

Geoecology-human impact on biomes

[Science](#), [Biology](#)



Humans have impacted on natural activities in the Sahel region and the desert biome region by over-cropping, overgrazing and deforestation. The Sahel is a narrow strip of land between the Sahara to the north and the Savanna and equatorial rain-forest to the South. It is a dry (Semi-Arid) region receiving rain in the wet Season from June to September. The Sahara desert is growing South by up to 5-10 Kilometers each year. Which is mainly due to human activity. Overgrazing: the people of the region were traditionally Nomadic. They moved following the rain and pasture- land.

Wealth was defined by animal ownership by the tribes of the Sahel. As the number of cattle and goats increased so did the competition for grazing land. They allowed the animals to graze the land more than it could sustain. Young trees were also grazed. Herders also moved animals onto marginal grazing land until there was little or no vegetation remaining. Wells were sunk to provide water for all the animals. This made herders remain longer in the one area applying more pressure on the land. The wells used up all the ground water causing the water tables to fall. Eventually the wells dried up along with the land around it.

As the human population increased farming methods changed, Nomadic herding was replaced with a more settled style of herding. Farmers began to fence in land and work it more intensely. Leading to soils being overused and exhausted. Soils began to lose structure and minerals. Vegetation was lost due to the large numbers of animals grazing and trampling the land. It was also unable to grow back because the soil was now drained of all its nutrients. This in turn has a knock on effect, when the vegetative cover is lost it leaves the soil exposed to erosion by wind and heat.

It leaves an easy job for heavy rain to wash away the topsoil. Over-cropping: The population of the region grew rapidly and this led to an increased demand in food. Grazing became replaced by growing food crops. The increased demand for food meant that the 'Fallow Year' was abandoned. Farmers were also put under pressure by the Government to grow 'Cash Crops' to help repay their International debt. This continuous usage of the grassland robbed the land of its nutrients and minerals. Soon this land became sterile and worthless. Farmers now needed more land in order to achieve the same return. Due to the shortage of wood people burned dried manure for heat and cooking, instead of using it on the land as a fertiliser. As the vegetation cover was reduced the amount of humus available was also reduced. Crops began to fail and again soil has lost its cover and was now vulnerable to wind erosion. Deforestation: Wood accounts for around 90% of the energy requirements in the Sahel. Deforestation is 'the loss of forests due to the over-cutting of trees'. Trees slow down the wind and their roots help to bind soil, they also absorb moisture during heavy rainfall.

The removal of trees leaves soil exposed to erosion. The land which had been shaded by trees becomes dried out and burned by the sun, resulting in desertification. There are methods to solve the problems of over-cropping and overgrazing. Crop rotation is one way in which the soil is not exhausted, and so stop desertification. Farmers can also place lines of small stones across the land to act as dams. Here the water has nowhere to go but to be absorbed by the soil. This reduces run-off and increases soil fertility. Contour ploughing is when the land is ploughed across rather than vertically.

This to in the same way as the stones act as a dam and prevents run off and stops the topsoil being washed away in heavy downpours. Farming methods such as strip farming, where crops are planted widely spaced then a different plant is planted in the gap. This ensures the land is not being depleted of nutrients and the fact the crops are harvested at different times means both plants will be using different minerals. Shelters belts (trees) are also planted to prevent soil from wind erosion. Also shelter belts are normally fruit producing trees which also provides a source of food.