Research Paper Social Science

Need of Sustainable Development for Inclusive Growth of Marginalised Communities: A Case Study of Fishermen Communities from Panchaganga River Basin

Ms. Nilisha Desai | Asst. Professor cum Asst. Director, Centre for the Study of social Exclusion and Inclusive Policy, Shivaji University, Kolhapur

ABSTRACT

Development, measured in terms of economic growth is altering environment at alarming rate. Deteriorating quality of environment is affecting the livelihoods of poor or marginalised communities in the society. Since last seven decadesmany international reports are repeatedly focusing on the adverse and irreparable changes caused due to unsustainable developmental models adopted all over the world and its impact on marginalized communities, who are dependent on the natural resources for their subsistence.

Growing problem of water pollution, frequently occurring fish kills are not only affecting the human health but also creating problems of livelihood for fishermen communities. This paper makes an attempt to present a study carried out at Panchaganga river basin and throws a light on the problems of fishermen communities due to problem of river water pollution; unsustainable management of river water and need of inclusive growth strategy for fishermen.

KEYWORDS Sustainable development, environmental deterioration, livelihood, inclusive growth.

Introduction –

The 20thcentury was a century of fluctuation between optimistic and pessimistic outlooks with regard to human development. Soon after World War II, from the 1950s, an unprecedented economic boom paved the way for renewed optimism about the prospects of rising living standards worldwide. It was, however, during this period of industrial and commercial expansion that the environmental crisis started looming larger on the horizon, forcing people to change their basic assumptions about growth and development (Jacobus and et al. 2006).By the early 1970s the different ideas about progress, sustainability, growth and development which had developed over many years started directing towards sustainable development.

The concept of sustainable development was not referred to explicitly, but nevertheless the international community agreed to the notion, now fundamental to sustainable development,that both development and the environment, previously which were addressed as separate issues, could be managed in mutually beneficial way.Sustainable development was the solution to the problems of environmental degradation discussed by the Brundtland Commission Report in 1987. The sustainable developmentis "development which meets the needs of the present without compromising the ability of future generations to meet their own needs".

Growing population, urbanization, indutrialisation; changing life style; developed and developing countriesdevide; use, overuse, exploitation of natural resources are creating never the less pressures on environment. Such scenario is creating a new deprived classin the world such as low income grops, poors, people sustaining on the natural resources, whose right to access to basic amenities is also crumpled. Deteriorating quality and quantity of natural resources has been a great concern. Hence, to overcome these inequalities concept of inclusive growth is percoalating in the national policies of many countries. India is also not an exception to this. OECD stated that, "Tackling inequalities in incomes, health outcomes, education and well-being, requires **breaking down the barriers to inclusive growth** and reaching **new frontiers in policy-making and implementation.** Everyone should be able to realise their potential and to share the benefits of growth and increased prosperity."

River as Livelihood System

River provides ecological and economic assistances to the man. Specifically, most tropical rivers play a major role in the livelihoods of poor dwellers along these rivers, but access to these resources varies annually across season. (Beck and Ghosh 2000; Gupta et al. 2001).Fisheries are important common pool resources in a number of countries, contributing to export earnings, also providing invaluable employment opportunities in coastal regions (Ibarra et al. 2000). For minor river systems, fisheries typically comprise diurnal hunter-gathering activities aimed at collection of edible products, including freshwater shrimp, snails, frogs, turtles, etc., and undertaken by individuals or small groups of women. For major river systems, there is scope for individuals, households and communities to be more heavily engaged in and dependent upon fisheries.

Fishing in wetlands is a traditional occupation of some local communities in Indian States like Maharashtra. Here fishermen communities are called as Koli. There are number of subcastes within fishermen community. Locally they are called as Koli, Mahadev-Koli, Dhivar, Bhoi, Bagadi, Katkari, etc. Some of them are classified into OBC, VJNT, NT and SBC by the Maharashtra Government. These communities are economically poor and socially backward. Because of their low income, low literacy rate and lack of other occupational skills, these are vulnerable communities dependent on the fish diversity and availability for their livelihood.

Many factors such as lowering of water quality due to water pollution, damming of river, building of weirs in the river bed, sand mining, introduction of exotic fish species, etc. are affecting the fish production and availability of various species. These components are affecting the livelihoods of fishermen. Lately these communities are doing another business or job to fulfil their needs. Growing competition in the business, lack of new technology, reduced fish catch, increased river water pollution forcing them to shift to another occupation for earning better income. Livelihood diversification is also commonly practiced among small-scale fishers particularly in Asia and Africa. The fishermen in this region establish societies for doing collective fishing in river, lakes and village ponds.

Objectives

The current paper aimed at evaluation of impact of water pollution on livelihood of fishermen communities with special reference to river Panchaganga. This paper is restricted to study carried on the Panchaganga River system (PRS) and fishermen communities in the particular area. Present paper has following objectives:

To identify the fishermen communities in the vicinity of Panchaganga river basin.

