Prelim Bits 25-05-2022 | UPSC Daily Current Affairs

Guidelines for Safety Assessment of Genome Edited Plants 2022

The Department of Biotechnology (DBT) has issued guidelines easing norms for research into genetically modified (GM) crops and circumventing challenges of using foreign genes to change crops profile.

> Genome editing involves the use of technologies that allow genetic material to be added, removed, or altered at particular locations in the genome. Several approaches to genome editing have been developed.

- The 'Guidelines for the Safety Assessment of Genome Edited Plants, 2022' shall be applicable for all public and private organizations involved in research, development and handling of the Genome Edited Plants.
- These guidelines provide a road map for
    1. Development and sustainable use of Genome Editing Technologies for plants in India,
    2. Specifying the biosafety and/or environmental safety concerns, and
    3. Describing the regulatory pathways to be adopted while undertaking Genome Editing of Plants.
- These Guidelines exempt researchers who use gene-editing technology to modify the genome of the plant from seeking approvals from the Genetic Engineering Appraisal Committee (GEAC).
- The guidelines say that all requirements that researchers must adhere to to develop transgenic seeds will apply to gene-edited seeds except clauses that require permission from the GEAC.
- **GEAC** - The GEAC is an expert body of the Environment Ministry.
- It evaluates research into GM plants, and recommends or disapproves their release into farmer fields.
- The final call however is taken by the Environment Minister as well as States where such plants could be cultivated.
- The Environment Ministry too has sanctioned this exemption.

Reference

1. https://www.thehindu.com/news/national/biotechnology-department-eases-norms-for-research-on-gene-editing-plants/article65439953.ece
2. https://dbtindia.gov.in/sites/default/files/Final_%2011052022_Annexure-I%2C%20Genome_Edited_Plants_2022_Hyperlink.pdf

Money Spider and Ant-mimicking Spiders

A study by the Department of Science & Technology (DST) and the University Grants Commission (UGC) has found money spiders and ant-mimicking spiders for the first time in India from the

Wayanad Wildlife Sanctuary.

Money Spider

- Commonly, the money spiders (*Prosoponoides biflectogynus*) are found in European meadows.
- The species is called 'Money spiders' as it is "believed to bring luck" to the person who comes in contact with it.
- This spider belongs to the family of **dwarf spiders** (*Linyphiidae*) under the genus *Prosoponoides*.
- Only six species of spiders belonging to this genus have been identified from across the world so far.
- It is the first report of this genus from India and this is the first species reported from the **Western Ghats**.
- Both the male and the female money spiders are dark brown and have irregular silver patches and black spots on elliptical abdomen.
- There are numerous fine black spines on their olive green legs. Eight dark eyes are arranged in two rows.
- Females build **triangular webs** in between dry tree twigs and feed on small insects, while males prefer to hide beneath dry leaves.

Ant-mimicking Spiders

- The ant-mimicking spider has been named *Toxeus alboclavus*.
- These spiders belong to the group of **jumping spiders**.
- They belong to the family of *Salticidae*.
- They perfectly mimic ants by lifting their front pair of legs while walking as a mechanism to escape from potential predators.
- Only three species of this genus have been reported from India, and this is the first species reported from the **Western Ghats**.
- The forward-projecting fangs have a characteristic shape of an antler. Long spines are present on the base of each leg.

Reference

1. https://www.thehindu.com/news/national/kerala/money-spider-ant-mimicking-spider-discovered-at-wayanad-wildlife-sanctuary/article6545650ece
2. https://www.nature.com/articles/s41598-020-75010-y
3. https://www.researchgate.net/figure/Prosoponoides-biflectogynus-sp-nov-male-copulatory-organ-A-prolateral-view-B_fig2_359281430

COP15 of the UN Convention to Combat Desertification

The 15th Conference of Parties (COP15) of the UN Convention to Combat Desertification (UNCCD) was concluded in Abidjan with a global pledge to boost drought resilience and invest in land restoration for future prosperity.

