VOLUME 19 • DECEMBER 2022

EARTH ROOT

Natural resources depletion

Effect of meat farming on the environment

Soil restoration
Depletion

About E-magazine

“Earth Root” is an open access e-magazine in the discipline of Environmental sciences published by Earth Root Foundation. The aim of the e-magazine is to provide information and upgradation of knowledge about environmental issues on wider scale and to share ideas and resources to the readers. Using essential knowledge people can lead a healthy life, which is more sustainable and can connect with ongoing efforts for stopping catastrophically the climate change. E-magazine caters to all related environmental aspects ranging from big issues like climate change, renewable energy and pollutants in the atmosphere to the health of human and living beings on Earth. We also take topics of water resources and efforts and measurement to provide optimum use of it; including large scale atmospheric circulation linked with oceans and ecology.

Title	Earth Root
Frequency	Monthly
ISSN	----
Publisher	Earth Root Foundation
Chief Editor	Dr. Vivek Panwar
Copyright	Earth Root Foundation
Starting Year	2021
Subject	Environment
Languages	English
Publication Format	Online
Phone No.	011 49064364
Email Id	info@earthrootfoundation.org; vivekpanwar@earthrootfoundation.org
Mobile No.	+91 8766317774; +91 9990013202
Website	www.earthrootfoundation.org
Address	456, Pocket B, Sector-13, Dwarka, New Delhi-110078

Editorial Board

TABLE OF CONTENTS

HEAT WAVE

Abhinandan
Rajdhani College, University of Delhi

Climate change and global warming are often used interchangeably to discuss the present scenario of the world's health. Also, we often used the term 'weather' and 'climate' in our daily language. weather refers to atmospheric conditions that occur locally over a short period – from minutes to days. and on the other hand, the climate is the term that is used for specifying the long-term scenario (for 25-30 years), regional or even the global average of temperature, humidity, and rainfall patterns over seasons, years, or decades.

GLOBAL WARMING :

Global warming is the long-term heating of the earth's surface observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in the earth's atmosphere. this term is referred to as "climate change".

Due to this many natural processes, which have been overwhelmed by human activities, can also contribute to climate change, including internal variability (e.g., cyclical ocean patterns like El Niño, La Niña, and the Pacific Decadal Oscillation) and external forcings (e.g., volcanic activity, changes in the Sun's energy output, variations in Earth's orbit). Due to this global warming, the result is an increase in extreme weather events such as heat waves, droughts, floods, cyclones, and wildfires. some severe heat waves occurring within the last few decades made heat waves a hot topic in climate change research, with 'hot' having a dual meaning: high temperature and high scientific activity.

In general, a heat wave is a period of excessively hot weather, which may be accompanied by high humidity. since the heat waves vary according to the region, there is no universal definition, but only definitions relative to the usual weather in the area and relative to normal temperatures for the season. The World Metrological Organization (WMO) defines a heat wave as 5 or more consecutive days of prolonged heat in which the daily maximum temperature is higher than the average maximum temperature by 5ºC (9 º F or more).

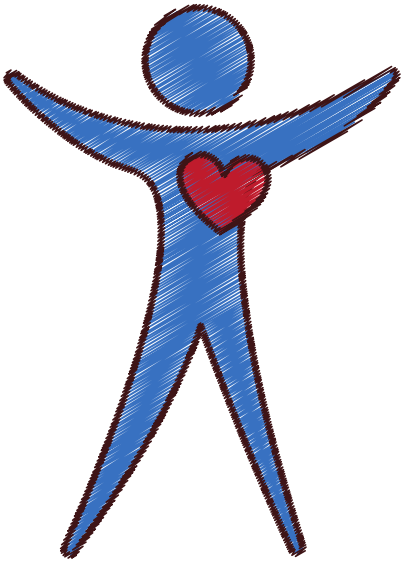
Currently, the world has suffered from a series of intense heat waves since the beginning of the twenty-first century. According to the world health organization (WHO) and various national reports, the extreme 2003 heat wave causes about 70,000 excess deaths, primarily in France and Italy. The 2010 heat wave in Russia causes extensive crop loss, numerous wildfires, and about 55,000 excess deaths(many in the city of Moscow). India has been suffering under record-breaking heat for the last couple of months, the April of 2022 was the hottest over the past 122 years, from 1901 to 2022 according to government officials. The average maximum temperature was 35.30ºC coming just behind 35.42ºC in 2010 and 35.32ºC in 2016.