To Study impact of river water pollution on livelihood of fishermen.

Methodology

Both the qualitative and quantitative methods were used for data collection. The methodology adopted for the primary data collection was based on field visits, personal observations and a social survey of the fishermen community along the entire PRS.The survey of 200 fishermen from 20 sites along the river was conducted by administering a random survey. The frmaedquestionnaire included questions regarding present status of fish diversity; ecological changes in the riparian system, threats to fish diversity and socio- economic condition of fishermen communities, etc.

Profile of the Study Area

The study area consists of the PRS. The confluence of the five rivers Kumbhi, Kasari, Dhamni, Tulshi and Bhogavati at Prayag forms the River Panchaganga which, is major tributary of river Krishna.

The PRS is a major source of water to 2 the major cities of Kolhapur and Ichalkaranji and also to 174 villages situated in the river basin;agriculture; 9 sugar factories, 4distilleries and a number of other industries About 20,000 families are depended on river panchaganga for fishing and for their livelihood.

The profile of Panchganga river system is as follows:

Extent of Panchaganga River Basin -16° 19′ 04″ and 16° 55′ 19″ N latitude,

73° 44′ 08″ and 74° 42′ 18″ Elongitude.

East – west spread of PRB -108 km.

North – south spread of PRB - 67 km.

Area of the basin - 2730.40 sq km.

Drainage pattern of PRB - trellis type

Average width of river - 110 m.

Minimum average depth of river - 3 m.

(Source – Panchaganga river and tributaries Pollution Status report 2009)

Socio-Economic Status of Fishermen Community

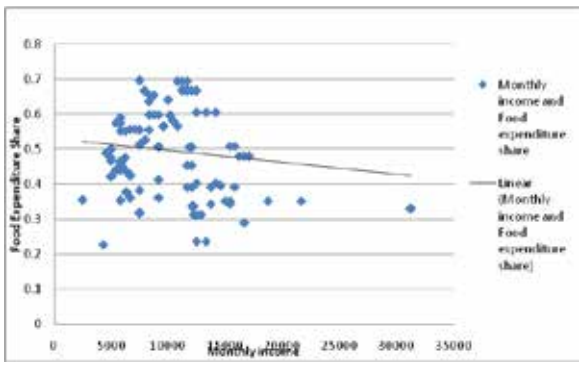
The fishing is done on 83 Km length of river, divided into 9 parts for fishing, which are called as Theka. About 4000 people are dependent on the Panchaganga River for fishing activity (Poman and et. al 2009). Amongst the respondents 42 % belongs to upstream while 58 % are from downstream.

Bhoi, ZingaBhoi, Bagadi and Gosavi are the traditional fishermen communities occurring in Panchaganga river basin. In last two decades local nontraditional fishermen communities are also engaged in the fishing activity. The fishing communities surveyed wereBhoi (40%) followed by Bagdi (33%) Gosavi (20%), and other non-traditional fishermen communities and OBC (7%). Bhoi, Zinga Bhoi and Gosavi are scheduled in nomadic tribes as well as Bagdi are listed in other backward community in Maharashtra.

Among the fishermen due to lower educational status, fishermen are devoid of good income source. There are 53% of fishermen who have chosen supplementary business to the fishing. About 41% respondents do fishing whole year while 43% do fishing for 151- 250 days of the year. While rest of the respondents do fishing for less than 150 days. These people prefer to do other occupation to manage their expenses. Their average monthly income is about Rs. 10,000/-. But there is high level of disparity in income. The Gini coefficient of the annual income is 0.37. About76% of the respondents are not satisfied with their existing living conditions.

Regarding the expenditure of their income Engels curve is calculated. Average Engel's Coefficient is 0.49. The Engel's coefficient graph elaborates the share expenditure on food decreases with the growing monthly income. The relation of monthly income and share of food expenditure is negative.

Figure 1 - Monthly Income and Food Expenditure share of Fisherman's Household in PRS



Impact of Panchaganga Water Pollution Fish Diversity

Anthropogenic changes in the PRS have adversely affected the population of fish in both quantitative and qualitative terms. Particularly in the rivers originating in the Western Ghats, their mid and lower catchments are more affected. Fish are excellent indicators of qualitative and quantitative change in the aquatic ecosystems; any slight change in the river character is reflected in their species diversity, distribution and abundance. The damming of the river by Kolhapur Type wierschanges the natural water flow and causes water level fluctuations. It also changes the rate of siltation. The changes observed in the fish diversity of Panchaganga River and its tributaries, in approximately over three decades. According to a study done in 1956 by Kalwar and Kelkar the number of species of fish in water were 71. In 1988 the number had gonedown to 48. After that a systematic study has not been done at any level. As such it is very difficult to specifically state the number of fish in the water.According to Fisheries department today only 31 species are found in the river.

