

**BUSINESS PROSPECTS OF COOPERATIVES
OF SMALL SCALE
MARINE FISHERS IN WEST BENGAL
*A STUDY***

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Preface

Including a statement of procedure

Like small-scale artisans and producers everywhere in India, small-scale fishers and fishworkers (hereafter SSF) have an uphill task surviving and making their ends meet.

The SSF have many problems. They must operate in the market, but often do not have what it takes to make the best of market realities and opportunities. For example, they are handicapped by severe capital shortage, caused largely by almost non-existent access to institutional loans at low interest. This forces them into the hands of private credit (in the form of actual credit on interest or money advance from merchants), which reduces their profits sharply and keeps them trapped in the vicious cycle of capital deficiency.

What worsens matters is another usual problem—poverty of human and cultural capital. This prevents them from exploring business prospects and opportunities beyond the traditional, keeping them trapped in their existing way of doing business.

One way out of this morass is governmental initiative—extending easy loans, providing business exposure training, entrepreneurship training, and skill-training. Unfortunately, such provisions are extremely inadequate, at least so far as West Bengal is concerned.

The other way out is through organizing the SSF into collectives that:

- Can pool monetary resources to strengthen the capital base
- Can enhance the fund of social capital through cooperation and mutual aid
- Can create a synergy of experiences and knowledge
- Can reduce the poverty of human and cultural capital through the pooling of whatever is available to each member

Moreover, cooperatives and other collective forms can use their joint resources to avail opportunities that are not often available to an individual from disadvantaged social groups. For example, they can draw on their collective resources to procure expert help for enhancing knowledge, skill-base, and business savvy. Moreover, they can avail governmental schemes and funds earmarked for cooperative endeavours.

As studies on cooperatives show, modern collective business institutions develop best among communities having thriving traditions of mutual aid and cooperative behaviour. Since our concern in this study is with coastal fishworkers in West Bengal, it is pertinent to ask whether traditional means of cooperation existed among them. The answer is in the affirmative.

The most outstanding example of cooperation is the Khoti. We shall see what the Khoti is in the first chapter. We shall see how it creates a democratic space for mutual cooperation in managing the fish landing centre and the fishers' affairs. However, and we shall also see this, the Khoti is not a business institution per se. Let alone being a business institution of the fishers, it does not even provide the small-scale fishers with the means to extricate themselves from the clutches of the moneylender of *dadan*-giving merchants.

But, we are running ahead of the story, which must be read in the chapters of this study. Here, we must mention the concerns of this study.

As the title indicates, the study is concerned with finding out the business prospects of cooperatives of small-scale marine fishers in West Bengal. The researcher has interpreted the term 'cooperative' to denote not only formal cooperative societies as defined under Indian law but any institution of collective business drawing its membership from the local community and whose goal is the collective uplift of its members.

The basic research was done in 2016, with most of the work concentrated during the last few months. Since the Khoti season of 2016-17 was still underway, the economic data collected pertained to the two previous years, i.e. to 2015-16 and 2014-15.

The following methodology was adopted in undertaking the study.

1. The literature on cooperative businesses and allied topics has been extensively examined.
2. Initial inputs on relevant topics were taken from those deeply involved with marine fisheries issues in West Bengal.
3. Initiation and training sessions have been conducted with key field investigators to orient them with the objectives of the investigation. The sessions were conducted as a two-way street, with the participants (who are experienced fieldworkers in the fisheries sector) contributing to framing the questions to be asked and the methodology of inquiry.

4. On the basis of the above, a questionnaire-based survey accompanied by general interviews of those surveyed and other community members were undertaken across fishers and fisher khotis/cooperatives in Purba Medinipur and Sagar Block of the South 24 Parganas district. The most populous set of respondents was that of the *layas*, or boat-owning marine fishers who were the ones that took loans or advances from the aratdars or byabasais. Some 30 respondents were surveyed from 3 out of the 7 Khoti-cum-cooperatives in Sagar. In Purba Medinipur District, a total of 5 respondents were surveyed across 4 Khotis in Khejuri, 9 respondents were surveyed from Dadanpatrapar Khoti in Ramnagar-II district, 2 respondents were surveyed from Junput Khoti, and 1 respondent was surveyed from Soula-2 Khoti and 1 respondent was surveyed from Baguran Jalpai-II Khoti. This makes a total of 48 *layas*.

The survey of the *layas* was two layered. The first layer was concerned with the nature of the overall conditions of their business – the problems, possible solutions, and overall prospects. The questions are as follows:

- a) What are the main problems of the small-scale marine fishers?
- b) Do you think that the total or per capita catch is declining? If yes, do you think that this might one day lead to this business becoming unprofitable?
- c) What are the raw and processed products of the small-scale marine fishers?
- d) Where do the products go after they leave your hands and where do they go from there?
- e) What proportion of your products is sold raw and whether some portion of the raw product is eaten in your home?
- f) What portion of the product is dried and sold? What is the fish-drying technique you use?
- g) Do you use any chemical for conserving raw or processed fish? If you do, can you say exactly what chemical you use? How did you learn the use of this chemical? Where do you get it? Do you know of any harmful effect of this chemical?
- h) Who buys raw fish? What is its destination?
- i) Can one process raw fish to produce other value-added products? Have you ever thought about this? Has your khoti or cooperative ever considered this?
- j) Is dried fish consumed by humans or becomes poultry feed? What proportion of your products end up in either of the categories?
- k) In what circumstances do your products become poultry feed or is considered fit for human consumption?

- l) What are the steps to add value to your product and what are the paths of distribution?
- m) What are the routes and means of product distribution within and outside the state?
- n) What are the problems of procuring loans and capital?
- o) What are the realities and problems of marketing of the products for the small-scale marine fishers?
- p) Are there problems of packaging and possible means of solving the problems?
- q) What are the means of directly marketing the products?

See Appendices A and B for a taste of the responses in translation and original.

The second layer of questions concerned hard economic data – the amount of loans or advances taken by the fishers, the costs incurred in fishing, the revenue from sales, and the income. This information was taken of the two preceding seasons (since the fishing season of 2016-17, when the survey was conducted, was still underway). This data was not taken from the fisher from Soula-2 and from Baguran Jalpai-II, and they were only surveyed with regard to the first set of queries. See Appendix C for a sample survey sheet from Khejuri with responses. Of course, the entire data is captured via tables in Chapter V.

5. Apart from the layas, some aratdars or byabasais, i.e. those who gave advances to the layas, were also surveyed. 3 aratdars were surveyed in Sagar, 2 who operated in Dadanpatrabar and 1 from Baguran Jalpai village. Hence, a total of 6 aratdars were surveyed. The substances of their responses have been seamlessly incorporated in the main body of the report.

6. The principle of selection of layas and aratdars were as follows:

Given the fact that these are days of endless surveys by government departments, NGOs, researchers, and so on, it has become difficult to get people to talk for any length of time. There is a feeling that such surveys and interviews bring no benefit to those surveyed and surveyors are often met with disinterest or irritation. In such a situation, there was no question of developing a random sampling procedure – for most randomly sampled individuals would refuse to be interviewed for any length of time. Hence, it was useful to target only those persons who were more likely to talk to the field investigators and would do so with sufficient interest so as to yield useful responses. Therefore, the sampling, perforce, had to be purposive, with a vengeance, so to say.

It was the same with aratdars, but for different reasons. Our field investigators were members of the marine fishing community. Unfortunately, the issue of the interrelationship between the aratdar and the laya is a thorny one and most aratdars were uninterested to talk about them with members from the community. (Of course, they would be unwilling to talk to outsiders still more, which was the point of having investigators from within the community.) So, the investigators could only approach aratdars who would be prepared to talk.

7. As regards the actual and possible value-added fishery products, Mr. Balaram Basak, the former Director, MPEDA, was interviewed.

His answers have been annexed as Appendix F.

8. Since the north-east is a very important market for dried fish, an investigative visit was made to the dry fish market in Tripura. A brief Tripura report, with pictures, has been annexed as Appendix G.

9. The inputs from interviews, visits, and survey findings were analysed in the light of the study concerns and the information received from other sources, including literature review.

ACKNOWLEDGEMENT

This study would not have been possible without the support of the two organizations mentioned on the title page.

I am deeply indebted to my friends at DISHA, particularly to Sasanka Dev and Pradip Chatterjee, for reasons which they know only too well. I thank them most for putting up with my strange (even to me) reluctance to write this report, although the bulk of the data was collected long back and mostly analysed. The only explanation of the reluctance I can offer is that the findings were so depressing and some of the issues perplexing. In this connection, I also thank my friends at ActionAid India with all my heart.

I am particularly indebted to Debasis Shyamal, Milan Das, and Sujoy Krishna Jana for numerous services they rendered in course of the study and putting up with my endless demands and occasional reprimands. I wish I had their generosity and forbearance. I am also indebted to Abdar Mullick of Sagar for his almost equal kindness and equanimity. I am also grateful to Manasi Bera of Sagar for giving some of her valuable time in helping me with the survey. Special thanks are due to Gautam Bera for approaching the survey in Khejuri with a meticulous and critical mind.

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I thank my friend Shyamalendu Biswas for undertaking the survey at Sheoraphuli with such competence and at such short notice. It is the best of fortunes to have friends whom you can shamelessly exploit.

I thank my friend Mukut Roy Choudhury for his indispensable help in arranging the Tripura trip, accompanying me to Tripura, and vitally assisting the investigation there. I also thank Mr. Ranen Deb Roy, officer in the Fisheries Department, Government of Tripura for his endless help and kindness during the Tripura trip. I also thank Mr. Swapan Kumar Das of Agartala Golbazar and Mr. Haradhan Das of

Teliamura for providing important information on the dried fish trade in Tripura in particular and the North-East in general.

Sometime in 2015, more than a year before I began this particular study, I visited Maharashtra to study some cooperatives in that state (as part of an, as yet, incomplete study supported by Soceo and ChildFund Germany, to both of whom I am grateful). I had the good fortune of visiting and interviewing members of the Arnala Fisherman Sarvodaya Sahakari Society. I am grateful to all of them and particularly to Moreshwar Vithoba Vaiti and Rajeshji, who were extremely kind and full of useful information about the problems of fishers' cooperatives.

Lastly, but by no means unimportantly, I thank all those who I have forgotten to mention in this hurriedly written statement and seek their forgiveness.

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Kolkata

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Glossary of terms and abbreviations

aratdar [*]	Etymologically, one who holds stocks—a merchant; among coastal fishing communities, the term is usually used as a synonym for dadandar (see below); another term used is <i>byabasai</i> —literally merchant
dadan	Money that the fish trader (usually dried fish trader) advances to the fisher at the beginning of the fishing season
dadandar	The small trader who advances dadan to the laya (fisher)
khoti	Community managed fish landing centre
laya	the fisher who owns a boat, employs crew, and is the master of his own fishing operation
SHC	shuntki for human consumption
SNHC	shuntki for non-human consumption
<i>shukno mach</i>	dried fish (see <i>shuntki</i>)
<i>shuntki</i>	dried fish

* Often the above terms are used in plural, viz. aratdars, dadans, dadandars, layas, etc.

SUMMARY OF FINDINGS

- The small-scale coastal fisher's catch has tended to decline down the years. The main reason seems to be destructive fishing in the coastal waters undertaken by the mechanized fishing fleet. Added to this is the pollution of the waters.
- While the overall catch has perhaps not declined, the fish stock available for the small-scale fishers, particularly those confined to fishing close to the shoreline has markedly decreased.
- The decline in catch has been so drastic that one could have expected it to result in disastrous decline in incomes, leading to small-scale fishing ceasing to exist as a profession. The only reason this has not happened is that the rise in fish prices due to rise in demand without a matching rise in supply has led to the effect of catch poverty getting compensated to a considerable extent.
- There is considerable geographical variation in incomes, as our study reveals. But, it also reveals that very often, and strictly speaking, the laya's business is non-profitable. If one takes into account the capital depreciation and the labour costs of the laya and his family, it often becomes difficult to see a profit or even breaking-even. The business, often complemented by other economic activity during non-fishing season, allows him and his family to survive and barely get along.
- The fact that many fishers at all break even and sometimes even make a slender profit is because while the demand for fish has grown rapidly, the overall catch has not kept up, leading to a steep hike in fish prices.
- The following things stand in the way of the small-scale fishers making a profit:
 - (a) His dearth of capital leading to his dependence on the dadandar and, occasionally on the local moneylender;
 - (b) His dependence on dadan forcing him to sell his catch to the dadandar at a price significantly less than what he could have got in the unrestricted market;
 - (c) Having to sell his entire catch to the dadandar – dried or raw fish as the case may be – preventing the small-scale fisher from exploring value-addition options and explore the higher product and price ranges;

(d) His cooperative connections, whether in the form of the khoti or the formal cooperative, failing to provide him with either capital or advanced market opportunities.

- Why then does the fisher take dadan? One must understand that taking dadan is a viable mode of living, even when it militates against profits. For, the dadandar offers various advantages to the fisher, not available from other sources. The fisher can take various freedoms with his dadandar and very often defaults on paying back the advance. The dadandar usually takes a lenient view of delayed payment or even long-term non-payment, for he is more concerned with being assured of fish supply at a reduced price. The dadandar's economics is buying at as low a price as possible so that he can make a higher profit when he sells the fish—other things remaining the same. If the fisher fails to repay his dadan, it is transferred to the next season, when it is added to the current advance and contributes to pulling down the price that the fisher gets for his catch. This benefits the dadandar. Therefore, the dadandar is ever-ready with his advance and even advances money for the personal contingencies and needs of the fisher. Indeed, the relationship between the dadandar and fisher often has a personal nature and often involve some amount of bonding. This, in turn, hugely benefits the fisher, at least in the short term. (But then, we largely live in the short term, and, as Keynes said, "in the long term we are all dead". Over time, the fisher and the dadandar often develop a kind of personal relationship, which allows for a degree of manoeuvring and negotiation on both sides. This personal-economic relationship is advantageous not only to the dadandar but also to the fisher, which partly explains why, notwithstanding occasional serious grievances on the latter's part, there is no serious or sustained effort to get rid of the dadandar's shackles. (Of course, getting rid of these shackles is far easier said than done.)
- Nevertheless, if the small-scale fisher continues to remain tied to his existing economics of dadan-taking, notwithstanding the advantages, and the consequent lack of access to markets near and further off there is no scope for his profits to increase.
- The main problem with the dadandar's control over the fisher is not so much the reduced price that the fisher gets. This is because, as we have found in this study, even if the fisher received the open market price, it would not suffice to keep him out of poverty. The main problem of dadan rather is the fisher's losing his entire catch to the dadandar. This leads to the fisher's total lack of control over his catch, creating a condition where one cannot think of the

fisher exploring, individually or collectively, other options for his catch—for example, that of various kinds of value addition.

