

A Level Geography Transition Work

WELCOME TO THE A-LEVEL GEOGRAPHY TRANSITION PACK


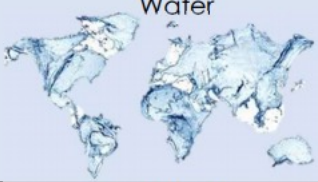
There are 3 parts to this transition pack as you can see below. Work through the pack, reading information and completing the work on the "TASKS" page (you'll notice the red border).

If you are stuck, please use BBC Bitesize and other internet sources to support.

GOOD LUCK! I hope you find this pack interesting, challenging and fun! 😊

Hints/Tips

- The images have (mostly) all been labelled, so you may **refer to them in your writing**.
- I'd advise you to do this in **Powerpoint**, instead of word if you can as it's easier to create and move text around. If you prefer word, that's fine.
- There are plenty of **extra readings and videos** on the slides to help you out / stretch your knowledge.

Sections	Topics	Summary
HUMAN GEOGRAPHY	<p>Globalisation</p> 	<p>TASK 1: What is globalisation? TASK 2: Trade and inequality TASK 3: Impacts of globalisation TASK 4: Globalisation and Migration TASK 5: Interdependence</p>
PHYSICAL GEOGRAPHY	<p>Water</p> 	<p>TASK 1: Water distribution and consumption TASK 2: Causes of water insecurity TASK 3: Water supply problems TASK 4: Water conflicts</p>
SYNOPTIC	Combination	This task will require you to argue which is more important, globalisation or water management.

WHAT IS GLOBALISATION?

Globalisation is known as the increasing interdependence between countries through flows of capital, trade, goods and services as well as culture and ideas. The rate of globalisation is increasing, with developing countries becoming more involved in global markets and forums, whilst developed countries become increasingly interdependent on one another. There are many causes for accelerating globalisation and the apparent 'shrinking' of the modern world:

Economic

The volume and influence of transnational companies (TNCs) has increased - many TNCs have incomes higher than GDPs of many countries. Online purchasing between countries is becoming increasingly common.

Stocks are traded from across countries and countries invest in each other (Foreign Direct Investment). Some financial businesses (pension funds and investment banks) trade large amounts of currencies in order to make profit



Migration

International migration has led to extensive family networks living across the globe, leading to the spread of culture and finance (through remittance). International tourism has increased - more people can travel abroad for holidays due to lower transport costs.



Technology

The internet has rapidly allowed the spread of information and knowledge. Social networking sites have become very popular (Facebook had 2.5 billion users in 2020), Tik Tok has 4million. Networks can allow the spread of culture, ideology and opportunities for migration and tourism. Enormous server farms exist currently (e.g. Microsoft's data centre in Washington) which store substantial amounts of data

Cultural

Americanisation and Westernisation of other (often developing) parts of the world.



Political

Trade blocs (e.g. NAFTA, EU) have become more influential and have reduced tariffs and other protectionist measures. IGOs (e.g. IMF, WTO and the World Bank) work to harmonise economies, whilst promoting democratic ideology. Political views and ideology are expressed in worldwide media outlets e.g. BBC, Fox, CNN.

Flow of Commodities

Goods can easily be imported, increasing countries interdependence on one another (some UK bottled water is imported from Fiji, which is 10,000 miles away) The volume of manufactured goods has increased rapidly due to low cost countries such as Bangladesh and Vietnam



WHAT IS GLOBALISATION?

Globalisation had led to:

- The lengthening of connections - people can now travel further afield and goods are brought in further away.
- The deepening of connections where connections are penetrating more in depth into most aspects of life.
- Faster speed of connections - people can now talk in real time from different parts of the world and you can travel much faster than previously between different countries etc.

Increasing globalisation throughout history

19th and 20th Centuries

Important innovations in **transport** include:

- **Steam power** – In the 1800s, Britain was leading the world in the use of steam technology. This allowed the British to move their goods and armies very quickly into key areas, such as Asia and Africa.
- **Jet aircraft** – Newer and more efficient aircraft have allowed goods to be transported quickly between countries. Increasing competition between affordable airlines (e.g. EasyJet, RyanAir, Jet 2) has led to more people being able to travel abroad.
- **Containerisation** – There are more than 200 million container movements every year and this is extremely important to the global economy. All sorts of goods are transported across the world, lower costs of transport is beneficial for both businesses and consumers

There were also **technological** advancements, which include:

- **Telegraph** – The first telegraph cables were laid across the Atlantic in 1860s, which allowed for almost instantaneous communication and revolutionised how businesses operated.



21st Century

Transport and technology continues to advance in the 21st Century, allowing for instantaneous communication and interactions across the globe:

- **Telephones** - Mobile phone use is very common across the world with smartphones becoming even more popular which has allowed better global communication
- **Broadband and fibre optics** – Since the 1990s, large amounts of data can be transferred very quickly via cables laid out along the ocean floor. The introduction of fibre optic cabling for domestic abuse has accelerated telephone, internet and television speeds for the home.
- **GPS** – Satellites have allowed companies and people to track goods across the world. GPS has become an essential feature of modern cars, and has led to the success of Google Maps.
- **Internet** – The internet is now extremely important - approximately 40% of the world's population have access to it. Social media is extremely influential and, due to their large numbers of users, has led to the rapid spread of news, knowledge and opinions.

TASK 1: WHAT IS GLOBALISATION?

TASK 1:

Complete the following tasks using the information from pages 3 and 4.

- What is globalisation?
- Create a brainstorm explaining the 3 main causes for globalisation. Success criteria: include a picture, a brief explanation in about 10 words. **You can do this using SmartArt on a word document on computer.**
- Create a timeline showing transport and technological changes in two different colours and for each, explain how this increases globalisation. Feel free to use pictures as you go.
- Which 19th/20th/21st century change do you think has been most significant in increasing globalisation? Pick one and explain why it's the most significant.

Challenge:

Read this article from January 2020. The author thinking we have reached a peak globalisation and will start to become less connected in the next few years...

<https://www.bloomberg.com/news/articles/2020-01-24/have-we-reached-peak-globalization>

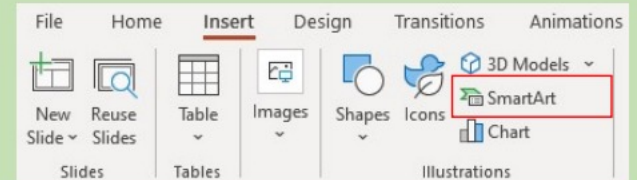
Then summarise your view – do you agree with their argument and why?

Optional video for help & stretch: Globalisation Full Documentary

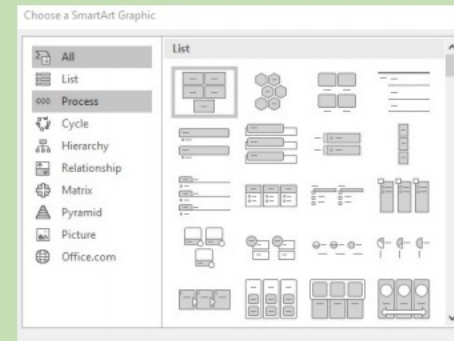
<https://www.youtube.com/watch?v=x1wLbJoSmR0>

How to make a brainstorm on Powerpoint/Word:

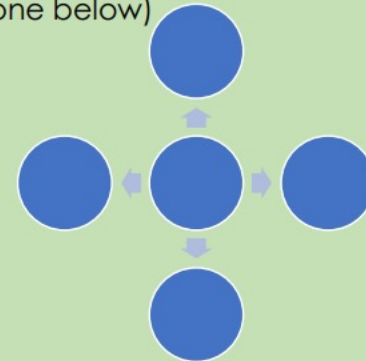
- Click SmartArt under the "Insert" tab



- Choose the template you want. I've chosen mine from "Relationship".



- Edit the template you're given (like the one below)



TRADE AND INEQUALITY

Transnational corporations

Globalisation has resulted in many businesses setting up or buying operations in other countries. When a foreign company invests in a country, perhaps by building a factory or a shop, this is called **inward investment**. Companies that operate in several countries are called multinational corporations (MNCs) or transnational corporations (TNCs). The US fast-food chain **McDonald's** is a large MNC - it has over 34,000 restaurants in 119 countries.

The majority of TNCs come from developed countries such as the US and UK. Many multinational corporations invest in other developed countries. However, TNCs also invest in emerging countries - for example, the British DIY store B&Q now has stores in China.

Factors attracting TNCs to a country may include:

- cheap raw materials
- cheap labour supply
- good transport
- access to markets where the goods are sold
- friendly government policies



Figure 1: Bottling locations of Coca-Cola
<https://www.coca-colacompany.com/company/coca-cola-system>

Interdependence

Interdependence between countries means that they are dependent on one another in some way. Globalisation increased this interdependence. For example

- many developing countries are dependent on developed countries for manufactured goods or aid.
- Developed countries are dependent on developing countries for primary products such as steel and iron.
- Developing countries are also dependent on developed countries for income from tourism, whilst developed countries require developing countries to provide the climate and hospitality for some holiday destinations.
- In this way, countries can be said to be interdependent.
- The greatest volume of trade occurs between developed, capital-rich countries, especially between industrial leaders such as Australia, Canada, France, Germany, Japan, the United Kingdom, and the United States.



Figure 2: Map showing countries with and without McDonalds*

* Price using the Big Mac Index published by The Economist, as an informal way of measuring the purchasing power parity (PPP) between two currencies and provides a test of the extent to which market exchange rates result in goods costing the same in different countries. Source: www.eurostat.com / www.eurostat.ec.europa.eu

TRADE AND INEQUALITY

Causes of inequality in trade

Trade is the exchange of goods and services between countries. More than half the world's trade takes place between just eight countries known as the G8. The G8 includes some of the world's wealthiest and most industrialised countries.

Usually, developed countries export valuable manufactured goods such as electronics and cars and import cheaper primary products such as tea and coffee.

In developing countries the opposite is true. This means that developing countries have little purchasing power, making it difficult for them to pay off their debts or escape from poverty.

The price of primary products fluctuates on the world market. Workers and producers in developing countries lose out when the price drops, but they benefit when it rises.

This instability makes it difficult to plan improvement, either locally on farms or in wider government.

The price of manufactured goods is steadier. This benefits developed countries as they have a stable income and can plan improvements accordingly.

Increasing trade and reducing their trade deficit is essential for the development of developing countries.

However, sometimes developed countries impose tariffs and quotas on imports. Tariffs are taxes imposed on imports, which makes foreign goods more expensive to the consumer.

Quotas are limits on the amount of goods imported and usually work in the developed country's favour.

A trade surplus means that the value of exports is greater than imports. A trade deficit is when the value of imports is greater than exports.

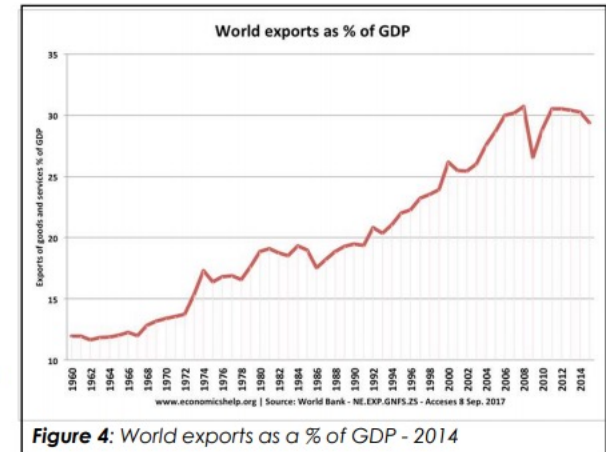
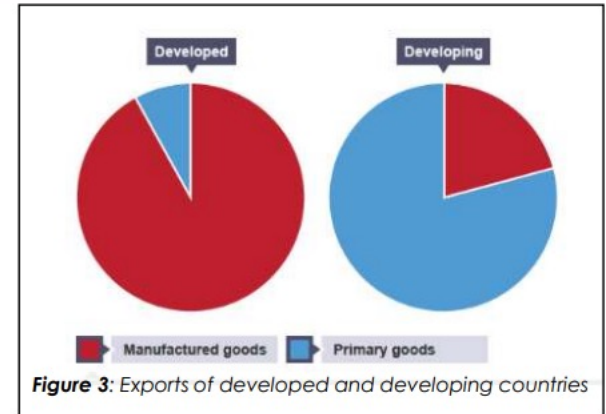


Figure 4: World exports as a % of GDP - 2014



Figure 5: Cotton picking in Uzbekistan

Poorer countries supply resources such as timber, agriculture, oil and mining products, often at low prices.

These products are used in manufacturing industries to make products which are then sold for large profits, often to poorer countries.

Tea and cotton are examples of a low profit, raw material which sells for more once processed. If poorer countries could begin to process the materials themselves they could make more money.

However, the process is often too expensive for them to set up and richer countries make it difficult for them as they want to avoid the competition for their goods.

TRADE AND INEQUALITY

What causes trade inequality?

Highly industrialised countries need lots of cheap raw materials and energy supplies.

They produce a wide variety of manufactured goods using these raw materials.

Their populations can afford to eat foods or buy goods not produced in their own country.

Trade groupings, such as the European Union, encourage trade within the trade grouping, by making it easy to cross borders without paying customs duties. Rich, influential developed countries often act together, for example the EU or the North American Free Trade Agreement. They dictate the terms of trade. 40 per cent of the trade in Canada, Mexico, and the US occurs within the NAFTA partnership.

Transport links have improved within these trade areas. Motorways, high speed trains and tunnels now link EU countries together. This allows for quicker and easier movement of goods between countries.

