

## MANAGEMENT ASPECTS OF KUTUHA BAR WETLAND IN ASSAM

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A study was conducted on the management aspects of *Kutuha Bar* wetland (16 ha) in the Dibrugarh district of Assam. The wetland is situated around 15 km West of Dibrugarh town (27°24'24.93"N and 94°52'53.72"E, elevation 350 ft MSL). The study indicated that community-based physical assets, *Beel* users' participation in developmental programmes, *Beel* users' decision making ability, women empowerment, community-based organization, management ability of *Beel* Development Committee (BDC), involvement of NGOs in *Beel* development programmes, were found to be significantly associated with the knowledge level of *Beel* users on community-based fisheries management either at 1% ( $p < 0.01$ ) or 5% ( $P < 0.05$ ) level of probability.

**Key words :** *Beel*, fishermen, management, community-based fisheries management, Assam.

### INTRODUCTION

India has numerous wetlands measuring c 2.02 lakh ha (Sugunan, *et al.*, 2000). These wetlands are basically low-lying areas and are situated in the flood plains of major rivers, viz. Ganga, Brahmaputra, Barak, Godavari, Cauvery and Krishna river basins. They are called by different names in different places (Vass, 1997; Srivastava & Bhattacharjya, 2003; Kar, 2007). These are important fish habitats which provide livelihood to surrounding people. Assam has large number of wetlands, which are locally called *Beel*. They are mainly associated with the rivers Brahmaputra and Barak. The existing fish production of the *Beels* in Assam is merely 173 kg/ha/year against the production potential of 1000-1500 kg/ha/year. *Beels* provide livelihood to the fishermen, conserve fish and other aquatic biodiversity and have many more uses.

The *Kutuha Bar Beel* is situated around 15 km West of Dibrugarh town (27°24'24.93"N and 94°52'53.72"E, elevation 350 ft MSL).

A preliminary study was done in the *Kutuha Bar Beel* to see the management aspects of the *Beel*. In Assam, much works have been done on the limnology and fishery of *Beels* (Dey, 1981; Kar, 1984; Goswami, 1985). However, systematic studies on management aspects of *Beels* of Assam are scanty (Kar, 2003, 2007 & 2010). Baruah *et.al.* (2000), and Barman (2004) mentioned that for sustainable management of *Beels* fisheries in the state, community-based fisheries management is imperative.

### MATERIALS AND METHODS

A total of 200 households, represented by both males and females were randomly selected from the surrounding *Beel* users and was taken 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. Afterwards, correlation coefficient, regression analysis were done to analyze the 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 assets, socio-political empowerment, *Beel* users' participation in the development programmes, *Beel* users' decision making ability, women empowerment, community-based organization, management capabilities of *Beel* Development Committee(BDC), involvement of *NGO*'s, availability of critical aquaculture inputs, community managed market are significantly associated with the knowledge level of best use 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 management of *Beel* fisheries through community-based *Beel* fisheries management. Our findings are in consonance with those that have already been reported by Baruah *et al.* (2000), Barman *et.al.* (2006 & 2009); Islam *et al.* (2006); Mustafa & Halls (2008); Barman & Dana (2009).

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, management capabilities of *Beel* Development Committee (BDC) were found to be most significantly contributing variables which can explain the maximum variability of *Beel* users' knowledge level on community-based fisheries management. Again, out of them, *NGO*'s involvement, women empowerment, community managed marketing, community-based physical assets and BDC's management capabilities 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.

**Observation :** From our study, it is observed that factors like involvement of *NGO*'s, women empowerment, community-managed marketing, community-based physical assets and management capabilities of BDC are some of the most potential factors to ensure effective management of *Beel* fisheries through community-based fisheries management.