- Nevertheless, it is less the *dadandar* and more the dwindling supply and the injuries inflicted by an increasingly unpredictable weather (in the climate change scenario) that hurts the fisher the most.
- Hence, it is difficult to conceive of a solution that might decisively empower the fisher and lead him, within reason, to a certain degree of mastery over his fate.
- Yet, opportunities exist. For example, dry fish has a national and international market and direct access to them or to agents further down the trade chain can bring significantly higher earnings or profits.
- This can only be ensured through better access to capital, information, and training. Properly functional collectives can be a means to that end. In fact, fish, even in its dried form, is a perishable item and call for technologies of preservation. Such technologies become available only with considerable capital, which, in the given situation of high cost of liquidity, renders cooperative means of capital formation desirable.
- However, the track record of existing cooperatives inspires little confidence in their being able to make a new start. This is true not only for the marine fisheries cooperatives, but for cooperatives across West Bengal, for this is one of the states with a poor showing in cooperative success.
- Moreover, as is evident to anyone acquainted with the community, and as this study confirms, the desire for cooperative business did not emerge either within the community or even among solitary individuals within the community.
- Further, the failure of cooperatives has created low level of optimism about cooperative solutions.
- Hence, it is unlikely to expect that successful cooperative forms will emerge unaided within the community (and merely aided by some external support).
- Rather, it seems that if cooperative forms must succeed, the basic inspiration and guidance must come from outside.
- There are some examples of this kind of successful intervention, classically in the case of Mondragon, and subsequently, in India, in the case of SEWA in Gujarat.
- If a team of activists—with requisite vision, knowledge, practical experience, and social capital—dedicated themselves to the task, then there is a possibility

of breaking the vicious cycle of failure leading to pessimism and low distrust, which, in turn, leads to more failure.

- However, things must be taken one step at a time. The beginnings should be made with a single collective. A huge amount of funding would be needed, which might possibly come, at least partly, from social investment projects. The experiment, if successful, could act as a model for further action and exploration.
- In all this, one should not make a fetish of formal cooperative societies. It might be important to think of more dynamic and flexible forms of organization such as small producer companies and even citizens' societies with new leadership prepared to think in a more entrepreneurial fashion.
- The beginning can only be made by asking enterprising and genuinely interested community members to put together a collective of sincerely motivated and forward looking persons, including a fair share of young people, prepared to venture and experiment. Whether the collective would be a producer company or some other institutional form can be worked out later on. The experiment can take off, if only such a group comes together. If the experiment succeeds, it can form a model for others of its kind. Not all groups can succeed, nor everyone will. Nor can everyone be a successful member of an entrepreneurial group. Even inspired social development cannot produce even and uniform results.

Chapter I

Existing traditions of cooperation

In official documents, the term Khoti is most often translated as 'fish landing centre'. However, a more appropriate term is 'community managed fishing camp and fish landing centre'. For, the Khoti is a community of SS fishers and fishworkers coming together, from near and relatively far, at a specific site of on the seashore (in some cases river banks) in order to go about their business in a spirit of collective understanding and mutuality. The business, of course, is fishing (during the entire marine fishing season, traditionally from October to February) and allied activity. Some of the fish must be sold raw. Others are dried and sold as *shuntki* (dried fish). Sorting and drying of fish involve prolonged use of the beach and employment of large numbers of people.

The Khoti is in many ways a democratic organization of the various stakeholders at the landing and fish drying site. The fishers (boat owners and crew) of course dominate in numbers, but other local service providers are included in the Khoti. Hence, the Khoti would consist not only of fishers who own boats, the fishers who act as crew, the driers, and the sorters, but also shopkeepers, barbers, generator owners or any other local service provider on whom the Khoti operations depend. The Khotis usually also include fish vendors as members.

In fact, the Khoti is in many ways an organization typical to West Bengal. This state does not have fishing villages per se. Nor does it have genealogically and socially defined fishing community. The coastal villages consist of families who fish and families who do not, at least professionally. Moreover, various castes and communities are involved in professional fishing. Last, but not the least, the fishing operation on the sea coast involves fishers and crew members from other localities. Therefore, a purely village-based fishing operation is not an ideal model. What is required is a different institutional arrangement to allow fishers and fishworkers from different castes and villages to work together.

The Khoti administration, democratically elected through voting, takes care of the day to day management of the landing centre and allied activities, resolving conflicts and taking steps to avoid possible avenues of friction. In addition, it deals with government agencies and other coastal communities. For all this, the Khoti charges a small fee from its members. From the vendors and wholesale buyers of dry fish it also charges a small fee per sack of goods purchased, in return for the orderly management of marketing operations it provides. Thus, this community-based administration provides management and governance services that are, on the one hand, low cost and, on the other, given its democratic and local-rooted character, sensitive to the interests of the various stakeholders.

The Khoti is the most striking example of occupational cooperation among the coastal SSF, particularly because it operates on a rather large scale, often with thousands of members in a single Khoti. However, it cannot normally be described as an institution of social enterprise. For, it is essentially a community-based democratic administrative arrangement to facilitate individual business, but is not a business organization *per se*. The Khotis in Sagar have registered themselves as cooperatives, for reasons that will be explored in further detail in the next chapter. However, as we shall see, even they have failed to develop themselves as genuine community business institutions.



At Dadanpatrabar – preparing the chaataal (ground) for fish drying

Chapter II

The condition of formal cooperatives among SSF in Sagar and Purba Medinipur

During the turn of the century, marine fishers' cooperatives in Maharashtra demanded and received loans from the National Cooperative Development Corporation (NCDC). This opened the way for disbursing similar loans to fishers elsewhere. However, such loans (for boats, nets, and so on) could be made available to fishers only through fishers' cooperatives. This resulted in the West Bengal government encouraging development of marine fishers' cooperatives in West Bengal. Now, whereas in Maharashtra, and in some other states, fishers' cooperatives had developed as community-business ventures, and sought soft loans to further their business activities, here in West Bengal the marine cooperatives sprang up with the sole objective of availing of the loan facility. Thereafter, once the loans were disbursed, the cooperatives quickly went into hibernation. The formal framework was maintained and yearly audits are done for the sole purpose of retaining a platform that can become useful when such cooperative loans become available again. Moreover, several malpractices emerged in the taking of the NCDC loans and in their non-refund, which also emerged during the survey. Several cooperatives became serious defaulters.

Hence, in Purba Medinipur, while the Khotis, which are purely community organizations, on the whole, function actively, the cooperatives languish and merely continue as potential government loan procuring mechanisms.

In Sagar, the historical situation was different with respect to Khotis. Here, the Khotis emerged later than in Purba Medinipur. With the exception of Mahishamari Hatipitia Marine Khoti Matsyajibi Samabay Samiti, the Khotis did not enjoy complete official recognition and, hence, there was a problem with receiving the support that is due to the Khotis from the fisheries department. Further, it became apparent to fishers that the cooperative was a good thing for receiving various kinds of support from the government, including the usual ones that a Khoti expects from the fisheries department. Therefore, the various Khotis in Sagar decided to present themselves in the guise of cooperatives. The needful formalities were completed and Khoti members became cooperative members.¹ Only Mahishamari Hatipitia was an

¹ However, the creation of marine cooperatives in Sagar resulted in an interesting problem. The Khoti is an inclusive institution, which includes everyone above the age of 18 who is in some way connected to the marine fishing activity. The Khoti committee is thus an elected board representing the entire local marine community—minus the children and adolescents. The cooperative as a legal entity, however, is a different kettle of fish (no pun intended). Here, only fishers who are local residents can be members and two persons from the same family (say husband and wife) cannot be members of the same cooperative. Hence, the governing board of the cooperative represents not the entire Khoti but only a small section of the Khoti members who are eligible to become members of the cooperative.

officially recognized Khoti, which is precisely why it did not become a cooperative. It only applied to become a cooperative in 2015 and its process of registration was not completed even during the time of the survey. It became a cooperative to avail of government schemes over and above such support as was available to the Khoti.

Table 1: Khotis and cooperatives in Sagar

Khoti	Number of cooperative members		Number of Khoti members who are not members of the cooperative	
	Male	Female	Boat-owners (all male)	Others (mixed figures, gender not disaggregated)
Hatipitia	18	0	80	700
Beguakhali	265	20	75	600
Sagar Matsyajibi	128	35	25	500
Sagar Sangam	60	45	46	450
Khal Dhablat	41	0	20	30
Bishalakshmi	70	15	0	20
Ma Ganga	112	40	0	50

This explains why the cooperatives in Sagar have some important activity to place on the table, while the Purba Medinipur cooperatives come up empty handed.

Therefore, in the case of both Sagar and Purba Medinipur, marine cooperatives have not developed with the real intention of community business. They are not real cooperatives, but institutions of a different kind.

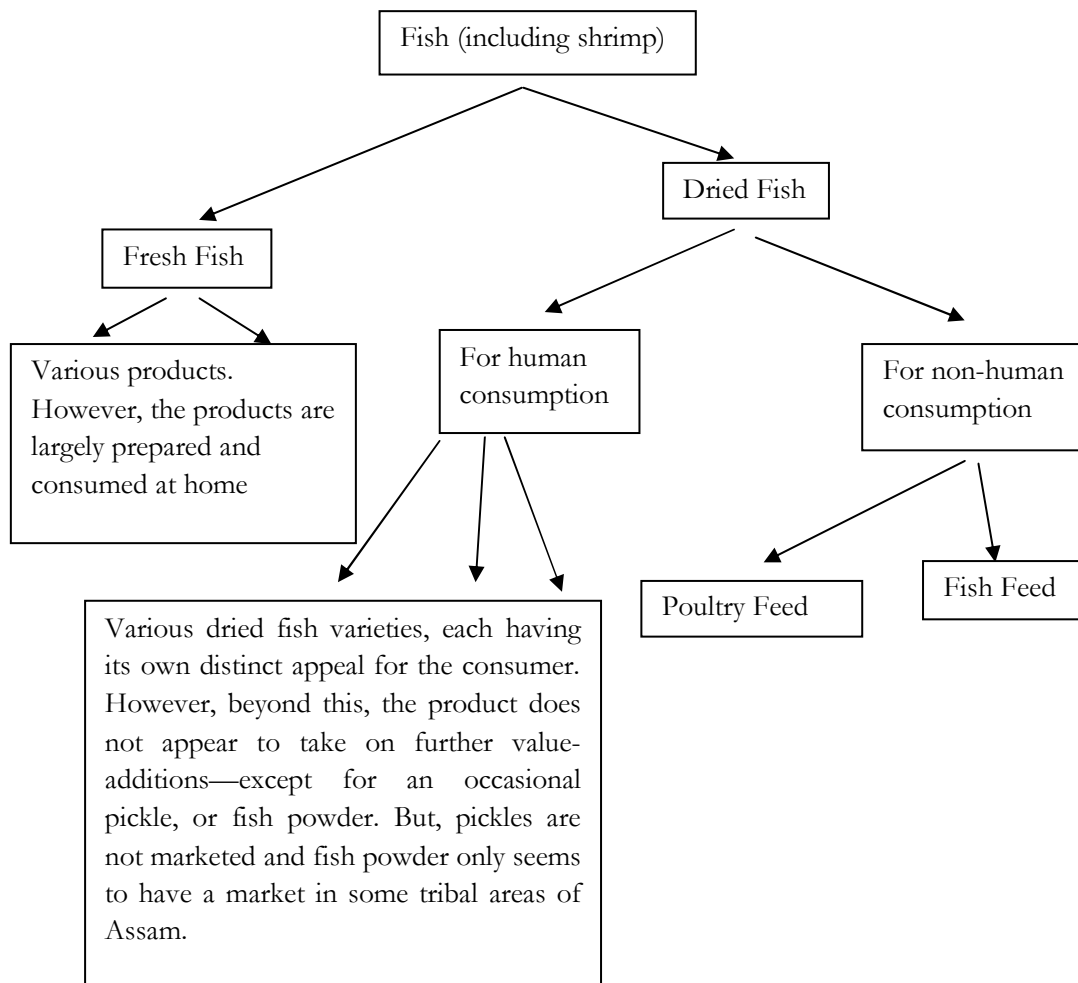
Further, only in the case of the two women's cooperatives in Purba Medinipur, i.e., in Junput and at Dadanpatrabar, have we seen a little serious effort to do business. The failure of business in the case of the Dadanprabbar Mahila Matsyajibi cooperative is a case of pure business failure, and is primarily due to problem of leadership, business savvy, skills etc. The same applies to the poor performance of the women's cooperative at Junput.

Yet, this board is recognized by the government and runs the Khoti. Therefore, in this vital sense, formation of cooperatives in Sagar involves a certain serious truncation of Khoti democracy.

Chapter III

The products of the coastal SSF

There is not much to be said about the existing products of the coastal small-scale fishers. The catch is fish (which includes shrimp). When the catch is sold as commodity, the broad division is that of fresh fish and dried fish. The dried fish has two product and commodity forms—for human consumption and for non-human consumption (fish feed and poultry feed). Thus, the essential product tree is as follows:



Product and its break-up across the khotis

The main activities of the coastal SSF revolve around dried fish (*shukno maach* or *shuntki* in local language). However, there is a small fraction of fresh fish catch. The following tables indicate fractional variation in product and their utilization across areas:

Table 2: Nature of catch in Sagar

	Fresh fish	Dried Fish	
Proportion of total catch	2-3% of the total catch	98-97% of the total catch	
Whether for human or non-human consumption	For human consumption	Marked for human consumption (Consists of the larger sized edible fish varieties)	Marked for non-human consumption (Consists of very small-sized fish and shrimp): becomes a vital constituent of fish feed and poultry feed at a subsequent point in the chain
Proportion of partial catch	100% of the fresh fish catch	40-45% of the total dried fish catch	55-60% of the total dried fish catch
Utilization	Usually 20-30% consumed by the crew and by the household of the laya(boat-owner) and the rest sold	The entire amount is sold; an insignificant portion may be retained for domestic consumption	The entire amount is sold



At Sagar – using brooms to separate the drying fish so as to prevent getting glued together

Table 3: Nature of catch in Dadanpatrabar Khoti

	Fresh fish	Dried Fish	
Proportion of total catch	10-12% of the total catch	86-88% of the total catch	
Whether for human or non-human consumption	For human consumption	Marked for human consumption (Consists of the larger sized edible fish varieties)	Marked for non-human consumption (Consists of very small-sized fish and shrimp): becomes a vital constituent of fish feed and poultry feed at a subsequent point in the chain in the chain
Proportion of partial catch	100% of the fresh fish catch	Usually 25-35% of the total dried fish catch	Usually 65-75% of the total dried fish catch
Utilization	Usually 15-20% consumed by the crew and by the household of the laya (boat-owner) and the rest sold	The entire amount is sold; an insignificant portion may be retained for domestic consumption	The entire amount is sold

Junput Khoti

In the case of Junput Khoti, the *layas* do not make shuntki. They catch the fish and sell the fresh fish to the saudagars, vendors, and aratdars. The vendors sell the fresh fish in the local markets. The aratdars in this case are fresh fish stockers. The Saudagars are the ones who dry the purchased fish and sell them near and far.



Junput – Dry fish stocked

Table 4: Nature of catch in the Khotis in Khejuri-II

	Fresh fish	Dried Fish	
Proportion of total catch	5-10% of the total catch	90-95% of the total catch	
Whether for human or non-human consumption	For human consumption	Marked for human consumption (Consists of the larger sized edible fish varieties)	Marked for non-human consumption (Consists of very small-sized fish and shrimp); becomes a vital constituent of fish feed and poultry feed at a subsequent point in the chain
Proportion of partial catch	100% of the fresh fish catch	Usually 15-25% of the total dried fish catch	Usually 80-85% of the total dried fish catch
Utilization	Usually 4-5% consumed by the crew and by the household of the laya (boat-owner) and the rest sold	The entire amount is sold; an insignificant portion may be retained for domestic consumption	The entire amount is sold

Hereafter, we shall refer to the shuntki for human consumption as SHC and the shuntki for non-human consumption as SNHC.