For poor, developing countries, the situation is different. They tend to have:

- little manufacturing industry and little money to develop it
- many of the population are poor farmers, including subsistence farmers
- there are no powerful trading groupings
- poor or non-existent communications and infrastructure



Figure 7: Bananas in Ecuador

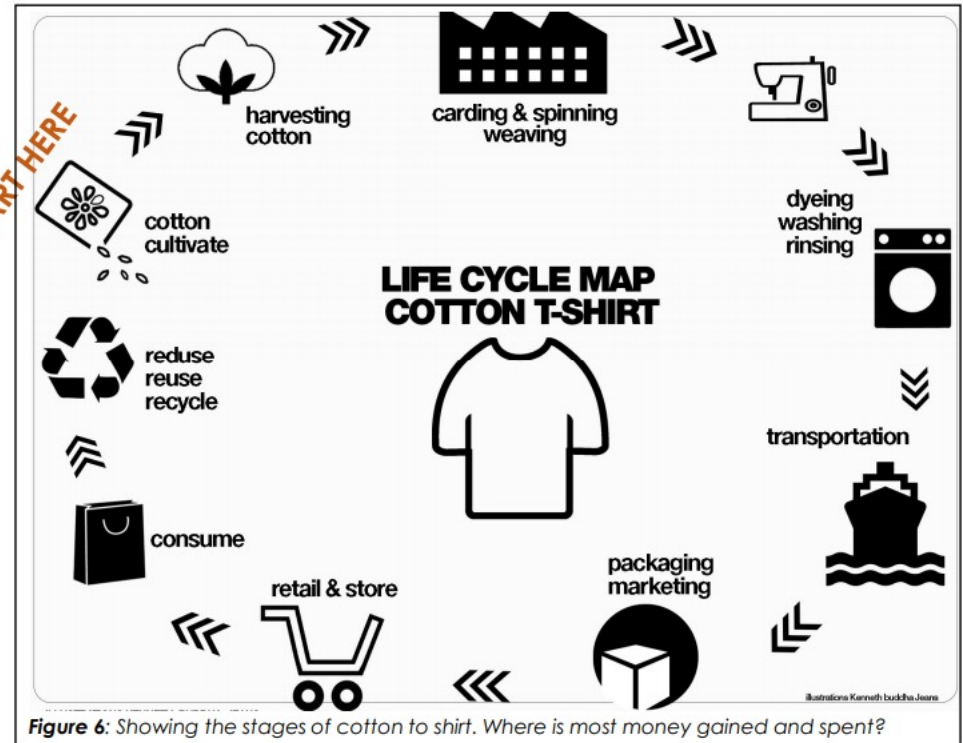


Figure 6: Showing the stages of cotton to shirt. Where is most money gained and spent?

Often poor countries rely on only one or two raw materials such as Ecuador which grows bananas. When the price or demand for bananas falls, the country's income can be badly affected.

This means countries may need to turn to borrowing and increasing their debts. This limits their ability to buy imports.

Ecuador has previously been involved in 'banana wars' with the EU. This was an ongoing dispute over import tariffs. In July 2014, agreement was reached to improve tariff conditions. The Association of Banana Exporters of Ecuador (AEBE), described the agreement as wonderful.

Examples of unfair global trade:



Dumping

Dumping is an unfair trade practice where products are exported at prices below their production costs. The EU and the US subsidise some produce and goods, dumping them on developing countries while concurrently keeping international prices at low levels. Millions of poor farmers in developing countries cannot compete against produce dumped in their countries at low prices.



Forcible opening of markets

For a long time, rich countries have been urging poor countries to open their markets, through the World Bank, International Monetary Fund (IMF) and international trade agreements, partly in order to dump their subsidised produce in these markets. They are now utilising international trade agreements to eliminate all trade barriers.

Patent rights

In order to protect the interests of their businesses, rich countries have raised the levels of protection on intellectual property rights, making developing countries suffer an extra cost of \$40 billion per annum. Affluent and powerful multinational corporations pressure their governments into increasing their levels of protection for intellectual property rights. This raises the prices of necessities such as seeds, medicines and computer software. As a result, many people in poverty cannot afford the medicine they need. Experts believe that 14 million people die from curable illnesses every year. If the price of medicine was set lower, more people's lives could be saved.



Shown in large on next page



Trade alliances

Towards the end of the 1990s a number of regional trade agreements came into existence. Today there are in excess of one hundred. It is thought that just about every country in the world is involved in at least one agreement. These agreements strengthen the political base of a country, ensure security and can even ensure food security between neighbours and trading partners through the use of price fixing, quotas and tariffs. Some agreements have even worked to allow countries into the global economy. Vietnam's present day success is due almost exclusively to its entry into the Asian Free Trade Area (ASEAN). The diagram below shows the different countries involved in various partnerships

TRADE AND INEQUALITY

Globalisation is now the dominant business environment and we are seeing new patterns of trade clearly emerge. Developing countries are sometimes locked into unfair trading agreements with larger companies or large multinationals. They can't afford to withdraw as multinationals can easily take their business elsewhere. Globalisation has not benefitted developing countries in the same way as developed countries. 75 per cent of world trade is carried out by Transnational Corporations. These are multinational companies, with a headquarters in a developed county, but many factories in developing countries. They take advantage of cheaper labour costs in developing countries. Transnational companies include Coca-Cola, Microsoft and Ford.

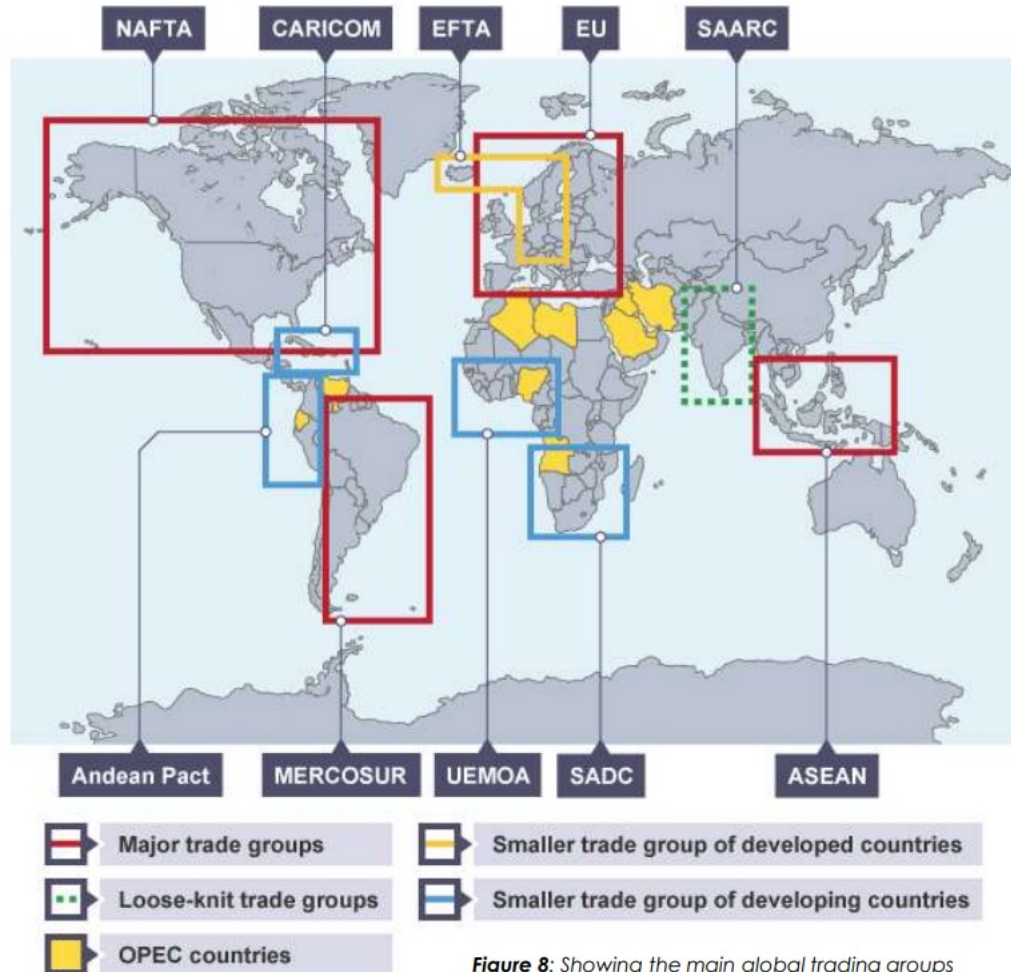


Figure 8: Showing the main global trading groups

TASK 2: TRADE AND INEQUALITY

TASK 2:

Complete the following tasks using the information from pages 6-10.

- a) What are TNCs? Define and give examples.
- b) Page 6 explains why TNCs might be attracted to other countries. Pick two and explain them, using a named example of a TNC (you may use a flow diagram using SmartArt if you want!)
- c) Explain how globalisation has made the world more interdependent. Is this a good or bad thing?
- d) What % (roughly) of the world's trade takes place between the G8 countries and who are the G8 countries? (research yourself).
- e) What difference does it make if a country exports primary goods or manufactured goods?
 - Consider value of good when sold
 - Consider cost of good for them to produce/sell
- f) What type of products are typically exported by developing/emerging countries and which are typically produced by developed? What impact might this have on development in those countries?
- g) Who benefits more from this uneven relationship and why?
- h) What is a quota and a tariff and what is the purpose of it?
- i) What is a trade group/block? Name 4 and identify the countries/types of countries involved. (See figure 8 for help)
- j) Why are groups like NAFTA so powerful compared to developing countries that are not part of trade blocks?
- k) Using Figure 6, describe how a t-shirt is made. At each stage, identify who carries this out and whether they benefit. In one sentence, summarise your findings.
- l) What happened to Ecuador's bananas? Why?
- m) For 2 examples of uneven trade (page 9), explain who benefits, who suffers and why.
- n) How has globalisation changed the way that trade works? Write two PEEL paragraphs explaining two recent changes. Consider who benefits in each.

Challenge:

Read this article from January 2018. It doesn't think trade is to blame for global inequality.

<https://www.theguardian.com/business/2018/jan/02/do-globalisation-and-world-trade-fuel-inequality>

Create a table summarizing why some people might agree and disagree with the author.

Optional video for support and stretch: Inequality & Globalisation

<https://www.youtube.com/watch?v=vecy6YYstOM>

IMPACTS OF GLOBALISATION

Globalisation is having a dramatic effect - for good and bad - on world economies and on people's lives. Critics of globalisation include groups such as **environmentalists**, anti-poverty campaigners and **trade unionists**.

Positive impacts of globalisation

Some of the **positive impacts** are:

- ✓ **Inward investment** by TNCs helps countries by providing new **jobs** and skills for local people. This can benefit the local economy and provide the governments with more skilled workers, higher wages and therefore more tax.
- ✓ TNCs bring **wealth** and **foreign currency** to local economies when they buy local resources, products and services. The extra money created by this investment can be spent on education, health and infrastructure.
- ✓ The sharing of ideas, experiences and lifestyles of people and cultures. People can experience foods and other products not previously available in their countries.
- ✓ Globalisation increases awareness of events in faraway parts of the world. For example, the UK was quickly made aware of the 2004 tsunami and sent help rapidly in response. This aid wouldn't have been as efficient or successful without globalisation and many more would have lost their lives as a result of lack of sanitation, lack of housing and lack of clean water as a result of the tsunami.
- ✓ Globalisation may help to make people more aware of global issues such as **deforestation** and **global warming** and alert them to the need for **sustainable** development. Without globalisation much of what we learn in school and action through charities would not be possible.



Figure 9: Supplying emergency aid to Thailand after the 2004 Indian Ocean Tsunami

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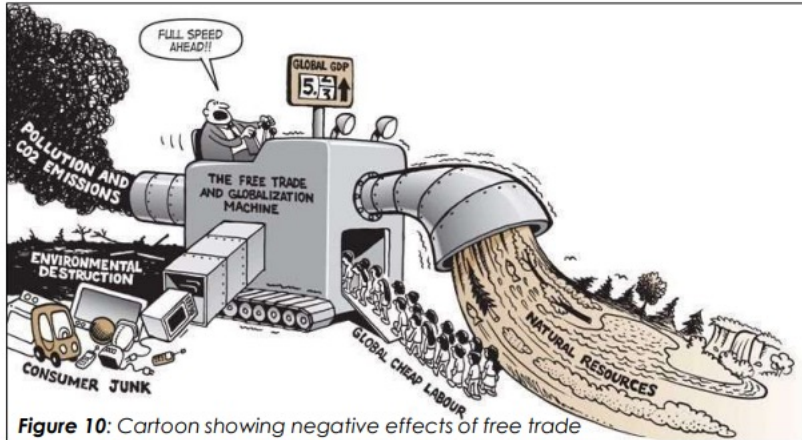


Figure 10: Cartoon showing negative effects of free trade

Negative impacts of globalisation

Some of the **negative impacts** include:

- × Globalisation operates mostly in the interests of the richest countries, which continue to dominate world trade at the expense of developing countries. The role of developing countries in the world market is mostly to provide the North and West with cheap labour and raw materials.
- × There are no guarantees that the wealth from inward investment will benefit the local community. Often, profits are sent back to the TNC headquarters where the TNC is based. Transnational companies, with their massive **economies of scale**, may drive local companies out of business.
- × An absence of strictly enforced international laws means that TNCs may operate in emerging countries in a way that would not be allowed in a developed one. They may pollute the environment, run risks with safety or impose poor working conditions and low wages on local workers.
- × Globalisation is viewed by many as a threat to the world's cultural diversity. It is feared it might drown out local economies, traditions and languages and simply re-cast the whole world in the mould of the capitalist North and West. An example of this is that a Hollywood film is far more likely to be successful worldwide than one made in India or China, which also have thriving film industries.
- × Industry may begin to grow in developing and emerging countries at the expense of jobs in manufacturing in the UK and other developed countries, especially in textiles. This has increased poverty in places like Manchester (UK) and Detroit (USA)



Figure 11: Cartoon showing negative effects of free trade

TASK 3: IMPACTS OF GLOBALISATION



TASK 3:

So we need to start summing up whether we think globalisation is good for the world or not....

