

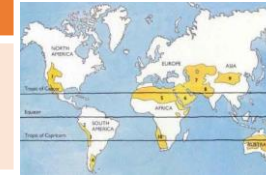


Hot Desert: Case Study Thar Desert – India/Pakistan

The Thar Desert is located on the border between India and Pakistan in Southern Asia. With India soon becoming the most populated country in the world in the next five years. With this, more people will plan to live in the desert.

Distribution of the world's hot deserts

Most of the world's hot deserts are found in the **subtropics** between **20 degrees and 30 degrees north & south** of the Equator. The **Tropics of Cancer and Capricorn** run through most of the world's major deserts.



Major characteristics of hot deserts

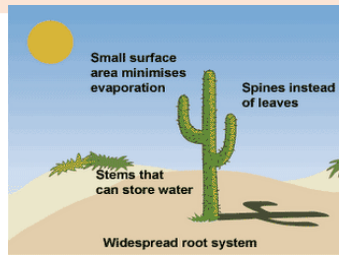
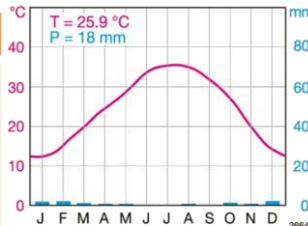
- **Aridity** – hot deserts are extremely dry, with annual rainfall below **250 mm**.
- **Heat** – hot deserts rise over **40 degrees**.
- **Landscapes** – Some places have dunes, but most are **rocky** with **thorny bushes**.

Hot Deserts inhabitants

- People often live in large **open tents** to **keep cool**.
- Food is often **cooked** slowly in the **warm sandy soil**.
- **Head scarves** are worn by men to provide **protection from the Sun**.

Climate of Hot Deserts

- **Very little rainfall** with less than **250 mm per year**.
- It might only **rain once every two to three years**.
- Temperate are **hot in the day** (45 °C) but are **cold at night** due to little cloud cover (5 °C).
- In winter, deserts can sometimes receive occasional frost and snow.



Adaptations to the desert

- | Adaptation | Details |
|---------------|--|
| Cactus | <ul style="list-style-type: none"> • Large roots to absorb water soon after rainfall. • Needles instead of leaves to reduce surface area and therefore transpiration. |
| Camels | <ul style="list-style-type: none"> • Hump for storing fat (NOT water). • Wide feet for walking on sand. • Long eyelashes to protect from sand. |

Desert Interdependence

Different parts of the hot desert ecosystem are **closely linked together and depend on each other**, especially in a such a harsh environment.

Opportunities and challenges in the Hot desert

Opportunities

- **There are valuable minerals** for industries and construction.
- **Energy resources** such as coal and oil can be found in the Thar desert.
- **Great opportunities for renewable energy** such as solar power at Bhaleri.
- **Thar desert has attracted tourists**, especially during festivals.

Challenges

- **The extreme heat makes it difficult to work outside for very long.**
- **High evaporation rates** from irrigation canals and farmland.
- **Water supplies are limited**, creating problems for the increasing number of people moving into area.
- **Access through the desert is tricky** as roads are difficult to build and maintain.

Causes of Desertification

Desertification means the turning of semi-arid areas (or drylands) into deserts.	Climate Change Reduce rainfall and rising temperatures have meant less water for plants.
Fuel Wood People rely on wood for fuel. This removal of trees causes the soil to be exposed.	Overgrazing Too many animals mean plants are eaten faster than they can grow back. Causing soil erosion.
Over-Cultivation If crops are grown in the same areas too often, nutrients in the soil will be used up causing soil erosion.	Population Growth A growing population puts pressure on the land leading to more deforestation, overgrazing and over-cultivation.

Strategies to reduce Desertification

- **Water management** - growing crops that don't need much water.
- **Tree Planting** - trees can act as windbreakers to protect the soil from wind and soil erosion.
- **Soil Management** - leaving areas of land to rest and recover lost nutrients.
- **Technology** – using less expensive, sustainable materials for people to maintain. i.e. sand fences, terraces to stabilise soil and solar cookers to reduce deforestation.

Tasks...

Describe the distribution of hot deserts.

Describe the location of the Thar desert.

Describe the climate of hot deserts.

How is a cactus adapted to survive?

How are camels adapted to survive?

What are the opportunities that exist within hot deserts?

What are the challenges that exist within hot deserts?

Define desertification.

What are the main causes of desertification?

What are the main solutions to desertification?

Prepare for your extended write.

Question: "Desertification is largely caused by poor land management."

Use evidence from a case you have studied to discuss this statement.

1. **BUG** the question by boxing the command word and underlining the content you need to write about.
2. List the key vocabulary you will use.
3. Create a plan of what you would write in each paragraph.
4. Practice writing your answer from memory.

