Transport and communication: limited mobility, limited choices

5.1   Introduction

Transport and communication have become indicators of sustainable development (UNCSD Framework, 2001), and rightly so since absence of these services result in curtailment of freedom of both individual and social choice. This chapter describes the transportation and communication system in the eco-region and demonstrates how it limits the freedom to such choices, a basic tenet of sustainable development. The eco-region is recognised as a backward area in terms of transport and communication (Das, 2002) with only 42 km of railway, 250 km of metalled road, and about 170 km of unpaved narrow roads (Sharma, 1994; Kanjilal, 2000). The chapter asserts that the linkages between collective action and the process of sustainable development in the Sundarbans are not always positive implying that the higher the level of collective action within a group/category, the less is the choice for the larger group in the population, a case of *second-order conflict*. The sub-cases in this chapter help to understand the conditions under which negative linkages between collective action and sustainable development become established. The sub-cases also meet the policy objective of this research in terms of providing pointers for designing institutions to facilitate higher levels of productive outcomes, individually as well as collectively. The scientific objective is met in an interesting way. Literature on collective action and governance of commons and negotiating social and or public-good dilemmas necessarily links collective action with positive outcomes but here the lesson is to the contrary. Collective inaction (a form of negative collective action) results in negative outcomes (in terms of working against collective interest articulated by the state). However, as a consequence, it may provide *net benefit* for the community.

5.2   The state of transport and communication in the Sundarbans
5.2.1   Transport

"The navigable rivers and creeks form the principal means of communication in the Sundarbans. Roads hardly exist. The only metalled road is one at Canning […] the other tracks are mere footpaths" (Hunter, 1875 [1998: 65]). For much of the population of the Sundarbans, the transport system of today is only slightly better than Hunter's observations made about 130 years ago. Most of the people are heavily dependent on boat services for their daily movements but services continue to be inadequate and deteriorating due to siltation of watercourses. For example, among

the 770 villages in the Canning belt, only 220 can be reached by regular boat services (Mandal and Ghosh, 1989).

The Sundarbans islands have a number of gateways with railheads and/or road heads (see Figure 3.2). Train services to Canning (in the eastern Sundarbans) have been in operation since 1863. In 1883, in the western Sundarbans, the railhead terminated at Diamond Harbour. These initial developments of the transport system in the Sundarbans were geared primarily to meet official needs of the British Administration (De, 1994). Despite these advances in the late nineteenth century, it is only now that the railway is being extended up to the last possible points on the mainland. Since January 2006, rail services have been extended up to Namkhana (Narayanpur) on the western side via Lakshmikantapur though sanction for

Photo 5.1: Crossing River Matla at low tide

extension work was granted in 1984. This is the first expansion towards Sundarbans since independence and it is not an extension of the existing Diamond Harbour line. On the eastern side, for extension of railway from Canning up to Sonakhali, a techno-feasibility study was completed in March 2006. Also in 2006, a similar study was sanctioned for the construction of a road bridge across the river Matla.

At Canning, a little distance from the railway station, passengers cross over to Dockghat (Kanthalberia) across the river Matla in a motorised country boat. At the lowest point of ebb tide, there is not enough draft for even country boats to ply and people just wade across (see Photograph 5.1). From Dockghat they have to travel 14 kilometres to reach Chunakhali or Sonakhali (in different directions) to get to their destinations in Basanti or Gosaba Development Blocks. The options to get to Chunakhali or Sonakhali are 'van-rickshaw', 'auto', or 'trekker'. There is also a bus service between Dockghat and Sonakhali and a similar service was available between Chunakhali and Dockghat until 1999 when transport unions of van-rickshaw, auto, and trekker operators forced the closure of the service.

