



Most Trusted Learning Platform



NAMOH 108

CSIR-National Botanical Research Institute launched an improved variety of the national flower Lotus with 108 petals called 'Namoh 108'.

The flower was dedicated to the nation a day before Independence Day.

The Lotus variety is more weather resilient and can flower from March to December.

CSIR-NBRI also released apparels made from lotus fibre and a perfume developed from Lotus plants.



NAMOH 108

The lotus has 108 petals and was discovered several years ago in Manipur and kept at the institute as part of its collection of flowers and plants, on which the institute conducts research.

This is the first lotus variety whose genome is completely sequenced for its characteristics.

CSIR-NBRI would be initiating a 'Lotus Mission' as part of a larger ongoing horticultural mission to have more of the 108 Namo flowers grow in other parts of India.

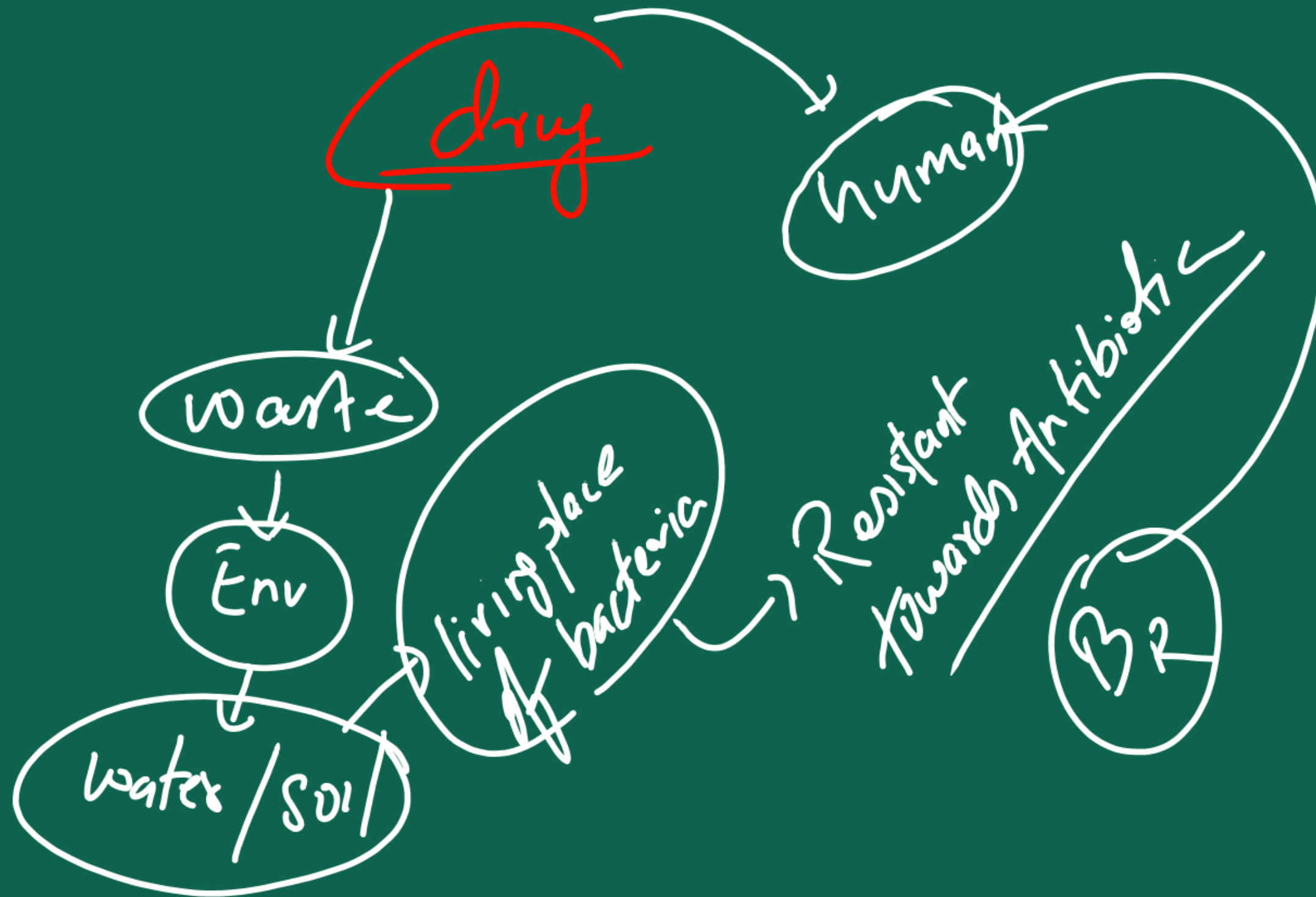


ANTIMICROBIAL RESISTANCE (AMR)