REASONS :

Heat waves typically occur when high-pressure systems become stationary and the winds on their rear side continuously pump hot and humid air north-eastward, resulting in extreme weather conditions. The more intense and more frequently occurring heat waves cannot be explained solely by natural climate variations and without human-made climate change. Scientists discuss a weakening of the polar jet stream caused by global warming as a possible reason for an increased probability of the occurrence of stationary weather, resulting in heavy rainfalls or heat waves. This jet stream is one of the most important factors for the weather in the middle latitude regions of North America, Europe, and Asia.

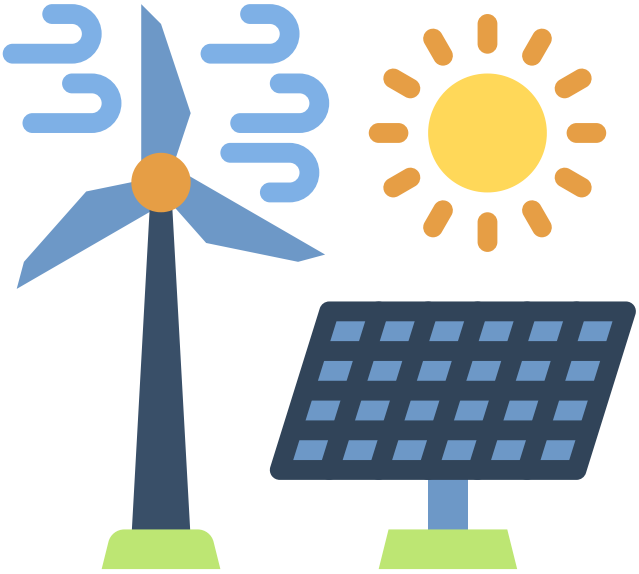
CONSEQUENCES OF HEAT WAVES:

Due to the heat waves, many things were affected,



1. Human health :

Extreme heat is one of the leading causes of weather-related deaths in the world, killing millions of people every year. Heat stress occurs in the human body when the body is unable to cool itself effectively. Normally the body can cool down through sweating, but when the humidity is high, sweat will not evaporate effectively and quickly, potentially leading to heat stroke.

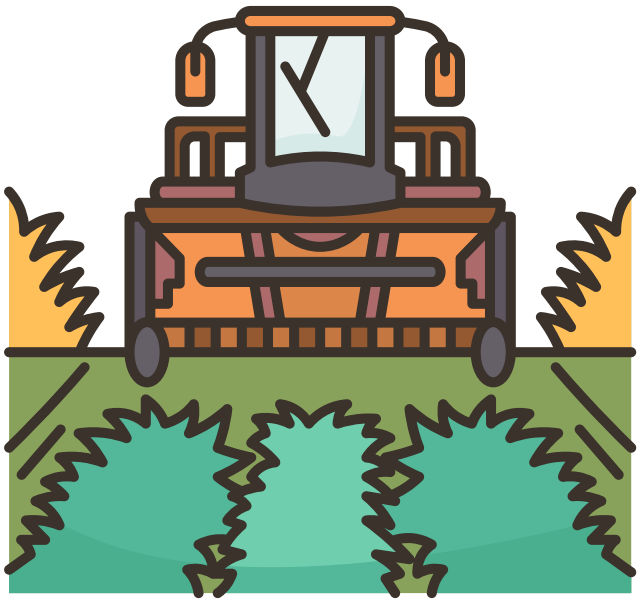


2. Agriculture :

High temperatures can damage agriculture. plant growth is negatively impacted by the high daytime temperature and some crops required cool night temperatures. Heat waves also increased the chances of livestock experiencing heat stress, especially when nighttime temperatures remain high and animals are unable to cool off. Heat-stressed cattle can experience declines in milk production, slower growth, and reduced conception rates.

