

Year 13— Topic 2—Population and the Environment



Affects human settlements - typically, desert climates (hot or polar) tend to have a low population density

Climate change is

risk/intensity, water

security and human

Affects food security -

places with moderate

temperatures and

high crop vields

rainfall tend to have

natural hazard

development

affecting food supply.

Certain climates are perfect breeding grounds for disease, e.g. hot, tropical climates are prone to biologically transmitted diseases, such as malaria

Climate

malnutrition and death rates

Geology

Topography affects the development of

human settlements, e.g. rocky, mountainous

terrain is unsuitable for infrastructural

development. This is why a lot of informal

settlements are built on this type of

topography - as the land is usually not in use or fairly cheap.

Migration can also cause a change

economic migrants, refugees and

asylum seekers. This can create

opportunities, such as increased

Economic migration may cause a

demographic shift. Young men are

most likely to migrate for work. Qatar

has a big migrant workforce so has

a large young male demographic.

Some HICs are experiencing an

ageing population (e.g. Japan) as

birth rates decline and advanced

healthcare reduces mortality. (This

is known as a natural decrease.)

workforce, or threats, such as strains

Agricultural systems must take into account climate. Hot, dry climates require large irrigation systems to sustain the demand Places in hot, dry climates often experience food shortages or famine - causina an increase in

Typically, countries rich in natural

resources loil, gas, coal and

minerals) have experienced

rapid development, although this

has also led to a widespread

wealth gap as well as social

and environmental exploitation

and injustices

Arable land for crops depends on soil type and fertility – fertile soil allows for a strong crop yield, which enables food supply

Problems facing soils that affect plant growth include: Places with fertile Waterloaging - resulting in lack of oxygen. soils tend to have a Erosion - Either through water, wind or high population 🔸 human/animal trampling. The nutrient-rich topsoil hecomes damaged. Zonal soils are soils found in

Salinisation - when salt levels build up in soil resulting in toxic soil. Structural deterioration - peds or aggregates form within the soil and alter the soil's natural

Water

Contaminated water, stagnant water and untreated water used for drinking are common factors in disease, e.a. waterborne diseases such as cholera and typhoid can be fatal if not treated properly this can lead to high death rates in LICs and some NEEs

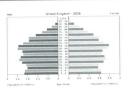
Water insecurity is an issue for several countries and can drastically affect development rates

POPULATION ECOLOGY

- Overpopulation: when population exceeds the available resources.
- Underpopulation: when there is an excess of resources for the population.
- Optimum population: when there is an equilibrium between population and resources (the ideal population size).
- Carrying capacity: the largest population size that an environment can cope with.
- Ecological footprint: the environmental impact of a population.
- The demographic dividend is when the number of people in a population's workforce outnumbers the number of dependents (children and elderly). This is seen as a huge benefit for a country
- The age-sex composition of a population is usually represented in a population pyramid.
- Cultural influences on populations include: gender equality lenabling women to have an education and a career often results in lower fertility and birth rates), gender preference (preference for boys in some places may result in female infanticide, skewing the age-sex composition

religious controls (where contraception may be inaccessible, resulting in high fertility rates, and abortions are illegal, resulting in high birth rates and high maternal mortality).

Malthusian theory: population will increase peometrically but food supply will continue trithmelically, eventually resulting in famine and uctuallons in total population oserup theory: lechnological advancements will llow food supplies to keep up with geometric population growth



This pyramid tells us there is a large working-age population and the balance between males and females is relatively even.

FOOD SECURITY

Physical geography

and population

Ways to increase food security include:

Increase food production (growing more crops / grazing more livestock). This can be expensive and there is risk associated as food production largely relies on climate

 GM crops – to produce disease-resistant crops or food with extra nutrition. This method has caused controversy as altering genes in crops has led to concern about the safety of the practice for both humans 1 and the environment

POPULATION MAKE THE ENVIRONMENT

ositive feedback cycles increase se pressure on ecosystems.

Negative feedback cycles reduct the pressure on ecosystems.

This map shows global population density. The key refers to the number of people living in each country

Types of agriculture Subsistence

Intensive farmina le.a.

particular regions of the world,

e.g. vertisols are found in the

tropics and subtropics and

podzols are found in boreal

Commercial farmina le.a. HICs and some Extensive farming

As agricultural systems develop, food security tends

farming le.g.

NEEs)

Water is essential

Many major

settlements are

built on riverbanks.

Water is needed for crop

irrigation (whether naturally

through precipitation or artificially

through irrigation systems).

Droughts can lead to famines

and impact on human health

and development.

for human life.

(e.g. USA)

POPULATION AND HEALTH

Biologically transmitted disease: an infectious disease, passed on through insects, animals or people, e.g. malaria. It is passed on to humans via mosquitos and is common in hot tropical climates such as that of sub-Saharan Africa (the perfect breeding ground for mosquitos). Lack of access to healthcare and poor sanitation in some areas means malaria is common in poorer areas (particularly in LICs). Malaria can be prevented with nets and mosquito repellent.

Non-communicable disease: a disease that is not considered contagious and cannot be passed on between people, e.a. lung cancer. This disease is non-contagious but can be fatal if not treated effectively/quickly. Lifestyle, genetics and air quality are linked to rates of lung cancer. HICs/NEEs tend to have higher rates of the disease than LICs due to increased air pollution (largely from industry and vehicle exhausts) as well as trends in lifestyle (such as smoking).

The epidemiological transition model shows how trends in disease change as countries develop:

1. Age of pesillence and famine

2. Age of receding pandemics

3. Age of degenerative and man-made disease

4. Age of delayed degenerative disease

NGOs: some are involved in treating diseases, such as providing medicines, or preventing diseases, e.g. through malaria nets, HIV/AIDS awareness and geducation.

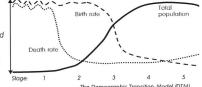
ernational agencies (IGOs): the World Health anization (WHO), UN (especially UNICEF, UNAIDS,

SYNOPTIC GEOGRAPHY

Changing places: how do populations alter a place? Hazards: why would people choose to live in a place that is at risk from natural hazards? Global systems: how does alobalisation affect the distribution of populations? Ecosystems: how does the environment affect where people live?

GLOBAL POPULATION FUTURES

- The global population is predicted to continue increasing into the near future
- LICs and NEEs are expected to continue to see rapid population increase.
- More HICs are predicted to start seeing a natural decrease and an ageing population.
- Environmental factors will change how populations develop:



The Demographic Transition Model (DTM). The DTM shows how hirth and death rates tend to decrease over time with development, leading to a population increase Countries in stage 5 may be experiencing population decline.

- Skin cancer and cataracts are likely to increase as a result of ozone depletion. Vector-borne diseases and risks associated with natural hazards are likely to
- increase as a result of climate change. Climate change will also affect agriculture and food production.
- Water stress and droughts will result in a higher number of people living in a place of water insecurity
- Heatwayes and cold spells as a result of climate change are likely to affect health of vulnerable populations.