The 'van-rickshaw' is essentially a tricycle with a flat wooden platform to carry load and passengers. A recent innovation has been to retrofit a small diesel engine on the van-rickshaw. This contraption is referred to as the 'engine-van'. The engine-van has

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evolved during the past 4-5 years, old motorcycles are cannibalised to make the front section as well as the wheels of the rear section (see Photograph 5.2). Sarberia

Photo 5.2: 'Engine van'

in Sandeshkhali II Development Block (see Figure 3.3) is a major hub for putting together these engine-vans in eastern Sundarbans. These vehicles are not recognised as motor transport and therefore are without any registration; consequently no traffic rules apply to them. The engine-vans in particular are prone to accidents since the driver has so little control over them. The Panchayat Samiti in Sagar Development Block has banned the use of engine-vans on the island. The van-rickshaw is availed of to carry load, passengers for short distances, as well as to ferry the sick and the

Photo 5.3: News clipping depicting a 'trekker' and lamenting on the state of affairs
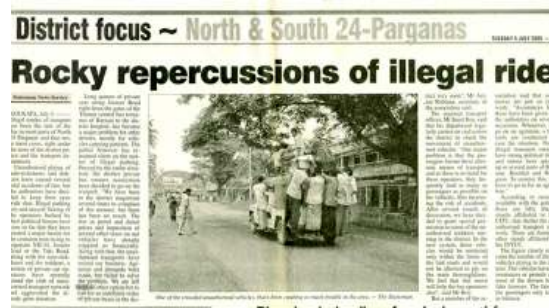
old. Islands without brick-paved roads do not even have this form of transport. When I visited Mollakhali Island for the first time in the year 2000, it did not have van-rickshaws, now it has over 160 plying between Chotomollakhali Bazar and Satjelia Ghat (see Figure 3.4).

An 'auto' is a three-wheeled, motorised vehicle with two sections. The front section is *officially* for the driver and the rear section for three passengers. In reality though,

as many as ten passengers travel in an auto. Autos are originally manufactured in the organised sector but are modified at local workshops in the Sundarbans. Over time, the vehicles are quite different from what the manufacturers had produced except for the outer shell. In fact, none of the autos run on the original engines, they are replaced by locally assembled diesel engines, which require the operator to pull a rope to start. People without much luggage and in a hurry use the auto service since it carries fewer passengers and makes fewer stops en route than a van.

The 'trekker' is a four-wheeled, 11-seater, motorised vehicle. It is a very popular mode of transport, and is slightly cheaper than the auto. I have travelled in trekkers with as many as 20 passengers inside and an equal number on the roof with some hanging on the two sides and the rear (see Photograph 5.3). Comfort and safety of the passengers is of no consequence to the operators of the various modes, getting the passenger to his/her destination is the only concern. None of the vehicles adhere to any safety or environmental norms nor do they renew their registration.

Photo 5.4: Watercrafts of Sundarbans

Bhut-bhuti on River Matla

Boats at Chotomollakhali Market

Mobile dispensary on a Launch

Specialised Vessel at Namkhana

Enforcement of such norms would require administrative and political will which are lacking while the operators are well organised and get away with all kinds of violations, even strictures of the High Court against overloading and pollution control norms are not enforced, not even in Kolkata.

Sundarbans being riparian, the primary means of transportation is through the watercourses. This mode is only slightly better as compared to road transport due to fewer bumps and jerks. Passenger boats in the Sundarbans are referred to by

different names based on size of the craft. '*Bhut-bhuti*' is a motorised country boat without canopy and sitting arrangement, and is usually used for crossing rivers, as in Canning and Namkhana. The 'boat' is slightly larger (about 18 metres long), and is like a bus service on water. These crafts have a firm wooden canopy covering about three-fourth of the length under which wooden benches are fixed along the length for passengers to sit. Load is carried on the canopy, and in the uncovered front section (there are boats exclusively meant to carry load, sail boats as well as mechanised). A diesel engine is mounted in the middle (under the canopy), generating enough noise for a first-time traveller to move as far away as possible from the engine. 'Launch' is larger than a 'boat', and is geared, making backward movement possible. In many places launch services have been replaced by boat services due to lack of draft and passengers. All watercrafts except for a 'vessel' are wooden constructions and crafts smaller than 'boats' do not require any registration. A 'vessel' is larger than a launch and is made of steel, the only passenger vessel service in the Sundarbans plies between Lot No. 8 (Harwood Point) and Kochuberia on Sagar Island. Specialised vessels are used to transport cars, buses and trucks to Sagar and Namkhana islands. See composite Photograph 5.4 for different types of watercrafts.

