

PiXL Independence:

Geography – Student Booklet

KS5

Population and Environment

Contents:

- I. Multiple Choice Questions
- II. Short Answer Questions
- III. Annotation
- IV. Suggested Reading or Viewing
- V. Extended Essay Questions
- VI. Synoptic Thinking

I. Multiple Choice Questions

1. Food security is?
 - a. When the price of food is affordable in that country.
 - b. When people aged 16-75 have access to sufficient, safe, nutritious food to maintain a healthy life.
 - c. When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy life.
 - d. When food can be grown by all of the population through the wet season and the dry season.

2. When there is a build-up of salts in soil it is called ...
 - a. Desalinisation
 - b. Salinisation
 - c. Waterlogging
 - d. Salt weathering

3. The main elements of the '*Green Revolution*' are...
 - a. Increased use of new, high-yielding crop varieties, fertilisers, pesticides and irrigation methods.
 - b. Increased use of new, high-yielding crop varieties, with no use of chemicals such as those in fertilisers and pesticides.
 - c. Increased use of organic methods of farming that do not use chemicals such as those in fertilisers and pesticides.
 - d. Decreased use of high-yielding crop varieties, with no use of chemicals such as those in fertilisers and pesticides.

4. Extensive farming has the following characteristics ...
 - a. Usually small scale and is capital intensive with money being invested in soil improvement, machinery, buildings, pest control and seed.
 - b. Is labour intensive, with high numbers of workers.
 - c. Is when farming is carried out on a large scale over a large area.
 - d. Usually small scale and is labour intensive with high numbers of workers with investment in new irrigation methods.

5. Which of the following will not improve the total factor productivity (TFP) of crops?
- Higher yielding, disease resistant and drought tolerant crop varieties.
 - More efficient harvesting technologies.
 - Using better animal care and reducing infection in animals.
 - Using new irrigation methods.
6. Soil performs 5 essential functions. Which of the following is not one of them?
- Cycling nutrients
 - Regulating water
 - Sustaining plant and animal life
 - Development of topography
7. Characteristics of latosols are ...
- They are produced in hot, wet climates where there is thick forest cover; the soil is often infertile as most of the organic nutrients are stored in the vegetation and not in the soil.
 - They are produced in cold, wet climates where there is thick forest cover, and the soil is often infertile as most of the organic nutrients are stored in the vegetation and not in the soil.
 - They are produced in hot, dry climates where there is a lack of vegetation cover and the soil is often infertile.
 - They are produced in cold climates where there is thick forest cover; the soil is fertile as most of the organic nutrients are stored in the soil.
8. Disability-adjusted life years (DALYs) is defined as ...
- A measure of the number of years of life lost by being in poor health or a state of disability.
 - A measure of the number of people within a society who are deemed to be in poor health or a state of disability.
 - A measure of the number of years of healthy life lost by being in poor health or a state of disability.
 - A measure of the number of people within a society who are deemed to be disabled but in good health.
9. Non-communicable diseases are ...
- Diseases that are infectious and transmissible among people.
 - Diseases that are infectious and non-transmissible among people.
 - Diseases that are non-infectious but can be transmissible among people.
 - Diseases that are non-infectious and non-transmissible among people.

10. In the epidemiological transition model stage 4 '*the age of delayed degenerative diseases*' is characterised by the following ...
- a. Life expectancy is 70+; there is health promotion and new treatments; main causes of morbidity and mortality are likely to be heart disease, strokes and cancers.
 - b. Life expectancy is 70+; there is health promotion and new treatments; main causes of morbidity and mortality are likely to be infectious disease such as malaria.
 - c. Life expectancy is 70+; there are health issues associated with poor diet; main causes of morbidity and mortality are likely to be heart disease, strokes and cancers.
 - d. Life expectancy is 70+; there are health issues associated poor diet; causes of morbidity and mortality are likely to be linked to poor nutrition.
11. In the epidemiological transition model '*the age of reducing pandemics*' is associated with the following life expectancy ...
- a. 20-40 years
 - b. 70+ years
 - c. 30-50 years
 - d. 50-60 years
12. The most common cause of death in High Income Countries is ...
- a. Malaria
 - b. HIV/AIDS
 - c. Ischaemic heart disease
 - d. Lower respiratory infections
13. An example of a vector-borne disease is ...
- a. Malaria
 - b. HIV/AIDS
 - c. Ischaemic heart disease
 - d. Lower respiratory infections
14. Which of the following is **not** used in the control of malaria?
- a. Insecticidal nets.
 - b. Indoor residual spraying with insecticide to control the vector.
 - c. Reducing the amount of stagnant water close to populations.
 - d. Nets to protect vulnerable crops from pests.

15. Net migration change is defined as ...

- a. The difference between the total number of immigrants and the population of the host country over a given period of time.
- b. The difference between the total number or average rate of immigrants and emigrants in an area or country over a given period of time.
- c. The total number of people that leave a country over a given period of time.
- d. The total number of people that arrive in a country over a given period of time.

