

## Netting Profits in Still Waters

*Shashibala Rai*

An ox-bow lake becomes the architect of a unique example in collective action for a sustainable livelihood in the Muzaffarpur district of Bihar.

*Bhusura Traditional Fisherwomen Cooperative (BTFC) is a successful example of livelihood interventions by a non-governmental organisation (NGO) named ADITHI, wherein the intervention was carried out making use of people's traditional knowledge and locally available natural resources. This cooperative is unique in the sense that it has been registered in the name of fisherwomen, run and managed by them as well.*

*BTFC was formed in the year 1984 in a small village in the Muzaffarpur district of Bihar and fishing operations were started from the beginning of 1986. ADITHI, an organisation that works towards the empowerment of women in rural Bihar, provided support in terms of getting the cooperative registered, land leased in the name of the fisherwomen, assisting fisherwomen to get loans from banks and other capacity building measures and brought about a positive impact on the lives of these fisherfolk in terms of economic and social development. BTFC has a unique conflict resolution and profit-sharing mechanism. ADITHI helped formalise all the operating procedures and related issues of BTFC.*

### The Background

Bhusura is a village located in the Gaighat block of Muzaffarpur district in Bihar. This village is surrounded by two rivers, Bagmati and Gandak and is inhabited largely by a fishing community called *Mallah* or *Nishad* belonging to a backward class. The village has a population of about 3,000. This community has traditional fishing skills and their livelihood depends on it. Alongside, they have very small land holdings.

An ox-bow lake over an area of 325 acre is located in the village which receives water from the Bagmati and Gandak rivers flowing through the region. The two ends of this U-shaped lake are open. It receives maximum water during the rainy season due to the flood in these rivers. The very shape of the lake helps it remain water logged throughout the year.

### Historical Perspective

The *Mallah*, an indigenous group of people belonging to the Backward Classes of the state of Bihar, have a moral and social right over the locally available fishing resources. It was they who fished in the lake for centuries, and since they were so few in number earlier, there was enough fish for all the families, without anyone being deprived of the haul. Moreover,

there was collective ownership of the resources (fish in the lake) with no significant improvement in the character of productive forces.

Even today, no sophisticated gadgets (like motor boats or motorised fishing gear) are used, just those that are typical of traditional small scale fishing. The reasons, attributed by the fishermen for not using sophisticated gadgets, are:

- The water level in the lake is not deep enough to require motor boats.
- The nets used by the fisherfolk of the lake do not sink very deep. Hence they risk damage to the nets if other than catamarans are used.
- The fisherfolk are of the opinion that if they use motor boats, they may pollute the lake and oil leakage from motor boats could damage the aquatic species of the lake.

## The Need for Collective Action

BTFC is outcome of the Mahila Krishi Vigyan Kendra (MKVK) programme run by ADITHI. In 1984, when ADITHI started its operations in this village, it found that there existed multiple factors for poor economic development among the village dwellers. The very small land holdings forced the menfolk of the village to migrate to other states like Punjab and Gujarat. ADITHI began working then with the women who had been left behind to look after their families through an income-generation programme. ADITHI recognised the traditional skills of women in fishing related activities. But there were no resources to utilise these skills in the vicinity of village. The two rivers Bagmati and Gandak flow at some distance from the village. It was difficult for the fisherwomen to leave their homes and go to the rivers to catch fish.

During that time, the Bhusura Lake was choked with weeds and filth was not suitable for fishing. ADITHI realised that if this lake, which is situated in the heart of village, was made available to these fisherwomen, they would get a livelihood opportunity right at their doorstep. Keeping this point in focus, ADITHI organised group meetings with the fisherwomen and discussed the idea of fish rearing and fish catching in the Bhusura Lake.