It ought to be noted that the bulk of the dry fish produced by the coastal SSF is SNHC, which is a vital constituent of poultry feed and fish feed. Nowadays, poultry feed is becoming standardized. It usually consists of different constituents, including soybean powder, crushed corn, crushed rice grain, crushed oyster shells, vitamin supplements and so on. Crushed dried fish is added as a vital constituent to this mix. Something similar happens in the case of fish feed though here the constituents are somewhat different (for example, soybean is not a part of the mix and pride of place goes to powdered rice or wheat chaff, fish powder, and fish oil).

Chapter IV

The vectors of product movement

In considering the vectors of product movement, we shall concentrate on shuntki. We shall talk about fresh fish also, but to a lesser extent and in a later chapter.

Both in Purba Medinipur and in Sagar, the local fishers sell to the local merchants. Mostly, the sale is made to the merchant from whom the fisher takes an advance at the beginning of the fishing season. We shall examine this particular economics later. Right now, we shall focus on how the product leaves its source and travels out and about.

We shall first talk about the SHC.

The boat-owners in Sagar and Purba Medinipur sell to the dadandar traders who have made advances to them at the beginning of the season. The selling pattern of traders tends to be determined by convention, but is flexible and can be rather variegated.

For example, the traders in Sagar take their SHC to the Nishchintapur market and Barkha market in South 24 Parganas. A major outlet for SHC appears to be the Balighai market in Purba Medinipur (see Appendix: A note on Balighali shuntki market). There is a local sale of SHC from all these markets. But, particularly in the case of Balighai, the volume of SHC sold to local consumption is rather small compared to sale to outside demand. Merchants come to Balighai market to buy SHC for sending to north-eastern India, Bangladesh, Jharkhand, and Orissa.

Another gateway to north-eastern states, largely Assam and Tripura, was the market at Sheoraphuli, in Hooghly. It collected its dried fish stock mostly from Bakkhali in South 24 Parganas and from various points in Purba Medinipur, largely Junput. It sold some 60% of its stock to the north-east and the rest to local retailers who came in to buy from Hooghly, Nadia, Burdwan, Birbhum, and Murshidabad.

North-eastern India, Bangladesh, Jharkhand, and Orissa—these are the names that usually came up during the survey, as external markets for dried fish from West Bengal. However, there seems to be some indication from sources (particularly from the survey in Tripura) that the trade in SHC and even SNHC is a pan-Indian trade and merchants can buy from and sell to different purchasers across India in response to demand. This is the key aspect of trade in shuntki (and indeed most other dynamically traded goods)—there are supply shortages and occasional demand hikes. Then vendors try to respond by buying stock from wherever they can, provided the price is affordable. Indeed, the businessman's success lies in able to detect demand and respond to it in a manner that will not only bring profit but will create for him new contacts and access to hitherto unexplored networks. It is this

nose for opportunity and flexibility in procurement that leads to sustained business success.

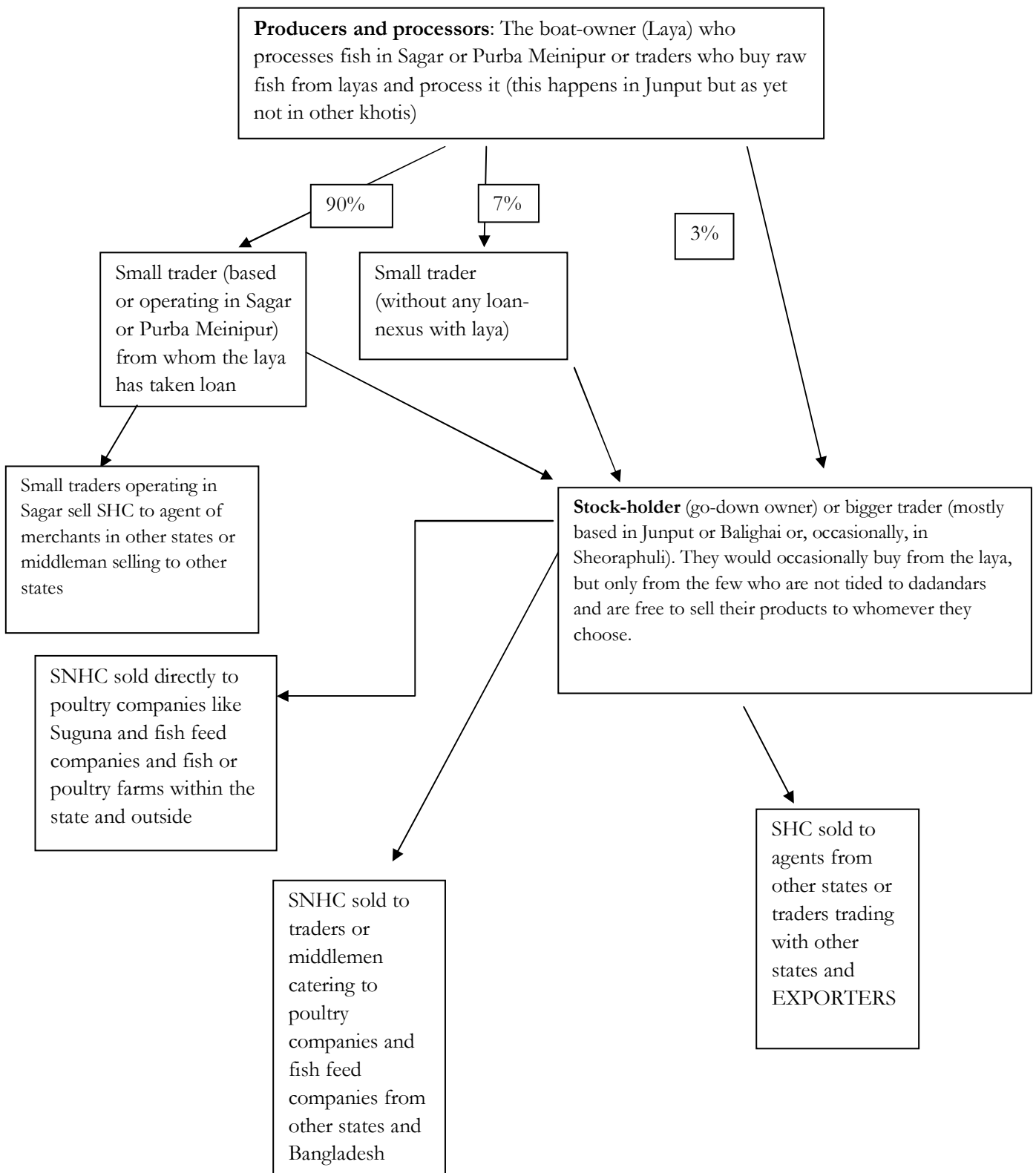
Thus, dried fish from the West Bengal coast can end up anywhere and dried fish from anywhere in India and Bangladesh can end up in West Bengal. However, under normal circumstances, traders tend to sell to other known merchants, who in their turn sell to their known vendors, ensuring continuance of the conventional vectors.

There are no available figures for supply and demand to various regions and, in any case, the present research was concerned with ordinal rather than cardinal numbers. So, while we did not get demand data for SHC with respect to different Indian states and Bangladesh, we did learn that the north-east is probably the most important recipient of SHC from West Bengal. The main hub of SHC trade in the north east is the Jagiroad market, reportedly the largest dry fish market in Asia. Jagiroad is located 50 km east of Gauhati. Fish from all over India – West Bengal, Gujarat, Uttar Pradesh, and Tripura – come to this market. The main stock of sea fish comes from West Bengal and Gujarat. The market generally operates for 3 days - Thursday to Saturday. Dry fish from the market goes to all the North-eastern states and Sikkim. Some of the dry fish are exported to Singapore, Bhutan, Malaysia and other Southeast Asian countries. 1000-1200 trucks come to the market every year. 70 per cent sales happen during the peak season and 30 per cent sales happen during the off season. The price of fish varies according to size and quality. Sea fish and freshwater fish like Bomla, Punti, and Misa range from Rs 7 to Rs 110 per kilogram. This is not a retail market and a minimum of one sack must be bought by a customer (Jagiroad Dry Fish Market).

Usually, the markets in all the north-eastern states get their SHC and SNHC from Jagiroad market. However, Tripura, which is a huge consumer of shuntki, is somewhat independent of Jagiroad. Of course, it takes in a huge amount from Jagiroad. But, its own traders also procure goods directly from other states (mostly West Bengal, but also Gujarat, Tamil Nadu, and Andhra Pradesh).²

²See the Report on Tripura in Appendix.

Product Movement: An indicative sketch³



³ The percentages shown below are merely indicative. No rigorous data exists.

Chapter V

The basic economics of fishing and fish sale of the coastal SSF and some key findings

The economics and basic algebra of the fisher's business

The fundamental economic features of marine small-scale fishing in West Bengal are capital shortage and chronic indebtedness.

Long before the khoti season begins in October, the laya must have a substantial amount of capital. For, he must repair his boat to make it safe for the sea, repair his nets or buy new ones, select the crew to be hired, settle terms with them and perhaps pay some of them an advance, buy his usual supplies, keep his establishment (the hut on the beach which is his temporary home and office during the khoti season) running and provided for, make any expenses necessary for fish drying on the beach, and so on. Indeed, since he is usually a person suffering from liquidity shortages, he might need some money to tide him through the lean months before the khoti season. Usually, the entire or bulk of the capital (and perhaps some domestic loan) comes as an advance from a trader (the byapari or byabasai). The latter is ready with money long before the khoti season begins, even as early as April or even March, close on the heels of the previous Khoti season.

Now, it must not be thought that the money advanced to the laya is in one package. There would be a substantial amount advanced before the start of the khoti season. However, the laya might need more money during the course of the season. Usually, the dadandar is only too happy to advance these amounts, which simply add up to make the total advanced.

It is important to understand the nature of the money advanced by the trader to the laya. It is not in the form of a loan against which the laya must give an interest. It, as we have already mentioned, is a *dadand* or advance. The terms of the advance are simple. The laya must sell his entire catch to the *dadandar* (one who has given *dadand*) trader and at a price less than what the laya would get if he were to sell it to someone else.

How much discount is the laya compelled to give the dadandar? This varies widely according to locality, whether the product is SHC or SNHC, and the amount of advance taken (for greater amount of advance given, the dadandar tends to take greater discounts). Anyway, the following might serve to give an idea of the discount range (note, discount figures mentioned are not as compared to the highest prices available but the usual going rate in the local market):

Discount rates are generally significantly less in Purba Medinipur. For SNHC, Rs. 1 per Kg discount is the usual rate and it could at the best be as high as Rs. 1.50. For

SHC, the discount rate could be as high as Rs. 3. This applies to both Dadanpatrabar and Khejuri. (For Khejuri, the discount rate of SHC could be as high as Rs. 4 per Kg.) In the case of Junput, the Layas sell only fresh fish and we did not get much dependable information of dadan rates (the two layas interviewed took loans and not dadan). In the case of the Sagar Khotis, the discount rate appears to be higher. Layas reported discount rates for SNHC as high as Rs. 5 per Kg and discount rates for SHC as high as Rs. 10 per Kg. However, this was in terms of the highest price in the market during the season. More balanced rates of discount (measured against the usual going rates) would seem to be Rs. 3 per Kg for SNHC and Rs. 6 per Kg for SHC.

Can we try to understand the economics of the marine fisher during the fishing season? We shall see that it can be a bit difficult.

As we have seen, the economics usually begins long before the fishing season starts when the laya starts taking dadan from the dadandar. Moreover, this is added to the money due to the dadandar from the previous year, if the fisher has not been able to repay his earlier loans, as often happens.

Now, once the fishing season starts, the fisher moves in to the seashore with his entire family. From now on, they will be staying on the shore. Members of the family will be assisting the operation. Here, one thing must be taken into consideration. When the fisher estimates his cost, he estimates the entire cost of running his establishment. *Thus, the family's daily provisions for the entire fishing season are taken into account.* Indeed, the fisher's seashore establishment and its costs are part of the fisher's economics. The fisher, however, *does not take his and his family's labour into account* in estimating his costs. We shall do so, but later.

Let us formulate the basic algebra of the fisher's business.

The fisher's cost, C , is as follows:

$$C = E + W + M + O$$

Where E is Equipment (i.e. boats, nets, etc., depreciated for the year); W is Wages; M is Repair and maintenance; O is operational cost (i.e. diesel, food, beverages, medicines, etc.).⁴

The fisher's revenue consists of revenue from sale of dried fish and raw fish and is as follows:

Revenue = dried fish + Fresh or raw fish, or, in obvious shorthand

⁴ We do not take into account the Khoti subscription. For, these are relatively small amounts. Moreover, it is certainly less in amount than the monetary value of the services the Khoti provides free of cost and which, in all fairness, should be added to the fishers' income if the subscription must be added to his cost. So we can do without this exercise altogether.

$$R = D + F$$

Therefore, his profit P is as follows:

$$\text{Profit} = \text{Revenue} - \text{Cost}$$

$$\text{Or, } P = R - C = [D + F] - [E + W + M + O + S]$$

There is one other element that comes into the picture if the fisher does not take a dadan but takes loan on interest, I.

$$\text{Then } P = R - (C + I)$$

This is straightforward and expected. Of course, the variables can take on any value, from 0 to any positive number. Moreover, R could be less than C, making P negative.

Towards concrete information on the variables

Do we have concrete information on the variables?

This is the difficult part. Our survey has yielded data on these variables and on other related information. However, the data is not entirely reliable, as we concluded after detailed discussion with the surveyors. We are attaching all the survey sheets, which readers can consult. However, it is important to give attention to several aspects of the matter. First, the respondents surveyed are usually not in the habit of keeping meticulous accounts and largely provided their data from memory—with obvious attendant difficulties. Secondly, there is a natural resistance to sharing information related to actual incomes. Thirdly, and more importantly, there is a tendency to inflate costs so as to prove that incomes are poorer than they actually are. (This is something that the surveyors admitted, on cross-questioning. It must be borne in mind that some of the surveyors are actually fisher engaged in the business.) Fourthly, there were inefficiencies on the part of the surveyors, which became apparent on cross-examination—for example, they failed either to explain or handle the question on capital depreciation. Further, they occasionally failed to carefully check the information presented for gaps, inconsistencies, and incongruities—which has resulted in an occasional submission being *rejected* or *the data had to be corrected* after further questioning. This, of course, is not unusual in surveys. We shall meet such instances as we proceed. However, notwithstanding all these glitches, we have received important information on the fishers' business and have tried to make use of it in trying to address the main concerns of this report.

The surveyors were carefully instructed to collect the annual depreciation data in the following simple manner.

Ask the price of the equipment (in Rs.)	p
Inquire about the expected lifetime of the equipment (in yrs)	f

Simply divide the first with the second
per year)

p/f (Rs.

Major structural repairs, which add majorly to the existing value of boats and whose effects last over years can be similarly depreciated.

The boats and nets need relatively minor repairs each year. However, those expenses were to be included under usual costs.

The above information is inescapably individual. This is because nets and particularly boats vary a great deal according to material and make. This is why, in order to be very correct, information was needed from each individual fisher.

The surveyors invariably failed to procure the depreciation values. What they did instead was to ask for and submit the repairing cost of equipment under the given head. This might appear to be a very serious lapse. It is. However, once we analyse the data we see that the absence of depreciation values is not as great a lacuna as it is likely to be have been in other circumstances. We shall see why this is so. Here, we can merely mention that most of the poorer fishers incur losses or are at the break-even situation. Hence, adding the depreciation would only indicate the severity of their plight, which is apparent as it is. Therefore, the absence of concrete values is not as grave as it would have been in other circumstances.

