



---

# Revision Series

# Geography

## (Part -2)

---

Visit our website [www.sleepyclasses.com](http://www.sleepyclasses.com) or

our [YouTube channel](#) for entire GS Course **FREE** of cost

Also Available: Prelims Crash Course | | Prelims Test Series

## Australian Bushfires

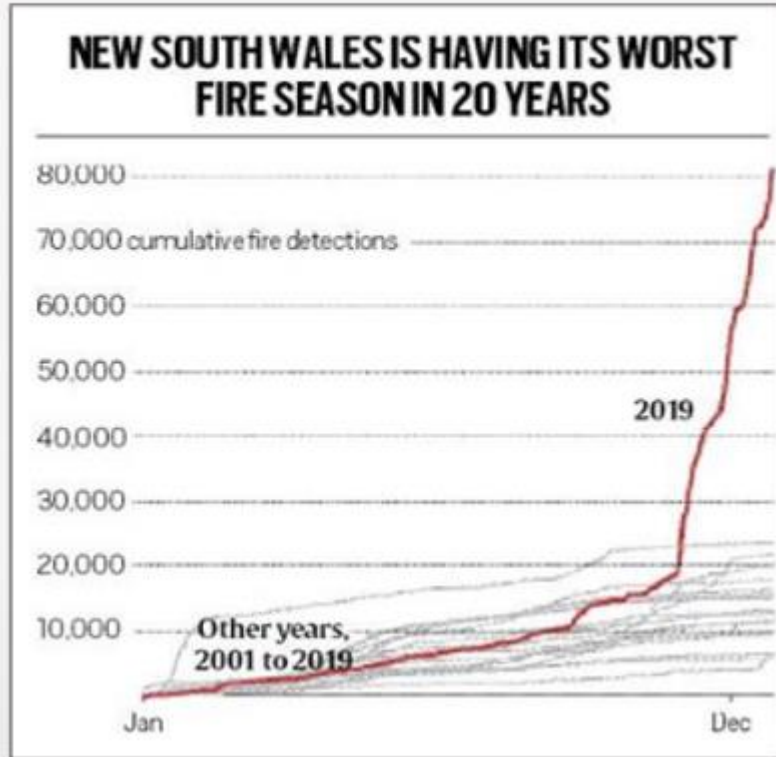
# Australian Bushfires



# Australian Bushfires



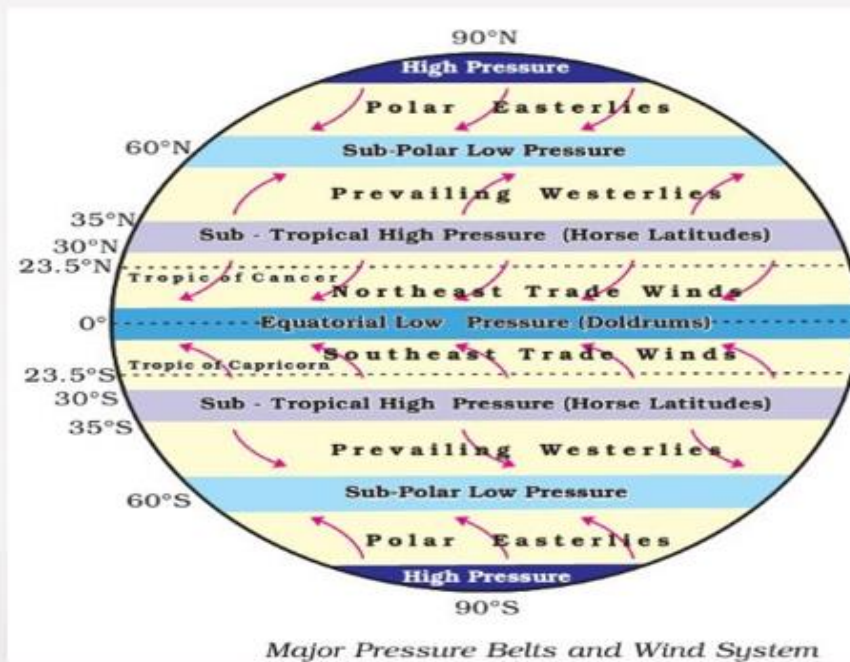
# Australian Bushfires



# Australian Bushfires



# Australian Bushfires

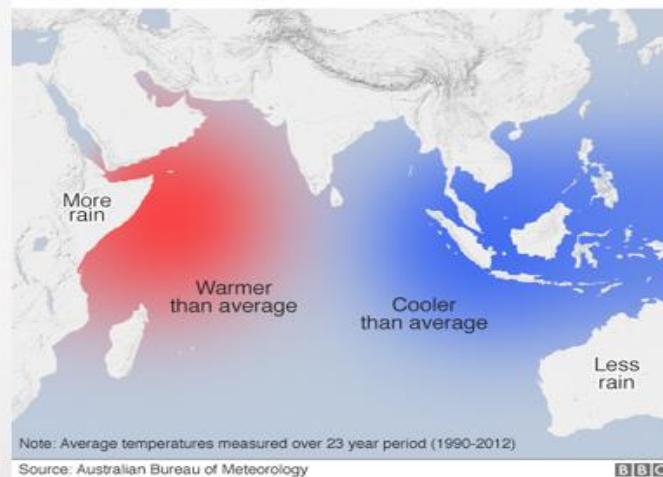


- Driest Inhabited Continent + Forest Cover
- Prolonged Drought
- Positive IOD
- Stratospheric Warming
- Shifting Cultivation

## Positive IOD

### POSITIVE IOD

A positive Indian Ocean Dipole means a wetter west and drier east





## Zombie Fires

- A zombie fire is a fire that continues to burn underground and then reignites on the surface after a period of time.

### Zombie Fires



- Zombie fires happen as a result of wildfires.
- They're called zombie fires as they seem to come back from the dead.
- After a wildfire has been extinguished on the surface, some of it can still burn belowground in secret, fueled by peat and methane.
- These fires can continue to burn all through winter, hidden under a layer of snow, and in spring as the temperature rises, the snow melts and the soil dries out, the wildfires can re-ignite and spread once again. – Feedback Loop.

## Kelps- Context

- Underwater Arctic Forests (Kelps) are expanding according to a research by Canadian Marine Ecology, Universite Laval published in Global Change Biology.
- Climate change is altering marine habitats such as kelp forests on a global scale.