3. Energy :

Warmer temperatures affect many aspects of the global energy system, including production, transmission, and demand. While higher summer temperatures increase electricity demand for cooling, at the same time, they can lower the ability of transmission lines to carry power, possibly leading to electricity reliability issues like rolling blackouts during heat waves.



Do's & Don'ts :

Heat Wave conditions can result in physiological strain, which could even result in death.
To minimize the impact during the heat wave and to prevent serious ailment or death because of heat stroke, you can take the following measures:

• Avoid going out in the sun, especially between 12.00 noon and 3.00 p.m.

• Drink sufficient water as often as possible, even if not thirsty.

• Wear lightweight, light-colored, loose, and porous cotton clothes. Use protective goggles, an umbrella/hat, shoes, or chappals while going out in sun.

• Avoid strenuous activities when the outside temperature is high. Avoid working outside between 12 noon and 3 p.m.

• While traveling, carry water with you.

• Avoid alcohol, tea, coffee, and carbonated soft drinks, which dehydrate the body.

• Avoid high-protein food and do not eat stale food.

• If you work outside, use a hat or an umbrella, and also use a damp cloth on your head, neck, face, and limbs

• Do not leave children or pets in parked vehicles

• If you feel faint or ill, see a doctor immediately.

• Use ORS, homemade drinks like lassi, Torani (rice water), lemon water, buttermilk, etc. which helps to rehydrate the body.

• Keep animals in shade and give them plenty of water to drink.

• Keep your home cool, use curtains, shutters, or sunshades and open windows at night.

• Use fans, and damp clothing and take bath in cold water frequently.

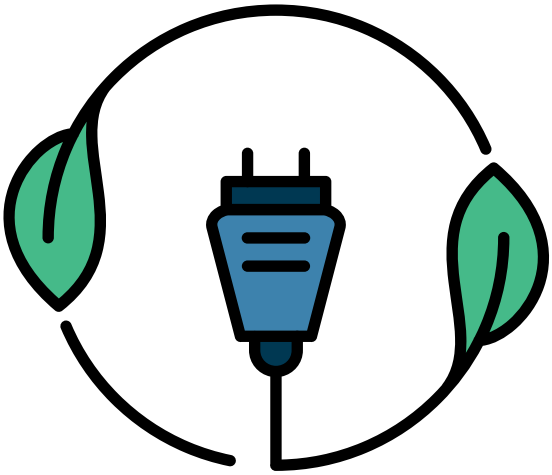
How to prevent the impact of heat waves :
Generally, the basic things that we can prevent are planting trees and also measures to prevent global warming and climate change.

NATURAL RESOURCES DEPLETION

Ayushi
Content Writer, ERF

The depletion of natural resources occurs when resources are consumed at a faster rate than their replacement. Natural resources are those resources that are in existence without human actions, and that can either be renewable or non-renewable. As we can see it from last evidence that exploitation of natural resources at a large scale. The effects that cause damage to our nature from time to time was a result of our own actions. Nature is our friend from the start of time but Humans are doing opposite and killing the nature for their own happiness and selfishness.

There are many things which are responsible for depletion of natural resources for example- Overpopulation; the more human will be here the more resources will be demanded & it will not give time to nature for healing few other reasons are logging the overuse of wood is a colossal threat to us; Industrial and technical development ;the luxury we enjoy today everything is easily operable making our life easy but dark side of the life is the depletion of our natural resources. lastly the transportation which is the biggest convenience of our life is the biggest cause as Natural fuel took thousand of years to renew but doing demand and supple over exhausting it.