- AMR is a condition in which any microorganism acquires a resistance against antimicrobial drugs thereby rendering them useless in treatment of an infection.
- These types of microorganisms are also known as "superbugs".
- AMR is among the top ten threats recognised by WHO to global health.
- AMR develops due to rapid misuse of antimicrobials as medicine for both human and crops in Agriculture.
- Unsanitary practices in pharmaceutical manufacturing sites also causes the same.

→ Improper disposal of waste from hospitals.
→ Overuse of drugs
↳ OTC

→ Antibiotics to cattles / plants



ANTIMICROBIAL RESISTANCE (AMR)

- **Convergence of several factors such as large population, rising incomes that facilitate purchase of antibiotics, high burden of infectious diseases and easy over-the-counter access to antibiotics causes AMR.**
- **A study reported by ICMR (Indian Council of Medical Research) from 10 hospitals showed that when Covid patients acquire drug-resistant infections in hospitals, the mortality is almost 50-60**

Lambani Craft ✓

- India's G20 Presidency created a Guinness World Record for the 'largest display of Lambani items' with a total of 1755 items.
- The record was made under the 'Culture Unites All' campaign of the Culture Working Group, Ministry of Culture.
- Lambani embroidery is a vibrant and intricate form of textile embellishment characterized by colourful threads, mirror work, and a rich array of stitch patterns.
- It is practised in several villages of Karnataka such as Sandur, Keri Tanda, Mariyammanahalli, Kadirampur, Sitaram Tanda, Bijapur, and Kamalapur.



Lambani Craft

- This rich embroidery tradition, predominantly **upheld by the skilled women of the Lambani community**, serves as a vital source of livelihood and sustenance, intertwining living practices with economic empowerment
- Lambani craft tradition involves skillfully stitching together small pieces of discarded fabric to create a beautiful fabric.
- The embroidery traditions of the **Lambanis are shared in terms of technique and aesthetics with textile traditions across Eastern Europe, West, and Central Asia.**



Lambani Craft

- This alludes to the movement of the nomadic communities across such regions historically, forming a shared artistic culture.
- This interconnectedness of cultures through the craft makes it an ideal symbol for the campaign 'Culture Unites All'.
- Through this art form, we celebrate our shared heritage and promote dialogue and understanding among diverse communities.



Places in News: ORKNEY ISLANDS

- Orkney Islands has proposed its intent to split from the U.K. and become a self-governing territory of Norway
- Sick of being ignored by far-away politicians, officials on Scotland's remote Orkney Islands are mulling a drastic solution: rejoining Norway, **the Scandinavian country that gave them away as a royal wedding dowry more than 550 years ago.**

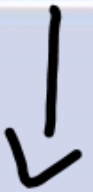


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Dark Star, Dark Matter, Dark Energy

Property	Dark Star	Dark Matter	Dark Energy
Nature	Hypothetical celestial object	 Hypothetical particles	 Hypothetical form of energy
Composition	Speculated to be composed of <u>dark matter</u> and <u>ordinary matter</u>	 Unknown, possibly exotic particles	Unknown, not composed of matter
Visibility	Potentially observable with telescopes, but difficult due to darkness	Does not interact with <u>electromagnetic forces</u> , making it invisible	Not directly <u>observable</u> , <u>inferred</u> from <u>cosmic expansion</u>

Dark Star, Dark Matter, Dark Energy

Property	Dark Star	Dark Matter	Dark Energy
Gravitational Effect	Influences nearby matter, potentially causing gravitational lensing	Exhibits <u>gravitational pull</u> , responsible for <u>large-scale structures</u> in the universe	Causes <u>accelerated cosmic expansion</u> , <u>counteracting gravity</u>
Role in Universe	Could be a component of the elusive dark matter	Makes up a <u>significant portion</u> of the <u>total mass</u> in the universe	<u>Drives the</u> <u>accelerated expansion</u> of the universe
Interactions	Interacts via gravity and potentially other forces	Primarily interacts through gravity, weakly interacting with other matter	Does not interact via known forces, except through its gravitational effect