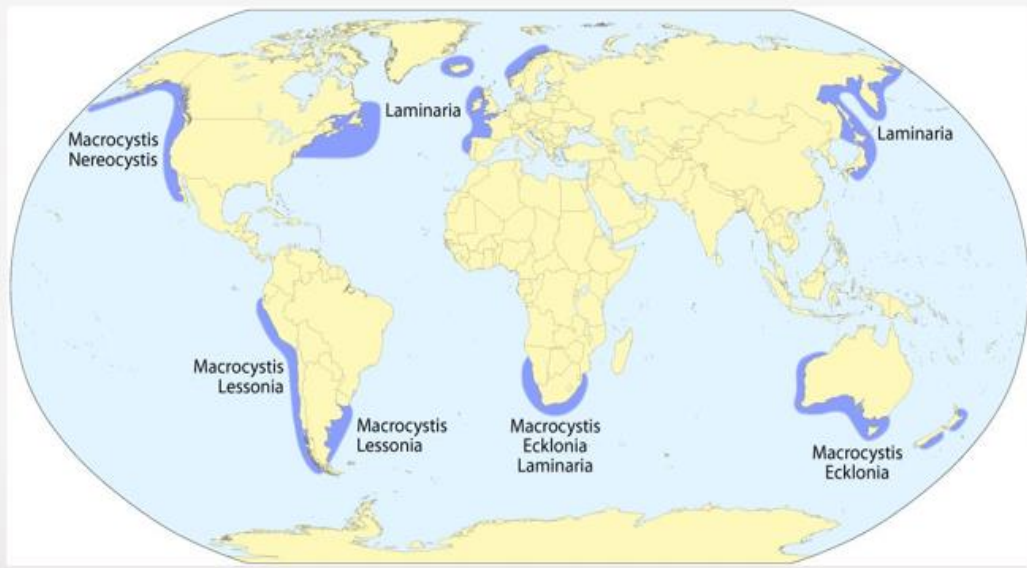
## Kelp Forests

- Kelp forests are underwater forests that thrive well in cold, nutrient rich waters.
- Kelps are large brown algae seaweeds attached to the seafloor and eventually grow to the water's surface and rely on sunlight to generate food and energy.

### Kelp Forests



# Kelp Forests



- Kelp forests occur worldwide throughout temperate and polar coastal oceans.
- Although kelp forests are unknown in tropical surface waters, a few species have been known to occur exclusively in tropical deep waters.
- The longest kelp recorded in the Arctic in Canada was 15 metres, and the deepest was found at 60- metre depth (Disko Bay, Greenland).

## **Significance**

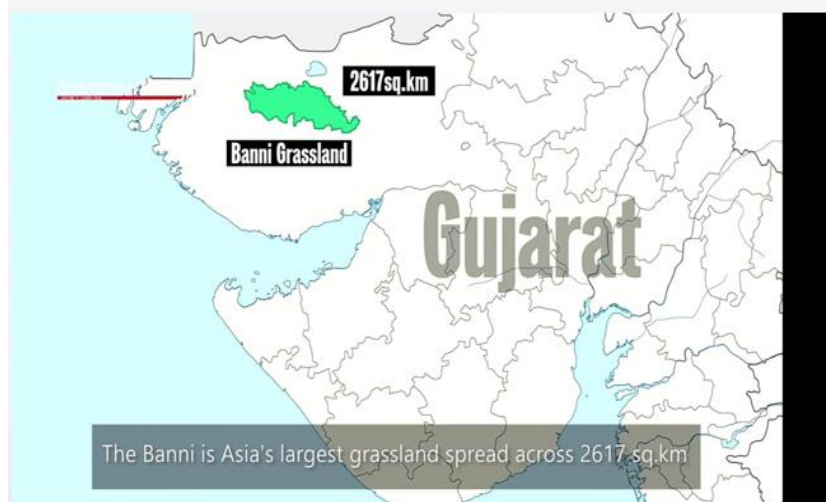
- Kelps function underwater in the same way trees do on land. They create habitat and modify the physical environment by shading light and softening waves.
- They are recognized as one of the most productive and dynamic ecosystems on Earth.
- They are considered as Keystone Species and their removal is likely to result in a relatively significant shift in the composition of the community and perhaps in the physical structure of the environment.
- Kelp forests also help protect coastlines by decreasing the power of waves during storms and reducing coastal erosion.
- Kelp is a coveted food source in many countries, full of potassium, iron, calcium, fibre and iodine.
- It increases productivity of the near shore ecosystem and dumps carbon into that ecosystem.

## Threats

- Thawing permafrost and crumbling Arctic coasts are dumping sediments into coastal waters at alarming rates, which blocks light and could limit plant growth.
- Ocean warming will also move conditions closer to temperatures of maximum growth, and could increase the productivity of these habitats.
- The run-off from melting glaciers will also lower salinity and increase turbidity, which impacts young kelp.
- Destructive fishing practices, coastal pollution, and accidental damage caused by boat entanglement are known to negatively affect kelp forests.

## Banni Grasslands – Invasive Species

### Banni Grasslands – Invasive Species



### Maldhari Tribe



### Banni Grasslands – Invasive Species





- *Prosopis juliflora* – a non-native and invasive tree species – has encroached over half Banni, one of Asia's largest grasslands in Gujarat.
- *Prosopis* was introduced into India's arid landscapes in the late 19th century owing to misplaced beliefs that deserts and grasslands were wastelands and hence needed trees.
- Fuelwood was another reason for its introduction. *Prosopis* was introduced in Banni to keep the salt flats of the Rann of Kachchh in check.

