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Analyzing Requirements for Environmental Protection of The Halda River in Bangladesh

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Introduction

Halda is a resourceful river with additional distinctive values. The Halda River of Bangladesh has immense importance, as it is the only natural spawning ground from where fertilized eggs of carps are collected by the local people. This river is one of the effectors of the economic development of the Chattogram region as well as the whole country by becoming the means of production and services such as drinking water supply, fish production, transportation, etc. For the ecosystem services produced by Halda, the government has considered announcing this river as an Ecologically Critical Area (ECA) for its conservation purpose. Bangladesh is a signatory to the Ramsar Convention (1971) and the World Heritage Convention (1972), which are the principal instruments for ensuring the conservation of natural heritages worldwide. The Government of Bangladesh has declared a 40 km area of the river as a sanctuary and Bangabandhu Fisheries Heritage. PKSF has been implementing a project titled "Promoting Agricultural Commercialization and Enterprises (PACE)" with the financial assistance of the International Fund for Agricultural Development since 2015. Under the PACE project, a value chain sub-project titled "Conservation and development of natural fish breeding ground in Halda river" has been implemented since 2016. The project has established the 'Halda River Research Laboratory' at the University of Chittagong. Subsequently, few notable initiatives of this project have been taken for the alternative livelihood options for egg collectors and tobacco farmers, adopted advanced technologies for crap egg and fry management. To improve the environment of the Halda River several government initiatives have been taken. This research document has identified the gaps in the existing policies, protocols, and guidelines of different sectors. To take necessary steps for conserving the breeding ground the study paper has suggested several recommendations in consulting with the local people, researchers, and government administrative bodies. This policy paper will help the policymakers to adopt integrated strategies to ensure better management of Halda for its restoration and conservation without compromising the expectations of the local people and related public authorities.

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Overview of the research or problem

Several appreciable studies have been conducted to estimate the direct (tangible) and indirect (intangible) value derived from Halda with focusing on some environmental problems. According to the study report of 'Water Quality Assessment Along With Pollution Sources of the Halda River' reveals that Halda River is being polluted due to industrial waste (53%), sewage contamination (20%), tobacco farming (13%), rubber dam (8%), and sand extraction (6%). Moreover, poultry farms adjacent to the river are contributing to the pollution. Recently, deforestation, blockage of Halda river sources, development of mango garden instead of natural forest at the Halda source, water withdrawal for different purposes have become major problems that need to be addressed with high priority. Along with these issues, no significant research has been found to know about people's perception and institutional responsibilities towards the integrated approach of Halda River conservation.

- ***Reviewed Policy Papers***
- ***Interview/field visit/KII***
- ***Interview with govt. non-govt. officials, policy makers, researchers***
- ***Direct indirect egg collectors, fry collectors, tobacco farmers, dam users***
- ***Halda River management committee and different government departments***

Objective of the study

The aim of this study is to evaluate the perception of the Halda related people and the existing management practices by relevant stakeholders to make all the initiatives sustainable. Palli Karma-Sohayak Foundation (PKSF) has taken the initiative to prepare a policy paper reviewing existing policies relating to Halda River and Halda river bank people's perception to identify significant problems in conserving the ecosystem of the Halda.

Methodology

The paper made policy recommendations by analyzing an assortment of qualitative and quantitative data from both primary and secondary sources. The primary data was collected through field visits, face-to-face and telephone interviews with various stakeholders and key informants including Halda-dependent communities, researchers, and relevant professionals from government and non-government institutions. A total of 132 people from the communities on the banks of the Halda River in different upstream and downstream areas of Manikchari, Fatickchari, Hathazari, and Raozan Upazilas were purposively selected for interviewing. Secondary information was

- ***Polluted due to Industrial waste (53%)***
- ***Sewage contamination (20%)***
- ***Tobacco farming (13%)***
- ***Rubber dam (8%)***
- ***Sand extraction (6%)***
- ***Poultry farming adjacent on the river bank***
- ***Water withdraw for different purposes***
- ***Destruction of natural forest***