Dark Star, Dark Matter, Dark Energy

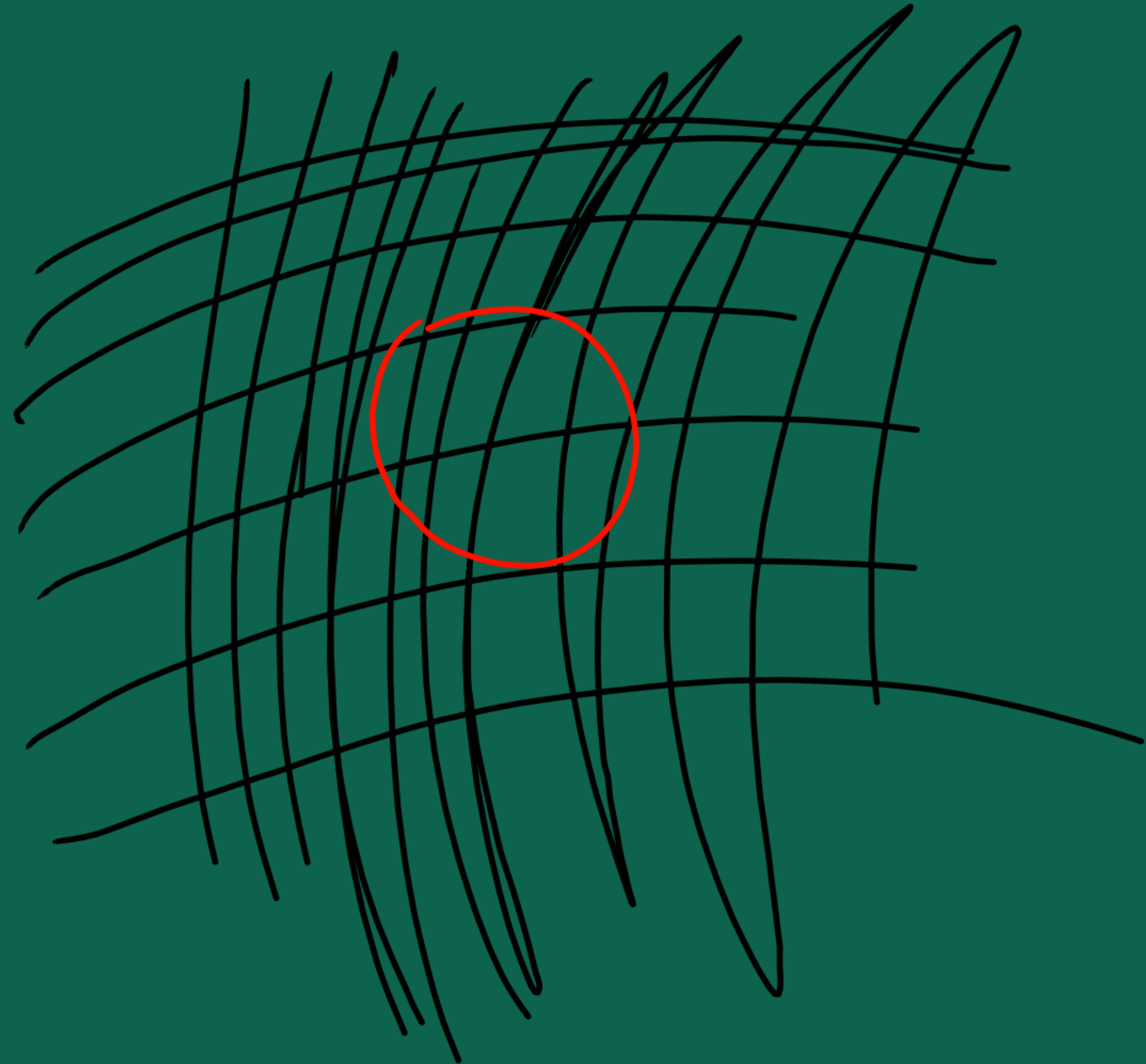
Property	Dark Star	Dark Matter	Dark Energy
Current Understanding	The existence of dark stars is speculative and not confirmed	Dark matter is inferred from its gravitational effects, but its exact nature remains unknown	Dark energy is inferred from cosmic observations, but its origin and properties are not well understood
Research Focus	Limited observational evidence, ongoing theoretical exploration	Intensive research to detect and understand dark matter particles	Continual efforts to understand the nature and properties of dark energy
Impact on Universe	Could influence the formation and evolution of galaxies and other cosmic structures	Plays a crucial role in the structure and evolution of the universe	Drives the acceleration of the cosmic expansion, shaping the fate of the universe

