Chapter–1

Introduction

1.1 General

Ecosystem begets nurtures, sustains and transforms the live and live-forms. The three basic mega-ecosystem are physical ecosystem, biological, and social ecosystem. For the physical ecosystem, the determinant factors are matter and energy, for biological ecosystem,it is genetics and metabolism. The social ecology again has got two basic determinants i.e. metabolism and intelligence.

The up surging issues of extension science are increasingly focusing on the aspects of social ecology along with its transformation in the technology socialisation process. Every ecosystem has got its own structural and functional constructs, which are in constant interaction and exchange with each other. The transforming extension paradigm is keeping up with structural issues, while the functional components are entirely in constant dynamics in the space retained by the structure, and that's why, without ecological paradigm, no such interaction can be elucidated or estimated.

Climate change has been recognized globally as an ever-increasing threat to our planet. The economic and social implications of global climate change are the subject of intense national and international study in present day

scenario. The mean global annual temperature increased between 0.4 to 0.7^{o}C (Singh, 2008).

Of around 7600k.m of coastal lines bordering India, itself is the world's one of the largest coastal ecosystem, increasingly vulnerable to sea level rising and global warming. Added to it, the aspects of livelihood changes, migrations, erosion of ichthyofaunal diversity, problems of salinity, decline of productivity etc. are making the problem complex and polymorphic.

Chilika lake of Odisha coastal area presents a huge pool of hydro-ecological, bio-ecologicaland socio-ecological dynamics and transformational traits. Chilika Lake is related to the status and prospects of livelihood and economic productivity for the entire social ecology ,keeps relegating to it. The change dynamics are more important than the present of change itself. While change dynamics include the past and direction of change as well as of shifts, its impacts on futuristic plan and prospects, is immense. The chronological change of agricultural productivity, fish catch, fertilizer application, income, family income etc. are providing not only indicators but also inputs to planning for a better future and secure livelihood.

The present study has taken care of the perceptual analysis of change dynamics along and across the age, community, occupation of the respondents. These are organically dovetailed to the ecological phenomena of the Chillikalake and her catchment areas. The spill of salt from Chillikalake to agricultural land may bring a prospect to shrimp culture, but isochronously a threat to agricultural crop as well. While more areas of lands are brought under shrimp culture unnecessarily, the aspects of crop economy is sure to crop shatter. So, the study envisages the problem and

threat perceptions at community level about this kind of changes and all being done to model up an empirical construct on the change dynamics of ChillikaLake.

1.2 Objectives

The objectives are as following-

1.2.1 General Objective

To study the *Social Ecology*, *Climate Change And*, *The Coastal Ecosystem*

1.2.2 Specific Objectives

The specific objectives of the present study are as follows:

- To study the change dynamics over decades in terms of some preset parameters.
- To identify farmers' perceptions on climate change and global warming.
- Identification and elucidation of dependent and independent variables to estimate the level of interactionsinterms of change perception and change disposition
- To study the icthyofaunal diversity of Chilika lake and resource partnership.
- To delineate policy implication for better climate resilience and adaptation.

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