

Science & Technology Book Released: Climate Change and Chemicals

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Professor Douglas Holdway (Tier 1 Research Chair in Aquatic Toxicology, Professor of Ecotoxicology, Faculty of Science, University of Ontario Institute of Technology) launched the 'Climate Change and Chemicals' book while presenting a seminar at the RMIT University, Melbourne, Australia on 30 July 2010. The book was published by New India Publishing Agency in 2010 (email: newindiapublishingagency@gmail.com; web: www.bookfactoryindia.com).

Key aspects covered in the book

1. The Book - Climate Change and Chemicals - Environmental and Biological Aspects' addressed the two key global environmental issues: climate change and chemical impacts on human health, environment and agricultural production with reference to chemistry, ecotoxicology, toxicology, and biology.

2. There are two parts : Part-1 of the book '**Climate Change Impacts**' (5 chapters) provides an account of greenhouse gases (GHGs) and its relationships to climate change and likely impacts of climate change on water resources, agriculture and livestock, fisheries and aquatic ecosystems and human health. Part-2 of the book '**Chemical Impacts**' (8 chapters) highlights the existing and potential environmental impacts of arsenic, heavy metals, pesticides, dioxins, endocrine disrupting chemicals, pharmaceuticals (human and veterinary drugs) and freshwater and marine biotoxins.

3. The book provides a world and regional reviews (Asia-Pacific including Bangladesh and Australasia and other parts of the world) on the impacts of both climate change and harmful chemicals on human health, environment and agricultural production and measures to reduce the impacts of climate change and chemicals.

4. The authors emphasize that there could be a link between climate change and chemicals, for example:

- The expected rise of surface water temperature due to global warming could accelerate growth of harmful algal blooms which produce toxins (freshwater biotoxins and marine biotoxins).
- Increases in the concentrations of CO_2 in the atmosphere are likely to cause further acidification of the oceans (called 'Ocean acidification').
- Temperature increases are likely to cause a decrease in dissolved oxygen supply and decreased levels of dissolved oxygen could result in endocrine disruption in fish.
- Where intense rainfall is expected to increase due to climate change, as a result run-off of pollutants such as pesticides (insecticides, herbicides), heavy metals (Cd, Cu, Hg, Zn), endocrine disrupting chemicals (estrone, estradiol nonylphenol, bisphenol A) and pharmaceuticals (antibiotics, NSAID, beta blockers, antineoplastics), into water bodies will increase.
- The warmer climates and climate extremes could be more favourable to the proliferation of insect pests and plant diseases resulting in increased use of pesticides chemicals.
- Changes in temperature and precipitation are projected to increase the frequency of bush fires and during bush fires, dioxins and other organic pollutants would be released into the atmosphere.

5. The book documented the complex and technical information in a simplified manner for catering to mass awareness in improving and managing both human and environmental health from the effects of climate change and harmful chemicals.

6. The book would be beneficial to academic and research institutes, and university students (undergraduates and postgraduates), agriculturists, biomedical scientists, chemists, chemical/ environmental/hydro engineers, ecotoxicologists, environmental scientists, freshwater/marine fisheries biologists, health professionals, hydrogeologists, water and public health professionals, and government planners, regulators and environmental campaigners.



