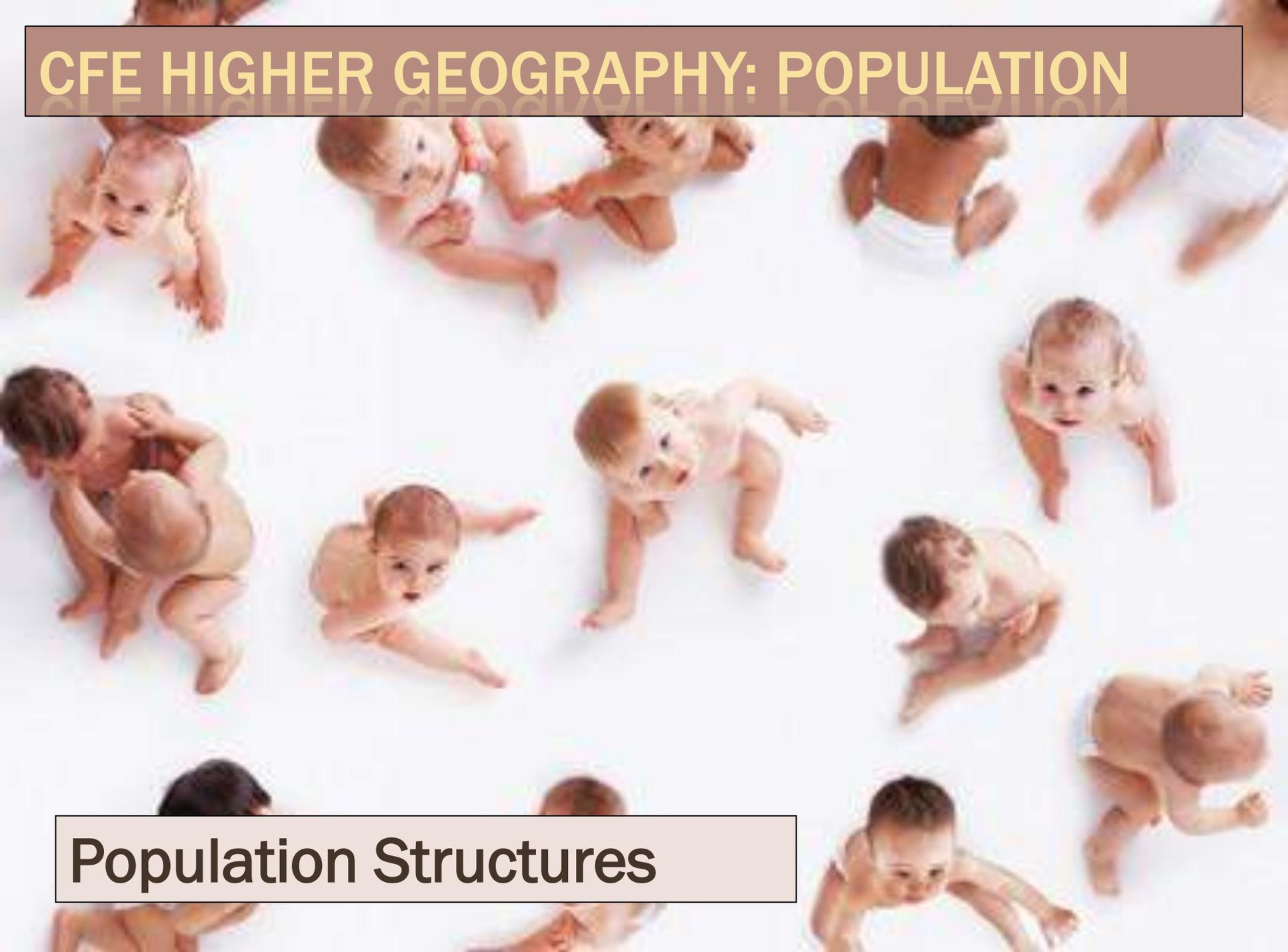


# CFE HIGHER GEOGRAPHY: POPULATION

A top-down view of several babies crawling on a white surface. The babies are in various stages of crawling, some on their hands and knees, some on their stomachs, and some on their hands. They are scattered across the frame, with some looking towards the camera and others looking away. The background is a plain, light-colored surface.

## Population Structures

# POPULATION STRUCTURES

The total population of an area is dependent on the balance between **NATURAL INCREASE** and **MIGRATION**

The natural change in any population is caused by the balance between births and deaths



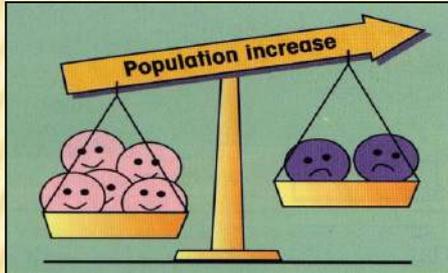
**Birth Rate:** The number of babies born per 1000 people per year



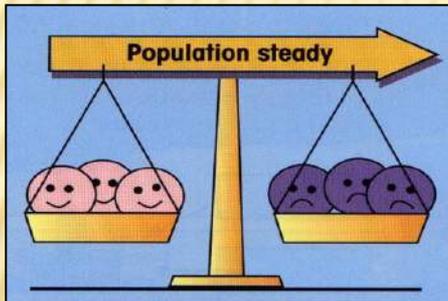
**Death Rate:** The number of deaths per 1000 people per year

Work it out: What will happen if the birth rate is higher than the death rate? Or if the death rate is higher than the birth rate?

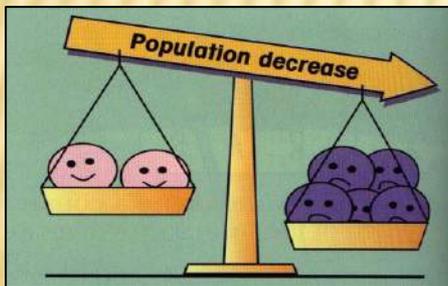
# THE BALANCE BETWEEN BIRTHS AND DEATHS



Birth rate more than death rate:  
**population increases.**



Birth rate and death rate the  
same: **population stays the  
same.**



Death rate more than birth rate:  
**population decreases.**



Take some notes

# FACTORS AFFECTING BIRTHS AND DEATHS

Construct a large version of the table below in your notes (you'll need lots of space)

Births Rate		Death Rate	
High	Low	High	Low

# SHOW YOUR UNDERSTANDING

Later marriages

High infant mortality means lots of babies die before their first birthday.

