A (Business as Usual) has estimated the magnitude of sea-level rise at about 20 cm by 2030 and about 65 cm by the end of the next century. Working Group I has also predicted the increase in global mean temperatures to be about 1°C above the present value by 2025 and 3°C before the end of the next century.

Any predicted effects of climate change must be viewed in the context of our present dynamic and changing world. Large-scale natural events such as El Niño can cause significant impacts on agriculture and human settlement. The predicted population explosion will produce severe impacts on land use and on the demands for energy, fresh water, food and housing, which will vary from region to region according to national incomes and rates of development. In many cases, the impacts will be felt most severely in regions already under stress, mainly the developing countries. Human-induced climate change due to continued uncontrolled emissions will accentuate these impacts. For instance, climate change, pollution and ultraviolet-B radiation from ozone depletion can interact, reinforcing their damaging effects on materials and organisms. Increases in atmospheric concentrations of greenhouse gases may lead to irreversible change in the climate which could be detectable by the end of this century.

Comprehensive estimates of the physical and biological effects of climate change at the regional level are difficult. Confidence in regional estimates of critical climatic factors is low. This is particularly true of precipitation and soil moisture, where there is considerable disagreement between various general circulation model and palaeoanalog results. Moreover, there are several scientific uncertainties regarding the relationship between climate change and biological effects and between these effects and socioeconomic consequences.

This impact study part of the Overview does not attempt to anticipate any adaptation, technological innovation or any other measures to diminish the adverse effects of climate change that will take place in the same time frame. This is especially important for heavily managed sectors, e.g., agriculture, forestry and public health.

Finally, the issue of timing and rates of change need to be considered; there will be lags between:

i) emissions of greenhouse gases and doubling of concentrations;

ii) doubling of greenhouse gas concentrations and change in climate;

iii) changes in climate and resultant physical and biological effects; and

iv) changes in physical and ecological effects and resultant socioeconomic (including ecological) consequences. The shorter the lags, the less the ability to cope and the greater the socioeconomic impacts.

There is uncertainty related to these time lags. The changes will not be steady and surprises cannot be ruled out. The severity of the impacts will depend to a large degree on the rate of climate change.

Despite these uncertainties, Working Group II has been able to reach some major conclusions. These are presented below.