CLIMATE CHANGE AND WATER RESOURCES

Summary

Freshwater resources are among the systems that are particularly vulnerable to climate change. Climate change affects freshwater availability, demand and use. In many areas of the Globe, the three categories of water problems (having too little water, too much water, and water pollution) are exacerbated by climate change. Climate change impacts on freshwater resources are discussed in the context of observations and model-based projections for the future. It is projected that the negative impacts of climate change on freshwater resources and related systems will outweigh its benefits. The climate-driven hydrological changes combine with other pressures on water resources, such as population growth, land-use change (e.g. urbanization, especially in coastal areas; deforestation) and changes in life styles increasing water demand and environmental pollution, creating a difficult challenge to water management. In addition, there are serious uncertainties in projections of future changes, restricting the anticipative adaptation. In high latitudes and parts of the tropics, climate models are consistent in projecting increase of precipitation and runoff, while in some subtropical and lower mid-latitude regions, they are consistent in projecting decreases of water resources.