

Institutions for Collective Action in Reservoir Fisheries Management: Lessons from Tawa Reservoir in Central India

Tyagi, L.K.*; Lal, K.K.; Bisht, A.S. and Pal Amar

National Bureau of Fish Genetic Resources, Canal Ring Road, P.O. Dilkusha, Lucknow – 226 002, U.P., India

***Corresponding author:** Phone: 91-522-2442440/ 2441735

Fax: 91-522-2442403

E-mail: tyagilk@gmail.com

l_tyagi@rediffmail.com

ABSTRACT

This paper presents the experiences learned from emergence and active involvement of the institutions of collective action in fisheries resource management in a reservoir in Central India. The institutions of collective action primary discussed here are represented by the fishing cooperative societies – a village level primary institution of rural people displaced due to construction of dam on river and their federation. We trace the roots of the emergence of these institutions and their progressive evolution into an effective mechanism of co-management of fisheries resources. The study focuses on the impact of these institutions on resources sustainability and equitable distribution. The study assesses how this system of co-management had impacted upon the orientation and actions of fisherfolks towards sustainable utilization of fisheries resources and led to a sustainable source of livelihoods for local people. An attempt has also been made to identify and discuss the factors contributing towards success of this arrangement and then fall of this system. Finally, the paper concludes by summarizing key lessons emerging from the study and their relevance and implications for designing and implementation of institutional and policy interventions for fishery resource conservation and management in other parts of the country.

Key words: Fishing cooperative societies, reservoir fisheries management, collective action, community mobilization

INTRODUCTION

This paper presents the experiences learned from emergence, active involvement and then fading away of the institutions of collective action in fisheries resource management in a reservoir in Central India. The institutions of collective action discussed here are represented by the fishing cooperative societies – a village level primary institution of rural people displaced due to construction of dam on river and their federation. We trace the roots of the emergence of these institutions and their progressive evolution into an effective mechanism of co-management of fisheries resources. The study focuses on the impact of

these institutions on resources sustainability and equitable distribution. The paper concludes by summarizing key lessons emerging from the study and their relevance and implications for designing and implementation of institutional and policy interventions for fishery resource conservation and management in other parts of the country.

In recent years, there has been a considerable experimentation in the institutional arrangements governing natural resource management (NRM), including fishery resources, in different countries. The institutional changes amount to a redefinition of the role of the state and have stimulated further exploration regarding a variety of local government and non-state forms of management and co-management. Institutional restructuring efforts of this kind involve local communities and user groups, joint environmental management schemes, nongovernmental organization-based initiatives, cooperative bodies and other actors at the micro and meso levels (Maynen and Doornbos, 2004). It is believed that prevailing institutional arrangements play a significant role in determining the efficacy of a given set of policy or technological interventions. Thus, the key task in NRM is building the right kind of institutions (Shah, 1993).

The literature on NRM, including fishery resources is replete with conceptualization, experimentation, analysis and evolution of different forms of community-based management (defined as a situation in which "decisions about fisheries management in a particular area are made at the local level by the community using the fishery, with no or very little clear role for government" and co-management (defined as "an arrangement where responsibility for resource management is shared between the government and user groups"). The managerial rationale for co-management lies, it is argued, in fact that the strengths and weaknesses of the state in resource management are complementary to those of local communities or user groups (Baland and Platteau, 1996).

Several countries have recognized the role and relevance of local communities in the management of natural resources (Baland and Platteau, 1996; Agrawal and Gibson, 1999; Berkes, 2003; Ostrom, 1990). However, most often the central agencies do not provide enough space for local communities to participate in resource management. At the same time, top down government fails to mobilize cooperation of local communities to deliver sustainable livelihoods that ensure fair and equitable distribution of resources (Thomson, 2006), as well as, effective conservation and management of the resource. Exceptions to this general failure are, however, increasingly being documented and analyzed globally.

It is believed now that new configurations of social and human relationships are prerequisites for long-term sustainable management of natural resources. There is growing recognition of the effectiveness of local groups and associations in bringing about positive biodiversity outcomes.

