

NATIONAL SOCIAL ISSUES- WOMEN, POPULATION, URBANISATION, EMPOWERMENT ETC**RUCO (Repurpose Used Cooking Oil) Initiative**

Dehradun-based Indian Institute of Petroleum has successfully finished a pilot test to convert used cooking oil into bio-aviation turbine fuel (Bio-ATF), which can be blended with conventional ATF and used as aircraft fuel. The test assumes importance as the Food Safety and Standards Authority of India (FSSAI) has launched the Repurpose Cooking Oil (RUCO) initiative to collect and convert used cooking oil into bio-fuel.

RUCO:

- The Food Safety and Standards Authority of India (FSSAI) had launched RUCO (Repurpose Used Cooking Oil), an initiative that will enable collection and conversion of used cooking oil to bio-diesel.
- Under this initiative, 64 companies at 101 locations have been identified to enable collection of used cooking oil. For instance: McDonald's has already started converting used cooking oil to biodiesel from 100 outlets in Mumbai and Pune.
- FSSAI wants businesses using more than 100 litres of oil for frying, to maintain a stock register and ensure that UCO is handed over to only registered collecting agencies.

Significance of the initiative: FSSAI believes India has the potential to recover 220 crore litres of used cooking oil for the production of biodiesel by 2022 through a co-ordinated action. While biodiesel produced from used cooking oil is currently very small, but a robust ecosystem for conversion and collection is rapidly growing in India and will soon reach a sizable scale.

Background: The initiative has been launched nearly a month after the food safety regulator notified standards for used cooking oil. According to FSSAI regulations, the maximum permissible limits for Total Polar Compounds (TPC) have been set at 25%, beyond which the cooking oil is unsafe for consumption.

Total Polar Compounds (TPC):

- In many countries, TPC is used to measure the quality of oil. The level of TPC increases every time oil is re-heated. Some of the studies show that TPC accumulation in oil without food is slower than that in oil frying with food.
- Higher level of TPC in cooking oil leads to health issues like hypertension, atherosclerosis, Alzheimer's disease and liver disease. One of the studies also noticed high levels of glucose, creatinine and cholesterol with declined levels of protein and albumin in cooking oil.

Need for regulation:

- Currently, used cooking oil is either not discarded or disposed of in such a manner that it chokes drains and sewerage systems. Apart from setting quality standards, the new regulation addresses the way this oil is discarded. As used cooking oil is considered the most reasonable feedstock for biodiesel production, the FSSAI is planning to redirect the used cooking oil from the food business operators. It has already started collecting used oil in small quantities either through a barter arrangement or at cost.

FSSAI:

- The Food Safety and Standards Authority of India (FSSAI) has been established under Food Safety and Standards Act, 2006 which consolidates various acts & orders that have hitherto handled food related issues in various Ministries and Departments.
- It was created for laying down science-based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.
- Ministry of Health & Family Welfare, Government of India is the Administrative Ministry for the implementation of FSSAI.
- **Composition:** The Chairperson and Chief Executive Officer of Food Safety and Standards Authority of India (FSSAI) are appointed by Government of India. The Chairperson is in the rank of Secretary to Government of India.

GOVERNANCE- WELFARE SCHEMES, E-GOVERNANCE, SERVICES ETC.**All India Citizens Survey of Police Services**

Ministry of Home Affairs has commissioned the Bureau of Police Research and Development to conduct a pan-India survey called "ALL INDIA CITIZENS SURVEY OF POLICE SERVICES".

Aim: The survey is aimed to understand public perceptions about Police, gauge the level of non-reporting of crimes or incidents to Police, the position on ground relating to crime reporting & recording, timeliness and quality of police response and action, and to assess citizens' perception and experience about women and children's safety.

Significance:

The outcome of the survey is expected to bring out useful suggestions for stakeholders in formulating and implementing appropriate policy responses and changes in the functioning of police at the cutting edge and for improving crime prevention and investigation, transformation in community policing, improvement in the access to the justice and increased appropriate resource allocation for police in a systematic manner.

INTERNATIONAL AFFAIRS- BILATERAL, GROUPINGS, ORGANISATIONS

Financial Action Task Force (FATF)

The Financial Action Task Force (FATF) has decided to keep Pakistan on its grey list at the end of its week-long plenary meeting in Paris. India had lobbied hard to get the global financial body to blacklist Pakistan for non-compliance in curbing terror financing.

Background: Pakistan was placed on the grey list by the FATF in June for failing to curb anti-terror financing. It has been scrambling in recent months to avoid being added to a list of countries deemed non-compliant with anti-money laundering and terrorist financing regulations by the Paris-based FATF, a measure that officials here fear could further hurt its economy.

