



News Analysis (19 Mar, 2019)

 drishtiias.com/current-affairs-news-analysis-editorials/news-analysis/19-03-2019/print

Septic Tanks Meet Norms: MoDWS

Union Ministry of Drinking Water and Sanitation (MoDWS) has said that Septic tanks and single pits are safe sanitation technologies that meet the standards prescribed by the Sustainable Development Goals.

Union Ministry was responding to a report on National Annual Rural Sanitation Survey (NARSS) 2018-19 on use of Septic Tanks.

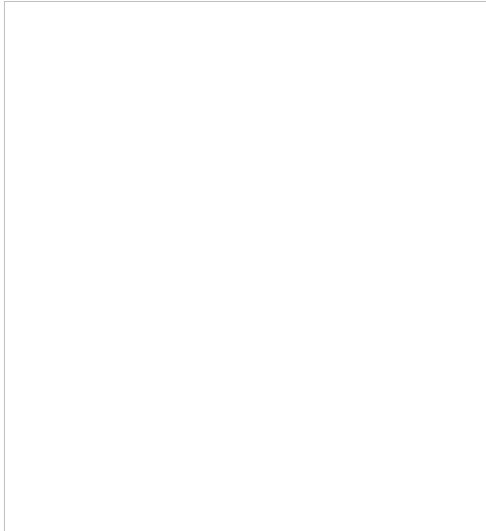
Findings of the Survey

- National Annual Rural Sanitation Survey (NARSS) 2018-19 has concluded that Only 26% of rural toilets use twin-leach pits and rural toilets [that do not use twin-leach pits] could create a new “sanitation nightmare.”
- Not using twin pit can be harmful to health and the environment, and can push a new generation into manual scavenging.
- Septic tanks are the most popular option, with 28% of toilets connected to a septic tank with a soak pit and 6% to a tank without a soak pit.

Union Ministry’s Response

- Ministry responded that Septic tanks and single pits are safe sanitation technologies that meet the standards prescribed by the Sustainable Development Goals(SDG).
- The twin-leach pit toilet is among the most economical and safe sanitation technologies, and has been promoted and extensively adopted.
- Ministry accepted, there is a manpower challenge to empty and clean such tanks, given the social context of the country and caste prejudices against such cleaning work.
- It is preparing technological and entrepreneurial solutions to the problem.

National Annual Rural Sanitation Survey(NARSS) 2018-19



It was conducted by an Independent Verification Agency under the World Bank support project to the Swachh Bharat Mission (Grameen).

Twin-pit and Single-pit system

- Two pits are dug with honeycombed walls and earthen floors which allow liquid to percolate into the surrounding soil.
- When one pit is filled and closed off, waste flow is transferred to the second pit, allowing waste in the first pit to be converted into manure after a year or two.
- It is an in-situ sanitation system which claims to bypass thorny issues such as caste purity, as owners will be dealing with manure, not excreta.
- In case of single pit system, once this single pit is filled, there is an immediate emergency to empty excreta not manure(it needs long time for conversion of excreta into manure).

Solar Tsunami Can Trigger the Sunspot Cycle

The scientists have found that solar tsunamis are responsible for triggering an 11-year cycle of sunspots.

It is believed that the “solar dynamo” is linked to the production of sunspots.

Solar Dynamo

Solar Dynamo is a naturally occurring generator which produces electric and magnetic fields in the sun.

Sun Spot

- Sunspots are areas that appear dark on the surface of the Sun. They appear dark because they are cooler than other parts of the Sun's surface.
- The temperature of a sunspot is still high around 6,500 degrees Fahrenheit.
- Sunspots are relatively cool. It's because they form at areas where magnetic fields are particularly strong. These magnetic fields are so strong that they keep some of the heat within the Sun from reaching the surface.
- The amount of magnetic flux that rises up to the Sun's surface varies with time in a cycle called the solar cycle. This cycle lasts 11 years on average. This cycle is sometimes referred to as the sunspot cycle.