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Shanghai Cooperation Organisation – Iran Joins SCO

- Iran on Tuesday gained full membership of the Shanghai Cooperation Organization (SCO) at the end of the 23rd summit of the SCO Council of Heads of States.
- **Tehran became the ninth member of the regional bloc**
- Iran joined China, Russia, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, India and Uzbekistan as full member during SCO summit where Belarus, and Mongolia were invited as observer state.
- The Shanghai Cooperation Organisation (SCO) **is a permanent intergovernmental international organisation**.
- Shanghai Cooperation Organisation (SCO) was proclaimed on June 15, 2001 in Shanghai (China) by the **Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan and the Republic of Uzbekistan.**



Shanghai Cooperation Organisation – Iran Joins SCO

- The Heads of State Council (HSC) is the highest decision-making body in the SCO.
- It meets once every year to take decisions and give instructions on all important issues regarding SCO activity.
- The Executive Committee of the Regional Anti-Terrorist Structure (RATS) of the Shanghai Cooperation Organisation (SCO) is the permanent body of the SCO RATS based in Tashkent, the capital of Uzbekistan.
- The Regional Anti-Terrorist Structure operates in accordance with the SCO Charter, the Shanghai Convention on Combating Terrorism, Separatism and Extremism

Shanghai Cooperation Organisation – Iran Joins SCO

- The SCO Interbank Consortium (SCO IBC) was established by the Council of Heads of Government on 26 October 2005 to provide funding and bank services for investment projects sponsored by the governments of the SCO member states
- The SCO Business Council is an independent institution capable of taking advisory decisions and giving expert assessments regarding the involvement of members of the business communities of the SCO member states in trade, economic and investment interaction within the framework of the Organisation.

DIGITAL PERSONAL DATA PROTECTION ACT 2023

Terms: “**Data Fiduciary**” means any person who alone or in conjunction with other persons determines the purpose and means of processing of personal data

“**Data Principal**” means the individual to whom the personal data relates and where such individual is—

- (i) a child, includes the parents or lawful guardian of such a child;
- (ii) a person with a disability, includes her lawful guardian, acting on her behalf

Applicability: it will apply to the processing of digital personal data within India where such data is collected online, or collected offline and is digitised.

It will also apply to such processing outside India if it is for offering goods or services in India.

DIGITAL PERSONAL DATA PROTECTION ACT 2023

Use of Personal Data: Personal data may be processed only for a lawful purpose upon consent of an individual.

Consent may not be required for specified legitimate uses such as the voluntary sharing of data by the individual or processing by the State for permits, licenses, benefits, and services.

Rights and duties of data principal: An individual whose data is being processed (data principal), will have the right to:

- (i) obtain information about processing,
- (ii) seek correction and erasure of personal data,
- (iii) nominate another person to exercise rights in the event of death or incapacity. and
- (iv) grievance redressal.

DIGITAL PERSONAL DATA PROTECTION ACT 2023

Obligations of data fiduciaries: The entity determining the purpose and means of processing, (data fiduciary), must:

- (i) make reasonable efforts to ensure the accuracy and completeness of data,
- (ii) build reasonable security safeguards to prevent a data breach,
- (iii) inform the Data Protection Board of India and affected persons in the event of a breach, and
- (iv) erase personal data as soon as the purpose has been met and retention is not necessary for legal purposes (storage limitation).

In case of government entities, storage limitation and the right of the data principal to erasure will not apply.

Transfer of personal data outside India: The Bill allows transfer of personal data outside India, except to countries restricted by the central government through notification.

DIGITAL PERSONAL DATA PROTECTION ACT 2023

Data Protection Board of India: The central government will establish the Data Protection Board of India. Key functions of the Board include:

- (i) monitoring compliance and imposing penalties,
- (ii) directing data fiduciaries to take necessary measures in the event of a data breach, and
- (iii) hearing grievances made by affected persons. Board members will be appointed for two years and will be eligible for re-appointment.

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) ACT 2023

National Capital Civil Services Authority: The Bill establishes the National Capital Civil Services Authority to make recommendations to the Lieutenant Governor of Delhi (LG) on certain matters related to services. These include:

- (i) transfers and postings, ✓
- (ii) matters related to vigilance,
- (iii) disciplinary proceedings, and ✓
- (iv) prosecution sanctions of Group A of All India Services (except Indian Police Service), and DANICS

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) ACT 2023

The Authority will consist of the:

- (i) Chief Minister of Delhi as Chairperson,
- (ii) Principal Home Secretary of the Delhi government as Member Secretary, and
- (iii) Chief Secretary of the Delhi government as member.