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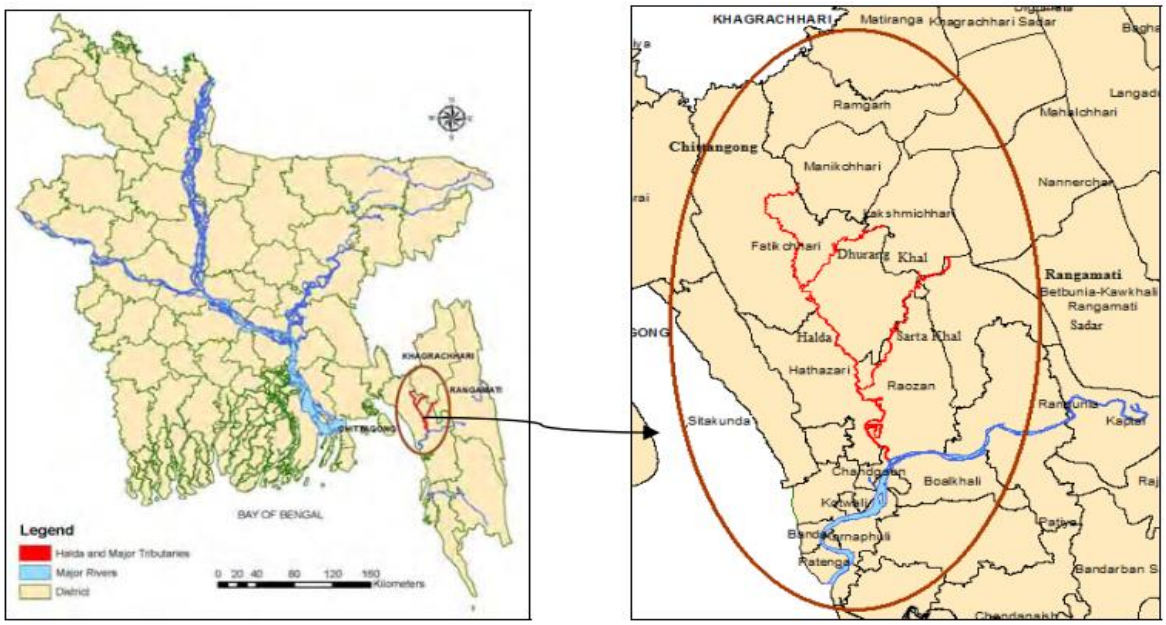
obtained from published journal articles, policy documents, and newspaper reports.

Study area

This policy report has been written based on visits to surrounding areas of Halda River.



Major findings

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Egg collection trend from 2001 to 2021

Highest 47,700 kg of eggs were collected by the egg collectors in 2001. Up to 2004 there was a sharp decrease in the amount which had increased after 2005. But up to 2014 the trend was fluctuating following both increase and decrease. Again, in the year 2015 there was a sharp decrease in the amount of eggs compared to the previous year and in 2020 the amount of collected eggs (25,536 kg) was the highest compared to previous 13 years. Again the amount has dropped in 2021 from 25,536 kg to 8,580 kg due to salinity intrusion.

Fry production trend from 2001 to 2021

Highest 795 kg of fries were produced from the eggs in 2001. Up to 2004 there was a sharp decrease in the amount which had increased after 2005. But up to 2014 the trend was fluctuating following both increase and decrease. Again, in the year 2015 there was a sharp decrease in the amount of fries compared to the previous year and in 2020 the amount of fries (393.74 kg) was the highest compared to previous 13 years. Again, the amount has dropped in 2021 from 393.73 kg to 105.73 kg due to salinity intrusion.

