Geography

CHAPT 2-How can we sustainably manage natural resources

What is a resource-A material that is identified by people to be useful Eg.Metal,plastic

How do people identify resources -A resource to one group of people might not be to another group,Culture&tech can shape how we decide whether an object is a resource

Whats a natural resource -Useful materials found on earth that are produced by occurring natural processes

How are they classified

Renewable-Materials that are replenished naturally within the same time period they are used(unlimited)

Non-Renewable-Materials which may not be able to replenished naturally/in the same time period they are used, replenishing the resource takes a long time beyond the period used ,thus its availability is limited

How can we use natural resources sustainably

Conserve by reducing our consumption of products, which in turn reduces the number of natural resources used.

Reusing a product reduces the need to buy or use materials. Recycling turns used materials into new & useful ones ,when we recycle we reduce the need to mine for new resources& Recover resources,save on the use of electricity as it takes less energy to recycle than to create a new product.

Technological development can influence our ability to make use of resources&increase the efficiency of using resources so that we can reduce our environmental footprint eg. solar panels

Peoples view of natural resources

Nature centred-Think that the environment should be preserved,protected&retained in its original state, use of the environment should be minimised

Human centred-Thinks the environment is valuable because humans can obtain materials for their use &benefit,are motivated to find ways to extract natural resources to enhance their personal well-being.Which in turn negatively impact the availability of resources & the physical environment

Chapt 3-Water&its spatial distribution

Water stores-They are places where water is found & can be categorised as freshwater(Glaicers,rivers,lakes, groundwater,soils)&saltwater stores(Oceans).Water stores are not evenly distributed on earths surface,though water can move from 1 store to another through flows

Oceans-Large masses of water that are connected to one another,the oceans in the world are,The Pacific,Atlantic,Indian, Arctic,Antarctic Ocean

Glaciers-Large masses of ice that rest on land or float in sea,found in places that snow throughout the year so that enough snow accumulates to harden into ice,they move slowly as they are very heavy

Lakes-Water bodies surrounded by land,may get water from rain,snow or rivers

Rivers-Natural wide flows of freshwater through land that store water temporarily before it flows in another water body

Soil-Loose topmost area of earth surface where plants grow.When it rains,water passes through the soil through pores.Water that's stored in the soil is called soil moisture,water that passes through soil forms when a part of the water flows to the bedrock beneath.Filling the gaps up with water.(Groundwater)

Hydrological cycle-A sequence of processes that occur to ensure water is naturally replenished on earth

Percipitation-Water falls as rain or snow(if air is cool enough)

Groundwater-Water that seeps into the ground may be absorbed by plants/stored as groundwater

Surface runoff-Water flows from highlands &over into streams&rivers

Evaporation-The suns heat causes water to evaporate.Water changes into a vapour

Transpiration-Plants give out water vapour through leaves

Condensation-Warm moist air cools as it rises,vapour changes into water droplets.Large amounts of droplets gather to form clouds

Water budget-Describes the flow of water in&out of a catchment area.Must have a balanced input&output to avoid water surplus/deficit

Chapt 4-Relation of water with the environment & people

How does variations in precipitation affect the availability of water-This may result in droughts or floods depending if too much or too little precipitation it receives

Floods-An overflow of a large amount of water onto dry land.Can happen in a form of flash floods&river floods

Flash floods-Causes by exceptionally heavy rainfall over a short period of time.Often occur in dry areas with not enough soil or vegetation to allow rainwater to infiltrate the ground,causing surface runoff which floods low lying areas
River floods-Typically caused by heavy rainfall or meltwater produced when snow /ice starts to melt.Large amounts of water enter streams,which flows into rivers.Water level in rivers rise rapidly&evantually overflows the banks,flooding the surrounding areas
Droughts-A long period of time with little or no rainfall in a specific area.Droughts may last for months or years,causing the area to be drier than normal.Water stores would start to dry up,reducing the amt of water available for human use

How do people use water

Domestic-Using water for home activities(Bathing,cooking&flushing account for the highest %s of domestic water use
Recreation-Enables people to carry out certain recreational activities(fishing/canoeing)
Agriculture-Largest use of water worldwide,used to grow crops&rear animals
Industry-Used to cool equipment as they generate a lot of heat&used as a cleaning agent in wafer fabrication

How does human actions lead to water pollution&its associated impact

Water pollution occurs when harmful substances enter water bodies&cause water qualities to fall.This poses a threat to aquatic life.⅓ of rivers in Africa&Asia,even though they are a source of water for millions

