Prelim Bits 18-08-2022 | UPSC Daily Current Affairs

National Action for Mechanised Sanitation Ecosystem (NAMASTE)

NAMASTE is a central sector scheme for improving the living standards of sanitation workers in urban areas.

- Namaste is a joint initiative of Ministry of Social Justice and Empowerment (MoSJE), Ministry of Housing and Urban Affairs (MoHUA) and Department of Drinking Water and Sanitation.
- **Objective -** It envisages safety and dignity of sanitation workers in urban India by
  - creating an enabling ecosystem that recognizes sanitation workers as one of the key contributors in the maintenance of sanitation infrastructure
  - providing them with sustainable livelihood
  - enhancing their occupational safety through capacity building and improved access to safety gear and machines
- It also aims at provide alternative livelihoods support and entitlements to reduce their vulnerabilities.
- This will enable them to access self-employment and skilled wage employment opportunities and break the intergenerationality in sanitation work.

Eligible cities

- 500 cities converging with AMRUT will be taken up. The cities include
- All Cities and Towns with a population of over one lakh with notified Municipalities, including Cantonment Boards (Civilian areas).
- All Capital Cities of States/Union Territories (UTs)
- Ten Cities from hill states, islands and tourist destinations (not more than one from each State).

Features

- **Creating database of Septic Tank Workers**
  - A database of informal Septic Tank Workers (SSWs) will be created.
  - It will help in reaching the SSWs and their families and provide them necessary support for collectivization, skill building and linking with social and financial benefits.
  - The Survey would be conducted by the City NAMASTE Managers validated by the concerned ULB in digital mode.
- **Extending Insurance Scheme Benefits**
  - SSWs and their families will be covered under the Ayushyaman Bharat- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
  - Their premium for those who are not covered earlier shall be borne under

NAMASTE.

- **Livelihood Assistance**
  - A SSW may choose to continue the work in the sanitation sector or explore an alternative livelihood option.
  - In case he chooses sanitation work, the National Safai Karamchari Finance Development Corporation (NSKFDC) will provide funding support and subsidy to the sanitation workers.
  - For SSWs and their dependants seeking alternative livelihood option they will be given counselling on available livelihood choices and an opportunity to acquire alternative skills.
- For self-employment projects the interest rates are
  - Projects up to Rs. 100000 - 5% (4% for women beneficiaries)
  - Projects above Rs. 100000 - 6%
- Upfront Capital subsidy is

	Project Cost	Capital Subsidy
Individuals	Upto Rs. 5,00,000	50% of project cost
	5,00,000 to 15,00,000	Rs. 2.50 lakh + 25% of remaining project cost
Group Projects	Upto Rs. 10,00,000 lakh per beneficiary with maximum project cost upto Rs. 50,00,000	Same as admissible to individuals subject to maximum Rs. 3.75 lakh per beneficiary.

- Interest Subvention - Interest subvention over and above the rates of interest prescribed under the scheme, is also admissible.
- The maximum repayment period including the moratorium period of up to 6 months may be
  - 5 years for projects costing upto Rs. 5.00 lakh
  - 7 years for projects costing above Rs. 5.00 lakh.
- **Saturation with Social Security Schemes' benefits –** SSW and their family members will be extended the benefits of all the social security schemes being implemented by various departments in the area, like
  - Food Security (Ration)
  - Pradhan Mantri Awas Yojana
  - Scholarship Schemes at pre matric and post matric level
  - Enrolment of out of school, school-going-age children
  - Atal Pension Yojana
  - Pension Schemes for older persons, widows, orphan, physically challenged etc.
  - Pradhan Mantri Suraksha Bima Yojana(PM-SBY)
  - Pradhan Mantri Jeevan Jyoti Bima Yojana (PM-JJBY)
  - Pradhan Mantri Ujjwala Yojana
  - Allotment of free land/plots
  - Anganwari
  - Coaching for entrance exams and service.
- **Implementing Agencies -** To support the implementation of NAMASTE following managements units will be setup