Couples want a disposable income

Lack of access to medical care

Lack of access to contraception

Waterborne diseases due to a lack of clean water

Emancipation of woman: Women want careers having had access to education.

Lack of

Add some of your own ideas to your table

Couples need children as a source of labour i.e on family farms

Healthy living campaigns; anti smoking, anti drinking, eating well

Sort out the statements into your table as to whether they will affect the birth or death rate and what the impact will be (high or low). **Explain** in detail why.

are expensive to

contraception is widely available

Religious beliefs and tradition promote large families

Poor quality housing with a lack of sanitation

Parents need children to look after them when old

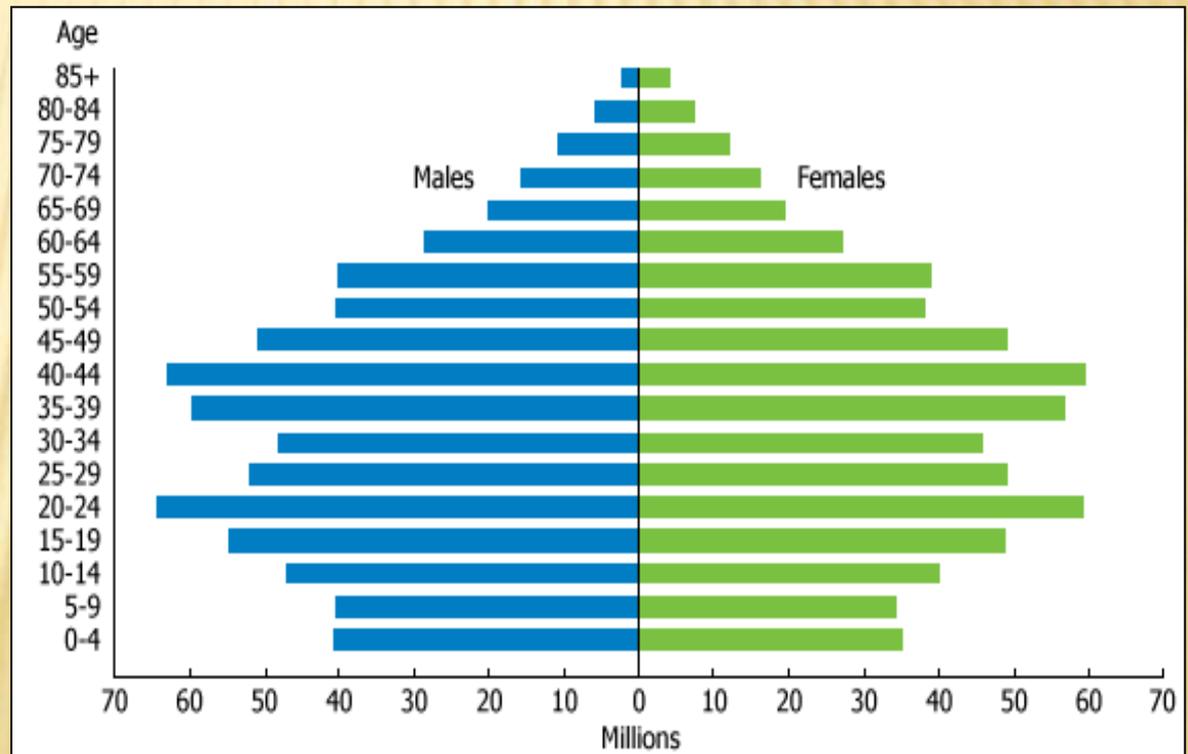
# POPULATION STRUCTURES

In order to display information on Population and changes in Birth Rate and Death Rate we can use **POPULATION PYRAMIDS**.

These are diagrams that show the population *structure* of a country.

A **DEPENDENT** is a person who relies upon others of a working age.

- Population is divided into **5 year age groups**
- Number or % of people in each age group
- Number or % of males and females
- Indicate changes in **BR, DR, Life Expectancy and Infant Mortality**
- Proportion of **Dependents**



# YOU NEED TO BE ABLE TO...

- ✘ Interpret structures for Developed and Developing countries
- ✘ Describe and explain the differences between them
- ✘ Give reasons for any changes
- ✘ Comment on the impact of the structure for the people and government of that country

Obtain Population Structures for any one country and compare current populations with projections for 2050 at:  
<http://www.census.gov/ipc/www/idbpyr.html>