Solar Tsunami

- Solar tsunami is the waves of the magnetic field and hot, ionized gas moving across the Sun at about 400 km per second.
- Tsunamis are generated after a release of matter into space called a coronal mass ejection (CME).
- Solar tsunamis were discovered in 1997 by the SOHO (Solar and Heliospheric Observatory) of European Space Agency.

Coronal Mass Ejection

- A coronal mass ejection (CME) is a significant release of plasma and accompanying magnetic field from the solar corona. They are often followed by solar flares.
- Solar Flares on reaching earth causes spectacular light shows by interacting with the earth's magnetic field called Aurora's.
- Solar Flares can also disrupt radio transmission and harm satellites in orbit.

How Solar Tsunami leads to Sunspot?

- The extreme temperature and pressure conditions that prevail some 20,000 km below the sun's surface cause its material to form a plasma consisting primarily of hydrogen and helium in a highly ionized state.
 - The plasma is confined with huge magnetic fields inside the sun. Holding these fields in their place requires that there is extra mass (plasma mass) pushing at the bands from higher latitudes.
 - Thus, a magnetic dam is formed which is storing a big mass of plasma. At the end of a solar cycle, this magnetic dam can break, releasing huge amounts of plasma cascading like a tsunami towards the poles.
 - These tsunami waves travel at high speeds of about 1,000 km per hour carrying excess plasma to the mid-latitudes. There they give rise to magnetic flux eruptions. These are seen as the bright patches that signal the start of the next cycle of sunspots.
-

Hayabusa 2

Japan Aerospace Exploration Agency (JAXA) has decided to make a **crater on asteroid 1999 JU3 (Ryugu)** to collect underground samples.

- This is part of the **Hayabusa 2 mission**, launched in December 2014, to explore asteroid 1999 JU3 (Ryugu).
- The purpose of drilling is to collect samples for possible clues to the origin of the solar system.

Asteroids

- **Asteroids are actually minor planets** which can neither be classified either as a planet or as a comet.
- These are generally in the **direct orbit around the Sun**.
- The larger forms of asteroids are also known as **planetoids**.

Hayabusa 2

- **Hayabusa 2 was launched in December 2014 and is planned to complete a mission of six years.**
- It arrived at Ryugu in July 2018 and **will spend 18 months studying the asteroid before making its return to Earth in December 2020.**
- The mission builds on the original Hayabusa mission that was launched in 2003 and successfully linked up with asteroid Itokawa in 2005.
- It returned samples to Earth in 2010 marking the first time sample materials from an asteroid were brought back to Earth.

Why Study Asteroids?

- Asteroids, like comets, are primitive bodies that can be considered to be the **building blocks of the early solar system**. They hold a record of the birth and initial evolution of the solar system.
 - Larger planets like Earth went through a more complex evolution over which the pristine materials were melted and altered significantly. Due to this change, the materials found on large planets do not hold information into their early stages of formation.
 - **Comets and asteroids, formed early in the evolution of the Solar System, retain a record of when, where and in what conditions they were formed. Exploration of these primitive bodies is essential in gaining insight into the formation of the Solar System.**
-