Chapt 5-Tropical Rainforests

Tropical Rainforests and climates
What is the tropical climate
Climate refers to the average weather conditions of a place over a long period of time,usually more than 30 years,The climate experienced by the tropics are found near the equator between the tropic of cancer & capricorn
What are tropical rainforests and where are they found
The tropical rainforest is the main type of natural vegetation found in parts of the world that experience the tropical climate.Tropical rainforests can be found in Central and South America,West & Central Africa,South&Southeast Asia.Most of these regions are located very close to the equator
Characteristics of Tropical Rainforests
Receives abundant sunlight and high rainfall throughout the year, making them very suitable for plant growth
The vast majority of tropical rainforests plants are evergreen.They don't shed all their leaves at a particular time of the year.They continuously grow the leaves that they have shed.This is unlike trees of temperate deciduous forests in Europe which shed their leaves before winter
The favourable conditions of the rainforests hosts the most plant species
Forest structure
Undergrowth layer(0-20m)
Found beneath the canopy layer .Very little sunlight is able to reach this layer.Not many plants are able to grow here except smaller ones and those able to grow in the shade
Vegetation is relatively sparse but when there's gaps in the canopy,certain species take advantage of this situation by quickly filling in these gaps
Canopy layer(20-30m)
Where most rainforest trees grow to this height,their crowns interlocking to form a thick mass of branches and leaves.It prevents 97-98% of the light from passing through to reach the forest floor
Emergent Layer(30-50m)
The tallest trees in the rainforests grow to this height
How plants adapt
-Broad leaves Large surface area=Absorbs the most sunlight as possible thus makes more food for its survival&growth
-Waxy leaves Glossy appearance thus Reduces the amt of water vapour it loses to the atmosphere through transpiration as a result of high temp in the rainforests
-Drip tips Small narrow tips that point down to allow rainwater to flow off them easily in order to prevent growth of fungi or bacteria
-Buttress roots Keep the tree upright and prevent them from tipping over as they have shallow roots which don't extend very deep
What are mangroves and where are they found

Mangroves are found along and very near to the coast.They are made up of a group of plants called mangroves which are able to grow in waters that has a higher salinity compared to fresh water ,mangrove species are able to grow in freshwater areas as well but they grow better in waters with high salinity due to the lack of competition from other types of plants in these type of conditions

Most areas where mangrove forests are found experience tropical climate.This is because mangrove plants are unable to withstand temperatures under 20,they also grow in calm water conditions so that their seedlings root themselves and don't get washed away by strong waves. They also encourage the accumulation of fine sediments containing nutrients,Which they require to sustain their growth.Hence,they are usually found only in sheltered environments along/very close to the coast,such as shallow river mouths or behind islands

Characteristics

Lower lying parts of the coast,which are closer to low tide level,are flooded for longer periods of time by the tide compared to areas which are further inland and closer to high tide level,Mangrove plants that are able to tolerate high salinity levels and longer periods of flooding are thus found closest to the low tide level such groups of species typically include sonneratia and avicennia.On the other hand,other groups of species which are not tolerant of these conditions such as Rhizophora and bruguiera are found closer to the high tide level instead,where the duration of high tide is shorter

Mangrove adaptation

-Salt secreting leaves Removes salt from the saline water that the roots have absorbed.As the concentrated salt solution secreted by leaves,as the salt solution evaporates,salt crystals are left behind,and are subsequently removed by rain or wind .Other groups of mangrove species like sonneratia are unable to secrete salt through leaves,thus they deposit salt in old leaves which eventually shed,this prevents salt from building up from within the plant

-Salt excluding roots Some mangrove species deny the intake of salt using their roots,these salt excluding species have roots which prevents salt from entering Eg,Brugeria

-Aerial roots Soil found in coastal environments are flooded for a few hours a day by tide,thus,it is waterlogged,poor in oxygen and is soft and unstable AR helps them adapt to these conditions,They grow partially above the soil surface,which enables them to take in oxygen directly from the air when they are exposed .This helps them survive in poor soil.The ARs help to anchor the mangrove plant to the soft soil,thus preventing them getting uprooted and washed away

CHAPT 6-Suitable management of tropical rainforests

Environmental function of tropical rainforests

Generate O2TR support the survival of many organisms in the physical environment because of its ability to generate O2 Rainforest and mangrove plants carry out o2 generation through photosynthesis(Absorbs CO2 ,water&Sunlight to produce food for their own survival and growth,They are also capable of producing O2 throughout the year as they are evergreen

Provide habitat for diverse animal life TRs are rich in biodiversity as their warm climate & abundance of water/food year round makes them very suitable habitat for a wide variety of animals.Mangroves serve as breeding grounds for young fish as its dense root network provides shelter from larger predators

Prevent soil erosion TR usually experiences heavy rainfall which causes soil erosion,RF plants can act as a protective cover over ground surface

Prevent coastal Erosion Mangroves play a part in protecting coastal areas from erosion as the roots and tree trunks cause friction with the waves hitting the coast helping to reduce the power of strong waves and storms

How are TRs used by people-Place for...

Habitation Though many people nowadays live in towns and cities,millions still live in tropical rainforests.Many are considered original inhabitants(Indigenous people) of that area.They depend on their surroundings for food water etc

Recreation TR can become recreational sites for people who live in towns and cities to get close to nature .People can do trekking birdwatching,etc as researchers have found that visiting forests has a positive impact on peoples health,wellbeing

Foods such asNuts,bananas,pepper grow in tropical forests

Raw materials-Valuable sources of wood,metals&minerals,can be mined for human benefit

Consequences-Deforestation is the permanent removal of tropical forests,occurs due to unsustainable cutting down of trees for wood or clearing of land for agri,mining etc

Enhanced greenhouse effect-The earths atmosphere behaves like a greenhouse with greenhouse gases helping to trap heat, when there is too much of this due to deforestation and the trees not being able to absorb co2 the temperature of earth increases due to this,leading to global warming as less heat is able to escape into the atmosphere

How can TRs be managed sustainably

Establish protected areas-Goverments can put strict laws in place to ensure people dont damage protected areas
Promote public education-Encouages sustainable extraction of natural resources from TRs by letting people know& understand why they are under threat,making them more likely to reduce deforestation