World Population: Distribution, Density and Growth

Fundamentals of Human Geography - Chapter 2

What this chapter is about

- People are the real wealth of a country. People use all other resources + decide policies. = real
- We study HOW many people there are, WHERE they live + HOW their numbers change.

Three big ideas to carry

- Distribution = the WAY people are spread over the earth's surface.*
- Density = the ratio of people to land area (persons per sq km).
- Growth = how the number of people changes over time.

Key facts to remember

- About 90% of people live in only 10% of the land.
- 10 most populous countries = about 60% of people.
- 6 of those 10 countries lie in Asia.
- World crossed 6 billion at the start of 21st century.

Cressey on Asia: "many places where people are few, + few places where people are very many."

Patterns of Distribution

What "distribution" means

- Population distribution = the way people spaced ~~spaced~~ over the earth's surface. = uneven
- It is very UNEVEN. People prefer some regions + avoid others.

The 90 - 10 rule

- Roughly 90% of the world population lives in only about 10% of the land area.

  So most ~~crowded~~ thinly peopled.

Most populous countries

- The 10 most populous countries hold about 60% of all the world's people.
- 6 of these 10 are in Asia, e.g. China + India (the two largest), Indonesia, Pakistan, etc.

Why study these patterns

- Patterns of distribution + density reveal the demographic character of any area.
- They show WHERE pressure on land + resources is high + where it is low.

Big question: why do people choose some regions, not others?

Density of Population

Why we measure density

- Each unit of land can support only a limited number of people.
- So we find the ratio of people to land. That ratio is the density of population.

The formula

Density = Population / Area

<- persons per sq km

Worked example

- Region X: area = 100 sq km, population = 1,50,000.

  Density = 1,50,000 / 100

  1,500 persons / sq km

- So Region X is fairly densely populated land.

Reading density values

- High density = many people on little land.
- Low (sparse) density = few people on much land.
- Density alone hides WHERE inside an area people sit.

Tip: always write the unit, persons per sq km, in the answer.

Marks are lost for a bare number with no unit.

Factors I: Geographical

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Distribution depends on geographical, economic + social factors. First, the geographical ones.

(i) Availability of water

- The most important factor for life. People settle where fresh water is easy to get. water = No. 1
- River valleys are among the most densely populated areas of the world.

(ii) Landforms

- People prefer flat plains + gentle slopes, good for crops, roads + industry.
- Ganga plains = very dense; the Himalayan mountain zones = scarcely populated.

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(iii) Climate

- A comfortable climate, little seasonal change, draws people. Extreme hot/cold deserts repel.
- Mediterranean regions settled early for their pleasant climate.

(iv) Soils

- Fertile loamy soils support intensive farming, so they carry more people.

Factors II: Economic

(i) Minerals

- Mineral deposits attract industries. Mining + industry create jobs, so workers move in!
- Example: the Katanga - Zambia copperbelt in Africa is densely populated.

(ii) Urbanisation

- Cities offer jobs, schools, hospitals + better transport + civic amenities.
- This causes rural to urban migration; mega cities keep drawing large numbers each year.

(iii) Industrialisation

- Industrial belts give jobs not just to factory workers but also to traders, doctors, teachers.
- Example: the Kobe - Osaka region of Japan is thickly populated due to many industries.

Quick economic summary

- Minerals + industry + cities = more jobs.
- More jobs = more in-migration = higher density.

City life ~~relaxing~~ can be very taxing too.

Economic pull is the main reason cities keep growing.

Factors III: Social + Cultural

(i) Social factors

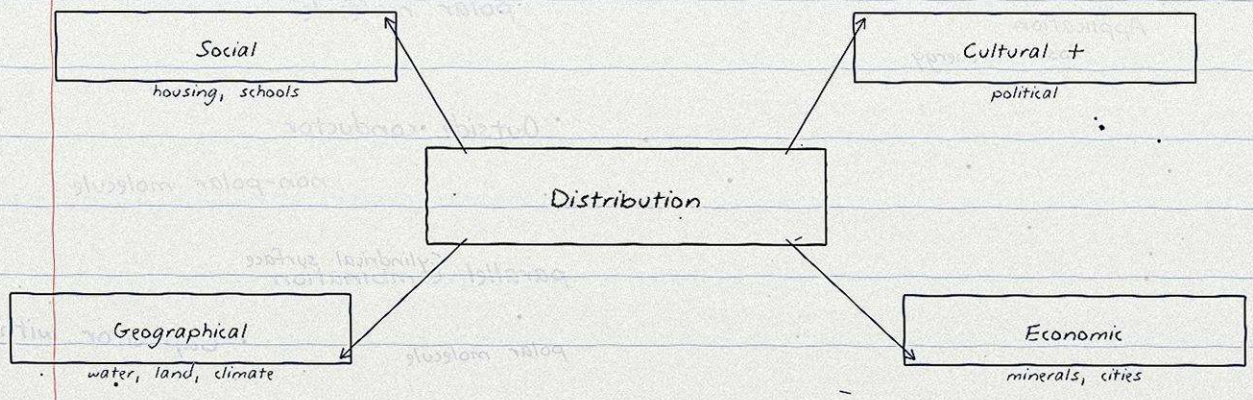
- Places with better housing, education + health facilities are more densely populated.