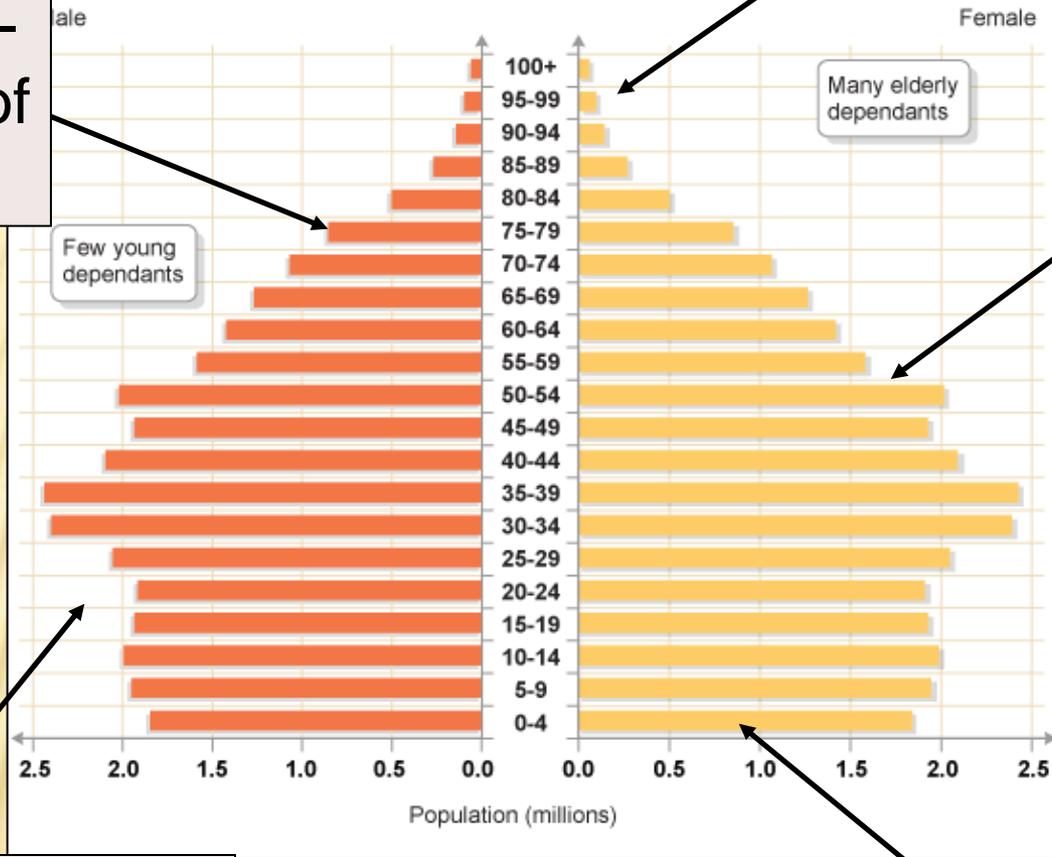
# TYPICAL DEVELOPED COUNTRY STRUCTURE

Glue in and annotate your pyramid



High life expectancy

Quite high % of over 60's - beginnings of Ageing Pop



Many elderly dependants

Few young dependants

Bulge in the middle age groups.

Most of pop middle aged (15-60)

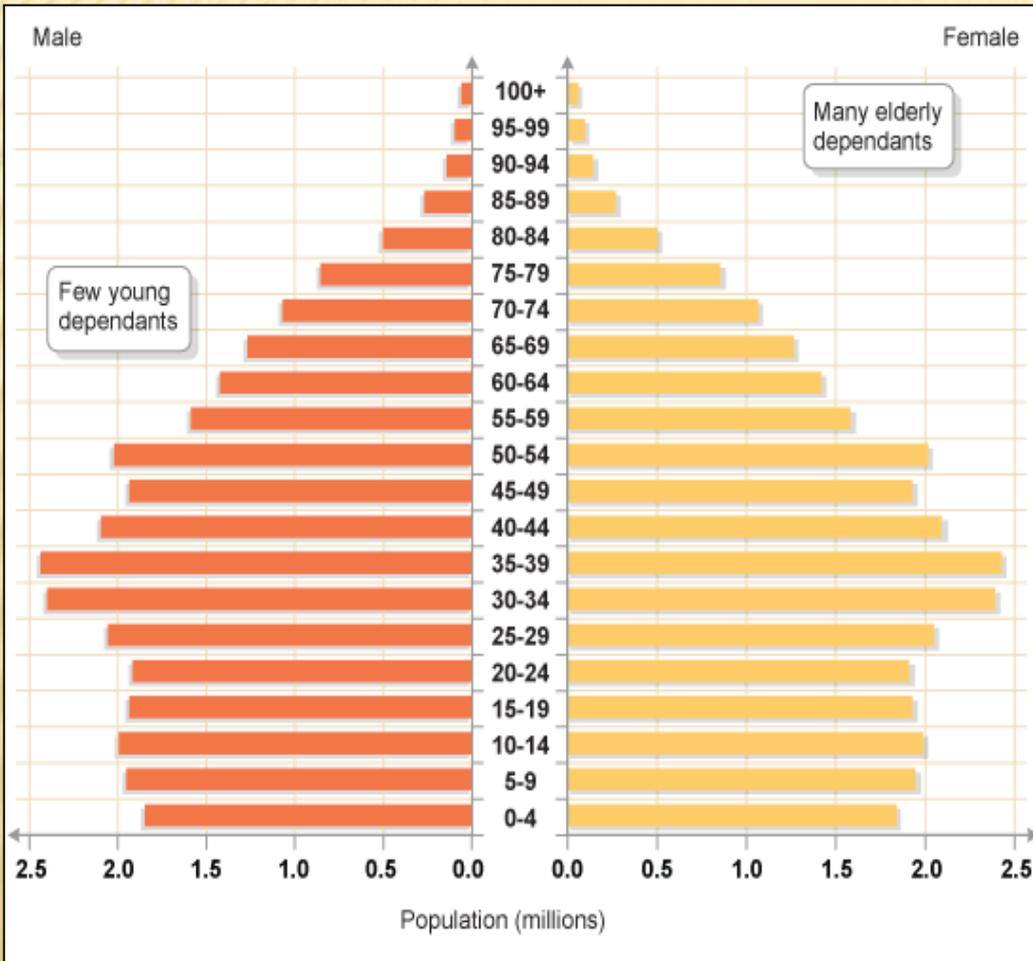
Bullet shape = steady, stable pop

Fairly low BR in both males and females (small base)

# SHOW YOUR UNDERSTANDING!

Describe and explain the population structure for the country shown (8)

Use your notes on birth and death rate and the writing frame shown here to help



- Describe the overall shape of the graph and say what type of country it is
- Describe the base (giving statistics). Explain what this shows about birth rate.
- Give minimum 4 reasons for the birth rate.
- Say what happens as you move up to the working age population (give statistics)
- Say what happens at the pyramid top (give statistics). Explain what this shows about death rate and life expectancy.
- Give reasons for the DR and LE

# CHECK YOUR ANSWER

The population pyramid has a relatively narrow base for both males and females ( about 1.8 million males and females aged 0-4) . This indicates a low birth rate and small proportion of young people aged under 15. This is due to the widespread use and availability of contraception, as well as family planning advice. Many couples are more materialistic, often valuing their disposable income to spend on material possessions and luxuries like cars and nice homes, instead of having the desire to bring up large families which are a financial burden . Also, many women are choosing careers rather than solely being mothers and having lots of children. The low birth rate might also be caused by later marriages which reduce the likelihood of couples having large families. In addition, there is a low infant mortality level, which means that babies born are likely to survive into adulthood, so parents do not need to have lots in the hope that some might survive. The bulge in the middle indicates a large working aged population which indicates that people are not dying at young ages.