Read through the advantages (page 12) and disadvantages (page 13) and summarise in a T-table.

Success criteria:

- Please categorise the impacts (social, economic, environmental, long-term/short-term, local, global). An idea will fit more than one. Be imaginative and use images/colours to help you (Don't forget a key!)
- There may be more than one idea hidden in a paragraph in the reading, so you can't necessary just have 5 on each side
- You may even use some of your own ideas from your readings / notes
- Feel free to add a picture to each if you want!
- Check out my example below:

Advantages	Disadvantages
 Globalisation can make people more aware of global issues like deforestation as updates are communicated through technology like the internet/news. (long-term) 	



Key

Environmental



Global

Optional video: Are there winners and losers of globalisation?

https://www.youtube.com/watch?v=DQ1YZGTgTYA&feature=emb_title

GLOBALISATION AND MIGRATION

Migration and globalisation:

According to the United Nations Population Fund (UNPF), in 2013 the number of international migrants worldwide reached 232 million. Approximately half of the world's migrants were born in Asia, the origin of 1.7 million movements per year for the last 15 years (United Nations Department of Economic and Social Affairs). Whilst Asia may provide a large number of international migrants, Figure 12 shows that the pattern appears to be one way. In 2015 Europe officially received nearly 900,000 migrants (United Nations Commissioner for Refugees), although unofficial estimates put the number at over one million, half of whom are estimated to have fled the civil war in Syria. In the UK, where immigration has increased from a yearly average of 37,000 for the period 1991–95 to an average yearly number of 232,000 during 2010–14, some 330,000 migrants arrived in 2015.

How the internet has shaped modern migration

The internet has provided a network to connect people to different places, in a way never known before.

- **Refugees and smart phones** The recent civil war in Syria and war in Afghanistan have caused lots of migrants to flee their homes and head for the European Union (EU). Most of these refugees work their way overland to Turkey before they then make the dangerous crossing by boat to Greek islands like Lesbos. The number of migrants crossing into Europe in 2015 exceeded one million, and half of them have come through Lesbos. Refugees deciding when to leave and where to go have access to detailed information through their smart phones that will influence their decisions. If borders are relaxed or opened up, then this information can be very quickly found out with apps like WhatsApp. Whilst this might seem surprising, Syria has a high percentage of people with mobile phones (87% in 2014). This means that when migrants have made it to islands like Lesbos, one of the first things they do is buy a SIM card and send a message or a photo back to their relatives via WhatsApp, to let them know that they are safe. The availability of smart phones and apps, such as global positioning service(GPS) apps, have added a new dimension to migration, allowing fast and easy sharing of information. This can include routes, arrests, border guard movements and transport arrangements, as well as places to stay and prices.
- **Skype** At the end of 2015 Skype had 300 million users and had been installed 500 millions times through Google Play alone. The free availability and ease of Skype allows people from anywhere in the world to communicate with each other, and means that people have a much better understanding of where they may be going to, and information and advice can be shared. Their decisions are based more on fact than speculation. Skype has also helped to shrink the world; people do not feel so far away if you can see and chat to them.
- **Money transfers** Paypal, Android Pay and even Facebook Messenger all allow users to easily send money from one person to another. Sending money back home (remittances) has become easier and faster. This ease of moving money around the world is a factor that helps to influence migrants' decisions to migrate.
- **Education** The Khan Academy can claim to be the world's largest school, with 10 million users a month. It is an online education website that provides lessons on YouTube. It is free, and is now developing lessons in local languages to help build a world-class education for anyone, anywhere. Increased access to education has meant that towns in the developing world without secondary schools can still afford to keep and educate their populations. However, it can also serve to increase migration, as a more educated individual is also more likely to have the skills to get a well-paid job in a city rather than in a local town, leading to brain drain.

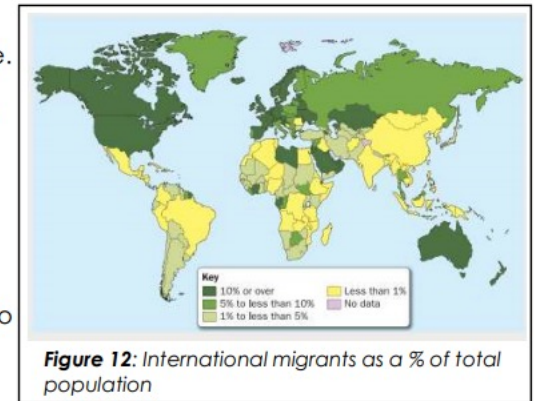


Figure 12: International migrants as a % of total population

It is clear that in today's world, where everything and everyone is highly connected, people are able to move more than ever before. Even when governments try to stop people from reaching their shores, globalisation and sheer determination and desperation have driven people to get to their destination. Migration and globalisation are not new concepts, but the impact that they have on one another has proven to be more evident today than ever before.

GLOBALISATION AND MIGRATION

What is migration?

- Migration is the movement of people from one place to another.
- **Internal migration** – migration within a country e.g. from Bihar to Mumbai in India
- **International migration** – migration from one country to another e.g. Mrs JB is an international migrant. She moved from New Zealand to the UK.
- Emigrate - People who leave their country are said to **emigrate**
- **Immigrant** - People who move into another country are called **immigrants**.
- The movement of people into a country is known as **immigration**.



Figure 13: They have since become known as the Windrush generation

Migrations may be forced or voluntary

- ❖ In 1948, 492 **immigrants** sailed from Jamaica to London on the Empire Windrush, looking to start a new life in the United Kingdom. This is an example of voluntary **migration**.
- ❖ In 1972 President Idi Amin expelled Uganda's Asian population from the country. Many emigrated to Britain - this was forced migration.



Figure 14: "Families were flown into Stansted on specially chartered flights, with Britain taking more than 27,000 refugees

Voluntary migrations

As more countries have joined the European Union many workers from poorer nations have exercised their right to travel to and work in other nations such as Britain.

Case Study: Migration from Eastern Europe to the UK

When countries such as Poland, Hungary and the Czech Republic joined the EU in 2004, their citizens gained the right to move to the UK to live and work. This resulted in large numbers of immigrants coming to the UK in search of work as the UK economy was booming.

Between 2004 and 2006 the UK became the host country for 600,000 Eastern European migrants. Many found jobs, particularly in the construction and retailing trades, earning up to five times as much as they did in their home countries. Many send money home to their families.

As Eastern Europe developed and the UK economy struggled from 2008 onwards, many Eastern Europeans returned to their home countries. This means that their migration was temporary. Many Eastern European immigrants in the UK intend to return to their home country eventually.



Figure 15: Number of Polish-born workers (LFS) in the UK since 2004 (when they joined the EU).

Challenge article "Poland wants its citizens to leave the UK"

<https://www.theguardian.com/commentisfree/2019/sep/19/poland-citizens-return-uk-support-those-staying>

Challenge research: Some Windrush migrants have recently been deported to Jamaica in what's become called the "Windrush Scandal" – because the paperwork proving their British citizenship was lost! <https://www.bbc.co.uk/news/uk-politics-52018824>

Voluntary migration

Case study: Mexico and the USA

There is a 2000 km border between the USA and Mexico as illegal migration is a huge problem. U.S. Border Patrol guards the border and tries to prevent illegal immigrants from entering the country. Illegal migration costs the USA millions of dollars for border patrols and prisons.

In 2012, the Obama administration deported a record 409,849 undocumented immigrants, arriving at a rate of about 34,000 a month.

Many Americans believe that Mexican immigrants are a drain on the economy. They believe that migrant workers keep wages low which affects Americans. However other people believe that Mexican migrants benefit the economy by working for low wages. Mexican culture has also enriched the USA border states with food, language and music.



Figure 17a and 17b: Photos of the border at different points.



Figure 16: Map showing US-Mexico border

Impact on Mexico

- The Mexican countryside has a shortage of economically active people. Many men emigrate leaving a majority of women who have trouble finding life partners. Young people tend to migrate, leaving the old and the very young.
- Legal and illegal immigrants together send some \$6 billion a year back to Mexico. Certain villages such as Santa Ines have lost two thirds of their inhabitants.
- There is a large wage gap between the USA and Mexico. Wages remain significantly higher in the USA for a large portion of the population. This attracts many Mexicans to the USA.
- Many people find living in rural Mexico a struggle because they have to survive with very little money. Farmland is often overworked and farms are small.
- It is estimated that 10,000 people try to smuggle themselves over the border every week. One in three get caught and those that do are likely to continue trying to cross the border at least twice a year.

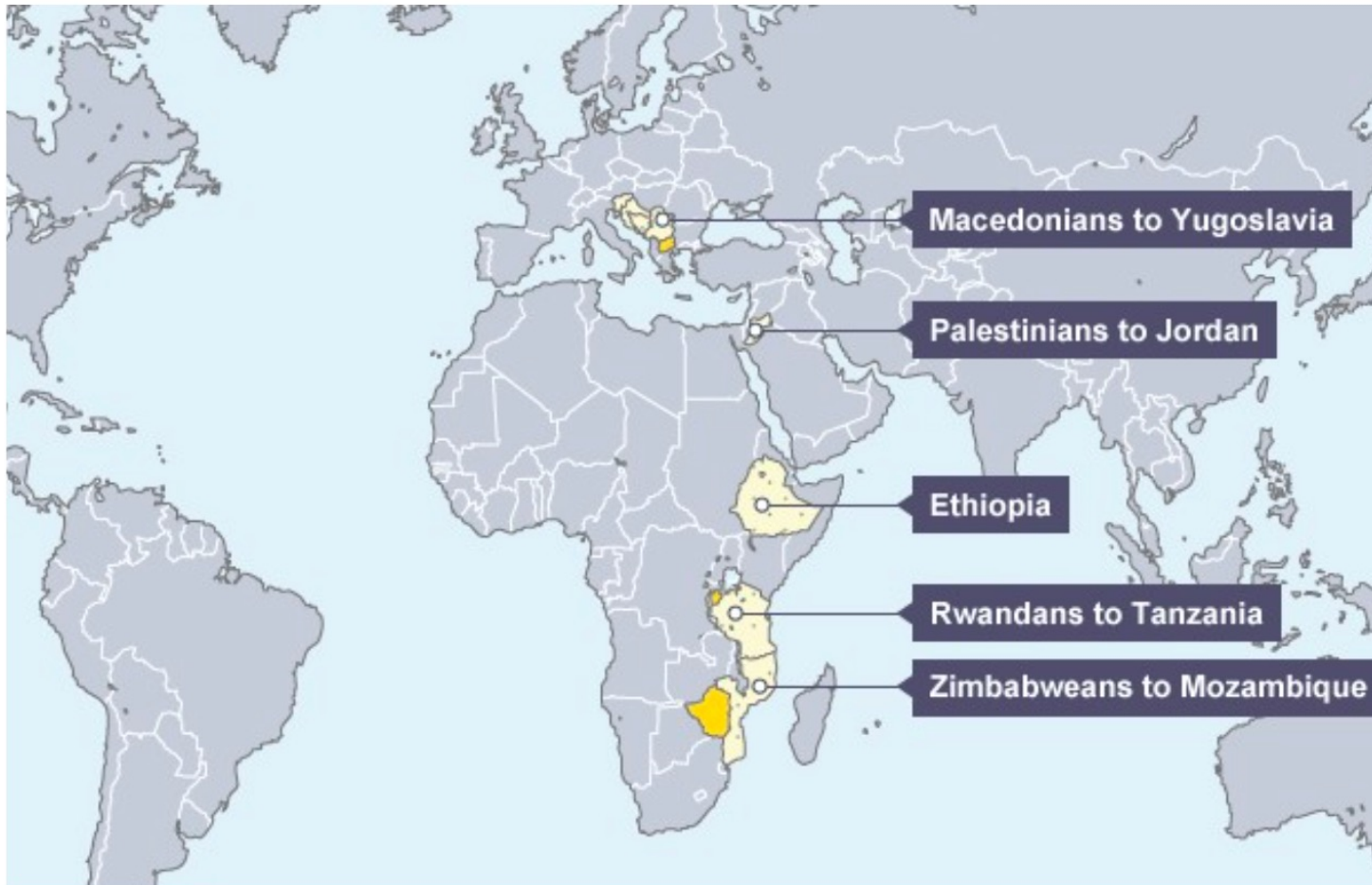
Forced migration

Forced migration can result from a range of circumstances. It is usually the result of sudden, life-threatening events such as war or **famine**.

The recent Syrian crisis for example, has resulted in more than four and a half million registered refugees fleeing the country. In 2016 more than 50% of Syria's population was displaced by this conflict.

While a steady flow of voluntary migrants usually brings benefits to the receiving country, the arrival of forced migrants (refugees and asylum seekers), in the short term at least, can be challenging to accommodate.

The map below shows examples of recent forced migration.



Over the next few pages, read about the examples of forced migration that've occurred recently.

Figure 18: Map of some recent forced migrations

GLOBALISATION AND MIGRATION

Ethiopia

Reasons

Ethiopia is a predominantly rural society. The country experiences a very variable pattern of rainfall. Crop failures and livestock losses can occur when seasonal rains fail, or when excessive rain causes flooding. Pastoral nomads have increasing difficulty in finding water or suitable grazing for their animals. In extreme cases, as in 1984-1985, this results in famine and massive migration movements occur.

Effects

The famine of 1984-1985 resulted in the death or displacement of hundreds of thousands of people within Ethiopia. Around 300,000 people fled to Sudan and approximately 100,000 people fled to Somalia. Forced migrants do not always cross international boundaries. In the drought conditions of 1999-2000, Christian Aid reported migration within Ethiopia - into towns, to search for work or beg for food and into areas of the country where the rainfall was more reliable. These movements can cause conflict between fellow Ethiopians competing for scarce resources or work opportunities. Ethiopia is also host to refugees fleeing the current crisis in South Sudan. The United Nations Refugee Agency (UNHCR) estimates that over 500,000 million people have recently fled from their homes.

