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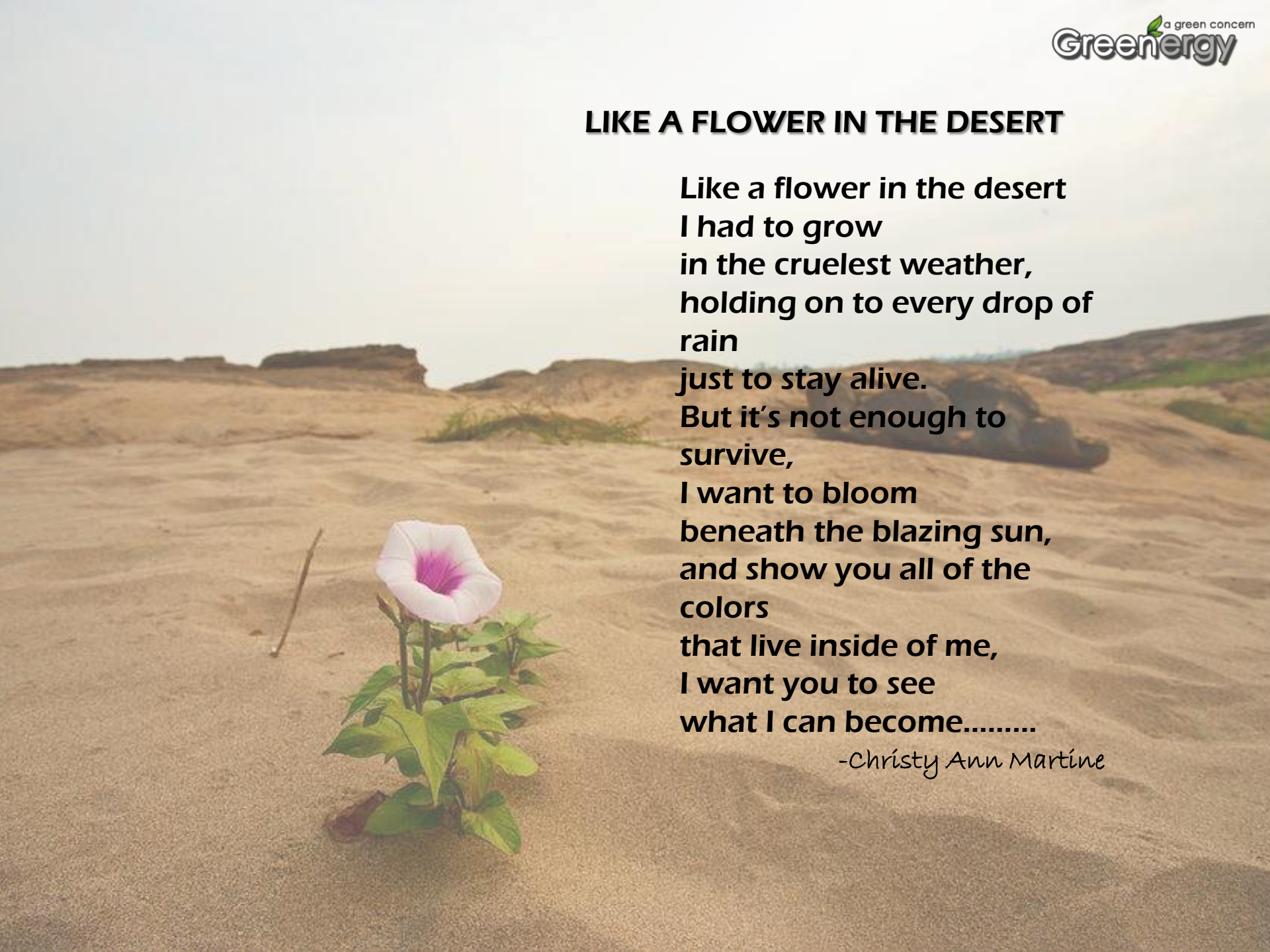
Desert

Only double SS makes the difference , A dessert and a desert.

A desert is a barren area of landscape where little precipitation occurs and consequently living conditions are hostile for plant and animal life .About one-third of the land surface of the world is arid or semi-arid. Deserts are formed by weathering processes as large variations in temperature between day and night put strains on the rocks, which consequently break in pieces.....There may be underground sources of water, in the form of springs and seepages from aquifers. Where these are found, oases can occur.

