

Pongamia Pinnata

❖ Context

- **University of Agricultural Sciences, Bangalore** has developed a pongamia pod decorticator and a mini vegetable seed oil extraction machine under grant-in aid from **Scheme for Young Scientist & Technologists (SYST)** program, **Science for Equity, Empowerment & Development (SEED) Division** of the **Department of Science and Technology (DST)**.

❖ Key Highlights

- The machine has **efficiency** of about **85-90%** and damage of the seeds to the tune of 10%.
- As the **manual dehusking** of **Pongamia (Karanj or Honge)**, a potential biofuel crop, is a **laborious process**, farmers do not show much interest in its collection. Hence motorized dehusking machine was much desired.
- There are several **non edible oil yielding trees** that can be grown to produce biofuel. **Karanja (Pongamia)** is one of the most suitable trees. It is widely grown in various parts of the country.
- Salient features of Pongamia
 - It is a **Nitrogen fixing** tree and hence enriches the soil fertility.
 - It is generally **not grazed by animals**
 - It is **tolerant to waterlogging, saline and alkaline soils**.
 - It can **withstand harsh climates** (medium to high rainfall).
 - It can be planted on **degraded, waste/fallow and cultivable lands**
 - Pongamia seeds **contain 30-40% oil**.
 - It helps in **controlling soil erosion** and **binding sand dunes**, because of its dense network of lateral roots.
 - Its root, bark, leaves, sap, and flower have **medicinal properties**. Dried leaves are used as an **insect repellent** in stored grains
- The oil extracted from seeds has **properties** very similar to **conventional diesel**.

- Apart from use as a biofuel, the Pongamia oil can be used for **lighting lamps, lubricant, water-paint binder, pesticide**, and in **soap making** and **tanning** industries.
- The oil is also known to be used for the **treatment of rheumatism** and **human and animal skin diseases**.
- The **press cake** (left over after oil extraction) is rich in Nitrogen and hence can be used for improving **soil fertility**. The press cake, when applied to the soil, also has **pesticidal value**, particularly against nematodes.

❖ Biofuels

- Crops used to make biofuels are generally either high in **sugar** (such as sugarcane, sugarbeet, and sweet sorghum), **starch** (such as maize and tapioca) or **oils** (such as soybean, rapeseed, coconut, sunflower).
- Biofuels are generally classified into three categories. They are:-
 1. **First generation** - Made from **sugar, starch, vegetable oil, or animal fats** using conventional technology. Common first-generation biofuels include Bioalcohols, Biodiesel, Vegetable oil, Bioethers, Biogas.
 2. **Second generation** - Produced from non-food crops, such as **cellulosic biofuels and waste biomass** (stalks of wheat and corn, and wood). Examples include advanced biofuels like biohydrogen, biomethanol.
 3. **Third generation** - Produced from micro-organisms like algae.

Sovereign Green Bonds

❖ Context

- Recently, the finance minister Nirmala Sitharaman in her Budget speech announced that the government **proposes to issue sovereign green bonds to mobilize resources for green infrastructure**.

❖ Key Highlights

- The proceeds will be deployed in public sector projects which help in reducing the carbon intensity of the economy.

❖ Significance

- The announcement is in line with India's commitment to achieving **net-zero carbon emissions by 2070**.
- It will also help India achieve its target of 175 GW of electric power from renewable sources by 2022.
- Green bonds have become an important tool to address the impacts of climate change and related challenges.

❖ About Green Bonds

- Green bonds are **financial instruments** that finance **green projects** and provide investors with regular or fixed income payments.
- These bonds are **typically asset-linked and backed by the issuing entity's balance sheet**, so they usually carry the same credit rating as their issuers' other debt obligations.
- They typically come with **tax incentives** such as tax exemptions and tax credits to attract investors.
- **First official Green Bond** was released by the **World Bank in 2009**.
- The World Bank is a major issuer of green bonds. It has issued **164 such bonds since 2008**, worth a combined \$14.4 billion. In 2020, the total issuance of green bonds was worth almost \$270 billion, according to the Climate Bond Initiative.



Face to Face Centres



Cyber Crime initiatives of MHA

❖ Context

- Home Ministry informed Parliament about the initiatives of government in tackling cyber crime.

