

to changes in water supply, water demand may also change through human efforts to conserve, and through improved growth efficiency of plants in a higher CO₂ environment. Net socioeconomic consequences must consider both supply and demand for water. Future design in water resource engineering will need to take possible impacts into account when considering structures with a life span to the end of the next century. Where precipitation increases, water management practices, such as urban storm drainage systems, may require upgrading in capacity. Change in drought risk represents potentially the most serious impact of climate change on agriculture at both regional and global levels.

2.4 Human settlements, energy, transport, and industrial sectors, human health and air quality

The most vulnerable human settlements are those especially exposed to natural hazards, e.g. coastal or river flooding, severe drought, landslides, severe wind storms and tropical cyclones. The most vulnerable populations are in developing countries, in the lower-income groups: residents of coastal lowlands and islands, populations in semi-arid grasslands, and the urban poor in squatter settlements, slums and shanty towns, especially in megacities. In coastal lowlands such as in Bangladesh, China and Egypt, as well as in small island nations, inundation due to sea-level rise and storm surges could lead to significant movements of people. Major health impacts are possible, especially in large urban areas, owing to changes in availability of water and food and increased health problems due to heat stress spreading of infections. Changes in precipitation and temperature could radically alter the patterns

of vector-borne and viral diseases by shifting them to higher latitudes, thus putting large populations at risk. As similar events have in the past, these changes could initiate large migrations of people, leading over a number of years to severe disruptions of settlement patterns and social instability in some areas.

Global warming can be expected to affect the availability of water resources and biomass, both major sources of energy in many developing countries. These effects are likely to differ between and within regions with some areas losing and others gaining water and biomass. Such changes in areas which lose water may jeopardize energy supply and materials essential for human habitation and energy. Moreover, climate change itself is also likely to have different effects between regions on the availability of other forms of renewable energy such as wind and solar power. In developed countries some of the greatest impacts on the energy, transport and industrial sectors may be determined by policy responses to climate change such as fuel regulations, emission fees or policies promoting greater use of mass transit. In developing countries, climate-related changes in the availability and price of production resources such as energy, water, food and fibre may affect the competitive position of many industries.

Global warming and increased ultraviolet radiation resulting from depletion of stratospheric ozone may produce adverse impacts on air quality such as increases in ground-level ozone in some polluted urban areas. An increase of ultraviolet-B radiation intensity at the Earth's surface would increase the risk of damage to the eye and skin and may disrupt the marine food chain.