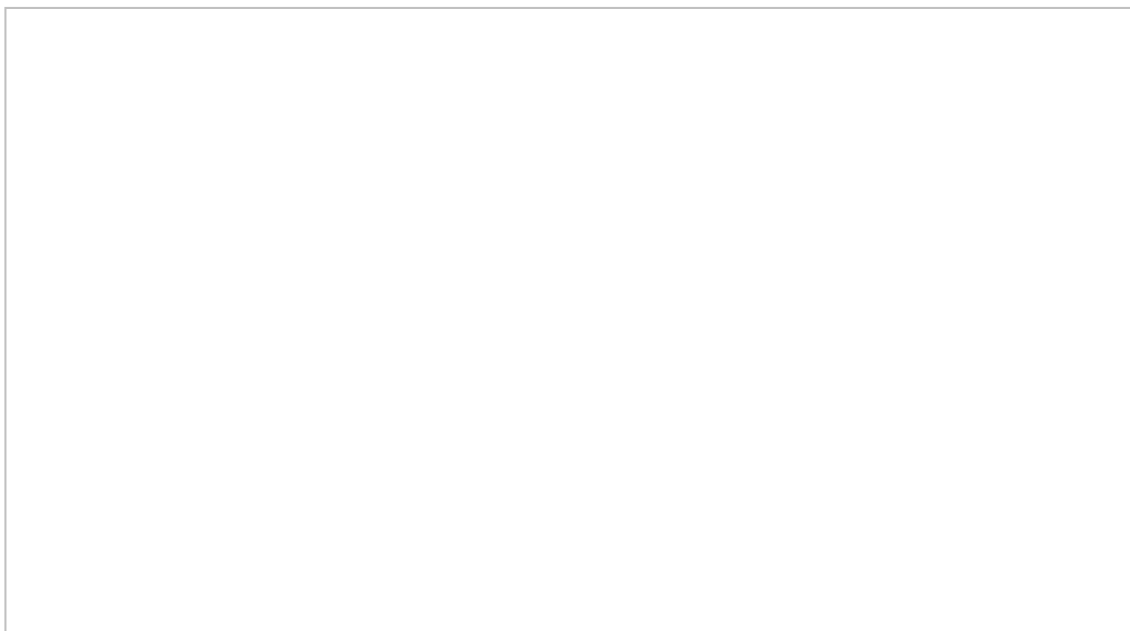
Important Facts For Prelims (19th March 2019)

Vaquita Porpoise

- Recently a dead **Vaquita Porpoise** was found in a fishnet off the **coast of Mexico**.
- It is **critically endangered (IUCN) marine animal** of which only about 10 remain in the world.
- It is also known as "**the panda of the sea**" for the **distinctive black circles around its eyes**.
- Vaquita Porpoises are among the **ocean's smallest cetaceans** and they only **reside in the northern Gulf of California**.

The Cetaceans are one of the most **distinctive and highly specialized aquatic mammals**. They include **blue whale, dolphins, blind river dolphins, Porpoise, etc.**

- The vaquitas are threatened primarily by **gillnet fishing for the totoaba fish**, another endangered species in the area that is hunted for its swim bladder, considered a delicacy in China. Dried totoaba bladders are often smuggled through the United States to China.
- Therefore, the **conservation of Vaquita primarily rests with US, China and Mexico**.



Dongria Kondh Tribe

- The Dongria Kondh tribe live in **Niyamgiri hill range of Odisha state**.
- They derive their **name from dongar**, meaning 'hill' and **worship the mountain god Niyam Raja**.
- The Dongria have **distinctive jewellery, tattoos and hairstyles**. Women wear many

rings through their ears and three through their noses, while boys wear two nose rings. Dongria girls wear clips in their hair and rings and beads around their necks.

- The Dongria Kondh have **no overarching political or religious leader**; clans and villages have their own leaders and individuals with specific ceremonial functions.
- The Dongria believe that animals, plants, mountains and other specific sites and streams have a **life-force or soul, jela**, which comes from the mother goddess.

AFINDEX-19

- The **Africa-India Field Training Exercise-2019 called AFINDEX-19** started at Aundh Military Station, **Pune**.
 - India and contingents of the **17 African Nations** i.e. Benin, Botswana, Egypt, Ghana, Kenya, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa, Sudan, Tanzania, Uganda, Zambia and Zimbabwe are participating in the exercise.
 - The aim of the exercise is to **practice the participating nations in planning and conduct of Humanitarian Mine Assistance and Peacekeeping Operations**.
 - It is a positive step towards **growing political and military ties** between India and African nations and will boost the already strong strategic cooperation between the countries.
-