❖ Key Highlights

- MHA has set up the '**Indian Cyber Crime Coordination Centre (I4C)**' to deal with all types of cyber crime in the country, in a coordinated and comprehensive manner.
- The state of the art **National Cyber Forensic Laboratory** has been established, as a part of the I4C, at CyPAD, Dwarka, **New Delhi** to provide **early stage cyber forensic assistance** to Investigating Officers (IOs) of State/UT Police.
- Massive Open Online Courses (MOOC) platform, namely '**CyTrain**' portal has been developed under I4C, for **capacity build-ing of police officers/judicial officers** through online courses on critical aspects of cybercrime investigation, forensics, prosecution etc. along with certification.

- The **National Cyber Crime Reporting Portal (www.cybercrime.gov.in)** has been launched, as a part of I4C, to **enable the public to report incidents** pertaining to all types of cyber crimes, with special focus on cyber crimes against women and children.
- **Citizen Financial Cyber Fraud Reporting and Management System**, under I4C, has been launched for **immediate reporting of financial frauds** and to **stop siphoning off funds** by the fraudsters.
- **Cyber Forensics Lab** at the Indian Computer Emergency Response Team (**CERT-In**) has been **notified as an Examiner of Electronic Evidence** in exercise of the powers conferred by **Section 79A of the Information Technology Act, 2000** and is equipped with tools to carry out analysis of digital evidences extracted from data storage and mobile devices.

Cheetah

❖ Context

- It was recently informed in the Loksabha that the Government of India is in the process of holding **consultation meetings with African countries** for bringing Cheetah.

❖ Key Highlights

- With help from the Wildlife Institute of India and the Wildlife Trust of India, the ministry will be translocating around **8-12 African cheetahs** from **South Africa, Namibia and Botswana** over a period of five years as per the Action Plan.
- The such introduced cheetah would be fitted with **Satellite/GSM-GPS-VHF radio-collars** before their release in wild so as to enable monitoring remotely.
- The Asiatic cheetah is the **only large carnivore to have gone extinct** in Independent India in the 1950s due to hunting and loss of habitat.
- Asiatic Cheetahs around **40-50 found only in Iran**.



• Translocation-

- The big cats will live at **Kuno Palpur National Park in Madhya Pradesh**.
- It will be the most suitable for cheetah translocation in terms of habitat and an adequate prey base.

• Significance-

- Cheetah has been an **integral part of Indian ecosystems**.
- It is a **major evolutionary force**, and an important cultural heritage.
- Their restoration will likely result in **better conservation of open forest, grassland, and scrub ecosystems** for which they will serve as a flagship species.

• Conservation Status of Asiatic Cheetah

- **IUCN- Critically Endangered (African Cheetah is in Vulnerable Category)**
- **CITES- Appendix 1 (Same as African Cheetah).**

News in Between the Lines

eGramSwaraj



❖ Context

- Ministry of Panchayati Raj informed Parliament about the application.

❖ Key Highlights

- The application is launched under **e-Panchayat Mission Mode Project (MMP)** with the aim to transform the functioning of Panchayati Raj Institutions (PRIs)
- It is a simplified **work-based accounting application** to address various aspects of Panchayat functioning viz. **planning, budgeting, accounting and online payments** through eGramSwaraj-PFMS Interface for expenses.
- Gram Panchayat (GP), Block Panchayat and Zilla Panchayats have to prepare

Face to Face Centres



IDEA



and upload their Development Plans on eGramSwaraj application.

- About 2.38 lakh GPs have adopted eGramSwaraj and 1.81 lakh GPs have made online payments through PFMS (Public Finance Management System).

❖ Context

- Minister of Agriculture & Farmers Welfare informed Parliament about a new database in development for farmers welfare.

❖ Key Highlights

- The various agricultural services will be built around the core layer of Farmers' Database, **AgriStack**.
- In order to create AgriStack, the department is in the process of finalizing the "India Digital Ecosystem of Agriculture (IDEA)" which lays down a framework for building AgriStacks
- This ecosystem shall help the Government in **effective planning** towards increasing the income of farmers in particular and improving the **efficiency** of the Agriculture sector, as a whole.
- The federated farmers' database is being built by taking the publicly available data as existing in the Department and in various data silos in Government and **linking them with the digitized land records**.
- It will also include the farmers registered under the PM-Kisan Scheme.

Agriculture Budget



❖ Context

- **Rajasthan** is going to present its **first Agriculture budget** financial year **2022-23**.

❖ Key Highlights

- The Budget will especially promote drip and sprinkler irrigation systems in view of the scarcity of water in the State and depleting groundwater level across the State. The announcement for the separate budget formulation for agriculture was made in the 2021-22 State budget.
- The agriculture and related sectors, including dairy and animal husbandry, in the State, registered a growth rate of 3.45% in 2020-21.
- Karnataka** was the first state in India to present a separate Agriculture budget in 2011-12, followed by **Andhra Pradesh (2013-14)** and **Tamil Nadu (2021-22)**, in order to give a focused approach to the sector.