The pyramid only gently tapers off towards the top and shows that a large proportion of males and females are aged 60+ ( 0.75 million males and females aged 75-79). This shows a high life expectancy and low death rates, both of which are caused by a good standard of living and health care. There is access to a clean water supply, adequate sanitation systems, and a well-developed health care system with access to doctors and hospitals, vaccinations and medical treatments. Standards of housing and general levels of wealth are likely to be high.

# WHAT PROBLEMS MIGHT THIS STRUCTURE CAUSE IN THE FUTURE?

<http://www.bbc.co.uk/learningzone/clips/why-is-the-uks-population-ageing/537.html>

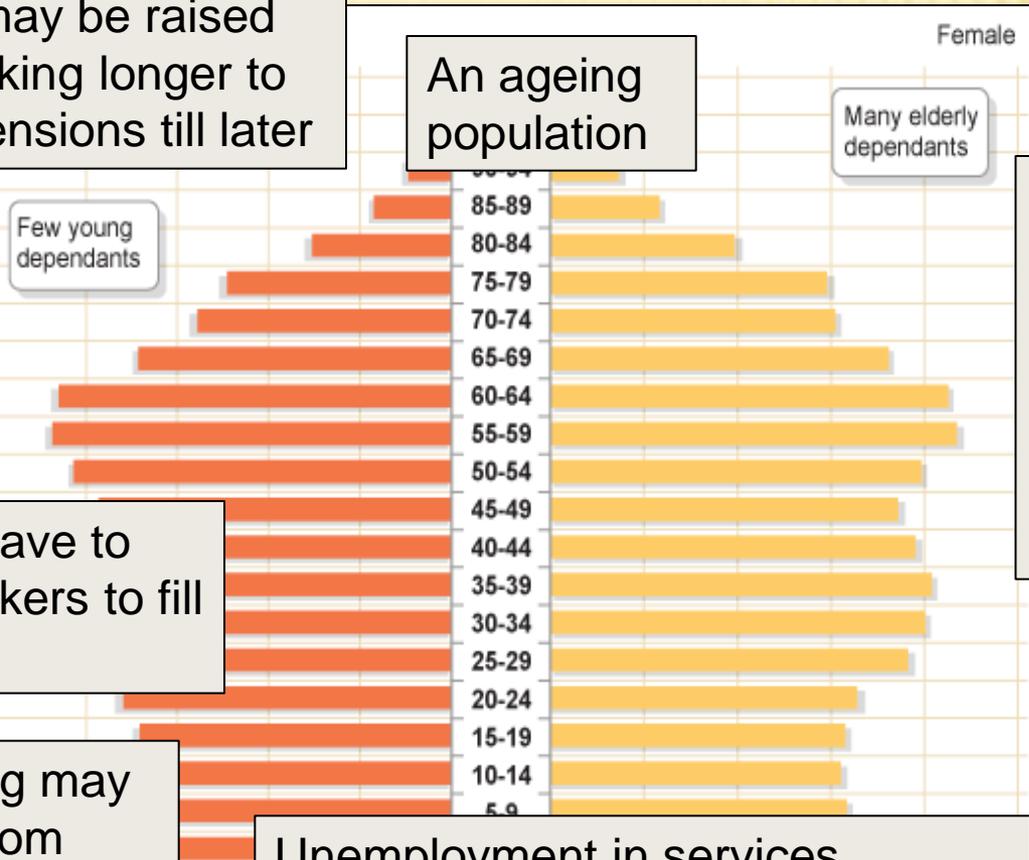
Age of retirement may be raised to keep people working longer to avoid paying out pensions till later

Few young people could lead to a lack of future workforce

Government may have to rely on migrant workers to fill jobs

Government funding may be diverted away from young people i.e. schools and put into old people's services instead

