

## Prelim Bits 04-10-2022 | UPSC Daily Current Affairs

### **Biomass Co-firing**

*Recently, an inter-ministerial meeting of the Environment, Agriculture and Power Ministries to review the progress of biomass co-firing in thermal power plants was held in New Delhi.*

- **Biomass co-firing** is a method for efficiently and cleanly converting biomass to electricity by adding biomass as a partial substitute fuel in high-efficiency coal boilers.

*The Centre has directed all thermal power plants in the country to ensure **5% co-firing of biomass** along with coal by October 2022.*

- In this meet, the Government is considering cutting coal supply for those thermal power plants that do not comply with the policy on biomass co-firing.
- Directions were also given to all thermal power plants in NCR region to install biomass pellet manufacturing plants in their premises.
- **Benefits** - Ministry of Power launched the National Mission on Use of Biomass in Thermal Power Plants (**SAMARTH Mission**) provides for co-firing of biomass waste in Thermal Power Plants.
- This reduces the challenges of stubble burning into an opportunity for green power production.
- This helps in the reduction of air pollution in the Northwest region of our country and also helps in the income generation for farmers.
- **Issues** - Unavailability of biomass pellets of agricultural residues as the manufacturing capacity is relatively low.
- Biomass pellet suppliers fetch better prices from other industries such as textile, food processing.

### **References**

1. <https://www.thehindu.com/news/national/india-lags-in-biomass-co-firing-targets/article65967719.ece>
2. <https://www.news18.com/news/india/winter-is-coming-but-thermal-power-plants-across-india-are-still-far-off-from-target-of-5-biomass-co-firing-6094177.html>
3. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1845043>
4. <https://www.downtoearth.org.in/news/energy/biomass-co-firing-why-india-s-target-for-coal-power-plants-is-challenging-83261>

### **MGNREGS in Reversing Desertification**

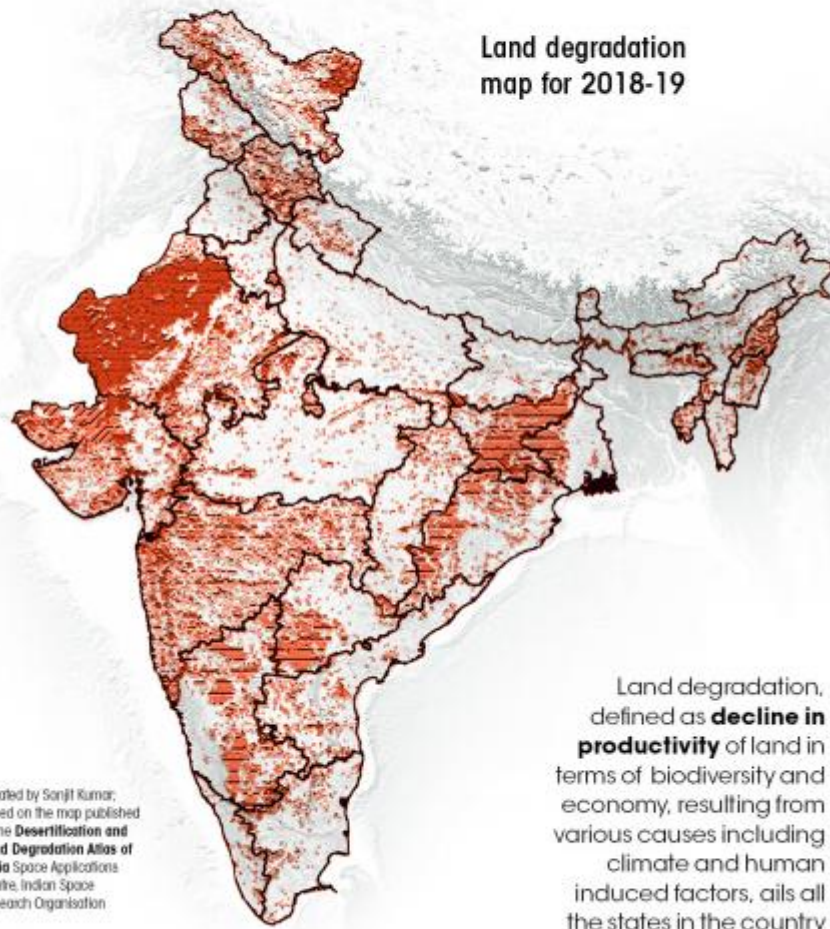
*A recent advisory from the Union Government urged the Chief Secretaries of the States to*

*ensure that the MGNREGS and PM Krishi Sinchayee Yojana to work in tandem to restore degraded land and reverse desertification in the country.*

- Under the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), activities such as ridge area treatment, drainage line treatment, soil and moisture conservation, afforestation, and horticulture are done.
- The Union government now wants the States to undertake these activities using Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) funds, which go towards both material and wage components.
- This convergence with the MGNREGS could help take up treatment of about 30% more land than feasible with the current scheme size.
- **Desertification in India** - According to the Desertification and Land Degradation Atlas published by the Environment Ministry in 2021, at least 30% of India's total geographical area is under the category of **degraded land**.
- Jharkhand, Rajasthan, Delhi, Gujarat and Goa have more than 50% of land area undergoing desertification or degradation.
- Kerala, Assam, Mizoram, Haryana, Bihar, Uttar Pradesh, Punjab and Arunachal Pradesh have less than 10% of land area undergoing desertification or degradation.

