



Enviro Notes

Environment Periodical for change makers
(An Environment Awareness Initiative by Nirvaan Somany)

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Agriculture and the Environment

Agriculture is the world's largest industry. It employs more than one billion people and generates over \$1.3 trillion dollars worth of food annually. Pasture and cropland occupy around 50 percent of the Earth's habitable land and provide habitat and food for a multitude of species.

When agricultural operations are sustainably managed, they can preserve and restore critical habitats, help protect watersheds, and improve soil health and water quality. But unsustainable practices have serious impacts on people and the environment.

The need for sustainable resource management is increasingly urgent. Demand for agricultural commodities is rising rapidly as the world's population grows. Agriculture's deep connections to the world economy, human societies and biodiversity make it one of the most important frontiers for conservation around the globe.

How and where we produce food is one of the most important conservation issues of the 21st century. The challenge of sustaining life on an increasingly crowded planet of more than 7 billion people grows more complicated every day. By the year 2050, our planet will be home to another 2 billion people. How will we feed them all? Not only will there be more people, but everyone will have more money to spend on food.

Agriculture is the leading source of pollution in many countries. Pesticides, fertilizers and other toxic farm chemicals can poison fresh water, marine ecosystems, air and soil. They also can remain in the environment for generations. Many pesticides are suspected of disrupting the hormonal systems of people and wildlife. Fertilizer run-off impacts waterways and coral reefs.

Farming is the only viable livelihood option for three-quarters of the global population living below the pover-

ty line. Subsidies provided by US and European governments to their agriculturalists encourage overproduction, which drives down world prices and forces many producers in developing countries to cut corners environmentally. Producers facing declining harvests from cleared lands expand into surrounding wild lands that are rich in biodiversity, resulting in a cycle of more people living below the poverty line and biodiversity loss.

The agricultural sector consumes about 69 percent of the planet's fresh water. Without creative conservation measures in place, agricultural production consumes excessive water and degrades water quality. This adversely impacts freshwater systems throughout the world.

Many farming practices-such as burning fields and using gasoline-powered machinery-are significant contributors to the buildup of green
(to be continue on page 2)

Environmental Impacts of Food and Agriculture

GREENHOUSE GASES



Food accounts for **26%** of global greenhouse emissions.

LAND USE

HALF of the world's habitable land is used for agriculture.



FRESHWATER USE



70% of global freshwater withdrawals are for agriculture.

WATER POLLUTION

78% of global ocean and freshwater eutrophication is caused by agriculture.