16. In richer developed countries the replacement rate is usually about?

- a. 82
- b. 2.1
- c. 4.5
- d. 76

17. A country at stage 3 '*early expanding*' on the demographic transition model will have the following characteristics ...

- a. Birth rates are starting to fall, death rates are still falling, natural increase slows down, there is a lowering of the infant mortality rate.
- b. Birth rates are high, death rates are high, natural increase slows down, there is a lowering of the infant mortality rate.
- c. Birth rates are low, death rates are low, natural increase slows down, there is a lowering of the infant mortality rate.
- d. Birth rates are starting to fall, death rates are still falling, natural increase increases, there is high infant mortality rate.

18. Causes of migration can be categorised into push factors and pull factors. Which of the statements are **not** push factors?

- a. War, conflict or political instability.
- b. Ethnic or religious persecution.
- c. Unemployment, low wages and poor working conditions.
- d. Varied employment opportunities and higher wages.

19. International migration has implications for both the country of origin and the country of destination. Which of the statements below best describes the social implications of migration?

- a. In the country of origin there is increased pressure on healthcare services, and migration might cause break-up of family units and communities. For the destination country there is less diversity of cultures, but also increased pressure on healthcare and education services.
- b. In the country of origin there is reduced pressure on healthcare services, but migration might cause break-up of family units and communities. For the destination country there is greater diversity of cultures, but also increased pressure on healthcare and education services.
- c. In the country of origin there is reduced pressure on healthcare services, and migration will prevent the break-up of family units and communities. For the destination country there is greater diversity of cultures, but also increased pressure on healthcare and education services.
- d. In the country of origin there is reduced pressure on healthcare services, but migration might cause break-up of family units and communities. For the destination country there is reduced pressure on healthcare and education services.

20. '*Environmental resistance*' can be defined as ...

- a. Mortality rates controlled by environmental factors that prevent survival, for example disease or shortage of food – sometimes known as 'limiting factors'.
- b. Mortality rates controlled by environmental factors that improve the chances of survival, for example disease resistance or food security – sometimes known as 'limiting factors'.
- c. Environmental factors that increase the rates of disease or shortage of food.
- d. Environmental factors that decrease the rates of disease or shortage of food.

21. '*Carrying capacity*' can be defined as ...

- a. The minimum population size that an environment can sustain indefinitely.
- b. The maximum population size that an environment can sustain indefinitely.
- c. A measure of the demand placed by humans on Earth's natural ecosystems.
- d. The difference between the number of immigrants compared to that of emigrants in a country.

22. Positive and negative feedback either enhances or counters change that occurs in a system. Which of these statements is true?

- a. Positive feedback reduces change. This moves the system away from its equilibrium which results in making the system unstable. Negative feedback will counter any change, which means that the system remains more stable.
- b. Negative feedback enhances or amplifies changes. This moves the system away from its equilibrium which results in making the system unstable. Positive feedback will counter any change, which means that the system remains more stable.
- c. Positive feedback enhances or amplifies changes. This moves the system away from its equilibrium which results in making the system unstable. Negative feedback will counter any change, which means that the system remains more stable.
- d. Negative feedback will mean that inputs are altered. Positive feedback will mean that outputs are altered.

23. Malthus and neo-Malthusian theories have the following characteristics ...

- a. Food production cannot increase as rapidly as human reproduction. Food production will increase arithmetically; however, population growth will be exponential (geometrical). The views are pessimistic.
- b. Food production cannot increase as rapidly as human reproduction. Food production will increase arithmetically; however, population growth will be exponential (geometrical). The views are optimistic.
- c. Food production increases and the same rate as human reproduction. Food production will increase arithmetically, and population growth will be exponential (geometrical). The views are pessimistic.
- d. Food production cannot increase as rapidly as human reproduction. Population will increase arithmetically; however, food production increases exponentially (geometrically). The views are pessimistic.

24. Which of the health issues listed below are not likely to be associated with environmental change?

- a. Skin cancer
- b. Cataracts
- c. Obesity
- d. Zika virus

25. Demographic dividend can be defined as ...

- a. The costs a country faces when its working population outgrows its dependants. A decline in economic productivity results from growing numbers in the workforce relative to the number of dependants.
- b. The benefit a country gets when its working population outgrows its dependants. A boost in economic productivity results from growing numbers in the workforce relative to the number of dependants.
- c. The costs a country faces when its working population outgrows its dependants. A decline in economic productivity results from falling numbers in the workforce relative to the number of dependants.
- d. The benefit a country gets when the number of dependants is greater than the working population. A boost in economic productivity results from growing numbers in the workforce relative to the number of dependants.

II. Short Answer Questions

Read the questions carefully, and then answer as many of these questions as you can. Answers should be written in full sentences and where appropriate use geographical language.