## ADITHI as an Implementing Agency

ADITHI is a non-profit rural women's organisation based in Patna with project areas in different rural and urban areas of Bihar, Jharkhand and Tamil Nadu. ADITHI was registered on May 11th, 1988 to enable the empowerment through economic and social development of women living below the poverty line in India. The name ADITHI was coined to capture the essence of the various activities carried out by it. ADITHI stands for

- A - Agriculture,
- D - Dairying
- I - Industry(small)

- T - Tree plantation and *Tasar* silk
- H - Handicrafts, handlooms, horticulture
- I - Integration of women in all these sectors

ADITHI's advocacy efforts have resulted in the fisherwomen of the Bhusura village getting the oxbow lake leased in the name of their cooperative BTFC from the state government. It further assisted the fisherwomen in de-weeding the lake, filling it with spawn and also helping them to get credit for building and maintaining fishing gear. Bhusura traditional fisherwomen have repaid Rs 8,93,000 out of a bank loan of Rs. 10,00,000 for the development of their oxbow lake; this has been the highest repayment in Bihar (especially by fisherwomen) so far.

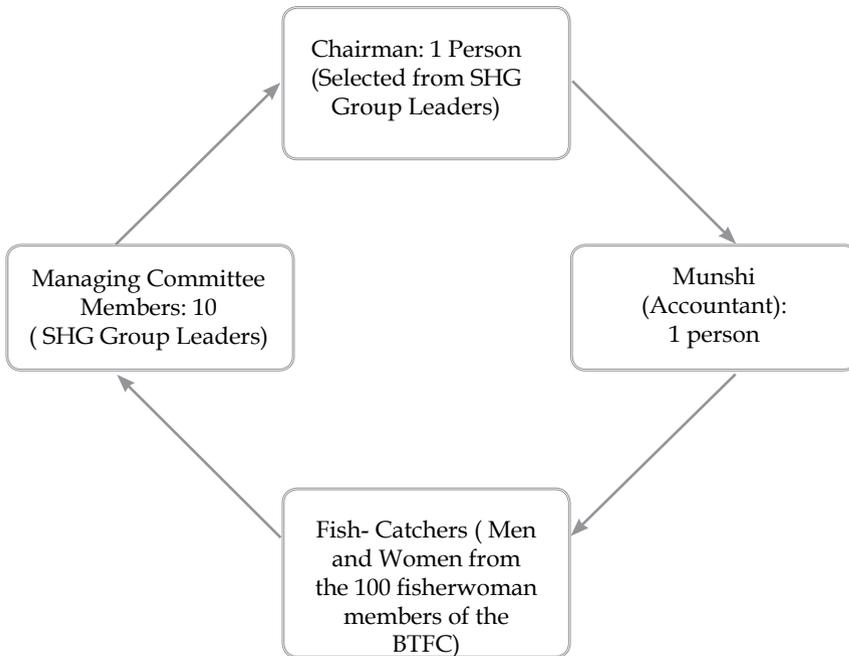
## Formation and Management of BTFC

BTFC was formed in the year 1984 and it is registered as a cooperative with 100 fisherwomen as its members. This lake has been leased for a 10-year period from the state government, renewable every 10 years. In the year 1984, this lake was not conducive for fishing due to heavy growth of weeds. It took one year to de-weed this lake and make it suitable for fishing. ADITHI helped the cooperative to get a loan from the bank to carry out its activities. There was no return in the initial two years as the most of the investment was carried out in making the lake suitable for fishing. The cooperative started full-fledged fishing in the lake and realised profits from the first year of operations.

BTFC has a three-tier management structure. These are: a) managing committee of BTFC; b) society staff; and c) general fisherfolk members (which include both men and women). There exists a reciprocal relationship (See Figure 3) between the three-tier system and the fish-catching members. The 100 fisherwomen members are divided into 11 groups. Each group has its group leaders. The chairman of the cooperative is selected from these group leaders. Since the inception of the cooperative, Mrs Pano Devi has been serving as the chairperson of BTFC. The cooperative has a unique conflict resolution mechanism. The chairperson is informed about the conflict. A meeting of all the group leaders are held at the village *chaupal* near the lake. Other villagers too join the meeting procedures. The issue is sorted out through discussion and negotiation. The decision of the chairman, in consultation with other group leaders, is final in all aspects and is accepted by all the parties concerned.

The staff members comprise one *munshi* (accountant) to manage the daily accounts of the cooperative. The *munshi* is paid a fixed monthly salary of Rs 2,500. His role consists of maintaining daily as well as monthly sales record of fish and other financial transactions of the cooperative.

Figure 1: Reciprocal relationship between various units of BTFC.