(ii) Cultural factors

- Places of religious or cultural significance draw people, e.g. Varanasi, Jerusalem, Mecca.

(iii) Political factors

- Stable, peaceful governments attract settlers; conflict + unrest drive people away.



Exam tip: name the group, then give one factor + one example.

Three geographical factors: water, landforms, climate (or soils).

Densely + Sparsely Peopled

The factors decide which belts are crowded + which are nearly empty. Learn typical examples.

DENSE (many people)	SPARSE (few people)
- river valleys	- hot/cold deserts
- fertile plains	- high mountains
- Ganga plains	- Himalayan zones
- industrial belts	- equatorial forests
- big cities	- polar regions

Classic sparse examples

- Atacama desert, the equatorial rainforest belt + the polar regions are all sparsely peopled.

But So~~sparse~~ dense~~ly~~ peopled.

Why the difference

- Dense belts have water, flat land, good climate, fertile soil + jobs all together.
- Sparse belts fail on one or more of these, so life there is hard + people stay few.

MCQ alert: "which is NOT sparse?" usually means a city or a fertile plain hidden among desert / forest / polar options.

Population in the Indian Context

The same ideas explain India's own map of people.

Where Indians cluster

- The Ganga plains are among the most ~~densely~~ populated areas in the whole world. = dense
- Water + fertile alluvial soil + flat land make them ideal for intensive farming + settlement.

Where India is thin

- The Himalayan mountain zones are scarce~~ly~~ hilly populated due to steep slopes + harsh ~~climate~~.
- Areas with poor soils or scant water also carry few people.

India + the world

- India is among the most populous countries + is one of the 6 Asian names in the top 10.
- Its population is still growing, broadly placing it in the expanding stage of transition.

Is population only a burden?

- A large young workforce can also HELP growth.
- People are a resource, not just a problem.

So population is both a challenge AND an opportunity.

Growth of Population

Key terms (learn exactly)

- Growth of population = change in the ~~number~~ number of people over a period of time. in time
- It can be POSITIVE (numbers rise) or NEGATIVE (numbers fall).

Growth rate vs growth

- Growth = absolute change in head-count.
- Growth rate = that change shown in per cent, i.e. change studied per unit of time.

Natural growth

Natural growth = Births - Deaths

- It counts only births + deaths, NOT migration.

Positive + negative growth

- Positive: births > deaths, or people migrate IN.
- Negative: deaths > births, or people migrate OUT.

Natural ~~growth~~ ~~births~~ migration.

So actual growth = natural growth + net migration.

Always state births, deaths AND migration in a full answer.

Components of Population Change

Three things change the population of an area.

(+) Births	(-) Deaths	(+/-) Migration

1. Crude Birth Rate (CBR)

$$CBR = (Bi / P) \times 1000$$

Bi = live births

P = mid-yr pop.

- Live births in a year per 1000 of population.

2. Crude Death Rate (CDR)

$$CDR = (D / P) \times 1000$$

D = deaths

P = mid-yr pop.

- Deaths in a year per 1000 of population.

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3. Migration

- Movement of people across regions or countries.
- Births + deaths are NATURAL; migration is the third, man-made component of change.

Remember: Births, Deaths, Migration are the 3 components.

Migration: In + Out

Two directions of movement

- Immigration: people who MOVE IN to a new place are called immigrants.
- Emigration: people who MOVE OUT of a place are called emigrants.
- The SAME person is an emigrant for the place left + an immigrant for the place joined.

Why people migrate

- For a better economic + social life. Two sets of factors push + pull them.

PUSH (leave origin)	PULL (to destination)
- unemployment	- better jobs
- poor living	- good living
- political turmoil	- peace + stability
- disasters, epidemics	- security of life
- backwardness	- pleasant climate

Medical + educational ~~push~~ pull are factor.

