

Topic 1.3

Causes of a change in population size.

Knowing about:

1. Calculating population change.
2. The Demographic Transition Model.

Key word

Population growth-Хүн амын өсөлт

Population explosion- хүн амын тоо эрс нэмэгдэх

Birth rate- төрөлт

Death rate-нас баралт

Natural increase - ердийн өсөлт

Migration-хүн амын шилжилт

Life expectancy-дундаж наслалт.

MEDC-More economic development country

LEDC- Less economic development country

Key terms

1. **Birth rate**- average number of births per 1000 people per year.
2. **Death rate**- average number of deaths per 1000 people per year.
3. **Net migration**- average number people moving into a country minus those moving out of it per 1000 people per year.

1. Calculating population change.

- Natural population change is calculated by subtracting the **death rate** from the **birth rate**. Malta's birth rate in 2013 was 10.3 per 1000 and its death rate was 8.8 per 1000. So its **natural population change** in 2013 was:

$$10.3 - 8.8 = 1.5 \text{ per 1000 people (0.15\%)}$$

Task 1: Calculate the natural population change of Niger and Russia.

Country	Birth rate per 1000	Death rate per 1000
Niger	50.54	14.11
Russia	11.05	16.04

Net migration.

- ❑ To calculate the overall population change, the net migration must be considered.

If more people per 1000 move into the country than move out of it, this is added.

If more move out of the country than into it, this is subtracted.

Malta's net migration in 2013 was 2.4 per 1000. So its **overall population change** was:

$10.3 - 8.8 + 2.4 = 3.9$ per 1000 people. (0.39%)

if the answer is positive the population is growing, if it is negative it is getting smaller.

Task 2 Calculate the overall population change.

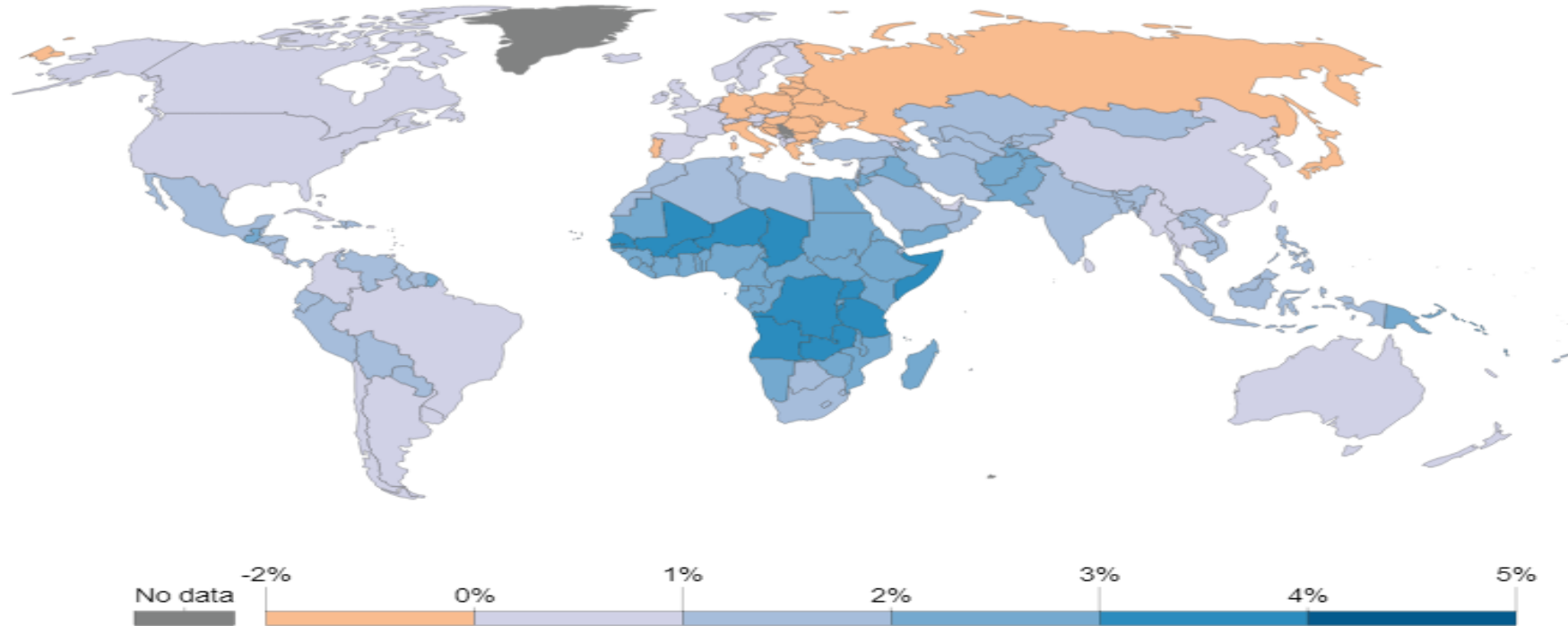
Country	Birth rate (per 1000 people)	Death rate (per 1000 people)	Net migration (per 1000 people)
Belgium	10.0	10.7	+1.2
Greece	8.9	10.9	+2.3
India	20.2	7.3	-0.1

