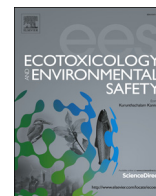




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Socio-ecological studies on marine fishing villages in the selective south coastal districts of Andhra Pradesh

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ABSTRACT

Coasts are an amazing gift of nature. Industrialization, infrastructure development, urbanisation, tourism, mechanized fishing, disposal of industrial and urban wastes and effluents, are all ringing the death-knell of the sensitive coastal ecosystems of recently separated State of Andhra Pradesh. These modern interventions have been violent, disregarding both nature's rejuvenating mechanisms, and the symbiotic relationship that exist between the coast and traditional marine fishing communities. Modern fishing technologies using mechanized trawlers and small meshed nets lead directly to overexploitation, which is not sustainable. It is evident that fish have to breed successfully and need to have time to grow if the yield has to be used sustainably. Multiple pressures and excessive technological invasion on these marine fishing villages had created an environment in which life has become physically and mentally unhealthy. The focus of this paper is to emphasize that investing in large-scale industrial fishing, building bigger boats, and giving subsidies for pursuing deep sea fishing would be a waste of resources as the fish hauls in these selective districts i.e. Krishna, Guntur, Prakasam and Nellore coastal communities have dropped off alarmingly in recent years. It is essential and crucial to focus research and scientific analysis and establish awareness and education to provide a means of distinguishing responses between improvements in quality of ecosystem and those of damages. The study is to elaborate that long-term ecological gains cannot be sacrificed for short-term economic gains that unfortunately lead to environmental damage. Investigating coastal regulations, policies, and their implementation is an urgent social need for the sake of socio-ecological safety and security of coasts and host communities.

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1. Introduction

Today, fish are being over-harvested until the catch has become a fraction of the original resources and the fish are incapable of breeding successfully to replenish the population. If fish is over-harvested, the ecological functions of the marine ecosystem are lost. Unfortunately, the traditional fishing communities are also forced to adopt technological fishing mechanism to satisfy the economic development of the country. The small traditional fishermen, who are no match for organized trawlers, are the worst affected by these developments (Daniel Pauly et al., 1998). Thus, there is a constant conflict of interests between the conservation interests of environmental scientists and the developmental interests of economists in this sun rising fishing sector. Fish is an important source of protein in many parts of the world. While the supply of food from fisheries has increased phenomenally between 1950 and 1990, in several parts of the world fish catch has since dropped due to overfishing. In 1995, FAO reported that 44% of the world's fisheries are fully or heavily

exploited-16% are already overexploited, 6% are depleted, and only 3% are gradually recovering. Marine fish resources show evidence of exhaustion (Fig. 1)

Modern fishing technologies using mechanized trawlers and small meshed nets lead directly to overexploitation, which is not sustainable. It is evident that fish have to breed successfully and need to have time to grow if the yield has to be used sustainably. Unlike agriculture or manufacturing, fisheries sector involves fish harvesting and not production. Fishing Down, that is, catching smaller fish at the lower tropic levels, is already a reality for India as for many other countries. India is an example of where the large fish are disappearing leaving behind ecosystems dominated by smaller prey fish (Daniel Pauly et al. 1998).

2. Study area and methodology

2.1. Study area

Andhra Pradesh State (A.P.), with 974 km of coastal line covering nine coastal districts from Srikakulam (north) to Nellore

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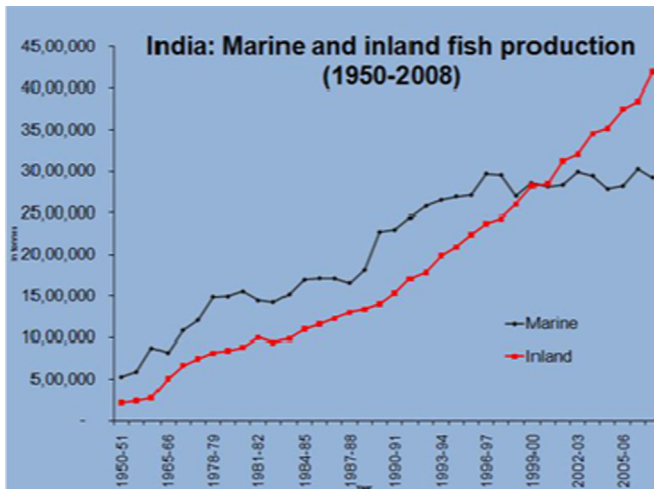


Fig. 1. Source: FISHSTAT, FAO (2010).