BIODIVERSITY LOSS



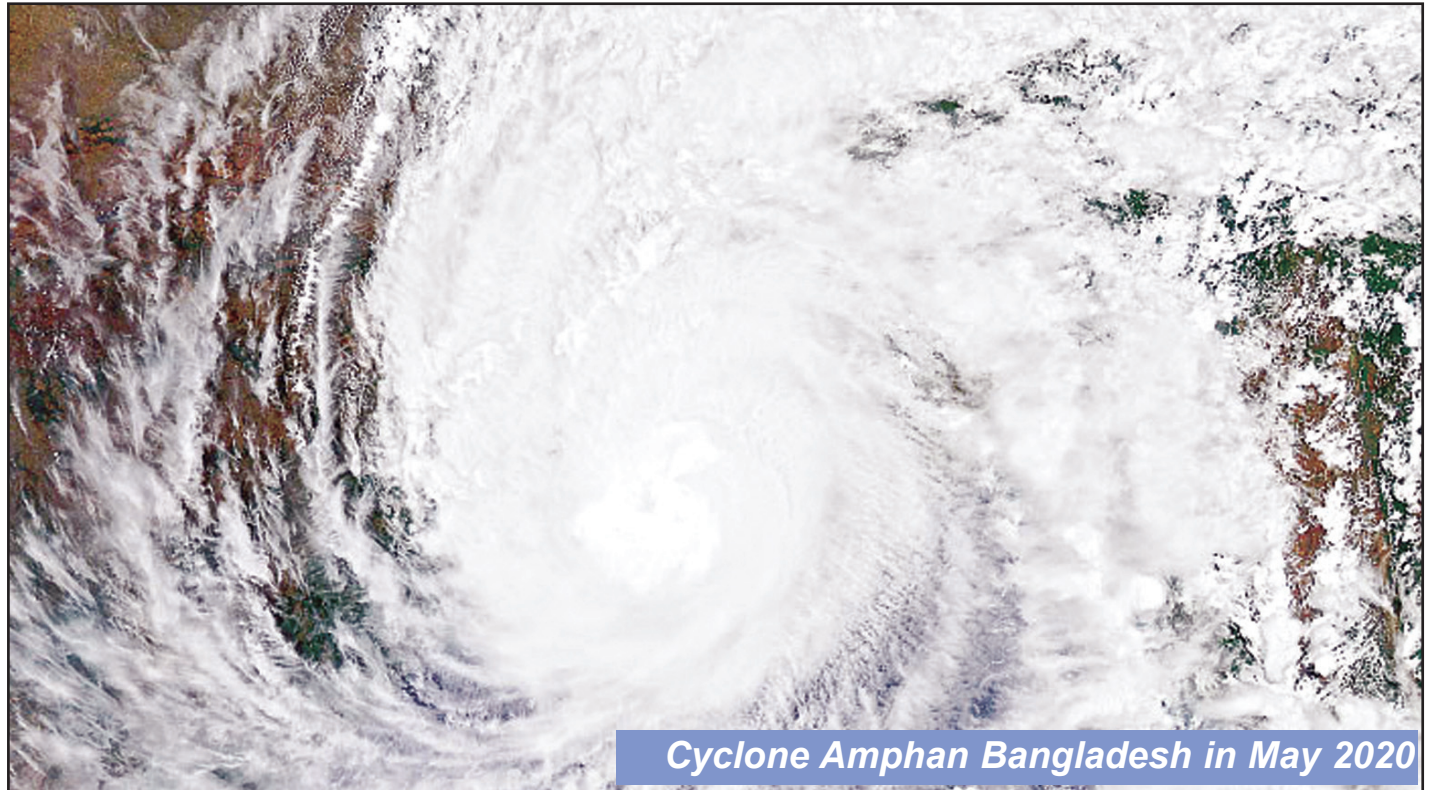
94% of mammal biomass (excluding humans) is livestock.

In recent years, there has been an increase in the occurrence of unseasonal cyclones in various parts of the world. These unusual weather events have raised questions about their causes and what can be done to prevent them. In this article, we will explore the reasons why unseasonal cyclones are occurring and their potential impacts on the environment.

First and foremost, it is important to understand what cyclones are and how they form. Cyclones, also known as hurricanes or typhoons depending on the region, are powerful tropical storms characterized by strong winds and heavy rainfall. They form over warm ocean waters and are powered by the heat and moisture of the ocean. The warm air rises, creating an area of low pressure, which in turn draws in more warm air and moisture, causing the storm to intensify.

One of the main reasons why unseasonal cyclones are occurring is climate change. As the global temperature rises, so too does the temperature of the ocean, which is the fuel for cyclones. The warmer ocean water provides more energy for storms to form and intensify, making them more frequent and more powerful. Another factor contributing to the occurrence of unseasonal cyclones is the El Niño-Southern Oscillation (ENSO) cycle. ENSO is a natural climate phenomenon that occurs in the equatorial Pacific Ocean

Unseasonal Cyclones



Cyclone Amphan Bangladesh in May 2020

and affects weather patterns worldwide. During an El Niño event, the ocean temperatures in the eastern Pacific are warmer than usual, leading to an increase in the number of cyclones in the eastern Pacific and a decrease in the number of cyclones in the Atlantic. However, during a La Niña event, the opposite occurs, with an increase in Atlantic cyclones and a decrease in eastern Pacific cyclones. The impact of unseasonal cyclones on the environment can be significant.

The heavy rainfall associated with cyclones can cause flooding, landslides, and erosion, which can lead to property damage, loss of crops, and even loss of life. The strong winds associated with cyclones can also cause significant damage to infrastructure, including buildings, power

lines, and transportation networks. Additionally, the storm surge caused by cyclones can lead to coastal erosion and flooding, further exacerbating the impact of the storm.