The natural increase in population around the world.

Natural population growth, 2015

Natural population growth is the population increase determined by births and deaths. Migration flows are not taken into account. This is shown from 1950, with UN projections to 2100 based on its median scenario.

Our World
in Data



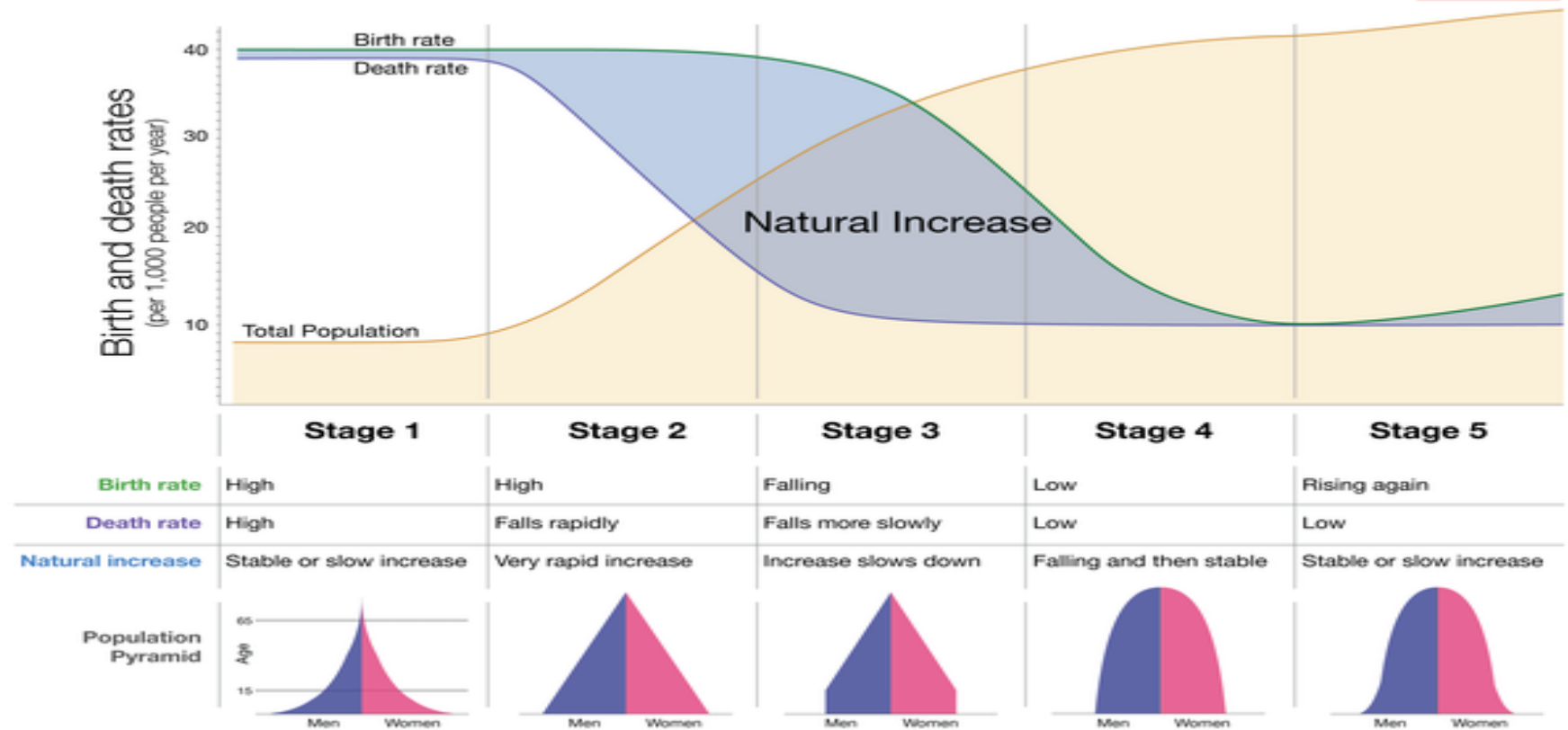
Source: UN Population Division (2017 Revision)