Source: Discussion with the BTFC members

## Fish Catching & Operational Procedure

**(a) Fishing Season** - The lake is filled with water throughout the year. The harvesting season is from November to June. During the months of July to October, no fishing activities are carried out in the lake. During this time the fish seed enter the lake due to the rains and flood waters. If fishing activity is carried out during this time, it will affect the growth of the fish seeds. In the past, the fisherfolk had tried to develop the fish seeds in the lake. Their attempt was futile due to the concurrent flood in the Bagmati and Gandak rivers. All the fish seeds were washed away as the lake is not bound from all sides. The flood water brings fish seeds with it and therefore the lake is left undisturbed during the monsoon season. This helps in development and growth of fish seeds.

**(b) Fishing Equipment** - The cooperative has 65 wooden boats for fishing during the season. There are three nets with the capacity of netting 20 tonne of fish.

**(c) Method of Work Distribution** - Few fisherwomen venture out into the lake to catch fish. Fishing is carried out by the menfolk from the families of members of BTFC. Those who are engaged in fishing are called *Jalua*. The schedule for fishing is decided at the beginning of each month and is

displayed on the notice board of *Machhli Ghat* (fish collection and selling centre). The fishermen follow this schedule for catching fish.

**(d) Profit Sharing Mechanism** - A fish collection centre called *Machhli Ghat* has been built near the lake bank. The group leaders of the 11 self-help groups (SHGs) are assigned fixed places at the *Ghat*. The fishermen and fisherwomen bring their catch to the *Machhli Ghat*. The fish/produce is weighed there. The munshi maintains a record of this in the *Khata Bahi* (log book). The catch is sold at the *Machhli Ghat*. The local traders come to the *Ghat* and take away all the produce. The price of the catch is fixed in the morning through a telephonic discussion.

These fishermen are paid daily wages. They get 33 per cent share of the catch of the day. The rest 67 per cent of the catch is sold. The return from this sale is distributed equally among the 100 members of BTFC.

Table 1: Sales revenue from the sale of fish on 10/7/2010.

Name of the Jalua	Total Fish Catch (Kg)			Rate (Rs./Kg)			Total sales (Rs)
	Rohu <sup>1</sup>	Khauda <sup>2</sup>	Khudi <sup>3</sup>	Rohu	Khauda	Khudi	
Bishnath Laltoo	2.1	3	1	137	84	84	624
Anil Laltoo	1.1	2	3.75	146	95	91	692
Bholanath Laltoo	3	2.5	4	140	88	85	980
Bhola Laltoo	2.4	3	4.5	145	95	92	1,047
Eknath Laltoo	3	4	2.5	147	89	86	1,012
Shambhu Laltoo	3.75	2.80	4.65	150	93	90	1,241
Total Sales for the Day (Rs.)							5,596

Source: *Munshi Record Book*.

**(e) Market Linkages** - There is huge demand for fish from this lake. There is a common belief among the people that the fish from this lake are sweet in taste because they grow naturally. Due to the huge demand, traders from the nearby blocks and Muzaffarpur district come to *Machhli*

<sup>1</sup> Rohu - Labeo Rohita, is a fish of the carp family Cyprinidae.

<sup>2</sup> Khauda- is the given to the offspring of Rohu.

<sup>3</sup> Khudi- A variety of fish available locally.

*Ghat*. BTFC, thus, does not have to worry about the market linkage for its produce. Every day, the traders give a final call to the munshi at around 1.00 PM in the afternoon and enquire about the availability of fish and confirm the order. They then come and collect their order. Payment for the bulk orders (more than 30 kg and above) are made on the same day. For smaller orders, traders are given a credit period of five days.

## **BTFC and Sustainable Livelihoods**

The most quoted definition of livelihoods is provided by Chambers and Conway (1992:7) wherein a livelihood 'comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living'. Although there is very little consensus among the academicians, researchers and practitioner on livelihood as a concept, this definition with minor modification has been adopted by several researchers employing a rural livelihoods approach (Carswell, 1997; Hussein and Nelson, 1998; Scoones, 1998).