Push = bad things that drive you AWAY from origin.

Pull = good things that draw you TOWARDS a destination.

Trends in World Population

A slow start, then a rush

- For most of history growth was very slow.
- Human population rose more than TEN ~~times~~ in the past 500 years. 500 yrs
- In the 20th century alone it grew FOUR times.

Why the sudden rise

- Death rates fell fast due to better food, sanitation, medicine + control of epidemics.
- Birth rates stayed high for a while, so the gap (natural increase) widened.

Doubling time

- Doubling time = the years a population takes to double itself.
- Developed countries take longer to double; many developing countries double faster.

Spatial pattern of change

- Growth is uneven: among continents, AFRICA shows the highest growth of population.
- Some European countries even have negative growth (deaths above births).

A small % growth on a huge base still adds many millions.

CBR + CDR: Worked Example

Both rates are "per 1000". Learn to compute them.

Given data (one year)

- Mid-year population $P = 50,00,000$.
- Live births $Bi = 1,50,000$; deaths $D = 50,000$.

Crude Birth Rate

$CBR = (1,50,000 / 50,00,000) \times 1000$

30 per 1000 =

Crude Death Rate

$CDR = (50,000 / 50,00,000) \times 1000$

10 per 1000 =

Natural increase

= CBR - CDR 20 per 1000 =

- So 20 extra people per 1000 are added each year from births + deaths alone (before migration).

Careful: divide ~~by P/1000~~, not 100.

If many migrate IN too, actual growth is even higher than 20.

Always show formula, substitution + the per-1000 unit.

Migration: Types + Effects

Where migration happens

- Internal: within a country, e.g. rural to urban, village to city for work.
- International: from one country to another, the person being immigrant + emigrant at once.

Effect on the place of origin

- Loses working-age people; can ease pressure on land + jobs but may drain skilled hands.
- Emigration = a negative effect on its numbers.

Effect on the destination

- Immigration adds people, labour + skills so cities + industrial belts swell in size.
- It is a positive component of that area's growth.

Migration in the growth sum

$$\text{Change} = (B - D) + (I - E)$$

I = in

E = out

- Net migration = immigrants minus emigrants.
- Add it to natural growth for the real change.

So a city can grow fast even with a modest birth rate, if many people keep migrating into it.

Demographic Transition Theory

What the theory says

- It describes how the population of a region changes as society develops, in 3 stages.
- Society moves from rural + farm + illiterate to urban + industrial + literate.

Stage 1: High Fluctuating

- High birth rate AND high death rate, so growth is slow. People reproduce more to make up for deaths from epidemics + uncertain food.
- Mostly farming, large families an asset, low life expectancy + low technology.
- 200 years ago, ALL countries were in this stage.

Stage 2: Expanding

- Fertility stays high at first but then declines.
- Death rate drops fast (better sanitation + health), so the net addition is HIGH.
- This wide gap is the population "explosion".

Stage 3: Low Fluctuating

- Both fertility + mortality fall a lot. Population is stable or grows slowly; urban + literate.

Humans are flexible: they adjust their fertility.