1. State the two main physical variables that determine the type of food production.
2. What is the '*Green Revolution*'?
3. Explain what is meant by the term '*food security*'.
4. Name three ways that population can be measured.
5. Explain the process of salinisation in soil.
6. Explain the concept of '*carrying capacity*' in connection with populations.
7. Draw a diagram to explain Malthusian theory on population and resources.
8. Explain how changes to the environment can make an impact upon disease.
9. For one non-communicable disease explain the impact it has on High Income Countries.
10. Suggest one way that international migration can make an impact on the health of the receiving nation.
11. For one Non-Government Organisation describe its role in relation to disease control.
12. For an infectious disease, evaluate one strategy used to control it.

13. Outline the benefits of international migration for the host country and the country of origin.
14. Describe the characteristics of latasol soils.
15. Produce two annotated population pyramids, one for a typical High Income Country and one for a typical Low Income Country.
16. Describe one strategy that can improve soil quality.
17. Outline the problems that can affect soil in a range of locations.
18. Evaluate one strategy used to ensure food security.
19. Compare the characteristics of two contrasting soil types.
20. Explain what is meant by '*ecological footprint*'.
21. Explain the role of positive and negative feedback in relation to population, resources and pollution.
22. For a named country, examine its changing population structure.
23. For a local area analyse the relationship between place and health.
24. Produce a labelled sketch of the demographical transition model.
25. Produce a labelled sketch of the epidemicological transition model.

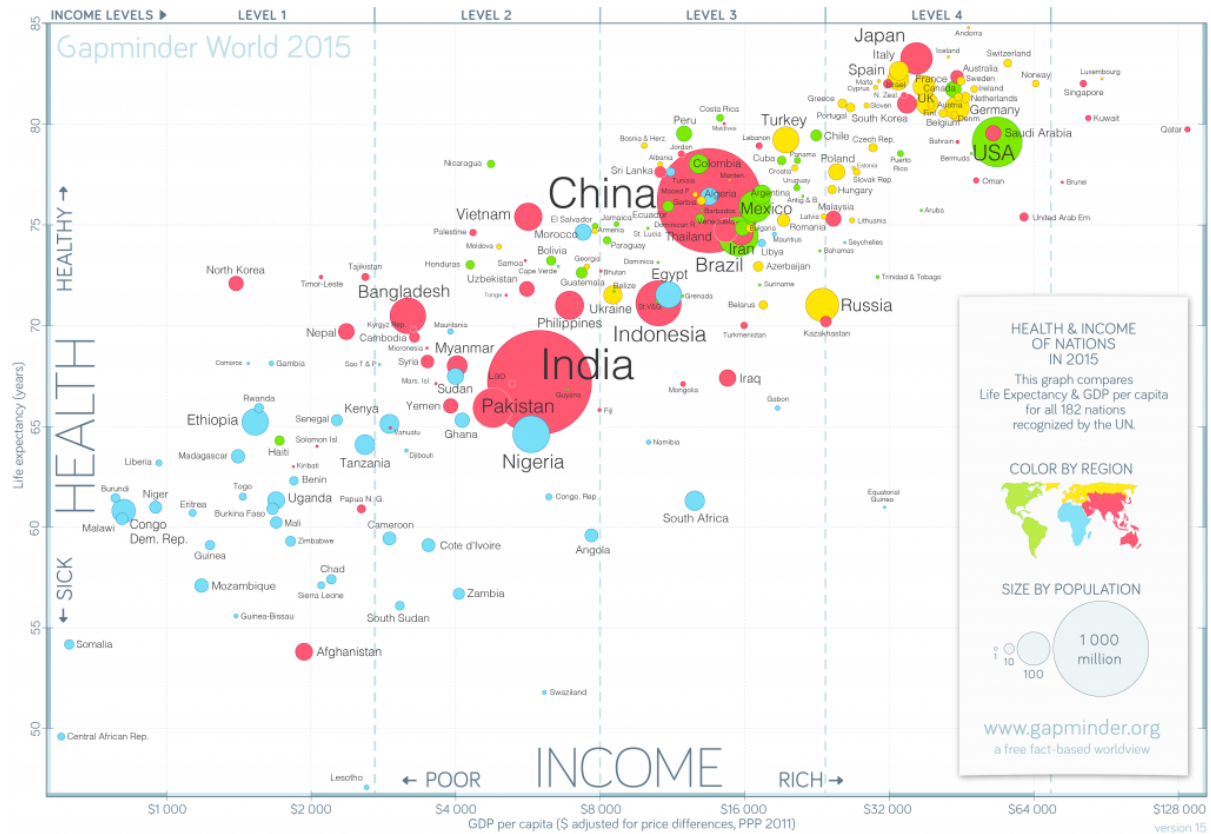
III. Annotation

Study the images and identify evidence, and then explain that evidence.

Annotate is more than just a label. You need to identify and then develop this further with an explanation as to why what you have pointed to is relevant to the question asked.

