SETTLEMENTS, SOCIETY AND INFRASTRUCTURE

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Infrastructure

- Design criteria for extreme events are very likely to be exceeded more frequently.
- Increased damage is likely for buildings (e.g. concrete joints, steel, asphalt, protective cladding, sealants), transport structures (e.g. roads, railways, ports, airports, bridges, tunnels), energy services, telecommunications (e.g. cables, towers, manholes) and water services.
- Climate change is very likely to affect property values and investment through disclosure of increased hazards, as well as affecting the price and availability of insurance.

Societies

- There are major implications for amenities, cultural heritage, accessibility and health of communities.
- Costs, injuries and trauma are likely to rise due to increased storm intensity and higher extreme temperatures.
- Damage is likely to items and landscapes of cultural significance.
- Degraded beaches due to sea-level rise and larger storm surges..
- Increased demand for emergency services is likely.
- Climate change may contribute to destabilising unregulated population movements in the Asia-Pacific region, providing an additional challenge to national security.

Indigenous communities

Indigenous communities in remote areas of Australia often have inadequate infrastructure, health services and employment. Existing social disadvantage reduces coping ability and may restrict adaptive capacity, affecting these communities' resilience to climate hazards.

Many of these communities strongly connect the health of their 'country' to their cultural, mental and physical wellbeing. Direct biophysical impacts such as increases in temperature, rainfall extremes or sea-level rise, are likely to have significant indirect impacts on the social and cultural cohesion of these communities.

Climate change impacts identified for remote Indigenous communities include

- increases in the number of days of extreme heat which may affect disease vectors, reproduction and survival of infectious pathogens, and heat stress;
- extreme rainfall events and flooding causing infrastructure damage;
- salt inundation of freshwater aquifers and changes in mangrove ecology;
- changing fire regimes;
- sea-level rise and coastal erosion.

The material contained in this factsheet has been taken from research outcomes identified in Chapter 11 of "Climate Change 2007: Impacts, adaptation and vulnerability", the second volume of the Intergovernmental Panel on Climate Change's Fourth Assessment Report. The full chapter will be available from www.ipcc.ch.

Tourism and recreation

- While some tourist destinations may benefit from drier and warmer conditions, e.g. for beach activities, viewing wildlife, camping, climbing, wine tasting and fishing, greater risks to tourism are likely from increases in hazards like flooding, storm surges, heatwaves, cyclones, fires and droughts.
- Changes in species distribution and ecosystems are likely to alter their tourism appeal.
- Queensland tourism is likely to be negatively affected by more intense tropical cyclones and by degradation of the Great Barrier Reef and beaches.
- By 2020 there is likely to be 5-40 fewer days of snow-cover per year in the Australia ski fields, along with a rise in the snowline of 30-165 metres, and a reduction in the total snow-covered area of 10-40%.
- By 2050 in the Australian ski fields the duration of snow cover reduces by 15-100 days, the maximum snow depth reduces by 10-99%, the snowline rises 60-570 m and the total area of snow cover shrinks by 20-85%.

Energy

- Increases in peak energy demand due to increased air conditioner use are likely to exceed those for base load, so more peak generating capacity is likely to be needed beyond that for underlying economic growth, and the risk of black-outs is likely to increase.
- However, *annual total* demand may be less sensitive to warming as there is likely to be a reduction in winter heating demand counteracting the increasing summer demand.
- Climate change is likely to affect energy infrastructure in Australia through impacts of more severe weather events on wind power stations, electricity transmission and distribution networks, oil and gas product storage and transport facilities, and off-shore oil and gas production

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