

SECTION 5: FOOD, POPULATION AND RESOURCES

5A: SYNOPSIS

Historically, food availability has been the most fundamental constraint on human population size. Population growth and increased food production during the past century have had a severe impact on the biosphere and on ecosystem services. Papers in this section examine the interplay between human numbers, resource depletion and environmental degradation.

Climate, environmental change and agricultural practices: impacts on food production and population health

The world's population is estimated to reach 8-9 billion by 2050, while consumer expectations are rising. Hence we must anticipate up to a doubling of food requirements over the next half century. Tony McMichael states that we face newly-occurring environmental challenges such as climate change, stratospheric ozone depletion, loss of biodiversity, that are likely to affect food production and human health. Our capacity to maintain food supplies will require more efficient and sustainable production methods.

Population, consumption and environmental degradation

Doug Cocks explains that while economic growth, as conventionally measured, is good news for many, it is not so good when its "externalities", such as congestion, pollution and degraded ecosystems are entered into the equation. Successive increments of economic growth are less and less beneficial to the average Australian. Should the community come to agree that economic growth needs to be slowed? Reducing the rate of population growth is one effective readily available way of doing so.

Food production and fossil fuels

Brian Fleay explains that the rate of global oil production is now four times as much as its discovery, and is likely to start to decline by the end of this decade. Australia's oil self-sufficiency is likely to decline rapidly during the coming decade, with imports having a major impact on the balance of payments. A world-wide strategy is needed first to halt population growth and then reduce it, while giving priority to agriculture in the use of the remaining economic petroleum supplies. This strategy is important for Australia, which is particularly dependent on fertilisers because of its nutrient deficient soils, all of which require a significant petroleum input.

Ecosystem services: the ways in which biodiversity sustains and fulfils human life

Ecosystems are declining worldwide, largely due to ignorance of their value to humans and inadequate social and economic mechanisms to encourage individuals to invest in maintaining them. Steven Cork advocates the need to maintain ecosystem services, which are transformations of natural assets (soil, water, air and living organisms) which are essential for supporting food production and sustaining and fulfilling human populations.

Nature, society and a sustainable future?

Since the human being dominates the biosphere it is important to consider who we are. The distinction between our physical role and the intelligent nature of our species is relevant to the search for understanding. Our physical impact is everywhere apparent, and the problem looms that we seem likely to so degrade our earthly environment that our future is in jeopardy, but this is met by widespread denial. A first step is to recognise the complexity of our social, political and economic interactions in relation to the natural world.