Implications of this move:

- Pakistani analysts say being put on the FATF watchlist could deal a blow to Pakistan's economy, making it harder for foreign investors and companies to do business in the country.
- It would be counterproductive to put Pakistan on the watch list as it would hurt its capability to fight terrorism. Also, being put back on the grey list would heighten Pakistan's risk profile and some financial institutions would be wary of transacting with Pakistani banks and counterparties.
- Being placed on the FATF watchlist carries no direct legal implications but brings extra scrutiny from regulators and financial institutions that can chill trade and investment and increase transaction costs.

FATF:

- The Financial Action Task Force (FATF) is an inter-governmental body established in 1989 on the initiative of the G7. It is a "policy-making body" which works to generate the necessary political will to bring about national legislative and regulatory reforms in various areas. The FATF Secretariat is housed at the OECD headquarters in Paris.
- **Objectives:** The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.
- **Functions:** The FATF monitors the progress of its members in implementing necessary measures, reviews money laundering and terrorist financing techniques and counter-measures and promotes the adoption and implementation of appropriate measures globally. In collaboration with other international stakeholders, the FATF works to identify national-level vulnerabilities with the aim of protecting the international financial system from misuse.

Blacklist and Grey list:

- FATF maintains two different lists of countries: those that have deficiencies in their AML/CTF regimes, but they commit to an action plan to address these loopholes, and those that do not end up doing enough. The former is commonly known as grey list and latter as blacklist.
- Once a country is blacklisted, FATF calls on other countries to apply enhanced due diligence and counter measures, increasing the cost of doing business with the country and in some cases severing it altogether. As of now there are only two countries in the blacklist — Iran and North Korea — and seven on the grey list, including Pakistan, Sri Lanka, Syria and Yemen.

Seoul Peace Prize 2018:

Prime Minister Narendra Modi has received the prestigious Seoul Peace Prize for 2018 for his contribution to international cooperation and fostering global economic growth.

Modi is the 14th recipient of the award and the past laureates included former UN Secretary General Kofi Annan, German Chancellor Angela Merkel and renowned international relief organizations like Doctors Without Borders and Oxfam.

Seoul Peace Prize:

- Established in 1990 to commemorate success of the 24th Olympic Games held in Seoul, South Korea.
- Established to crystallize Korean people's yearning for peace on Korean Peninsula and in the rest of the world.
- Awarded biennially to those individuals who have made their mark through contributions to harmony of mankind, reconciliation between nations and world peace.

Afghanistan launches new export route to India through Iran

Afghanistan began exports to India through the Chabahar as the landlocked, war-torn nation turns to overseas markets to improve its economy.

Afghan Exports to India

- 23 trucks carrying 57 tonnes of dried fruits, textiles, carpets and mineral products were dispatched from western Afghan city of Zaranj to Iran's Chabahar port.
- The consignment will be shipped to the Indian city of Mumbai.
- The Iranian port provides easy access to the sea to Afghanistan and India has helped developed this route to allow both countries to engage in trade bypassing Pakistan.

Afghanistan, a new trade partner

- India has sent 1.1 million tonnes of wheat and 2,000 tonnes of lentils to Afghanistan through Chabahar.
- Both countries established an air corridor in 2017.
- Afghan exports to India stood at \$740 million in 2018, making it the largest export destination.

ENVIRONMENT- CONSERVATION, BIO-DIVERSITY AND ISSUES

Arjuna Tree

- The Arjuna is a large, buttressed tree that usually grows along river banks.
- The arjuna tree (*Terminalia arjuna*) is best known for its medicinal properties and its importance to the charismatic grizzled giant squirrel, but it plays a special role in the river-forests of Karnataka's Cauvery Wildlife Sanctuary too.
- A higher number of trees specific to riverine habitats thrive under the canopies of old arjuna trees.
- The soil under these trees' enormous canopies is also more moist and higher in organic carbon.
- This makes a case to recognize it as a keystone species — one that plays a crucial role in the landscape and conserve large, old trees.

Why Keystone specie:

- Scientists studied the plant species growing under the canopy of arjuna trees, as well as in areas without the trees.
- This revealed a higher species diversity (44 species; some like the mahua tree *Madhuca latifolia* grew only under the canopy of arjuna trees) under these trees.
- Similar riverine areas without arjuna trees housed only 26 species.
- Areas devoid of the trees also had more species that were not native to riverine stretches.

Medicinal Use

- The arjuna was introduced into Ayurveda as a treatment for heart disease by Vagbhata (c. 7th century CE).
- It is used in the treatment of wounds, hemorrhages and ulcers, applied topically as a powder.

Gives out rich soil

- The researchers also sampled soil properties under the trees as well as in areas without them.
- This revealed that soil in areas under the canopy of the tree had higher organic carbon and moisture contents, probably due to the presence of the large canopy.
- Put together, these factors prove that the arjuna is a crucial tree in the landscape.