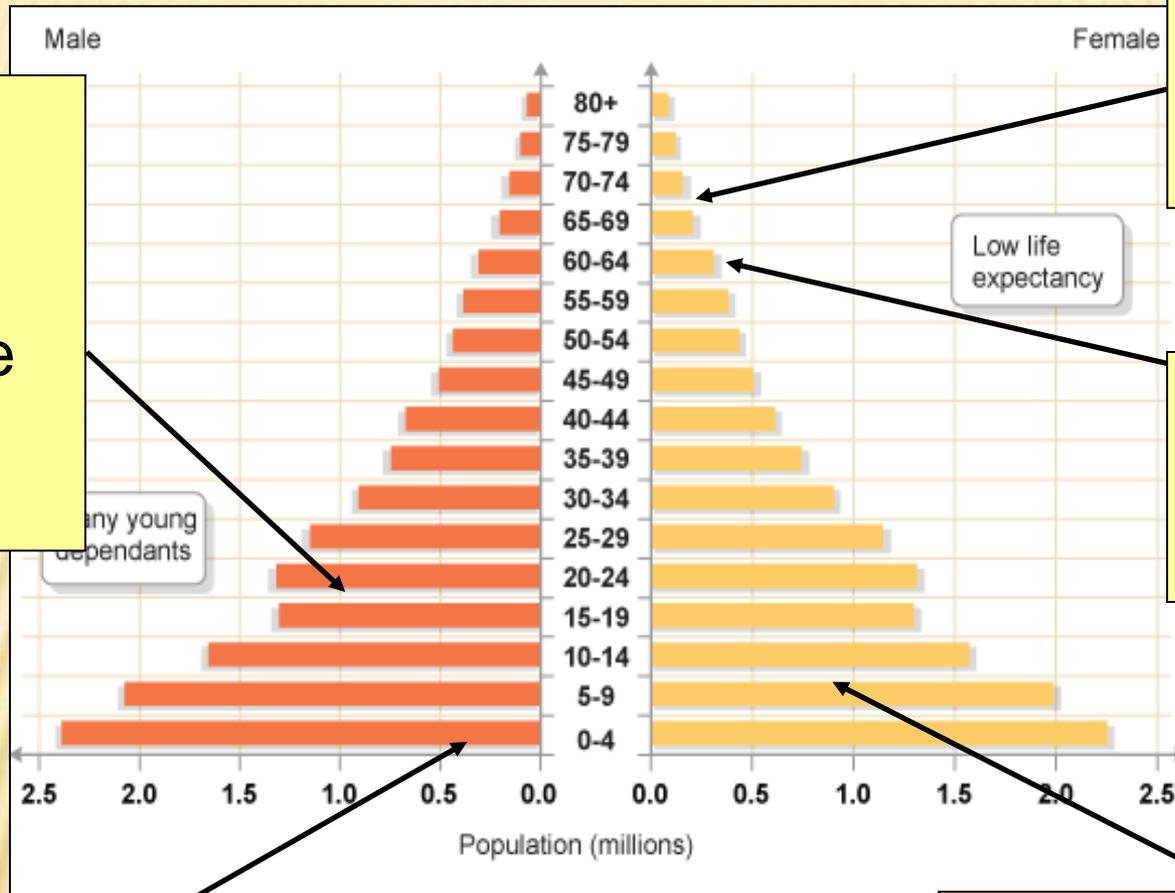
Unemployment in services catering for children i.e. nurseries and schools as less will be needed so people will lose jobs



Extra resources for elderly like medical treatment, nursing homes needed

Government needs more money for pensions. Taxes could increase

# TYPICAL DEVELOPING COUNTRY STRUCTURE



Pyramid shaped - numbers decrease rapidly after 15

Many young dependants

Low life expectancy

Few people over 60, so low life expectancy

Narrow top = high DR

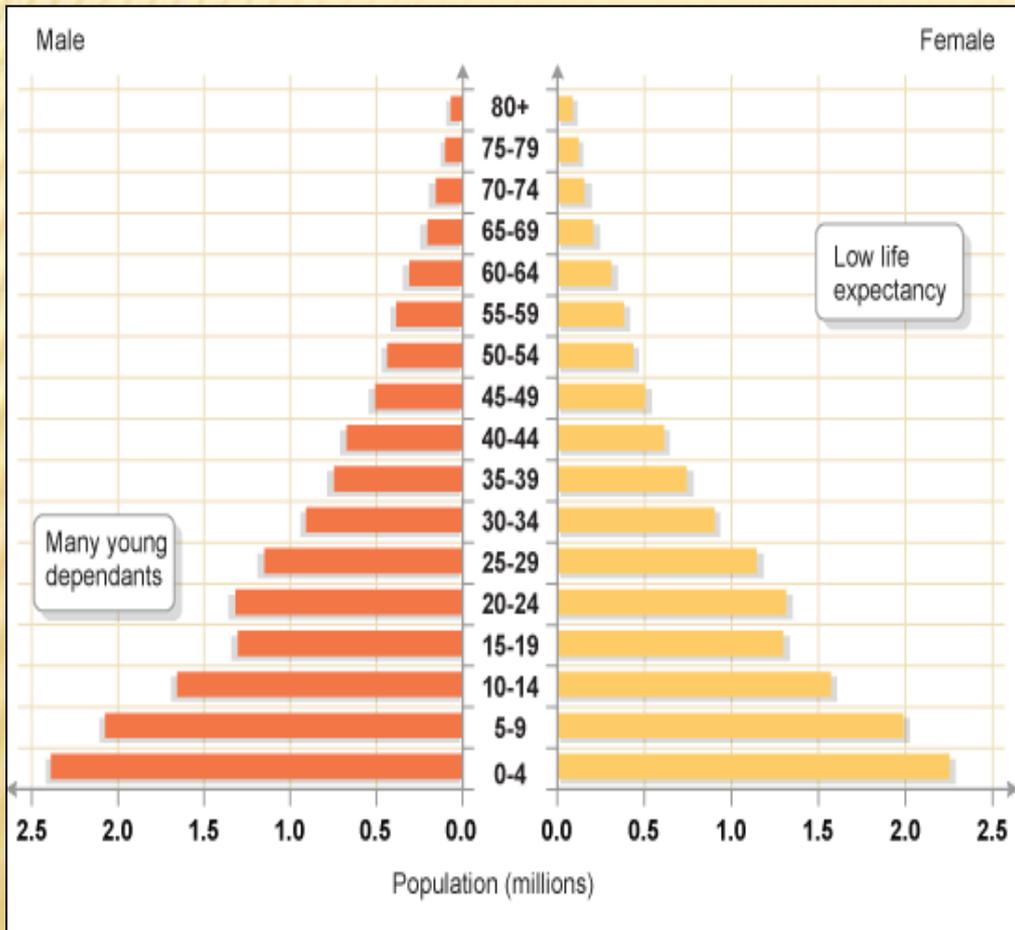
Wide base = high BR for both males and females

Large proportion of young dependants (0-15)

# SHOW YOUR UNDERSTANDING!

Describe and explain the population structure for the country shown (6)

Use your notes on birth and death rate and the writing frame shown here to help



- Describe the overall shape of the graph and say what type of country it is
- Describe the base (giving statistics). Explain what this shows about birth rate.
- Give minimum 4 reasons for the birth rate.
- Say what happens as you move up to the working age population (give statistics)
- Say what happens at the pyramid top (give statistics). Explain what this shows about death rate and life expectancy.
- Give reasons for the DR and LE

## CHECK YOUR ANSWER

The population pyramid has a very wide base for both males and females (about 2.4 million males and 2.3 million females aged 0-4). This indicates that the country has a high birth rate and a large proportion of children below 15 years. This can be attributed to a lack of family planning and contraception, as well as traditions to have large families and the need for many children to work on family farms. Children also provide security for parents in old-age. In addition, high levels of infant mortality means that each family has many children in the hope that some might survive into adulthood.