India is a country that is particularly vulnerable to the impacts of unseasonal cyclones, which have become increasingly common in recent years.

One example is Cyclone Amphan, which hit the eastern coast of India and Bangladesh in May 2020. This was an unusually early cyclone for the region, as the cyclone season typically begins in April. Amphan was one of the strongest cyclones to hit the region in decades, with wind speeds reaching up to 185 km/h (115 mph). The cyclone caused widespread damage to infrastructure, including power lines and roads, and led to the dis-

placement of millions of people. The heavy rainfall associated with the cyclone also caused flooding and landslides, leading to loss of crops and property damage.

In conclusion, the occurrence of unseasonal cyclones is a complex issue with multiple contributing factors. While some of these factors are natural, such as the ENSO cycle, the impact of climate change cannot be ignored. It is essential that we take action to reduce greenhouse gas emissions and address the root causes of climate change to prevent further damage to the environment and communities. We must also prepare for the possibility of more frequent and intense cyclones in the future by implementing effective disaster risk reduction strategies and investing in resilient infrastructure.

Agriculture and the Environment

(continues from page 1)

house gases in the atmosphere. The Food and Agriculture Organization of the United Nations (FAO) contends that the livestock sector alone is responsible for 18% of all greenhouse gas production. Additionally, clearing land for agricultural production is a major contributor to climate change, as the carbon stored in intact forests is released when they are cut or burned.

Agricultural expansion is a major driver of deforestation and other ecological destruction, decimating habitats and biodiversity. Oil palm displaces

lowland forests in Indonesia while soy production damages the Cerrado and Atlantic Forests of Brazil and Paraguay. Loss of forests and unsustainable farming practices lead to extreme erosion. During the past 150 years, half of all agricultural topsoil has been lost.

Sustainable farming practices are important for the environment because they promote long-term environmental health and productivity. These practices focus on minimizing the negative impact of farming on the environment while also maximizing the positive benefits that agriculture can provide.

Mangroves

Mangroves are a unique type of forest that grow in the intertidal zone of tropical and subtropical coastlines. These salt-tolerant trees and shrubs are incredibly important ecosystems that provide a range of ecological, economic, and social benefits.

One of the most significant ecological functions of mangroves is their ability to protect coastal areas from erosion and storm surges. Their intricate root systems and dense foliage help to stabilize shorelines, reduce the impact of waves and currents, and prevent coastal flooding. Mangroves also play a crucial role in improving water quality by filtering pollutants and trapping sediment, which helps to maintain the health of coral reefs and other coastal ecosystems.

Furthermore, mangroves provide vital habitat for a

range of marine and terrestrial species. They serve as nurseries for fish and other aquatic species, which depend on mangroves for food, shelter, and protection from predators. Many bird species also rely on mangroves for nesting and feeding, while primates, reptiles, and other animals use mangroves as important feeding and breeding habitats.

Mangroves also have significant economic and social benefits. They are an important source of timber, fuelwood, and non-timber forest products, which provide livelihoods for millions of people worldwide. Mangrove forests also support important fisheries and aquaculture industries, which provide food and income for coastal communities.

Despite their ecological,

economic, and social importance, mangroves are under threat from a range of human activities. Coastal development, pollution, overfishing, and climate change are all significant threats to mangrove ecosystems, which can result in the degradation or loss of mangrove forests and the valuable ecosystem services they provide.

However, there are a variety of strategies that can be used to protect and restore mangroves. One of the most important is to establish protected areas and enforce regulations that prevent destructive practices such as clear-cutting, shrimp farming, and dredging. Education and awareness-raising campaigns can also help to promote sustainable use and conservation of

mangrove ecosystems.

Additionally, restoring degraded mangrove areas can help to enhance ecosystem resilience and restore important ecological functions. This can be achieved through a variety of techniques, including planting new mangrove trees and restoring hydrology and soil conditions to support healthy mangrove growth.

In conclusion, mangroves are vital ecosystems that provide a range of ecological, economic, and social benefits. Protecting and restoring mangroves is essential to maintain the health of our coastal environments, support the livelihoods of millions of people, and conserve the rich biodiversity of our planet.



