

What is Xenotransplantation?

- Xenotransplantation involves the transplantation of nonhuman tissues or organs into human recipients.
- The dream of animal-to-human transplants goes back to the 17th century when attempts were made to use animal blood for transfusions.
- By the 20th century, surgeons were attempting transplants of organs from baboons into humans.
- In the early 1960s, a surgeon performed 13 chimpanzees-to-human kidney transplants. One of the recipients lived for 90 days. However, most of these transplants failed and were gradually given up.
- But recently, a genetically modified pig's heart was successfully transplanted into a 57-year-old man dying of heart failure in a New York hospital. This is the first successful transplant of a pig's heart into a human being.

☀ China's Artificial Moon

✔ hotter than the Sun, China is ready with its first artificial moon. Scientists have built an “artificial moon” research facility. The facility will help them in conducting low-gravity environments using magnetism.

▪Artificial moon research facility

✔The artificial moon research facility is scheduled for official launch in the year 2022. It will use powerful magnetic fields inside a vacuum chamber of 2-foot-diameter, for making gravity disappear. To develop this research facility, scientists were inspired by a previous experiment, in which magnets were used to levitate a frog.

▪What is the use of this facility?

✔Scientists have planned to use this facility to test technology in prolonged low-gravity

environments, before sending it to the moon, where gravity is one-sixth of Earth's gravity. This experiment will help scientists to resolve technical issues and test whether some structures will survive on the moon's surface. It will also help in assess viability of human settlement on the moon

▪What is diamagnetic levitation?

✓✓Atoms consists of atomic nuclei and electrons orbiting around them in loops of current. These moving currents induce magnetic fields. Usually, randomly oriented magnetic fields of all the atoms of an object cancel out, and no material-wide magnetism is evident. With the application of external magnetic field to these atoms, electrons modify their motion and produces their own magnetic field to oppose the external magnetic field. If the applied external field is strong, magnetic force of repulsion & field of the atoms becomes powerful to overcome gravity and levitate the object into the air. This phenomenon is called as diamagnetic levitation.

☀Rural Area Development Plan Formulation and Implementation (RADPFI)

✓✓ Why in News: The Ministry of Panchayati Raj has revised Rural Area Development Plan Formulation and Implementation (RADPFI) guidelines, 2017, to transform rural India and ensure rural prosperity.

✓✓RADPFI 2021 guidelines is a continuation to the Ministry's efforts towards promotion of Spatial rural planning.

✓✓It will create pathways for rural transformation by developing a perspective for long term planning in villages.

✓✓It includes Village Planning Scheme (VPS) on the lines of Town Planning Schemes in urban areas.

✓✓It will augment development of vibrant economic clusters in rural areas, which would contribute to the socio-economic development of rural areas.

✓✓It will also supplement the efforts of the Central Government such as the SVAMITVA Scheme of Ministry of Panchayati Raj and RURBAN Mission of Ministry of Rural Development and

facilitate better utilization of Geospatial information

▪Objectives:

- ✓ It will enable effective land use planning in rural areas
- ✓ It will help in improving the quality of life in rural areas.
- ✓ It is aimed at ensuring ease of living in villages and help minimizing migration to big cities by providing all necessary infrastructure and facilities and also resources and opportunities for livelihood in rural areas.

#GS2

#prelims

☀️DEEP OCEAN MISSION

- ✓ Why in News: Chief of the Naval Staff, Admiral R. Hari Kumar called on Union Minister Dr Jitendra Singh and discussed the modalities to deepen cooperation in "Deep Ocean Mission" which is to be the torchbearer of India's "Blue Economy".
- ✓ The Modi Government had approved the Deep Ocean Mission (DOM) in June, 2021 to be implemented by the Ministry of Earth Sciences at a total budget of Rs. 4077 Crore for 5 years.
- ✓ DOM is a multi-ministerial, multi-disciplinary programme with emphasis on development of deep-sea technology that includes development of manned Submersible rated for 6000 metre water depth along with technologies for deep sea mining, exploration of deep-sea mineral resources and marine biodiversity, acquisition of a research vessel for ocean exploration, deep sea observations, and capacity building in Marine Biology.
- ✓ Background [CLICK HERE](#)

▪Role of Indian Navy:

✓The Indian Navy is a member of Deep Ocean Council and it will be involved in launching and recovery of Man submersible in deep water, which will be developed under the Deep Ocean Mission.

✓The Ministry of Earth Sciences and Indian Navy are to soon sign a MoU for knowledge sharing in the areas of design and development of underwater vehicles.

▪MATSYA :

✓Dr Jitendra Singh informed that the preliminary design of the manned submersible MATSYA 6000 is completed and realisation of vehicle is started with various organization including ISRO, IITM and DRDO roped-in to support the development.

✓It is designed to carry 3 people to a depth of 6000 metres in the ocean with suit of scientific sensors and tools.