Plants and animals living in the desert need special adaptations to survive in the harsh environment. People have struggled to live in deserts and the surrounding semi-arid loads for millennia. Earlier days people by caravans of camels carrying salt , gold , ivory and other goods. Now all are used to collect Solar and Wind energy , mainly SOLAR.As abundant sunlight in desert areas gives potential for the capture of large quantities of solar energy.

Ar.Pramod Chaugule.



LIKE A FLOWER IN THE DESERT

Like a flower in the desert
I had to grow
in the cruelest weather,
holding on to every drop of rain
just to stay alive.
But it's not enough to survive,
I want to bloom
beneath the blazing sun,
and show you all of the colors
that live inside of me,
I want you to see
what I can become.....

-Christy Ann Martine

The Thar Desert

- India serves as home to multiple desert biomes, each of which exhibit distinctive ecological communities.
- The **Thar Desert**, one of India's largest, stretches from Rajasthan state in northwestern India to the Punjab and Sindh provinces in Pakistan.
- India has prominent arid regions in the northwestern, western and southern part of the subcontinent.
- Also known as the Great Indian Desert, this arid region covers about 92,200 squares miles and is the seventh largest desert in the world.
- The name Thar comes from *t'hul*, a term for this desert's characteristic sand ridges.
- About 10 percent of the Thar Desert contains sand dunes, while the rest is formed of craggy rocks, dry salt-lake beds and grasslands. Although it borders the Indus River to the west, Thar is a dry subtropical area because the monsoons that carry rain to the rest of India bypass this region.
- The region features extreme temperatures that range from freezing in the winter to soaring heat over 122 degrees Fahrenheit in the summer.

INDIAN DESERTS

WHITE SALT DESERT OF KUTCH

- One of the dustiest and hottest regions of India is the White Salt Desert of Kutch, also known as the White Rann or Great Rann of Kutch.
- This region expands around 2,898 square miles and lies in the State of Gujrat, on India's western border with the Sind Desert in Pakistan.
- As its name suggests, this desert is covered with layers of white salt, giving it the surreal appearance of a snow-covered landscape. Average summer temperatures can reach a high of 50 degrees Celsius, while in the winter the desert cools to below freezing.

INDIAN DESERTS

INDIAN DESERTS

- The **Spiti Valley cold desert** in Himachal Pradesh state is a cold desert high in the mountains that harbors rare wildlife, including snow leopards.
- This desert gets its name, ***Spiti***, from its location -- middle ground -- between Tibet and India.
- The Spiti Valley area represents one of the least populated regions in India; It serves as the gateway to the northernmost reaches of the country.
- The valley lies in the northeastern portion of the state and receives an abundance of sunshine and snow, but very little rain.
- During the winter months, its sparse residents, essentially 35 people to a village, are essentially cut-off from the rest of the country until the snow clears.

LIFESTYLE IN DESERT

•The traditional **lifestyle** has adapted to these extremely arid conditions.

•Their nomadic **lifestyle** means they do not settle in one area for long. Instead, they move on frequently to prevent exhausting an area of its resources.

•They have herds of animals which are adapted to **living in desert** conditions, such as camels.

•Their tents are built to allow air to circulate within them, keeping them cool. Animal hair is used to insulate them, to keep the tent cool during the day and warmer at night.

•Many people in the deserts are nomads. Nomads rear cattle like goats, cows and camels. They keep moving from one place to another with their animals in search of food and water for them. Some of them are craftsmen and make a living by selling their goods.

LIFESTYLE IN DESERT

•The people living in the desert regions used to follow a lifestyle that is suitable for their surroundings and climatic conditions.

•They practice farming as their main **source of income.** Some people **grow crops** like **bajra, jowar, wheat** and **mustard seeds.** There are also many industries (textiles, sugar, cement, fertilisers, etc.) and mines (lead, zinc, iron-ore, etc.) that provide people of this region with means of livelihood.

•**Handicrafts** and **jewellery** made in Rajasthan are sold in many parts of India and the world.

•**Clothes people wear-**
The **women** of Rajasthan wear colourful ghaghra-cholis with an odhni or chunni.
The **men** wear dhoti-kurta with turbans to protect themselves from the harsh sun.

