

## Management Aspect of Talu Malu Wetland in Assam

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### Abstract

A study was conducted to see the management aspects of the Talu Malu wetland (22 ha) of Dhubri district of Assam. The wetland is situated around 25 km north of Dhubri town (26°19' 53.17'' N and 90°08' 35.45'' E, elevation 39.31 m MSL). The study revealed that community-based physical assets, beel users' participations in the developmental programmes, beel users' decision making ability, women empowerment, community-based organization, management ability of the Beel Development Committee (BDC), involvement of NGOs in beel development programs were found to be significantly associated with the knowledge level of beel users on community-based fisheries management either at 1% or 5% levels of probability.

**Key words :** Beel, Fishermen, Management, Community-based fisheries management, Assam.

India has extensive area of wetlands measuring c 2.02 lakh ha. These are basically low-lying areas (1—3). They are situated in the flood plains of major rivers, viz., Ganga, Brahmaputra, Barak, Godavari, Cauvery and Krishna river basins (4). These wetlands are known by different name in different places. These are productive water resources and also provide livelihood to surrounding wetland users (5—11). In addition, the wetlands help in natural conservation of fish and other aquatic biota (6—8, 12). Among the Indian provinces, Assam has maximum number and maximum amount of water spread area under wetlands. It constitutes about 49.5% of the total wetland area of the country. Locally, these water bodies are known as beel (5, 10—12). Assam beels are mainly associated with the river Brahmaputra and Barak. The existing fish production from the Assam beels is about 173 kg/ha per year compared to the production potential of 1000—1500 kg/ha per year (10—12). A preliminary study was undertaken at the Talu Malu beel to see its management aspects. Much works have been done on the limnology and fishery of Assam beels. However, systematic studies on the management aspects of the beels of Assam are not many (1—3, 5). Barman (3) indicated that management of beel fisheries through community-based fisheries organization

could be a viable alternative for its sustainable management.

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### Methods

A total of 200 households, represented by both males and females were randomly selected from the surrounding beel users as the sample size of the study. Data were collected during 2007—2009 with the help of personal interview through structured interview schedule. From the collected data, correlation matrix was prepared. Subsequently, correlation coefficient, regression analysis were done to analyze data using standard statistical packages (SPSS. Ver. 7.50).

### Results and Discussion

From the correlation analysis it was revealed that education, social participation, community-based physical asset, socio political empowerment, beel users participation in the development program, beel users decision making ability, women empowerment,

community-based organization, management capabilities of beel development committee, involvement of NGOs, availability of critical aquaculture inputs, community managed market are significantly associated with the knowledge level of community-based beel fisheries management for sustainable management of the beel either at 1% ( $P < 0.01$ ) or 5% ( $P < 0.05$ ) level of probability. This indicates that these variables are the important factors for sustainable managements of beel fisheries through community-based beel fisheries management.

The result of regression analysis indicated that among different management options, NGO's involvement, women empowerment, community managed marketing, community-based physical assets, socio-political empowerment, BDC's management capabilities were found to be most significantly contributing variables that can explain the maximum variability of beel users' knowledge level on community based fisheries management. The stepwise multiple regression analysis indicated that NGO's involvement, women empowerment, community managed marketing, community-based physical assets and management capabilities of BDC were found to be most significantly contributing variables on the basis of their  $t$  values 5.22\*\*, 4.94\*\*, 4.64\*\*, 3.05\*\*, 2.91\*\* respectively) and each of them contributed at 1% ( $P < 0.01$ ) level of significance with respect to management of the beel through community based fisheries management approach.

Similar findings have also been reported by Barman and Dana (1), Barman et al. (2), Barman (3), Islam et al. (4), Mustafa and Halls (9).

Thus, the study revealed that involvement of NGOs, women empowerment, community managed marketing, community-based physical assets and management capabilities of beel development committee plays a significant role in community-based fisheries management for its sustainable development.

#### References

1. Barman R. C. and S. S. Dana. 2009. Impact of participation and involvement in decision making on knowledge level of beel users for sustainable development of beel fisheries, *Ind. J. Anim. Sci.* 79 : 91–95.
2. Barman R. C., S. S. Dana and N. A. Talowar. 2009. Empowering women for sustainable development of beel fisheries in Assam. *J. Environ. & Socio-Biol.* 6 : 93–97.
3. Barman R. C. 2004. *Community based fisheries management with peoples participation for sustainable development of beel fisheries*. M.F.Sc thesis. W. B. Univ. Anim. and Fish. Sci., Mohanpur, West Bengal, Nadia.
4. Islam G. N., N. M. R. Abdullah, K. K. Viswanathan and T. S. Yew. 2006. Augmenting fishers' welfare and all livelihood assets through community-based management in Bangladesh. 11th *Bienn. Conf. of Int. Assoc. for the study of common property*. 19–23 Jun 2006, Agung Rai Museum of Art (ARMA) Bali. Indonesia.
5. Kar D. 2007. *Fundamentals of limnology and aquaculture biotechnology*. Daya Publ. House, New Delhi. India.
6. Kar D. 2010. *Biodiversity conservation prioritization*. Swastik Publ., New Delhi, India.
7. Kar D. 2003. Peoples' perspective on fish conservation in the water bodies of South Assam, Mizoram and Tripura. Pp. 325–328. In P. C. Mahanta and L. K. Tyagi (eds). *Participatory approach for Fish biodiversity conservation in North-East India*. Nat. Bur. Fish Gen. Resour., ICAR, Lucknow, India.
8. Kar D. 1998. Biodiversity conservation prioritization in Barak vally region of Assam. *Proc. Int. Symp. of the biodiversity Conservation Prioritization Project*. World Wide Fund (WWF) for Nature India, New Delhi, India.
9. Mustafa M. G. and A. S. Halls. 2008. Impact of community based fisheries management on sustainable use of inland fisheries in Bangladesh. P 11. In *CBFM-2. Int. Conf. on Community Based Approaches to Fisheries Management*. 6–7 Mar 2007. Conf. Proc. 75.
10. Shrivastava N. P. and B. K. Bhattacharya. 2003. Status of fisheries of floodplain wetlands of Assam. Pp. 22–29. In G. K. Vinci., B. C. Jha, U. Bhaumik and K. Mitra (eds). *Fisheries management of floodplain wetlands in India*. Bull. No. 125, CIFRI, Barrackpore, India.
11. Sugunan V. V. and B. K. Bhattacharjya. 2000. *Ecology and fisheries of beels in Assam*. Bull. No. 104. CIFRI, Barrackpore, India.
12. Vass K. K. 1997. Floodplain wetlands-an important inland fishery resource of India. Pp. 23–30. In *Fisheries enhancement of small reservoir and floodplain lakes in India*. Cen. Intl. Cap. Fish. Res. Inst., Ind. Coun. Agric. Res., Barrackpore, West Bengal, India.