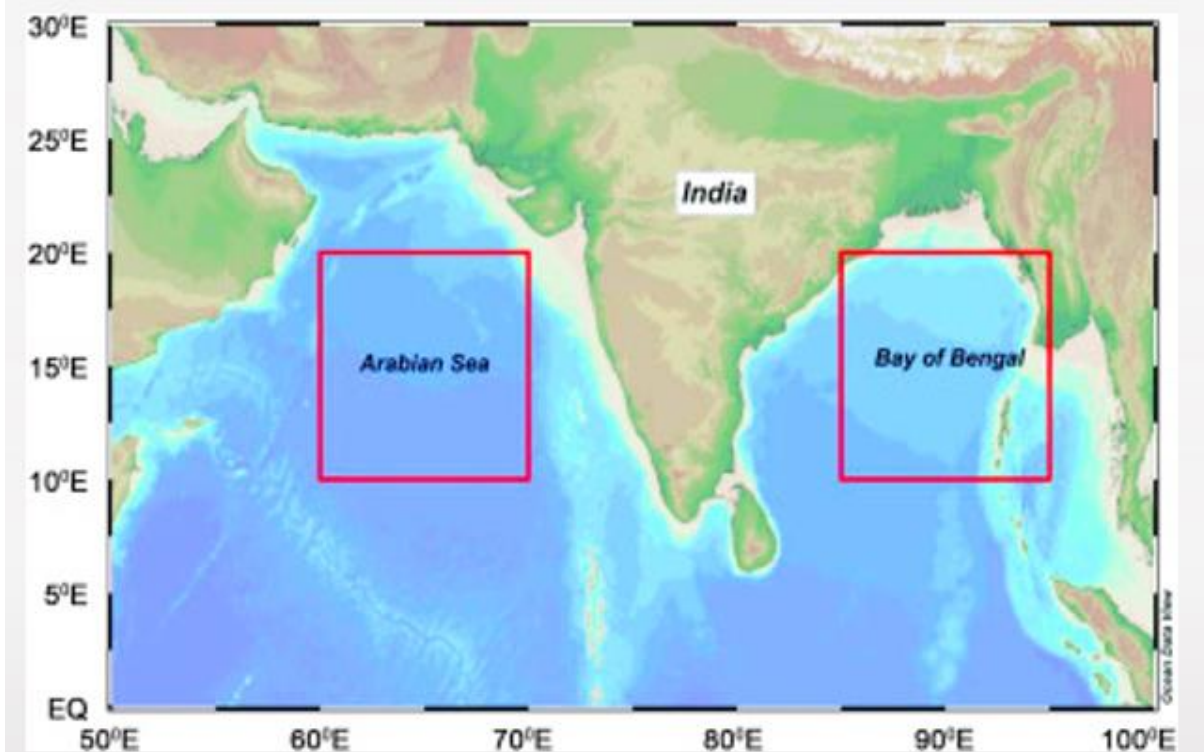
## Puri – Tap Drinking Water



- Odisha's Puri has become the first city in the state to have a drink-from-tap facility.
- This means that the city now has safe drinking water that can be used directly from tap for cooking and drinking, without requiring further filtration.

## Cyclones – Arabian Sea vs Bay of Bengal

### Cyclones – Arabian Sea vs Bay of Bengal



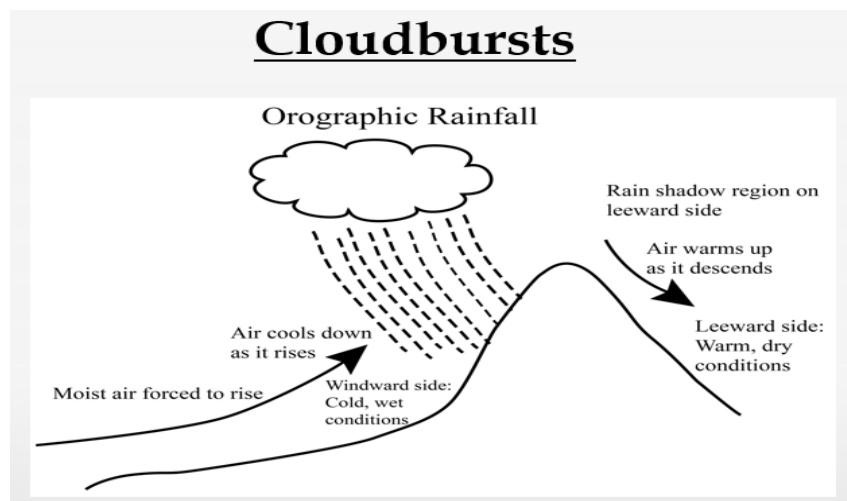


- High sea surface temperatures along with high humidity in the Bay of Bengal - Arabian Sea is relatively cooler than this temperature range.
- Constant inflow of freshwater from the Ganga and Brahmaputra rivers.
- Bay of Bengal closed and smaller water body - higher temperature than Arabian sea. - Less mixing.
- Most of the cyclones in the Arabian Sea are local. They collapse a little after making landfall as there is no back-up supply -- BOB receives remnants of typhoons originated in North West Pacific Ocean.
- The Western Ghats prevents the cyclonic storms to go in the hinterland .
- Hills along the eastern coasts are not high enough to stop cyclones making much inroad into the coastal states.

## Changing Trend

- Sea surface temperatures in the Arabian Sea have increased rapidly during the past century due to global warming.
- Rising temperature is also enabling the Arabian Sea to supply ample energy for the intensification of cyclones.
- Conducive wind shear for cyclones.
- Greater occurrence of El Niño Modoki.