The possible range of the depreciation – a note

The main capital expenditure of the small-scale fisher is on boat and net. The smallest boat that the marine fisher uses easily costs Rs. 70,000. When there is even a small engine on board, which is readily the case with sea-fishers, the price is not less than Rs. 100,000. The less poorer fishers use boats that cost from Rs. 200,000 to Rs. 250,000. The slightly better off fishers use boats that go deeper into the sea. Here the price can easily be from Rs. 450,000 to Rs. 500,000—depending not only on the size of the boat but on the materials (mainly, the wood) used to build it. Now, estimating the depreciation cost can be tricky. This is because the lifetime of the boat varies widely, depending not only on the material used and nature of the construction but also the geographical locale. For example, boats that get the benefit of entering a river and anchoring there have longer lifetimes, while boats that do not get the benefit of slightly sweeter and relatively still water (for example, in Dadanpatrabar) endure much less.

There is another difficulty in working out the depreciation rate. Often rather than occasionally, repairs are so extensive that they result in a major overhaul. This is almost like buying a new boat. However, the cost would be reported under annual repair. It would simply be more than in other years.

Therefore, in order to truly estimate the boat related cost for an individual fisher, the best means would often be to add up all costs (purchase cum repairs) on a boat

during, say, the last ten years, and simply divide the quantity by ten. If, perchance, two boats got purchased during this period, one might simply divide the total cost by 15, for a new boat would last at least 5 years, and with only minor repairs. However, procuring this data would be extremely difficult.

Similar issues obtain with regard to the net. A good net usually lasts for about 3 years, with relatively minor repairs. After that, and almost certainly after 4 years, the net needs replacing. The durability varies a little with regard to the quality of the net, the nature and locale of its use, and on contingencies.

If the depreciation were taken into account, how much difference would it make to the actual costs? For a poor small-scale fisher's boat costing close to Rs. 100,000, it could be as high as Rs. 15,000 per year (for these boats do not last more than 7 years). For larger boats costing around Rs. 250,000, the boats last easily up to 5 years and then the repair costs continue to increase until the fisher must buy a new boat in another five years. Therefore, the annual depreciation would be about Rs. 25,000. For larger boats costing 400,000 to 500,000, the longevity would be around 10 years and the annual depreciation would be Rs. 40,000 to Rs. 50,000.

Even for the poorer fishers, the behundi net would cost not less than Rs. 18,000. For the larger and pricier nets, the price could be as high as Rs. 30,000. Thus, the annual depreciation for the net could hover between Rs. 6,000 and Rs. 10,000.

Given the above numbers, the annual depreciation for the fisher for boat and net could be as low as Rs. 21,000 and could be as high as Rs. 60,000, the average being somewhere around Rs. 40,000. Once we bear this range in mind, it, if required, can be used in the place of specific depreciation data.

In the case of marine fishing, capital depreciation, for all practical purposes, reduces to the depreciated value of boat and net. These are the two major capital assets for the SSF, having several-year lifetimes.

Note that data was sought from each fisher for two years, so as to allow for a sudden annual high or low. A three-year period would have been still better, but as far back one goes, the quality of the data tends to suffer. Therefore, data was sought only for the two previous seasons (years).

The economic data from the Khotis

Let us start with Khejuri.

Five persons were surveyed in Khejuri. One must note that the fishers in Khejuri often took loans on interest instead of or in addition to dadan. This has caused some variation in the table for Khejuri.

Table 5: The Laya's income in Khejuri

0	1	2	3	4	5	6	7	8	9	10	11	12
PER- SONS	YEAR	LOAN AT THE BEGIN- NING OF THE FISHING SEASON	LOAN AS DADAN	LOAN ON INT.	EXPENSE IN TERMS OF WAGES, CONSU- MABLES ETC.	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INT. PAID ON LOAN	INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)	LABOUR (OF SELF AND FAMILY) IN WORKING DAYS	MULTIPLY COL. 6 WITH MIN WAGE*	LABOUR ACCOUNTED INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)
1	2015-16	25000	0	25000	15000	12000	54000	4000	23000	100	20000	3000
	2014-15	30000	20000	10000	10000	15000	70000	5000	40000	120	24000	16000
2	2015-16	25000	0	25000	12000	8000	50000	3000	27000	110	22000	5000
	2014-15	40000	30000	10000	12000	10000	80000	6000	52000	120	24000	28000
3	2015-16	40000	30000	10000	8000	12000	55000	1200	33800	100	20000	13800
	2014-15	35000	20000	15000	7000	15000	60000	4000	34000	120	24000	10000
4	2015-16	50000	30000	20000	50000	10000	70000	3200	6800	110	22000	-15200
	2014-15	40000	20000	20000	12000	10000	90000	8000	60000	120	24000	36000
5	2015-16	65000	50000	15000	20000	10000	100000	3000	67000	120	24000	43000
	2014-15	50000	30000	20000	12000	10000	90000	8000	60000	120	24000	36000
	Average	40000	23000	17000	15800	11200	71900	4540	40360	114	22800	17560
	Median	40000	25000	17500	12000	10000	70000	4000	37000	120	24000	14900

For a bird's eye view, the appropriate figures to view are those indicating the twin central tendencies—the arithmetic mean (average) and the median. As we can see from the figures, in most of the columns the mean and median are pretty close, often convergent, indicating normal or close to normal distribution.

The second column is highly interesting. It shows the amounts of money that the fishers take as dadan. The mean is Rs. 23,000 and median Rs. 25,000. It is alarming that for this relatively small sum, the fishers are compelled to sign away their catch to the dadandar (not only is this signing away a matter of having to give the fish at discounted rates, it is also a matter of not being able to take advantage of any price hikes in the market.)

Column 7 is a crucial column, for it gives us the revenue figures for the whole season. Here, we see rather humble figures (given that they are for the entire season)—Rs. 71,900 (average) and Rs. 70,000 (median). But, of course, the main columns of interest are columns 9 and 12, showing incomes. We see that the seasonal incomes are rather poor. As per column 9, the average income is Rs. 40,360 and the median income is Rs. 40,000. Now, in the case of Khejuri, the khoti fishing season is roughly 4 months. This would imply an average of Rs. 10,000 per month for the

* The minimum wage rate reported is that actually prevailing in the villages concerned in the period under consideration.

fishing season. However, most of the fishers in this area are almost wholly fishers, i.e. with little significant income outside fishing. Therefore, the above is the bulk of the income for the entire year. It goes without saying that as a figure for annual income, this is very poor indeed. Moreover, if one takes into account the cost of the labour of the fisher and his household, we find that very little is left and in one instance the income becomes negative. Therefore, the fishers' incomes are very close to that earned by labour at minimum wage rates for unskilled labour.

When confronted with such low figures, one might recall the caveat mentioned earlier. The fisher often mentions somewhat inflated figures for cost so as to conceal his actual income. (They are less likely to under-report sale figures, for that information can often be checked.) Information from knowledgeable circles indicates that the fisher could report costs higher by 20% (this would not be any higher in this particular survey for the surveyors were from the fishing community and would be able to see through too inflated figures). So let us apply this caveat to the present income figures and assume that the fisher has inflated his costs by 20%. Now, by simple arithmetic, if costs have been increased by 20% to get the present cost figures, they must be scaled down by 16% to get the original figures. Let us now apply this to the cost components of the average and median values. The resulting figures are as follows:

Table 6: Effect of cost reduction on central tendencies in Khejuri

1	2	3	4	5	6	7	8	9	10	11	12
Year	Loan at the beginning of the fishing season	Loan as dadan	Loan on int.	Expense in terms of wages, consumables etc.	Expense on boat and net	Revenue from selling of fish	Int. paid on loan	Income: col. 7 minus (col. 5+col. 6+col.8)	Labour (of self and family)	Multiply col. 10 with min wage	Labour accounted income: col. 9 minus col. 11
Average	40000	23000	17000	13272	9408	71900	4540	44680	114	22800	17992
Median	40000	25000	17500	10080	8400	70000	4000	40760	120	24000	14900

Compared to earlier figures, we see an immediate increase in average and median incomes. However, the concerned cost figures were not too high in relative terms, a 16% reduction leads does not lead to serious reduction in absolute figures and, hence, not a substantial rise in income figures. (The average income increases by Rs. 4,320 and the median income increases by Rs. 3,760.)

There is one aspect of the matter that we have not considered? What would have happened to the income if the fisher was not compelled to sell the fish to the dadandar at discounted prices? For Khejuri, we succeeded in getting reliable figures on total weight of fish sold and the total discount that the fisher had to make to the dadandar. If the fisher did not have to pay the dadandar, his income would have increased by the corresponding amount. Let us put these figures together.

Table 7: Increase in income if there were no dadan or loan on interest

	1	2	3	4	5	6	7	8	9
PER-SON	YEAR	INCOME:	LABOUR ACCOUNTED INCOME	TOTAL QUANTITY DRIED FISH SOLD TO THE DADANDAR (KG)	DISCOUNT GIVEN PER KG (RS.)	INTEREST GIVEN ON LOAN	TOTAL DISCOUNT (RS.)	LOSS DUE TO HAVING TAKEN LOAN ON EXCESSIVE INTEREST	INCOME INCREASE THAT WOULD HAVE BEEN ACHIEVED UNDER CONDITIONS OF NO DADANDAR OR NO PRIVATE LOAN
1	2015-16	23000	3000	1400	0 ⁵	4000	0	3000	3000
	2014-15	40000	16000	1500	3	0	7500	0	7500
2	2015-16	27000	5000	1800	0 ⁶		0	2000	2000
	2014-15	52000	28000	3000	3	0	9000	0	9000
3	2015-16	33800	13800	1500	4	0	6000	0	6000
	2014-15	34000	10000	1200	3.50	0	4200	0	4200
4	2015-16	6800	-15200	2200	3.18	0	7000	0	7000
	2014-15	60000	36000	3500	3	0	10500	0	10500
5	2015-16	67000	43000	3000	4	0	12000	0	12000
	2014-15	60000	36000	3000	3	0	9000	0	9000
	CENTRAL TENDENCY OF INCOME ENHANCEMENT		AVERAGE						7020
			MEDIAN						7250

These are substantial increases. We can now put together the combined incomes due to hypothetically lessened costs and absence of dadandar or private interest.

Table 8: Central Tendencies in a situation of lessened cost, no dadan or no interest

	A	B	C	D	E	F
Central Tendencies	Straight income (Rs.)	Labour accounted income (Rs.)	Straight income after 16% reduction of cost (Rs.)	Labour accounted income after 16% reduction of cost (Rs.)	C + increase in income in the scenario of no dadandar and no private interest (Rs.)	D + increase in income in the scenario of no dadandar and no private interest (Rs.)
Average	40360	17560	44680	17992	51700	25012
Median	37000	14900	40760	14900	48010	22150

⁵ Loan taken on interest and not as dadan.

⁶ Same as above

Now, we have happier figures. The chief items of interest are C and E, for these are figures for actual incomes (or what the actual income would be if certain conditions are met). D and F are just ways to put the incomes into perspective. Anyway, the important thing to remember here is that for Khejuri these are seasonal figures—for a 4-month season. Moreover, for many fisher families, these would be the main annual income figures, for most families have no other steady or substantial income. Once the figures are divided by 12, the results are poor.

Moreover, and unfortunately, we can't forget depreciation. For the rather small boats used by the poor Khejuri fishers, the price would be around Rs. 80,000 to Rs. 100,000. With appropriate repairs, such boats would easily last 8-10 years. Therefore, the annual depreciation would be around Rs. 10,000. (This, of course, would be in addition to repairs; but these have been taken into account). In addition, we would have to deduct another Rs. 6,000 for depreciation on account of the net. (The Khejuri fishers use nets that cost less than Rs. 20,000.) Once these figures are deducted, we see that even with reduced costs and the dadandar and mahajan (private moneylender) out of the picture, incomes take a serious dip.

What accounts for the low incomes? The main reason that comes up as a constant refrain in the fishers' responses is decline in catch. Without hesitation, and almost without exception, the respondents surveyed in blamed this on destructive fishing by the heavily mechanized boats and, occasionally, on pollution of the waters.

Now, let us look at the data from Junput. Only two persons were surveyed at Junput. As we have noted, the fishers at Junput do not dry their fish. They catch the fish and sell the fresh fish to the saudagars, vendors, and aratdars. The vendors sell the fresh fish in the local markets. The aratdars in this case are fresh fish stockers. The Saudagars are the ones who dry the purchased fish and sell them near and far.

Although only two were interviewed at Junput, the interviews yielded lots of useful information. However, here we are concerned only with their incomes.

Table 9: Junput costs and incomes

0	1	2	3	4	5	6	7	8	9	10
PERSONS	YEAR	LOAN AT THE BEGINNING OF THE FISHING SEASON (TAKEN ON INTEREST)	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSES ON BOAT AND NET)	REVENUE FROM SELLING OF FISH	INTEREST PAID ON LOAN	INCOME: COL. 5 MINUS (COL. 3+COL. 4+COL.6)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 6 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 7 MINUS COL. 9
1	2015-16	30000	580700	16000	742500	10500	135300	210	42000	93300
	2014-15	20000	563460	15000	680000	5600	95940	210	42000	53940

2	2015-16	0	549000	26000	700000	0	125000	210	42000	83000
	2014-15	50000	552400	20000	640000	14000	53600	210	42000	11600
	Average	25000	561390	19250	690625	7525	102460	210	42000	60460
	Median	25000	557930	18000	690000	8050	110470	210	42000	68470

Here, the thing to note first is that no dadan has been taken. On three of the total four occasions noted, the business has taken the help of loan on interest.

The second thing to note is that on all the four occasions, the basic income is positive and *so is the labour accounted income*. Although we have only four occasions, still we indicate the average and median values for convenience. We find that, as compared to Khejuri, the incomes are better.

The problem arises, of course, as soon as we start thinking of applying depreciation rates. We have seen that the annual depreciation rate for those with larger boats and nets could be as high as Rs. 60,000. The Junput fishers do use such boats and nets. So, we deduct Rs. 60,000 from their income (from the average and median incomes). We see that the income takes a sharp dip and the labour accounted income almost disappears.

However, the entire situation changes if one were to reduce the cost component by 16% (as we have done earlier) and see the result.

Table 10: The incomes at reduced costs

1	2	3	4	5	6	7	8	9	10
CENTRAL TENDENCIES	LOAN AT THE BEGINNING OF THE FISHING SEASON (TAKEN ON INTEREST)	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSES ON BOAT AND NET)	REVENUE FROM SELLING OF FISH	INTEREST PAID ON LOAN	INCOME: COL. 5 MINUS (COL. 3+COL. 4+COL.6)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 6 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 7 MINUS COL. 9
Average	25000	471568	16170	690625	7525	195362	210	42000	153362
Median	25000	468661	15120	690000	8050	202747	210	42000	160747

Here, the effect is dramatic. Because the reported costs are relatively rather high, a reduction of 16% causes a striking decrease in terms of absolute numbers resulting in a remarkable rise in incomes. Now, the deductions for capital depreciation do not hurt so much.

