

Population Growth & Aridification in the Sahel

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Topic: 3.2.4.7 Case study of a country/society in population change to illustrate causes, problems, patterns, and implications of this.

Sahel region, Africa



This is the **Sahel**. It is a climatic region of Northern Africa comprising 9 LICs. It is defined by 'semi-arid' climatic conditions and **irregular rainfall patterns**.

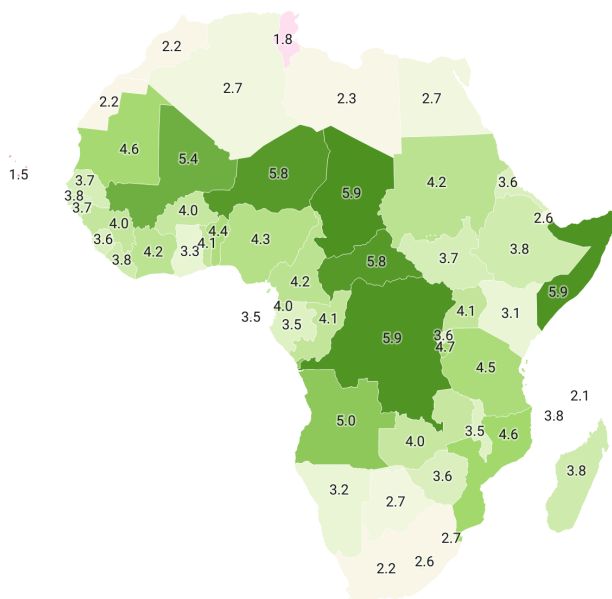
In an exam, you may be asked to contrast this area of high population growth against one with decline. For this, check out our resource [Japan's Population Decline – Should we be Worried?](#)

This might be a new region and topic for you. Before we get into it, here's what we are going to be talking about:

1. Where is the Sahel ?
2. What demographic issues does this region face?
3. What patterns can we read from it?
4. What are the implications of our observations?
5. How does climate change influence this situation?

We have already established that the world's population will, by most middling projections, flatline at around 10 billion people in 2100 (currently it sits at around 8.5 billion.) Much of this growth will be in a region of Northern Africa called the Sahel. This 'belt' of countries has the **youngest population**, with **47% under the age of 15**, and some of the **highest birth rates** in the contemporary world. In this case study fact file we will break down some of the reasons why this might be happening, what the trends are and how this issue is intrinsically related to geopolitical stress, climate change and refugees.

Total Fertility Rates in Africa (2025)



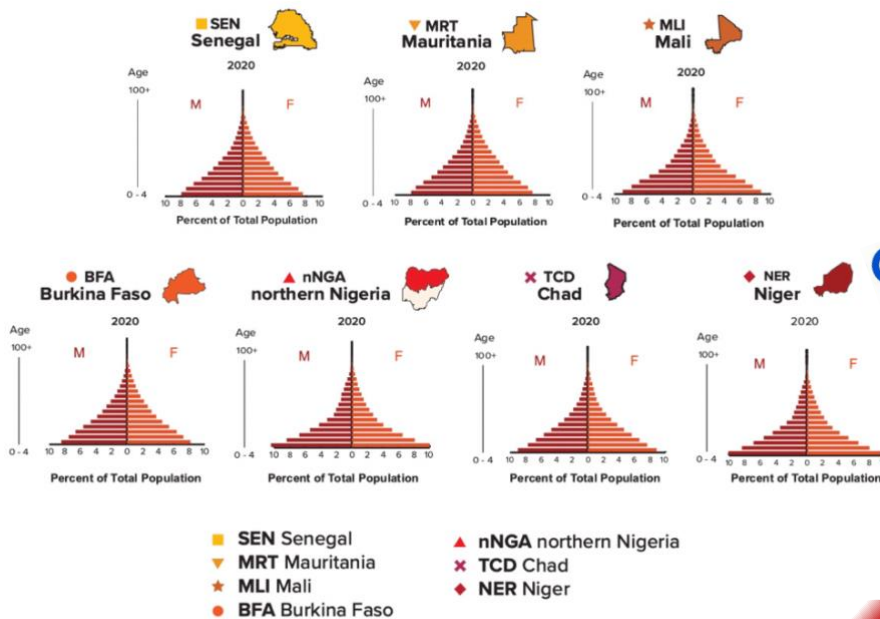
Source: UNDP (2024) • Created with Datawrapper