NATURAL NUMBERS
THE VALUE OF THE PLANET IN MINUTES

Why are mangroves unique?



SALT TOLERANT



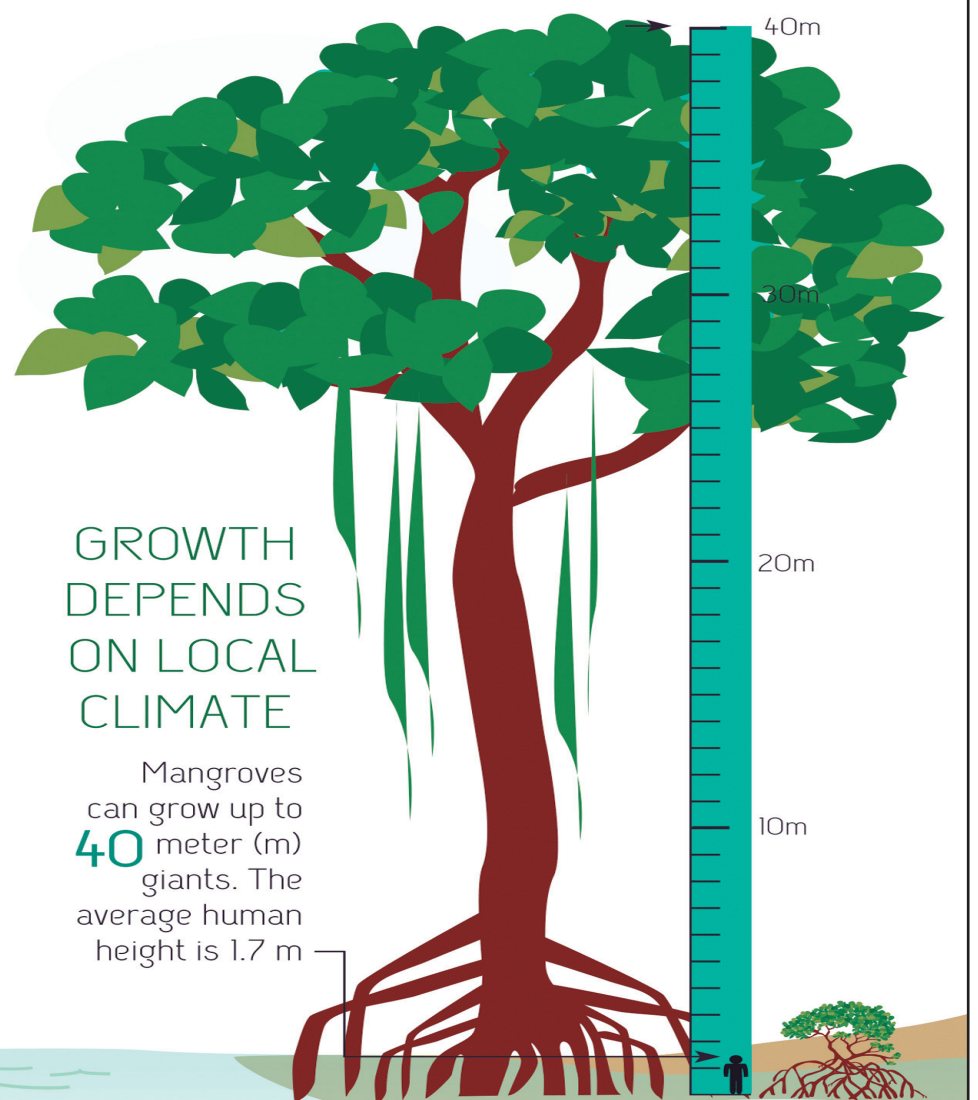
PRODUCTIVE

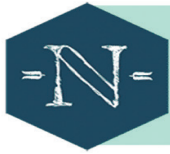


LOW OXYGEN
ADAPTED



BIODIVERSITY
HUB





What are mangroves?

TROPICAL TREES

Mangroves are found worldwide around tropical locations. They are adapted to survive in harsh and salty coastal regions.

SPECIES RICH

There are over **60** species of mangroves worldwide that inhabit the harsh and salty conditions of the intertidal.