Let us now look at the data from Dadanpatrabar. But, before looking at the data, one must take note of one thing. The fishers in Dadanpatrabar almost never take loan on interest, at least with regard to their business. They meet their monetary needs by taking dadan from aratdars. Therefore, in the table that follows (as in the tables relating to Sagar), there are no columns indicating loans taken on interest and the

loan at the beginning of the season is shown straightaway as dadan or advance. The table is as follows:

Table 11: Costs and incomes from Dadanpatrabar

0	1	2	3	4	5	6	7	8	9
PER- SONS	YEAR	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 5 MINUS (COL. 4+COL. 3)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 7 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 6 MINUS COL.8
1	2015-16	70000	150000	72000	216000	-6000	450	90000	-96000
	2014-15	90000	125000	110000	204000	-31000	450	90000	-121000
2	2015-16	100000	366000	30000	340000	-56000	600	120000	-176000
	2014-15	120000	261000	59000	419000	99000	600	120000	-21000
3	2015-16	80000	322000	32000	221600	-132400	450	90000	-222400
	2014-15	80000	424500	100000	219000	-305500	540	108000	-413500
4	2015-16	120000	347000	30000	207500	-169500	450	90000	-259500
	2014-15	140000	494800	105000	303400	-296400	720	144000	-440400
5	2015-16	70000	340000	62000	169800	-232200	540	108000	-340200
	2014-15	50000	358000	30000	204000	-184000	540	108000	-292000
6	2015-16	75000	247225	30000	115000	-162225	360	72000	-234225
	2014-15	90000	288550	75000	135000	-228550	540	108000	-336550
7	2015-16	50000	150400	40000	108000	-82400	360	72000	-154400
	2014-15	80000	175800	75000	100000	-150800	360	72000	-222800
8	2015-16	80000	262800	40000	136000	-166800	540	108000	-274800
	2014-15	135000	274100	130000	136000	-268100	540	108000	-376100
9	2015-16	75000	404000	35000	233250	-205750	360	72000	-277750
	2014-15	225000	719500	155000	290700	-583800	540	108000	-691800
	Average	96111	317259.7	67222	208792	-175690	497	99333	-275024
	Median	80000	309775	60500	205750	-164525	540	108000	-272525

The first to notice are the revenue figures in Column 5. Once again, the mean and median figures are close enough to suggest near normal distribution. But, the surprise comes with the income figures in Column 6. Not only are both the mean and the median figures negative, all except one of the actual income figures (i.e. on one of the two years of a single laya) are also negative.

When confronted with such extremely low figures, one is only more strongly tempted to scale down the cost figures by 16% to approach what could be truer figures. Let us do that. The resulting figures are as follows

Table 12: After cost reduction by 16%

1	2	3	4	5	6	7	8	9
YEAR	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 5 MINUS (COL. 4+COL. 3)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 7 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 6 MINUS COL.8
Average	96111	266498	56467	208792	-114173	497	99333	-213507
Median	80000	256431	50820	205750	-118111	540	108000	-203345

As we can see, this does not help. The incomes remains negative (i.e. even the basic income figures) with the amount of loss incurred increasing alarmingly when labour is accounted for. Since this happens in the case of both central tendencies, it is not surprising that this also happens in the case of the majority of the instances (7 out of the 9 persons surveyed), although we need not give details of the figures.

What happens in a hypothetical situation where there is no dadan and hence no discount to be given to the dadandar? Let us look at the following table for Dadanpatrabar.

Table 13: Once we remove the discount that the fishers are forced to give

		1	2	3	4	5	6	7
PERSONS	YEAR	IN-COME:	LABOUR ACCOUNTED IN-COME	IMPROVED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	IMPROVED LABOUR ACCOUNTED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	TOTAL DIS-COUNT GIVEN TO DADANDAR ON SNHC + SHC + FRESH SHRIMP	IMPROVED INCOME IN HYPOTHETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)	IMPROVED LABOUR ACCOUNTED INCOME IN HYPOTHETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)
1	2015-16	-6000	-96000	29520	-60480	42500	74570	-15430
	2014-15	-31000	-121000	6600	-83400	80000	91400	1400
2	2015-16	-56000	-176000	7360	-112640	37500	47110	-72890
	2014-15	99000	-21000	150200	30200	40000	192600	72600
3	2015-16	-132400	-222400	-75760	-165760	50000	-22760	-112760
	2014-15	-305500	-413500	-221580	-329580	122000	-92260	-200260
4	2015-16	-169500	-259500	-109180	-199180	35000	-72080	-162080
	2014-15	-296400	-440400	-200432	-344432	110000	-83832	-227832
5	2015-16	-232200	-340200	-167880	-275880		-167880	-275880
	2014-15	-184000	-292000	-121920	-229920		-121920	-229920
6	2015-16	-162225	-234225	-117869	-189869	29000	-87129	-159129
	2014-15	-228550	-336550	-170382	-278382	27000	-141762	-249762

7	2015-16	-82400	-154400	-51936	-123936	24500	-25966	-97966
	2014-15	-150800	-222800	-110672	-182672	17000	-92652	-164652
8	2015-16	-166800	-274800	-118352	-226352	34000	-82312	-190312
	2014-15	-268100	-376100	-203444	-311444	66000	-133484	-241484
9	2015-16	-205750	-277750	-135510	-207510	37600	-95654	-167654
	2014-15	-583800	-691800	-443880	-60480	41000	-400420	-508420

Columns 2 and 3 are our old acquaintances from the original table on Dadanpatrabar. 4 and 5 are the effects of hypothetical cost reduction on each instance of income.

In presenting the data on discounts to dadandars in Dadanpatrabar, we have shortened our presentation by not specifying the number of Kg sold, reduction per Kg, and so on. We have only given the data on the total discount given to the dadandar by the laya for the season. This is given in Column 5. Note that the laya in Dadanpatrabar sells not only dried fish but fresh shrimp to the Aratdar at a discounted rate and hence that rate is also included in the figure. The data on discounts from the fifth respondent was incomplete and appeared a bit inconsistent on cross-questioning and has been rejected. So, we are dealing here with 8 respondents and 16 entries instead of 9 respondents and 18 entries.

It is evident that even in the hypothetical scenario we do not have positive figures for the majority of instances.

Given the painfully low figures, there is little point dwelling on possible depreciation rates. The fishers appear badly off as it is, with or without the dadandar.

When questioned about the seriously low figures, the fishers said that the catch had not been particularly bad during these two years. They blamed it on coastal resources drying up due to the destructive impact of mechanized fishing. We must leave it at that.

Below, we begin with the data from Sagar. The first data-table is of the fishers surveyed at Sagar Sangam Khoti. Note that the data in the Sagar tables do not include data on loans with interest. For, it is rather unusual for a Sagar fisher to take such loans for business. They tend to meet all their monetary (business and even otherwise) by taking advances or dadans from the aratdars.

Table 14: From Sagar Sangam Khoti

0	1	2	3	4	5	6	7	8	9
NAME	YEAR	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 5 MINUS (COL. 3+COL. 4)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 7 WITH MIN WAGE	LABOUR-ACCOUNTED INCOME: COL. 6 MINUS COL. 8
RAMJAN SAHA	2015-16	175000	500000	50000	429000	-121000	270	54000	-175000
	2014-15	500000	475000	45000	500000	-20000	540	108000	-128000
RATAN SHAU	2015-16	150000	400000	90000	500000	10000	240	48000	-38000
	2014-15	80000	200000	50000	390000	140000	480	96000	44000
AMAR MONDAL	2015-16	250000	650000	100000	550000	-200000	480	96000	-296000
	2014-15	500000	550000	80000	650000	20000	480	96000	-76000
SHEIKH MOHSIN	2015-16	250000	300000	70000	295000	-75000	480	96000	-171000
	2014-15	200000	270000	250000	600000	80000	480	96000	-16000
SHEIKH SIRAJ	2015-16	230000	450000	80000	500000	-30000	840	168000	-198000
	2014-15	200000	470000	75000	550000	5000	480	96000	-91000
ARJUN DAS	2015-16	340000	500000	200000	550000	-150000	480	96000	-246000
	2014-15	300000	470000	100000	700000	130000	600	120000	10000
SRIHARI PRADHAN	2015-16	500000	800000	300000	600000	-500000	735	147000	-647000
	2014-15	300000	450000	300000	550000	-200000	840	168000	-368000
UTTAM MONDAL	2015-16	450000	400000	70000	230000	-240000	600	120000	-360000
	2014-15	240000	300000	375000	375000	-300000	600	120000	-420000
SHEIKH RABIUL	2015-16	200000	350000	60000	270000	-140000	240	48000	-188000
	2014-15	210000	340000	200000	325000	-215000	240	48000	-263000
SK. MD. ALI	2015-16	225000	300000	150000	400000	-50000	240	48000	-98000
	2014-15	210000	280000	110000	550000	160000	240	48000	112000
CENTRAL TENDENCY	AVERAGE	275500	422750	137750	475700	-84800	479	95850	-180650
	MEDIAN	240000	422750	100000	500000	-75000	480	96000	-175000

The central tendencies under this head are noteworthy. In column numbered 5, we find that the mean revenue is Rs. 475,700 while the median revenue is Rs. 500,000. Unfortunately, once the costs are deducted, we find a gloomy picture. We find that the average income (in Col. 6) is negative – Rs. -84,800. So is the median income – Rs.

-75,000. The central tendencies in Col. 9 are lower still. The mean and corresponding median, however, are close enough to suggest that the distribution is not too skewed. The negatives would appear worrying. They suggest that both the average fisher and the median fisher are running a losing business.

But, remembering the caveat about the fishers' tendency to inflate costs, we again undertake the routine reduction by 16%. Without displaying a case by case situation, we simply show the effects on the mean and median figures.

Table 15: Central tendencies after cost reduction

1	2	3	4	5	6	7	8	9
CENTRAL TENDENCY	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 5 MINUS (COL. 3+COL. 4)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 7 WITH MIN. WAGE	LABOUR-ACCOUNTED INCOME: COL. 6 MINUS COL. 8
AVERAGE	275500	355110	115710	475700	4880	479	95850	-90970
MEDIAN	240000	378000	75600	500000	-15800	480	96000	-111800

On decreasing the costs, the negative for mean disappears from column 6 but the negative for median doesn't. Moreover, once we look at the labour accounted income, the situation is almost as dismal as it was before.

What happens when we remove the discount given to the dadandar?⁷

Table 16: Incomes after removing discount to dadandar

		1	2	3	4	5	6	7
PER-SONS	YEAR	IN-COME:	LABOUR ACCOUNTED IN-COME	IMPROVED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	IMPROVED LABOUR ACCOUNTED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	TOTAL DIS-COUNT GIVEN TO DADANDAR ON SNHC + SHC + FRESH FISH/ SHRIMP	IMPROVED INCOME IN HYPO-THETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)	IMPROVED LABOUR ACCOUNTED INCOME IN HYPO-THETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)
1	2015-16	121000	-175000	-33000	-87000	27000	-6000	-60000
	2014-15	-20000	-128000	63200	-44800	62500	125700	17700
2	2015-16	10000	-38000	88400	40400	34000	122400	74400
	2014-15	140000	44000	180000	84000	10700	190700	94700

⁷ The Sagar layas claimed that they give discounts to dadandars at the rate of Rs. 12-15 per Kg. However, the dadandars claimed that they received discounts at the rate of Rs. 1-2 per Kg. Through repeated discussions and cross-questioning we found that it would be wise to take the average rate at Rs. 10 per Kg, across the various products.

3	2015-16	- 200000	-296000	-80000	-176000	37500	-42500	-138500
	2014-15	20000	-76000	120800	24800	42500	163300	67300
4	2015-16	-75000	-171000	-15800	-111800	32000	16200	-79800
	2014-15	80000	-16000	163200	67200	42200	205400	109400
5	2015-16	-30000	-198000	54800	-113200	32500	87300	-80700
	2014-15	5000	-91000	92200	-3800	42500	134700	38700
6	2015-16	- 150000	-246000	-38000	-134000	65500	27500	-68500
	2014-15	130000	10000	221200	101200	55500	276700	156700
7	2015-16	- 500000	-647000	-324000	-471000	65000	-259000	-406000
	2014-15	- 200000	-368000	-80000	-248000	42000	-38000	-206000
8	2015-16	- 240000	-360000	-164800	-284800	33000	-131800	-251800
	2014-15	- 300000	-420000	-192000	-312000	34500	-157500	-277500
9	2015-16	- 140000	-188000	-74400	-122400	27000	-47400	-95400
	2014-15	- 215000	-263000	-128600	-176600	32500	-96100	-144100
10	2015-16	-50000	-98000	22000	-26000	50000	72000	24000
	2014-15	160000	112000	222400	174400	50000	272400	224400
Central Tenden- cies	Average	-84800	-180650	4880	-90970	40920	45800	-50050
	Median	-62500	-173000	3100	-99400	39750	49750	-64250

Since the discount to dadandars is significantly higher in the case of Sagar, the incomes show a considerable improvement and produce positives and, more significantly, the mean and median values are also positive in the case of the straight income. The mean and median for the labour accounted incomes, however, remain negative.

Unfortunately, one must take into account depreciation. This, even for the poor fishers in this Khoti, would certainly be at least around Rs. 16,000 per annum and could be higher in proportion to the price of boats and nets (not likely to be more than Rs. 40,000 though, as the fishers here are not owners of expensive boats). The consequences for the incomes are obvious and need no elaboration.

Let us now look at the situation regarding the two other Khotis surveyed.

First we look at Khal Dhablat Khoti.⁸ The point to note is that here we look at information from only 7 out of the 10 surveyed. This is because there were problems with the data from the other 3, resulting in their being thrown out.

⁸Please note that while 10 persons were surveyed from this Khoti, the data for two were thrown out because they appeared to be erroneous both on preliminary examination and subsequent cross-questioning of the surveyor.

Table 17: Cost and incomes at Khal Dhablat

0	1	2	3	4	5	6	7	8	9
PERSONS	YEAR /CT	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 6 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)
1	2015-16	200000	300000	70000	200000	-170000	240	48000	-218000
	2014-15	250000	400000	90000	500000	10000	240	48000	-38000
2	2015-16	300000	300000	80000	250000	-130000	240	48000	-178000
	2014-15	200000	250000	90000	300000	-40000	240	48000	-88000
3	2015-16	300000	400000	90000	300000	-190000	360	72000	-262000
	2014-15	200000	300000	120000	450000	30000	360	72000	-42000
4	2015-16	300000	400000	90000	300000	-190000	480	96000	-286000
	2014-15	200000	300000	120000	350000	-70000	120	24000	-94000
5	2015-16	250000	300000	250000	450000	-100000	360	72000	-172000
	2014-15	300000	450000	200000	400000	-250000	360	72000	-322000
6	2015-16	300000	400000	60000	300000	-160000	240	48000	-208000
	2014-15	400000	300000	70000	450000	80000	360	72000	8000
7	2015-16	150000	500000	120000	500000	-120000	240	48000	-168000
	2014-15	200000	400000	90000	500000	10000	240	48000	-38000
CENTRAL TENDENCIES	AVERAGE	253571	357143	110000	375000	-92143	291	58286	-150429
	MEDIAN	250000	350000	90000	375000	-110000	240	48000	-170000

A single look at Column 6 shows that there is no surprise here. Negatives predominate. No wonder, both the mean and the median are negative. Again, we go ahead and reduce the reported cost by 16% and get the following figures (once again, with respect to the mean and median figures).

Table 18: After cost reduction

CENTRAL TENDENCIES	DADAN AT THE BEGINNING OF THE FISHING SEASON	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSE ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 6 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)
AVERAGE	253571	300000	92400	375000	-17400	291	58286	-75686
MEDIAN	250000	294000	75600	375000	-16400	240	48000	-76400

Once the cost figures are reduced, the extent of negativity decreases considerably but does not disappear.

Now, we follow the usual tactic of seeing what the income would be in a situation of 'no dadandars'.