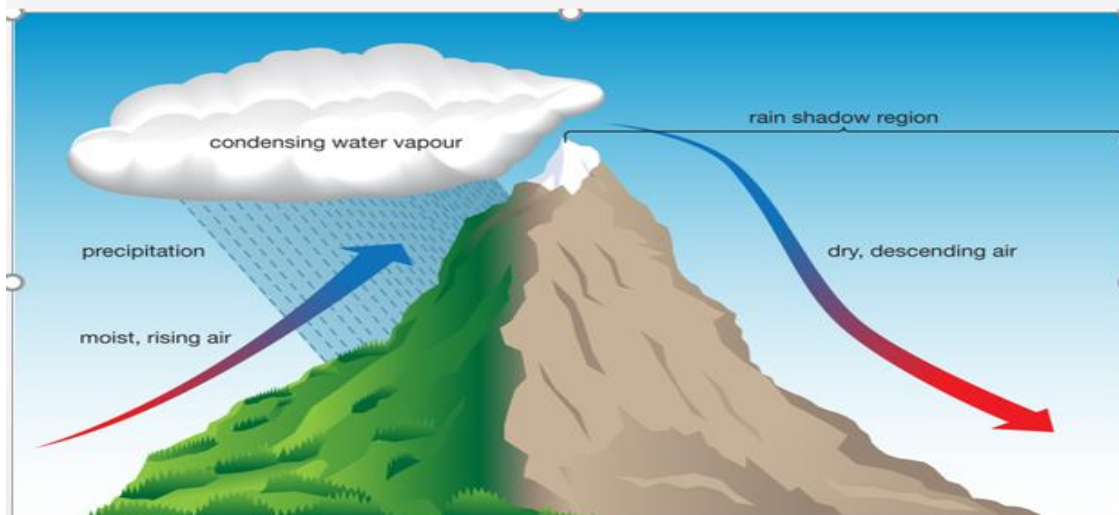
## Cloudbursts



## Cloudbursts



## Cloudbursts



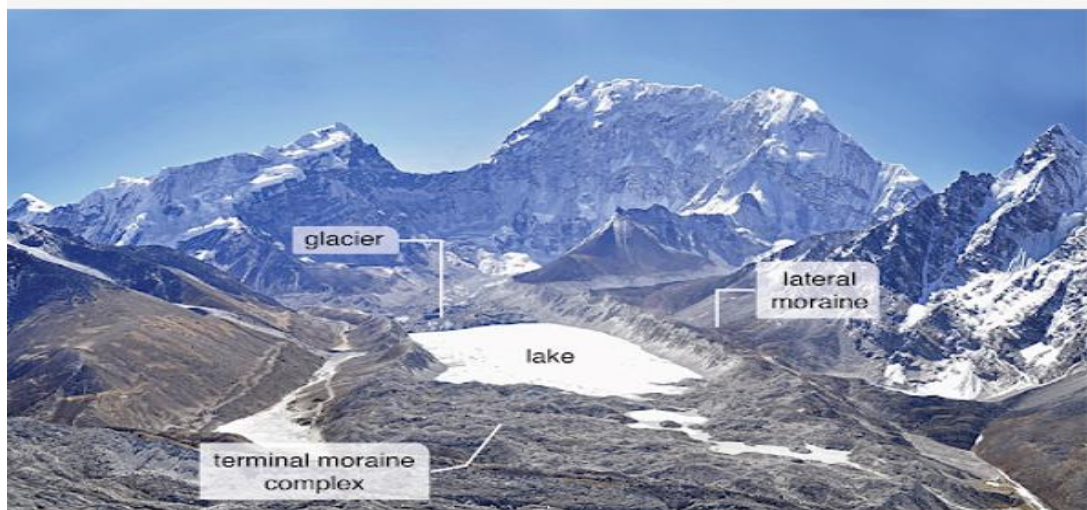
## Cloudbursts



- Cloudbursts are short-duration, intense rainfall events over a small area.
- According to the India Meteorological Department (IMD), it is a weather phenomenon with unexpected precipitation exceeding 100mm/h over a geographical region of approximately 20-30 square km.
- Several studies have shown that climate change will increase the frequency and intensity of cloudbursts in many cities across the globe.
- As temperatures increase the atmosphere can hold more and more moisture and this moisture comes down as a short very intense rainfall for a short duration.
- This results in flash floods in the mountainous areas and urban floods in the cities.

## Glacial Outbursts

### Glacial Outbursts



## Space Rice

### Space Rice



### Space Rice

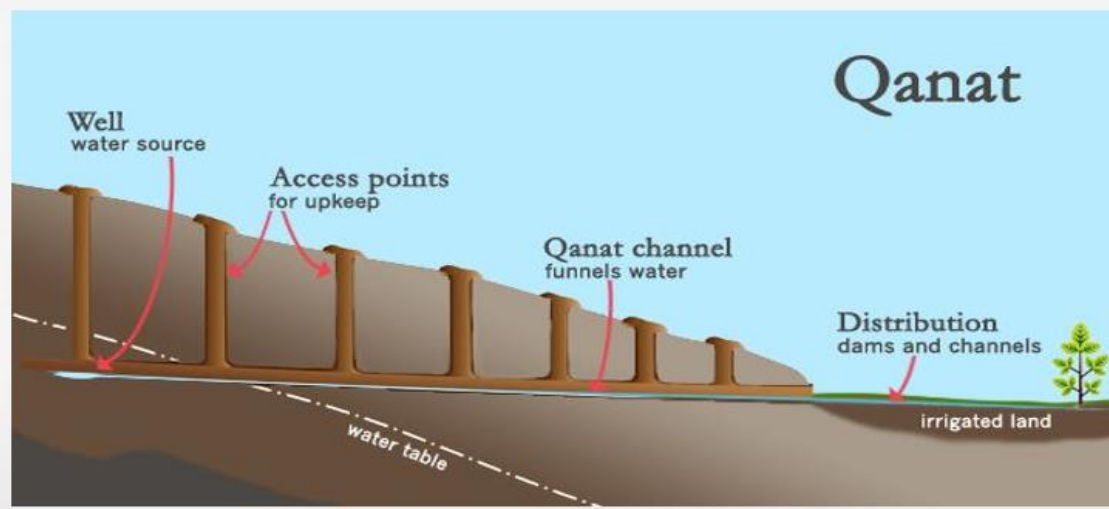




- Hailed as Rice From Heaven, China harvested its first batch of 'Space Rice' from seeds that went on a lunar voyage with China's Chang'e-5 in November 2020 for a period of 23 days and travelled a distance of more than 7,60,000 kilometers.
- After being exposed to cosmic radiation and zero gravity, these seeds weighing around 40 grams returned and were harvested.

### 'Karez' system of irrigation

## 'Karez' system of irrigation



### Pink Bollworm

## Pink Bollworm



- It is an insect known for being a pest in cotton farming - Adults lay eggs on cotton bolls; once hatched, the larvae eat the seeds and damage the fibers of the cotton.
- The pink bollworm is native to Asia, but has become an invasive species in most of the world's cotton-growing regions.

## Sea Snot Outbreak - Turkey

### Sea Snot Outbreak - Turkey



### Sea Snot Outbreak - Turkey



### Sea Snot Outbreak - Turkey



- There has been growing environmental concern in Turkey over the accumulation of 'sea snot', a slimy layer of grey or green sludge in the country's seas, which can cause considerable damage to the marine ecosystem
- Sea snot' is marine mucilage that is formed when algae are overloaded with nutrients as a result of water pollution combined with the effects of climate change.
- The nutrient overload occurs when algae feast on warm weather caused by global warming. Water pollution adds to the problem.
- Environmental experts have said that overproduction of phytoplankton caused by climate change and the uncontrolled dumping of household and industrial waste into the seas has led to the present crisis.