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2. The Demographic Transition Model.

The Demographic Transition Model is a model of the way that population growth can be divided into four stages as birth rates change over time.

The demographic transition in 5 stages



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	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Death rate	High because of disease, famine, lack of clean water, lack of medical care.	Starting to fall because of improved medicine, cleaner water, more and better food, improved sanitation.	Still falling, for the same reasons as Stage 2.	Remains low.	Goes up slightly because more of the population is elderly.
Birth rate	High, due to a lack of birth control; women also marry very young; children are needed to work in the fields to support the family's income.	Still high, for the same reasons as Stage 1.	Starting to fall, because fewer people are farmers who need children to work; birth control is now available; numbers of infant deaths are falling; women are staying in education longer and marrying later.	Low, because of birth control – people are now having the number of children they want.	Remains low, and can fall below the death rate; changes in lifestyle mean people have fewer children later.
This means that natural increase is low; population doesn't increase much.	... natural increase is high; population increases quickly.	... there's still some natural increase, but it's lower than it was; overall population increase is slowing down.	... there is little or no natural increase, so population doesn't increase much.	... if more people die than are born, the total population will probably fall (depending on migration patterns).
Places at this stage today	Perhaps just a few remote tribes in tropical rainforests, isolated from the rest of the world.	Poor countries with low levels of economic development, such as Nigeria and Afghanistan.	Countries where economic development is improving, like India and Brazil.	Richer countries which are more economically developed, such as the UK, USA and France.	A few richer countries, like Japan, Italy and Germany.

D Reasons for falling birth rates and death rates

Falling birth rates are caused by:

- availability of contraception
- more women go out to work
- girls are educated and marry later
- reduction of infant mortality
- more family planning education
- less need for children as a labour source

Falling death rates are caused by:

- improvement in health care facilities
- increased availability of medicines and doctors
- more and better quality food available
- improvement in water supplies
- improvement in sanitation and hygiene
- reduction in wars and conflicts