•Mostly desert peoples favor low-protein cereal grains, high-protein seeds, local varieties of vegetation, and teas and coffee. The diet of desert cultures can differ wildly depending on the geography and biodiversity of the area.

•The nomadic peoples of the Sahara carry bags of rice and dates on camels' backs while they herd sheep, which are occasionally eaten.

•People at desert regions follow the tradition of marrying at young ages when compared to the usual people. **Water is considered as a great resource in those areas and they will not waste it at any cost.**

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-Er. TANUJA

Flora in the Sahara

People think of deserts as barren, lifeless places. In spite of their harsh conditions, deserts are anything but lifeless. Many animals have found ways to thrive in deserts, and so have many plants. The Sahara desert, located in North Africa, is the largest hot desert in the world and one of the hottest places on Earth with average summer temperatures of 104 degrees Fahrenheit and yearly rainfall of only 1 to 4 inches. Despite the conditions, many plant species thrive in the Sahara. Each of these species developed adaptations to survive the staggering heat and dryness.

1. Laperrine's Olive Tree

When you picture a desert, you probably do not picture olive trees. However, in the mountainous regions of the Sahara, the Laperrine's olive tree thrives. These trees are so drought-resistant that some farmers have crossed their cultivated olive trees with Laperrine's olive trees to improve their own trees' hardiness. Unfortunately, due to the impacts of climate change, these trees are now considered endangered.

2. Doum Palm Tree

Although many people associate palm trees with the tropics, certain species of palm trees exist in the desert. Some desert palms are extremely long-lived with lifespans of 150 years or more. Other species, such as the doum palm, produce fruits that can be safely eaten by animals. Humans living in or near the Sahara use the rinds of the doum palm's fruit for making molasses. Palm trees have thick trunks that store water for extended periods of time and wide leaves called fronds, which convert massive amounts of desert sunlight into stored sugars to sustain the palm.

3. Sahara Lovegrass

Grasses are some of the toughest plants on earth, and lovegrass is no exception. This plant is widespread in the Sahara desert. It grows in tough clusters and produces small white flowers with edible seeds. Because lovegrass can grow back as long as its water-storing roots remain intact, it can survive in harsh desert conditions. The tangled roots also prevent soil erosion.

4. Wild Desert Gourd

Wild desert gourds, also referred to as creeping plants, are members of the watermelon family that grow abundantly in the Sahara desert. The plants simply do not need much water to survive, as their roots, leaves and fruits store abundant water throughout the year. Desert gourds grow as vines with thin, green leaves. They bear large, round, yellow fruits with thick rinds. These fruits are a good source of food and water for any desert animal strong enough to break through the rind. The desert gourd's large, yellow flowers are also edible.

5. Nitraria Retusa

This typically low-growing shrub is found across a broad range in the Sahara (as well as the Arabian Desert). It's often found edging salt marshes (both in coastal and interior desert) and oases and growing along the beds of the dry gullies and washes called *wadis*. *Nitraria retusa* commonly forms hummocks or mounds that, in some areas, have been shown to help stabilize sand dunes and thus shape the development of plant communities on these challenging and mobile surfaces.

6. Date Palm Tree

Of all the trees in the Sahara desert, date palm trees are the most useful to people. The fruits of this tree are used to sweeten beverages or are dried and eaten on their own. The leaves are sometimes used for food as well and can be tender and nutritious when cooked. Like the doum palm, date palms store water in their thick trunks, allowing them to survive in spite of the lack of rain in the Sahara.

7. Desert Thyme

Unlike cacti and palm trees, which store water inside their thick bodies, desert thyme does not use much water in the creation of its stalks, leaves and flowers, and it doesn't need much water to maintain them. This survival strategy gives thyme a shrubby, dried-out appearance. However, the plant is extremely successful at surviving desert conditions. Thyme is often used by people as a flavoring herb in cooking.

8. Tobacco Tree

The tobacco tree is not native to the Sahara desert but grows there as an invasive species. These plants were originally from South America but were brought by settlers to other continents. Unlike some forms of tobacco plant, the leaves of the tobacco tree can be lethal if smoked. This plant can grow to heights of over 6 feet and has small leaves, which prevents the desert sun from drawing away moisture. The tobacco tree also stores water in its roots.

