between Talcher to Mangalgadi is 237 km long and goes through river Brahmani. From Talcher to Jokadia there is a need to maintain water level of 2 meters for easy transport of loaded ship containers through waterway. In this stretch the riverbed is shallow and it will need barrages to maintain the required water level for navigation. According to prefeasibility report of the Brahmani stretch of waterway NWW5, there will be five barrages between Talcher to Jokadia River stretch of Brahmani, at Renthapat, Indrajit, Gobindapur, Bartanda and Matila. Barrages will have impacts on the river ecology, the fishing and on the riverbed cultivation.

Dredging and Impacts on ecosystem and fishermen

To maintain the water depth throughout the waterways there will be need of dredging the riverbed, the creeks and estuaries. Dredging will be of two types. The first is the Capital dredging which is undertaken during the construction phase to deepen the river channels. This

would include removal of hard earth at bottom of the riverbeds. The second type of dredging will be maintenance dredging which involves regular removal of silt and sediments which get accumulated in the navigational path throughout the year. According to the prefeasibility report for the development of this waterway, there will be dredging between 54.83 to 72.83 million cubic meter (MCM) earth in the Dhamra to Geonkhali depending on final selection of design.

Dredging can have many adverse impacts on local ecosystem, including fish. Due to dredging there will be increase in turbidity of water which will affect aquatic fauna and fisheries. Likely dumping of dredged out material in mangrove belt areas will impact the mangroves. Dredging activities at ports and creeks and inland sea channels are known to have resulted in salinity intrusion (Kudale, 2010). Such an impact is also likely in the Mahanadi delta and other parts of the NWW5. The increase in salinity could have adverse and irreversible effect on brackish water ecosystem of estuaries and mangroves. This will also have serious impacts on the livelihoods of the people.

Figure 3: River Khairnasi going through mangrove forest of Hatamundai. The National waterway no 5 will be going through this river by widening of the river stretch and increasing depth through dredging. Both these activities will affect mangroves and aquatic ecosystem in river and surrounding areas.

Denial of Access to Fishermen

This waterway goes through a very fragile ecosystem which has second largest mangrove forest after Sundarban in India. The flora and fauna of region is mainly dominated by mangrove forest. There are Kalibhanj Dian, Bhitarkanika and Hatamundai Reserved forest with four protected areas with dominance of mangrove forest. In Hatamundai forest area this waterway will go through Kharnasi River. The same river is used by nearly 700 fishing boats from Paradip, Ramnagar, Kharnasi, Thubi, San Thubi, Jambu Dweep and Sundaripal villages to venture into sea near mouth of Gorbri, Hansua and Kharnasi River (See map below). This area is known for good fish catch due fish population in the mouth region of rivers. Once the Kharnasi river is converted to a waterway, it is likely that the fisher people will not be able to use it for venturing into the sea and going to their fishing areas. Fishermen in this region are already facing closure of fishing during the nesting period of Olive Ridley turtles.

In fact, even the Kharnasi river itself is used by fisher people for fishing and once it is converted into a part of the waterway, this fishing is likely to be severely affected. This is because they catch fish by dangling and suspending their nets in the river across the water, and the vessels would certainly drag and tear away their nets.

Figure 4: Local fisherman preparing Byad Jaal (side net) for catching fishes on the bank of River Kharinasi. This fishing activity will be stopped after construction of National waterway no 5.

Figure 5: Google Earth image showing Mahanadi and Brahmani delta with fishing villages (indicated by numbers) with Kharnasi, Gobri and Hansua river (rivers in red), the Waterway along the coast (in blue, overlapping with Kharnasi river) and waterway in Mahanadi (in green). Highlighted area is the fishing area.

Risks from Transported Goods

This waterway will be used mainly for transportation of minerals like coal and iron ore from the mineral rich areas to Dhamra and Paradip ports. According to the executive summary of DPR for Development of Inland Waterway No. 5, by 2034 the main goods transported on this waterway will be coal, accounting for 20 million tons per annum, out of total cargo of 23.4 million tons per year. This will create the risk of coal dust pollution due to coal handling at terminals and uncovered coal transport through waterways which will pass through one of the most eco-sensitive areas. Already, many ports in India handling coal are impacted with severe coal dust pollution and some have even been asked to shut down coal handling, like the Mumbai port.

Another danger is from accidental spill of coal and other cargo. Last year, in October 2015 a vessel with coal cargo capsized in the Sundarban in Bangladesh. Several such incidents have highlighted the risks to flora, fauna, ecology and fish from the transport of such goods in the waterways. These accidents will unfortunately impact the local communities the most.

As one can see, there are likely to be very serious impacts of the waterways in the sensitive Mahanadi-Brahmani river and delta regions. Given the experience of EIA process in the country, it is unlikely that impacts of these waterways will be captured in their full seriousness. In fact, the whole exercise is proceeding with an assumption that waterway is necessarily a good project. However, there are serious questions about whether it would indeed have sufficient economic advantages to offset the many impacts. [5]

People not taken into confidence

What is equally serious is that such a major intervention as the waterways – that will affect lakhs of people and their livelihoods, is being carried out without informing the people, let alone their participation. In a field visit by Manthan to this area, it was found that the local people had no idea that such a project was being planned. It is not in larger public interest that such a huge intervention be pushed without involving the people and without their informed participation and consent.

Conclusion

Massive interventions are being proposed in Odisha in the Mahanadi and Brahmani basins and the deltas though the expansion of the National Waterway 5 and the creation of the new National Waterway 60. These are likely to have severe impacts on the ecology, livelihoods and communities of this entire area, which is highly sensitive at the same time which provides livelihoods to lakhs of people. The EIA processes do not inspire much confidence and it is not clear if the economic benefits will outweigh the many costs.

We would suggest that this unilateral push to go ahead with the waterways must be put on hold. A full and comprehensive exercise of assessing the desirability of the waterways, along with their impacts must be carried out with the full involvement of the people and civil society before taking a final decision on the waterways.

Jinda Sandbhor and Shripad Dharmadhikary
Manthan Adhyayan Kendra
www.manthan-india.org

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Footnotes

[1] Press Note of Shipping Ministry, 31 July 2015

[2] http://iwai.gov.in/showfile.php?lid=820

[3] As per the feasibility report titled Development of stretch Pankapal/Jokadia to Dhamra and Paradip of National Waterway no. 5 in the State of Odisha, there was an earlier proposal to take the Mangalgadi- Paradip IWT route through rivers Hansua, Babar, Nuna, Gobri, Ramchandi Galia, Kharnasi and Mahanadi. But, this “was not suitable for safe navigation of the vessels of economical size due to the existence of number of cross structure, river bends, shallow and narrow waterways etc. Hence it was decided to inspect and survey an alternative route running along Hansua, Karnasi and Mahanadi rivers and through the bay along the coastline near Jambu Dweep.” It is this route that has been finalized now.

[4] Website of Inland waterway Authority of India. Retrieved from, http://iwai.nic.in/WriteReadData/l892s/image2-64882188.jpg

[5] See http://indiatogether.org/losing-our-rivers-to-grand-plans-economy for some more details