Table 19: After removing the discount to dadandars

PERSONS	YEAR	INCOME:	LABOUR ACCOUNTED INCOME	IMPROVED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	IMPROVED LABOUR ACCOUNTED INCOME AFTER ESTIMATED COST REDUCTION BY 16%	TOTAL DISCOUNT GIVEN TO DADANDAR ON SNHC + SHC + FRESH FISH/ SHRIMP	IMPROVED INCOME IN HYPOTHETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)	IMPROVED LABOUR ACCOUNTED INCOME IN HYPOTHETICAL SCENARIO WHERE THERE IS NO DADAN (COL.4 - COL.8)
1	2015-16	- 170000	-218000	-110800	-158800	23000	-87800	-135800
	2014-15	10000	-38000	88400	40400	42000	130400	82400
2	2015-16	- 130000	-178000	-69200	-117200	28000	-41200	-89200
	2014-15	-40000	-88000	14400	-33600	32000	46400	-1600
3	2015-16	- 190000	-262000	-111600	-183600	34000	-77600	-149600
	2014-15	30000	-42000	97200	25200	43000	140200	68200
4	2015-16	- 190000	-286000	-111600	-207600	30000	-81600	-177600
	2014-15	-70000	-94000	-2800	-26800	34000	31200	7200
5	2015-16	- 100000	-172000	-12000	-84000	40000	28000	-44000
	2014-15	- 250000	-322000	-146000	-218000	36000	-110000	-182000
6	2015-16	- 160000	-208000	-86400	-134400	25000	-61400	-109400
	2014-15	80000	8000	139200	67200	35000	174200	102200
7	2015-16	- 120000	-168000	-20800	-68800	42000	21200	-26800
	2014-15	10000	-38000	88400	40400	47000	135400	87400
Central Tendencies	Average	-92143	-150429	-17400	-75686	23000	17671	-40614
	Median	- 110000	-170000	-16400	-76400	42000	24600	-35400

Once again, there is no point dragging in the question of depreciation values. As we can see, the income increase in a non-dadan scenario is considerable. However, it fails to make serious headway in ridding the fishers of their poverty, as evident from the many negatives and the central tendency values. Once we bring depreciation rates into the picture, the income gets into serious trouble.

Now, let us look at the data from Mahishamari Hatipitia Khoti.

The second thing of note was that although 10 fishers were surveyed, the data for 3 respondents were rejected on suspicion of incorrect data.

Table 20: Costs and incomes at Hatipitia

0	1	2	3	4	5	6	7	8	9
PERSONS	YEAR	LOAN AS DADAN	EXPENSE IN TERMS OF WAGES & USUAL CONSUMABLES	EXPENSES ON BOAT AND NET	REVENUE FROM SELLING OF FISH	INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)	LABOUR (OF SELF AND FAMILY)	MULTIPLY COL. 6 WITH MIN WAGE	LABOUR ACCOUNTED INCOME: COL. 10 MINUS (COL. 4+COL. 5+COL.7)
1	2015-16	123000	150000	60000	300000	90000	480	96000	-6000
	2014-15	80000	200000	50000	390000	140000	480	96000	44000
2	2015-16	150000	100000	40000	1790000	1650000	480	96000	1554000
	2014-15	150000	70000	50000	1032000	912000	480	96000	816000
3	2015-16	150000	100000	40000	1790000	1650000	480	96000	1554000
	2014-15	200000	250000	300000	478000	-72000	120	24000	-96000
4	2015-16	600000	500000	150000	4032000	3382000	600	120000	3262000
	2014-15	400000	400000	150000	3040000	2490000	600	120000	2370000
5	2015-16	600000	700000	100000	4032000	3232000	600	120000	3112000
	2014-15	400000	500000	90000	3040000	2450000	600	120000	2330000
6	2015-16	150000	170000	50000	2050000	1830000	480	96000	1734000
	2014-15	130000	190000	70000	1766000	1506000	480	96000	1410000
7	2015-16	70000	90000	50000	1255200	1115200	600	120000	995200
	2014-15	60000	120000	70000	1580000	1390000	480	96000	1294000
CENTRAL TENDENCIES	AVERAGE	233071	252857	90714	1898229	1554657	497	99429	1455229
	MEDIAN	150000	180000	65000	1778000	1533000	480	96000	1482000

The first and hugely important thing to note is the predominance of positive numbers in the income columns. There is a single negative entry in column 6 and, what is far more impressive, only 2 negative entries in Column 8.

The reason is simple. Except for respondent 1, all the others have highly impressive revenues without particularly high costs. This leads to impressive incomes. Respondent 2 shows comparatively very poor revenue for 1 year – but that, on inquiry, was found to be due to certain grave personal-familial problems that stood in the way of regular fishing operations. When confronted with these very high incomes (as compared to the incomes elsewhere) we were hard put to explain it. On pressing the matter hard, it emerged that the fishers of Hatipitia enjoyed an immense geographical advantage.



As we can see in the Google Map, Hatipitia enjoys the advantage of having unobstructed access to the marine and estuarine zone at the Hooghly River mouth. The latter offers a twofold advantage: first, the river water carries with it enormous loads of nutrient—from the drainage outfalls of various settlements, which spew out their often untreated waste into the Hooghly. Moreover, the Hooghly carries enormous amounts of fresh water, which, on mixing with the seawater creates an environment that is neither too saline nor sweet and which is hospitable both to marine species and to other fish species who thrive better in a less saline environment than they do in a purely saline environment (this is why estuarine waters are often more productive than both coastal water that is entirely saline and sweet water). Unfortunately, for Sagar Sangam and Khal Dhablat, the marine and estuarine zone in the Hooghly river mouth that does not interfere with the main navigational channel is too far away (given their relatively small boats, maximum 2-cylinders). Moreover there are silt bars (both visible and submerged) in the way that prevent the journey to the desired destination from these two Khotis. Hence, the Khotis remain excluded from the one zone in the coastal waters of West Bengal that is exceptionally productive. Hence, Hatipitia and, reportedly, the New Jalda Khoti in Purba Medinipur (which we did not get a chance to survey) have the privilege of having the best hunting grounds on the West Bengal coast.

Even when confronted with high income figures, we must ask whether the fishers surveyed were reporting excessive costs. But, we needn't undertake the exercise of hypothetical cost reduction in this case. The income figures are quite high as it is. Indeed, there is little point dragging in the question of depreciation also. It is true that

depreciation figures for these richer fishers could be considerably higher, for some of these fishers might be using much larger boats costing 600,000 to 800,000 and multiple nets. But, even allowing for that and assuming a high depreciation value of Rs. 200,000 per annum, the incomes remain impressive. Since there are only few figures, we need not go through the exercise of elaborate demonstration.

Last but not the least is the issue of what would have happened if there was no need to accept dadan. Obviously, the incomes would have been correspondingly higher.

A last word on the figures for Hatipitia: There is considerable difference in the mean and median figures for dadan! This seems a bit unusual in the light of the figures we have been witnessing. The reason that the mean figure for dadan is considerably higher is because of a solitary very high dadan figure, which has caused the mean to become slightly “imbalanced”, i.e., considerably removed from the middling figure. It goes without saying that this ‘imbalance’ does not extend to other figures, for example the figures on incomes. This, again, should make us cautious. It is quite possible that the respondents surveyed were from among the richest layas in Hatipitia and, hence, the overall incomes are more than would be the case if we surveyed some others. And the size of the sample presented here is not large (the sample size is 8 out of the 98 laya members of the Khoti, i.e. slightly more than 8%). Therefore, the overall picture presented could be somewhat less representative. There could be other fishers who could be doing less well. Careful interrogation of the surveyors suggested this possibility. However, it was also clear that the average and median would not be much less even with a more representative population.

Rounding up

The picture of incomes from Dadanpatrabar is dismal. So is the picture from Sagar Sangam Khoti and Khal Dhablat Khoti in Sagar. The picture from Khejuri is depressing. The picture from Junput is slightly better. The best situation obtains with Hatipitia Khoti.

What accounts for the economic picture presented in some detail above? An analysis of the fishers’ and dadandars’ responses in the light of general information suggests the following:

- i. Indeed, no official sources claim that that *overall* marine catch has declined. Publicly available statistics, notwithstanding its serious limitations, clearly indicates that the overall marine catch has continued to rise, though the rate of growth in marine capture fishing is pronouncedly less than in the fish culture (Department of Animal Husbandry, Dairying and Fisheries, 2014)
- ii. However, fish supply in general has obviously not kept pace with the overall growth of demand for fish – export and domestic combined – as evidenced in the remarkable rise in fish prices

- iii. If overall fish catch has continued to rise, this *is not true* of the overall fish catch from the small-scale fishing sector. Here, as per all anecdotal evidence, fish catch has continued to decline and drastically so in the recent years. This is most tragically true of riparian fishing, but is also true, though to a slightly lesser extent, of marine fishing. Since the overall number of marine small-scale fishers has not declined, or has not declined at a comparable rate, the per capita catch has declined. There is now considerable published report and analysis on the incredibly drastic decline in the share of small-scale fishing in marine production.
- iv. This has resulted in very poor incomes for poor fishers—of which everyone connected to this sector is aware and which the present survey corroborates
- v. The decline in catch has been so drastic that one could have expected it to result in disastrous decline in incomes, leading to small-scale fishing ceasing to exist as a profession. The only reason this has not happened is that the rise in fish prices due to rise in demand without a matching rise in supply has led to the effect of catch poverty getting compensated to a considerable extent.
- vi. *That the richer fishers at Hatipitia Khoti enjoy better incomes* is due to the overly fortunate circumstances of their geography. Unfortunately, if other fishers were to try and crowd into the same zone (which they cannot, due to distance from their Khotis), that would cause a fall in catch and incomes for everyone concerned.
- vii. Although destructive fishing has severely corroded marine biodiversity and fish stocks (as attested by numerous international reports), its effect has been felt comparatively less by the main culprits, mechanized and trawl fishing. This is because the latter's ability to cut a wide swath across the sea and into the depths allows them to exploit a wider resource base.

The laya and his dadandar – the alchemy of dependence

We have seen that even the richer Hatipitia layas also take loans from dadandars. However, if we look at the revenue figures, we will realize that the amount of the advance is only a small portion of the monetary volume of the business. For them, it is mostly a liquidity support that makes up for the shortfall in their capital.

On the other hand, the dadan or advance is an indispensable support for the poor layas. Only a very small percentage of fishers in the small-scale sector have the economic means and confidence to opt entirely for private loan. It is the poverty of the laya which forces him into the arms of the dadandar.

The laya goes to the dadandar for the loan because he does not have any other option for procuring ready capital. Banks are notoriously reluctant to advance even tens of

thousands, let alone hundreds of thousands of rupees. (Their reluctance stems at least partly from past experience of non-recovery. There are also instances where the bank employees have taken bribes for arranging loans, to the tune of 15-20% of the loan amount. Once someone has paid this much, they had little concern about paying interest or repaying the loan. The bank, on the other hand, found seizing local immovable property difficult because of the local political trouble it provoked. The result was they stopped giving loans. Therefore, the laya had no way out but to resort to taking advances from the dadandar.)

One must also realize that this advance, notwithstanding the charges that come with it, has real benefits. These are:

1. The laya can get the money almost as soon as he needs it.
2. There are no formalities to the advance
3. There is no question of any security except for the verbal assurance of giving the entire catch to the dadandar at a discounted price
4. The laya not only gets an amount as capital before the start of the season. He can get subsequent amounts during the season if there is some capital shortfall or any other urgency
5. The laya is free to use the money for meeting any personal or familial needs
6. Last, but not the least, the laya can fail to make full repayment at the end of the season. The shortfall is merely carried over to the next season, without any additional interest. Whenever this happens, i.e. whenever there is delayed repayment without the laya having to pay any additional charge, there is an effective reduction of interest. This happens pretty often. If one factors-in the defaulted repayment figures, one can see the effective interest coming down to 15% or even lower. (We are not citing actual figures here, because there is large variation across individuals and over the years.)

It is interesting to explore how the economics works in favour of the trader giving the dadan. For him, the dadan is a way of ensuring two things:

1. From all those to whom he gives dadan, he is ensured a supply of dry or fresh fish as the case may be
2. He is ensured of getting the supply at a price less than he would have to pay to someone who is a free agent—for example, a laya who has not taken dadan but who works on his own capital or on the basis of a loan taken from a usurer.

It is worthwhile to explore the relationship between the dadandar and the laya a little further. As is often the case for the merchant and artisan in the unorganized sector, the relationship is often a long-standing one. Over the years, the laya usually takes dadan from the same dadandar or from the same set of dadandars. This often results in a kind of stable relationship. Not only do the layas and aratdars know each other

extremely well, there develops, notwithstanding an essential conflict of interest, some kind of mutual understanding and tolerance. For example, it is often seen that some amount of the advance remains unpaid over the years. As we have seen, this is likely to happen in the years of loss, which, if our statistics is in any way representative, is by no means uncommon. Thus, the dadan often goes un-repaid, either in part or in full. This, unless the un-repaid amount is huge, does not prevent the dadandar from advancing further amounts whenever the laya needs it, for business or for personal reasons. The unpaid amount from the previous year is simply added to the money advanced by the dadandar in this year and the size of the total un-repaid advance determines the discount that the dadandar claims from the laya. The larger the outstanding, the greater is the discount that the dadandar claims. However, there are no fixed rules. The whole thing is informal, negotiable, and depends on the power equation between the two and, to a varying extent, on the nature of the persons concerned and interpersonal relations. The prime concern of the dadandar is not getting back his advance fully. His main concern is having an assured supply of fish and having it at a discounted price, which gives him an advantage on resale.

What stands in the way of the small-scale fisher making a profit?

The following things stand in the way of the poorer small-scale fishers making a profit:

- i. First, and foremost, he is in a business that is in trouble; not only has irresponsible and destructive fishing severely hurt the biodiversity of the coastal and near coastal waters, the harvestable potential of the Indian EEZ is possibly being rapidly approached;⁹ and the poorer the fisher, the more

⁹ The ecological impact of and resource destruction of the coastal waters due to large-scale heavily mechanized fishing is well attested (Rajasenan, 2015).

There have been repeated attempts to calculate the estimated harvestable potential of our EEZ. Nair and Gopinathan gave an estimate of 5.50 million tons in 1981, Matthew et al. gave an estimate of 7.46 million tons in 1989, Desai et al. pulled it drastically down to 3.66 million tons in 1990, to be followed in the same year with the GOI working group who offered a slightly higher figure of 3.90 million tons. This was followed in 2000 with another GOI working group offering the almost similar figure of 3.93 million tons. This, again, was followed by the GOI working group in 2012 offering a somewhat higher figure of 4.419 million tons of harvestable potential.

Since the last four figures are relatively close to one another, it is reasonable to accept them as being a closer approximation to the current harvestable potential in the Indian EEZ. Now, even if we choose the latest and highest estimate among the last four as the best, we notice that in our 2013-14 marine catch (3.44 million tons) we had already attained 78% of our harvestable potential (we don't have reliable figures for more recent harvests). Therefore, it is clear that scope of expansion in the marine capture sector is already limited. Further, capture operations, like any other economic venture, is not only about possible yields, but about marginal costs and returns. Closer to maximum possible yield, the marginal costs increase and marginal returns fall, something that already appears to be happening in the industrial sector, leading often to more unsustainable behaviour and violation of fishing regulations by trawlers and large mechanized crafts. This too is already happening, something we shall get to right away. We shall also address the problems confronting the marine sector. However,

- difficult it is becoming for him—because, as we have mentioned, his navigational resources restrict him to a relatively small hunting ground
- ii. His dearth of capital leads to his dependence on the dadandar and, occasionally, on the local moneylender; moreover, the less his income, the more is his dependence
 - iii. His dependence on dadan forces him to sell his catch to the dadandar at a price less than what he could have got in the market;
 - iv. His dependence on dadan forces him to sell his *entire* catch to the dadandar—dried or raw fish as the case may be—preventing the small-scale fisher from exploring value-addition options and explore the higher product and price ranges;
 - v. His cooperative connections, whether in the form of the khoti or the formal cooperative, does not provide him with either capital or advanced market opportunities.