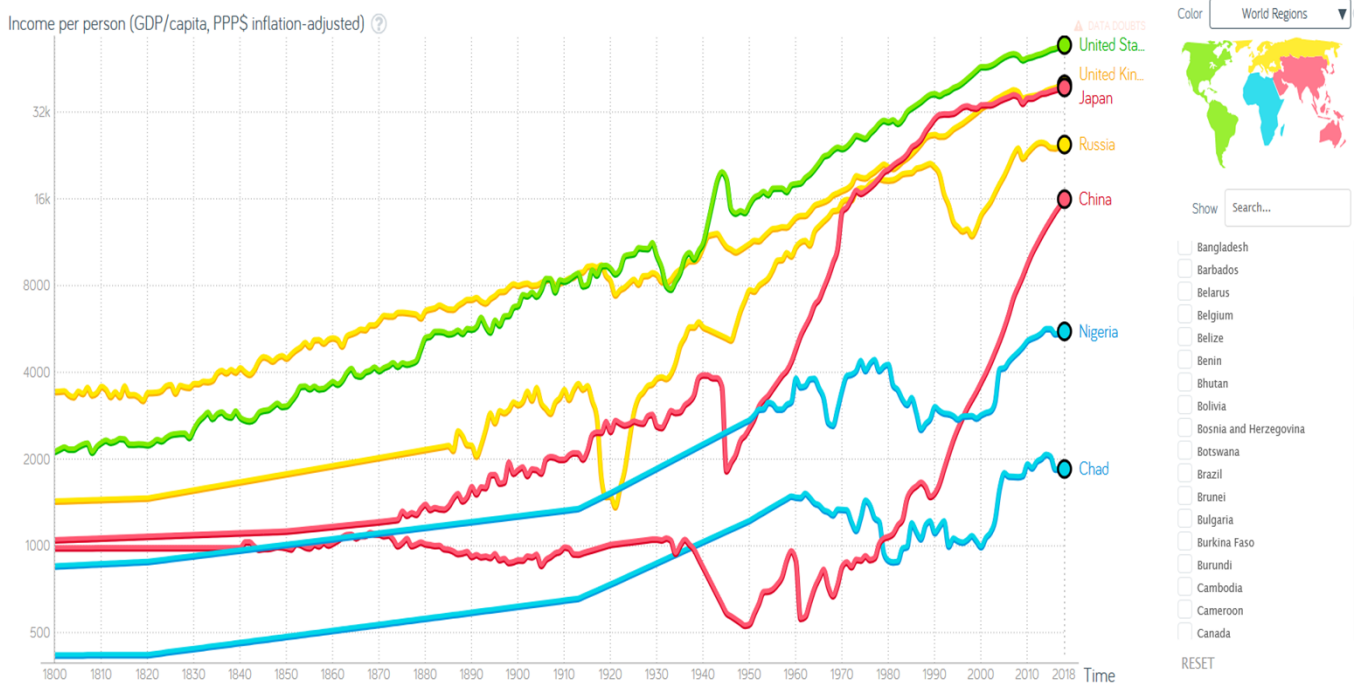
1. Study the graph below, and annotate the main patterns and trends in life expectancy and income.

(Source: Gapminder)