Impact of Panchaganga River Water Pollution on Livelihood of Fishermen Community

The growing problem of river pollution affects the health of ecosystem, people; also shows adverse impact on the livelihood of fishermen. Fishermen are well aware of the fact of river pollution. According to them river pollution is caused by discharge of untreated industrial effluent, sewage; dumping of solid waste into the river. They stated that river pollution is adversely affecting the fishing. Majority of the fishermen said that small fish catches are found, frequently fish kills occur which is leading the fishery business into trouble. About 97% are of opinion that there is change is fish species composition.

According to fisherman frequently occurring fish kills are hampering the fishery business. These impacts are in the form of frequent fish kills due to pollution, decreases in fish variety, some of the species are on the way of getting extinct. Fishermen do not get any compensation from government for their loss.

Inland fishermen have limitations of market. They either sale at their own village or they go to the central fish market at Kolhapur. About 97% of respondents are not satisfied with the price of fish they get. Many factors decide the price of fishes. The price of fishes varies with season, availability of fishes in the market. Being a biodegradable material and lack for storage facility fishermen have to sale fishes at lower prices. Another crucial factor mentioned by fishermen is that

whenever fish kills occur in the river people avoid buying fishes as suspect of getting polluted fishes. Many time fishermen have to dispose off their fish catch as there is no buyer for it. In case of new species, they don't get proper price of new fish species and customer don't prefer to experiment with new fish species.According to fishermenGetting small fish catch, lack of storage facility for and availability of new technology in the fishing are the major challenges in this business.

Conclusions

In the Panchaganga river basin Bhoi, Bagdi and Gosavi communities are dominant in the riverine fishing. Due to various constraints in the fishing business, low and irregular economic gains fishermen are doing supportive business or jobs.

There is no any agency to decide or fix the price of fishes. Hence,fish varieties, season, market area the price of fishes goes on changing which is making the fishery business more uncertain. Fishermen expects monitory compensation for their loss during fish kills.

Suddenly occurring load of effluent shocks causes fish kills. Stakeholders and government officials strongly believe that non flow of water due to K.T. Weirs was one of the major causes of increasing intensity of pollution. The ecosystem of the river PRS has changed from lotic to lentic type due to the numerous K. T. Weirs in the river. Pollution of the water in the river is responsible for various water borne diseases seriously affecting the health of the people in the area. Eating of fish from the river has also caused diseases.

Recommendations

Fishermen should be encouraged to develop their fishery with latest technology. They shold be equipped with proper facilities for fishing. To avoid the exclusion of fishermen it is necessary to carry out detailed study of these communities with holistic approach of ecosystem management which will conserve the endemic ecosystem and will also be helpful for livelihood management.

The system of K. T. weirs needs to be modified to keep river flowing continuously to flush out pollutants.Interdisciplinary approach towards planning is essential to overcome problems in management of water release schedule of Panchaganga River.Moreover an integrated river basin approach is essential to solve the problems of Panchaganga River pollution and for inclusive growth of fishermen.

REFERENCES

• Beck T., Ghosh M.G. (2000), Common property resource and the poor: Findings from West Bengal. Economic and Political Weekly. 35(35) 147-153 | • Census of India (2001), series 28, Maharashtra, District census Handbook of Kolhapur District | • Gupta A. K., Oza A., Pastakia A., Saxena R., Desai U., Underwood B. (2001), Common Pool Resources in Semi-arid India: Gujarat Regional Report. Natural Resources Institute (NRI Report No. 2649). 96 | • Ibarra A. A., Reid C., Thorpe A., (2000), The political economy of marine fisheries development in Peru, Chile and Mexico, Journal of Latin American Studies 32: 503-527 | • Jacobus A., (2006), Sustainable development – historical roots of the concept, Environmental Sciences, 3:2, 83-96 | • Mahajan A. (1992), Studies in Water Quality Criteria of some Freshwater Fishes from River Panchaganga for Sugar and Paper Industry Pollutants, Division of Environmental Biology, Department of Zoology, Shivaji University, page 46. | • Maharashtra Government, 1989, Maharashtra State Gazetteer Kolhapur District, published by Maharashtra Government, page 191. | • Maharashtra Pollution Control Board, 2004 – 2005, Environmental Status Report Kolhapur Region, published by MPCB, pg 88 | • Maharashtra Pollution Control Board, 2006, White Paper on Pollution of River – Causes and Remedies published by MPCB, pg 305. | • Millennium Ecosystem Assessment (2005). Millennium Ecosystem Assessment Synthesis Report. Island Press, Washington DC. | • Panchaganga river and tributaries Pollution Status report (2009) | • Sarch M. T., (2001), Fishing and farming at Lake Chad: Institutions for access to natural resources, Journal of Environmental Management, 62: 185-199 | • United Nations. 1972. Declaration of the United Nations Conference on the Human Environment, Stockholm, 16 June 1972. | • WCED (World Commission on Environment and Development). 1987. Our common future. Oxford: Oxford University Press |