(south) it is situated between 13°N and 20°N. Length of marine coast line – 974 km, continental Shelf – 33,227 sq. km., No. of Fish landing centers – 353, No. of fishing villages – 555, No. of fishermen families – 163,427, fisherfolk population – 605,428, stands 5th in the marine fish production among the maritime states of India. The study area covers 350 km distance, which include four sendogamous fishermen populations namely the Jalari, Vadabalija, the Palli, and the Pattapu in the selective south districts of Andhra Pradesh i.e. Krishna (43), Guntur (36), Prakasam (67) and Nellore (94). Two sample villages were selected randomly in every selective district of study area.

2.2. Methodology

The study is both descriptive and analytical in nature. It is descriptive with respect to the socio-ecological features of marine fishers and the impact of modern Technologies on marine fisheries. The analytical part of the study is that it interprets and analyzes the primary data to reach conclusions. The basic approach followed in this investigation highlights the eco-crises of fish and fisher folk, coastal economy in the wake of modern technologies of marine fishing villages of selective districts of Andhra Pradesh.

Both primary and secondary data are extensively used in this investigation. The primary data collected in this study focus on two areas.

1. A general profile of the socio-economic status of marine fishermen in the coastal villages (sample fishing villages).
2. Impact of modern technologies in the fishing villages (sample fishing villages).

The primary data tends to focus exclusively on the fishermen community of the coastal belt of fishing villages of the selective districts of Andhra. Generally, these fishermen are backward in nature as caste and communal equations still operate to a great extent. Hence their position in the socio-economic ladder ends at the bottom.

2.3. Selection of sample villages

In order to collect primary data, complete information regarding marine fishermen population has been obtained from District Fisheries Departments. The marine fisher folk of the four

selective districts constitutes the target in the study. Study area of coastal belt comprises 240 fishing villages from which eight sample villages are chosen. The eight fishing villages selected are as follows:

1. Manginapudi
2. Gilakaladindi
3. Nizampatnam
4. Suryalanka
5. Vodarevu
6. Ramapuram
7. Krishnapatnam
8. Maipadu

The geographical significance of the sample villages selected represents its rich and varied bio-diversity. The selection of the sampling villages is based on three major criteria.

1. The predominance of both motorized and artisanal crafts particularly motorized marine plywood boats and non-motorized wooden canoes.
2. These villages have mechanized fish landing centers and have a sizeable number of Kattamarams. Thus small crafts as well as deep sea trawlers operate
3. from these centers. These two aspects are relevant because a sizable mix of traditional and modern crafts enable the use of modern devices in fishing.
4. Another crucial factor regarding selection of these villages is the pattern of their socio-communal composition.

The total populations in eight sample villages are 5667 and 6164 for the year 2010 and the year 2015 respectively.

In both the years 2010 and 2015, the respondents (fisher folk) from the eight sample fishing villages are selected by random technique.

The most important aspect of the framework of the sample design is the information on the total number of respondents (fisher folk) selected in two periods of time in data collection. In the year 2010, the total numbers of respondents in the sample villages are 200 respondents are selected during that period. While for the year 2015, a total number of 400 respondents are being selected, a total of 50 each from the eight sample fishing villages.

Primary data was collected with the help of a structured schedule. The schedule was administered to the respondents by personal interview method. Analysis, explanation and interpretation of the data are mainly done on the basis of percentages and Pearson's Chi-square test. Secondary data have also been extensively used in the study. It is being mainly collected from State Department of Fisheries, Andhra, Central Marine Fisheries Research Institute, Center for Development Studies, news papers, magazines, journals, various websites etc.

2.4. Major variables in the study

(1) Population; (2) Communication parameters; (3) Modern Technology; (4) Socio-economic composition; and (5) Fish harvesting.

2.5. Need of the study

Investing in large-scale industrial fishing, building bigger boats, and giving subsidies for pursuing deep sea fishing would be a waste of resources for India (or any other country for that matter) as the global fish catch is on the decline. The idea that the high seas hold fish wealth waiting to be exploited is "all absolute

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