Rwanda to Tanzania

Reasons

In 1994 there was a bitter civil war in Rwanda between two ethnic groups, the majority Hutu and the minority Tutsi. An estimated one million people were killed within a three-month period. Subsequently many refugees, mainly Hutus, fled from Rwanda to neighbouring countries. Approximately two million went to Zaire and half a million to Tanzania.

Effects

Most of the refugees in Tanzania are found in refugee camps on the western borders of the country. The arrival of the refugees has had a substantial impact on the environment:

- Deforestation - as refugees seek wood for fuel and shelter.
- Overgrazing - by the cattle, sheep and goats brought by the refugees.
- Water shortage - resulting from the sudden increase in demand.
- Water pollution - since no proper sanitation system was initially available.

The competition for water and firewood led to conflict between the refugees and the local population.



Figure 20: Photos of Rwandan Hutu in 1996



Figure 21: Map of region of Central-East Africa



Figure 19: Map of Ethiopia

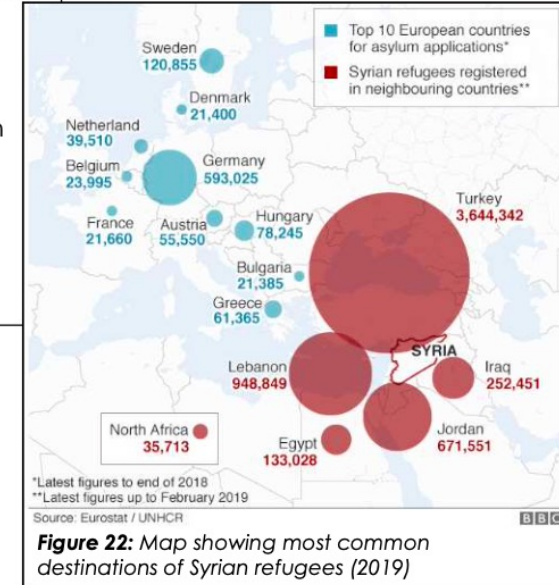


Figure 22: Map showing most common destinations of Syrian refugees (2019)

Syria

Reasons

The Syrian crisis is an on-going armed conflict in Syria between forces loyal to the Ba'ath government and those opposing them. In 2016, reports estimated that fatalities caused by the civil war in Syria amounted to 470,000. An estimated 4.5 million refugees have fled the country, many to neighbouring countries such as Lebanon and Jordan. The infographic below shows the figures in 2016. In addition, over six million people are estimated to be internally displaced within Syria trying to escape escalating violence.

Effects

A large share of Syrian refugees in Jordan are not in camps and have fled into urban areas, beyond the reach of direct assistance from the UN and other donors. Roughly 70 per cent of these refugees are estimated to be hosted in local communities, resulting in enormous strain on public resources. This leads to tensions with the native community as resources are strained.

TASK 4: GLOBALISATION AND MIGRATION

Task 4: Now we're going to look at the relationship between globalisation and migration.

- a) What has happened to global migration figures? (Use statistics in your answer)
- b) Which region of the world has the most emigrants? Which regions have the most immigrants? (Figure 12)
- c) How has globalisation made migration easier? Explain two ways, using examples.
- d) How does the EU affect migration to the UK?
- e) Identify 3 main reasons for voluntary migration (support with examples)
- f) Complete this table demonstrating (using examples) how and why people have migrated around the world recently (both voluntarily and forced). Feel free to add a map, images to your example to improve the quality of your notes.

	What does it mean?	Give a detailed example	Explain why it happens
Forced migration			
Voluntary migration			

- g) Why is it important for governments to understand the difference between forced and voluntary migration?
- h) If the world were to become *less* globalized (as some have suggested), what do you think it would do to migration? Why? Write a PEEL paragraph.

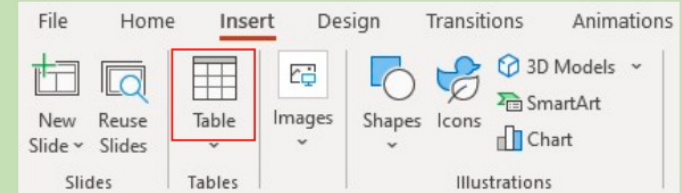
In order to become a British Citizen, immigrants have to take a test to prove they understand "Life in the UK" Here is a link to some example test questions they're expected to know the answer to. Do you think this might be important for immigrants, forced or voluntary? Why?

<https://lifeintheuktests.co.uk/life-in-the-uk-test/>

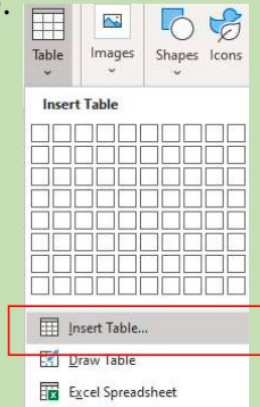
Note: Mrs Jackson-Ball will have to take this test if she ever wants to get a British passport!

How to make a table on Powerpoint/Word:

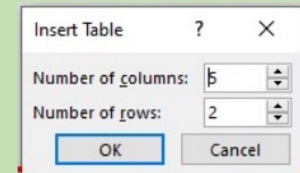
1. Click Table under the "Insert" tab



2. From the dropdown menu, select Insert Table.



3. Select the number of rows/columns you want to make.



4. If you want to add more/delete some, just right click the table and select insert or delete



AN INTERDEPENDENT WORLD

So globalisation has helped to make the world much more interdependent. This means that countries rely on one another to keep their own country running smoothly. There is debate over whether this is good or bad!

Unequal flows of capital, labour, products, services and information between interdependent places can have both positive and negative effects on different groups of people and environments.

In some cases, these unequal flows can act to promote stability, growth and development by equalising conditions and reducing internal tension and conflict. In others they can cause inequalities, conflicts and injustices for people and places.



Benefits of Interdependency

Beneficial effects may include:

- ✓ **Remittances:** As we have already seen, the money sent home by migrants is a very important source of income for many societies.
- ✓ **Labour flows:** Some states like Qatar and Singapore depend on migrant labour for their prosperity. Many global businesses have located their Asia-Pacific head offices in Singapore, including the bank Credit Suisse. Many foreign employees and their families have relocated there and so Singapore has many international schools recruiting teachers from around the world.
- ✓ **Inflows of foreign direct investment (FDI):** Average incomes have soared amongst Asian 'tiger' economies which have been major recipients of American, European and Japanese FDI. Worldwide, one billion people have escaped US\$1.25-a-day poverty since 1990; over 500 million have escaped poverty in China alone. The term 'new global middle class' is used to describe the growing proportion of urban working people who have emerged out of rural poverty. Some work in the manufacturing sector in Bangladesh and China. Others belong to services industries in India and the Philippines. Without inflows of capital from abroad for investment in key projects, this growth would have been hard, to achieve.
- ✓ **Capital flows to countries where TNCs are headquartered:** In return, the countries where **Transnational Corporations** have their headquarters also benefit from globalisation. This is because of huge corporation taxes paid by successful global businesses to their "host" governments. Apple, with its HQ in California, paid US\$6 billion to the US government in 2012; ExxonMobil handed over US\$31 billion. In the past, most TNCs were domiciled in wealthy countries such as the USA. Ireland has attracted the European HQs of companies like Amazon and Google with its 'lowest in Europe' business tax rate (12.5%) to stimulate its economy. Increasingly, successful TNCs are based in emerging economies too. India is the home of Tata; Chinese has companies like Lenovo, Xiaomi, OnePlus and Huawei.
- ✓ **Lending:** Interdependency also stems from IMF and World Bank lending to countries. The World Bank lent Laos US\$1 billion to build a dam on the Nam Theun River. The dam generates hydroelectric power. Laos now earns US\$2 billion annually by selling electricity to its neighbour, Thailand. This is enough to pay back the loan and to increase the GNI of Laos, while helping Thailand too.
- ✓ **Information flows:** Access to mobile internet services is transforming people's lives in developing countries. Small businesses in Kenya are thriving thanks to smartphone apps. Indian call centre workers enjoy a much higher standard of living than their parents did. The growth of global data networks fosters global interdependency while also improving people's quality of life in many societies.

AN INTERDEPENDENT WORLD

Costs of Interdependency

Unequal flows between interdependent places can, however, have harmful effects too.

- × **Loss of profits:** The repatriation of profits by TNCs to their home country may limit the benefits felt by those developing countries where low-wage factories and offices have been established as a result of FDI. Consequently, there may only be a limited “trickle-down” of wealth for local societies. Profits are siphoned back home.
- × **Environmental degradation:** Chinese cities suffer from a phenomenon called “airpocalypse” by the western media. Air pollution reduces life expectancy by up to five years, according to the World Health Organisation (WHO). In Accra, Ghana, entire families undertake the dangerous work of breaking down old computer monitors brought in from Europe, and melt circuit boards down to extract the high-value metals - while generating large amounts of waste, which is discarded.
- × **Worker exploitation:** The “exporting” of unethical or immoral workplace practices to developing countries has been condemned by critics of globalisation. They argue that economic interdependency has, in reality, resulted in dangerous working conditions for people in countries like Bangladesh, Vietnam and India. Other concerning issues include child labour and highly unequal pay for men and women in some global supply chain workplaces, combined with over-long working hours.
- × **Brain drain:** International migration has meant that many developing countries and emerging economies have suffered a loss of skilled workers. Many Indian and Polish doctors and dentists have migrated to the UK. Also, while remittances help compensate for the labour loss and brain drain in the short-term, there is no guarantee remittances will continue to be sent in the long-term. Children of Polish migrants born in the UK may feel less connected to Poland and might send less money in the future.



Figure 23: Photo showing air pollution in Lianyungang, China



Key point: The decision-making of TNCs may affect who benefits most from the global flows which their activities generate. In recent years, some European-based TNCs have relocated their headquarters to Ireland, Luxembourg or the Netherlands where corporate taxes are very low. There is evidence showing the GDP of Ireland has grown at the UK's expense due to the re-routing of profit flows by TNCs like Starbucks and eBay.

TASK 5: AN INTERDEPENDENT WORLD

Task 5: We're going to start to wrap up our learning on interdependence, globalisation, trade and migration.

- What does it mean to say that countries are "interdependent" today?
- Complete a basic T-Table summarizing the impact of a more interdependent world. This time I want you to consider WHO it is having a positive or negative impact on.

Positive impacts	Negative impacts
<ul style="list-style-type: none">Remittance payments sent home by migrants can benefit source country (Positive for country of migrant's origin)	

- Based on all of your learning on globalisation, trade, migration and interdependency, complete the following essay.
"Evaluate the view that globalisation is damaging for the world"

Challenge:

Summary of views on globalisation = has free trade really made the world a better place? Use information from this to improve your essay.

<https://www.theguardian.com/world/2017/jul/14/globalisation-the-rise-and-fall-of-an-idea-that-swept-the-world>

How to write a good "evaluate" essay

Success criteria:

- ✓ Use of facts and statistics (feel free to add your own!)
- ✓ Good use of geographical language
- ✓ Clear line of argument throughout
- ✓ Clear judgement made at the end
- ✓ Considers the significance of the impacts

Structure:

- Introduction:** Define keywords and outline your argument – how far is it bad?
- Paragraph 1:** PEEL summarising 1 positive impact of globalisation
- Paragraph 2:** PEEL summarising another positive impact of globalisation
- Paragraph 3:** PEEL summarising 1 negative impact of globalisation
- Paragraph 4:** PEEL summarising another negative impact of globalisation
- Conclusion:** How far is globalisation good/bad (remember, **make a decision**).

Advice from Mrs JB:

- ❖ Make a **very** clear decision at the end. It is good for a and b but bad for c and d.
- ❖ Plan this out well and decide on your answer before you actually start writing. In this way you'll have a clear line of argument all the way through.
- ❖ Use evidence from this booklet (e.g. articles / figures)

WATER DISTRIBUTION AND CONSUMPTION PATTERNS

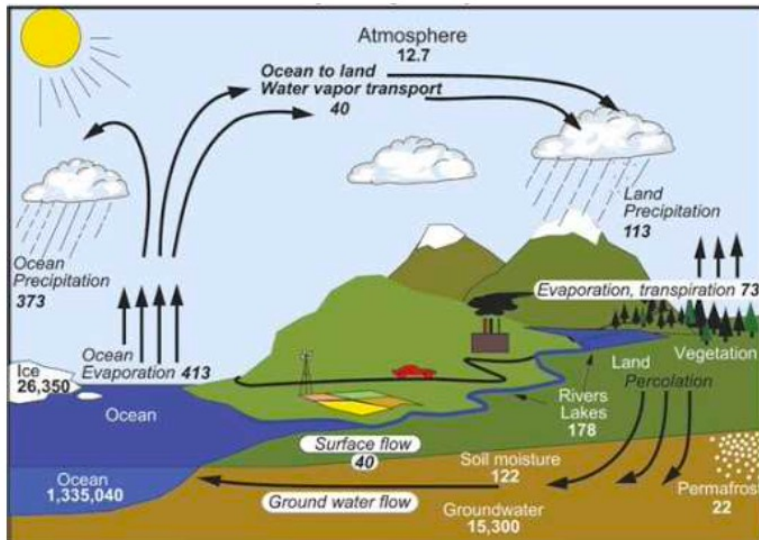
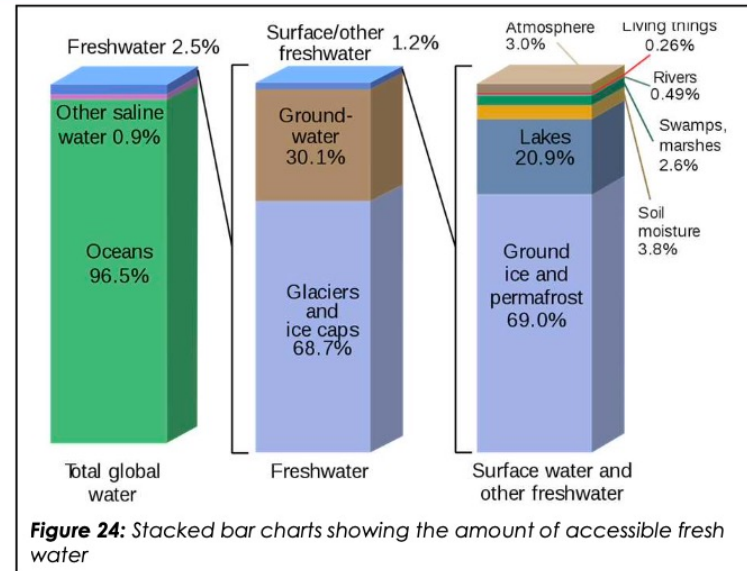
The Earth is often called the “blue planet” because 70% of it is covered with water (see page 1 of this booklet!). The water can come in a variety of forms

- **Liquid** (oceans, lakes and stream)
- **Solid** ice caps and glaciers
- **Gas** (water vapour in the atmosphere)

Water is essential for human life but as well as water for drinking, we also use it in hundreds of other ways – for growing crops, cooking food, washing clothes, in industry and in generating power.