The structure shows a definite pyramid shape where the population decreases rapidly towards the top and starts tapering after the age of 25. There are few elderly people as a proportion of the population (only about 0.25 million males and females aged 70-74). This shows a high death rate a low life expectancy. This is due to an overall lack of development, including a lack of health care for example childhood vaccinations, access to doctors and hospitals. There are poor levels of nutrition, inadequate sanitation, and a lack of access to clean water. There is generally a very low standard of living.

# WHAT PROBLEMS MIGHT THIS STRUCTURE CAUSE IN THE FUTURE?

Widespread poverty and lack of services e.g health care, education.

Self-perpetuating as with so many young people birth rates will continue to rise

Overpopulation occurs as the birth rate exceeds the death rate and population grows quickly

Overall low standard of living due to the strain put on the country's resources its increasing population

Lack of sufficient food to meet demand due to the inability of the country to provide food for its growing population

High levels of unemployment due to too many people for the jobs available.



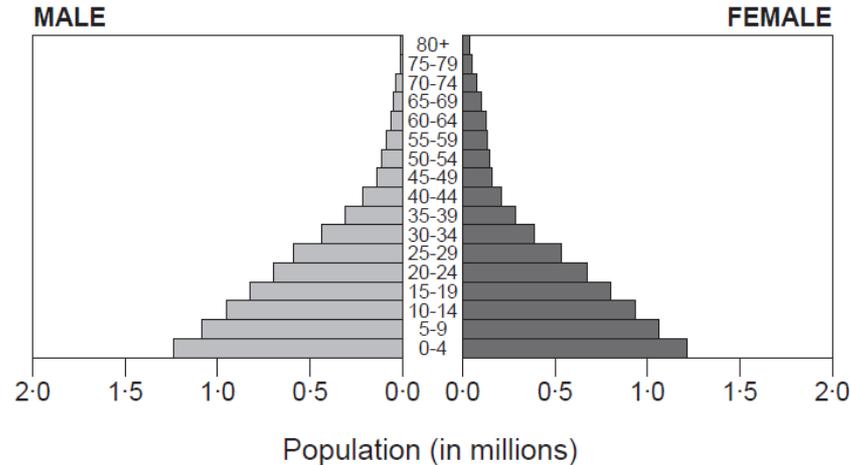
Lack of basic facilities like sewage systems, electricity and clean water supply. This causes spread of disease.

Inadequate housing for the population, particularly in cities, with vast numbers of people forced to live in make-shift shanty towns

# EXAMPLE EXAM QUESTION

Collect a copy of the 2013 past paper question

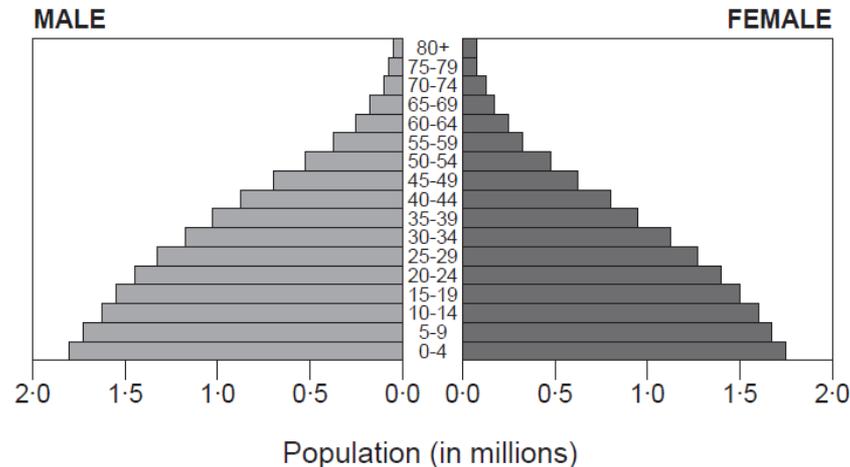
Diagram Q7A: Population Pyramid for Malawi, 2010