▪Samundrayaan

✓Dr Jitendra Singh launched India's First Manned Ocean Mission Samundrayaan at Chennai in October, 2021 and thus joined the elite club of nations such as USA, Russia, Japan, France and China to have such underwater vehicles for carrying out subsea activities.

✓This niche technology shall facilitate Ministry of Earth Sciences, MoES in carrying out deep ocean exploration of the non-living resources such as polymetallic manganese nodules, gas hydrates, hydro-thermal sulphides and cobalt crusts, located at a depth between 1000 and 5500 metres.

#science_and_technology

#mains

#prelims

#The Montreux Record Ramsar Site

The Montreux Record was established by Recommendation of the Conference of the Contracting Parties (1990).

Sites may be added to and removed from the Record only with the approval of the Contracting Parties in which they lie.

Currently, two wetlands of India are in Montreux record: Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur).

Chilka lake (Odisha) was placed in the record but was later removed from it.

#Ramsarwetlands #Environment

#ENVIRONMENT

■ Centre to Rank States On Faster Green Nods-

✓The Ministry of Environment, Forests and Climate Change has proposed to ""incentivize states"" by ranking them based on ""efficiency and timeliness in granting environmental clearances"".

✓The State Environment Impact Assessment Authority (SEIAA) will be ranked first because it clears projects in the quickest amount of time, has a high clearance rate, and requires fewer ""important details.""

✓In order to streamline clearance processes, the time frame for providing environmental clearance to a project has already been cut from 105 days to 75 days.

● Key Points Of the Order:

✓SEIAA will be ranked first because it clears projects in the quickest amount of time, has a high clearance rate, and requires fewer ""important details.""

✓States will be rewarded based on their efficiency and timeliness in granting EC funds through a star-rating system (environmental clearance).

● Parameters for the rating system:

✓ Marks Days taken for
clearance by the
SEIAA

2 < 80 days

1 < 105 days

0.5 105 – 120 days

0 > 120 days

✓ Rating on the basis of disposal of fresh TOR: The state authorities will also be rated on the percentage of disposal of fresh Terms of Reference (TOR) or TOR amendment proposals pending for over 30 days.

✓ State officials will be paid as well for requesting fewer environmental details. (Details on the environment are required)

✓ The ranking system also considers how complaints are handled.

✓ If an SEIAA receives more than 7 points based on these criteria, it will be given a 5-star rating (the highest ranking). Any SEIAA with a total score of less than 3 shall receive no star.

● Reaction on the move:

✓ This has been criticised by environmentalists.

✓ They claim that state officials, whose job is to promote environmental protection, would now "compete" to clear projects quickly in order to boost state rankings.

● What is SEIAA?

✓ The SEIAAs are in charge of obtaining environmental approval for the vast majority of infrastructural, development, and industrial projects.

✓ Established under The Environment Protection Act of 1986.

✓ Objective: To examine the planned project's impact on the environment and people, and to

try to minimise that damage.

● Importance of EIA:

- ✓ Provides a low-cost strategy for reducing or eliminating the negative effects of development projects.
- ✓ Allows decision-makers to assess the impact of developmental activities on the environment prior to the project's implementation.
- ✓ Encourages the development plan to incorporate mitigating techniques.

● Stakeholders in the Environmental Impact Assessment (EIA) Process:

- ✓ Those who suggest the project are known as proposers.
- ✓ The public has the opportunity to comment on the environmental consultant who prepares the EIA on behalf of the project proponent Pollution Control Board (State or National).
- ✓ The MoEFCC's Regional Centre for Impact Assessment

● Environmental Impact Assessment (EIA) and India:

- ✓ History: The need first arose in 1976-77 when the Planning Commission asked the Department of Science and Technology to examine the river-valley projects from an environmental angle.
- ✓ The first EIA notification was issued by the Ministry of Environment and Forests in 1994. (now the Ministry of Environment, Forests and Climate Change).
- ✓ According to the notification Environmental Clearance (EC) was required for any expansion or modernisation of any activity, as well as the establishment of new projects listed in Schedule 1 of the same.
- ✓ Statute: The Environment Protection Act of 1986, which contains various provisions on EIA methodology and process, provides legal support for environmental impact assessments in India.

● Shortcomings of EIA:

✓ Time-consuming- There is little public involvement in the actual execution.

✓ Sometimes get too caught up in the scientific analysis.

✓ Many countries have impact assessment systems.

SOURCE - INDIAN EXPRESS

India - Maurities Bi-literal RelationShip

Jointly inaugurating multiple development projects in Mauritius, along with the country's Prime Minister Pravind Kumar Jugnauth, Prime Minister Narendra Modi on Thursday said that Mauritius is "integral" to India's approach to the Indian Ocean, and that the development partnership is a key pillar of the close ties between the two nations.

Here's the detailed information about India Mauritius bilateral relationship

Note:pics also there.