Chapter — VII

Infrastructure, Tourism and Energy Crisis

7.0 Introduction

Transport and communication is a major problem in the Sundarban. This has been a major hindrance for its rapid development. Modern means of cheap transport system such as rail connection is almost nonexistent. In the western part, railway track connects the towns of Hasnabad, Canning and Lakshmikantapur. The Sealdah-Diamond Harbour broad gauge line was completed in 1883 and it extended only up to Mathurapur P.S. (O'Malley, 1914)

7.1 Roads

Metalled roads have been restricted over limited area. ‘Van rickshaw’ is still the only means of travel within the islands. Buses ply only through certain important nodes. Transport by road is time consuming and strenuous. The embankments are still used as roads for internal movements, which is also responsible for damage to the embankments. From Namkhana crossing to Diamond Harbour there is a break at Kakdwip in the bus route.

7.2 Water Ways

The Sundarban is interlaced with numerous rivers and creeks. Thus the area demands a good ferry service. Only at certain major places as Kakdwip, Canning, Hasnabad, some of the tourist spots, there is the provision of regular motor launch service. In the south-eastern section large number of launch ghats is found. However, the local people complain of nominal development of water transport. Along several roots only one or two launches ply during the day and often it is twice in a week to Satjalia. Canning-Gosaba and Hasnabad-Bhanga Tushkhali portions of water way have very little frequency. The over growing population create problems for the launches with overflowing crowds.
FLOW LINES
ROAD, RAILWAY AND WATERWAY
REGULAR SERVICES

REFERENCES
Transport Frequency in terms of
Bus Units of 37 Seats
Road
Railway
Waterway
Kolkata Conurbation

Source: Govts. of India and West Bengal.
7.3. Rail Ways

There is very little extension of railways along the Barasat-Hasnabad section, where it is as low as 189. The absence of more frequent trains to Calcutta, forcing often an avoidable break at Barasat causing resentment amongst the people of 24 Parganas (Mukherjee, 1974). The extension of the Diamond Harbour or Lakshmikantapur railway lines on the eastern bank of Hugli to Kakdwip or Namkhana has long been awaited for. An extension of Canning railway root up to the western bank of river Matla had been a major requirement. (Fig. 30)

7.4. Accessibility

The accessibility zones have shown on the maps as parallel belts and as circular pockets from the railway stations. We find that in the southern section there are 17 large inaccessible pockets, 11 in the north section and 6 in the south. The three pockets covering the reserve forest area are considered to be the largest ones in the entire region. Although some skeletal bus services ply across some of the pockets irregularity prevents them from becoming reliable accessibility sources to the market. The least accessible area of Sundarban is a wide belt from Haroa P.S. through Canning-Basanti-Jaynagar-Kultali-Mathurapur to Patharpratima occurring at the fringe area. However, in the police stations of Hasnabad, Hingalganj, Sandeshkhali and Gosaba a good link up occurs with the help of launches. Thus it is much easily reached to the destinations of Hasnabad, Hingalganj and Canning. After several years of Independence it is found that only a nominal link is maintained by irregular skeletal launch services via Canning, Raidighi and Namkhana. (Fig. 31)

Even when using a single mode of transport, railroad or water, there are several breaks required to reach the destination. The change in the same mode of transport often proves to be hazardous. Launches ply from Canning to Satjalia, but the distance cover is not greater enough to demand appreciation.
ACCESSIBLE ZONES
ROAD, RAILWAY & WATERWAY
REGULAR SERVICES

REFERENCES
Boundaries:
- International
- District
Major Railways
Major Roads
Kolkata Conurbation
Accessible Zones

Fig-31
Namkhana in the Namkhana P.S. is 170 kilometers from Calcutta. It serves as a converging point for Patharpratima and Sagar. However, the people stick to the better option of going to Kakdwip to avoid the underdeveloped transportation system from Namkhana. In order to reach Calcutta several breaks in the mode of transportation is required. Namkhana has to be crossed by ferry, Kakdwip reached by bus and wait for another bus to reach Diamond Harbour. Finally, waiting for the train to Calcutta. It is found that due to Calcutta's market-pool breaks in the short journey had to be made. A massive bridge if constructed across the Namkhana creek could have solved the problem. Another problem found here is that for a 14 kilometers bus trip to Kakdwip the frequency is only 25, while the total frequency is a respectable 488. The need of the hour is, to increase the number of buses from Namkhana-crossing to Diamond Harbour, which could prove beneficial to the farmer-trader.