Almost all ferry services except vessel service are private enterprises operated by cartels under nominal oversight of the elected district administration (*Zilla Parishad*). The inland launch services commenced from four stations, namely Hansnabad, Canning, Kakdwip, and Raidighi in mid 1940s. The service was conducted on individual initiative but has been taken over by 'Launch Owners' Association'. The cartels decide on the routes and frequency of service, as well as tariff effectively leaving almost no place for public voice. Things are changing though, due to the expansion of road network, and siltation of creeks and rivers; on some of the watercourses river traffic is not possible during low tide. The road network is being expanded under a Government of India scheme, the *Pradhan Mantri Gram Sadak Yojna* (PMGSY (Prime Minister's Rural Roads Plan)). A few of the islands such as Namkhana, Amtali and Hingalgunj already have these roads and the difference it has made is evident[1]. These new roads have also affected some of the older markets and boat services adversely, for example, the boat service to Dhamakhali from Chotomollakhali no longer plies during the day since it is faster to cross over to Amtali and travel mostly by road. Also, the Chotomollakhali market (among the largest on the islands of the eco-region) is losing significance due to improved accessibility.

Major points of embarkation or boat-landing sites, locally referred to as *ghats* have RCC (Reinforced Cement Concrete) jetties erected by the Sundarban Development Board (SDB). However, not all jetties can be put to use either because of their location or design. On the islands of Mousuni and Mollakhali (field research sites), jetties have been erected close to the main market at Bagdanga and Chotomollakhali respectively but both remain mostly unused since these are suitable for launches

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[1]During my initial visits to Mollakhali, it would take almost the entire day to reach from Kolkata, but since 2003, it is possible to return to Kolkata on the same day with few hours to spare while travelling through Amtali-Dhamakhali or Gosaba-Sonakhali routes.

rather than boats and *bhut-bhutis*. Absence of buffers on these concrete structures makes the wooden boats and *bhut-bhitis* vulnerable to damage. In the absence of usable jetties or where there are no jetties at all, people have collectively made arrangements to make use of certain locations as boat-landing sites using mud, bamboo and brick. These initiatives are usually either driven by traders or 'clubs' to overcome problems of transhipment of goods and movement of people.

In the case of Mousuni Island, the problem with the jetty is compounded by the fact that for most part of the year the water level does not reach the jetty platform even during high tide (see Photograph 5.5). At Chotomollakhali market, the Forest Department (Sundarban Tiger Reserve) has raised a mangrove patch just southeast of the jetty to provide protection to the adjoining embankment. While the mangrove patch provides protection to the embankment, it encourages silt to be deposited on the jetty itself making it unusable till silt is removed. On both the islands smaller

Photo 5.5: The jetty at Bagdanga Market that can be seldom used

ghats are used on a regular basis. Small *ghats* and the ones with insignificant traffic are in the realm of the commons wherein most users are free riders while only a handful contribute towards their maintenance. The larger or busier ones are public property but user charges are levied either as a matter of convention or through legal arrangement by private actors such as contractors, market committees[2], or boat operators' union.

The various boat-landing sites provided opportunities for detailed observations, interviews and interactions. In all, 63 interviews were conducted on transport and communication, ten each at Dockghat, Chunakhali, Chotomollakhali, Namkhana and Bagdanga, six at Sonakhali and seven at Dhamakhali. Greater emphasis was laid

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[2] Market committees are independent 'collective action' or 'self-organised action' organisations that run the markets. Members of these committees are elected from among the permanent traders operating in the markets except in case of a private market where the owner or her/his representative is a permanent member of the committee. The committees are locally known as *Bazaar Committee*. A *Bazaar Committee* raises subscription from among its members as well as other traders in the market. A *Bazaar Committee* is usually apolitical and members make efforts to keep political influence out of its dealings.

in the eastern part (68 percent of the interviews and five out of seven locations) since it is less accessible as compared to the western part.

