

International Perspective on Climate Change Impacts

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For the past 15 years, through the United Nations Framework, Dr Ian Hannam has worked with many countries around the world, but in particular with three regions (western Arctic; North western China and the Mongolian Steppes; and Central Asian Pamir-Alai mountain area), on reform of environmental law and strategy systems to manage the effects of changing climate characteristics induced by human activities. Each of these regions is experiencing some of the most accelerated affects of global climate change in the world. Whilst most of the effects in these regions are land-based, indirectly they are influencing sea-level rise.

Climate change is a global phenomenon which requires management at the regional, national and local levels, focusing on the atmospheric, terrestrial and marine ecosystems. In this regard, while each of the above tree regions has an integrated program which considers these systems, the main areas of interest include the rapid transformation of land and biophysical resources in coastal zones; multiple stresses on ecosystems and biophysical resources of elevated land; changes in resource use and emissions due to rapid urbanization in urban zones.

Moreover, each of the three regions is experiencing significant changes in rainfall pattern and increasing average annual terrestrial temperature. In the western Arctic (Greenland and Iceland) there is accelerated instability of the ice sheets and glaciers and continental warming, whereas the central Asian and China and Mongolian Steppes is experiencing albedo change, glacier retreat, reduction in precipitation and continental warming.

Each of these changes affects global sea level.

These changes are having a dramatic effect on economic and cultural aspects of livelihood and the specific areas of interest include climatological, hydrological, ecological and societal features. This has necessitated the development and introduction of environmental strategies that clearly document the global, regional, national and local aspects of climate change, in conjunction with the development of new national and local environmental laws and regulations that prescribe levels of human behavior to effectively manage the changing ecological circumstances.

In these regions, it has been found that to develop a system of environmental law and policy that adequately provides for the climatological, hydrological, ecological and societal features of climate change, takes between 5-10 years. The integrated research and planning is reliant on quality data acquisition, modeling, regional studies, capacity building, and international linkages.