## KURDS



## Uighur Muslims





## KAREN REBELS

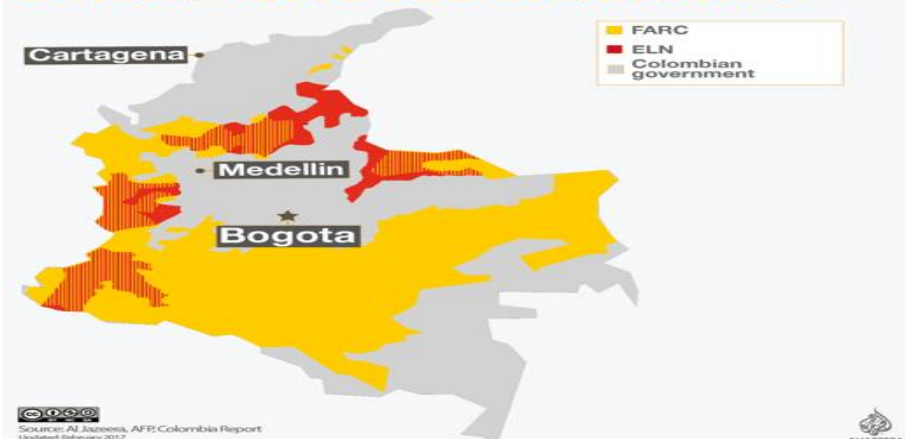


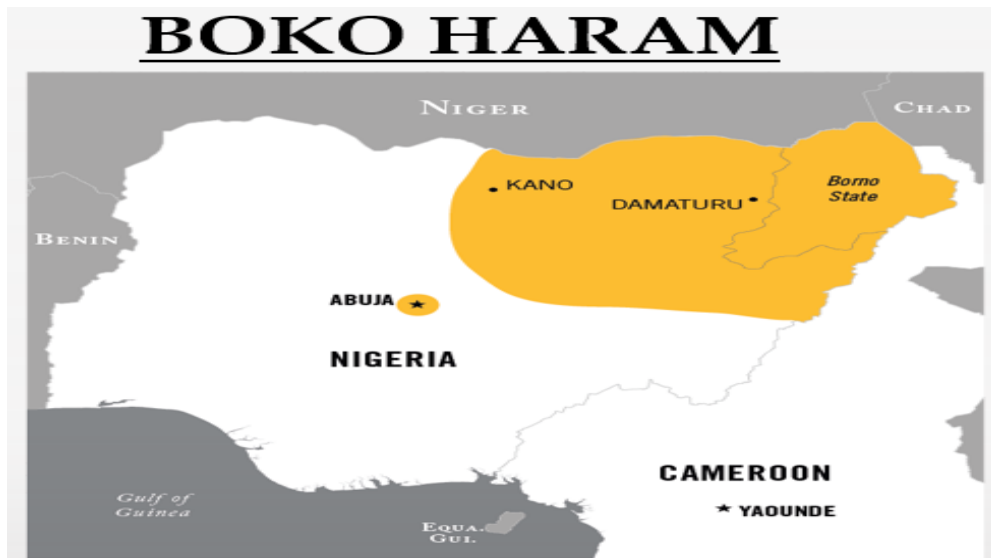
## KACHIN STATE



## FARC REBELS

### Colombia: Areas of influence





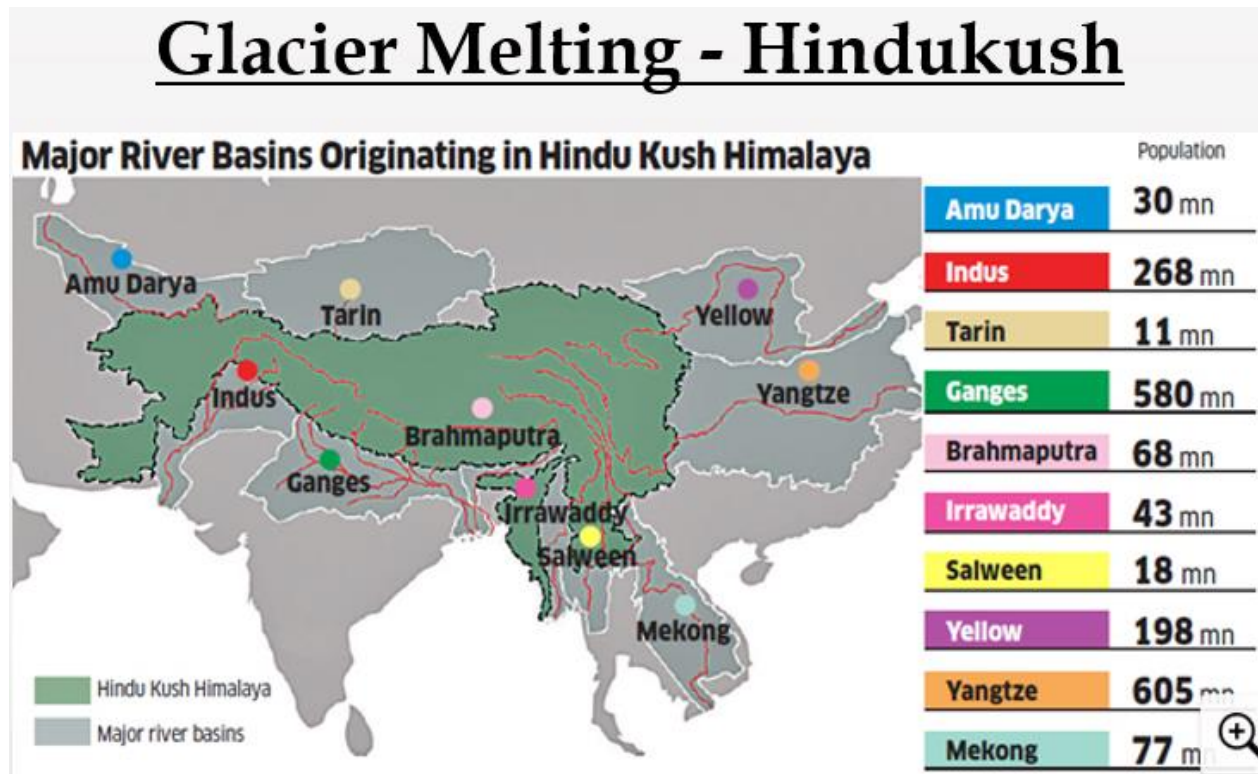
## **Glacier Melting - Hindukush**



## **Glacier Melting - Hindukush**



## Glacier Melting - Hindukush



- Hindu Kush Himalayan Assessment study has been released by the International Centre for Integrated Mountain Development (ICIMOD).
- Significance :
  1. River Systems
  2. Agriculture , Climate - Monsoons
  3. Migration
  4. Biodiversity
- NOTE : Karakoram

### UMNGOT





## **Chenab Bridge: World's highest Railway Bridge**



## **System of Rice Intensification :**



- The System of Rice Intensification involves cultivating rice with as much organic manure as possible, starting with young seedlings planted singly at wider spacing in a square pattern; and with intermittent irrigation that keeps the soil moist but not inundated, and frequent inter cultivation with weeder that actively aerates the soil.
- Soil fertility management + Planting method + weed control + irrigation management.
- Note : Methane

# Saguna Rice Technique

**1** Seedlings get transplanted at a much younger age.



**4** Intermittent water application to create wet and dry soil conditions, instead of continuous flood irrigation.



**2** Only single seedlings, instead of a handful of seedlings get planted in each hill.



**5** Rotary weeding to control weeds and promote soil aeration.



**3** Plants are spaced wider apart, and in a square pattern.



**6** Increased use of organic fertilizer to enhance soil fertility.



## Saguna Rice Technique



## Saguna Rice Technique





## Tillage



- Saguna Rice Technique is a unique new method of cultivation of rice and related rotation crops without ploughing, puddling and transplanting (rice) on permanent raised beds.
- This is a zero till, Conservation Agriculture (CA) type of cultivation method.
- SRT iron forma tool facilitates planting of crop in predetermined distances enabling precise plant population per unit area.