A study was undertaken on "Studies on fishing cooperative societies with a focus on their potential for conservation of fishery resources" by the National Bureau of Fish Genetic Resources, Lucknow, India in three provinces namely, Uttar Pradesh, Madhya Pradesh and Himachal Pradesh. The main aim of this study was to assess the role, relevance and potential of fishing cooperative societies in improving the conservation and management of freshwater fishery resources so that the strategies could be suggested to utilize these kinds of people's organizations for conservation and management goals in the freshwater fishery sector. In this paper, efforts made by the tribal people displaced by the Tawa dam in Hoshangabad district. of Madhya Pradesh province of India, towards mobilization of collective action for obtaining

fishing rights in the Tawa reservoir and successful management of fishery resources in an organised cooperative way, are discussed.

METHODS

The study was undertaken in a case study mode at Tawa reservoir located in the Hoshangabad district of the Central Indian province, Madhya Pradesh (M.P.). A total of 10 fishing cooperative societies of tribal people functioning at Tawa reservoir were studied in detail. Field visits were made and data was collected by in-depth interviews of the member tribal fisherfolks and representatives of the Tawa Matsya Sangh (TMS) with the help of a specially prepared checklist. The officials of the state fisheries department, State Fisheries Development Corporation and Kisha Adivasi Sangthon – a local NGO, were also interviewed. Besides, the data was also collected from the secondary sources such as published literature, as well as, annual reports and records of TMS. The methodology included a combination of quantitative and qualitative approaches. Roles played by cooperative societies and their federations were documented through interview schedule qualitatively, where as quantitative indices were prepared to measure the orientation and performance of fishing cooperative societies and their members with respect to conservation and resource management.

RESULTS OF CASE STUDY

The Tawa reservoir and management of its fisheries

The Tawa reservoir is located in the Hoshangabad distt. of M.P on the river Tawa, a tributary of the river Narmada. The Tawa Dam was started in 1956 and completed in 1974. The average area of the reservoir is 12,145 ha. Tawa was the first major dam of Narmada valley. Approx. 21,000 ha of land including 44 villages (mostly of tribal people) and thick forest were displaced due to dam.

The Madhya Pradesh State Government began fish production in the reservoir in 1975. The responsibility was transferred to the Madhya Pradesh Fisheries Development Corporation in 1979, which continued until 1994. During 1994-95, rights were auctioned to a private contractor. The local community was not involved in fishing during these periods and fishing was done mostly by employing fisherman hired from outside. The local communities were not even allowed to catch fish from the reservoir for their self-consumption (Jyotish and Parthasarathy, 2007).

Mobilization of collective action and emergence of new institutions of tribal fisherfolk

The denial of access to the natural resources and other livelihood and displacement related problems, created unrest and awareness among tribal communities. The local displaced tribal people, in search of livelihood, learned the skills of fishing enterprise. Communities, mostly tribals (Gonds & Korkus), organized protests under the banner of a NGO, Kisan Adivasi Sangathan and formed a federation named Tawa Displaced Tribal Fish Production and Marketing Cooperative Fish Federation, popularly known as Tawa Matsya Sangh, Kesla. The TMS is a central federation of 34 primary fishing cooperative societies at village level

(mostly of tribal people) and 6 affiliated fishing cooperative societies. Total membership of all the 40 societies is 1679 out of which 1445 are tribal members (Table 1). One of the conditions for the membership of primary Fisherman's Cooperative Society is that the person should be displaced from Tawa Dam or should reside within three kilometers of the reservoir boundary. Outsiders have no entry in these societies. The people concerned are the natives of this region.

After a long struggle, the tribal communities got the exclusive fishing rights in the name of Tawa Matsya Sangh in the year 1996-97. The TMS and Kisan Adivasi Sangathan, with cooperation of other grassroot organizations organised meetings, protest campaigns, workshops, etc. from time to time to get the fishing rights and then to get them renewed for another term. An important aspect of this struggle of tribals has been the active involvement of the women. This lease was extended for another 5 years in 2001. However, the lease was not renewed after December 2006, due to legal and technical objections from the forest and wildlife department.