It is important to realize a key aspect of the matter. The dependence on the dadandar is a huge problem for the poor small-scale fisher but it is by no means his main economic problem. We have seen that in case of the poorer fishers (who are the majority), the absence of dadan would result in increase in incomes but not at rates that would help get rid of his poverty. His main economic problem is that, in the rather near-shore waters (which are his area of his operation) the resources are drying up, mostly due to destructive fishing (Rajasenan, 2015) and possibly pollution (Nambudiril, 2015) (Fishing in troubled waters, 2016); (Oceans, Fisheries and Coastal Economies). Paradoxically, if his economic-technological capability were to increase, so would not only his economic returns but also his per capita ecological impact. With returns increasing, fishing would tend to become more profitable, drawing in more fishers. Thus, the overall impact of small-scale fishing would increase, adding to the impact of heavily mechanized fishing. This, given that we are approaching the limits of harvestable catch in the Indian EEZ, is likely to have adverse impact on catch and incomes in the longer run.

Why do the poorer sections of the small-scale marine fishers subsist in their trade, if it is so inadequately rewarding? The answer is as follows:

- i. Often, there is no better economic opportunity available to many of them; this is the trade they have learnt and they have no other skill that might generate better incomes and with less hardship
- ii. Although it keeps them in poverty and mostly in chronic indebtedness, the profession supports the family (often the whole family) during the fishing

we shall be better placed to do so after examining the situation inland. See (Chacraverti, 2016) (Gopalakrishnan & Grinson, 2014).

season (which can extend to 6 months) and, as we have seen, the costs of the upkeep of the family members participating in the fishing and fish drying operations are included in the fishing costs; they, thus, manage to scrape by – an occasional good income helps them reduce the debt burden and makes things a bit easier

- iii. For many, fishing is not merely a source of income and habitual engagement; it is also something they like to do; the liquid crystalline vastness, the rolling, waves, the uncertainties, and even the perils have their attractions

Notwithstanding all the above – many fishers do leave their profession and try to find opportunities elsewhere. We don't have hard statistics – but anecdotal evidence suggests that more small-scale fishers are leaving or looking forward to leaving their professions if they can. This seems to be a prominent global trend – though more pronounced in the developed than in developing world (2016, p. 32). In West Bengal, the fisher does not want his children to carry on this trade. The children also tend to develop apathy or antipathy towards this profession.

Chapter VI

Summing up the economic plight of the small-scale fisher – the overall lack of control: from procuring the product to selling it

The plight of the small-scale fisher lies not merely in his poverty. Rather, his poverty is the result of his almost complete lack of control over his products.

As we have seen, they have poor control over procurement. Their supply source is at peril, due to resource destruction coupled with their comparative economic-technological disadvantage in procurement. (As we have also mentioned, paradoxically, if their efficiency in procurement were to increase, this would only increase the pressure on the resources, contributing, in the long run, to a faster decline in overall catch. Unless the state stepped in to ensure strict sustainable fishing policies in the marine sector, there seems no future for the capture fishing sector—and particularly its small-scale arm. And, as the hope of this kind of stepping in seems politically unrealistic, the future of small-scale fisheries seems bleak.)

In fact, the small-scale fisher's lack of control over procurement is markedly less than that of the small and marginal farmer. The latter is also at the mercy of several factors—natural and economic. His procurement is at the mercy of the weather. If the rains fail, the farmer is in serious trouble. However, even here, his dependence is, or can be, considerably less than that of the small-scale marine fisher. For, the farmer does not capture his catch, he grows it. Therefore, he can learn to adopt almost free of cost methods to improve water retention of the soil, select hardy traditional seed varieties requiring considerably less water, and proceed to produce and even increase production under inimical weather conditions. His advantage over the fisher is the advantage of one who grows over one who captures, a fact which has determined the entire course of humankind's development.

The next phase of lack of control over their products, of course, stems from the small-scale fishers' dependence on the dadandar, which compels them to give the dadandar their entire package of goods. But, even if they were freed of the clutches of the dadandar, the fishers are at mercy of nature and the markets.

For example, the fishers have no means of protecting drying fish from untimely rains. The entire problem is being aggravated by climate change. Extreme events have increased in frequency and have become more unpredictable. Even as I write these lines, post monsoon heavy rains have hit the fishers a second time.¹⁰ His fish drying methods are traditional. Until now, he has the beach at his disposal and the

¹⁰ A single spell of heavy rains lasting more than two days, occasionally accompanied by stormy or cyclonic weather, in the period from 20 September to 30 October, is not unexpected; however, two such spells is almost unheard of.

sun does his work for him. The method was developed presumably at a time when the period from late autumn to early March was an overwhelmingly dry period, except for an occasional wetness in November. Moreover, the method worked well in a period when catch was abundant and the loss of a few days' catch did not hit the fisher too hard—the sea yielded more than enough during the rest of the season. Now, with occasional showers visiting in October and November and even a few showers in January or February, and catches declining alarmingly, the fisher finds himself in serious trouble. Whenever there is an untimely drizzle, the fisher avoids taking his boat out. What is the point of burning diesel and paying the crew for a catch that would get spoiled.

This leads to the fishers' occasional use of formalin or even insecticides like Doom (dichlorovos) to preserve the fish, leading to serious questions of food safety. This has alarming economic consequences too. Once purchasers near and far come to know that fishers of a particular locality are resorting to such measures, they shy away from buying products from the area—leading to a fall in price of the product.

There is a view that if fishers had access to cheap yet safe technological means to save large proportions of their dried fish from being spoiled their business could still turn out a profit.

Their ability to store fresh fish is also severely limited. Even today, no Khoti or cooperative has any large-scale refrigeration facility or even an ice mill. Therefore, having almost non-existent means of preservation, the fisher must sell his product at the price the market offers, even if he were to be free of the clutches of the dadandar. He has no means to store his goods for even a little while, waiting for a better offer or opportunity.

It goes without saying that the small-scale marine fisher in West Bengal has no visions of value addition. The only value addition he knows is drying the fish. And even here, as we have seen, he is at the mercy of nature. As to subsequent other kinds of value-addition, the point is moot. It can only arise when the fisher is freed from the clutches of the dadandar and is free to decide what to do with his catch. Further, he can be freed from the clutches of the dadandar when he has all the capital he thinks he can manage and at a cost he can comfortably bear.

Chapter VI

What are the business prospects of collectives¹¹ of small-scale fishers and fishworkers in coastal areas in West Bengal?

The short answer to the question that constitutes the title of this chapter is: *very poor—if it is business as usual*. Collectives (cooperatives, producer companies, or whatever) do not bring magic solutions. They can only *help* the individual achieve what he cannot achieve on his own—for example, creating a combined fund of human and economic resources that each member can draw upon. However, collectives cannot create business opportunities where none can exist, or overcome obstacles that can only be overcome on a national or societal level, if at all.

Systemic trouble

The problem confronting the small-scale fishing is that it is a profession suffering not merely from economic problems in the narrow sense, such as capital shortage, marketing problems, and so on. Rather, it is a profession that is in systemic trouble—at least, for the poorer sections of the small scale fishers. The trouble stems from dwindling resource supply due to factors beyond the small scale fisher's control and factors that will continue to be beyond their control even if they organize themselves into well-functioning cooperatives. For example, fishing cooperatives of Maharashtra are much better organized and have distinct better performance in aiding the fishers' business and helping to enhance incomes. Yet, they are also in serious trouble as catches dwindle. As Kiran Kohli, from the Madh Island Fishermen's Cooperative pointed out emphatically in an interview,¹² small-scale fishing was dying because marine biodiversity was being decisively killed by heavily mechanized trawlers and purse seiners and small-scale fishers had tremendous difficulty making their ends meet. However, 'dying' is not synonymous to 'dead' and nature has ways of bouncing back. Therefore, the sea will continue to yield fruit for decades to come. The question is how far the yield will be enough for the poorer sections of the small-scale marine fishers to be able to harvest in amounts necessary to sustain them and their economic activity and whether the fishers will be able to devise ways of adapting to low yields and other adversities—such as effects of climate change—which are possibly going to increase operational costs in a significant way.

¹¹ Officially, the study is concerned with looking into the business prospects of cooperatives of marine fishers in West Bengal. However, for more reasons than one, the real concern is whether a collective solution to the fishers' ills is possible—whether the collective is in the form of a cooperative, producer company, or even society (yes, there are instances of societies of producers doing successful business).

¹² Taken on 6 November 2015

More powerful boats and attendant gear – why this is not a feasible solution for small-scale fishers in general

The only *short term* solution is to have sufficient funds to have larger and more powerful boats. The richer sections of the small-scale fishers have these boats, which allow them to go deeper into the sea and earn better returns.

If a fisher is capable of procuring funds to buy such a boat and the gear, he is far better placed in terms of income. He would not need to be a member of a cooperative to ensure a far better deal than he gets now.

Can a cooperative provide funds to fisher members to purchase larger boats and associated fishing gear so as to be able to do business that is distinctly, consistently, and durably better – at least for the next couple of decades, until the fish stocks start dwindling to levels that would make fishing operations uneconomic? It doesn't seem likely. Boats with 4-cylinder engines cost not less than Rs. 1,500,000 while those with 6-cylinder engines cost easily as much as Rs. 3,000,000. No fisher cooperative can be conceived that can arrange for this kind of fund for its members/shareholders on a large scale. (Unless, the cooperative/collective divides its members into groups, say, of 10 members each, each of which pools its resources to buy one such boat and each works as a crew member. This is a definite possibility. However, we need not explore such practical details here in this report. Nor shall we speculate on why such mini-collectives would need to belong to a larger collective.)

A possible solution that could work

In absence of governmental schemes tackling the problem of capital availability and market access in a big way, the only option that might work is the formation of *genuinely entrepreneurial collectives*.

Yes, these are the magic words. One can go on endlessly harping on 'community business,' but putting people from the community together into a cooperative or producer company is not going to deliver desirables. (We shall soon see why this is so.) What we need is a collective of relatively homogeneous, entrepreneurially oriented, yet collectively inclined individuals, who are capable of both democratic functioning and organizational discipline. This is a great deal to ask, particularly in the West Bengal setting – but it is only such a collective that might yield desirable results. But, before we get into that, let us explore what the sociology of cooperative effort teaches us.

Cooperatives: reflections that might be relevant for the small-scale marine fishers

We shall be talking of 'cooperatives'. But, as suggested earlier, let us not get fixated with 'cooperatives' in the formal sense of the word. Here, we speak of cooperatives

because this has been the standard form of modern collective enterprise and the one most studied. But, lessons derived from studying them could apply to other versions of collective enterprise with suitable modification, if any are required.

Under what circumstances might a cooperative thrive?

Studies indicate that *other things being favourable*, cooperatives have a fair chance of succeeding under the following circumstances:

- a. The product that the cooperative deals in is such that its production, processing, preservation and/or marketing call for a substantial amount of capital while the concerned producers in their individual capacity do not have the requisite capital. Therefore, operating in individual capacity, they tend to be at the mercy of moneylenders, traders, processors, manufacturers, and so on. Milk and sugarcane are good examples. Another important example is fish. Fishers down history have been seen to engage in some form of collective activity and khotis, as we have seen, are good examples of large-scale cooperation among marine fishers. (However, while some amount of collective activity is essential to survival it might not be enough for acquiring economic freedom and power, as the case of our marine fishers proves so well.)
- b. While the nature of the product might provide the basis for cooperation, whether and how far such cooperation will lead successful business is another question. That can only happen when four conditions are fulfilled.
 - I. The basic business plan is viable—that is, the cost incurred will succeed in generating an income that shows a profit.
 - II. On the whole, the overall background—social, political, cultural, and institutional—is favourable to the cooperative. (This is not to say that there won't be adversities. On the contrary, adversities and challenges help to strengthen both individuals and organizations. No, this is to say that, on the whole, the overall balance of factors in the background and environment should not be overly hostile to the development of cooperative business.)
 - III. There exists appropriate leadership, initial and subsequent
 - IV. The members feel that the cooperative is serving their interest and is likely to continue doing so in future and, in more concrete terms, is generating more and steadier income than would be possible in a non-cooperative situation.

Applying the above to the marine fishing community in West Bengal

Condition I in the above has no reality for the marine fishing community in West Bengal. There is no cooperative business worth the name and hence no real business plan.

The following may be noted. Although the marine fishing community in West Bengal has traditions of cooperation, it has no traditions of cooperative business activity. That alone would not have been a hindrance but for the fact that the general societal background contains elements inimical to the success of cooperative businesses. The predominantly inimical element is the lack of successful examples and the existence of a plethora of counter examples—of cooperatives taking off but not succeeding due to poor leadership, inefficiency, and corruption. Moreover, and nearer home for the marine fishing community, cooperatives were created with the specific objective of availing government loans or subsidies and allowed to rot once the loan was received and disbursed. As we have mentioned in the concerned chapter, the classic examples of this are found in the case of Marine Fisheries Cooperatives in Purba Medinipur. Whereas in Maharashtra, and in some other states, fishers' cooperatives had developed as community- business ventures, and sought soft loans to further their business activities, here in West Bengal the marine cooperatives sprang up with the sole objective of availing of the loan facility. Thereafter, once the loans were disbursed, the cooperatives quickly went into hibernation. The formal framework is maintained and yearly audits are done for the sole purpose of retaining a platform that can become useful when such cooperative loans become available again. Moreover, several malpractices emerged in the taking of the NCDC loans and in their non-refund. (This has emerged during an earlier survey.) Several cooperatives became serious defaulters. Cooperative corruption (and/or viewing cooperatives merely as means to extract and misappropriate government funds) is often linked to local political corruption, and involve local political elements notorious for their cavalier attitude to public wealth. Moreover, such elements often see cooperatives as means to gaining and exercising power and control. All this creates a serious lack of faith in the possibility of viable cooperative business enterprises. Moreover, such examples tend to fortify the notion that only individual efforts to enrichment are likely to lead anywhere and collective efforts have bleak futures.

These conditions appear to be applicable to coastal areas in which our marine fishers ply their trade and is generally true of West Bengal, which is a state with poor showing in cooperative performance. There have been efforts to trace regional success or failure of cooperatives to overall historical, social, and economic realities of the regions. We cannot go into this here. For a discussion of these themes see (Chacraverti, *The social and cultural context of cooperatives*, 2017). However, the nature of landholding and tenurial systems in West Bengal has been such as to encourage fragmentation in social life and discourage a culture of mutual aid and collective

effort. This could be acting as a sort of general depressant to cooperative initiatives in this state.

As regards the condition II (able leadership), this again is a sterile zone. In a sense, this would seem to be a natural corollary to the above. For, where there is little faith in cooperative business solutions among the mass of people, pioneers in cooperative initiative are unlikely to emerge. Of course, an exceptional individual might have emerged to try and encourage formation of and successful continuation of cooperatives. There have been instances of individual initiative in West Bengal to develop cooperatives even within this overall gloomy scenario. However, as of yet, there are no instances of such leadership emerging or promising to emerge among the marine fishing community.