Religious

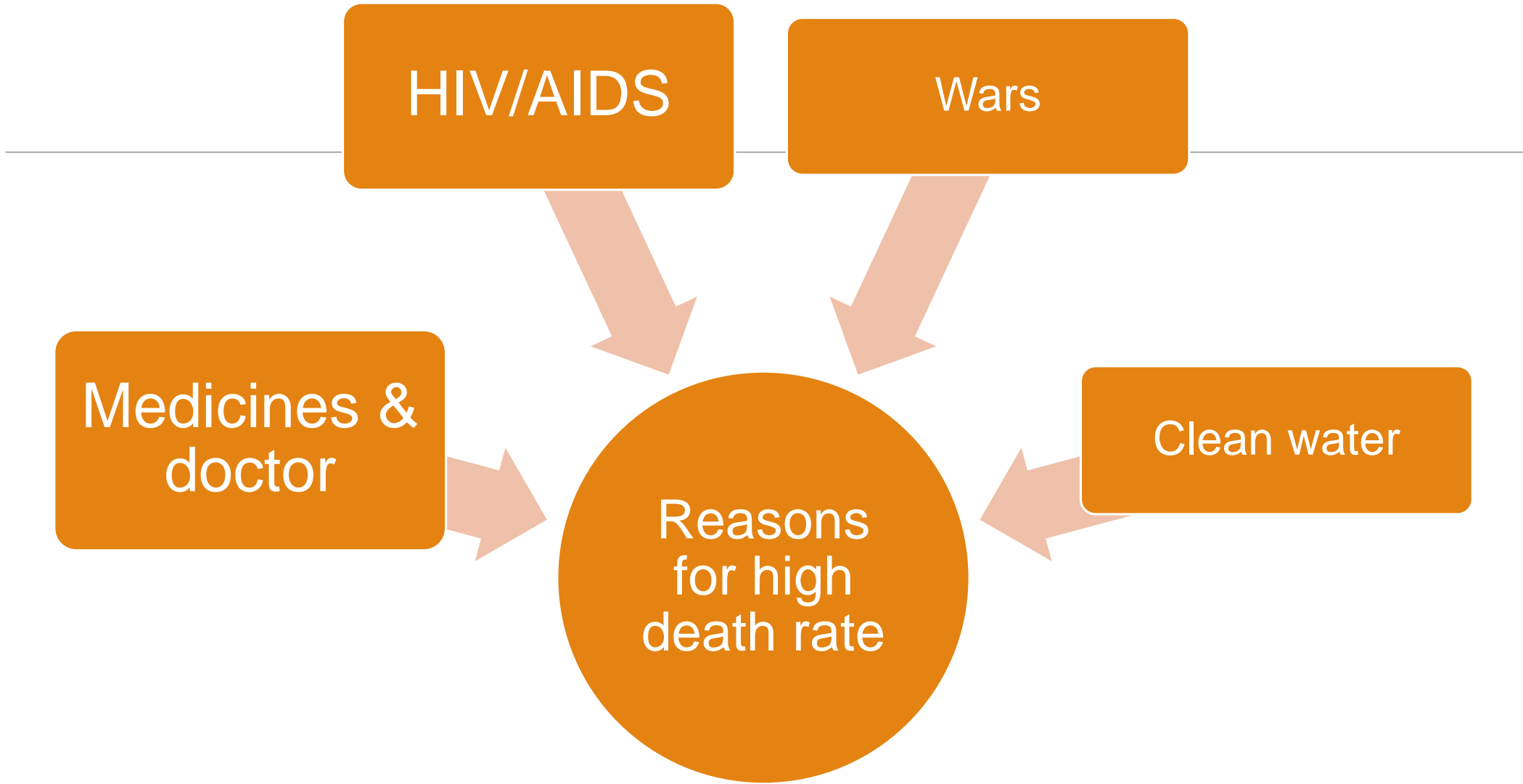
Demographic

Cultural &
social

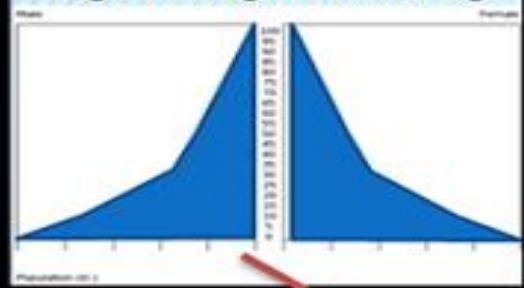
Economic

Reasons
for high
birth rate

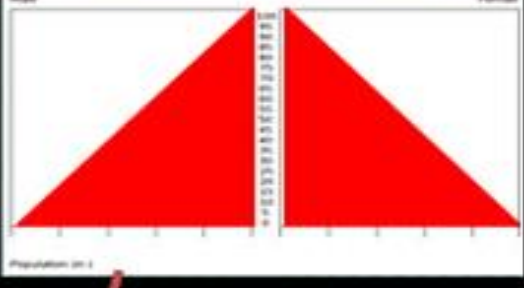
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graph TD; Religious[Religious] --> Center((Reasons for high birth rate)); Demographic[Demographic] --> Center; Cultural[Cultural & social] --> Center; Economic[Economic] --> Center;