7.5. Communication

In Sundarban region, practically no importance so far had been given to the expansion of telephone connections. The tourist centers at certain locations in the western portion are connected with telephone cables. But often it is found that the communication through telephones has turned out to be a mockery because telephone lines remain disconnected. At Gangasargar, telephones maintain connection with Calcutta and other parts of the state and country, but only for a short time span.

No proper government schemes have so far brought remarkable results in this arena. In an age, where information technology has already begun to affect everything and low cost telecommunication network encouraged, Sundarban remains doomed in darkness. Thus Sundarban suffers from lack of exposure and proper telecommunication network. (De, 1991)
Plate 23: Transport of wooden logs following unauthorized slashing of casurina plantations from the Frazerganj sea beach.

Plate 24: Non degradable plastic bags dumped by the tourists on the sea beach at Ganga Sagar.
7.6. Energy Crisis

It was found that two major socio-scientific movements gained importance during the 1970s. The initial one had its thrust on environmental protection and the other one on renewable energy sources. Both movements had their origin in fossil fuels. It was the burning of fossil fuels by the world — especially in the first world — which had raised the specter of global annihilation by environmental pollution. It was fossil fuels, which had directly and indirectly contributed to the over-consumption of all the natural resources, generating pollution of different kinds. (Abbasi, 2001)

There is acute energy crisis in the Sundarban. The non-conventional energy source is considered to be more suitable source than conventional mode of energy.

The changing attitude has affected the ways in which science functions in the society. The complexity of science’s role in modern society has stood in the way of efforts to provide a unified theoretical perspective in many fields.

However, solar energy has been able to work out successfully only in certain parts of Ganga Sagar. Community solar project is yet to be implemented. In most of the areas there has been pockets of development, but not at large scale. Since they have not been taken up at a large scale the solar power has become comparatively expensive i.e. cost of installation becomes high.

Possibility of harnessing wind energy near the coastal area has not been able to work out effectively. (For example at Ganga Sagar and Bakkhali)

The possibility of setting up cow dung as plant utilizing the cattle population, has not been given due importance because of which the energy crisis still remains.
With the absence of electricity there is very little scope for setting up cold storage. This is a major problem due to which agriculture and fishing has suffered most. These products have either to be consumed locally in the market or sent to Diamond Harbour, Canning or Kakdwip, where there is storage facility. Agro-based products and fishing thus has very few diversification and scope for industrialization. Scope of fruit canning industry has not been given importance. Rice bran oil could also be another alternative.

Very little had been done to develop the forest-based industry. The wood could be utilized for making peanuts factory of packing boxes, but most of the wood is utilized as fuel. Honey collection and distribution is not done at a very large and organized scale. Thus the moulees have very little profit margin. No honey-processing unit has been installed there. Processing occurs at Calcutta. Thus scope of development of industry based on honey has been neglected.

There are several trees in the Sundarban having medicinal values, which are still not utilized as ‘Neem’ (Azadirachta indica).

7.7. Solar Energy

The radiation continuously showered on earth by the sun represents most basic and inexhaustible source of energy, which is the mother of all forms of energy — conventional or non-conventional, renewable or non-renewable, except nuclear energy. (Abbasi, 2001)

Solar energy is the largest of renewable energy sources and if viewed in respect of non-conventional energy alternatives, the problems of energy storage and large-scale power generation, direct solar energy-based systems appear to be the easiest and cleanest means of tapping renewable energy. But no sooner one begins taking cognizance of the energy requirements and pollution generation associated with materials needed to tap solar energy —
primarily steel, glass, and cement — and the environmental stresses that a large solar-collector would cause on water resources (in terms of need for cooling water) and land, the entire picture begins to acquire an altogether different complexion.