Part 1: Demographics

Remember what Natural Replacement Rate was? It's the fertility rate above which a population will grow (about 2.1 children per woman.) The current global TFR is around 2.2, so just slightly above it. However, in much of Central and Sub-Saharan Africa, **including the Sahel, the average fertility rate is between 4 and 6 children per woman**. This means one thing: population explosion. In fact, the population of the Sahel is estimated to explode to over **500 million by 2050, up from 60 million in 1950!** That is an exponential growth which comes with a huge number of challenges for not only the countries involved, but the wider global community too.

Look at the figure above. Think about why there might be such a large variation between countries. Is it cultural, developmental, or religious in nature? We'll be looking into that next 😊

Selected Western Sahel Region Population Pyramids:



Source: UNDESA/ Population Division, 2019; National Bureau of Statistics (Nigeria), 2017, author's model.

Here are some population pyramids from countries in the Western Sahel region. Note how they look – very bottom heavy and few people above the age of 60. This means that:

- 1) The birth rate is very high
- 2) The death rate is very high

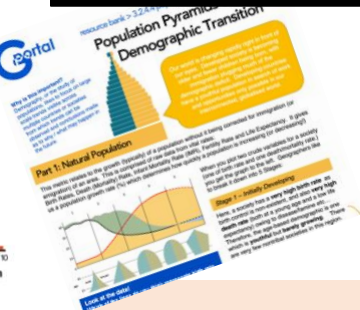
This leads to an exceptionally youthful population (which can be both a good and bad thing depending on how its managed – more on this later.) These countries are probably all in stage 2 of the **Demographic Transition Model**. You could even potentially argue that some such as Niger are late stage 1.

Part 2: What does this mean?

Due to this rapid growth, these countries are the world's most likely to witness a '**Malthusian**' population catastrophe. This is because, although not the case in most of the rest of the world, population growth in the Sahel is outstripping the constrained production of not only food, but other critical resources such as water and energy generation, which may plunge the region in to further crisis. This is exacerbated by a few factors:

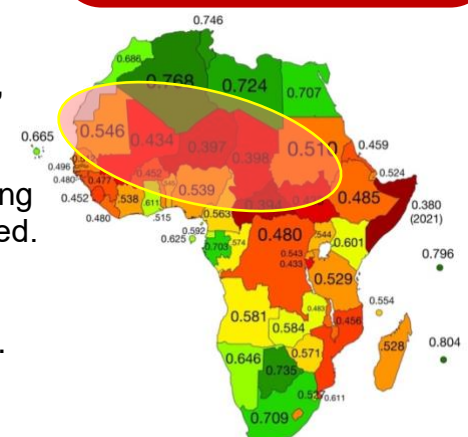
- **Poor Government Control** over many regional and rural communities has prevented development of crucial infrastructure, particularly in fields such as education & healthcare (which both serve to reduce fertility rates.)
- **Corruption amongst officials** has meant aid to the region totalling nearly \$5Bn per year gets redirected away from where it's intended.
- **Militant Conflict** in areas such as Mali and Burkina Faso with Islamist groups like Boko Haram have further weakened societal ties, prevented aid, and stalled any improvements to Human Dev. Their religious influence also has an impact on birth rates – very anti-contraception and family planning.

Before continuing, if you want to learn a bit more about Population Pyramids & The Demographic Transition click this box or scan the QR code below.



This metric is an indirect measure of development. Therefore, it is reasonable to assume that these countries are some of the poorest LICs in the world. This is correct. The Sahel region has a low **Human Development Index** (see figure below). Poverty is rife, educational outcomes are poor and healthcare systems under significant strain. Culturally, the best way to earn enough to support your family is having as many children working as possible. Much of the economy of these nations is driven by aid and loans from the United Nations and World Bank.