    - National NAMASTE Management Unit
    - State NAMASTE Management Unit
    - City NAMASTE Monitoring Unit
- **Funding -** Financial allocations of existing SRMS, SBM, DAY-NULM and NSKFDC will be leveraged for
    - SHG formation of core sanitation workers.
    - PPE procurement and distribution.
    - Safety devices and equipment procurement (can also be financed through NSKFDC to ULBs).
    - Occupational safety training and skilling for SEPs & Duty Supervisors (can also be done through NSKFDC under SRMS).
    - Providing work assurance to sanitation workers interested in availing Sanitation Related Projects.
    - Interventions under AMRUT.
- **IEC Campaign -** Campaigns would be undertaken to spread awareness in electronic and print media, social media and hoardings at prominent locations.
- The Government has formulated various structure like Responsible Sanitation Authority (RSA) and Emergency Response Sanitation Unit (ERSU) to ensure that only trained professionals are exposed to any potential hazard with appropriate safety gear, as a last resort, if the mechanized equipment is unable to make necessary improvement.

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Hayabusa-2 probe

Hayabusa-2 probe has brought 5.4 grams of rocks and dust from the asteroid Ryugu.

- Hayabusa-2 mission was launched in December 2014.
- It is a six-year voyage to study the asteroid Ryugu.
- In 2018 the spacecraft reached the asteroid and deployed two rovers and a small lander onto the surface.
- In 2019, the spacecraft fired an impactor to create an artificial crater to collect the samples.
- A small capsule containing the rock and dust samples landed safely landed in the South Australian outback in 2020.

Key Findings

- The analyses of the samples have helped us explore the origins of life on our planet.
- Volatile and organic-rich C-type asteroids may have been one of the main sources of Earth’s water.
- These sample from Ryugu represents one important source of volatiles. They are 4.6 billion years old.

- The materials contained amino acids. Living organisms use amino acids to make protein which makes them fundamental building blocks of life.
- Since it would not have survived the planet's molten origin, such primordial material cannot be found on Earth.
- Scientists were not able to rule out the possibility that those amino acids had originated from terrestrial sources.
- Amino acids were previously recovered from meteorites that crashed into Earth.
- It suggests that the building blocks of life might have formed in space.
- The organic material collected probably has originated from the fringes of the Solar System.
- The composition of particles collected from Ryugu closely matches water on Earth.
- However it is unlikely to be the only source of volatiles delivered to the early Earth.
- The slight differences identified suggests that our planet’s water might have also originated from places other than asteroids.
- **Asteroid -** Asteroids are rocky objects that orbit the Sun, much smaller than planets. They are also called minor planets.
- There are 994,383 known asteroids.
- It is divided into 3 classes.
    - Asteroid between Mars and Jupiter.
    - Trojans, which are asteroids that share an orbit with a larger planet.
    - Near-Earth Asteroids (NEA), the orbits of the asteriods pass close to the Earth.
    - More than 10,000 such asteroids are known, out of which over 1,400 are classified as potentially hazardous asteroids (PHAs)

“Ryugu is also classified as a PHA and was discovered in 1999 and was given the name by the Minor Planet Center in 2015.”

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Traditional Knowledge Digital Library (TKDL)

The Cabinet chaired by the Prime Minister, Shri Narendra Modi has approved the, widening access of the Traditional Knowledge Digital Library (TKDL) database to users, besides patent offices.

- The Traditional Knowledge Digital Library (TKDL) is a prior art database of Indian traditional knowledge established in 2001.
- It is established jointly by the Council of Scientific and Industrial Research (CSIR) and Department of Indian Systems of Medicine and Homeopathy (ISM&H, now Ministry of AYUSH).
- The TKDL is a first of its kind globally and has been serving as an exemplary model to other nations.