Problems of Halda River identified by the Halda River management administrative bodies

According to 73% of the respondents, pollution from different sources is the most detrimental problem in Halda nowadays. Besides, dredging and brood fish hunting were identified as problems by 64% of the respondents. Illegal fish catching with net and establishment of rubber dam has been mentioned by 55% of the respondents individually as current problems in Halda. Another 45% believed that a lack of awareness, and 36% opined that engine boats are acting as the reasons for problems in Halda. Not only these issues but also the establishment of the sluice gate, siltation problem, and cutting of oxbow bend were mentioned by 27% of respondents that are acting as the reasons of problems in Halda. Moreover, 18% of the interviewee opined that salinity intrusion, lack of scientific information, and lack of water in the upstream during the dry season are also causes of creating problems for the Halda River. Besides these, some other issues have come out from 9% of the interviewees i.e. dolphin hunting, construction of brickfield, the poor management system of sluice gates, riverbank erosion, lack of coordination, and logistic supports from the administration, the designing project without root cause analysis, etc.

- ***26 out of 76 species of fishes are no longer found in the natural breeding ground***
- ***Highest 47,700 kg of eggs collected in 2001, however, 8,580 kg of eggs collected in 2021***
- ***Highest 795 kg of fries produced in 2001, however, 105.73 kg of fries collected in 2021***
- ***54% of the respondents opined that the amount of dolphins has decreased***

Causes:

- ***Water pollution, killing of brood fish***
- ***Cutting of oxbow bend and less water flow***
- ***Industrial pollution and tobacco cultivation***
- ***Residential wastes and industrial wastes of the northern side of Oxygen to Kulgaon were dumped into the Karnaphuli River by the local Bamanshahi canal***
- ***The wastes of nearby poultry farms are being dumped in the riverside areas.***

Challenges

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PKSF supported value chain sub-project has made a remarkable change in the adjacent community of the Halda River. The activities of this project have been instrumental in the recent success of increasing the spawning trend of fishes. The efforts of PKSF, active participation of local administration, government, and non-government actors assist remarkably in improving the environment and increasing productivity in natural fish breeding of the Halda River. The natural environment of Halda has improved tremendously in recent times. However, there are still some challenges. In the upstream region still, there are Rubber dams and concrete dams. In addition to this, 18 sluice gates in 19 branch canals. Still, there are practices of illegal brood fishing and dolphin hunting. Besides, continuous cutting of river bends, lack of effluent treatment plant (ETP) in nearby factories, unplanned development project implementation centering Halda, and other issues are challenging for Halda's development initiatives.

Recommendations

(i) Avoid setting up various committees; formulate a designated 'Halda Heritage Preservation Committee' for proper management of the Halda River. This committee will determine integrated strategies for the holistic development of the Halda River to solve the problems and be responsible for overseeing the river.

(ii) Formation of groups, technical assistance for safe agricultural products, increasing health awareness, including market connectivity for alternative livelihoods for the fishermen and tobacco growers.

(iii) Training to the tobacco farmers for alternative agricultural production systems. Provide high productive seeds, transfer technology, technical support and available knowledge. Providing support for their nutrition, child education, and other social and cultural issues.

(iv) Increase the monitoring system of the adjacent areas of the Halda River to stop illegal brood fish catching with the net.

(v) Ensure loan facilities for the Rubber dam users. Also, ensure management of the drainage system in irrigation areas through the concrete drain or underground pipes. Besides, management can establish deep tube-well for irrigation. Government can arrange electric pumps for irrigation.

(vi) Establish proper surveillance surrounding the Halda River. Create awareness among the local people, fisherman, farmers, and other user groups. Also, need to rehabilitate the fisherman.

(vii) Ensure and implement the law by the government. Establishment of the modern waste management system to stop pollution. Conservation of the riverbank and tree plantation on riversides.

(viii) To set up the Sewerage treatment Plant for waste management in residential region. To fulfill the water demand of the industrial city placed within the Mirsharai-Feni area from the closest, most effective, and economically viable supply as a replacement of the Halda River.

(ix) The 18 sluice gates of 19 branch canals need to be rehabilitated in an environmentally pleasant way to increase water flow inside the upstream areas of the river. The navigability of the Karnaphuli River desires to be increased.

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