Transition: Stage Diagram

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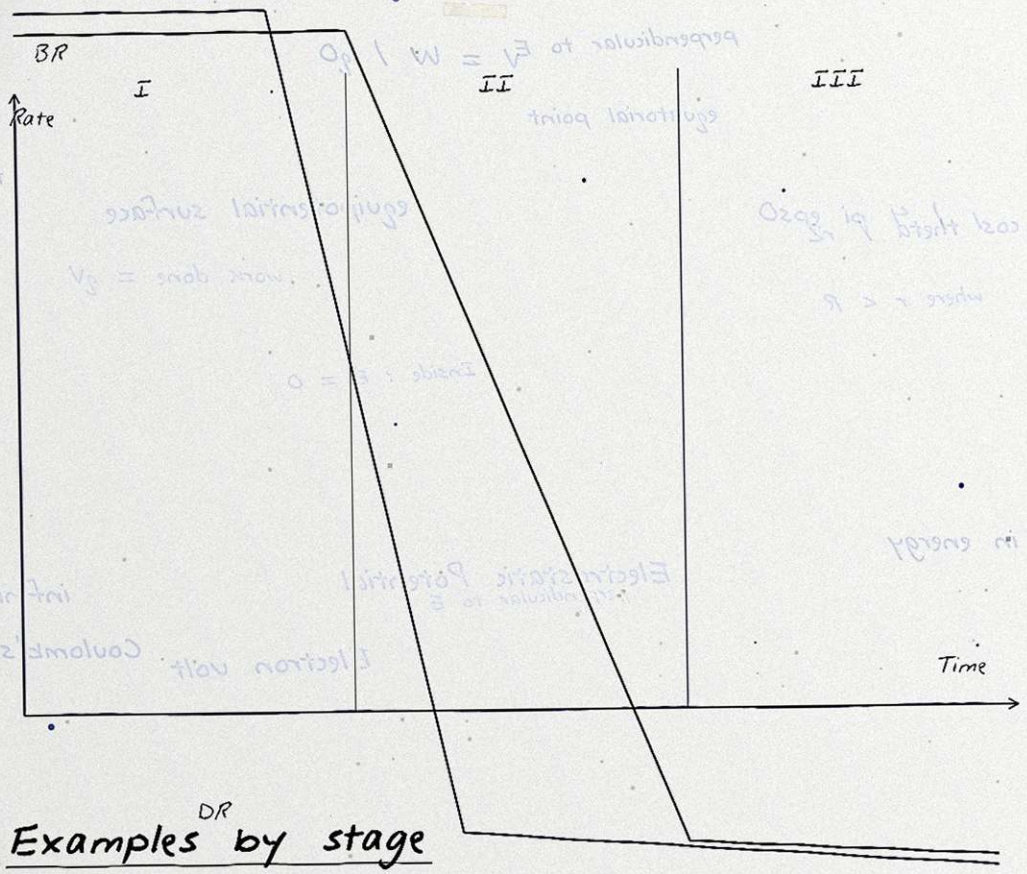
BR + DR over the three stages. The shaded gap between them is the natural increase.



Examples by stage

- Stage I: a few rainforest tribes today.
- Stage II: Bangladesh, Kenya, Sri Lanka, Peru.
- Stage III: Canada, Japan, USA.

How to read the curve

- Both lines high + together = Stage I (slow growth).
- DR drops, BR still high = Stage II (fast growth).
- Both low + together = Stage III (slow/stable again).

Population Control Measures

Family planning

- Family planning = spacing or preventing the birth of children.
- Access to it limits growth + improves women's health.

Measures used

- Propaganda + awareness campaigns.
- Free availability of contraceptives.
- Tax disincentives for very large families.

Malthus's theory (1798)

- Thomas Malthus said people would increase food FASTER than the food supply. < people
- Any further rise would cause a population CRASH through famine, disease + war.

~~physical~~ preventive checks are better than physical (positive) checks.

Why control matters

- To keep resources sustainable, the world must control rapid population increase.

Preventive checks (planning) beat positive checks (famine, war).

Key Terms + People

Distribution	How people are spaced over the earth
Density	Persons per sq km (people / area)
Growth	Change in numbers over time
Growth rate	That change shown in per cent
Natural growth	Births minus deaths only
CBR	Live births per 1000 of population
CDR	Deaths per 1000 of population
Migration	Movement of people across areas
Immigrant	One who moves INTO a place
Emigrant	One who moves OUT of a place
Push factor	Bad thing driving you from origin
Pull factor	Good thing drawing you to a place
Doubling time	Years a population takes to double
Malthus	Said people outgrow food supply