Among the regular commuters, traders constitute the largest segment (25 percent) followed by schoolteachers and other employed people (21 percent), students (19 percent), and local politicians (11 percent) and others (24 percent). Traders vary their time of travel and mode of transport as per their convenience. For example, Tapas Mandal, a fertilizer/seed shop owner from Chotomollakhali travels via Dhamakhali to central Kolkata but for south Kolkata he travels via the Chunakhali-Dockghat-Canning route unless it is expected to be low tide while crossing the river Matla in which case he travels through Dhamakhali. Most of those interviewed at Dockghat (6 out of 10), Chunakhali (7 out of 10), and Sonakhali (4 out of 6) have had to wade across river Matla at least once in the recent past (within six months preceding the date of interview). All the commuters aged 50 and above inform that about 25-30 years ago the Matla River always had enough draft for boats to ply, now the situation is different due to siltation.

Box 1

Through the interactions and interviews, 63 in all, at various embarkation locations, the following points emerged:

a) About 73 percent commuters believe that the journey is uncomfortable due to overcrowding and bad roads;

b) Almost 32 percent of the commuters feel that the road journey is unsafe because:

    (i) driver's view is blocked due to luggage on the bonnet of the trekker, and at night the headlamps provide insufficient illumination,

    (ii) the driver virtually hangs out of the vehicle making it difficult for him to remain in proper control, and

    (iii) the administration neither maintains roads nor enforces safety and traffic regulations;

c) Most (84 percent) commuters feel that the journey irrespective of mode of transport is expensive and time consuming but some of the older respondents are of the opinion that it is a much improved situation because from some places in the Sundarbans it is now possible to go to Kolkata and return the same day;

d) All the commuters feel that Sundarbans is a neglected and backward region of the State.

Among those travelling to Kolkata via Canning, 69 percent (excluding local politicians) avail of the trekker service because trekkers accommodate about 40 passengers per trip and are the cheapest; local politicians prefer travelling by auto or van-rickshaw. The commuters' complain of the journey is, that it is uncomfortable, unsafe, unpleasant, expensive, and time consuming, irrespective of the mode of transport (see Box 1). All the commuters believe that they have to pay according to the wishes of the transport operators who are organised in unions backed by political parties and 84 percent of those interviewed would like to pay less for the quality of service rendered. Due to expensive and poor transportation, farmers in the eco-region find it difficult to compete in larger markets of Kolkata and its suburbs despite proximity of the eco-region to these places (see Chapter 3, Section 5).

5.2.2   Communication

Till the year 2000, it appeared that the only way to communicate to the outside world from the eastern islands of the Sundarbans was to physically travel and communicate with the intended audience. Over time it was revealed that passenger boats are an important channel of communication. The boatman carries the message and calls the intended person from a public telephone booth on the mainland and asks the called person to return the call at that particular public telephone while

Photo 5.6: Passengers disembarking during low tide at Mollakhali Bazaar

conveying that there is a message from so and so. The booth operator charges ten Rupees ($ 0.22) for both outgoing and incoming calls. People from the mainland familiar with the system call and leave messages with particular telephone booth operator for the message to be conveyed to such and such boat route which eventually reaches the intended person on the island. This complicated communication system remained in operation due to the fact that the rural telecommunication expansion scheme of the 1990s was abused by the Minister, senior officials and contractors[3]. Chotomollakhali Gram Panchayat had received a

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[3] During the early days of economic liberalisation in the early 1990s, Sukh Ram was the federal Minister for Communications. He, in cahoots with senior officials and contractors, had had Multi-Access Rural Radio (MARR) systems installed ostensibly to expand the country's rural telecommunications network. Many of the equipments never worked. Sukh Ram was eventually convicted for fraud in 2002 along with the contractor and a senior official (Venkatesan, 2002).

public telephone under the rural telecommunication expansion scheme which never served much purpose because it was only possible to make calls to Gosaba, the Block Headquarters though it should have been possible to make calls anywhere.