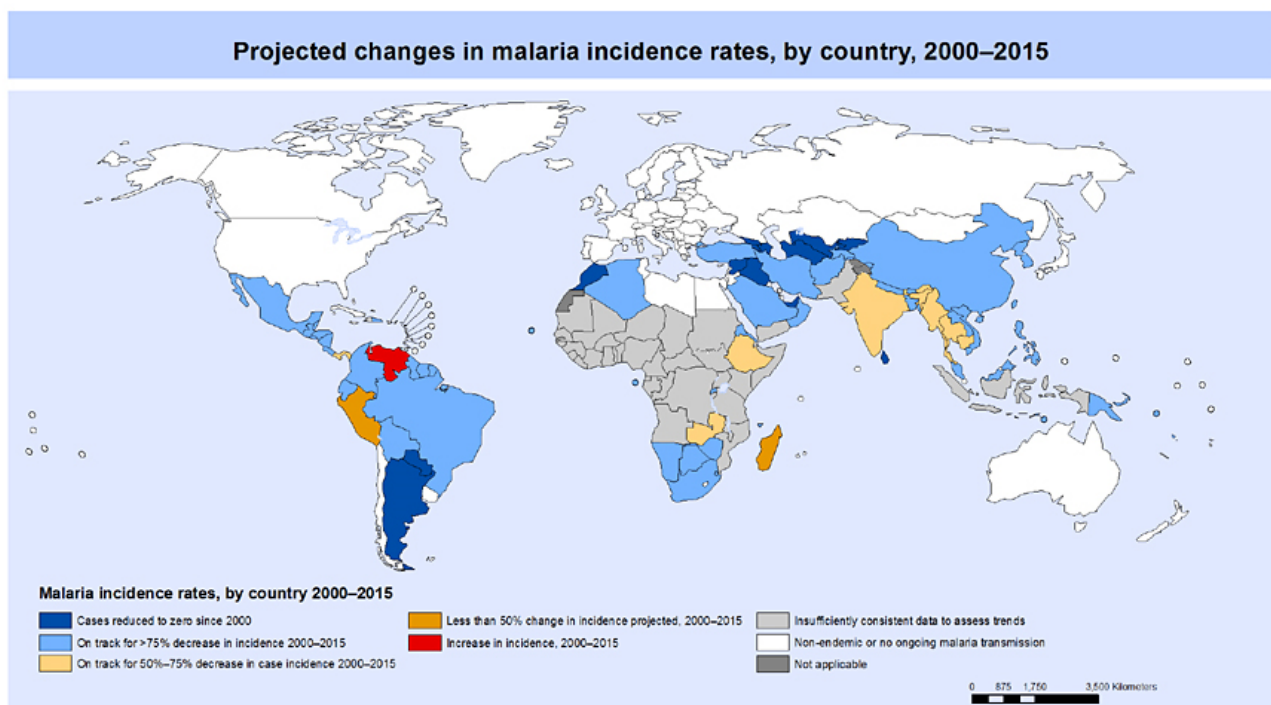


2. Study the graph below, and annotate the main patterns and trends in income over time, by country.

Source: www.gapminder.org/tools)



3. Study the map below, and annotate the map to analyse the distribution of malaria.
(Source: World Health Organisation)



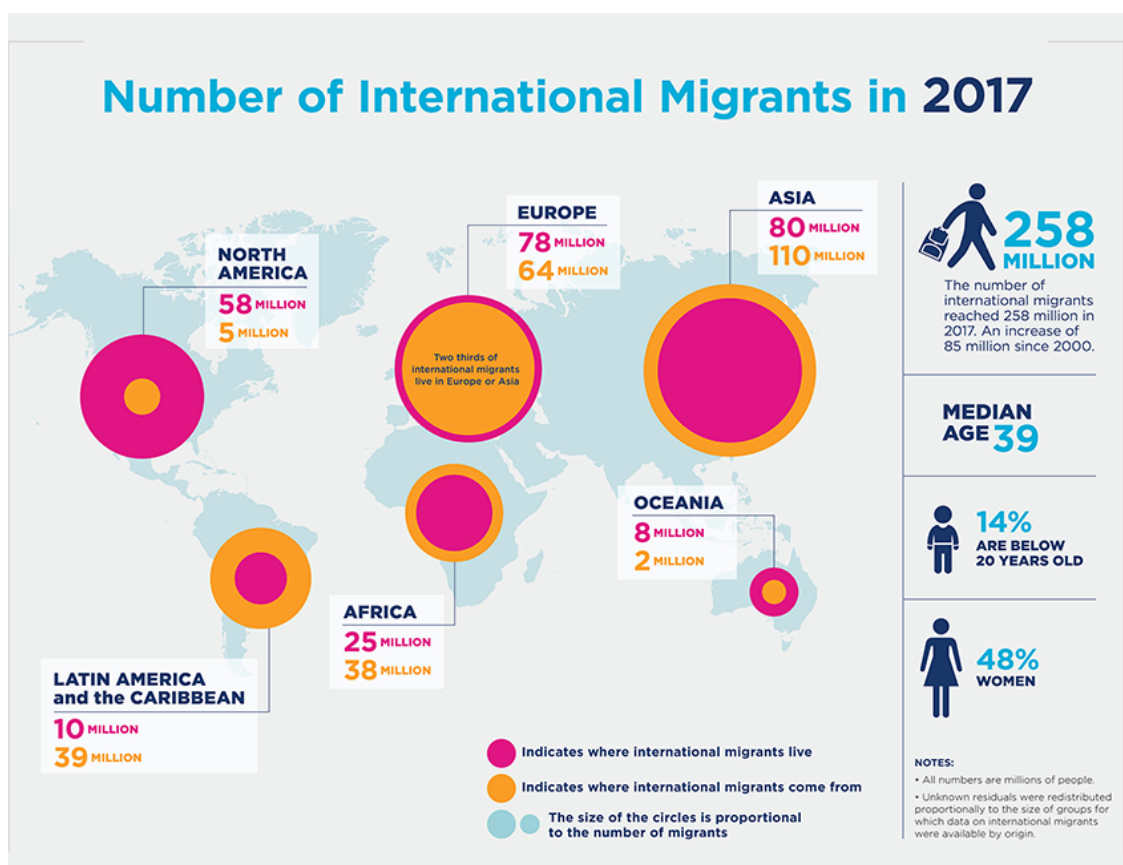
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Malaria Report 2015
Map Production: Global Malaria Programme
World Health Organization



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4. Study the map below, and analyse the data on international migration. Assess the usefulness of this data.
(Source: UN population division)



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). Trends in International Migrant Stock: The 2017 Revision. United Nations database, POP/DB/MIG/Stock/Rev.2017. For more information visit: bit.ly/2017Migration

IV. Suggested Reading or Viewing

Watching these clips or reading these articles should extend your knowledge and understanding of the issues associated with population and the environment.