## Fall Army worm

### Fall Army worm

#### **Unwelcome visitor**

The Fall Armyworm (FAW) is native to the Americas



The pest munching on maize in Zimbabwe

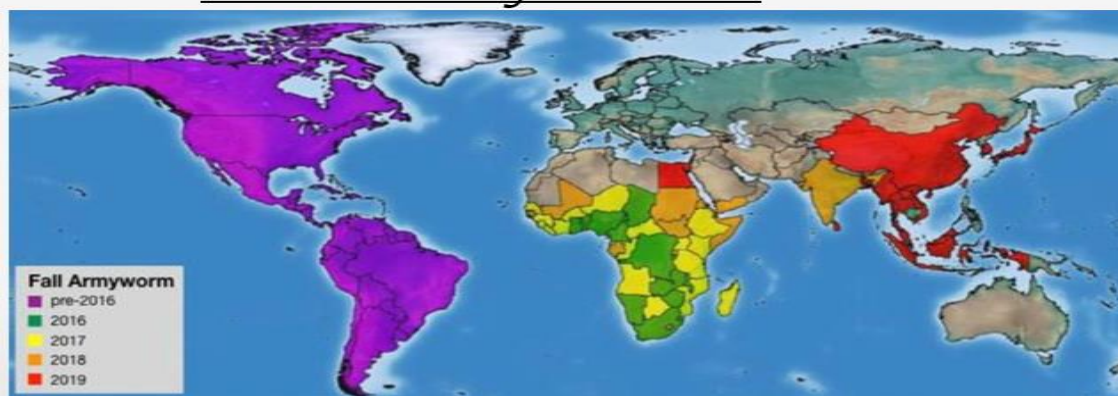
- FAW arrived in Africa in 2016. Since then, it has spread to 44 African countries
- It prefers maize, but can feed on 80 species of plants, including rice, sorghum, millet,

sugarcane and cotton

- India's tropical climate could allow the pest to thrive
- It can be controlled with insecticides, through natural enemies, or by inter-cropping

Source: FAO

### Fall Army worm



- Damage in the absence of rain + High temperature - Assam.
- Food and Agriculture Organisation has launched a Global Action for FAW Control.



## TR4 – Panama Disease



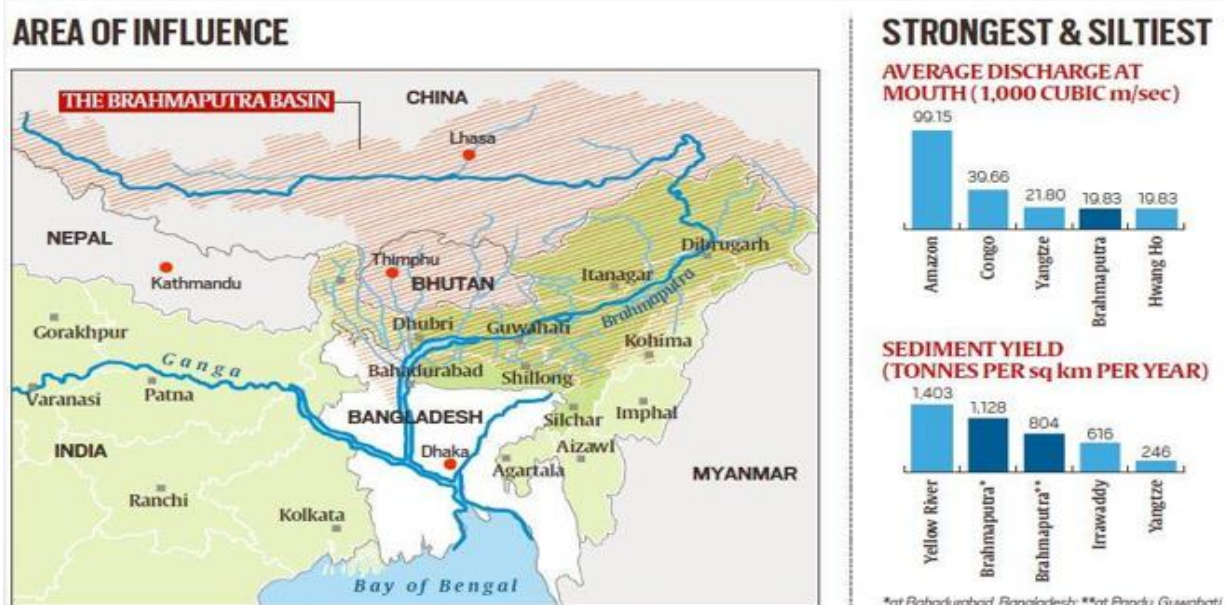
- Panama Disease is caused by a fungus - *Fusarium oxysporum* f. *Sp cubense*.
- One of its strains which is called 'Tropical Race 4' - has started infecting the Banana plantations in India.
- Fungus resides below ground and infects the plant through its roots.

## Paraquat

- Paraquat is a toxic chemical that is widely used as an herbicide (plant killer), primarily for weed and grass control.
- Restricted Use - USA - No antidote.

## Assam – Prone to floods

### Assam – Prone to floods



- Brahmaputra – dynamic and unstable.
- The vast amount of sediment comes from Tibet, where the river originates. “That region is cold, arid and lacks plantation. Glaciers melt, soil erodes and all of it results in a highly sedimented river.
- As the river comes from a high slope to a flat plain, its velocity decreases suddenly and this results in the river unloading the sediment. The river’s channels prove inadequate amid this siltation, leading to floods.
- Again, because of the earthquake-prone nature of the region, the river has not been able to acquire a stable character.
- Besides these natural factors are the man-made ones – habitation, deforestation, population growth in catchment areas (including in China) – which lead to higher sedimentation. For example, the sediment deposition itself creates temporary sandbars or river islands.

### Fossil of World’s “Oldest Animal” Found in Madhya Pradesh

#### Fossil of World’s “Oldest Animal” Found in Madhya Pradesh



- Researchers have discovered fossils of one of the Earth's earliest known multicellular animals – the 550-million-year-old Dickinsonia – on the roof of the Bhimbetka rock shelters in Madhya Pradesh.