During the same period, it was possible to make calls anywhere from the western islands using long-range cordless telephones. The base station of the cordless phone would be at the nearest public telephone booth on the mainland or neighbouring large island with landline connection while the handset would be on the island without normal telephone connectivity. To make a call, the booth operator would be paged using the handset, who in turn dialled the desired number. Over time, more sophisticated handsets appeared allowing numbers to be dialled directly from the handset itself. The handset operator collects payments from callers. Owning and using long-range cordless telephones is illegal in India.

The Sundarbans islands were connected to the telephone network in 2004 through the WLL (wireless in local loop) system but the service was unreliable and the long-range cordless phones remained in operation for almost another year. In October 2005 the GSM cellular network became available in the Sundarbans. Though more expensive than WLL phones, the service is satisfactory and it does not cost to receive calls, making it easier and cheaper to send messages to the islands than in the other direction.

India has a teledensity[4] of 16 percent as of December 2006 (targeted at 22 percent by the end of 2007), which is significantly lower as compared to China at 23 percent (as of March 2005) and way behind USA where teledensity is 60 percent (as of March 2005); the corresponding figure for rural India is a meagre two percent. Obviously, for a backward region like the Sundarbans, telecommunication is only for the very few, the rest depend on radio for news from the outside world as well as weather warnings. All India Radio (national broadcaster) has a pan Indian coverage but the most popular channels in the Sundarbans are the private FM stations, in operation since 1999; local announcements are made over the most popular FM channel. Since 2003, it has become legally permissible to run FM community radio stations (campus radio stations to be precise since licenses are granted to educational institutions) and local announcements can be made over these but effectiveness would depend on the popularity of the channel vis-à-vis private FM radio. Moreover, setting up and running such radio stations are an expensive proposition. The Anna FM (radio service of Anna University, Madras) the first of its kind in the country incurs an expenditure of 300 Rupees (about US$ 7) for every hour of operation and had spent about US$ 17,000 on installation. It also requires clearances from six federal ministries apart from the State Government.

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[4] The number of landline telephones in use for every 100 individuals living within an area. A teledensity greater than 100 means there are more telephones than people. Third-world countries may have a teledensity of less than 10. http://www.techweb.com/encyclopedia/defineterm.jhtml?term=teledensity viewed on 30 April, 2007. In India, mobile phones are taken into account while measuring teledensity (see *The Financial Express*, January, 9, 2006).

5.3   Collective action and public-good

Review of literature has shown that although collective action may be successful in managing common property, common-pool resources and provisioning of public-good, it is not always the case, because of the different levels and spaces at which collective action operates, as well as the different forms of collective action itself. In this section three sub-cases follow. These help to understand the conditions under which negative linkages between collective action and sustainable development get established, as well as how 'collective inaction' as a form of collective action facilitates provisioning of public-good. Understanding these cases is important from the point of view of designing institutions to facilitate individuals achieving higher levels of productive outcomes in social or public-good dilemmas.

Maintenance of boat-landing site

Launch services between Chotomollakhali and Canning were introduced in 1961. To facilitate loading/unloading of goods, and embarkation and disembarkation of passengers, the Sundarban Development Board (SDB) constructed a concrete jetty at Chotomollakhali in 1989, prior to which an earthen brick-lined finger-like extension into the watercourse locally known as Sarasa River was used as the boat-landing site (*ghat*). Around 1997, launch services were withdrawn due to loss of draft and passengers. By this time a number of boats were plying on different routes connecting Chotomollakhali to different islands as well as to different points on the mainland using the *ghat*. The *Bazaar Committee* maintained the ghat. From mid-1997, the Committee started to charge a user-fee of a tenth of a Rupee (a miniscule amount in $ terms) to engage a cleaner to remove slippery silt from the brick blocks during low tide. The *ghat* poses no problem during high tide since boats are able to berth next to the embankment, but during low tide due to a loss of draft boats were stuck in the soft soil about 20-25 meters away from the embankment making it difficult for the passenger and head-loaders (see Photograph 5.6).

Towards the end of 1997, the Gosaba Block Administration (headed by a civil servant) objected to the collection of user-fee by the *Bazaar Committee* on the ground that a private entity unless expressly authorised by the state cannot levy user-fee on public/state property. Collection of user-fee was discontinued, as was the practice of cleaning the brick blocks during low tide.