Major achievements of collective action in management of fisheries at Tawa reservoir

The total fish production in Tawa reservoir under various management regimes is presented in Table 2. It is clear from the data shown in table 2 that total fish production had increased by 135 percent where as average productivity increased by 140 percent during ten years of TMS regime. Performance of the tribal fishermen's cooperative societies under TMS on some of the on socio-economic parameters is summarised in table 3 which shows that the maximum number of working fishermen ranged between thirty five to fifty percent of the total members, out of which, on an average, forty to forty five percent had been working daily in the fishing activity. The average number of working days had been consistently above 250 days in a year which had resulted in creation of over 50,000 fishing days of employment, on an average, in a year.

Management initiatives undertaken by tribal fisherfolks under cooperative regime

During the period of ten years when the tribal people (through the TMS) had fishing rights over Tawa reservoir, they introduced a number of initiatives to mobilise collective action for ensuring proper management of the resources which included:

- (i) devising mechanisms and procedures for effective management of the fishing and fish marketing activities,
- (ii) measures for enhancement and conservation of fishery resources, and
- (iii) equitable sharing of benefits among the fishermen.

Some of the measures undertaken by the TMS were the following:

- It ensured that all the conservation rules enforced by the state government are followed.
- TMS undertook responsibility of stocking several lakhs of fish seed fingerlings every year in order to replenish and maintain the fish stock in the reservoir.
- Seeds of only recommended specie were stocked.

- Care was taken not to stock seeds of exotic species e.g. Silver Carp, Common Carp, Grass Carp, Thai Mangur, etc. which may be harmful to native fish fauna.
- TMS undertook a unique experiment of developing low-cost rearing ponds at the periphery of the reservoir and mobilising people to form groups of tribal men and women to rear fish seed. This has got both socio-economic, as well as, ecological advantages.
- A number of mechanisms were developed to manage the fish production and marketing activities of the member fishermen, such as, the rate for purchase of fish from the fishermen member was decided in the general body meeting of all the members of the primary societies of TMS, weekly payments were made to the fishermen by the TMS, etc.
- TMS developed a mechanism of calling a meeting, collectively taking a decision and penalizing any member caught violating the rules.
- TMS staff regularly moved around in jeeps and motorboats in order to keep vigil and check illegal fishing.
- Fishing was done by manually operated boats. No trawlers or mechanized boats used for fishing.
- Proper records were maintained for all the activities by the TMS.

DISCUSSION

The tribal fishermen's cooperative societies in Tawa reservoir, under the leadership of TMS, had not only increased fish production and fishermen's income (as compared to the other management regimes i.e. the state agencies and the private rights) during the last ten years

It shows that the sustainable production from the reservoir has been able to provide gainful employment to the displaced tribal people sustain their livelihood. These are remarkable figures in the present scenario of inland capture fisheries where more and more number of fishermen are leaving capture fisheries due to declining fish catches.

Fish poaching and illegal fishing had been an important problem in reservoir fisheries. This problem was resolved to a large extent by community participation and community control in the Tawa Reservoir. Every village on the periphery had a primary society and every willing resident of the village had been given an opportunity to join. Middlemen had been abolished and fishermen got better wages. This had led to an increased participation and commitment on their part. The previous 'poachers' have been transformed into owners.

It was a model of successfully combining the struggle and constructive initiatives of local community, without any outside funding, for real participatory development.

Despite these successes, it was found in our study that the state fisheries department and other state agencies did not have a favourable attitude towards these people's organisations.

CONCLUSION

Detailed case study of the cooperative management of fishery resources in Tawa reservoir by the fishing cooperatives under TMS had brought following lessons:

- It had presented a new model of community management of natural resources, where the use, development, conservation and governance of natural resources could be done simultaneously.
- It was also a model of tribal development where the tribals have organized themselves and led a sustained constructive struggle for, not only securing rights over natural resources, but also, devising mechanisms and implementing them for governing the resources successfully.
- It was a successful experiment of rehabilitation (though partial) of dam-affected people.
- It also reaffirms that the issue of rights (i.e. property/ ownership rights or at least the right to manage the resource) to the community, is the most fundamental issue to be addressed in dealing with the management and governance of natural resources.
- There is enough evidence, in case of Tawa fishing cooperatives, to show that if recognized and supported through appropriate policy and administrative interventions, such local people's organizations, as institutions of collective action, can become active partners in the co-management of freshwater fisheries resources, by providing institutional support at the grassroots level, for sustainable and equitable utilization.

