

Global Warming and Possible Climate Crises

RAMESH H. KRIPALANI¹ and JAI-HO OH¹

¹*Department of Environmental and Atmospheric Sciences, Pukyong National University,
Busan, South Korea*

An attempt has been made to develop an index to quantify the possible impacts of climate change / global warming. Hence to quantify the possible hazards of global warming the concept of Climate Crises Index (CCI) has been introduced. The CCI has been developed on the basis of six factors. The factors are atmospheric carbon dioxide concentration, surface air temperature and annual precipitation, security indices of food, energy and water of each country. The CCI values have been computed based on empirical formulae for selected countries at 10-year intervals for the period 1950-2100. The values could vary from 0 through 150, hence a value in excess of 100 could be considered to be critical.

Analysis over selected countries of the five continents of Asia, Africa, Australia, America and Europe have been undertaken and displayed on global maps. Preliminary results reveal that the countries in northern parts of Africa, Middle-East and South Asia are likely to exceed the critical value of 100 during the middle of the 21st century; on the other hand the countries in East Asia, Australia and North America may attain this critical value during the 22nd century. Furthermore, analysis reveals that some countries could face food crises as early as in the 2030s; however water crises are anticipated during the latter half of the 21st century.