

Impacts of Global Warming on Coastal Environment: The Case of South Western Coastal Sector in Sri Lanka

A.G. Amarasinghe

Head, Department of Geography, Faculty of Social Sciences, University of Kelaniya

Introduction

Global warming or increasing the average temperature level of the global atmosphere is admitted by all respective scientists unanimously. And also, they have identified that the main cause for this phenomena is the accumulation of GHGs into the atmosphere due to anthropogenic activities such as burning fossil fuels, deforestation and other actions that cause to release Green House Gases (GHG) in to global atmosphere after industrial Revolution started in 1750s. More specific information confirms that the human being is more vulnerable to climate change. Biosphere, hydrosphere and atmosphere will change significantly in near future creating adverse impacts on human population disrespecting economic, social or geographical divisions (IPCC, 2007:48)

The process of global warming has influence significantly to change or alter the equilibrium of the natural environment leading to create environmental, economic and social problems. Among them, climate change, sea level rise, reduction of bio-production and bio-diversity are obvious. These issues cause to create many other problems. Accelerating the intensity of shoreline erosion, earth slips, soil erosion and sedimentation is the one of the main

impact of such problems. Further to these outcomes, reduction the harvest of food crops, increase the intensity of natural hazards and creating health problems have been identified as issues that seek immediate solutions.

It is found that the overall impacts of these issues are more significant in Small Island countries where the share to the Gross Domestic Product (GDP) from agricultural, fishing industry, tourism and service sector are larger than the industrial sector. Therefore the Island of Sri Lanka has been identified as a country which is susceptible and vulnerable to the effect of global warming. And also, the available facts and figures prove that the impacts of the process of global warming on coastal environment of Sri Lanka would create vast array of critical problems. Inter Governmental Panel of Climate Change (IPCC) has already identified that the coastal environment in general and coastal zone of tropical countries such as Sri Lanka in particular would affect badly from the process of global warming (IPCC, 2013: 63). On the other hand, in nature coastal zones have become the most vulnerable geographical region due to many reasons such as continues changing nature of shoreline, alteration of physical properties of sea water and increase attraction of

people. All these factors including increasing sea level would create complex socio-economic and environmental problems of the coastal zone. The overall objective of this paper is to discuss on these issues that can be traced from the South Western Coastal Sector in Sri Lanka with the help of available scientific data and information.

South Western Coastal Sector

South Western coastal sector of Sri Lanka is rich with mangroves, lagoon and estuarine, marshes, coral reefs and other wetland ecosystems. Biodiversity and bio production of these ecosystem are being diminishing significantly from the climate change and related issues. Increasing sea level rise, coastal erosion, sedimentation on low-lying wetlands, changing pH level of sea water and intrusion brine into fresh water bodies can be identified as main causes that affects to degradation of these ecosystems.

Fishing industry has become a major economic activity particularly in the coastal lowland in Sri Lanka. Near shore or coastal fishing industry sustains livelihood of majority of coastal dwellers. Near shore sea is the main fish production geographical area in this country. On the other hand, the near shore sea area or continental shelf is the most vulnerable marine sector to climate change (IPCC, 2007: 48).

Importance of the South Western Coastal Sector and Expected Impacts of Climate Change

The length of the South Western coastal sector which comprised with the shorelines of Colombo, Kaluthara and Gall district is 135kms (Fig.1). This coastal belt has become the most important geographical region in Sri Lanka due to many factors. South Western coastal sector can be identified as the region with highest populated, urbanized and the area with highest contribution to Gross Domestic National Product in Sri Lanka. As these features concentrate to coastal zone, main infrastructure facilities such as roads, railways, houses and other facilities lie either along the shoreline or over the low-lying areas. If the sea level rises as predicted, these facilities will erode due to coastal erosion or submerged by sea water due to increasing Sea Level before 2100. Therefore, it is our responsibility to find solution to control global warming and answers to the coming socio-economic and environmental problems.