Some adverse impacts of central solar systems are:

a) Permanent use of large land area, no reclamation until plant is decommissioned.

b) Generation of non-recyclables during decommissioning: fiberglass, glass, coolant, insulations; in PV-based systems additional disposal problems would be caused by cadmium and arsenic.

c) Aesthetic impacts: would be similar to fossil plants including steam but excluding air emissions.

d) Hazard to eyesight from reflectors, hazard from toxicants in coolant fluids.

e) Soil erosion and compaction; wind diversion; potential decrease in evaporation rate from soil.

After accounting all direct and indirect aspects of the different energy production and delivery systems the study concludes that:

i) Given current technologies, on a standardized energy unit basis, solar energy systems may initially cause more greenhouse-gas emissions and environmental degradation than do conventional nuclear and fossil-energy systems.

ii) An ambitious programme to utilize solar energy systems in place of nuclear and fossil-fuel systems, could for the next four or five decades, actually increase environmental degradation. In addition, the production of materials for these technologies involves hazardous substances that must be handled cautiously to avoid environmental damage.
iii) In comparing solar energy systems with the conventional alternatives, it is important to recognize the substantial costs, hazardous wastes, and land-use issues associated with solar technologies.

iv) Based upon risk perceptions and current technologies, the health and safety risks of solar energy systems may be substantially larger than those associated with some fossil and nuclear energy resource options.

Fuel saving oven had become very popular in Sundarban. Within 1997 and 2002, 14,000 such ovens had been constructed. 

Solar energy gained emphasis for harnessing electricity. Places as Bhagbatpur, Dhanchi and Nalgarah, expansion of solar energy gained impetus. Even within the Tiger Reserve, the arrangement for utilization of solar energy was made. By proper utilization of solar energy 100 solar lanterns were distributed in different parts of Sundarban. At Ganga Sagar, however, solar cells have led to electrification of marginal areas.

7.8. Wind Energy

Wind, which is essentially air in motion, carries with it kinetic energy. The amount of energy contained in the wind at any given instant is proportional to the wind speed at that instant. The temperature of the wind also influences the energy content of the wind but is not important in the context of wind-based energy production systems.

Winds are generated due to the atmospheric temperature differences caused by different areas getting different fluxes of sunlight. Air mass tends to move from hotter to the cooler regions, thereby generating winds. In turn, wind movements cause atmospheric pressure differentials, which lead to turbulence and more winds.
In our daily lives, wind serves innumerable purposes of vastly varying scales and consequences — from providing cool breeze to causing devastating storms, drying clothes and grain to bringing in monsoons, and facilitating kite flying to moving gigantic ships. Wind could be described as ‘one of the great natural mediums for harnessing, harvesting, and conserving solar energy’.

Wind energy generation has been given a strong thrust by Ministry of Non-conventional Energy Sources, Government of India.

The three most favourable sites, for large wind power installations are: a) Mountain tops and ridges, b) The Western Great Plains and c) Off-shore.

Thus, for Sundarban, the off-shore location has proved to be favourable for harnessing wind energy, specially along the coastal border of Frazerganj, Bakkhali and Ganga Sagar. However, due to lack of follow up action, the installation of several such projects proved to be a failure.

7.9. Tidal Energy

Flowing water carries kinetic energy with it. It is found that when such water encounters a turbine, part of the momentum of the flowing water is transferred on to the turbine, causing it to rotate. Whether the water is in the open ocean, an estuary or a river, its motion can thus be utilized in generating energy. The tides occurring in the oceans are one such source of energy based on the movement of water. The tidal rise and fall of water is often accompanied by periodic horizontal to and fro motion of water called tidal currents.

It is found that along most of the coastlines, the tides rise to about a meter high, but in constricted area where they are amplified by a funnelling action, they may rise by 10 meter or
even more. These constricted areas are considered to be ideal for location of most effective tidal power plants.