Read this next section with reference to Figure 24

Around 97% of all the water on Earth is contained in the oceans, but this is too salty for us to drink. This leaves only 3% of all water available as freshwater. Of that, 2/3rds is locked up in ice caps and glaciers and most of the rest is stored in soil, vegetation or deep underground in groundwater stores (aquifers). This leaves a relatively small proportion in streams, rivers, lakes and groundwater to provide people with the freshwater they need every day to live. This is why freshwater is regarded as a finite resource.



Water is circulated and distributed naturally via the global hydrological cycle (see figure 25). Water circulates between the stores on land, in the oceans and in the atmosphere, and this circulation can be studied at a variety of scales – from global to local and over short to long timescales.

As a result of natural and human processes, there are significant inequalities in the distribution of freshwater. According to a 2015 United Nations (UN) assessment, 663 million people, approximately a tenth of the world's population, lack of access to safe clean water. Water insecurity has become a significant global issues for the 21st century, as human threats to water security continue to increase as agriculture expands to produce more food and because of threats from climate change and transboundary water transfer issues. In 1995, the vice-president of the World Bank warned that “if the wars of this century were fought over oil the wars of the next century will be fought over water”. Unless we change our approach to managing this precious and vital resource.



WATER DISTRIBUTION AND CONSUMPTION PATTERNS

The global supply of water is unevenly distributed because of the amount of rainfall places receive and the rate at which water is lost through evaporation and transpiration. Many places have a rough balance between the two. But some parts of the world, for example rainforests and mountainous areas, receive more than they lose, resulting in a water surplus. On the other hand, some parts of the world such as the countries in the north of Africa, receive little rainfall and have high rates of evaporation and transpiration causing a water deficit.

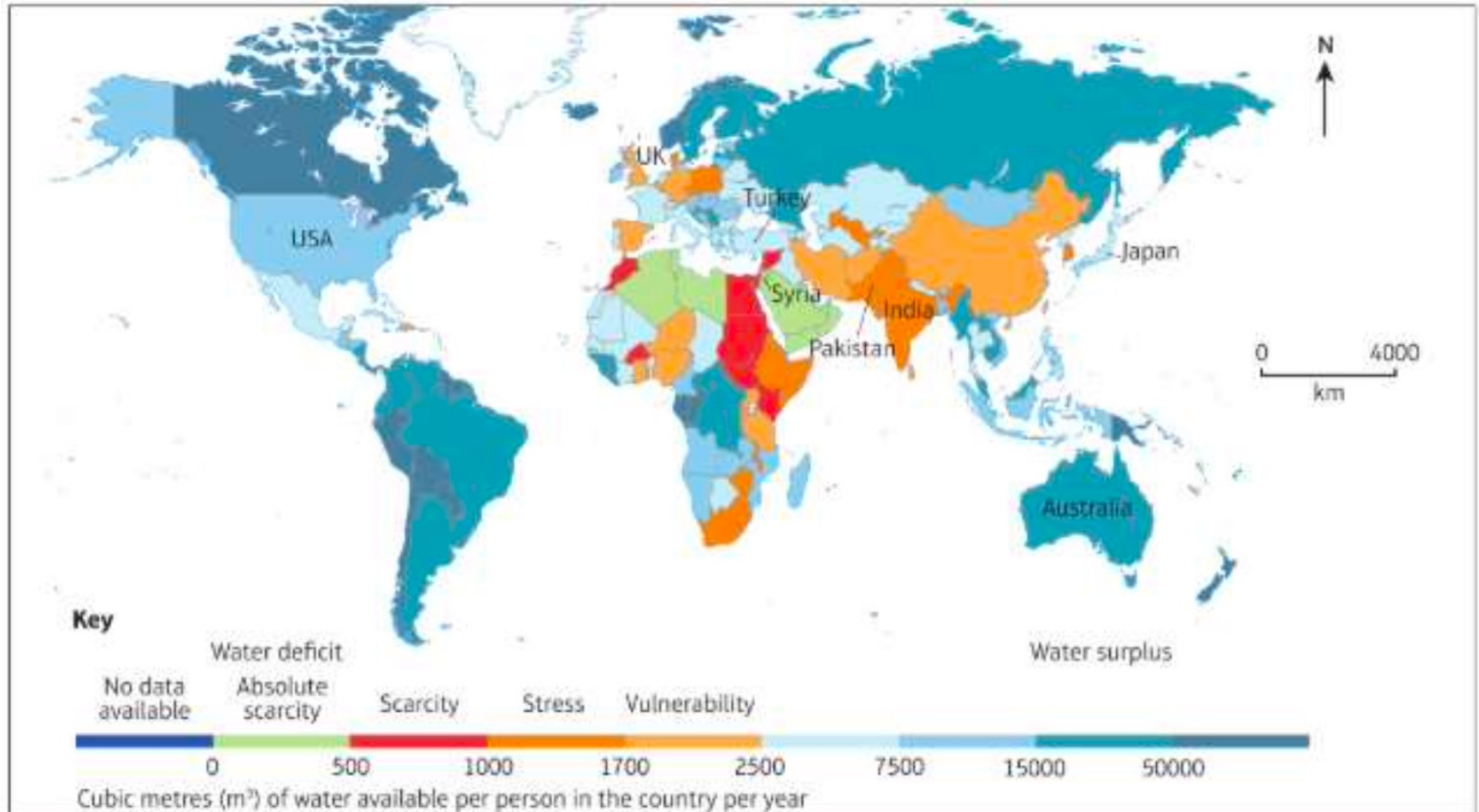


Figure 26: Global water surplus (too much water) and deficit (not enough water)

WATER DISTRIBUTION AND CONSUMPTION PATTERNS

When there is not enough water to meet people's needs this is called **water stress**. Currently, more than 1.2 billion people do not have access to clean drinking water around the world. Water stress is increasing because of three main factors:

1. Population growth

Everyone needs water, so if the number of people increases but the supply of water does not, water stress intensifies. Over the last decade, the increase in demand for water has been double the rate of population growth, so population increase is not the only factor.

2. Climate change:

In some regions precipitation is becoming **unreliable**: e.g. lower amounts of rainfall, intense rainstorms that cause more surface runoff and rainfall at unusual times of year.

Note: Climate change isn't necessarily making all places hotter!

3. Development

Economic development means higher water use therefore, more water is taken out of rivers and lakes, leaving less water for people to use.

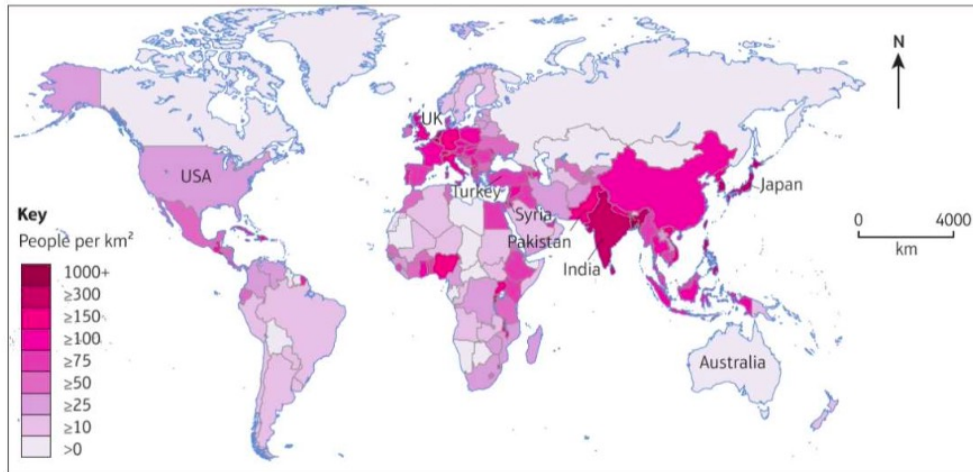


Figure 27: World population densities, by country (2015)

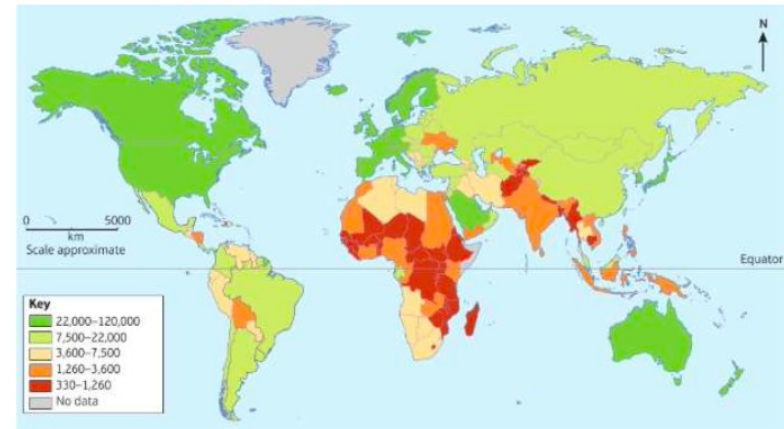


Figure 28: World map showing GDP per capita in US\$ (2014). This is an indication of economic development.

WATER DISTRIBUTION AND CONSUMPTION PATTERNS

Water consumption in countries can be divided between agriculture (irrigation of crops), industry (cooling machinery, washing products) and domestic (drinking and washing) usage. The distribution of water usage per sector varies around the world.

	Japan HDI rank: 20	China HDI rank: 90	Bangladesh HDI rank: 142	Afghanistan HDI rank: 171
Agriculture	64%	65%	88%	98%
Industry	17%	23%	2%	1%
Domestic	19%	12%	10%	1%

Figure 28: Table showing water usage by country

AGRICULTURE

In developing countries, water use in agriculture is often inefficient. A lot of water is added to fields by open irrigation channels and by flooding of fields with water. In contrast, in developed countries, irrigation tends to be more efficient and more targeted, with less water wasted through evaporation. Sprinklers and drip feeds are used to supply just enough water to exactly the right places at the right time.



Figure 29: Irrigation of whole field (left) and "drip fed" (right)

INDUSTRY

Industrial water is used for such purposes as fabricating, processing, washing, diluting, cooling, or transporting a product; incorporating water into a product; or for sanitation needs within the manufacturing facility. In developing countries, small-scale cottage industries use relatively little water in their production processes. As TNCs move their factories to these countries, the amount of water used increases rapidly. For developed countries industrial processes take place in large scale factories that use millions of litres of water in the production process.



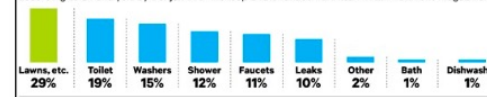
Figure 30: Example of cotton washing in factory making t-shirts.

DOMESTIC

In developing countries a large percentage of people do not have piped water in their homes. Water is often collected by women and children who can walk long distances to Wells or communal taps. This reduces the amount of water is wasted. In developed countries homes have a piped water supply and have boards, showers and flush toilets. Many have washing machines and dishwashers. Some even have swimming pools. Domestic water use often higher than industrial use in developed countries.

Where Our Water Goes

The chart shows water usageln the average U.S. household, which taps about 255 gallons per day, according to an analysis by Benjamin D. Inskeep and Shahzeen Z. Attari in Environment Magazine.



Source: Environment Magazine, July-August 2014.

Figure 31: Common usage of domestic water in US (2015)

RISING DEMAND

The United Nations World Water development report 2015 has projected an increase in global water demand of 55% by 2050. This is mainly due to a growing demand from secondary industries, thermal energy generation and domestic use, all of which are linked to increasing urbanisation in developing countries. The UN projects a 40% global water deficit by 2030 under the "business-as-usual" scenario which would pose serious challenges in some locations.

WATER DISTRIBUTION AND CONSUMPTION PATTERNS

How and why the supply and demand for water has changed.

In highly developed countries such as the USA, the demand for water has increased significantly over the last 50 years as living standards have risen alongside economic development. American citizens expect to have dishwashers and powerful showers in their homes, green lawns in the gardens and sparkling clean cars in their driveways. However the south-west of the USA is an area of water deficit. Some cities like Las Vegas, have been built in the middle of deserts. This has exacerbated (made worse) issues of have been growing problems and falling supply.

Las Vegas get 90% of its water from Lake Mead, a reservoir created in 1936 when the Colorado river was dammed to improve water supply in the semi-arid regions (see Figure 32). Over the last 50 years, Las Vegas' population has increased from around 40,000 people to 580,000. The increased demand for water, plus long droughts in the region, mean that Lake Mead's water supplies have dropped by half over the last 10 years. The original intake pipeline that takes water from the lake to Las Vegas could soon be above the surface of the water (see Figure 33). Engineers are currently building a new intake pipe line near the lake bottom - at a cost of over US\$800million.