# Losing land

**Almost 30% of India** land area is under desertification



- In 2019, the government raised its target of restoration of degraded to **26 million hectares by 2030** during **COP14 held at New Delhi**.
- The Rural Ministry has been making efforts to contribute towards meeting the international commitment made during the **UN Convention to Combat Desertification (UNCCD)**.

*The UNCCD is the only legally binding framework set up to address desertification and the effects of drought. India hosted the COP14 of UNCCD in 2019.*

## Reference

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## Pahari Community

*Paharis of Jammu, one of the communities which has long-standing demand for the Scheduled Tribe status.*

- The Pahari community is a **linguistic group** mainly residing in the **Pir Panjal valley** comprising Rajouri and Poonch districts in J&K.
- Paharis are also spread in parts of the **Kashmir valley**.
- Gujjars, Bakerwals and Paharis are non-Kashmiri speaking population of J&K.
- Paharis comprise both **Hindus** and **Muslims**.
- But the two prominent nomadic clans, **Bakerwals** and **Gujjars** follow Islam.

*According to Article 342(1), the President of India declares a tribe as Scheduled Tribe, after consulting with the Governors of respective states.*

- **The Gujjar -Pahari rift** - Bakerwals and Gujjars are given ST status in J&K.
- At present, there is 10% reservation in jobs for STs in J&K and they feel this reservation will be diluted, if Paharis were granted ST status.
- Bakerwals and Gujjars are arguing that ST status is not granted on the basis of linguistics though the Constitution does not define or specify any criteria.

## References

1. <https://www.thehindu.com/news/national/other-states/paharis-eagerly-await-amit-shahs-jk-visit-hope-to-get-his-backing-on-scheduled-tribe-status/article65967479.ece>
2. <https://indianexpress.com/article/political-pulse/amit-shah-arrives-tomorrow-for-two-ral-lies-in-jk-amid-growing-tensions-over-an-st-tag-8188215/>

## Medicinal Fungi

*A research shows that some chemicals that medicinal fungi secrete may find use as novel drugs.*

- **Medicinal fungi** - These are fungi that contain metabolites or can be induced to produce metabolites to develop prescription drugs.
- Fungi when they are induced produce chemical compounds which are not essential but enhance the fungus' ability to survive are called **secondary metabolites**.

*Cordycepin, a secondary metabolite produced by Cordyceps species of fungus, is known to have anti-tumour properties.*

- Medicinal fungi belongs to two taxonomic divisions namely,
  - *Basidiomycota* - Mushrooms belongs to this.

Example - The consumable button mushroom.

- *Ascomycota* - They are generally not mushrooms.

Example - Fungi *Isaria cicadae* and *Shiraia bambusicola* are used in traditional Chinese medicine.

- **Findings** - The researchers analysed the structure of 1,830 secondary metabolites of medicinal fungi and found that the secondary metabolites were structurally distant from existing drugs.
- However, the secondary metabolites of medicinal fungi have molecular properties which makes it suitable for identifying novel drugs.

## Reference

1. <https://www.thehindu.com/sci-tech/medicinal-fungi-may-be-suitable-for-identifying-novel-drugs/article65955552.ece?homepage=true>

## ***Kappaphycus Alvarezii***

*Centre's Multi-purpose Seaweed Park project promotes cultivation of Exotic Kappaphycus seaweed in TN's coastal villages, which poses threat to coral reefs.*

- ***Kappaphycus alvarezii*** is a red alga but, its actual live colour is green or yellow.
- **Habitat** - The seaweed is native to the Indo-Pacific region.
- It has been widely introduced and cultivated in tropical regions for commercial purposes.
- **IUCN Status** - The invasive seaweed *Kappaphycus* is an IUCN red-listed species.
- **Commercial significance** - It is used in the production of an industrially lucrative polymer called Carrageenan.
- Carrageenan a substance extracted from red and purple seaweeds, which is used as a thickening or emulsifying agent in food products.
- **Threat it poses** - The rich coral reefs of Gulf of Mannar Marine National Park and the seagrass beds in Palk Bay Dugong Conservation Reserve have increasing threat from exotic seaweed *Kappaphycus*.

*The Gulf of Mannar Marine National Park is one of the six marine National Parks and only marine Biosphere reserve in India*

- **Threat to Coral reefs** - The algae was firmly attached to the coral colonies and started forming a thick gelatinous unbreakable mat over them, eventually smother and kill corals.
- Some of the islands in the Gulf of Mannar have been invaded by *Kappaphycus*.
- The coral reefs of Valai Island in the Keelakarai group and Krusadai Island of Mandapam group were dying due to stress from *Kappaphycus* invasion
- **Threat to Dugongs** - The commercial cultivation of *Kappaphycus* in Palk Bay may affect the efforts to conserve the dugong population.
- Seagrass beds, which are Dugong's prime foraging grounds are likely to be impacted.

*India's first Dugong Conservation Reserve is in Palk Bay, Tamil Nadu.*

- **Threat to other aquatic species** - Also with increased Kappaphycus cover, the macro faunal and fish density is decreased.

## **References**

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2. <https://www.thehindu.com/news/cities/Madurai/exotic-kappaphycus-seaweed-poses-threat-to-coral-reef-ramanathapuram/article27276987.ece>