The effect of our doings are unimaginable to us as we can neglect them today, but they can be neglected in the long run of time. Of the necessities for human-like water due to overuse, only 1.2% is drinkable and just 3% is fresh water if the thing is still going to be like this then one Day Human will die out of thirst. The other major threat is the extinction of species due to poaching and deforestation few species are already extinct and few are endangered, this will affect the ecosystem and that is not good for us.

But the only species with brains is Human and if we can destroy nature we can fix it too, what we should do? The question arises few solutions can be controlling deforestation it will help nature to breathe and take time to recover second thing we can do is Sustainable development we should use resources within the limit and should find inexhaustible substances for energy development.

To sum up "it's our home and we have to take care of it".so we should be helping nature to heal and stop doing what hurts our home.

What causes the depletion of our natural resources?

- Overpopulation. With 7 billion people on the planet, the demand on Earth's resources continue to increase.
- Overconsumption and waste. This is the excessive and unnecessary use of resources.
- Deforestation and the Destruction of Ecosystems leading to loss of biodiversity.
- Mining of Minerals and Oil.
- Technological and Industrial Development.
- Erosion.
- Pollution and Contamination of resources.

Source:freepik

SUSTAINABLE LIVING

Aditi Avasthi
Shyama Prasad Mukherji College

“We have not inherited this earth from our forefathers; we have borrowed it from our children”.
- Lester Brown

Sustainable living is following a lifestyle that does not impact the earth negatively. It is also termed "net zero living". In recent years there has been a boom in green technology and a much greater emphasis on driving business in the direction of sustainable development goals (SDGs). This year COP27, an initiative by United Nations Climate Change Conference held in Egypt, concluded with a decision to operationalize funding to poorer countries that have become victims of climate change by the developed countries. Sustainable development can help fight climate change thus leading to a better quality of life for both, the present and future generations. Sustainability has three pillars namely- economic viability, environmental protection, and social equity. technical feasibility, political legitimacy, and institutional capacity are other aspects of sustainability. All these have to be kept in mind while devising, strategizing, and implementing SDGs. The application and extensive philosophy of ecological living are thoroughly interrelated with universal principles of sustainable development.

We can opt for a sustainable lifestyle by taking small steps. We can avoid the use of plastics by switching to hemp, jute cotton and bamboo fibres. We can switch to a climate-friendly diets such as vegan and vegetarian. We can reduce our consumption and control our purchasing habits, by mending our older stuff or purchasing second hand. Consumerism is a big issue now. Switching to and making more use of public transportation and green vehicles such as an electric car would help in reducing pollution. Buying stuff which is locally made or grown and promoting micro enterprises and local industries. We should be considerate tourists by keeping the places we visit- clean. These little steps would benefit not only us in the present, but also our future generations. Geopolitical matters are important for the successful working of SDGs. In case of political lethargy, we should always insist and create awareness. All of us can learn more about minimalism, as was in the book and documentary, "Ikigai", which literally means "life purpose" and Zero waste living.

SOIL RESTORATION METHODS

Ritika Sen

Freelance content writer

Soil restoration is a method of enhancing compacted soils to improve its nutrition and porosity. A degenerated soil basically losses its ability to provide food and occupancy to living organisms and its surrounding. By the help of restoring soil the infiltration capacity of soil which basically recharges the water level and increase the water availability. Soil erosion and landslides can be prevented by increasing the moisture content as increased moisture content helps the vegetation to grow well.