ECOLOGICALLY & ECONOMICALLY VALUABLE

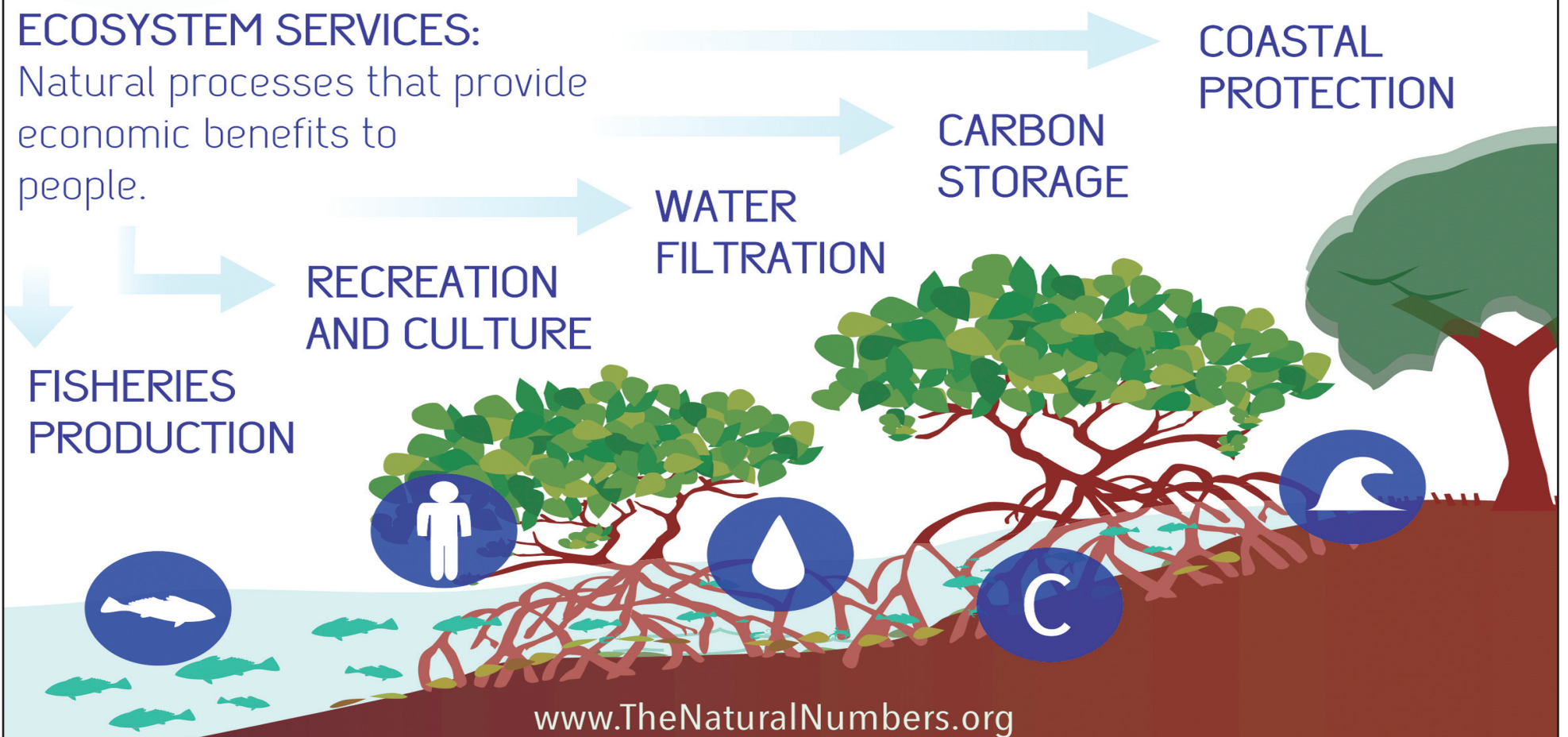
Mangroves support entire ecosystems of thriving life and provide **goods and services** people depend upon in coastal communities around the world.



What makes mangroves valuable to people?

ECOSYSTEM SERVICES:

Natural processes that provide economic benefits to people.



www.TheNaturalNumbers.org