Through a bidding process organised by the Gosaba Block Administration, a contractor gained the right to levy user-fee with the obligation to maintain the Chotomollakhali *ghat* from April 1998. Initially, the contractor charged 0.15 Rupee from each passenger, and 0.20 Rupee for each head-load. The contractor did not make any effort for the upkeep of the *ghat*. In the subsequent year, user-fee was enhanced while the state of the *ghat* deteriorated, but boat operators continued to use it instead of the SDB jetty about 100 meters downstream because the *ghat* contractor would not allow such use as he would lose money and the jetty was not in a very good state due to silt deposition. Users of the *ghat* did not complain about the situation but would grumble only when probed. The Chotomollakhali Gram Panchayat maintained that anything beyond the embankment was not within its jurisdiction. Only some of the members of the *Bazaar Committee* were vocal about the state of the *ghat*. The situation appeared ripe as a subject for this research for

examining whether an existing institution could be leveraged to obtain a public-good through collective action.

Some of the *Bazaar Committee* members are more influential than others, two such members are Ashok Gupta and Ramesh Agarwal. Ramesh's family owns the largest grocery store in the market; it is also the major money-lending family on the island. Ashok has different kinds of businesses, and is good with machines for which he is considered smarter than others and knowledgeable. The situation of the *ghat* was put to Ashok and Ramesh and both agreed that it was foolish to have to pay the contractor for no services received. They took up the matter at a *Bazaar Committee* meeting. During the financial year 2001-02, the *Bazaar Committee* appealed to the Block Administration to discontinue the services of the contractor. Members of the Committee visiting Gosaba on business or other purpose kept prodding the Block Administration. Later that year the Block Administration asked for an undertaking from the Committee that it would maintain the *ghat* without levying user-fee, which was provided before the end of the financial year on March 31, 2002 but by then the *ghat* contractor had renewed his licence. After another year, on April 01, 2003 the *ghat* was handed over to the *Bazaar Committee*. The Committee sought and accepted donations from the traders at the rate of one hundred Rupees ($ 2.20), as well as one Rupee (about two cents) from members of the community at the market for a period of one month to raise money for repair work and relaying of new brick blocks. Since May 2003, use of the *ghat* is for free, traders contribute a monthly sum of ten Rupees ($ 0.22) towards maintenance and salary for the cleaner.

Trans-shipment of a load of saplings and two large pots of fish
The following two stories are very specific, incidental small cases but have been used as a sub-case to describe a more general phenomenon of unionisation of transport and its effects.

In the year 2001, an environmental NGO was contracted for raising energy plantation for a biomass gasifier power station at Chotomollakhali which needed to transport ten thousand saplings to the island. To reach the saplings to the island, the arrangement was to transport them by truck up to Dhamakhali from where a boat would carry them to the island. Handling saplings in large quantities is a specialised job since each sapling is in a polythene tube with some loose soil; wrong handling either uproots the sapling or rips the polythene tube. Prior arrangement was made with the Forest Directorate nursery which was supplying the saplings, to provide handlers who would come up to Dhamakhali and load the saplings on to the boat.

On the appointed day a boat waited at Dhamakhali for the saplings to arrive but things did not proceed as planned. While saplings were being unloaded, a group of men demanded that local head-loaders be engaged for the unloading or else the truck would have to return with the consignment. No amount of reasoning seemed to work, including the fact that saplings require special handling. Ultimately, the local group relented after being paid a certain amount of money. Calculating man-hours it would take to put the saplings on to the boat and then reducing it by half, was how the monetary figure was arrived at. In effect, the local head-loaders received one half of the amount although they rendered no services at all.