1. *Factfulness: Ten Reasons We're Wrong About the World – and Why Things Are Better Than You Think*, by Hans Rosling, Ola Rosling, Anna Rosling Rönnlund
2. DON'T PANIC — Hans Rosling showing the facts about population
<https://www.youtube.com/watch?v=FACK2knC08E&t=1583s>
3. TED Talk - The best stats you've ever seen, Hans Rosling
<https://www.youtube.com/watch?v=hVimVzgtD6w>
4. The story of Ebola
<https://www.youtube.com/watch?v=XCrOde-JYs0&t=8s>
5. *Our Daily Bread*, by Norman Borlaug (a book about the Green Revolution)
6. Geofile – World population update. 673
7. A 2020 vision for the global food system, from WWF
http://assets.wwf.org.uk/downloads/2020vision_food_report_summary_feb2013.pdf
8. *Farming for the Future: Organic and Agroecological Solutions to Feed the World*, by Christopher D. Cook, Kari Hamerschlag, and Kendra Klein
9. Geo factfile: Migration Update – Exodus from Syria. 345

V. Extended Essay Questions

You should attempt to answer the longer questions on the following page using the following tips to help you with each set of command words:

Do you agree with this statement? Justify your reasons

- Read the statement
- Come up with at least two reasons you could agree with the statement and at least two reasons you could disagree
- Use evidence to back up these reasons
- Plan your answer in detail. You might use this structure – introduction, reasons you agree, reasons you disagree (however), and an evaluative conclusion that clearly answers the question set.

Assess the extent to which/To what extent

- If there is a statement or quote, read it carefully
- Decide where you sit on a sliding scale; do you totally agree with the statement or totally disagree?
- Consider your reasons for agreeing or disagreeing
- Use evidence to back up your reasons
- Plan your answer in detail. You might use this structure – introduction, reasons you agree, reasons you disagree (however), and an evaluative conclusion that includes an amount word, that clearly answers the question set.

Evaluate the effectiveness of/how useful

- Consider reasons why it might be effective
- Consider what is ineffective about it
- Plan your answer in detail. You might use this structure – introduction, reasons it is effective, reasons it is not effective (however), and an evaluative conclusion that clearly answers the question set.

1. 'Soil fertility is the most significant factor when considering the levels of food security across the world.' To what extent do you agree with this statement?

2. 'Levels of mortality link directly to levels of economic development.' To what extent do you agree with this statement?

3. Evaluate the usefulness of the demographical transition model when analysing changes in population structure.
4. 'There is not enough food to feed the World's population.' To what extent do you agree with this statement?
5. Evaluate a range of strategies used to ensure food security.
6. "Changes in climate, agricultural productivity and nutritional standards will have equal impact on food security." To what extent do you agree with this statement?
7. Assess the importance of improvements in health and food security in explaining the changes in infant mortality.
8. 'Non-communicable diseases are influenced by the physical and socio-economic environments, and mitigation strategies used to control these diseases need to reflect this.' To what extent do you agree with this statement?
9. Assess the role of global governance dealing with infectious disease worldwide.
10. For a vector borne disease, evaluate the strategies used to reduce its impact on health and well-being.

11. Evaluate the role of one Non-Governmental Organisation in combating disease at a global scale.

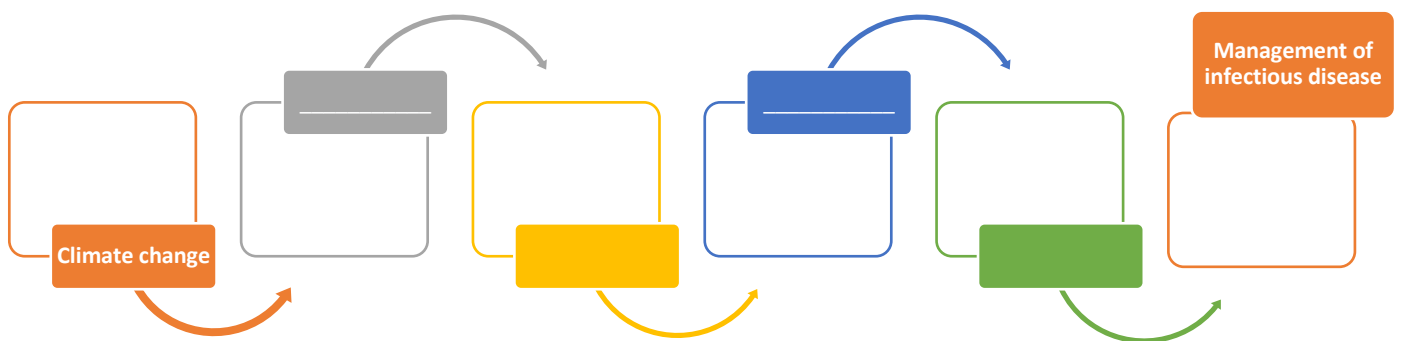
12. 'International migration is fuelled by environmental, socio-economic and political process in equal measure.' To what extent do you agree with this statement?