Lake Mead is 40 km from Las Vegas. The next best water source for the city is located 500 km away, and a pipeline project to bring water from this location to Las Vegas would cost US\$15 billion as well as causing significant environmental damage. Protesters against the new pipeline argue that Las Vegas residents must realise that present levels of water use are unsustainable.

Lake Mead is the USA's largest reservoir. When it is full it holds 32 km³ of water, but a long drought and increased demand for water means it has not been full since 1983 (see figure 33).

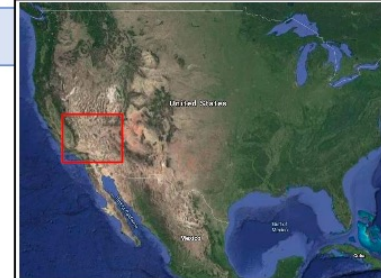


Figure 32: Satellite map of the USA with box showing region in Fig 32.

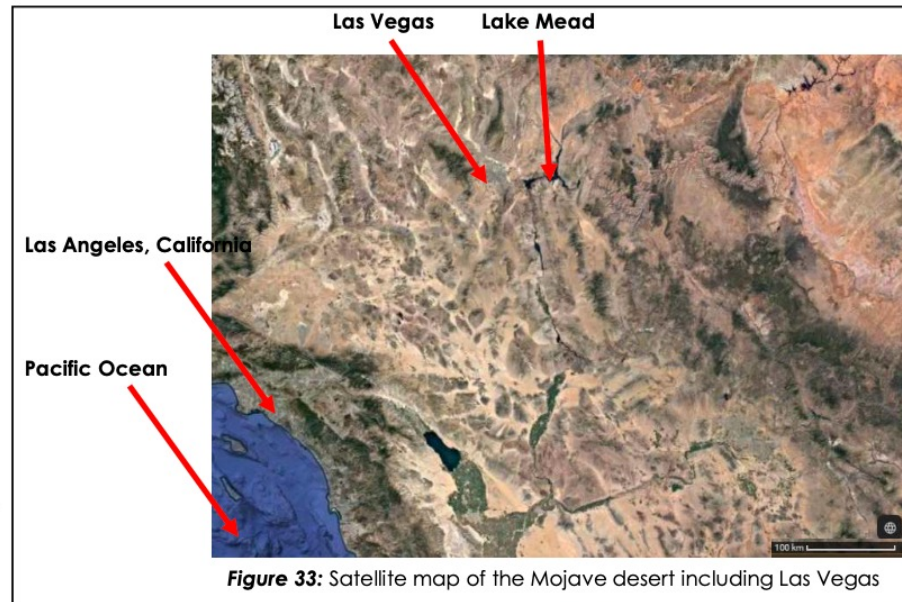


Figure 33: Satellite map of the Mojave desert including Las Vegas

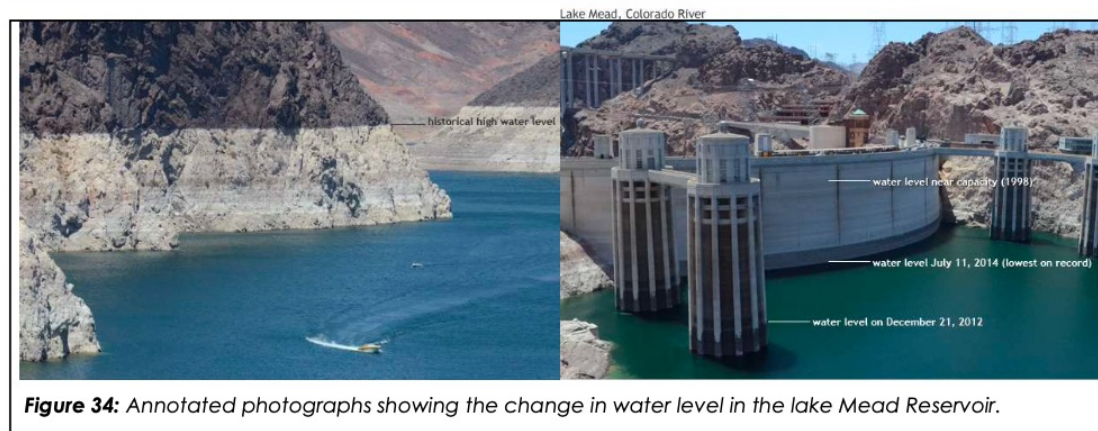


Figure 34: Annotated photographs showing the change in water level in the lake Mead Reservoir.

TASK 1: WATER DISTRIBUTION AND CONSUMPTION PATTERNS

Start with a new sub-heading/Page: Physical Geography: Water Issues

- How much of the world's water is drink-able?
- What is a glacier? And what is permafrost (Fig 24)
- What are the main processes involved in the hydrological (water) cycle?
- How many people lack access to clean, safe drinking water in the world today?
- Describe the distribution of water surplus and deficit in Figure 26.
- How does climate affect distribution of water surplus and deficit?
- Explain the 3 factors affecting water stress
- Create 4 pie charts (or other chosen chart) and write a PEEL comparing water usage in the four countries in Figure 28.
- Explain (using the examples from the table above) why consumption patterns vary between countries.
- Describe the location of Las Vegas (use the internet, Figure 32 and 33 to help you).
- Summarise the causes of water stress in Las Vegas.
- Which of the following suggestions is the best way for the Las Vegas local government to manage the issue? Justify your answer.
 - Hosepipe ban
 - Educate local people on water conservation
 - Make water more expensive for them to use
 - Get more water transported to Las Vegas/Lake Mead
 - Ban more people from moving to Las Vegas area

Challenge:

Will Las Vegas run out of water? – Help and stretch video <https://www.youtube.com/watch?v=-zw8psm6VnE>

AAND watch the video of the famous water fountains of Vegas (they do use recycled water from the hotel)

<https://www.youtube.com/watch?v=iNQpcDuE6e4>



How to create a chart in Microsoft word/Powerpoint

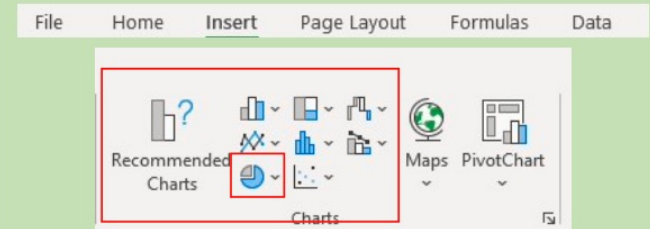
- Open excel and write the data into a table.

	A	B	C	D	E
1		Japan	China	Bangladesh	Afghanistan
2	Agriculture	64	65	88	98
3	Industry	17	23	2	1
4	Domestic	19	12	10	1
5					

- Highlight the data you want in one swoop e.g. in my example I want China (Hold down Ctrl) to select more than one column)

	A	B	C	D	E
1		Japan	China	Bangladesh	Afghanistan
2	Agriculture	64	65	88	98
3	Industry	17	23	2	1
4	Domestic	19	12	10	1

- Select your graph type / Recommended graphs



- You can then play with "Chart Design" to add labels/change colours etc.



HUMAN AND PHYSICAL CAUSES OF WATER SECURITY

There are significant global variations in the distribution and availability of fresh water resources, due to natural climate variability between **arid and humid climate and over wet and dry seasons**. Climate change may increase these variations and the risks associated with scarce supplies. Increasing variability in precipitation patterns, which many countries have already begun to experience, is leading to direct and indirect effects on the whole the hydrological cycle with changes in run off and aquifer (under ground water storage) recharge and in water quality.

The warmer climate at some locations will increase rates of evaporation and transpiration, leading to **less effective precipitation** (the amount of precipitation that is added and stored in the soil after losses). In addition the higher water temperatures of a warmer climate and localised industrial discharges of warm waste water increase many forms of pollution. **Warmer waters encourage the growth of bacteria** and other organisms that are harmful to human health. The quality of water may be affected by sedimentation, nutrient enrichment, dissolved organic carbon, pathogens, pesticides and salt, as well as thermal pollution, with possible negative impacts on ecosystems, human health and water system reliability and operating costs.

Under natural conditions the seaward movement of freshwater reduces salt water encroachment (where salty water encroaches – creeps up on – fresh water) on coastal zones, and soil moisture and groundwater remain fresh. However **global sea-level rise** and localised abstraction of rainwater are increasing the risk of **salt water intrusion** into many coastal areas. Extensive ground water pumping from fresh water wells lower the water table, and a little salt water to move into soils and aquifers. Thermal expansion of the sea, along with melting ice sheets and glaciers end result of global warming-or enabling salt water to intrude further inland, threatening farming and natural ecosystems such as the Sundarbans National Park in Bangladesh. These trees create a natural wall protecting the India-Bangladesh coast from flooding.

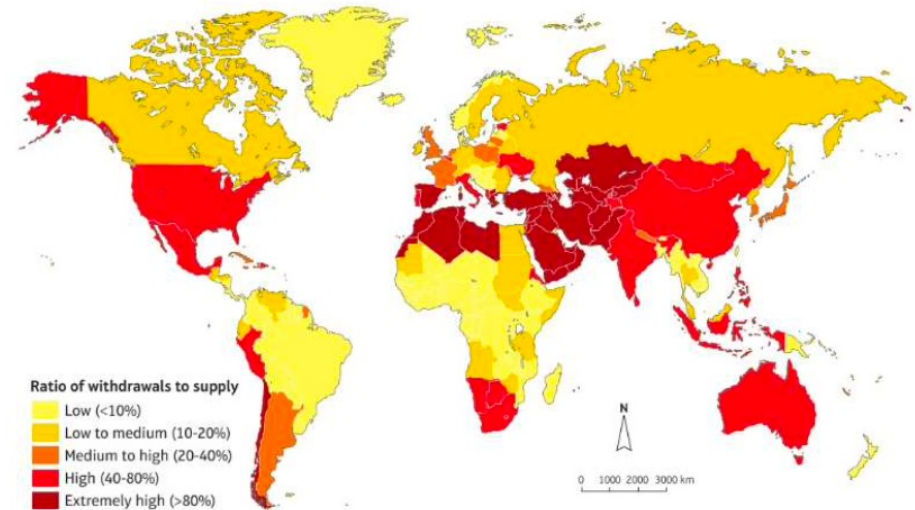


Figure 35: Projected global variations in water stress by 2040 (based on people continuing "business-as-normal")



Figure 36: Map showing location and extent of Sundarbans National Park, which is at greater risk of flooding on the border of India and Bangladesh

Sundarbans flooding pictures:

<https://www.nationalgeographic.com/magazine/2019/07/sundarbans-mangrove-forest-in-bangladesh-india-threatened-by-rising-waters-illegal-logging/>

HUMAN AND PHYSICAL CAUSES OF WATER SECURITY

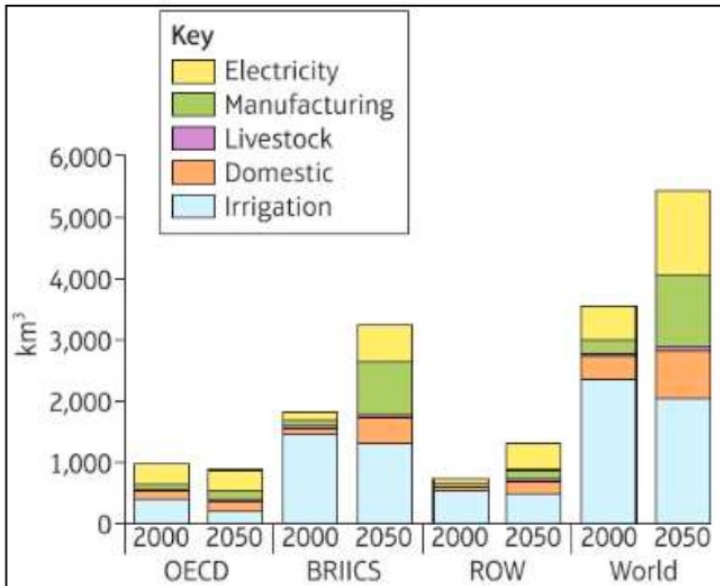


Figure 37: Global water demand in 2000 and 2050

- **BRICS** = Brazil, Russia, India, Indonesia, China, South Africa
- **OECD** = Organisation for the Economic coordination and development (37 countries, mostly European/Western)
- Doesn't include farming that relies on rainwater, only irrigated farming.

Water availability is also affected by **pollution and contamination**. Most problems related to water quality are caused by intensive agriculture (chemical fertilisers and pesticides), industrial production (wastes and chemicals), mining (dangerous metals), untreated sewage (harmful bacteria), and urban run off and waste water. Many cities in developing countries have inadequate storage and water infrastructure to collect and treat so rich and separate it from rivers; it is estimated up to 90% of all waste water in developing countries is discharged untreated directly into rivers, lakes or oceans. Expansion of commercial agriculture (agribusinesses) has led to increases in nitrate and phosphate fertiliser applications, causing eutrophication of freshwater ecosystems and significant environmental and health risks.

Global gross domestic product (GDP) rose at an average of 3.5% per year from 1960 to 2012. During the same period, population growth, urbanisation and industrialisation, along with increases in production and consumption, have generated ever increasing demand for freshwater sources.

Strong income growth and rising living standards (**a growing middle-class**) have led to sharp and perhaps unsustainable **increase in water use**, especially where supplies are vulnerable or scarce and where the distribution, price, consumption and management of water are poorly managed all regulated. This growing middle class also have a higher demand for meat (water is needed for the crops for animals to eat!) for larger homes (water is used in concrete manufacture) and for motor vehicles, appliances and other energy consuming devices (needing HEP and cooling water for power stations).

Agriculture is the human activity with the largest use of water (70% globally and 90% in developing countries), and excessive water withdrawals for agriculture have created problems from California to India.