Nitric Oxide (NO) Kills SARS-COV-2 virus



❖ Context

- Recently, In a study a **novel intervention for Covid-19** has been explored with the well-known gas Nitric Oxide (NO).

❖ Key Highlights

- The study involved **doctors from the Amrita Hospital, Kochi**, and scientists from the **School of Biotechnology at Amrita Vishwa Vidyapeetham**.
- The study conducted by the Amrita scientists has found that **inhaled Nitric Oxide (iNO) is virucidal and kills SARS-COV-2 virus**.
- It also **prevents the virus' effective attachment to host cells**.
- The gas **induces biochemical changes** which directly affect the spike protein of the virus.

❖ About Nitric Oxide (NO)

- Nitric oxide (NO), also called nitrogen monoxide, is a **colorless toxic gas** that is **formed by the oxidation of nitrogen**.
- It performs important chemical signaling functions in humans and other animals and has various applications in medicine.
 - It **works by relaxing smooth muscle to widen (dilate) blood vessels**, especially in the lungs.
- It is known to have a broad **antimicrobial effect against bacteria, fungi, helminths, protozoa and viruses**.
- It is being used worldwide for the treatment of medical conditions such as **Blue Baby Syndrome** and for treatment of **heart or lung transplant patients**.



South Col Glacier (SCG)



❖ Context

- Recently a study found that with estimated **thinning rates of nearly two meter per year**, glaciers on Mount Everest such as South Col Glacier, has been **thinning at an alarming rate**.

❖ Key Highlights

- Research found that **SCG has lost more than 54m of thickness** in the last 25 years.
- Since the 1990s, ice that took around 2,000 years to form has melted away.
- The glacier, which sits around 7,906m (25,938 ft) above sea-level, is **thinning 80 times faster** than it first took the ice to form on the surface.

❖ About South Col Glacier

- South Col Glacier lies on the main climbing route of Mount Everest on its southern ridges. It lies at one of the **sunniest spots in the world**
- This relatively small glacier is undoubtedly the **highest glacier in the world**.
- The surface of the glacier is mainly bare ice, apart from seasonal snow and a perennial snow apron along the sides of Mount Everest, which comprise the upper reaches of this southerly oriented glacier.

Sachindra Nath Sanyal



❖ Context

- On February 8, 2022, the **80th death anniversary** of Sachindra Nath Sanyal was marked.

❖ About Sachindra Nath Sanyal (1893- Feb 7, 1942)

- Sachindra was an **Indian revolutionist**.
- He was associated with the **Indian Revolutionary movements**.
- He was a **mentor for revolutionaries** like Chandrasekhar Azad and Bhagat Singh.
- He along with Rashbehari Bose **attacked Viceroy Hardinge** and injured him while he was entering the new capital of Delhi.
- Sanyal was closely **involved in the plans for the Ghadar Conspiracy**.
 - He was sentenced to life for his involvement in the conspiracy and was imprisoned at Cellular Jail.
- He was also jailed by the British for his involvement in **Kakori Conspiracy**.
- He **founded a branch of Anushilan Samiti** in Patna in 1913.
- He was one of the founders of the **Hindustan Republican Association (HRA)** also known as Hindustan Socialist Republican Association.
 - It was created to carry out armed resistance against the British Empire in India.
 - He was the author of the HRA manifesto titled **"The Revolutionary"**

Operation AAHT



❖ Context

- **Railway Protection Force** has launched a nationwide operation to curb **human trafficking**. **"Operation AAHT"**, special teams will be deployed on all long-distance trains/routes with focus on rescuing victims, particularly women and children, from the **clutches of traffickers**.

❖ Key Highlights

- The RPF that recued more than more than 2,000 women and children between 2017-21 from the clutches of traffickers intensified the crackdown on human trafficking with the increasing number of cases. The National Crime Records Bureau registers about 2,200 cases of Human Trafficking cases on an average each year.
- Human Trafficking, especially of women and children, for sexual exploitation, forced marriage, domestic servitude, organ transplant, drug peddling etc is an organised crime and the most abominable violation of human rights.
- The RPF could act as a bridge cutting across States to assist the local police in the mission to curb the menace.
- The RPF personnel have a pan-India presence and are deployed in escorting trains to provide security to railway assets and passengers.