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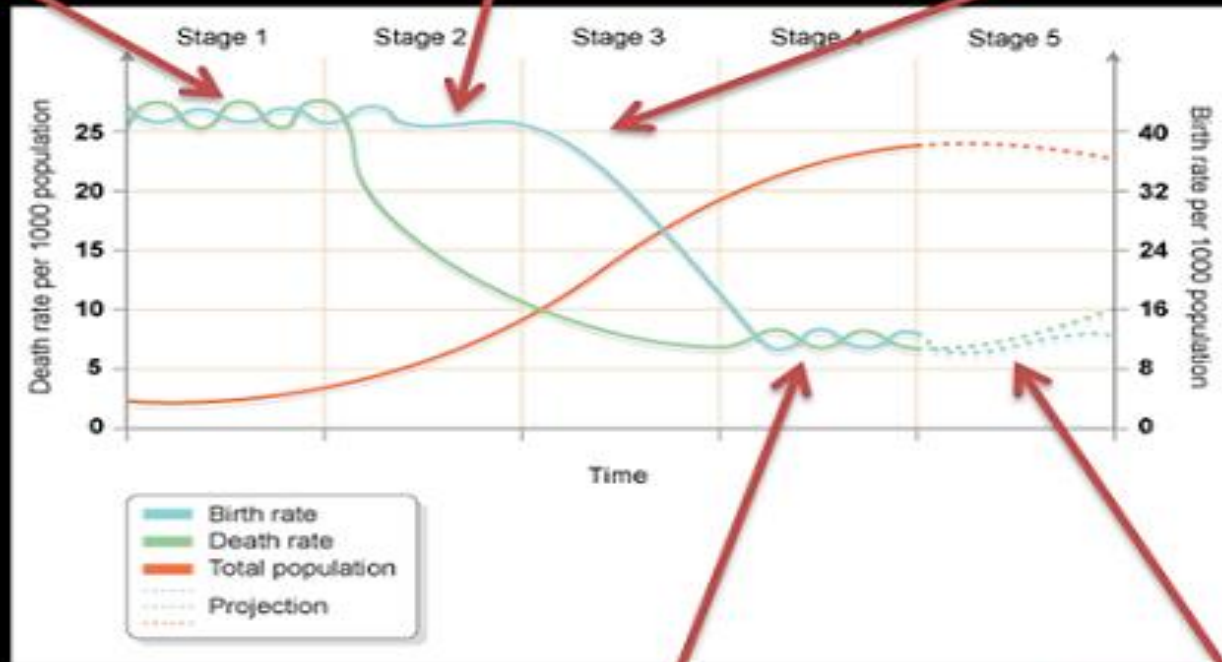
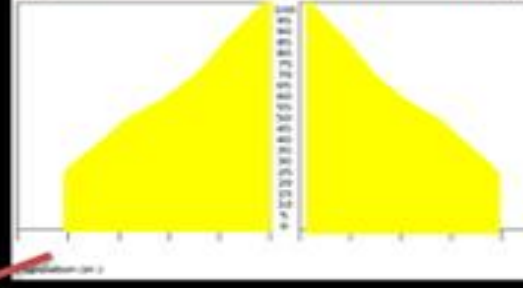
Stage 1 – High Fluctuating



Stage 2 – Early Expanding

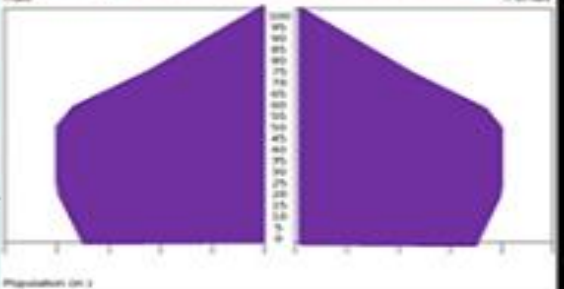


Stage 3 – Late Expanding



How Population Pyramid shape relates to the DTM

Stage 4 – Low Fluctuating



Stage 5 – Population Decline - Ageing