Freshwater withdrawals for **energy production** account for 15% of the worlds total because nearly all forms of energy require some input of water as part of the production process thermal power generation and hydro power account for 80% and 15% of global electricity production respectively and require large quantities of water. Inefficient use of water for crop production empty aquifers, reduces the river flows, degrades wildlife habitat. Poor practice and use of sea-water has caused salinization (made salty) of 20% of the global irrigated land area. This makes the area then unable to grow crops.

Groundwater plays a substantial role in the water supply. Worldwide, 2.5 billion people depend solely on groundwater resources to satisfy the basic daily water needs, and hundreds of millions of farmers rely on groundwater cities to sustain their livelihoods and insure food security. It is estimated that groundwater provides drinking water for at least 50% of the global population and 43% of the irrigation water. **Over-abstraction occurs when too much water is removed from ground water so that supplies diminish (decline)**; an estimated 20% of the worlds aquifers are over exploited. Groundwater levels are declining in some of the worlds intense farming areas, such as the North China plain, and around numerous mega cities such as Beijing.

TASK 2: HUMAN AND PHYSICAL CAUSES OF WATER SECURITY

Task 5: Which are more significant, human or physical factors in causing water insecurity?

- a) Identify a country with the following climate patterns:
- Arid
 - Temperate
 - Humid
 - Suffers from monsoon rain in wet season
- b) Why are warmer waters bad for water security?
- c) What is salt-water encroachment?
- d) Complete the following table summarising the physical and human causes of water insecurity

Human causes	Physical causes

Water inequality is a global issue - here's what we must do to solve it



The problems of water scarcity and polluted supplies are no longer solely the preserve of developing countries

Image: ohhnyy McCling on Unsplash

Challenge:

An article on water inequality

<https://www.weforum.org/agenda/2019/10/water-inequality-developing-world-usa-west/>

Do you agree with the author's solution? Why might it be difficult to implement?

Water supply problems in the UK

There are three main reasons why the UK sometimes has water supply problems.

- 1 Supply and demand are not balanced. The areas where rainfall is highest have the lowest numbers of people, but where demand is highest, there is less rainfall.
- 2 A seasonal imbalance. It rains more in winter than in summer, so the geographical imbalance can be made worse if areas of high demand also experience droughts.
- 3 Ageing infrastructure. The UK was one of the first countries to develop piped water supplies and a piped sewage system but those systems are now old and they leak, losing water.

1

Rainfall imbalance

Figure 38 illustrates the problem: annual rainfall totals of over 1000 mm are found in the west and especially in the lightly populated mountainous regions of Wales and Scotland. The high population density of south-east England, however, is in a region where average annual rainfall is below 1000 mm, and in some areas is less than 800 mm, per year

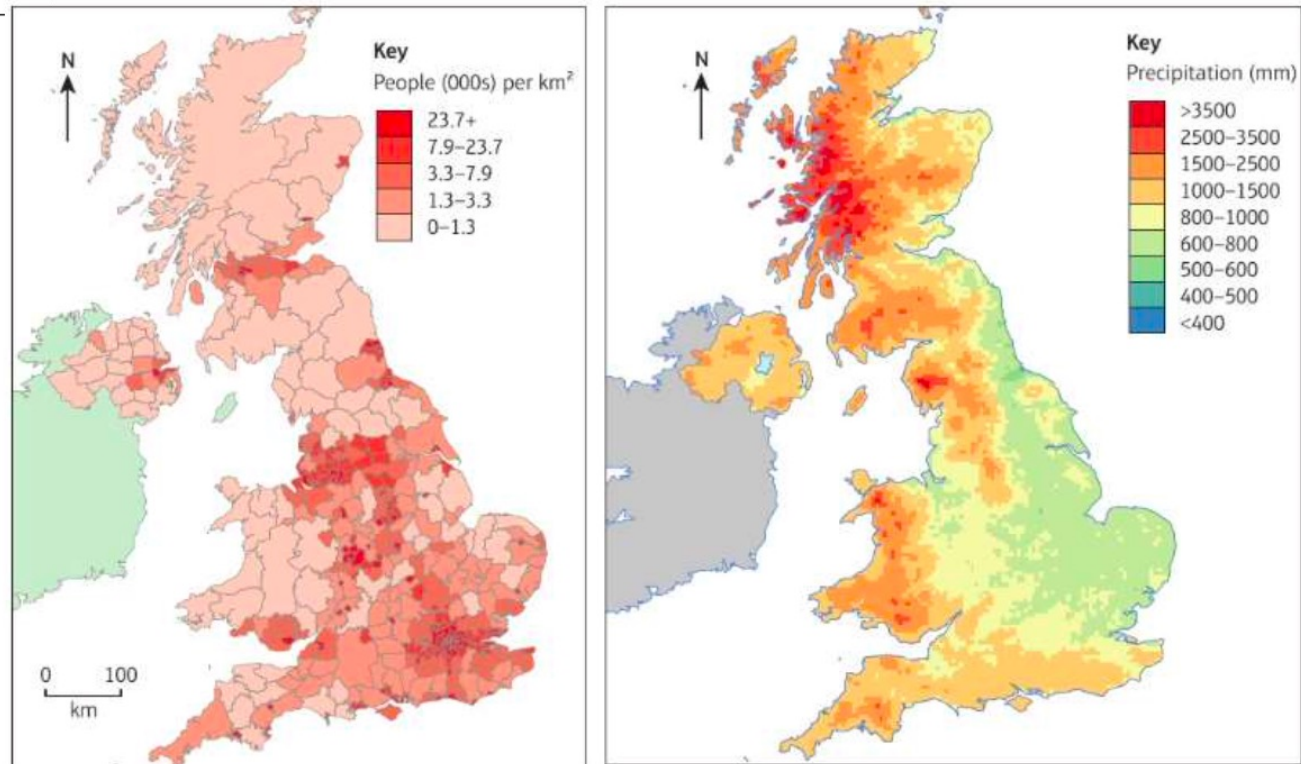


Figure 38: Population density (2012) and annual average rainfall (2014) for the UK

2 Seasonal imbalance

Some regions have a strong seasonal imbalance in rainfall, which means that some months receive far less rain than others. This can cause problems of water supply in the dry months. This only becomes a major supply challenge for the UK's water companies during exceptional droughts.

The UK experienced a series of dry months between the winter of 2009 and spring of 2012, leading to a severe drought. By June 2010, the lack of rain in the preceding winter months meant that reservoir levels had dropped. A hosepipe ban was introduced. In 2011 the lack of rain caused major problems for farmers in the east of the UK. River levels and groundwater supplies ran very low, with crops drying up and wildfires breaking out in the south, Wales and Scotland. The drought ended with very heavy rain from April 2012 through to July 2012, which caused widespread flooding.

Did you know?

A single leaking tap wastes 5500 litres a year – enough to fill one paddling pool every week for the whole summer.

3

Ageing infrastructure

The UK's water supply system is quite amazing – every day the water companies supply the UK's population with 17 billion litres of high quality water, which come from 666 UK reservoirs, plus 1500 boreholes (down to **groundwater**) and 600 abstractions (from rivers). The water companies also collect 16 billion litres of wastewater from us (sewage) and treat it at 9000 wastewater plants so it can be returned to the rivers. All this takes 325,000 km of pipes to bring us the water, and 300,000 km of pipes to take our wastewater away again.

Unfortunately, one problem with the system is that all those hundreds of thousands of kilometres of pipes mean a lot of leaks: it is estimated that 3.28 billion litres of water are lost this way every day. Many of the pipes are old and unable to cope with the higher water pressure that Britain's large population now requires, leading to frequent burst water mains. Although the number of leaks has been reduced by one-third over the last 20 years, it would still cost £100 billion to repair all the leaking pipes in the UK – far more than water companies could ever afford to invest.

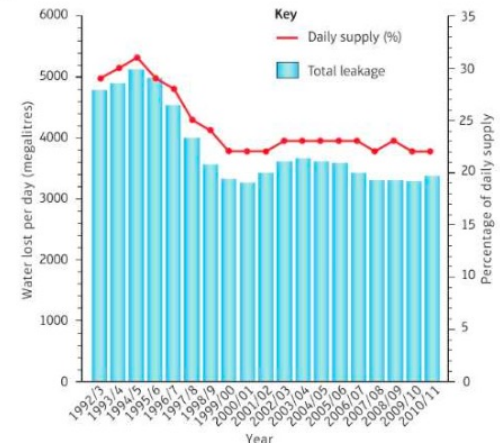


Figure 39: Megalitres of water lost per day as a percentage of daily supply. England and Wales (2013)

WATER SUPPLY PROBLEMS – CASE STUDIES

Northern China is suffering from water scarcity and the problem is most acute in the Hai basin, where Beijing is located. Half of China's people and two-thirds of the farmland are in the north of the country, while 80 per cent of its water is in the south, notably in the Yangtze River basin. Beijing, the capital, has similar levels of water scarcity to Saudi Arabia, at just 100 cubic metres per person a year. The water table under the capital has fallen by 300 metres since the 1970s, and the problem is compounded by poor water quality in up to 60 per cent of river water as a result of pollution, which further reduces the supply of clean water for drinking and domestic use.

China has **designed** a huge hard-engineering solution, the largest inter-basin water transfer scheme in the world: the South-North Water Transfer Project. This project has the capacity to deliver 25 billion m³ of freshwater per year from the Yangtze River in China's south to the drier north by two routes (central and eastern), each covering a distance of over 1,000 km (*Figure 40*). A proposed third western route remains in the planning stage.



Figure 40: China's South-North Water Transfer Project

WATER SUPPLY PROBLEMS – CASE STUDIES

The huge project has raised a number of concerns:

- Economic – it is very expensive, with reservoir and canal construction costs reaching US\$80 billion in 2015 and continuing high maintenance costs and water prices. Many farmers claim that the water will be too expensive and that therefore they will continue to exploit groundwater.
- Social – more than 300,000 people were displaced during the construction of the central route, as the water level of the Danjiangkou reservoir had to be raised by 13 metres.
- Environmental – the transfer of water does not address the underlying causes of water shortages in the north: pollution and inefficient agricultural, industrial and urban use. Extracting water from the Yangtze drainage basin may further reduce discharge levels and affect river ecosystems in addition to the Three Gorges Dam impacts.

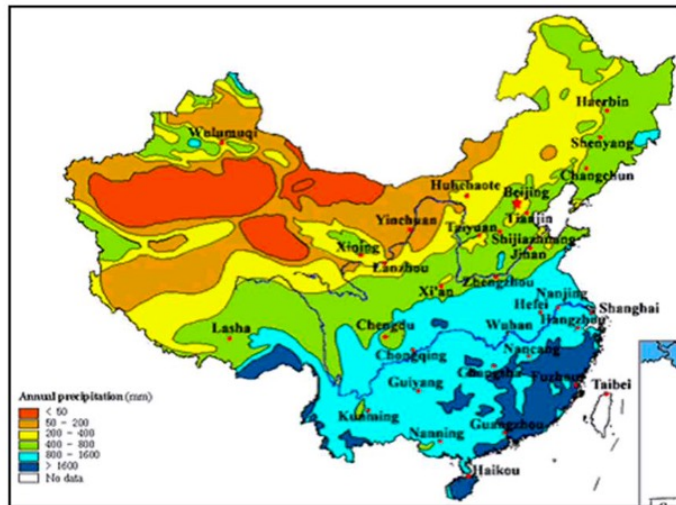
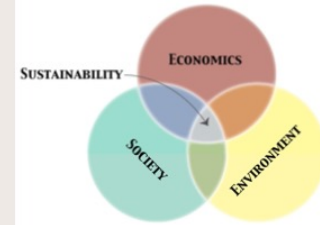


Figure 41: Map showing China's annual precipitation patterns

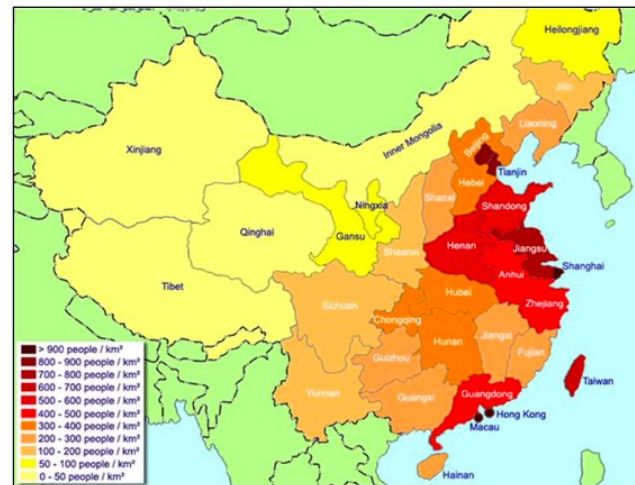


Figure 42: Map showing China's population density patterns

Furthermore, in the past decade two severe droughts in the Yangtze basin have caused water shortages in south China, so the South–North Transfer Project would increase the risk of more frequent water scarcity in the future, in addition to the effects of urbanisation and climate change. This **could have** significant negative economic, social and environmental consequences in the Yangtze basin and create the potential for conflict within China itself.

Critics of the project suggest that, with more effective water management, North China could be self-sufficient in water without the transfer of water from the south. They claim that rainwater harvesting and waste-water recycling could **meet much** of the demand in cities. In agriculture, losses could be reduced by lining irrigation canals with concrete and using smart irrigation techniques.

TASK 3: WATER SUPPLY PROBLEMS – CASE STUDIES

Task 3:

- a) Create a brainstorm summarising the main issues facing the UK government with water management.
On the right, you can see 6 solutions facing the British government in how to manage this.
- b) Rank them in order of best idea to worst idea (*Follow SmartArt instructions on page 5 and choose a hierarchy*)
- c) Justify your top and bottom decision based on what you know about water issues and the UK in general.
- d) Describe the distribution of population and precipitation in China.
- e) Where in China is the Gobi desert (you need to look this one up!)
- f) What is the population of Beijing?
- g) What are the issues facing water supply in China?
- h) How are China and the UK similar and different in their issues?
- i) What have the Chinese proposed? Explain how it would work (You can use a SmartArt flow diagram here if you wish)
- j) Is the South-North Water Transfer a good idea for China to implement?
- k) Is this something that should be implemented in the UK? Why/Why not?