Condition III has no chance of being already fulfilled in our case as there are no cooperative business enterprises among the marine fishing community in West Bengal.

The overall lack of confidence in the power of collective initiative came out in our interviews. To put it more accurately, our interviews indicated that cooperatives did not feature substantially or even considerably in the respondents' notion of feasibilities. The respondents did not mention cooperatives on their own and talked about them apparently after a little prodding from the surveyor (in response to a question about marketing the products). When asked how they thought the fish business could flourish and the fishers could extricate themselves from dependence on aratdars and moneylenders, the fishers occasionally spoke about government support. Mostly, none spoke of cooperatives as a possible source of cheap capital (i.e. capital with low interest rates). Only, occasionally, a respondent/interviewee would mention cooperatives as a possible source of capital and a means to advancing business. But, even in such cases, apprehensions were expressed about the long-term viability of cooperatives. This lack of faith in a cooperative solution, as we have mentioned above, is the greatest obstacle to the possible success of cooperatives.

Since low confidence in cooperatives contributes to cooperative failure and the latter results in confidence remaining low, we have a vicious cycle.

Learning from historical and present examples

History shows that successful cooperatives can come up in two different ways. The first is that the community's own business needs lead to the setting up of a forward-looking cooperative. The needs are felt by the community at large and particularly by some members, who take a leading role in creating a cooperative. The classic Indian example is that of Kaira District Cooperative Milk Producers Union, which came to be known to the world through its marketing brand Amul.

The second kind of example is where a particular person within the community plays a pioneering and leading role in setting up a cooperative. Once again, to take an Indian example, and one that is particularly relevant to our concerns, is that of Arnala Fishermen cooperative (the Arnala Fisherman Sarvodaya Sahakari Society), which was formed largely because of the single handed efforts of its founder, a social entrepreneur from the community.¹³



Moreshwar Vithoba Vaiti, Secretary Arnala Fisherman Sarvodaya Sahakari Society

It is clear that the above examples do not have much relevance to the situation on the ground for the marine fishers' cooperatives in West Bengal. For, the community, or the individuals within the community, simply have not been able to generate the initiative necessary for putting in place a successful cooperative enterprise. Hence, we need to look at a different class of examples.

The other examples can be categorized under a single head—creation or promotion of cooperatives by outside initiative. A world famous instance is that of Mondragon. Here, the initiative of a Basque catholic priest led to the creation of an entire chain of different kinds of cooperatives among the working class population in the Mondragon area in Basque country, Spain (Logue, 2006).

In India, one can cite the example of the Warana cooperative movement. Here, Tatyasaheb Kore's efforts led to the creation of a cooperative sugar factory in Warana. This was followed by an entire gamut of various kinds of cooperatives, including dairy cooperatives, cooperative bank, consumer cooperatives, poultry

¹³ Based on interview of Moreshwar Vaiti, taken on 4 November 2015 and of others taken on 4 November 2015.

cooperatives, and cooperative power generation. This initiative has delivered welfare across more than hundred villages in the Panhala area of Kolhapur, a district in Maharashtra (Chacraverti, *The Warana Initiative*, 2017).

One can also cite the initiative of the SEWA. Although it can be seen as having taken birth in the women's trade union movement in Gujarat, the fact remains that a separate women's trade union movement was itself triggered largely by the vision and persistent efforts of Ilaben Bhat. It was again Ilaben's vision that led to the creation of the cooperatives.

The above examples are inspiring and point towards a possible line of action. However, even here, one must be extremely careful in learning from these examples. Let us try to understand the issues involved.

Let us take the example of Mondragon. Here, we have a Basque Catholic community with strong nationalistic inclinations and religious conviction. The inspiration and leadership comes from Arizmendiarieta, a Basque Catholic priest from a peasant background, who had immediate acceptance among the working class in the Mondragon area. Moreover, this is a person with an advantageous blend of characteristics. He is deeply attached to the ideals of poverty alleviation, reduction of social inequality, and social and democratic control over property. On the other hand, he has no communistic aversion towards business, but rather believes that cooperative models of business are a mode of empowerment for the poor. What is also supremely important is that not only is this priest a man of noble convictions and wide reading, he is also intensely practical. He has a fine sense of organizational necessities, leadership issues, managerial needs, and awareness of *the need for technological excellence*. Thus, he is able to inspire youths from the working class community in Mondragon to receive high quality technical education at the local technical school run by the Union Cerrajera, a company owning several iron and steel factories in the Mondragon area and to join the Company. These youths acquired a high level of technical education and quickly rose in the Company hierarchy. Then they left their jobs and joined Arizmendiarieta in setting up the workers' cooperatives and taking care of the managerial and engineering aspects. It is this approach, of empowering the cooperatives with technically proficient and dedicated personnel, which contributed to the success of the Mondragon cooperatives See, for example, (Logue, 2006), (Molina & Miguez, 2008).

In the case of Warana again, we find that the founder, Tatyasaheb Kore, was a successful businessman, who also had considerable experience as a sugar farmer. He used his farming knowledge and business experience to guide the sugar cooperative. He also inspired members of his own family to take an active interest in the cooperative movement and developed a team of dedicated and knowledgeable

cooperative activists to lead the cooperative movement. Further, the technical management of the factories, banks, cooperative stores, and other cooperative efforts was kept in the hands of technically proficient personnel. Moreover, while the cooperatives ran themselves democratically, the members realized that so long as the leadership remained in the hands of those with necessary qualities, the cooperatives would flourish. This resulted in the cooperatives going from strength to strength (The Warana Initiative, 2017).

In the case of SEWA, once again, we find an important role played by the founder and a team of individuals inspired by her vision. The team played a vital role in spearheading both the trade union and cooperative movement. Ila Bhat drew her first inspiration from Israeli cooperatives, which she saw at first hand during her visit to Israel (Bakshi, 2008). She combined her experiences with the Gandhian ideals of self-help and social cooperation to set up highly practical objectives of self-employed women empowerment through cooperative business. While the local leaders undoubtedly played a vital role, setting up a cooperative network and keeping alive the vision required educated and dedicated central team drawn from middle and upper middle classes of the Gujarati society (Bhatt, 2006).

Interestingly, there are some modestly successful fishing cooperatives in West Bengal. All of them, however, are fish farmers' cooperatives. However, even in their case, most of the success is due to the important role played by several outsiders, including government officers, in promoting them. The classic examples are Mudiali Fishermen Cooperative Society, Captain's Bheri Fishermen Co-operative Society, and Bonhooghly Fishermen's Cooperative Society. However, these are relatively modest successes. This is because, none of them have progressed beyond the raw product—fish. They have not been able to move on to more advanced fishery products; nor have they been able to make any particular headway in marketing.

All the above examples indicate that in the present setting of West Bengal, if one has to think in terms of successful marine fishers' cooperative, one has to think in terms of a dedicated team of outsiders working to set up one or two successful cooperatives, which can then function as inspiring models for other cooperatives to follow. Without such examples the vicious cycle of pessimism and distrust leading to failure leading to pessimism and distrust cannot be destroyed. Nor can precedents be created in developing value-added products.

The prospects of a cooperative solution in light of the above

Will a cooperative /collective of small-scale marine fishers be able to do successful business or, what is the same thing, aid the fisher members in finding increasing income through sale of their goods?

It can be successful if it succeeds in carrying out profitable business. What would be the conditions of profitable business for the small-scale marine fishers of West Bengal?

The conditions would fall under two heads:

- i. Economic conditions and
- ii. Conditions related to human resource.

We shall take up economic conditions first.

Identifying the necessary or desirable economic conditions stems from the fact that:

- a. There is supply uncertainty and shortage at the fundamental level: resources accessible to small-scale fishers are dwindling
- b. This is accentuated by increasing undesirable weather conditions leading to loss of products
- c. Hence, there is a dearth of marketable goods
- d. In addition, there is severe capital shortage among the poorer majority of small-scale marine fishers, leading to heavy dependence on the dadandar and, consequently, lack of control over the products, which must be given to the dadandar, and at reduced prices
- e. However, even if there were no need to give discounts to the dadandar, the income from sales is not likely to have brought sufficient revenue to yield incomes necessary for escaping poverty
- f. This is because the fishers have no means of translating their products across time and space—they have no means of storing and preserving their products over time so as to take advantage of better prices in future or transporting their goods to places where it would fetch much better prices; therefore, they are compelled to act as price takers—they have to sell their goods to those with such resources and access, who can take in whatever stock the fishers can provide; therefore, these traders are in a position to dictate terms and prices—even in a non-dadan scenario
- g. Further, in addition to fresh fish, the fishers have only one value-added product at their disposal—dried fish; they have neither the means nor the knowledge to produce any other value added product, although such products *would fetch several times the price per Kg than they received for either fresh or dried fish*

In the light of the above, the requisite economic conditions would seem to be clear enough:

- a) Availability of an initial capital that could be advanced to the members/shareholders as loan at low interest (say about 14% per annum).

- b) Availability of initial funds that could be utilized to take care of all organizational overhead and cover initial losses due to bad loans
- c) Availability of initial funds to hire expert personnel at all levels—from preparing business plans to designing marketing solutions
- d) Having necessary funds and appropriate facilities and technologies to take care of preserving dry and fresh fish (for example, ice factories and nitrogen packing facilities)
- e) Facilitating the sale of members' usual products in near and remote markets by developing appropriate contacts and connecting to appropriate networks. (In the given circumstances of marine small scale fishers, it would be advisable if the collective did not purchase all the goods from the fishers and resold them at the best prices available; rather, it would be better if it provided a platform through which the fishers found the best market opportunities. For example, it could take from the fishers their goods, carefully recording the quantity and nature of the goods taken from each member, thereby creating a total stock that would be sold. This stock would be preserved or sold as per market reach and requirement.) Creating contacts with remote markets—specifically the Jagiroad Dry Fish Market in Assam and the Teliamura and Golbazar markets in Tripura—might create opportunities of avoiding a large number of middlemen and, therefore, procure prices considerably above what one received in the local markets. Similarly, direct contacts with exporters exporting to Bangladesh might prove hugely beneficial.
- f) Product Study: Some products enjoyed very high regard in distant markets. For example, dried phyasa (*Setipinna phasa*) and certain kinds of dried shrimp enjoyed tremendous regard in the Tripura markets. Stressing on them might help increase revenues.
- g) Activity diversification—this is of cardinal importance in the context of small-scale marine fishing. For, with reduced catch and the increasing uncertainties of weather, the small-scale marine fishers seem to be looking at the prospect of resource death, definitely in the long run. Under the circumstances, encouraging activities that are generically related to fishing—such as fish and crustacean farming—appears to be extremely desirable and even urgent. These combined with value-addition (see next point) might prove useful means of enhancing revenue
- h) Continuing exploration of market opportunities for existing and possible products (value-added) [As the brief input from Dr. Balaram Basak, the former Director, MPEDA shows, there is a wide market value-added products that the marine fishers can produce]. Value-added products can fetch prices per unit weight several times that of either fresh or dried fish

- i) Developing marketing strategies, with proper utilization of skilled personnel and online platforms

Glimpses of the Shuntki market in Tripura



Varied shuntki products in Golbazar, Agartala



Nona Ilish, Battala Bazar, Agartala



Nona Ilish, a north-eastern favourite



Putting shital Shunti (perhaps the most preferred dried fish item in north-eastern states) in the *matir kalshi* (earthenware vessel)

Identifying the necessary or desirable human resource conditions stems from the fact that:

- a. The community as a whole is deficient in motivation; the majority tends, at the most, to make the best of existing circumstances, but have neither the vision, confidence, or motivation to try to change the circumstances
- b. The majority are deficient in exposure and skills necessary to explore state-of-the-art, yet appropriate, strategies and technologies
- c. The younger generation tend to show little interest in the profession

In the light of the above, the requisite conditions pertaining to human resource would seem to be:

- a) General member motivation to make the cooperative a success
- b) To be prepared to operate with team spirit, to bear with occasional difficulties, to be ready to combine democracy in decision-making with discipline in implementation
- c) Development of appropriate leadership from among the members
- d) Appreciating the importance of hiring skilled personnel in various domains as indicated in the above subsection on economic requisites
- e) Hiring skilled personnel for helping to develop viable business plans, technological guidance, creative yet practical marketing solutions, advertisement, digital technologies, and so on.

Unfortunately, ensuring all the above is an immensely difficult challenge and there is no foreseeable way that any existing cooperative of marine small-scale fishers can even dream of taking on these tasks. For example, they would not have even a clue of procuring the initial funds. [In planning the quantum of initial funds, one might proceed as follows: the *highest* mean and median figures for dadan in our data often approach a seasonal total of Rs. 275,000.¹⁴ So, if one were to think of a collective in Sagar of μ members, one would have to keep ready a monetary provision

¹⁴ The mean and median values of the dadan vary across Khotis. In Khejuri it is Rs. 23,000 and Rs. 25,000 respectively. However, this is outstandingly low and bespeaks of the dire poverty of the fishers. In Dadanpatrabar the mean and median figures are Rs. 96,111 and Rs. 80,000 respectively. In Junput, we did not get data on dadan amounts but the loan amounts were not too high, the mean and median both being Rs. 25,000. The situation changes radically in the case of Sagar. In the Sagar Sangam Khoti at Sagar, the mean and median figures for dadan are Rs. 275,000 and Rs. 240,000 respectively. In the case of Khal Dhablat Khoti, the figures were Rs. 253,571 and Rs. 250,000 respectively. In the case of Hatipitia Khoti the figures are Rs. 233,071 and Rs. 150,000 respectively. (We have explained the considerable difference in the mean and median figures for dadan in the main text.) These figures are important in indicating the trends of financial requirement of the small-scale marine fishers.

approaching Rs. 275,000 μ dedicated to loan advances alone.¹⁵ For a collective of 30 members, this would mean a provision of Rs. 8,250,000 for loan advances alone. Certainly, such funds cannot be accumulated by member donation/subscription, for if the members had this kind of money, they would not be going to the dadandar for advances. The members might be able to put together a small percentage of the initial funds through stretching themselves to the limit.¹⁶ In addition to the seed fund for providing capital support, one would need an initial fund for other inevitable expenses—including administrative costs for the first three years, appointing technical personnel, preservation and packaging technologies, keeping some funds for exigencies, and so on.] Nor would the members be able to procure expert help and advice for preparing the initial plans and programmes. Hence, the initial impetus and guidance must come from an NGO committed to community uplift. The funds cannot be expected to come from pure charity. Some of it could, of course. However, the NGO must devise other strategies, for example, to invite social investment—at terms that are deemed most suitable by the collective.

How to begin

The beginning can only be made by asking enterprising and genuinely interested community members to put together a collective of sincerely motivated and forward looking persons, including a fair share of young people, prepared to venture and experiment. Whether the collective would be a producer company or some other institutional form can be worked out later on. The experiment can take off, if only such a group comes together. If the experiment succeeds, it can form a model for others of its kind. Not all groups can succeed, nor everyone will. Nor can everyone be a successful member of an entrepreneurial group. Even inspired social development cannot produce even and uniform results.

¹⁵ It might appear that we are keeping more provisions than actually indicated, for the mean and median figures for Sagar fishers are often less than Rs. 250,000 and in other places the usual dadan is much lower. But, one needs to keep more funds than indicated by actual advances, for the fishers are likely to tend to take slightly more advance if they got better terms. Moreover, the organization needs funds to absorb initial non-repayment shocks without too much discomfort.

¹⁶ For example, the average contribution from the members could be Rs. 10,000 per head. However, they might donate a little land, say for office space and offer other support, including service, in kind.

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