Table 1 Details of the fishing cooperative societies and number of members at Tawa reservoir

Details of societies			No. of members			
Type of society	Landing center	Number of societies	Scheduled Castes	Scheduled Tribes	Other Backward Castes	Total
Primary member fishing cooperative societies	Tawa Nagar	5	7	135	25	167
Primary member fishing cooperative societies	Banglapura	20	19	989	6	1014
Primary member fishing cooperative societies	Tekapar	9	0	319	13	332
Associate societies	Tawa Nagar	6	1	2	163	166

Total		40	26	1445	207	1679
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Table 2 Comparative account of Fish production and seed stocking in Tawa Reservoir under different management regimes

Year	Total Fish Prod. (tones)	Av. Prod. (kg/ ha)	Stocking of fish seed (lakhs)	Fish seed produced by villagers (No. lakhs)	Managing agency
1990 - 91	130.69	10.75	20.67	--	Fish. Dev. Corp.
1991 - 92	146.01	12.05	24.85	--	Fish. Dev. Corp
1992 - 93	88.67	7.30	16.43	--	Fish. Dev. Corp
1993 - 94	84.42	6.95	27.48	--	Fish. Dev. Corp
1994 - 95	176.18	15.50	17.96	--	Contractor
1995 - 96	Authorized fishing remained closed				
Average of 5 yrs. 1990-91 to 1994 - 95	125.19	10.31	21.48	--	
1996-97 (Av. of 3 months)	93.22	7.68	--	--	TMS
1997 - 98	245.81	20.24	26.14	0.20	TMS
1998 - 99	344.37	28.35	27.90	0.20	TMS
1999 - 2000	393.16	32.37	29.47	4.77	TMS
2000 - 01	327.17	26.94	32.19	5.45	TMS
2001 - 02	269.05	22.15	31.11	5.96	TMS
2002 - 03	202.13	16.64	27.34	8.61	TMS
2003 - 04	195.89	16.12	26.54	9.80	TMS
2004 - 05	382.12	31.46	23.20	3.96	TMS
2005 - 06	287.33	23.66	28.40	11.37	TMS
Average of 9 years	294.118	24.22	28.03	5.58	TMS

1997-98 to 2005-06					
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Source: TMS Annual Report 2005-06

Table 3 Detail performance of the fishing cooperative societies on socioeconomic parameters under the Tawa Matsya Sangh

Parameters / Indicators	YEAR								
	1997-98	1998-99	1999 - 2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
No. of Societies	36	38	38	38	38	40	40	40	40
No. of Active Societies	33	34	36	36	37	39	38	38	38
No. of Members	1000	1042	1042	1242	1250	1250	1300	1500	1600
Max. No. of Working Members	393	400	479	477	554	400	477	484	413
Daily Av. of Working Members	171	205	213	209	183	156	159	212	205
Av. no. of Working Days	267	257	262	250	270	272	289	290	284
Employment created (Total Fishing days)	45750	52749	55,806	52191	49394	42435	46039	61568	58356
Income from fish sale (Rs. lakhs)	77.56	99.86	125.35	116.71	97.21	71.27	74.40	131.31	99.90
Total income of fishermen (Rs. lakhs)	30.45	47.15	52.12	47.46	36.37	26.64	29.43	62.81	44.78
Royalty paid to Fish Fed. (Rs.)	11.80	16.53	18.87	15.70	12.91	9.70	9.40	18.34	13.79

lakhs)									
Income of fishermen (Per Kg of fish) (Rs.)	12.37	13.69	13.26	14.51	13.52	13.20	15.02	16.44	15.58
Income of fishermen (Per Day) (Rs.)	66.56	89.39	93.27	90.93	73.64	62.79	63.92	102.02	76.73

Source: TMS Annual Report 2005-06

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