Successful livelihoods projects must capture the link between assets and options people possess in practice to pursue alternative activities that can generate the income level required for survival. BTFC is one such example of a successful livelihood project. The fisherfolk have the traditional skills of fish catching and the resource (lake) was available in the village. ADITHI recognised the assets and skills people have and initiated the project for achieving sustainable livelihoods.

In order to understand the complex social phenomena such as providing sustainable livelihood to the poor, ADITHI employed the Livelihoods Framework developed by IFAD (Fig 4). The reference frame captures livelihoods through six key assets ranging from human and financial capital, through physical and natural capital to social and personal capital. Interaction among these elements defines an 'envelope of opportunity' for the poor. It then draws a distinction between a vulnerability context with its potential shocks, trends and seasonality on one side, and the enabling agencies and service providers of the wider context with their influences on the six dimensions of livelihood assets on the other. There is a constant conflict between the vulnerability threat and facilitating conditions as tried by the enabling agencies and service providers. This tension is reflected by the arrows in either direction in the figure. Where the relationships between enabling agencies, service delivery agencies and the poor do not function well and fail to support them, their capacity to deal with vulnerability factors will be reduced, the 'envelope of opportunity' more limited (the inner circle contracted), and both the aspirations and opportunities of the poor would be correspondingly constrained.

The IFAD framework also highlights the importance of markets – most service providers are usually private sector agencies. It is important

to appreciate the private sector by analysing the rules that govern it, understand who sets these rules and how are they enforced. Market forces also exert a major influence on livelihoods through changes in the relative prices and terms of trade. Government liberalisation policies may interact with market forces by removing market imperfections and barriers. The framework also specifically recognises 'politics' – representation, power relations, rights, and political processes that influence strongly the relations between enabling agencies, service providers and rural citizens. Culture is also liable to play a critical role in defining the 'rules of the game' – attitudes to legal process, money, property, the distribution of power, the roles of gender/age/class/ethnic group/ability in attracting people's access to services and to the policy process and the social 'norms' or customs that are common throughout society or for particular groups within society.

Figure 2: IFAD Livelihood Framework (Source: IFAD)



ADITHI also employed the Nine-Square Mandala approach to understand the impact of BTFC on the lives of people. The key insight in the application of the nine square Mandala is that BTFC has not only been able to impact the lives of people in the region deeply, it has also inculcated a sense of pride among the people regarding pursuing their traditional skills to achieve earn a livelihood in more dignified way. Before the formation of BTFC, there was distress migration among the male population in the village. BTFC has helped to check migration and there is reverse migration. Earlier people used to live in thatched houses. Now 90 per cent of the people live in pucca houses and rest of the 10 per cent have laid foundations for the same.

Table 2: Nine Square Mandala.

<p><b>9. Individual Orientation</b>                  Visions, Hopes, Aspirations, Fears, Self-Image                  "Guru" models</p>	<p><b>8. Family Ancestors, Caste,</b>                  Social Status,                  Aspirations to Education, Leadership, jobs, Aspirations to power, wealth and social mobility</p>	<p><b>7. Collective Orientation</b>                  Subsistence                  Agriculture, Food Security, Religion, Tradition, Values, State Laws, Common Property Resources                  World Views, Ideologies</p>
<p><b>6. Inner Human Space</b>                  Integrity, identity, Awareness, Selfishness, Compassion                  People orientation                  Curiosity, Courage</p>	<p><b>5. Family Space</b>                  Gender relations                  Nutrition distribution                  Health, Family planning                  Work distribution                  Solidarity</p>	<p><b>4. Socio-economic Space</b>                  Production relations                  Patterns of cooperation                  Community organisations                  Factors and goods markets                  Intermediation processes</p>
<p><b>3. Emotional Base</b>                  Memories                  Attachments                  Feelings, Anxieties                  Boredom, Idealism</p>	<p><b>2. Knowledge Activity Base</b>                  Technical skills, Experience                  Agriculture patterns                  Traditional knowledge                  Labour, Crafts, Services                  Modern professions</p>	<p><b>1. Physical Base</b>                  Natural habitat                  Natural resource base                  Animals-populations-trees                  Distribution of wealth                  Accumulation of wealth</p>

Traditional Bound

Outer Reality

## Expansion Opportunities for BTFC (Alternatives for BTFC)

BTFC is considering the options of a) converting this lake into a tourist spot during the non-harvesting season; b) increasing the productivity; and 3) scientific culture based fisheries and aquaculture. All of above alternatives seems to be feasible. The chairperson is worried about the financial assistance for the same. Plan two and three require phase-wise investment. Whereas option one can be pursued with focus on existing infrastructure and careful planning of communication and promotion strategy.

