



Research perspective along Coastal India with reference to decadal change in coastal ecosystems

Mahabaleshwar R. Hegde

Centre for Policy Research, New Delhi.

The coastal ecosystems constitute less than 20 % of earth surface, and about 66 % of human population is associated with these habitats. The world's coastlines are one of its most important and intensively used areas for human needs. Coastal ecosystems exhibit high variability in ecological parameters largely influenced by land use pattern and runoff resulting in seasonal anomalies. The prevalence of wide range of abiotic factors provide wide array of habitats for marine opportunistic species those navigate between coastal and estuarine environments, thus providing enormous scope for increased diversity (Venkataraman and Wafar, 2005).

Marine biodiversity research would help in adequately managing and protecting our resources. Hutchings (2000) indicated that except a few commercially exploited species, the recovery of fishable stock is very little after the collapse and that about 69 % of species need conservation and management. Further, Caddy and Sharp (1986) suggested that over-exploitation of fish resources alters stock size and affects ecosystem functioning through successive removal of higher trophic species.

The present paper focuses on threats to the coastal ecosystem with respect to decadal land use change and resource exploitation.

Expansion of fisheries

With reference to the global scenario, coast of Karnataka is not different in terms of over-exploitation of resources. There has been gradual increase in the number of mechanized boats operate along the coast from 1957 – 1993. Before 1960's the entire fishing was by traditional methods. Mechanized crafts

were introduced in unregulated manner from 1960's. The total number mechanized crafts (purse-seines, trawlers and gill-netters) in 1975-76 was 371; it shot up to 1333 in 1985-86, 1592 in 1995-96 and 2300 in 1999-2000. This is interesting to see that significant increase in the number of boast in state did not show the increase in the landing (Figure 1). It was observed that fish landing remain same even though there is increase in the fishermen population, number of vessels and effort. This means that during 60s traditional fishermen use to catch more fishes than the recent modern mechanized fishermen. With the increased entry of mechanized crafts, several of them owned by people from traditional non-fishing sectors, today about 85% of the catches are with the mechanized sector, thereby depriving the traditional fishermen of their age old source of sustenance.

During the last decade we have also noticed that land use change has occurred along the coast which has taken away the lands of traditional fishermen. One of the example is Belekeri, Karnataka, where the expansion of port for export of ore has changed the wave pattern and eroded the agricultural lands in near vicinity.

These are the only few examples for the change pattern in the land use and resource exploitation along the coastal water, however there are several similar instances cab be noticed all along the coast. In view of this research on coastal ecosystem shall be focused on documentation of habitats and diversity, study on spatio-temporal variation of marine and coastal resources, studies on variable trends in resource exploitation, trophic dynamics and resource partitioning among the marine organisms.

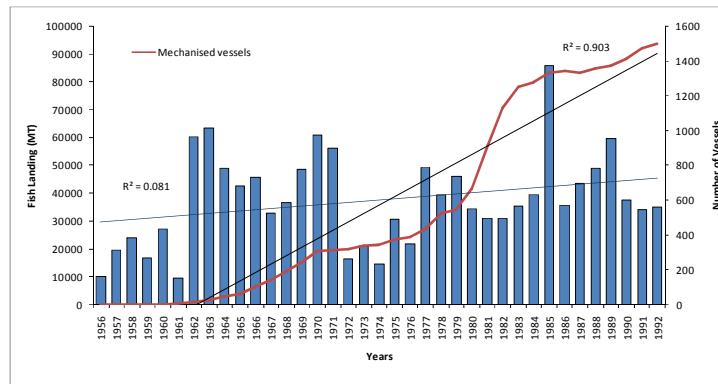


Figure 1: Landing trends of marine fishes along Karnataka Coast
Belekeri Port



Figure 2. Decadal change in land use pattern at Belekeri, Karnataka.