On another occasion in 2002, a man named Sudhangshu had to pay a van-rickshaw driver at Chunakhali for not availing his services. Sudhangshu lives in Sonarpur with his wife and children. His parents and other brothers live in Kalidaspur village on Mollakhali Island, whom he occasionally visits. On one such visit the family pond was emptied, and Sudhangshu decided to carry his share of fish live to Sonarpur, to distribute some among his relatives there, and to sell part of it at the market. He partly filled two over-sized (20 litres in volume) aluminium pots with water and put the fish in them. He took the last boat to Chunakhali from Chotomollakhali at 15:15 hrs to reach Sonarpur by about 21:30 hrs if there were no disruptions or breakdowns en route. About an hour from Chunakhali, due to low tide the boat ran aground. Sudhangshu was getting anxious but he could not wade across the river with two heavy over-sized pots. As the boat finally reached Chunakhali, he hurriedly got on to a trekker and placed the aluminium pots on the roof. The fare-collector informed him about the charges for carrying the pots to which he readily agreed. Just as the trekker was about to leave for Dockghat a group of van-rickshaw drivers surrounded the trekker blocking its way. Normally trekkers are not supposed to carry anything other than ordinary personal luggage. The group of van-rickshaw drivers were objecting to the trekker carrying the fish laden pots. At this point the trekker driver asked Sudhangshu to disembark along with his pots. Sudhangshu pleaded that he be allowed to travel by trekker or else he would be stranded for the night. Fellow passengers fearing delay joined the group in demanding Sudhangshu's disembarkation. Ultimately, one of the passengers suggested that Sudhangshu pay the van-rickshaw driver (whose turn it was to ferry such luggage) the fare for the trip to Dockghat which, time permitting, he would have made. Sudhangshu ended up paying twice for his journey to Dockghat, once to the van-rickshaw driver and again to the trekker fare-collector.

Cordless phones and FM radio
In 2003, there were eight cordless phone operators at the Bagdanga market on Mousuni Island and they had their base stations at different locations on Namkhana Island. All the operators had other primary businesses such as textile shop, medicine shop, laundries, grocery and TV repair shops, and were aware of the illegality of the cordless telephony but none of them made any effort to hide or camouflage their operations. The callers which included Panchayat and other government officials had no qualms about using the service though many of them knew about the illegality of the operation, in fact, all of them were pleased with the availability of the service. This was an offence nobody seemed to take any cognizance of.

Once, while administering a questionnaire in 2003 at Pahelagheri on Mousuni Island, the FM radio transmission caught my attention. It seemed that the regular transmission was being interrupted and in its place an incoherent but rather dramatic announcement was being made. I presumed it to be the usual drift in radio reception and that some Bangladeshi channel must have interfered. Days later I noticed it again at a ferry *ghat* while waiting for a boat (a long wait since I had just missed the service I had intended to take). I asked the tea stall owner about the announcement and was informed that it was meant to let people know of *jaatra* (folk theatre) shows being organised. It appeared that announcement through FM channel was common and effective due to the popularity of the medium. There are individuals with FM transmitters in the Sundarbans who make these announcements. I met up with one

who knew it was clandestine and that it amounted to radio piracy but justified his action by saying that visiting the radio station in Kolkata for buying time slot on the channel was time consuming, thus impractical. He avoided detection by interrupting regular transmission in short bursts and would make these announcements from a moving boat. Moreover, he felt that the Police would not try tracking him down since they had more pressing issues to deal with and what he was doing was merely illegal and not something sinister or criminal.

5.4   Analysis

In the first sub-case from Mollakhali Island, commuters and traders are forced to use the *ghat* rather than the jetty and in doing so put a mechanism in place to maintain it whereby *net benefit* remains positive. The arrangement is disturbed due to external influence exerted by the Gosaba Block Administration which undermines local collective action solution (Category D-external environment, Table, 2.1). Also, because the Chotomollakhali Gram Panchayat (*institutionalised* collective action organisation) and the Gosaba Block Administration are parts of parallel channels of governance rather than nested, the situation deteriorates – the Gram Panchayat remains aloof and the Block Administration organises a bid – leaving all actors worse off except for the contractor and the state in terms of profit and revenue respectively. In fact, the institutional arrangement is such that there is no coordination among the different state agencies.