The Directorate of Fisheries, Bihar government has launched a scheme

for the development of fisheries in ox-bow lakes and they have planned financial outlays for the same. Exhibit 2 provides details on this issue. As it can be seen from Exhibit 3, Bihar falls under the aquaculture zone. There are various schemes under the National Fisheries Development Board for intensive aquaculture in ponds and lakes. The lists of various schemes are listed in Exhibit 4. The chairperson can avail financial assistance from these schemes.

### **Directorate of Fisheries, Bihar Government Scheme for the Development of Fisheries in Ox-Bow Lakes**

An estimated 9,000 ha of water body area varying in size from four to 400 ha in the form of ox-bow lakes or *mauns* offers immense scope for scientific culture based fisheries development supporting a sizeable number of fishers and small and marginal farming households. These lakes are the discarded loops of meandering rivers, mainly in the Gandak basin, which get disconnected and connected with the main rivers during floods or the rainy season, thereby drawing water. At present, mainly capture fisheries is practiced, and only about 2,700 ha area i.e. less than one-third of available area has been brought under culture with average productivity of 300-400 kg/ha/yr. The lakes have been subjected to a number of stress factors like heavy infestation of aquatic weeds, siltation, encroachment, habitat degradation, etc., leading to considerable decline in its physical expanse and aquatic biodiversity.

The policy seeks to bring almost every ox-bow lake into culture based fisheries by the year 2020 and produce nearly 9,000 tonne of fish every year. The policy encourages community participated management of the ox-bow lakes by active involvement of local fishing/farming communities. The leasing policy shall ensure long-term leasing of water bodies to facilitate investment, inculcate a sense of ownership and sustainable production approach. The leasing priority, lease rent, terms and conditions are to be streamlined and subjected to periodic review. A cluster development approach is to be adopted to ensure easy and round-the-year availability of adequate and quality fish seed. Comprehensive mapping and survey for proper planning, renovation and restoration of oxbow lakes to make them suitable for fish culture, regular training and technical support are some of the essential parts of the management strategy so as to help the local communities sustainably manage these ecologically significant resources.

BTFC has both opportunities in terms of expansion and resources to meet them. The problem faced by it is the lack of awareness about various schemes under the state government's fishery department. Previously, ADITHI was supporting it in most of the issues. Slowly ADITHI withdrew its support in order to make this cooperative self-reliant. Now the chairperson feels handicapped without the support of ADITHI. Mrs Pano Devi should take the help of the educated people in the village to gather

information about the various government schemes. BTFC will easily get the financial support from the state government on the basis of its unique characteristics. It is just required to reach out to the people concerned and make presentations before them for fund allocation.

## **Factors accounting for the Success of BTFC**

The design principle of Elinor Ostrom (1990) has been analysed separately here in order to highlight the factors that contributed to the success of this collective.

### **Design Principle 1: Clearly defined boundaries**

Ostrom (1990) states that the boundaries of both the service area and the individual households with the user right to the CPR should be clearly defined. It is crucial to determine what is being managed and by whom.

BTFC has very clear boundaries regarding the service area and the 100 participatory households. They have fishing rights over the Bhusura Lake spread over 325 acre. This lake is open on two sides and boundaries on the other two. Non members from the village are not given access to this fishing resource.

### **Design Principle 2: Proportional Equivalence between Benefits and Costs**

It is crucial that well-tailored appropriation and provision rules are crafted concerning the system itself. Rules regarding all aspects of the management must be in place, with regard to input and output. However, it is crucial that local conditions are considered.

The member users have very clear and structured management rules regarding BTFC. The chairperson is the highest authority in all matters related to cooperative. They have official rules regarding the fish netting schedules. The schedule is prepared in advance for the month. Each member follows the schedule. There is penalty for violating this schedule.

