

## **Summary:**

GEC (global environmental change) is among the most severe challenges facing mankind today. It is a suite of environmental change problems, climate change being the most studied of all. Global environment includes physical, chemical, and biological processes that are necessary for life-supporting services on the earth. No studies on a single environmental component will be meaningful for GEC, if viewed in isolation. It is the feedback between various components that assumes greater importance for GEC and, hence, the term GEC involves changes in various components of the environment. In order to have a meaningful understanding of GEC, other environmental components such as land use and land cover, biodiversity, fisheries, coastal and marine ecosystems, fresh water, etc. and the cascading effects generated due to the changes in these components merit attention. Hence, this volume attempts to present case studies on all these components.

Further, GEC is interpreted to mean the outcome of processes that are manifest in localities, but with consequences at multiple scales. GEC occurs at multiple scales and involves complex dynamics at different scales. Accumulated consequences of several environmental concerns occurring at local levels pose serious threats at the global level. The effort in the present volume is to generate a wider consensus of the issues connected with GEC using local case studies with cumulative approach.

Moreover, global change does not operate in isolation but rather interacts with an anthology of challenges. The presence of several factors and the multifaceted aspect make global change very complex. GEC will affect life-supporting systems of the earth. Food security (land), water resources, air, and biota are the most important systems that will be affected. These threats coupled with the complex dynamics of GEC warrant a need for integrated assessment. GEC studies need inter/multidisciplinary approaches. The biggest challenge for GEC research is to develop a science of integration, which transcends disciplinary boundaries across the natural and social sciences. The ultimate goal of this volume is to contribute to the development of an integrated, broader scientific perspective that will foster inter/multidisciplinary research and promote studies on various environmental issues occurring at local level. It is expected that such assessments at the local level will deepen our understanding of GEC.