9. Tamarisk Shrub

Tamarisk is a small, shrubby plant native to the Sahara. Unlike many desert plants, it does not store much water in its roots or body. Instead, it uses little water to maintain itself, so its need for water is low. Its leaves and flowers are dry and scalelike. Like desert grasses, tamarisk shrub roots help to decrease soil erosion.

10. Ephedra Alata

Another shrubby desert plant, Ephedra alata has a similar survival strategy to the tamarisk shrub. This plant has adapted to use little moisture, yet it thrives even though it appears dried out. This plant has long been used in the traditional medicines of people living in or near the Sahara desert.

WHEN DESERT MEETS SNOW

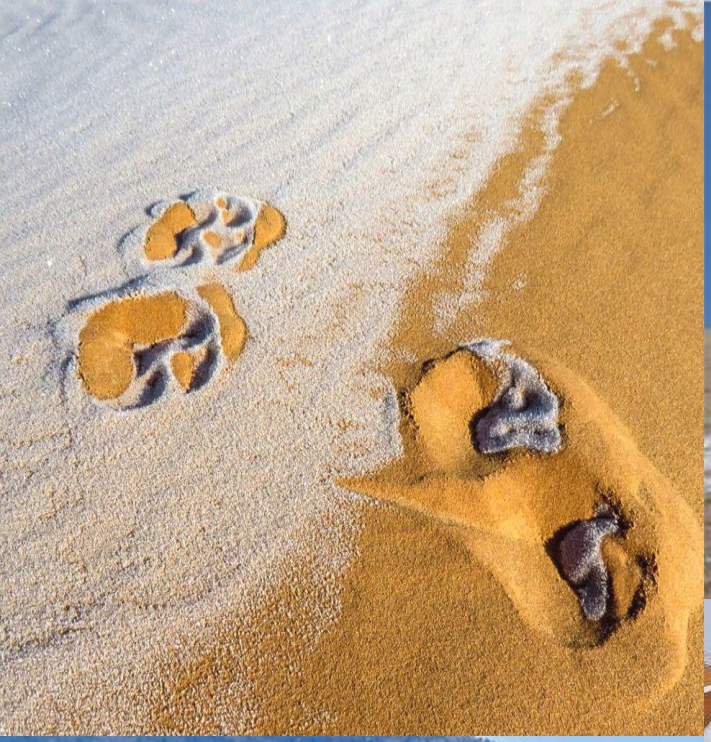
The Sahara desert is largest hot desert in the world and third largest desert having an area about 92,00,000 square kilometers located in African continent. The climate of the Sahara desert is scorching hot and parched dry. It has a short rainy season. Since the sky is cloudless and clear, the rate of water evaporation is greater than the rate of water accumulation. Hence, there is water scarcity. However, the nights may be freezing cold with temperatures nearing zero degrees Celsius.

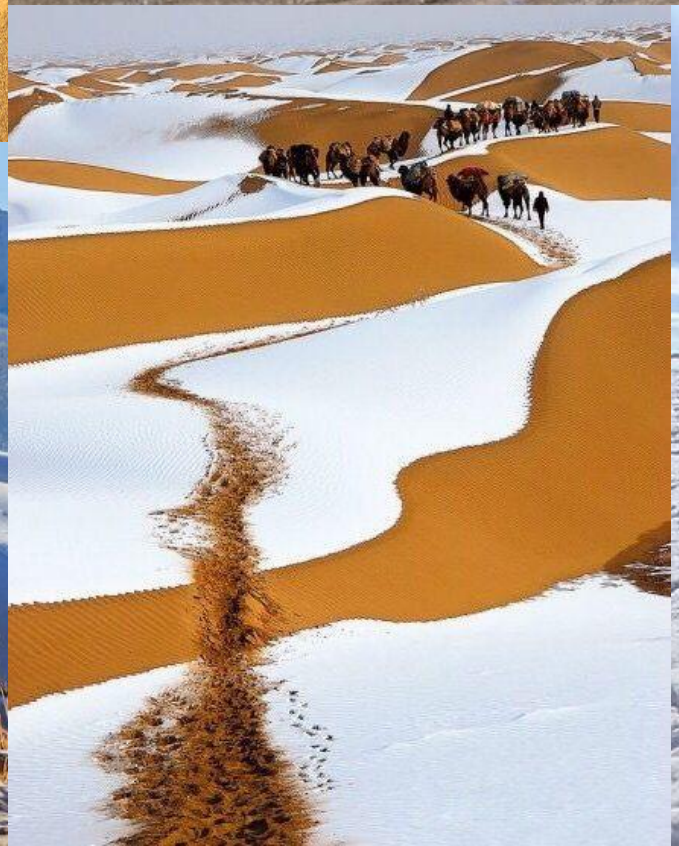
In the summer, daytime air temperatures across the Sahara often soar to well over 100 degrees Fahrenheit, with the hottest air temperature. Under the clear skies, the temperature may fall 40 degrees or more during an evening. In the winter, freezing temperatures may occur in the northern Sahara, and milder temperatures, across the southern Sahara. Snow may fall occasionally in some of the higher mountain ranges and rarely, on the desert floor.