### **Design Principle 3: Collective Choice Arrangement**

This principle states that in long enduring self-governing systems, the individuals affected by the operational rules must be included in the decision unit one can modify over time. The users must take on the enforcement role.

Every member of BTFC is included in the decision-making process. As mentioned earlier, there are 11 groups with one group leader. Each group is responsible for the implementation of crafted rules. Every member has right to call for a meeting regarding any issues on the management of the cooperative, implementation of rules or sanctioning punishment to the defaulter.

#### **Design Principle 4: Monitoring**

This design principle clearly states rules might not always be followed; therefore it is crucial to have monitors for the system. These monitors can be the users themselves or external authorities. However, a long enduring system indicates that the users themselves should undertake monitoring, and that the monitors must be accountable to the users.

In BTFC, the members of the cooperative as well as their family members have the official role to monitor the users to ensure no violation of the operational rules. However, all members know each other well, and the members conduct day-to-day monitoring of fish catch, cleaning of the collection centre, daily sales record and keeping watch on the lake. There is mutual understanding among the members that the fishermen families residing near the lake keep watch on the lake so that there is no event of poisoning of fish seeds, cattle bath in the ponds or using of pond water for washing clothes etc.

#### **Design Principle 5: Graduated Sanctions**

It states that users who violate the operational rules are likely to receive graduated sanctions depending on the seriousness and the context of the offence. Users themselves and/or officials accountable to the users can implement the sanctions.

In case of BTFC, if the members do not turn up for fishing on the scheduled day, s/he is not entitled to get wages for that day. Apart from that they have devised mechanisms to impose penalties, depending upon the severity of the offence. For example, if the member reaches the collection centre for cleaning it, he is liable to a punishment of a 100 sit-ups. Economic sanctions are imposed on those who miss their schedules for fishing. Those who turn up late for the monthly meetings are told to hold his/her ear in front of all the members present there.

#### **Design Principle 6: Conflict Resolution Mechanism**

This principle states that the users and their officials need rapid access to low-cost local arenas in order to resolve conflict between users, or between users and officials. Furthermore, it is crucial that the selection of equal representation is clearly structured and the conflict resolution mechanism has an informal character.

BTFC has provision for a conflict resolution mechanism. The chairperson of the cooperative is the highest authority for conflict resolution. Members first try to resolve the conflict at their own level. If it is not resolved, a meeting of all the members is called for the same. Till now, there has not been any major conflict among the members of BTFC.

## **Design Principle 7: Minimal Recognition of Rights to Organise**

This principle states that the rights of the users to devise their own institution should not be challenged by external governmental authorities. Lacking formal recognition might hinder opening bank accounts, representations before administrative or judicial bodies. A system might crumble if the rules are challenged by formal government.

BTFC has formal recognition. The state government has leased the lake in the name of the cooperative for the fisherwomen. This has helped them to get a loan from the bank for the development of the lake. Since there is provision that this pond can only be leased to the local fisherwomen, no other external agency can try and control this lake. Local NGO ADITHI has helped these fisherwomen in skill development and capacity building.

## **Design Principle 8: Nested Enterprises**

It states that the long enduring CPR systems are organised into multiple layers of nested enterprises. Several different scales (small and large) within the organisation generate sustainable systems, relying on internal resources and if the seventh design principle holds, all enterprises should be externally organised political jurisdictions.

There is no evidence of nested enterprise in the case of BTFC. They have planned for producing value-added products such as fish pickles, developing this site as a tourist place. But as of now, these have not been brought into existence.

## **Intersection of Gender and Collective Action in success of BTFC**

Apart from these design principles, the role of gender has added another dimension to the factors responsible for the success of this cooperative. Collective action plays a vital role in many aspects of human interaction, including income generation, risk reduction, and public service provision. Experience has shown that institutions of collective action play an important role in how people use natural resources, which in turn shapes the outcomes of production systems. Collective action refers both to the process by which voluntary institutions are created and maintained and to the groups that decide to act together. It can assume various forms ranging from voluntary SHGs to formal organisations that aim to manage a community's natural resources or to advocate for political change at the national level.

