Chapter 6

Recommendations
6. RECOMMENDATIONS

Rivers are important component of urban ecosystem. With the rapid development of city economy, urbanization has resulted in enhancement of environmental problems, especially deterioration of water quality. Ahmedabad, the seventh largest populous city of India and commercial capital of Gujarat is located on the bank of River Sabarmati. The Sabarmati River which flows from North to South in the centre of a city is a backbone of Ahmedabad and provides water in every sector. However, the river has been subjected to severe pressure and abuse owing to the fast pace of urban and industrial growth of the city. Therefore, Ahmedabad Municipal Corporation had established a Sabarmati River Front Development Co. Ltd. in order to improve environmental quality and for urban rejuvenation. The Sabarmati River Front Development project was started in the year 2005. This project has increased the anthropogenic interventions for the river which has resulted into deterioration of water quality and destruction of aquatic community. Therefore, based on the investigations carried out for two years (2009-2011), this chapter is concluding essential site specific problems and recommendations for the future development of selected sites of both the study areas.

6.1. Sabarmati River (Study area – I):

Site 1: Indira bridge

The Indira bridge is located in upstream of river and is outside the main city area. The water is comparatively fresh at this site. It forms habitat for various fresh water flora and fauna as well.

- This site is situated near Hansol and Kotarpur village and is surrounded by agricultural land, being a potential source of runoff. Use of fertilizers like DAP, Urea etc. should be minimized or use of biofertilizers in these farms are encouraged so as to prevent inflow of nutrients into the river water due to agricultural runoff. The river water also receives high amount of domestic waste water and sewage discharge from villages. Furthermore, people living in nearby areas use the river water for cloth washing, bathing and other house hold related activity. This leads to pollution of river water by sewage and

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fertilizers which affects the water quality. Proper measures should be taken to divert the sewage water of small villages to sewage treatment plant of the Ahmedabad city.

- On the other hand, the site is a place of religious and socio cultural activities. The main pollution load experienced at this area is by pilgrims visiting temple located at this site. This activity increases the organic pollution of water. Regulations in dumping of idols and wastes, manual time to time cleaning of the bank by local authorities can prevent organic pollution to some extent.

- People while crossing this bridge dump holy things, garbage, plastic waste and bulk of miscellaneous waste which is highly responsible for pollution of river water. Fencing having net with definite size should be provided at both the sides of bridge in order to prevent such input. The garbage and plastic waste can be collected and removed manually from the site time to time.

**Site 2 (Gandhi bridge) and Site 3 (Sardar Patel bridge):**

- The two sites viz; Gandhi bridge and Sardar Patel bridge are situated in the main city area and a major work of River Front Development on both the banks is being carried out at these sites. The River Front Development activity includes the construction of retaining wall, filling up of river with soil, dredging of sediment from river bed, construction of lower and upper promenade and construction of major pipelines which will carry the city sewage at sewage treatment plant located at Pirana. At present, the river is receiving the sewage water along with storm water outfall which has deteriorated the water quality at larger extent. There should be proper channelization of sewage water into Sewage Treatment plant which will help in maintaining the clean water quality. All these activities have created much anthropogenic interventions in the existing aquatic environment and influence the aquatic community. The dredging of sediment disturbs the benthic organisms and in turn disturbs the whole food web and ecosystem. Furthermore, the narrowing of river and filling up of river with soil has hindered the flow of water which has resulted into growth of algal blooms during summer, and also has created disturbance in aquatic community. As this SRFD is a major task and is for improvement
of city life one cannot discontinue the progress of work but some measures must be taken by AMC to clean the surface water time to time.

- On the other hand, along with River Front development activity, the other anthropogenic activities also take place at these sites such as cloth washing, bathing, dumping of waste and garbage. People use the river as a dumping site and throw any kind of waste without any hesitation. Also, the open defecation by people living along the river bank causes faecal contamination of water body.

- In addition to all these activities, these two sites also hold religious significance and dump all the sacred items used during worship into the river especially during festivals like Dashama Vrat, Ganesh Chaturthi, Ramapir festival, Navratri etc. hence the water quality gets highly deteriorated. The sites are under great anthropogenic pressure throughout the year by one or other means. Therefore, these two sites should have fencing facility so as to avoid excessive dumping of garbage and other waste.

- In vicinity of the Sardar Patel Bridge there is a vegetable market and a flower market. The solid waste from these places increases the organic pollution in river. To prevent this, the waste from both places should be collected at the end of the day and separate disposal of this solid waste can be managed.

- The untreated sewage and sewerage flowing in various open drains are one of the causes of water quality deterioration. Proper underground sewage system must be laid in all inhabited areas and the untreated sewage and industrial wastes should not be allowed to flow in open drains.

**Study area II (Kharicut canal):**

The Kharicut canal passing through Vatava is used as a sink to dump industrial effluent having high load of organic contaminants. Vatva Industrial Estate is one of the oldest and largest estates in the state, spread over an area of more than 491 hectares, and having over 1800 small and large scale industrial units in four Phases. Most of them are dye manufacturing units and chemical industries which liberate their effluent into canal. The extent of pollution in this area is so high that even ground water is getting deteriorated as a result of percolation and leaching of highly toxic and colored effluent. People utilize

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that ground water in their day to day activities in absence of alternate source of water. So, it not only deteriorates the aquatic life but also pose serious health problems to the people living in surrounding area. Following are some steps/ recommendation which can be helpful in preventing further deterioration of canal.

- The small scale industries should have a separate effluent treatment plant or effluent should be sent to Central Effluent Treatment Plant for treatment of waste water. Proper measures should be adopted for regulating effluent/ waste discharge into the canal.
- The water obtained from the ground water sources should be tested and analyzed to ensure the suitability of ground water for human consumption.
- In the absence of alternate safe source of water, the water with excessive undesirable constituents must be treated with specific treatment process before its use for human consumption.
- The mass awareness should be generated about quality of water, its effect on human health and responsibilities of public to safeguard water resources.

Pollution control requires an integrated approach and continuous monitoring of developmental activities. Continuous monitoring of water is also required. A careful planning combined with training and education of the local people is necessary for proper management of pollution problems.