SCIENCE AND TECHNOLOGY- EVERYDAY SCIENCE, SPACE, NUCLEAR, DEFENCE ETC

India to launch a public DNS server

The government will soon launch a public domain name system (DNS) server that could protect users from any malware or phishing with enhanced security features as well as faster response time.

Key features:

- The new platform is an upgraded version with enhanced in-built security features compared to the earlier created by the National Informatics Centre (NIC) and has a capability to host as many as 5 million users that can be scaled up further if needed.
- If a user inadvertently accesses a malicious or phishing site, the new public system would immediately open up a page or popup to alert the user of such potential threat so that the suspicious resource could be avoided, the official who is aware of the initiative.
- The new DNS will be placed across the country to minimise outage and would be available round the clock. Users can simply use it by typing the IP number into the Internet browser.

Need: DNS is an important tool that requires to be fool-proof and has a major role in browsing the Internet. The Centre is eyeing a new and robust platform in the wake of critical digital services being delivered online requiring enhanced security to discourage cyber-attacks and a quicker site loading time.

Domain Name System:

- DNS is a system that translates domain names to Internet Protocol or IP addresses that allows browsers to load websites sought.
- It is a database that stores all of the domain names and corresponding IP numbers for a particular top-level domain (TLD) such as .com or .net. The DNS identifies and locates computer systems and resources on the Internet.

Hayabusa2 lands on Ryugu

Japan Space Exploration Agency (JAXA) has announced that a probe, Hayabusa2, had successfully landed on an asteroid- Ryugu– 300 million km from Earth. Notably, Hayabusa2 is the second Japanese spacecraft to land on an asteroid, after Hayabusa achieved a similar feat back in 2005.

Hayabusa: In mid-September 2005, Hayabusa landed on the asteroid Itokawa, and managed to collect samples in the form of grains of asteroidal material. It returned to Earth with the samples in June 2010, thereby becoming the first spacecraft to return asteroid samples to Earth for analysis.

Hayabusa2:

- It is an asteroid sample-return mission operated by the Japanese space agency, JAXA.
- It was launched on 3 December 2014 and rendezvoused with near-Earth asteroid 162173 Ryugu on 27 June 2018.
- It is in the process of surveying the asteroid for a year and a half, departing in December 2019, and returning to Earth in December 2020.
- Hayabusa2 carries multiple science payloads for remote sensing, sampling, and four small rovers that will investigate the asteroid surface to inform the environmental and geological context of the samples collected.

The Hayabusa2 payload incorporates multiple scientific instruments:

- Remote sensing: Optical Navigation Camera (ONC-T, ONC-W1, ONC-W2), Near-Infrared Camera (NIR3), Thermal-Infrared Camera (TIR), Light Detection And Ranging (LIDAR).
- Sampling: Sampling device (SMP), Small Carry-on Impactor (SCI), Deployable Camera (DCAM3).
- Four rovers: Mobile Asteroid Surface Scout (MASCOT), Rover-1A, Rover-1B, Rover-2.

The scientific objectives:

- To characterize the asteroid from remote sensing observations (with multispectral cameras, near-infrared spectrometer, thermal infrared imager, laser altimeter) on a macroscopic scale
- To analyse the samples returned from the asteroid on a microscopic scale.

Significance of the mission: Ryugu is a C-type asteroid – a relic from the early days of the Solar System. Scientists think that C-type asteroids contain both organic matter, and trapped water, and might have been responsible for bringing both to Earth, thereby providing the planet with the materials necessary for life to originate.

Beresheet- Israel's First Lunar Lander Launched

Israel's First Lunar Lander- Beresheet– was recently launched on board Falcon 9. Beresheet will attempt to become the first Israeli spacecraft, and the first privately-operated mission, to land on the Moon.

- If successful, it will make the Jewish state only the fourth nation to ever to achieve a controlled touchdown on the moon's surface. So far, only three other nations have carried out controlled "soft" landings on the moon – the United States, the former Soviet Union and China. Spacecraft from several countries, including India's Moon Impact Probe, Japan's SELENE orbiter and a European Space Agency orbital probe called SMART 1, have intentionally crashed on the lunar surface.
- Beresheet would mark the first non-government lunar landing. The 1,290-pound (585-kg) spacecraft was built by Israeli nonprofit space venture SpaceIL and state-owned defense contractor Israel Aerospace Industries (IAI) with \$100 million furnished almost entirely by private donors.
- Beresheet is designed to spend just two to three days using on-board instruments to photograph its landing site and measure the moon's magnetic field. Data will be relayed via the US space agency NASA's Deep Space Network to SpaceIL's Israel-based ground station Yehud.

QUOTE OF THE DAY

You may only succeed if you desire succeeding; you may only fail if you do not mind failing