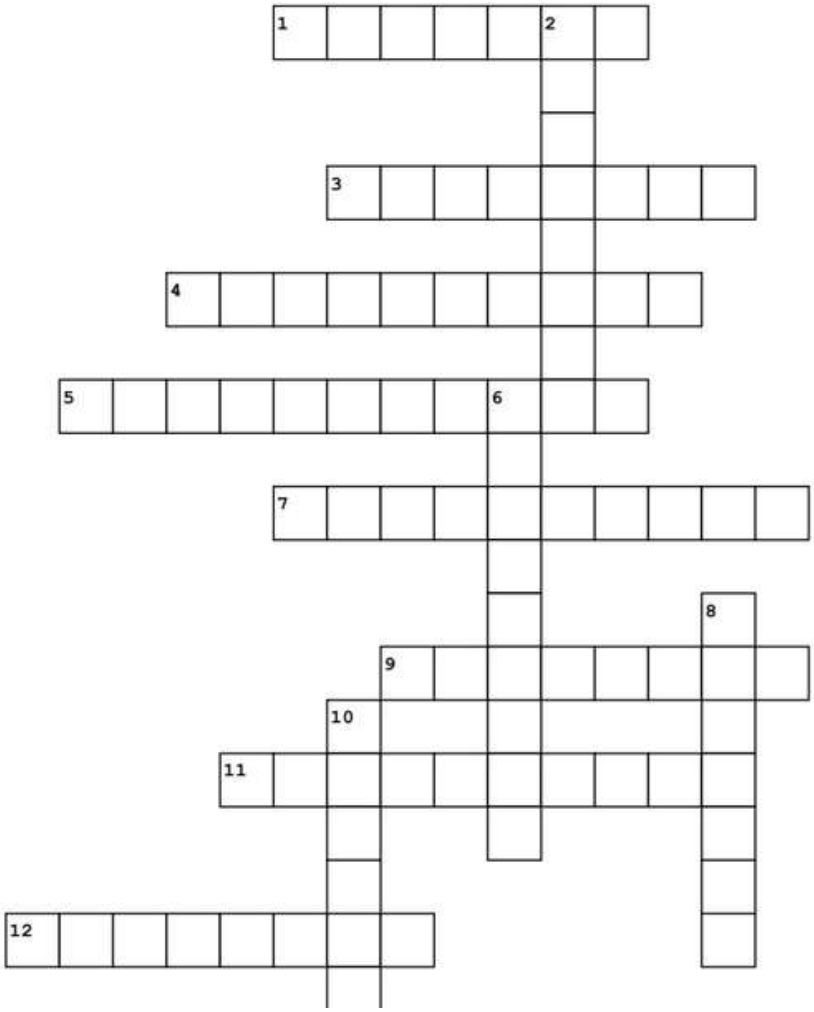
Soil restoration includes:-

1. Mechanical loosening
2. Biological and mechanical inflation
3. Dense vegetation plantation
4. Soil amendments

Soil restoration can be done in the following ways:-

1. Evaluation of the condition of soil and improving it using technical support
2. Planting pioneer species in order to increase the stability and organic matter content of the soil.
3. Planting live stakes of native arboreal species to prevent soil erosion.
4. Reforestation with native species from local nurseries or transplanted seedlings.
5. Doing correspondent actions for water and soil preservation.
6. Performing maintenance work properly.
7. Assessing the restoration programme and taking the follow-up actions.

CROSS WORD



Across

1. a layer of rock or sand that can absorb and hold water
3. the people or companies engaged in a particular kind of commercial enterprise.
4. the state or situation that results when something (such as a plant or animal species) has died out completely.
5. A substance that can cause cancer.
7. to be used once or only a few times: made to be thrown away after one use or several conservation the careful use of natural resources uses.
9. available source of wealth; a new or reserve supply that can be drawn upon when needed.
11. Relating to or using the natural heat produced inside the Earth.
12. the atmosphere of an environment

Down

2. The act of producing or sending out something (such as energy or gas) from a source.
6. Everything that exists in a particular environment.
8. a science that deals with the relationships between groups of living things and their environments.
10. a line of argument rationalizing the course of action of a government

1. aquifer, 2. emission, 3.industry , 4. extiction,
5. carcinogens, 6. ecosystem, 7. disposable, 8. ecology, 9. resource,
10. policy, 11. geothermal, 12. ambiance

CREDITS

Publisher
Earth Root Foundation
456, Pocket B, Sector-13, Dwarka, New Delhi-110078
www.earthrootfoundation.org | info@earthrootfoundation.org | +91 8766317774

@earthrootfoundation @EarthRootFound1 Earth Root Foundation Earth Root Foundation