Integrating a gender perspective into successful collective action is imperative because institutions themselves are gendered and can either challenge or reinforce existing social roles. Gender also serves

as an organising principle for community action and thus may have implications for the efficiency and effectiveness of collective action. Gender refers to the “socially determined ideas and practices of what it is to be female or male” (Reeves and Baden, 2000). Gender is both an organising principle and a source of power dynamics and yet gender is largely absent from the literature on collective action for public goods provision, particularly in the context of agriculture and natural resource management. Also, as noted above, many women’s programmes are premised on collective action yet lack a clear understanding of the mechanics of effective collective action.

BTFC is a unique example of intersection of gender and collective action. It presents three entry points for analysis of gender in collective actions: motivations for engaging in collective action, effectiveness of collective action (as defined by the group’s objective), and impact of collective action on gender equity.

In terms of motivations, BTFC is being used as a vehicle for reaching development and poverty-reduction goals; hence a better understanding of women’s and men’s motivations for joining such groups.

In terms of effectiveness, certain socio-economic characteristics, such as class and ethnicity, have been studied in an effort to understand the group dynamics and the power relations which foster effective collective action, but much less attention has been paid to how gender influences group dynamics and patterns of interaction within collective action. This is somewhat surprising given that a wide range of group strategies exist (from women-only groups on one end of the spectrum, to gender blind male groups on the other, and mixed sex groups in between), thus raising the question of whether certain strategies may be more effective than others. BTFC becomes a unique case in terms of ethnicity and gender. There exists homogeneity in terms of ethnicity and all its members are women.

In terms of impact, collective action programmes that fail to address gender risks further disempower women, while gender-related programmes premised on collective action can provide real opportunities to foster women’s empowerment. BTFC presents a different scenario in terms of impact. It has elevated the status of women within her family. During discussion with the villagers on the same issue, most of the men in the village echoed that “*yeh co-operative chal raha hai kyunki mahilaye isko sambhal rahi hai*” (This cooperative is thriving because it is managed by women).

## Conclusion

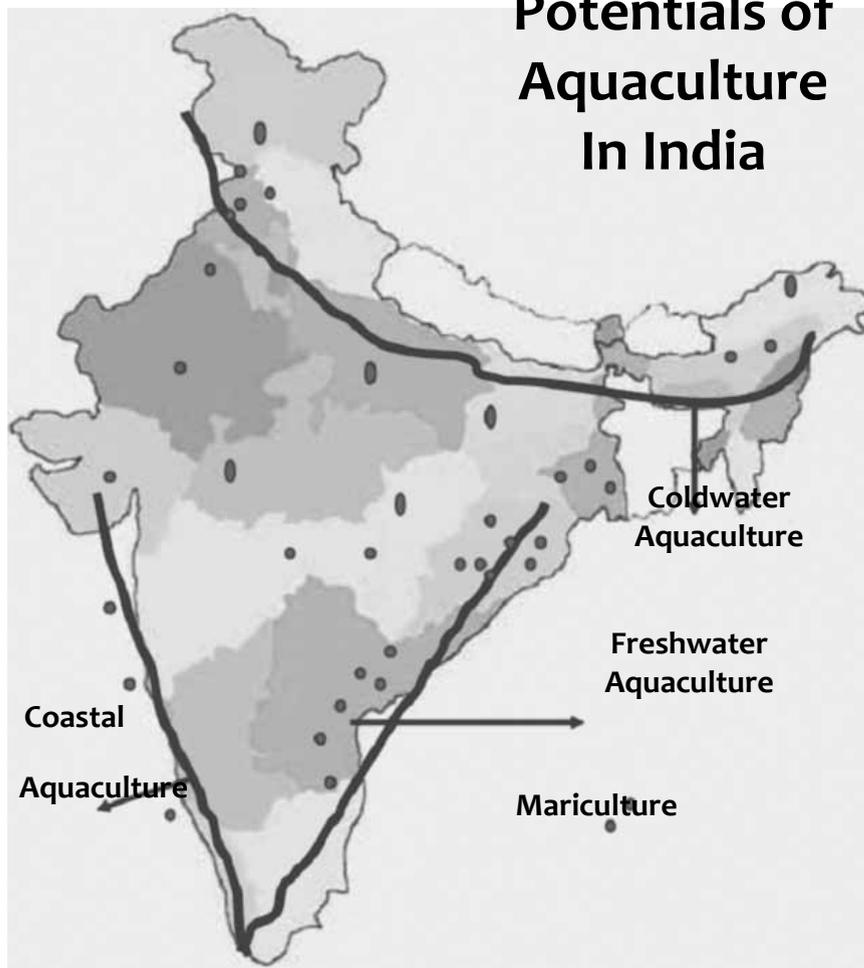
BTFC wishes to expand its activities in order to generate revenue throughout the year. The three best possible solutions have been provided to collective. The strategies for implementing these strategies are discussed in detail thereupon. This case study provides empirical evidence in support of the effectiveness of collective actions in sustainable livelihood. The community included in the study have mutual agreement regarding the design of management mechanisms. There is no problem of enforcement because every member of the community is his brother's keeper. Those who violate rules are easily detected and social pressures are brought to bear upon them. Evidently, the mechanisms adopted are effective in engendering sustainable development of the fisheries. The traditional belief system, cohesiveness of the social system, homogeneity of the fisherfolk and their commitment to the socio-cultural values of the communities are the main determinants of the effectiveness of management mechanisms.