WHEN DESERT MEETS SNOW

A high pressure formation in Europe, causes the cold air from the Artic to be pulled down, which makes its way through southern Europe landing in the Sahara desert. This cold air then rises to the elevation Ain Sefra, where it causes the snowfall. The higher the pressure formation, the farther south the air can travel.

The rare event has occurred the fourth time in the past 42 years in the Sahara Desert. The first incident of snowfall in the Sahara desert town of Ain Sefra was recorded in 1979, then in December 2016 and January 2018 when the desert was reportedly covered with 16 inches of snow.





- AR.AKSHATA

DESERTIFICATION

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What is Desertification?

Desertification is the process of productive cropland turning into non-productive, desert-like environments. Desertification usually happens in semi-arid areas that border deserts.desertification results in persistent degradation of dry land and fragile ecosystem due to man-made activities and variations in climate.

Causes of Desertification

1. Overgrazing

If there are too many animals that are overgrazing in certain spots, it makes it difficult for the plants to grow back, which hurts the Biome and makes it lose its former green glory.

2. Deforestation

When people are looking to move into an area, or they need trees in order to make houses and do other tasks, then they are contributing to the problems related to desertification.

3. Excessive Use of Fertilizers and Pesticides

The use of excessive amounts of fertilizers and pesticides to maximize their crop yields in the short term often leads to significant damages for the soil.

4. Climate Change

Climate change plays a huge role in desertification.
As the days get warmer and periods of drought become more frequent, desertification becomes more and more eminent.

5. Soil Pollution

Soil pollution is a significant cause of desertification. Most plants are quite sensitive to their natural living conditions. When soil becomes polluted due to various human activities, the respective area of land may suffer from desertification in the long run. Higher the level of pollution more will be the degradation of soil over time.

Devastating Effects of Desertification

1. Farming becomes next to impossible

If an area becomes a desert, then it's almost impossible to grow substantial crops there without special technologies. This can cost a lot of money to try and do, so many farmers will have to sell their land and leave the desert areas.

2. Hunger

Without farms in these areas, the food that those farms produce will become much scarcer, and the people who live in those local areas will be a lot more likely to try and deal with hunger problems. Animals will also go hungry, which will cause even more of a food shortage.

3. Poor Water Quality

If an area becomes a desert, the water quality is going to become a lot worse than it would have been otherwise. This is because plant life plays a significant role in keeping the water clean and clear; without its presence, it becomes a lot more difficult for you to be able to do that.

4. Poverty

All of the issues that we've talked about above (related to the problem of desertification) can lead to poverty if it is not kept in check. Without food and water, it becomes harder for people to thrive, and they take a lot of time to try and get the things that they need.

Solutions to Desertification

1. Policy Changes Related to How People can Farm

- In countries where policy change will actually be enforced on those in the country, policy change related to how often people can farm and how much they can farm on certain areas could be put into place to help reduce the problems that are often associated with farming and desertification.

2. Education

- In developing countries, education is an incredibly important tool that needs to be utilized in order to help people to understand the best way to use the land that they are farming on. By educating them on sustainable practices, more land will be saved from becoming desert.

3. Technology Advances

- Research is the key to overcome most of our environmental problems, and it applies to desertification also. In some cases, it's difficult to try and prevent desertification from happening.
- In those cases, there needs to be research and application of the latest technology that pushes the limits of what we currently know about the drivers of desertification. Advancements could help us find more ways to prevent the issue from becoming an epidemic.




*"Desertification is taking place not only on the earth of our country but in the heart and mind of our **ANNADATA** (farmers) also."*

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