Study Diagram Q7A

**(a) Describe and explain the population structure of Malawi in 2010. (5)**

Diagram Q7B: Projected Population Pyramid for Malawi, 2050

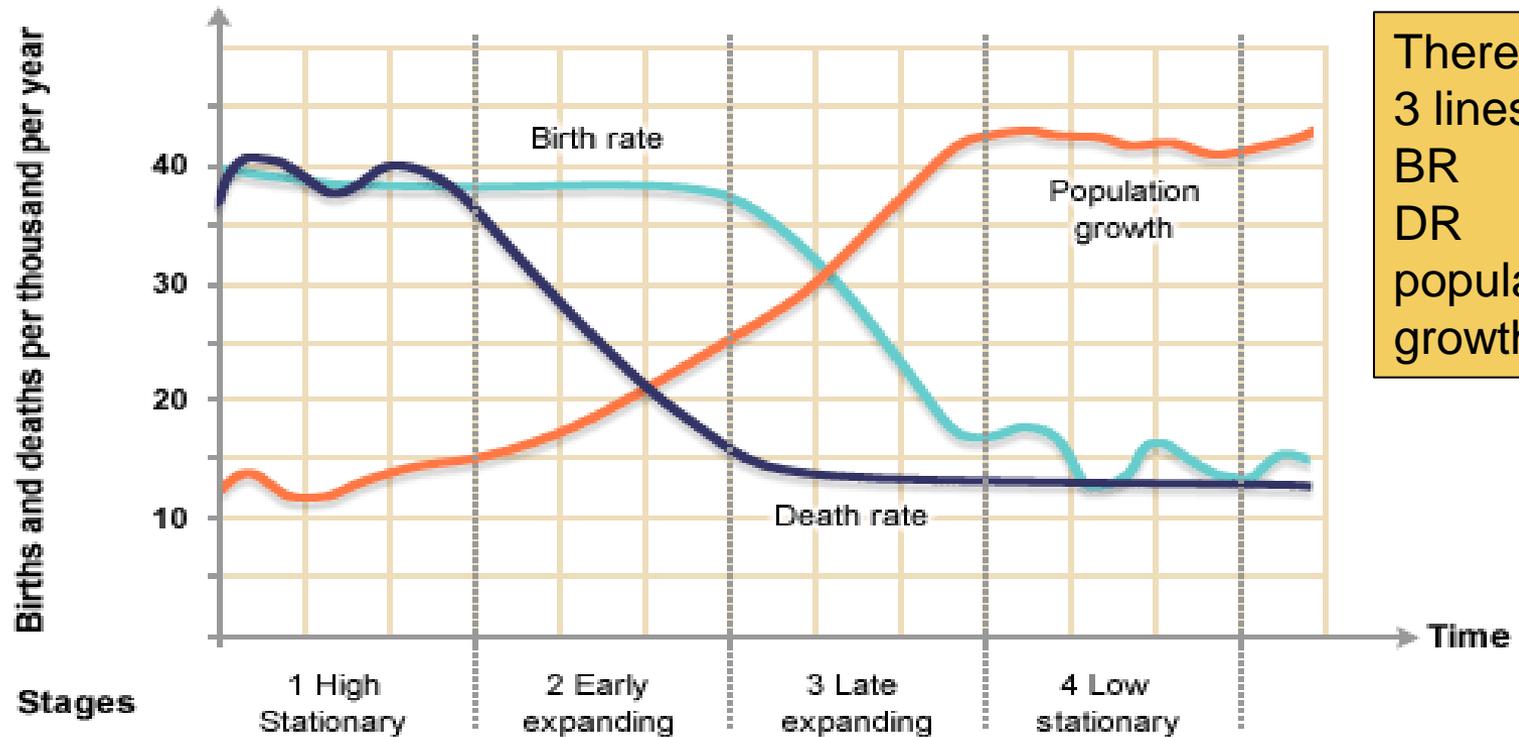


Study Diagram Q7B.

**(b) Discuss the possible consequences of the 2050 population structure for the future economy of Malawi and the welfare of its citizens. (6)**

# POPULATION CHANGE OVER TIME

This is the demographic transition model. It shows how population changes over time as a country develops. It reflects the balance between birth and death rate.



There are 3 lines:  
BR  
DR  
population growth

There are 4 stages (sometimes 5)

# YOUR TURN

Annotate your version of the DTM to show the main features. Use the labels below to help.



Population is low and stable

Population is high and stable

Birth rate is high and stable. Death rate is high and fluctuates

Death rate decreases rapidly. Birth rate remains high.

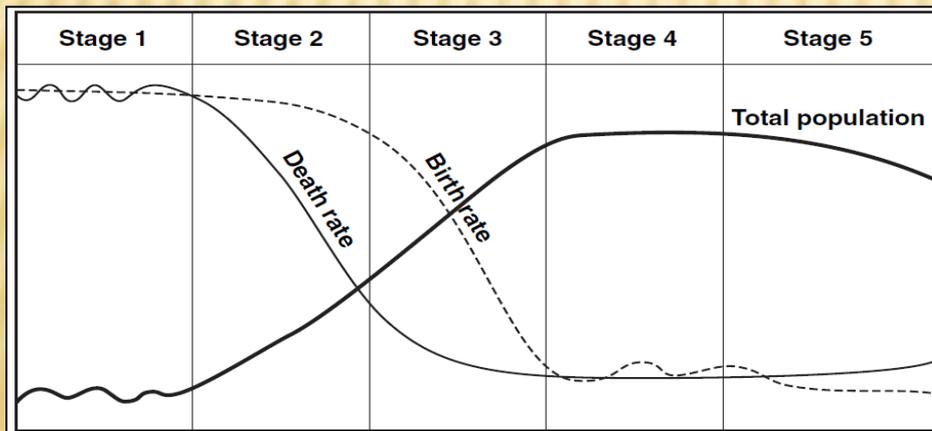
Population begins to increase

Birth and death are both low, but birth rate fluctuates

Population shows a rapid increase

Birth rate decreases rapidly why death rate continues to fall

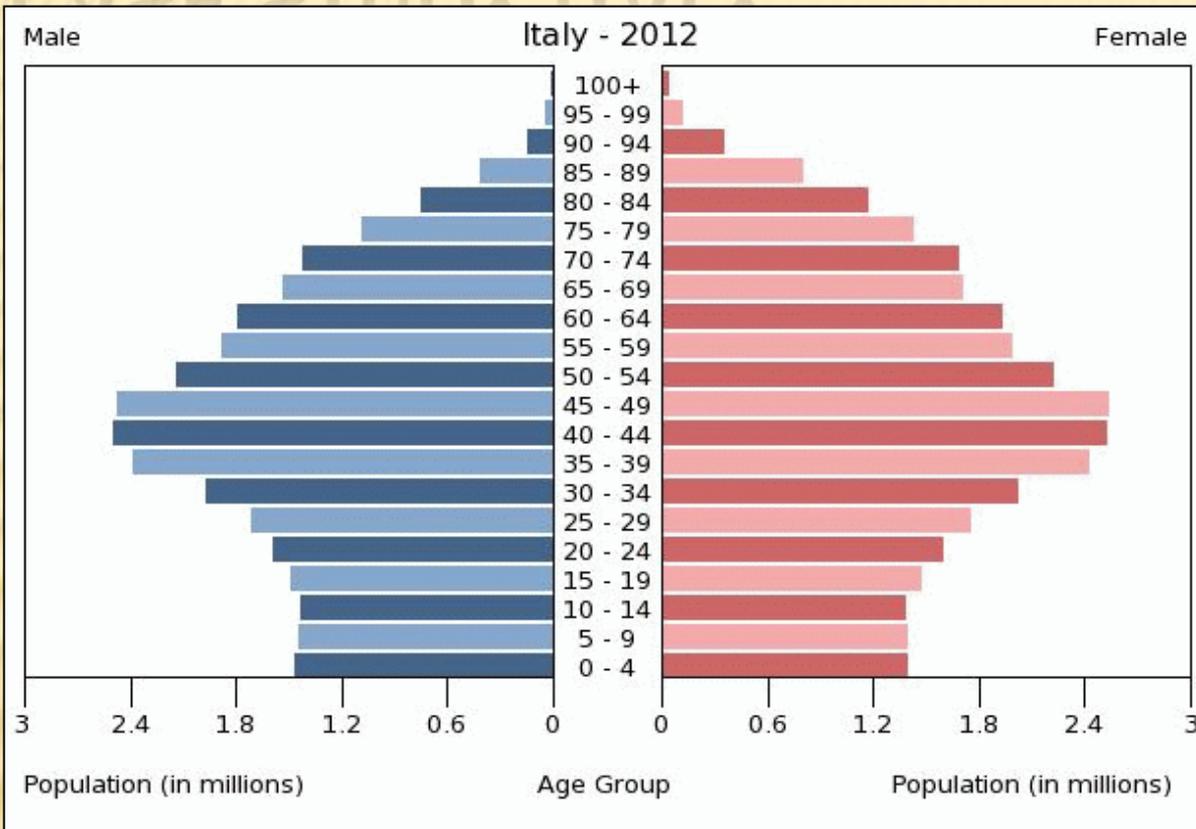
Now add a note to describe **stage 5**. Underneath your diagram make notes to explain each stage.