Table 2 How water companies can increase (1–3) or decrease (4–6) the amount of water they supply

Option	Disadvantages
<p>1. Build new reservoirs or extend existing reservoirs so they can hold more water.</p> <p>Water companies in the south-east plan to build or extend seven new reservoirs at a cost of £800 million.</p>	<p>Cost: customers will probably end up paying more for their water to fund these projects.</p> <p>New reservoirs in the south and east mean disruption to local areas and impacts on local ecosystems.</p>
<p>2. Extract more water from natural supplies.</p> <p>Water companies can apply for permission to pump more water out of rivers or from groundwater boreholes into reservoirs.</p>	<p>This needs to be done very carefully or river ecosystems and groundwater supplies can be badly damaged.</p> <p>Groundwater supplies are pretty much at maximum use already when droughts hit.</p>
<p>3. Recycle water.</p> <p>Treat wastewater so it can be used as drinking water and for other domestic and industrial uses.</p>	<p>People in the UK are not used to the 'toilet to tap' concept: some customers might object.</p> <p>Wastewater currently goes back into rivers, so using more for drinking water might affect river flows, which will have environmental impacts.</p>
<p>4. Install water meters in houses.</p> <p>Instead of standard charges, water meters allow for charging by what is used. They can cut water use by 10–15%.</p>	<p>While single-person households usually save money with a meter, families tend to pay more compared with when there is just a standard water rate.</p>
<p>5. Cut water use by farmers</p> <p>Usually the first thing that happens in a drought is that farmers in water-stressed regions are ordered to take less water from rivers and groundwater supplies.</p>	<p>Farmers suffer because their crops do not grow well.</p> <p>Food prices increase in UK shops.</p>
<p>6. Educate people about ways to use less water.</p> <p>Water companies spend a lot of time and money helping schools teach about saving water and providing water-saving services.</p>	<p>Voluntary schemes do not always make a big impact.</p> <p>Public perception about the UK's water supply is hard to change because it seems to rain all the time.</p>

Video showing the Chinese South-North Water Transfer

<https://www.youtube.com/watch?v=8VwllbP72yY>

WATER CONFLICT

The last thing we'll look at is conflict over water.

This can occur within a country when different stakeholders have different opinions on water management.

Sometimes conflict occurs when one water source is transboundary (goes over the boundary – border – of at least two countries).

CASE STUDY: Conflict between water users in Ethiopia

Ethiopia has an ambitious and controversial dam-building programme, designed to turn the country into the 'powerhouse of Africa' and fuel economic growth. The programme has not only caused international conflict (see the Nile case study above) but it has also caused significant internal conflict, such as controversy over the Gilgel Gibe III Dam.

The Gilgel Gibe III Dam and hydroelectric power plant is on the Omo River in Ethiopia. This US\$1.8 billion project began in 2008 and started to generate electricity in October 2015, becoming the third-largest hydroelectric plant in Africa. The project is controversial because of local negative environmental and social impacts.

The environmental impact assessment was not published until two years after construction started. According to critics, the dam will be potentially devastating to the downstream indigenous population as it will prevent seasonal floods. It is estimated that more than 200,000 people rely on the Omo River below the dam for subsistence agriculture, and they are dependent on the seasonal floods to replenish the dry soils for planting. Many of the ethnic groups such as the Mursi and Nyangatom already live in chronic hunger, so the dam not only threatens their livelihoods but their very survival. Many tribespeople are armed to defend themselves against neighbouring tribes, and there are **fears** that water shortages could cause **violent conflict**.

Those supporting the dam construction argue that artificial floods can be released from the reservoir, and irrigation projects are planned for massive cotton and sugar cane plantations in the lower Omo Valley, which will improve the livelihoods of the downstream population. However, critics claim that these plantations will benefit only Ethiopian state-owned companies, and there are reports of human rights violations by the **Ethiopian army** against locals who **oppose** the sugar plantations in the lower Omo Valley, including beatings and intimidation.

In June 2011 **UNESCO's World Heritage Committee** called for the construction of the dam to be halted, to review its impact on Lake Turkana, a natural World Heritage Site straddling the Kenya–Ethiopia border. It is feared that the dam could reduce the level of Lake Turkana by up to 10 metres, affecting up to 300,000 people as well as the wildlife. This could increase the salinity of the water, threatening the drinking water supply, the fishing industry and the lake ecosystem.



Figure 43: The Gilgel Gibe III Dam on the Omo River



Figure 44: The context of the dam. You can see the large lake in Kenya in the South and the dam located in the north.

WATER CONFLICT

CASE STUDY: River Nile transboundary water conflicts

The 6,700-km long River Nile is the longest river in the world, so it is not surprising that it flows through several countries. It is an international transboundary river, whose water resources are shared by 11 **countries** – Tanzania, Uganda, Rwanda, Burundi, Congo-Kinshasa, Kenya, Ethiopia, Eritrea, South Sudan, Sudan and Egypt. The Nile has two major tributaries, the White Nile and the Blue Nile, which meet near Khartoum in the Sudan. Much of the river and its tributaries flow through semi-arid (Sahel) and arid (Sahara) areas, which increases their importance as other water resources are scarce. The river is an increasingly valuable resource for these Nile countries, providing water for domestic, industrial and agricultural purposes and it is under increasing pressure from rapid population growth, economic development and climate change. The river is particularly important to Egypt and Sudan, where it is the primary water source; Egypt depends on the River Nile for 95 per cent of its water needs.

There is a long history of **disagreement** over the use of the Nile, arising originally from historic water allocation agreements that favoured the downstream states of Egypt and Sudan, and more recently as a result of ambitious dam-building programmes that have the potential to reduce downstream flows. In 1929 a Nile **agreement** between Egypt and the UK (the colonial power in Sudan at that time) granted significant water allocations to Egypt and Sudan, making no allowance for the water needs of the other Nile states. It also granted Egypt veto power over construction projects on the Nile and its tributaries, in an effort to minimise interference with the flow of water in the Nile. This historic agreement has led to conflicts between the Nile river basin countries; upstream countries are increasingly harvesting the waters of the River Nile to meet the needs of their growing populations and economies, yet Egypt has maintained that the water rights it acquired through the 1929 agreement must be honoured, and that no construction project may be undertaken on the River Nile or any of its tributaries without prior approval from its government.

In 1999, the River Nile countries, except Eritrea, **signed** the Nile Basin Initiative (NBI) in an effort to enhance cooperation over the use of the Nile water resources. This initiated work on developing a permanent legal framework for governing the Nile River Basin, with equitable water allocation – the Cooperative Framework Agreement (CFA). In May 2010, Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda signed the CFA agreement on sharing Nile water, which raised **strong opposition** from Egypt and Sudan over fears that it would reduce their water rights and allocations.

In April 2011 the Ethiopian Prime Minister **announced** the construction of the Grand Ethiopia Renaissance Dam on the Blue Nile, which met with **an angry response** from the Egyptian president, who stated that Egyptians would not accept any projects on the Nile River that threatened their livelihood. Fortunately, further **discussions** led to a recent agreement that is expected to resolve some of the issues between Ethiopia and Egypt; in March 2015 Egypt, Ethiopia, and Sudan met and signed an agreement on the development of the Grand Ethiopia Renaissance Dam. However, this agreement did not resolve the broader, contentious **issues** of sharing the Nile waters among all Nile countries, as shown by Egypt not signing the CFA.

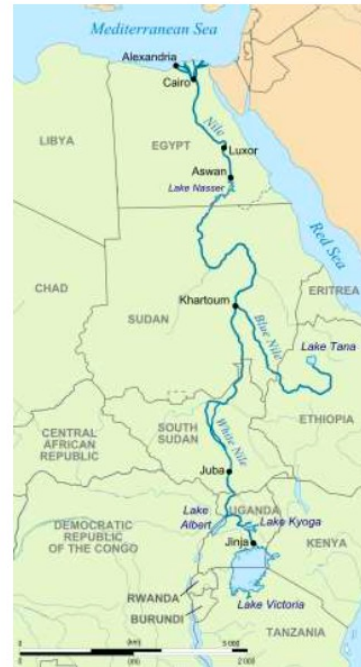
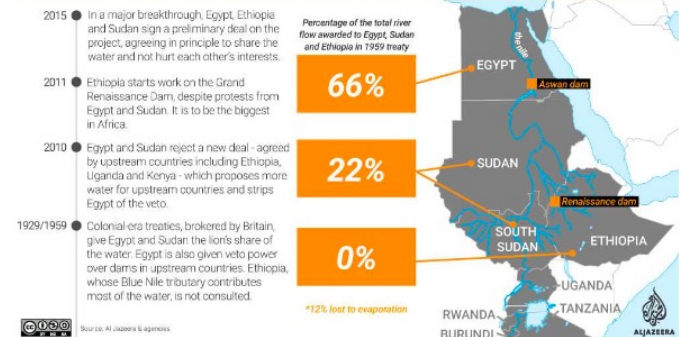


Figure 45: Map showing the location of the River Nile.

Who owns the Nile? It's more complicated than you think



BBC News article about the conflict surrounding the GGIII dam in Ethiopia

<http://news.bbc.co.uk/1/hi/world/africa/7959563.stm>

BBC News article about the Grand Renaissance Dam in Ethiopia and Egypt's issues with it

<https://www.bbc.co.uk/news/world-africa-50328647>

TASK 4: WATER CONFLICT

Task 4:

- a) Define the following words
 - i. Transboundary
 - ii. Conflict (non-violent)
 - iii. Controversial
 - iv. Indigenous
- b) Describe the location of the Gilgel Gibe III (GGIII) Dam.
- c) Why was the dam created? What benefits does it bring to the local area?
- d) Why were there very few environmental concerns raised during the first two years of the projects construction?
- e) Who will be negatively affected by the dam and how (list them)
- f) Why is Lake Turkhana important according to the UNESCO World Heritage Committee?
- g) List the countries that the river Nile is shared between (feel free to use a map in your answer!)
- h) Does the Nile run north-south or south-north? *Think where does it meet the sea?*
- i) How important is the Nile for people in Egypt?
- j) What was the issue with the 1929 agreement about the Nile?
- k) Why did this lead to conflict?
- l) What was the Nile Basin Initiative? What was it's aim?
- m) How have historical agreements affected the bargaining position of Sudan and Egypt?
- n) Write the following essay "**Evaluate the view that climate change is the biggest water-related issue facing the world today**"

Video showing Cape Town's water crisis where the city feared "Day Zero" when the taps would turn off.

<https://www.youtube.com/watch?v=EZmxEY6QoUY>

Article about the Cape Town and the *real* issues regarding water management
<https://theconversation.com/south-africas-real-water-crisis-not-understanding-whats-needed-126361>

How to write a good "evaluate" essay

Success criteria:

- ✓ Use of facts and statistics (feel free to add your own!)
- ✓ Good use of geographical language
- ✓ Clear line or argument throughout
- ✓ Clear judgement made at the end
- ✓ Considers the significance of the impacts

Structure:

- Introduction:** Define keywords and outline your argument – how far is it bad?
- Paragraph 1:** PEEL summarising the impact of climate change causing water issues
- Paragraph 2:** PEEL summarising another water-related issue (Mismatch of population and precipitation distribution, Human over-use, growing middle class, pollution)
- Paragraph 3:** PEEL summarising another water-issue
- Paragraph 4:** PEEL summarising another water issue
- Conclusion:** Which water-related issue is more of a concern? Is it climate change? (remember, **make a decision**).

Advice from Mrs JB:

- ❖ Make a **very** clear decision at the end. It is good for a and b but bad for c and d.
- ❖ Plan this out well and decide on your answer before you actually start writing. In this way you'll have a clear line of argument all the way through.
- ❖ Use evidence from this booklet (e.g. articles / figures)

FINAL TASK

Evaluate the view that water management is a bigger concern to the world today than globalisation”

How to write a good “evaluate” essay

Success criteria:

- ✓ Use of facts and statistics (feel free to add your own!)
- ✓ Good use of geographical language
- ✓ Clear line or argument throughout
- ✓ Clear judgement made at the end
- ✓ Considers the significance of the impacts

Structure:

- Introduction:** Define keywords and outline your argument – how far is it bad?
- Paragraph 1:** PEEL summarising 1 reason water management is a significant concern
- Paragraph 2:** PEEL summarising another reason water management is a significant concern
- Paragraph 3:** PEEL summarising 1 reason why globalisation is a significant concern
- Paragraph 4:** PEEL summarising another reason why globalisation is a significant concern
- Conclusion:** Which is a more significant concern to the world today? (remember, **make a decision**).

Advice from Mrs JB:

- ❖ Make a **very** clear decision at the end. It is good for a and b but bad for c and d.
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Structure:

- ❑ **Introduction:** Define keywords and outline your argument – how far is it bad?
- ❑ **Paragraph 1:** PEEL summarising 1 reason water management is a significant concern
- ❑ **Paragraph 2:** PEEL summarising another reason water management is a significant concern
- ❑ **Paragraph 3:** PEEL summarising 1 reason why globalisation is a significant concern
- ❑ **Paragraph 4:** PEEL summarising another reason why globalisation is a significant concern
- ❑ **Conclusion:** Which is a more significant concern to the world today? (remember, **make a decision**).

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- ❖ Use evidence from this booklet (e.g. articles / figures)

WELL DONE! CONGRATULATIONS!

You've finished the Geography transition work pack! (and probably learnt some skills around computers and data presentation).



We look forward to reading your work and to seeing you in our Geography class in September! 😊