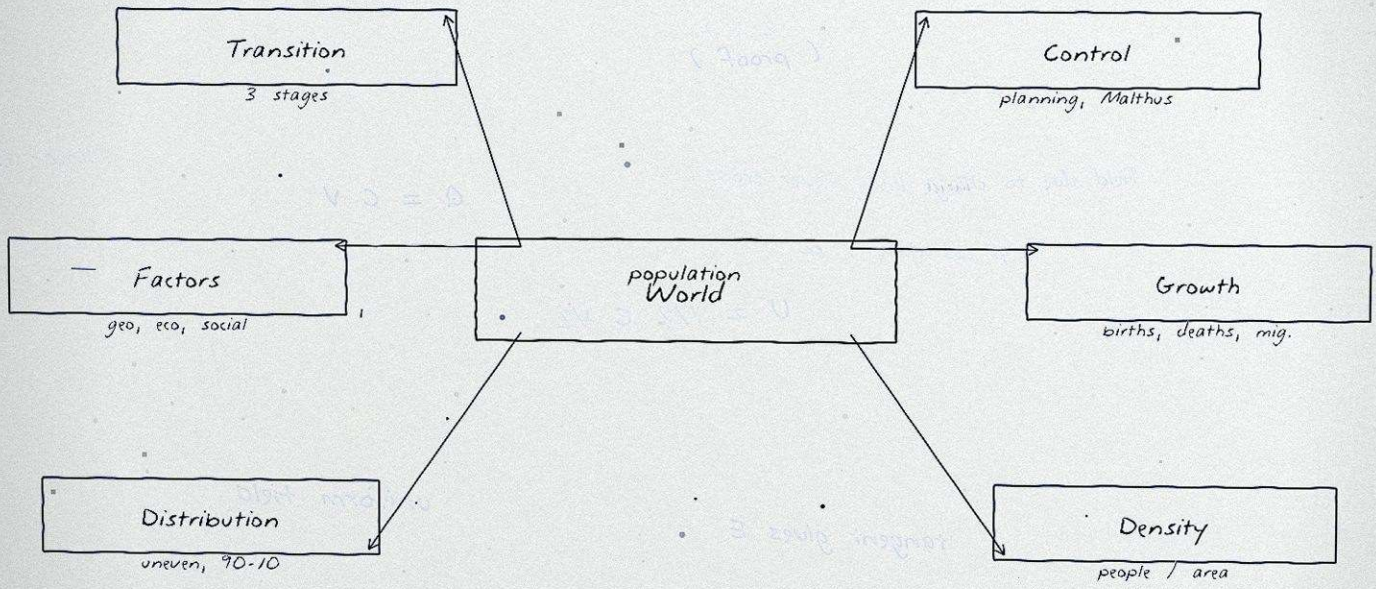
Facts worth quoting

- 90% of people on 10% of land; 10 countries = 60% of the world; 6 of them in Asia.
- x10 growth in 500 yrs; x4 in the 20th century.

~~Epidemiologist~~ reemigrant, immigrant, demographic, urbanisation.

Learn definitions word-for-word; examiners reward precise wording.

The Whole Chapter: Mind-Map



Read it as one chain

- People are spread unevenly (distribution).
- We measure crowding by density = people / area.
- Geo + eco + social factors decide WHERE they live.
- Births, deaths + migration drive growth + transition.

Learn this chain; it frames most short + long answers.

Quick Recall

Five-line answer skeleton

- 1. Distribution is uneven: 90% of people on 10% of the land.
- 2. Density = population / area (persons per sq km).
- 3. Factors: geographical, economic + social-cultural.
- 4. Change = births - deaths + net migration.
- 5. Transition has 3 stages: high, expanding, low.

Exam pointers

- Always write the unit, persons per sq km, with any density value.
- For migration, give one push + one pull example.
- For transition, name + describe all three stages.

Common slips to avoid

Highest growth ~~Asia~~ ~~Saint~~ ~~Afrita~~ is

- Immigrant = moves IN; emigrant = moves OUT.
- Natural growth = births - deaths, ignores migration.
- Medical + educational facilities are PULL, not push.

MCQ traps from the book

- South-east Asia is NOT sparsely populated (it is dense).
- Atacama, equatorial + polar belts ARE sparse.

Students who define terms precisely + give examples score best.

Traps + Misconceptions

Crossed-out lines = a wrong first attempt; the correction follows. Learn the right version.

Wrong vs right

Density is ~~measured~~ per square kilometre (persons per sq km).

Highest population ~~growth~~ in Africa among the continents.

An immigrant ~~moves~~ TO a place; an emigrant moves OUT of it.

Natural growth uses ~~births + migration~~ only, NOT migration.

Last-minute revision

- Distribution uneven; density = people / area; factors are geo, economic + social-cultural.
- Change = (births − deaths) + (immigrants − emigrants); CBR + CDR are per 1000.
- Transition: I high-high, II expanding, III low-low; Malthus warned food would lag behind people.

Master these four corrections + you avoid the usual mistakes.

Practice: Q + A

NCERT-style questions with short model answers.

Q1. Three geographical factors?

- Availability of water, landforms (flat plains) + climate. (Soils is a valid fourth.)

Q2. Why some areas very dense?

- They combine water, fertile soil, flat land, a good climate + jobs from industry + cities.

Q3. Three components of change?

- Births, deaths + migration.

Q4. Birth rate vs death rate?

- CBR = live births per 1000; CDR = deaths per 1000 of the population in a year.

Q5. Three stages of transition?

- I High Fluctuating (high BR + DR, slow growth);
- II Expanding (DR falls, BR high, fast growth);
- III Low Fluctuating (both low, stable + slow).

Answer pattern: define, then one example or one figure.

That structure earns full marks in CBSE + CUET answers.