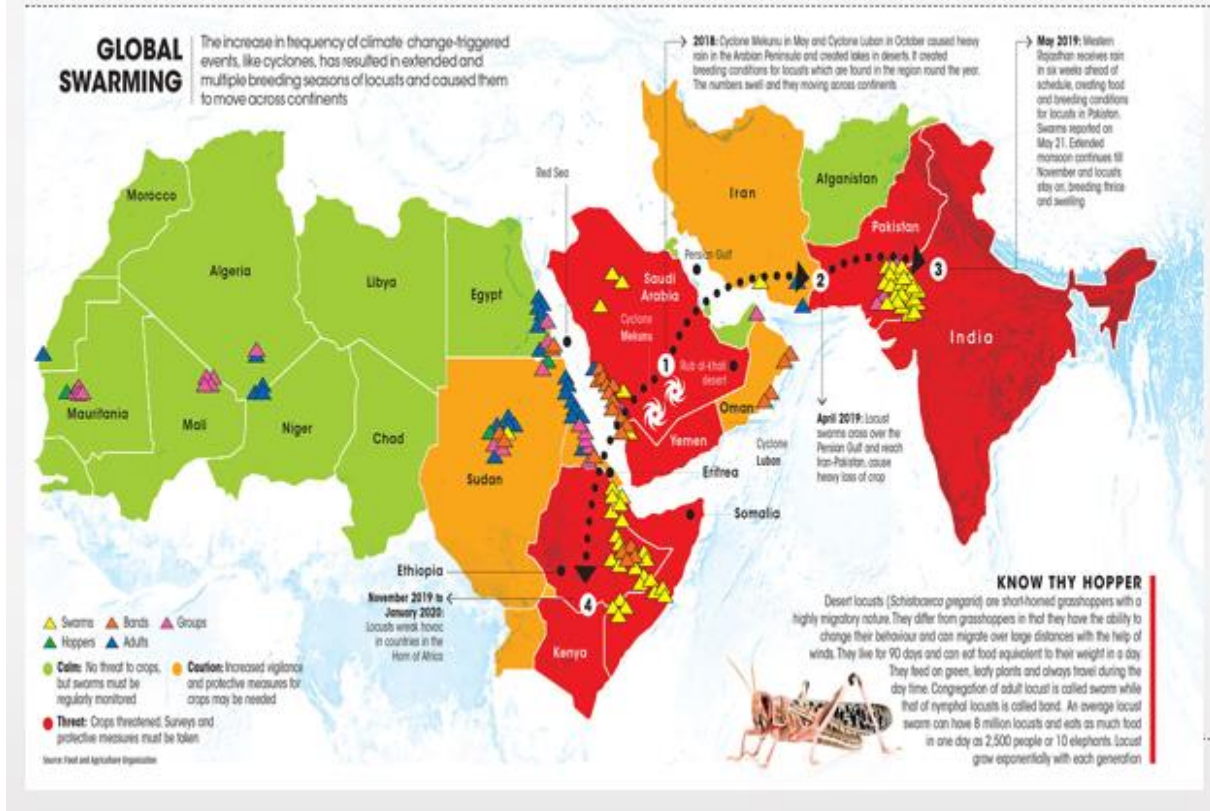
### Locust Attack [Solitary vs Gregarious Phase]

#### Locust Attack [ Solitary vs Gregarious Phase]





# Locust Attack - Desert Locust

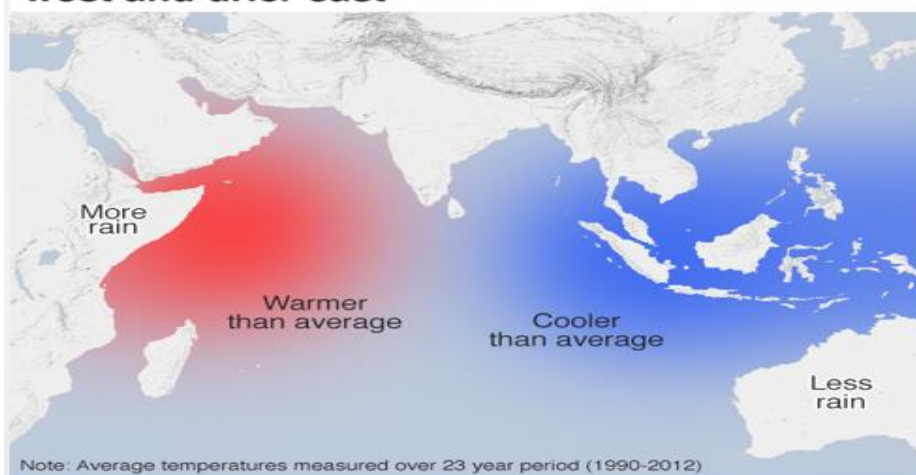


## Locust Attack - Manifestation

- Strong westerly winds from the Arabian peninsula- low-pressure area by Cyclone Amphan in the Bay of Bengal.
- Unseasonal heavy rains - Arabian peninsula - Cyclonic Storms Mekunu and Luban - uninhabited desert tracts to large lake where the locust swarms breed.
- Indian Ocean dipole.

## Indian Ocean Dipole

**A positive Indian Ocean Dipole means a wetter west and drier east**





## Locust Attack

- Unseasonal heavy rains - Arabian peninsula - Cyclonic Storms Mekunu and Luban
- Strong westerly winds from the Arabian peninsula- low-pressure area by Cyclone Amphan in the Bay of Bengal.
- Indian Ocean dipole.

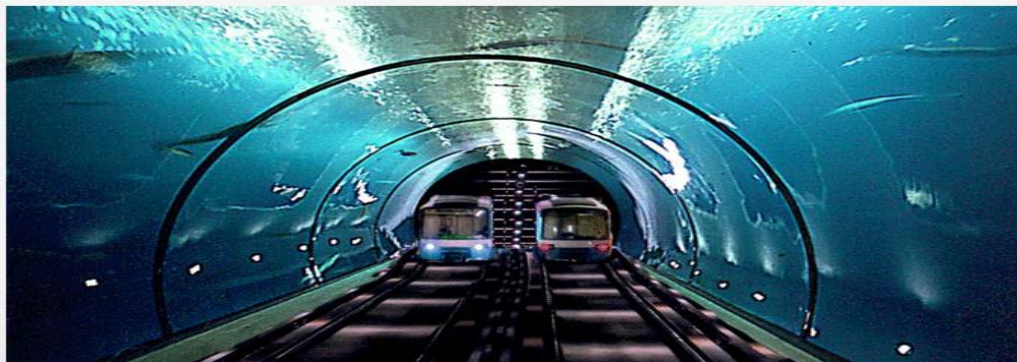
## Malathion

- Malathion is an insecticide in the chemical family of organophosphates.
- It is used to control a wide variety of insects in agricultural as well as domestic purpose.

## Glyphosate

- The herbicides are based on a compound called glyphosate.
- It is applied to the leaves of plants to kill weeds.
- In 2015, the World Health Organization published a study that found glyphosate "probably carcinogenic to humans". However, no advisory has been issued yet.

### **India's first Underwater Metro - Kolkata**



## Longest Electrified Rail Tunnel

### **Longest Electrified Rail Tunnel**

<p><b>ANOTHER MILESTONE ACHIEVED</b></p> <ul style="list-style-type: none"> <li>&gt; Located between Cherlopalli to Rapuru stations and constructed in shape of a Horse Shoe</li> <li>&gt; New Australian Tunneling Method (NATM) is used</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Length of the tunnel is <b>6.6 km</b></li> <li>&gt; Height of tunnel (rail level to roof) is <b>6.5 metres</b> and the minimum height of contact wire is maintained at <b>5.2 m</b></li> <li>&gt; LED lighting provided at <b>10 m</b> intervals inside the tunnel</li> <li>&gt; Two traction power supply sub-stations provided near Cherlopalli and near Adurupalli</li> </ul> <p><b>Cost incurred is ₹460 cr</b></p>
--	---

- South Central Railway (SCR) had commissioned the longest electrified tunnel of 6.6 km between Cherlopalli and Rapuru stations in the state of Andhra Pradesh.