Annexure 1: Fisheries Proposed Eleventh Plan Outlays

Code	Major Head/ Minxor Head of Development	Tenth Plan 2002-07	Eleventh Plan 2007-12
01	Agriculture and Allied Activities 2405 Fisheries 011 Direction and administration 1. Strengthening of fisheries organisation	40.26	50
101	Inland Fisheries 1. Production and supply of quality fish seed	400	600
	2. Development of reservoir fisheries	40	40
	3. Fish farmers development agency	655	350
	4. Supply of fisheries requisities including subsidy	-	-
	5. Maun development scheme	200	430
105	Processing / Preservation / Marketing 1. Fisheries Marketing scheme	25	35
109	Extension & Training 1. Fisheries extension schem	15	150
	2. Training and extension scheme (CSS)	60	60
120	Fisheries Cooperratives Group Accident Insurance Scheme	20	25
190	Assistance to PSUs Fisheries Development Corporation	-	-
191	Fisheries Cooperatives Fishermen Housing under National Welfare Scheme (CSS)	370	450
800	Other Expenditures 1. Fisheries Research Scheme	25	40
	2. Assistance to fisherfolk under BCP/ WCS/SCP		50
<b>Total</b>		<b>1,895.26</b>	<b>2,280.00</b>

Source: Department of Animal Husbandry and Fisheries, Governement of Bihar)

## Potentials of Aquaculture In India



Source: [www.nfdb.org.in](http://www.nfdb.org.in)

Annexure 3: Schemes under National Fisheries Development Board

Sl No.	Activity	Eligibility Criteria	Eligible Financial Assistance	Documents required
1	Reclamation/ renovation of existing ponds & tanks	<ul style="list-style-type: none"> <li>• State departments of fisheries</li> <li>• Farmers who desire to construct new ponds and sponsored by the fisheries departments</li> <li>• Farmers who have fish ponds and tanks and sponsored by the state department of fisheries</li> </ul>	20% subsidy on the unit cost Rs. 60000	<ul style="list-style-type: none"> <li>• Duly filled in application (Form-IA-I), routing through the DoF concerned</li> <li>• Land ownership title deed; If lessee, lease hold agreement for not less than 5 yrs</li> <li>• Bank consent to provide loan</li> </ul>
2	Construction of new ponds and tanks	As above	20% subsidy on the unit cost of Rs. 2.00 lakhs. For SC/SC & NE States 25% subsidy	As Above
3	First year inputs for new ponds and claimed/ renovated ponds and tanks	As above	<ul style="list-style-type: none"> <li>• 20 % subsidy on the unit cost of Rs. 0.30 lakhs.</li> <li>• For SC/ ST &amp; NE States 25% subsidy</li> </ul>	<ul style="list-style-type: none"> <li>• Duly filled in application (Form-IA-I /II)</li> <li>• Land ownership title deed; If lessee, lease hold agreement for not less than 5 yrs</li> <li>• Bank consent to provide loan</li> </ul>

Source: [www.nfdb.org.in](http://www.nfdb.org.in)

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8. [www.mapsofindia.com](http://www.mapsofindia.com)