

Learning Unit 2: Population growth and resource use

GGH2604



Sources to consult

- **Atlas:** The location of Saudi Arabia, Kuwait, Iraq, Iran, the United Arab Emirates, China, Libya, and the Nile River in Africa.
- **Map 2:** The Nile River Basin
- **Prescribed book:** Chapter 2, "Resources: oil and water", on pages 17-41 in Whitehead (2014)
- **Case Study 2:** Unconventional oil and gas extraction in South Africa
- **Additional Resources on myUnisa:** YouTube videos and Podcast 2.6 Water resources in the Nile Basin

Learning Outcomes

- Discuss how the consumption of minerals affects the environment
- Describe the causes and consequences of unconventional oil and gas extraction
- Compare and evaluate various population growth theories and discuss how population growth affects the use of resources
- Explain how population growth and resource consumption contribute to resource scarcity

The Simon-Ehrlich Wager

- Paul Ehrlich predicted that rising levels in the global population would lead to shortages in the availability of resources (such as food and energy) and significant forms of human suffering.
- Ehrlich is associated with a Malthusian worldview which suggests that in the context of rising population levels and the increasing demand for resources, finite resources will eventually be exhausted.
- Julian Simon claimed that population growth did not lead to resource scarcity and holds a cornucopian outlook.
- Cornucopians believe that technologies and market forces will work to ensure that in the future humans will have enough resources to meet their collective needs.



Changing patterns of resource use

- **Read** Case study 2: Unconventional oil and gas extraction in South Africa
- Examples of products that have caused an increase in the consumption of mineral resources:
 - Hydraulic cement used for buildings
 - Iron ore used in construction and infrastructure projects
 - Metals with high levels of conductivity (such as copper) are used in the production of electrical products
 - The metal nickel is used in the production of stainless steel, rechargeable batteries, coins and even electric guitar strings
 - Gold necklaces
 - Mobile phones
 - iPads
- **Vote** in Poll 2.4 on myUnisa. The poll question is:
 - According to Whitehead (2014), the average global consumption of water per capita (per person) is approximately 100 litres per day. How many litres of water does your household consume per day?

Doomsters, Cornucopians and everything in between

- **Watch** the YouTube video titled “Human geography – population theories” from the link:
<https://www.youtube.com/watch?v=DI4222I5poE>
- Malthus argued that population growth would lead to food shortages and hunger, and increases in human conflict and war for control over scarce resources.
- He also predicted that checks would be placed on human population growth – positive checks (birth control and smaller sized families) and negative checks (increases in death rates).
- Neo-Malthusians (often referred to as the *Club of Rome*) believe that there are real limits in the biosphere’s ability to supply resources and absorb the pollution associated with resource extraction.

Doomsters, Cornucopians and everything in between

- Cornucopians believe that increases in population lead to the discovery and development of more resources (Boserup) and that the operations of the free market can help humanity avoid serious resource shortages (Chicago Boys).
- The work of Ester Boserup is considered as one of the most important challenges to Malthus's theory.
- Hubbert predicted that oil production in the US would reach a peak during the early 1970s. He also predicted that the global production of oil would reach a peak around 1995, after which point the supply of oil would enter a terminal pattern of long-term decline.
- While Hubbert's prediction about the US peak oil production was accurate, his global prediction was less reliable. Many "peakists" have argued that Hubbert's curve could be applied to a range of other resources.

Doomsters, Cornucopians and everything in between

- Marxists claim that Malthusian concerns with resource shortages fail to recognise that there are often enough resources. From a Marxist perspective, resource scarcity occurs since wealthy owners of a given resource tend to overexploit them for their own gain – by selling harvests to overseas markets, or placing oil revenues in overseas bank accounts.
- Marxists are also critical of the cornucopian claim that the free market provides the basis for enhancing resource production, since they argue that it is the free market systems that are causing social and environmental problems.
- Le Billon's work illustrates that there is no simple connection between resources and conflict. Resource scarcity is not the only driver of conflict – the desire for power and wealth are strong motivators.
- The type of conflict that emerges around resources is caused by the economic and political situation of a geographical region.

Water resources in the Nile Basin

- **Watch** the YouTube video titled “Changing power, changing tides: Conflicts over water in the Nile Basin” from the link:
<https://www.youtube.com/watch?v=ioQoI76f804>
- **Listen** to Podcast 2.6 titled “Water resources in the Nile Basin” on myUnisa.
- **Participate** in the Discussion Forum Topic 2 on myUnisa:
 - “The South African population is predicted to grow from 50.6 million currently to 58.5 million by 2030. Migration from neighbouring countries could push this number up to 61.5 million...” (Esterhuyse et al. 2016: 409). Recently, restrictions on water use were introduced in urban areas in South Africa during lower rainfall periods. Do you think South Africa’s water scarcity situation is an example of the Malthusian, Cornucopian or Marxist perspective?

Thank you

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Define tomorrow.

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