- 1) For stages 2, 3 and 5 of the DTM **explain** the reasons for the population structure shown.
- 2) **Describe** the likely impact of the population change shown in stage 3 and 5 of the model



# CASE STUDY ITALY



**Describe and explain** the population structure for Italy, shown here

Use the **population statistics** to work out which stage of the DTM Italy is in. Give **reasons** for your answer

Describe the likely **consequences** of Italy's population structure for the Government and people

## Population statistics

Aged 0-14 have 14.17% of the population, Aged 15-64 have 67.48% of the population and the elders - 65 and up - have 18.35. Birth rate is 9.05 per thousand. Death rate is 10.07 per thousand.

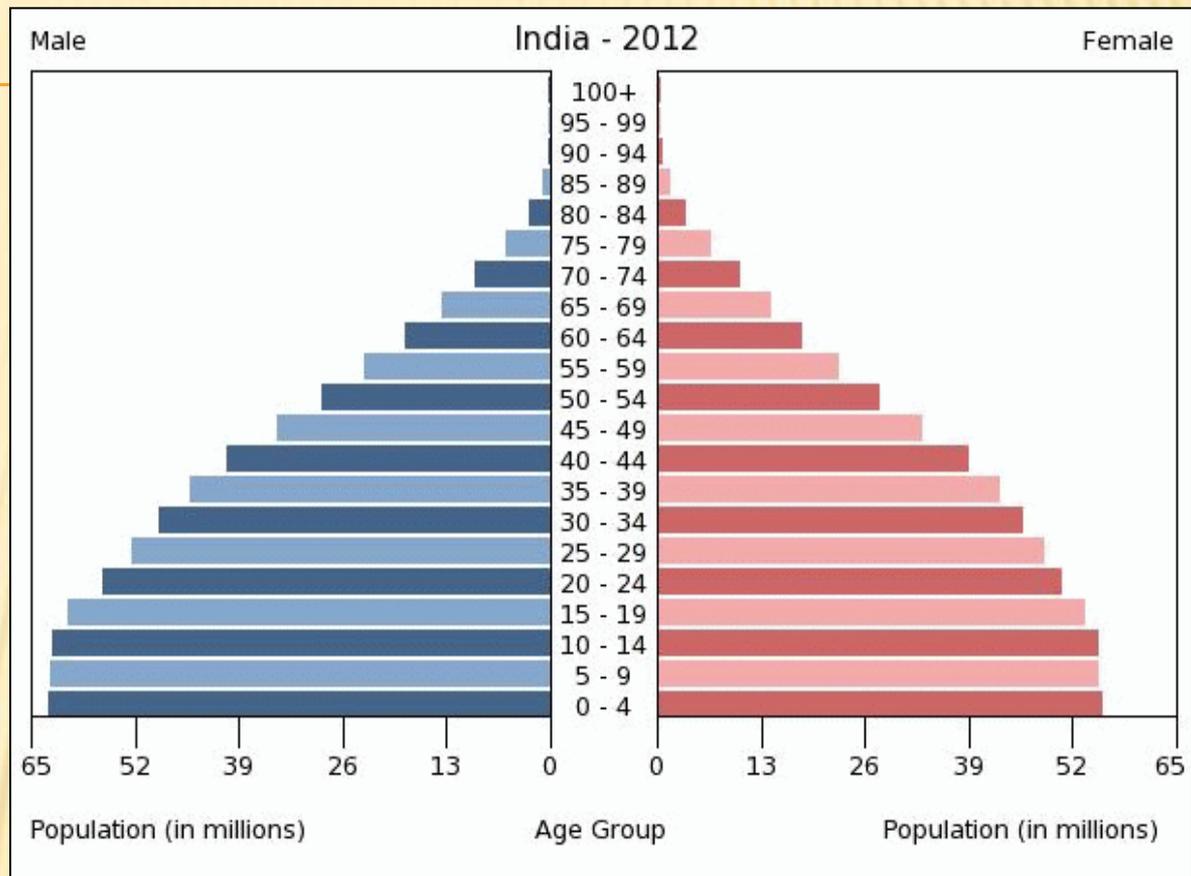
Life expectancy is on average 79 years.

# CASE STUDY INDIA

**Describe and explain** the population structure for India, shown here

Use the **population statistics** to work out which stage of the DTM India is in. Give **reasons** for your answer

Describe the likely **consequences** of India's population structure for the Government and people



## Population statistics

**Age structure: 0-14 years: 29.3, 15-24 years: 18.2% 65 years and over: 5.6%**

Birth Rate 20.22 births/1,000 population, Death Rate 7.4 deaths/1,000 population

Life expectancy 65.4 years