In Sundarban, tidal surge is a phenomenon, which occurs quite often. This is mainly preceded by cyclonic storms. The most attractive tidal power sites of India are the Gulf of Cambay and the Gulf of Kutch, where the maximum tidal range is of the order of 11 meters and 8 meters respectively and the average tidal range is of the order of 6.8 and 5.2 meters respectively. This scheme had an installed capacity in the range of 800 to 1000 MW.

Inspired by the positive effects of Tidal Energy at Gujarat, the Central Electric Authority, government of India considered Sundarban, where the maximum tidal range of 5.0 meters and an average tidal range of 3.0 meters was recorded. At Durgadoani of Gosaba, the tidal energy project was launched. (Ghosh, 1998)

7.10. Supply of Potable Water

The main source of drinking water is tube well. With the scarcity of sweet water sources, the people have to travel long distances to collect drinking water. Moreover, the depth of ground water level and increasing salinity of the fresh water sources has become another hazardous affair. More than a decade ago, funding from World Bank was available to the Sundarban Development Board for making provisions of drinking water. A costly water purification system was purchased in which water was boiled in a big jar, and the vapour transferred to another jar through a pipeline. In the process, water was desalinized and could become potable after necessary chlorination. Unfortunately functioning of such a device never took off for reasons best known to the administrators. (Mondal et al, 1989)
During the field-work it was observed that collection of potable water from a distant source was mainly the task of the women, along with the collection of fuelwood and other household works. Total working hours of the women of Sundarban thereby exceeds that of men.

Moreover, on both the banks of Bhagirathi in West Bengal, starting from Murshidabad in the north to Baruipur in the south, located at a distance of few kilometers away from the northern limit of Sundarban, arsenic contamination of water pumped out from the deep tubewells has been reported. Experts have suggested that high density of deep-tubewells has disturbed the arsenate deposit retained in the Gangetic alluvium about 800 meters below the surface. It may so happen that low density of deep-tubewells have saved the fresh water resource in the subsoil of Sundarban from arsenic contamination. Over tapping of ground water may invite trouble.

Supply of water through the pipelines is costly enough. Under the circumstances, inherent problem of potable water supply continues and consequently so many people suffer from gastro-enteritis and other water borne diseases. In fact, the entire Sundarban region is an endemic zone of such diseases and in several occasions cholera broke out in Sagar Island in the form of epidemic in the fair site of Gangasagar normally held in the middle of January. (Hazra, 1980)

7.11. Tourism

Recently, studies on the nature, magnitude and impact of domestic and regional tourism in different socio-economic and environmental contexts and on diverse social groups in developing countries are attracting serious notice. Attempts to formulate policy for coping with national and regional mass tourism, are being evaluated because national and regional tourism involves large numbers of people — thereby challenging the practice of sustainable, ecological or ‘managed’ tourism. (Kumar, 2001)
Sundarban becomes irresistible to the adventurous tourists all over the world. This unique ecosystem is the residence of Royal Bengal Tiger (often defamed as man eater), several migrating birds, mammals and reptiles. Moreover, the natural beauty — tidal creeks, rivers, surrounded by sub-tropical mangrove forest has proved to be attractive to the tourists.

The nearest sea beach from Calcutta with real forest surroundings and wildlife are also of great attraction to all nature lovers and casual visitors. Provision of basic infrastructure with proper publicity has immense possibility for developing Sundarban as the major tourist spot. It is clear, that the motorable road along with Motor Launch connection, can attract sizeable tourists all over India. Imaginative ideas and proper initiative will project Sundarban, on the tourist map of India, with the potentiality to earn good amount of foreign exchange. Economy of this area can also be improved by enhancing its beauty.

More watchtowers, and lodges inside the forest area with proper security arrangement will attract many more tourists hankering for peace, tranquility and for oneness with nature. Steamer trip from Calcutta with provision of night halt at Sundarban is available which is also attracting sizeable population.