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## REFERENCES

- BARMAN, R.C. & DANA, S.S. 2009. Impact of participation and involvement in decision making on knowledge level of *Beel* users for sustainable development of *Beel* fisheries. *Indian J. Anim. Sci.* 79(9) : 91-95.
- BARMAN, R.C., DANA, S.S. & TALOWAR, N.A. 2009. Empowering Women for sustainable development of *Beel* fisheries in Assam. *Journ. Environ. & Socio Biolog.*, 6(1) : 93-97.
- BARMAN, R.C., DANA, S.S., BHATTACHARJYA, B.K. & MAJUMDAR, D. 2006. Predictive Factors of Knowledge levels of *Beel* Users on Sustainable Development of *Beel* Fisheries. *MANAGE Extension Res. Review. MANAGE*. Vol. VII(2) : 61-69.
- BARMAN, R.C. 2004. Community Based fisheries management with peoples participation for sustainable development of *Beel* fisheries. *M.F.Sc Thesis* (Unpublished) West Bengal University of Animal and Fisheries Sciences, Mohanpur, West Bengal, Nadia, India.
- BARUAH, U.K., BHAGWATI, A.K., TALUKDAR, R.K. & SAHARIA, P.K. 2000. *Beel* fisheries of Assam: Community-based co-management imperative. *NAGA*, The ICLARM Quarterly. 23(2) : 36-41
- DEY, S.C.(1981). *Hydro biological studies of small lakes (Beels) of Assam. Final Technical Report*, Northeastern Council, Govt.of India, Shillong. pp.177.
- GOSWAMI, M. M. 1985. Limnological investigations of a tectonic lake of Assam, India and their bearing on fish production. *Ph. D. Thesis, Gauhati University, Assam*, pp. 395.
- ISLAM, G.N., ABDULLAH, N.M.R., VISWANATHAN, K.K. & YEW, T.S. 2006. Augumenting fishers' welfare and all livelihood assets through community based management in Bangladesh. Paper presented at the 11<sup>th</sup> Biennial Conference of International Association for the study of common property held on June 19-23, 2006 at the Agung Rai Museum of Art (ARMA) Bali, Indonesia.
- KAR, D. 1984. Limnology and Fisheries of Lake Sone in the Cachar district of Assam (India) *Ph. D. Thesis, University of Gauhati, Assam.* viii + 201.
- KAR, D. 2003. Peoples' Perspective on Fish Conservation in the Water bodies of South Assam, Mizoram and Tripura. In : *Participatory Approach for Fish Biodiversity Conservation in North-East India* (Mahanta, P.C. & Tyagi, L.K. Eds.). National Bureau of Fish Genetic Resources (ICAR) (Lucknow). pp.325-328.
- KAR, D. 2007. *Fundamentals of Limnology & Aquaculture Biotechnology*, Daya Publishing House, New Delhi. pp.1-609.
- KAR, D. 2010. *Biodiversity Conservation Prioritisation*. Swastik Publication, New Delhi. pp.1-172.
- MUSTAFA, M.G. & HALLS, A.S. 2008. . Impact of community based fisheries management on sustainable use of inland fisheries in Bangladesh. In : *CBFM-2 : International conference on community based approaches to fisheries management*, 6-7 March 2007. conference proceeding -75. pp. 11.
- SHRIVASTAVA, N.P. & BHATTACHARYA, B.K. 2003. Status of fisheries of floodplain wetlands of Assam. In : *Fisheries management of floodplain wetlands in India* (Vinci, G.K., Jha, B.C., Bhaumik, U. & Mitra, K. Eds.). Bull. No. 125, CIFRI, Barrackpore. pp. 22-29.
- SUGUNAN, V.V. & BHATTACHARJYA, B.K. 2000. *Ecology and fisheries of Beels in Assam*. Bull. No. 104. CIFRI, Barrackpore, pp. 1-65.
- VASS, K.K. 1997. Flood plain wetlands-an important inland fishery resource of India. In : *Fisheries Enhancement of Small Reservoir and Floodplain Lakes in India*. Central Inland Capture Fisheries Research Institute (ICAR), Barrackpore, West Bengal, India. pp.23-30.