What's this? Well, we've made just the resource for you. [Unpack Different Theories of Population Growth here!](#)



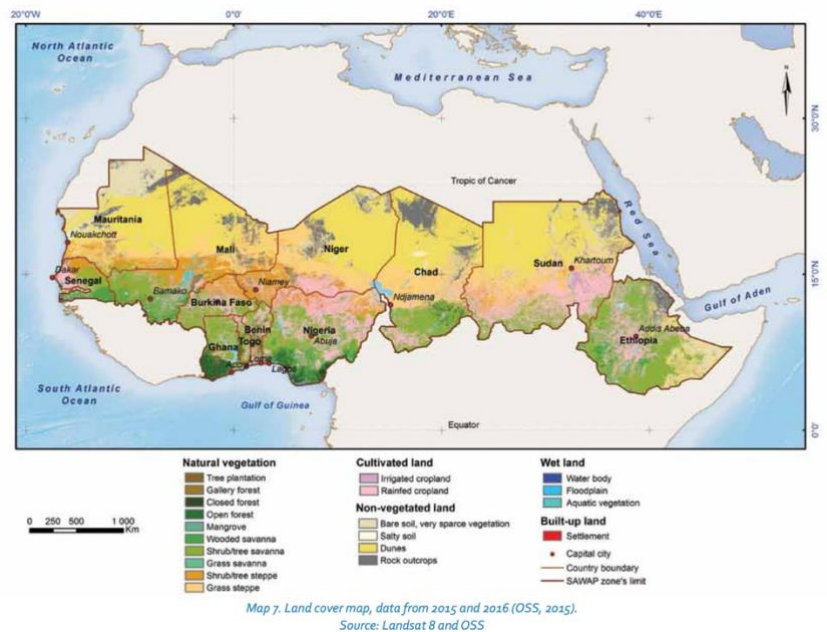
Part 3: The impact of climate

The figure below is a climate/vegetation classification of the Sahel region. What patterns can you spot?

There is one more invisible factor which makes this issue a truly global one: **climate change**.

Like everywhere in the world, the Sahel region is changing. Warming temperatures and smaller wet seasons leads to a process known as **aridification**.

This is especially prevalent as this region straddles the border between desert Sahara and subtropical grasslands/forested area. The gradual southward spread of this inhospitable ecosystem will place further strain on farming and food supply.



So, What's Happening?



The Africa Union has instigated a program to help prevent aridification, known as the '[Great Green Wall](#).' This is a soft management strategy by creating a curtain of climate-tolerant green landscapes, sheltering agricultural production in the region



There is a tight correlation between women's education and fertility rates. The UN's Social & Behaviour Change Communication (SBCC) program aims to promote empowerment of adolescent women and girls.

Educating and lessening the cultural and accessibility barriers to effective contraception through nationwide programs organised by the World Bank.



A* Extra Learning: Refugees from the Sahel Region

So many contemporary demographic issues are global. Their impacts straddle borders, mountains, and oceans. Look at the figure to the top right. It's from an old article showing how many people are affected in Sahel countries by drought and aridification, and subsequent food shortages. It would seem fairly feasible that this statistic has only grown since. Think about the risks this might put on geopolitics in the wider region. In a future where climate refugees seek liveable conditions, the sudden outflux of millions of especially vulnerable young people from this region could put a huge strain on global migration programs, both in Africa and the wider community.



Links & Resources:

This is a detailed case study, but a very important one when looking at the risks of high population growth on an underdeveloped region. Generally, though, population growth rates have been in decline for at least the last half century. This is due to a number of factors, which are highlighted in our resource [Population Pyramids & The Demographic Transition](#).

In an example, you'll potentially be asked to contrast it with an area of low population growth (or even decline.). For this we made the resource [Japan is shrinking. Should we be worried?](#) It is a contemporary example of exactly the opposite phenomenon to this, which is occurring across many high-income nations, particularly in East Asia due to a combination of economic, social, cultural, and political factors.

What if I want to practice an actual exam question?

We have you covered! The Geography Portal contains a huge bank of questions tailored to the AQA A-Level specification. Some come from past papers, some from teachers and examiners, all of them have detailed mark schemes which you can read through to figure out how well you did, where you could've added details or for your teacher to grade it.

[A-Level Exam Question & Answer Bank](#)



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