## World's largest Solar Tree

### World's largest Solar Tree



- In a bid to promote renewable energy, CSIR-CMERI developed the world's largest solar tree which is installed in Durgapur, West Bengal.

## World's First Energy Island

### World's First Energy Island



### World's First Energy Island



### World's First Energy Island





# World's First Energy Island



- Denmark to build 'first energy island' in North Sea.
- An energy island is based on a platform that serves as a hub for electricity generation from surrounding offshore wind farms
- The artificial island- will serve as a hub for 200 giant offshore wind turbines.
- It will supply both power to households and green hydrogen for use in shipping, aviation, industry and heavy transport.

## **Significance**

- The move has come after the EU announced its plans to transform its electricity system to rely mostly on renewables within a decade and to increase its offshore wind energy capacity by over 25-fold by the year 2050.
- Climate Neutrality – Net zero emissions.



## Northern European Enclosure Dam

### Northern European Enclosure Dam



### Northern European Enclosure



## Northern European Enclosure Dam



- Northern European Enclosure Dam (NEED) enclosing all of the North Sea to protect economic regions of Northern European countries from Sea-level Rise.
- Scotland and Norway & France and England.
- To separate the North and Baltic Seas from the Atlantic Ocean to protect Northern Europe against Sea Level Rise .

## Power of Siberia

## Power of Siberia





# Power of Siberia



## Power of Siberia



- It is a pipeline in Eastern Siberia that transports natural gas from Siberia to China (Eastern gas route)
- The proposed Western gas route to China is known as Power of Siberia 2.
- Under this pipeline project, Russia will deliver 1 trillion cubic meters of natural gas to China over the next 30 years.
- The pipeline will pass through the deltas of the Yangtze and Amur rivers of China.



## Living Root Bridges



## Lichen Park – Uttarakhand – Bioindicator

### Lichen Park – Uttarakhand – Bioindicator



### Example

- Lichens are sensitive to atmospheric pollution such as nitrogen (N) because they receive all their nutrients and water from wet and dry atmospheric deposition (fall out).
- Nitrogen deposition can increase the load of nutrients. Too much N can harm and kill the algae's chlorophyll which is used to produce sugars feeding it and the fungi.

## Islands in News



MAP SPECIAL - ISLANDS IN NEWS + REVISION PLAN - PRELIMS 2021- Geography 2 Minute Series

18K views • 1 month ago

Sleepy Classes

Let's quickly discuss List of Islands important for UPSC Prelims. We are making Civil Services Preparation Affordable and ...



MAP SPECIAL (Part - 2) - ISLANDS IN NEWS + REVISION PLAN - PRELIMS 2021 || 2- Minute Series

12K views • 1 month ago

Sleepy Classes

Let's quickly discuss List of Islands important for UPSC Prelims. We are making Civil Services Preparation Affordable and ...

## Volcanoes in News



Map Special Prelims 2021- Volcanoes in News - Geography 2 Minute Series

7K views • 1 month ago



Let's quickly discuss List of Volcanoes important for UPSC Prelims. We are making Civil Services Preparation Affordable and ...

## GI Tags in News



2-Minute Series || Important GI tags in the News || 30th August 2021

18K views • 2 weeks ago



Let's discuss about the important GI tags in the news for UPSC prelims and UPSC mains . We are making Civil Services ...

4K

## Tribes in News



2-Minute Series || Tribes in News || 6th September 2021 || UPSC

15K views • 1 week ago



Let's talk about Tribes in News for UPSC Prelims and UPSC Mains. We are making Civil Services Preparation Affordable and ..

4K



2-Minute Series || Tribes in News - Part 2 || 13th September 2021 || UPSC

6.5K views • 5 days ago



We are making Civil Services Preparation Affordable and Accessible to all. We are now creating top-rankers in civil services from ...

New 4K



# Places in News



## MAP SPECIAL - PLACES IN NEWS + REVISION PLAN - PRELIMS 2021 || 2-Minute Series

20K views • 1 month ago

Sleepy Classes

Let's quickly discuss Places in News important for UPSC Prelims + Mains. We are making Civil Services Preparation Affordable ...



## Geo - 2 Minute Series || Places in News || UPSC Prelims 2021

12K views • 4 months ago

Sleepy Classes

Let's quickly discuss about "Places in News" UPSC prelims and UPSC Mains. We are making Civil Services Preparation ...

4K

## PRE - MIX

### 1. Geography

Click [here](#) to watch the following questions on YouTube

1. With reference to agricultural soils, consider the following statements:

1. A high content of organic matter in soil drastically reduces its water holding capacity.
2. Soil does not play any role in the Sulphur cycle.
3. Irrigation over a period of time can contribute to the salinization of some agricultural lands.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: B

## 2 - Minute Series

### 1. Circular Bioeconomy

#### Definition:

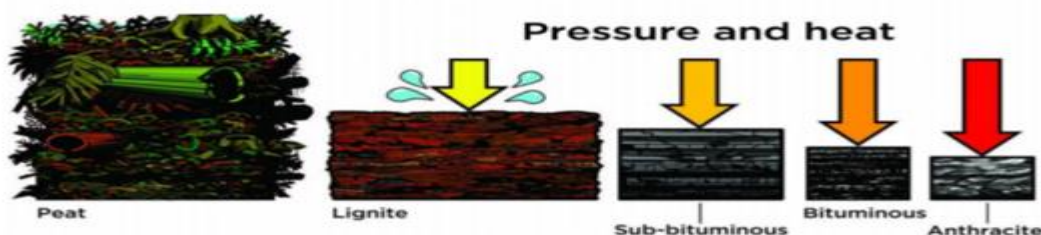
- The "circular bioeconomy" is defined as the intersection of bioeconomy and circular economy.

#### Bioeconomy

- The bioeconomy means using renewable biological resources (biomass) from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy.

#### Example

Coal





## PDF 's - Description Section

### To Download-

- Lecture Video Link:  
**Source:** [Click Here](#)
- Schedule Link:  
**Source:** [Click Here](#)
- PRE MIX - COMPILATIONS - with Video Links.  
**Source:**
  - 1) Download PDF of Annual Compilation of Premix (April 2020 - March 2021).  
[Click Here](#)
  - 2) Download PDF of Annual Compilation of Premix ( April 2021 - August 2021).  
[Click Here](#)
- Pre-cure - Download PDF of Annual Compilation of Pre-cure( April 2020 - March 2021)  
**Source:**  
[Click Here](#)