13. To what extent are the theories of Malthus and Neo-Malthusian theory still pertinent today across the world, when considering the balance between population and resources?

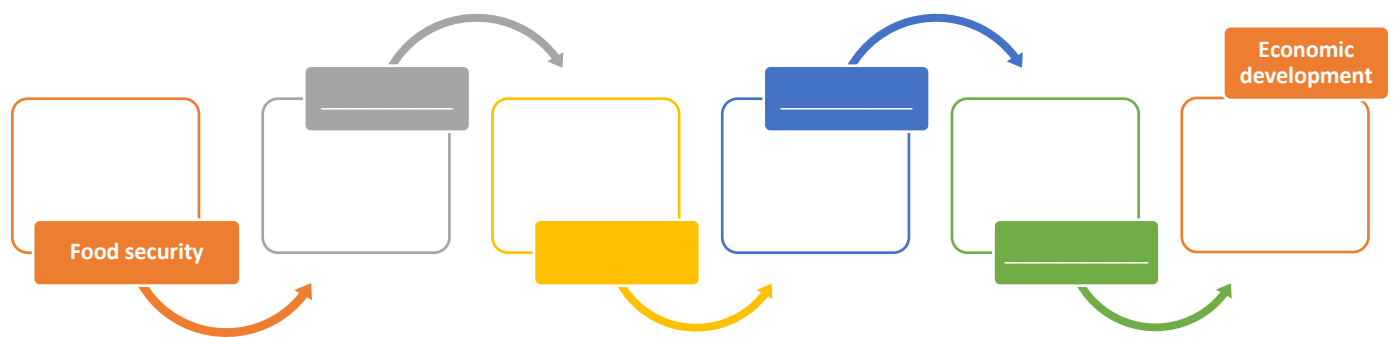
VI. Synoptic Links

Can you find the processes, interactions, and links that connect these geographical ideas?

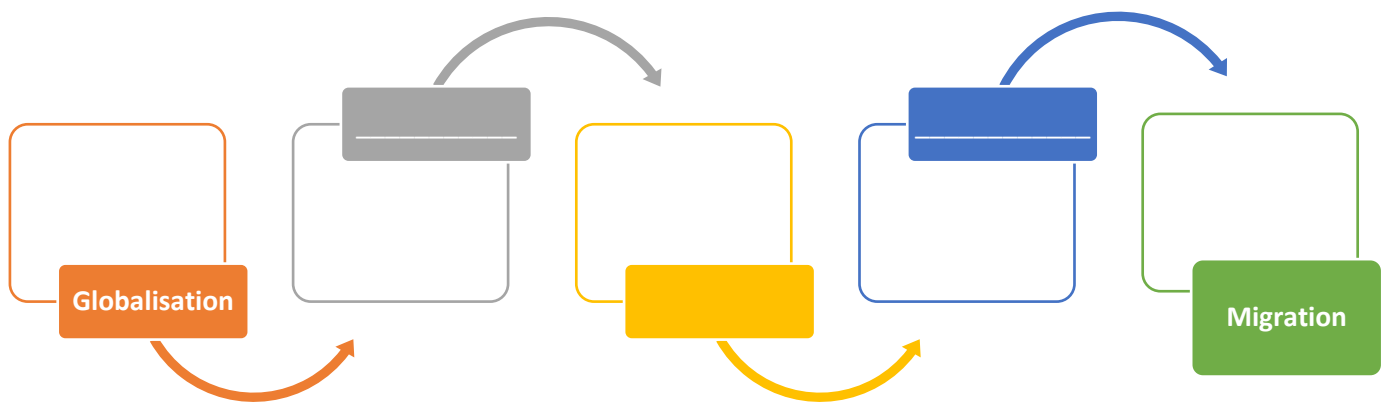
1.