- The COP15 adopted 38 decisions that highlight the role of land in addressing multiple crises.
- The COP15 aims to drive progress in the future sustainable management of one of our most precious commodities: land. It
- The UN members agreed to establish an Intergovernmental Working Group on Drought for 2022-2024 to look into possible options to support a shift from reactive to proactive drought management.

- They will focus on improving data gathering and monitoring to track progress against the achievement of land restoration commitments.
- They are committed to establishing a new partnership model for large-scale integrated landscape investment programmes.
- The "Drought in Numbers, 2022" had called upon the world to prioritise drought preparedness and resilience.
- Another global consensus emerged on boosting drought resilience by identifying the expansion of drylands, improving national policies and early warning. So, mobilising drought finance will be critical.
- The leaders came on board and also committed to prioritise and ensure **women's involvement** in land management for effective land restoration.

According to the recent UN estimates, up to 40% of Earth's land is degraded.

This will directly affect half of humanity and is a threat to about 50% of global GDP or around $44 trillion. But the world has is slow on restoration of one billion hectares of degraded land by 2030.

- The UN members also agreed and committed to accelerate the restoration of one billion hectares of degraded land by 2030.
- Other significant outcomes of the COP 15 included three key declarations:
    1. **Abidjan Call** issued by the Heads of State and Government to boost long-term environmental sustainability,
    2. **Abidjan Declaration** on achieving gender equality for successful land restoration and
    3. The COP15 **"Land, Life and Legacy" Declaration**, which responds to the findings of the UNCCD's report, Global Land Outlook 2.
- **Related Links** - Great Green Wall

Reference

1. https://www.downtoearth.org.in/news/wildlife-biodiversity/how-to-fight-deseritification-here-s-what-the-15th-cop-to-unccd-agreed-on-82953
2. https://www.unccd.int/cop15

Biodiversity Register

Kolkata became the first major metropolitan city in India to prepare a detailed register of biodiversity.

- This biodiversity register includes 138 trees, 126 Chinese vegetables, 33 medicinal plants, 47 fish, 84 birds, 22 mammals, 70 butterflies, and nearly 100 other plants.
- The People's Biodiversity Register (PBR) has been prepared by and will be maintained by the Biodiversity Management Committee (BMC) of the Kolkata Municipal Corporation (KMC).
- [The People's Biodiversity Register details flora and fauna forms within the city as well as its land uses and human activities.]
- It was supervised by West Bengal's biodiversity board with the help of non-profits.

The National Biodiversity Authority Chairman stressed on 'C4' - cooperation, coordination, convergence and connect - promote biodiversity in the country.

Reference

1. https://www.downtoearth.org.in/news/wildlife-biodiversity/kolkata-unveils-biodiversity-register-first-among-major-indian-metros-82973
2. http://nbaindia.org/uploaded/pdf/PPT_PBRs_Guidelines.pdf

BHASHINI

Ministry of Electronics & Information Technology has organized a brainstorming session on Mission Digital India BHASHINI - the National Language Translation Mission (NLTM).

- Mission Digital India BHASHINI (BHASHa INterface for India) Platform will make A.I. and Natural Language Processing (NLP) resources available to MSMEs, Startups and Individual Innovators.
- Bhashini acts as an orchestrator to **unify and align a large diverse network** across government, industry, academia, research groups and start-ups to bring all their contributions into an **open repository**.
- This mission aims to empower Indian citizens by connecting them to the Digital Initiatives of the country in their **own language** thereby leading to digital inclusion.
- It is interoperable and will catalyze the entire Digital Ecosystem.
- This Mission will create and nurture an ecosystem involving Central/ State government agencies and start-ups, working together to develop and deploy innovative products and services in Indian languages.
- BHASHINI also aims to increase the content in Indian languages on the Internet substantially in the domains of public interest, particularly, governance-and-policy, science & technology, etc. ,
- Thus, it will encourage citizens to use the Internet in their own language.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1827997
2. https://www.bhashini.gov.in/en/about

SHANKAR IAS PARLIAMENT
Information is Empowering