The new arrangement proves detrimental due to individual maximising tendencies of the actors involved, all in different ways; the state (in the form of the Gosaba Block Administration), the traders (in the form of the Chotomollakhali *Bazaar Committee*) and commuters, and the contractor. Gosaba Block Administration does what is least bothersome, legally acceptable, and generates assured revenue. With the intervention of the local Block Administration, the *Bazaar Committee* discontinues cleaning and upkeep of the *ghat*, the immediate interest is the use at hand, long-term consequence is perpetually deferred to next use; similar is the response of the individual commuter. For the contractor, the individual maximising tendency is the strongest; he levies user-fees based on the calculation of revenue paid plus profit, proportionately divided over the average number of users in a given financial year. Over time, *net benefit* declines because the contractor and the Block Administration operate outside the triangle of *trust*, *reciprocity*, and *reputation*, and being 'outsiders' their *interest* is short-term.

With the decline in *net benefit,* the *Bazaar Committee* steps in again in its own *interest* and that of the other traders. As the Block Administration yields space to the *Bazaar Committee* through withdrawal, there is *opportunity* for *spontaneous* collective action since the extent of *shared interest* is high, the *Bazaar Committee* is an *organisation* with *intensive involvement* of its members and is able to *mobilise* resources for repair and maintenance of the *ghat*.

Given the political polarisation and protectionism prevalent in West Bengal, e.g. 'clubs' (Section 3.5), the conduct of the head-loaders at Dhamakhali and van-rickshaw drivers at Chunakhali is neither surprising nor uncommon in the incidents narrated in the second sub-case. While collective action by the members of the two unions is successful, the prospects of achieving sustainable development goals – in

terms of choices available and the freedom to make choices, and overcoming the ills undermining human well-being – are weakened, a case of *second-order conflict* wherein successful collective action by the union members runs counter to larger social and/or public-good. This phenomenon of unionisation is evident in West Bengal wherever the state has yielded space through poor regulation and enforcement; poor regulation and enforcement could be deliberate. Unlike most other places where there are choices, in the Sundarbans, this phenomenon has a negative multiplier effect on the economy as well as ecology.

Availability of limited choices to consumers raises costs leading to inefficient use of resources and out-pricing the eco-region as a production centre for goods and services as will be evident in Chapter 7 in case of agricultural produce. It is the *human frailty* of short-sightedness that alters the *driving forces* in the form of mismanagement by state agencies and powerlessness of the people in a manner that the *perverse conditions* of poverty and oppression not only persist but deteriorate leading to a downward spiral. As poverty extends or even sustains at current levels, exploitation of the Protected Area as well as the riparian commons intensifies as will be evident in Chapter 8. Also, continued denial of choice results in downward adaptation, unquestioning acceptance of authoritarian interference, e.g. by clubs and political parties, and fatalistic tolerance of deterioration of the physical situation ultimately leading to lessened movement of goods and people which has a direct bearing on livelihood options of the people of the Sundarbans. The case studies on livelihood (Chapters 7-9) are treated as a separate category in this thesis but the first category of case studies (Chapters 4-6) the 'physical conditions' has a direct bearing on that former category either in an enabling way, or as a constraint.

The third sub-case is an example of linkage between sustainable development and collective action in the reverse order to that of the second sub-case. Legal provisions against use of cordless telephone and radio piracy are articulation of collective interest by the state. Absence of the services in question would bring down the *net benefit* and therefore, the community, the operators and agents of the state enter and remain in a relationship of *trust*, *reciprocity* and *reputation* for *spontaneous collective inaction*. This *collective inaction* permits provisioning of services that would otherwise be unavailable to the community leaving it with fewer choices and means of overcoming the ills that undermine human well-being. Thus it is not always the case that negative linkages will result in lowering of *net benefit* for the community. These linkages, however, get established for different reasons such as failure of collective action to co-opt the agency of the state, political patronage and regulation of the market, and unavailability of basic amenities to a community. The policy pointer here is not to legitimise what is illegal but 'licit' (acceptable to the community) as opposed to illicit (unacceptable to the community), but to create an enabling condition whereby the 'licit' but illegal activity makes way for a legal and 'licit' activity without any reduction of *net benefit* to the community.