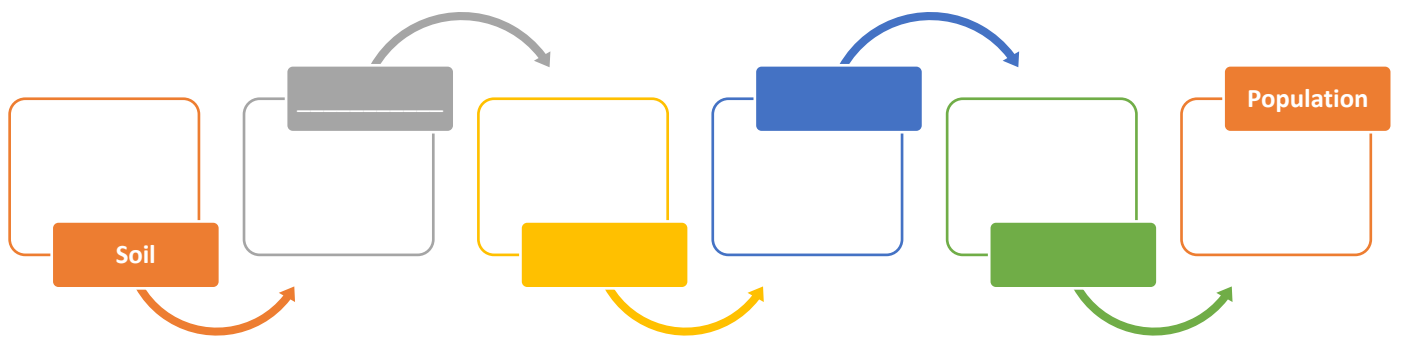
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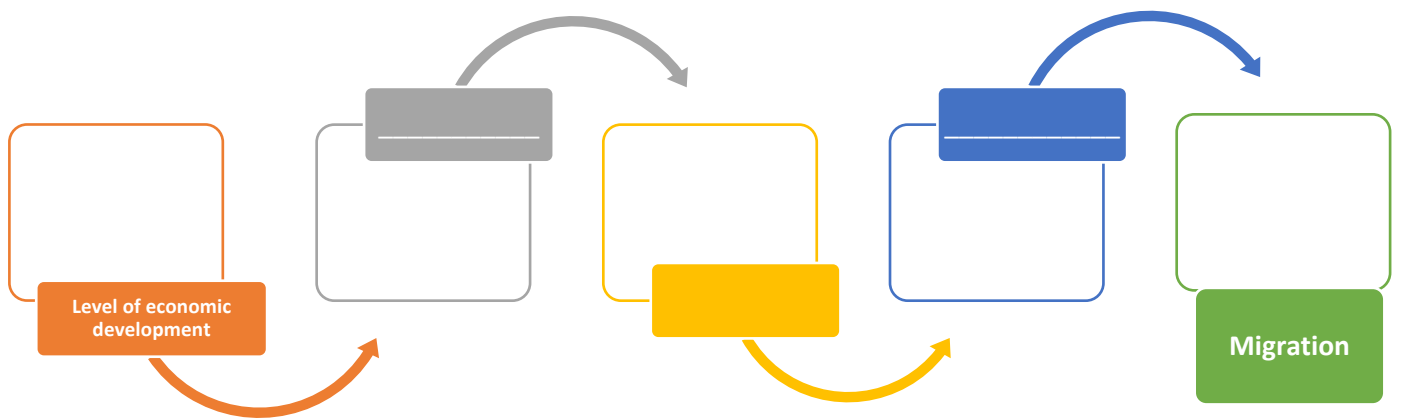
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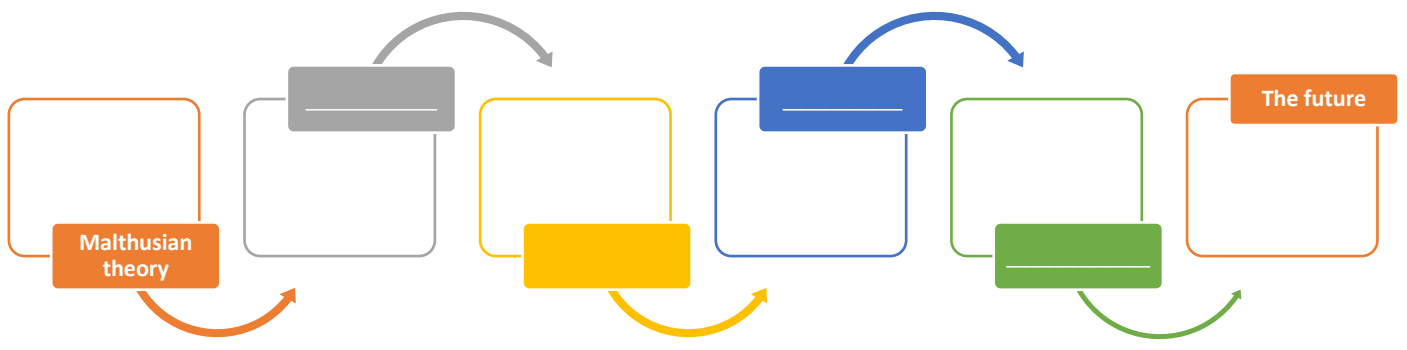
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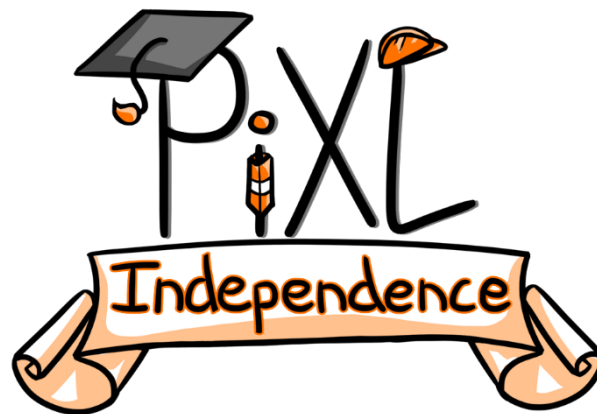


5.



6.





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