Unpredictable natural hazard, soil erosion, change of river course, cyclonic storm and above all the unsettled condition of the area of course remained a hindrance against rapid development of this place as major tourist spot. (De, 1994)

Frazerganj — the beautiful sea beach of the other day at present took its final abode in the sea. If one traces the history we find that it was Lt. Governor Sir Andrew Fresser who leased out in 1903 some portion near Michlenberg Island under Kakdwip P.S. for reclamation and specially for sea resort. It was started in 1905 and an area for the sea resort was demarcated and named as Frazerganj after the name of the said Lt. Governor. Bakkhali a nearby area is now rapidly developing as major tourist spot and this place is approachable by road directly
from Calcutta (about 120mm.). With the construction of the bridge over Hatania-Doania river at Namkhana, the problem of accessibility of the tourists has been minimized.

West Bengal Tourist department or forest department may be approached who arrange the conducted tour for all the sports of Sundarban. The different sanctuaries having tourist attraction with the location and other particulars are appended here for ready reference.

Reclaimed areas of Sundarban remained underdeveloped due to partial negligence of the authorities in the past as well as the absence of basic infrastructure and remoteness of the area.

After independence Sundarban Development Board has drawn some ambitious developmental programme in various fields. It is heartening to note the World Bank stepped in a bigger way to shoulder the responsibility of financing various schemes on time bound basis.

As such the reclamation of long channels, construction of sluice gates and culverts for discharge of accumulated water, construction of roads and various employment oriented schemes for agricultural products have been undertaken along with fish oils.

7.12. Problems of Transport, Communication and Tourism

It is found that due to less development and extension of road, rail and waterways, the time distance becomes much greater than road distance. Thus places located quite near to each other, is reached much later. This is another cause for backwardness and underdevelopment.

Sundarban is endowed with multifarious natural facets, which attract tourists all over the world. Still, it is found that there is inadequate hotel facilities for the tourists of various income groups. There are few accommodations of the Tourism department and private enterprises in the western section of Sundarban. However, in the south-eastern section there
is comparatively less amount of accommodation facilities. There is a tourist lodge at Sajnekhali, within the premises of Sajnekhali Wildlife Sanctuary and few watchtowers, which are occupied by the forest guards and is poorly maintained. The absence of motels, is another factor that would not promote tourism to a great extent. However, Gangasagar and Bakkhali are the only exceptions.

The tourists visit Sundarban only during the winter season. The rest of the time especially during the monsoons and dry summer — a huge time span, the hotel business do not get scope to flourish. The seasonal fluctuation of tourist, is the main cause of socio-economic insecurity of those engaged in tourism and allied business. 

Booking of youth hostels and other accommodations in Sundarban is mainly Kolkata-centric. Due to this even the people residing in the suburbs find it difficult to book for accommodations. Had such booking centers been spread evenly, negating the Kolkata centrism, Sundarban would have attracted much more tourists.

Tourism promotion received a setback due to power crisis. It has been found that lack of proper development of non-conventional sources of power has further aggravated the problem of power crisis. Nowhere in Sundarban electricity is available after 9 p.m. The tourist spots of Sagar, Namkhana and Frazerganj are no exceptions.

The scope of adventure tourism has never been explored seriously. Had this arena been adequately supported by advertisements, pamphlets etc. the region would have got greater exposure and more tourists would have flocked to this part in thirst of adventure. Such a process could encourage tourism, without disturbance of the core zone.

The metal roads constructed at several parts of Sundarban are of very poor quality, broken and dotted with numerous potholes. When buses and rickshaw vans ply upon these roads the condition becomes miserable.

Plate 26: Colony adjacent to reserve forest at Bakkhali.
Lacuna is there in the system of tourism promotion in the form of irregularity of the advertisements, which leads to information gap for the tourists. Tourism department of government of West Bengal has two luxury launches at their disposal, maintenance of which is costly enough. The scope of promotion of conducted tour, within the creeks of Sundarban has so far been under-explored.

7.13. Conclusion

Transport and communication network links up points of significance with one another. This helps to strengthen the economy of a backward region by encouraging mobility. Transporting agricultural produce to markets and providing a leading step in developing tourism and allied activities at Sundarban is the main task of roads, rails and waterways.

Reference