- The TKDL currently contains information from existing literature related to ISM such as Ayurveda, Unani, Siddha, Sowa Rigpa and Yoga.
- The information is documented in a digitized format in five international languages which are English, German, French, Japanese and Spanish.
- TKDL provides information in languages and format understandable by patent examiners at Patent Offices worldwide, so as to prevent the erroneous grant of patents.
- The TKDL will drive research & development, and innovation based on India's valued heritage across diverse fields.
- The opening up of the TKDL is also envisaged to inculcate thought and knowledge leadership through Bharatiya Gnana Parampara, under the New Education Policy 2020.
- **Indian traditional knowledge (TK)** offers immense potential to serve national and global needs, therewith providing societal benefits as well as economic growth.
- The World Health Organization (WHO) established its first off-shore Global Centre for Traditional Medicines (GCTM) in India.
- This demonstrates the continued relevance of traditional knowledge in address the current and emerging needs of the world. The TKDL will act as an important sources of TK information for advancing knowledge and technology frontiers.
- It facilitates wider adoption of Indian traditional medicines.
- The access to the TKDL database would be through a paid subscription model with a phase-wise opening to national and international users.
- In future, more information on Indian traditional knowledge from other domains will be added to the TKDL database from the perspectives of the "3P – Preservation. Protection and Promotion".
- It caters to prevent the granting of wrong patents on Indian traditional knowledge.
- The TKDL database will also push creative minds to innovate for better, safer and more effective solutions for a healthier and technology endowed population.
- Access to the complete TKDL database is restricted to 14 Patent Offices worldwide for the purposes of search and examination.
- This defensive protection through TKDL has been effective in safeguarding Indian traditional knowledge from misappropriation, and is considered a global benchmark.

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BioSentinel

NASA's BioSentinel will carry microorganisms to deep space to help scientists better understand the effects of deep space radiation on biological lifeforms.

- The BioSentinel mission was selected as one of the secondary payloads, and the sole biological experiment, to fly on the first launch of the Space Launch System rocket for the Artemis I mission.
- The primary objective of BioSentinel is to develop a biosensor instrument to detect and measure the impact of space radiation on living organisms over long durations beyond

low-Earth Orbit (LEO).
- While progress identifying and characterizing biological radiation effects using Earth-based facilities has been significant, no terrestrial source can fully simulate the unique radiation environment encountered in deep space.
- The BioSentinel biosensor utilizes the budding yeast Saccharomyces cerevisiae to query the biological response to ambient deep space radiation, including DNA damage like the formation of double strand breaks (DSBs).
- DSBs are deleterious DNA lesions that are generated by exposure to highly energetic particles in the deep space radiation spectrum, and that are often repaired without errors by the cell.
- The biosensor contains two genetically engineered yeast strains.
- One is a wild type strain that serves as a control for yeast health and "normal" DNA damage repair.
- The second is a rad51 deletion strain, which is defective for DNA damage repair.
- These changes will be detected by the biosensor payload.

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Rhine River

The low water levels on the Rhine River hurts Germany's economy.

- The Rhine is one of the major European rivers.
- The river begins in the Swiss canton of Graubünden in the southeastern Swiss Alps.
- It forms part of the Swiss-Liechtenstein, Swiss-Austrian, and Swiss-German borders.
- After that the Rhine defines much of the Franco-German border, after which it flows in a mostly northerly direction through the German Rhineland.
- Finally in Germany the Rhine turns into a predominantly westerly direction and flows into the Netherlands where it eventually empties into the North Sea.
- It is the second-longest river in Central and Western Europe (after the Danube).
- The Rhine has been a vital navigable waterway bringing trade and goods deep inland
- It is an important link between industrial producers and global export terminals in North Sea ports such as Rotterdam and Amsterdam.
- While canals and other rivers link the Rhine to the Danube, making it possible to ship to the Black Sea as well.

Importance of the Rhine River to Germany's economy

- Economists' estimate, the disruption to Rhine shipping could knock as much as half a percentage point off overall economic growth this year in Europe's largest economy.
- The low Rhine water levels are expected to increase costs for chemicals companies such as BASF and could lead to production cuts.
- Coal power plants, now back in fashion as an alternative to Russian gas supplies, and also face supply shortages with boats unable to take on enough coal.

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