The central government will appoint both the Principal Home Secretary and Chief Secretary.

All decisions of the Authority will be based on a majority vote of the members present and voting.

The quorum for a meeting is two people.

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) ACT 2023

Powers of the Lieutenant Governor: Under the Act, matters where the LG may act on his discretion are:

- (i) matters outside the legislative competence of the Delhi Legislative Assembly but which have been delegated to the LG, or
- (ii) matters where he is required by a law to act in his discretion or exercise any judicial or quasi-judicial functions.

The Bill specifies that in these matters, the LG will act in his sole discretion.

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) ACT 2023

Disposal of matters by Ministers: A Minister of the Delhi government may issue standing orders for the disposal of matters brought to his attention.

The order should be issued in consultation with the concerned Department Secretary.

Certain matters must be submitted to the LG, through the Chief Minister and the Chief Secretary, for his opinion prior to the issue of any order.

These include proposals affecting:

- (i) the peace and tranquillity of Delhi,
- (ii) relations between the Delhi government and the central government, Supreme Court, or other state governments,
- (iii) summoning, prorogation, and dissolution of the Legislative Assembly, and
- (iv) matters on which LG is to give an order in his sole discretion.

ULLAS: Nav Bharat Saksharta Karyakram

The Government of India has approved a new Centrally Sponsored Scheme "Nav Bharat Saksharta Karyakramme" for the period FYs 2022-2027.

It aims to cover all the aspects of Education for All (erstwhile termed as Adult Education) to align with National Education Policy 2020.

It aims to provide basic literacy (reading, writing and numeracy) besides critical life skills, digital and financial literacy, awareness about rights, vocational skills, etc. to non-literates aged 15 and above.

The age cohort of 15-35 will be saturated first followed by ages 35 and above.

The scheme envisions implementation through volunteerism, with material and resources provided digitally and in physical mode.

The development of online teaching-learning material, delivery of training and orientation is being done by NCERT.

ULLAS: Nav Bharat Saksharta Karyakram

A special element of this scheme is the establishment of Samajik Chetna Kendras, which are primarily ICT-enabled centres equipped with proper resources to carry out the teaching-learning process.

The scheme is being implemented through volunteerism, promoting social responsibility and a sense of duty or Kartavyabodh.

ULLAS also incorporates experiential learning in its teaching methods for volunteer teachers, making the entire process more engaging and meaningful, simultaneously providing practical value to learning.

Along with this, the scheme acknowledges the efforts of the learners as well as the volunteer teachers through certificates which indubitably boost their confidence and motivate them to keep moving forward in life.

Sponge Cities

A sponge city is one that acts like a sponge, soaking up and retaining water during rain and storms and releasing it slowly

The term "sponge cities" is used to describe urban areas with abundant natural areas such as trees, lakes and parks or other good design intended to absorb rain and prevent flooding.

Adding more parks, trees, other greenery or natural drainage can boost a city's absorbency and make it more flood- and drought-resilient.

Many cities are adding green spaces to increase sponginess and deliver other benefits, from cleaner air to wildlife habitat and places to escape summer heat.

Small Modular Reactors (SMRs)

Small modular reactors (SMRs) are advanced nuclear reactors that have a power capacity of up to 300 MW(e) per unit, which is about one-third of the generating capacity of traditional nuclear power reactors. SMRs, which can produce a large amount of low-carbon electricity, are:

Small – physically a fraction of the size of a conventional nuclear power reactor.

Modular – making it possible for systems and components to be factory-assembled and transported as a unit to a location for installation.

Reactors – harnessing nuclear fission to generate heat to produce energy.

Nuclear fission - splitting a large nucleus into two small nuclei
Nuclear fusion - two small nuclei combine to form a large nucleus

Small Modular Reactors (SMRs)

SMRs can be sited on locations not suitable for larger nuclear power plants.

Prefabricated units of SMRs can be manufactured and then shipped and installed on site, making them more affordable to build than large power reactors, which are often custom designed for a particular location, sometimes leading to construction delays.

SMRs offer savings in cost and construction time, and they can be deployed incrementally to match increasing energy demand

Small Modular Reactors (SMRs)

✓ **Fuel** - Generally, **Uranium Oxide** (UO_2) arranged in tubes to form fuel rods

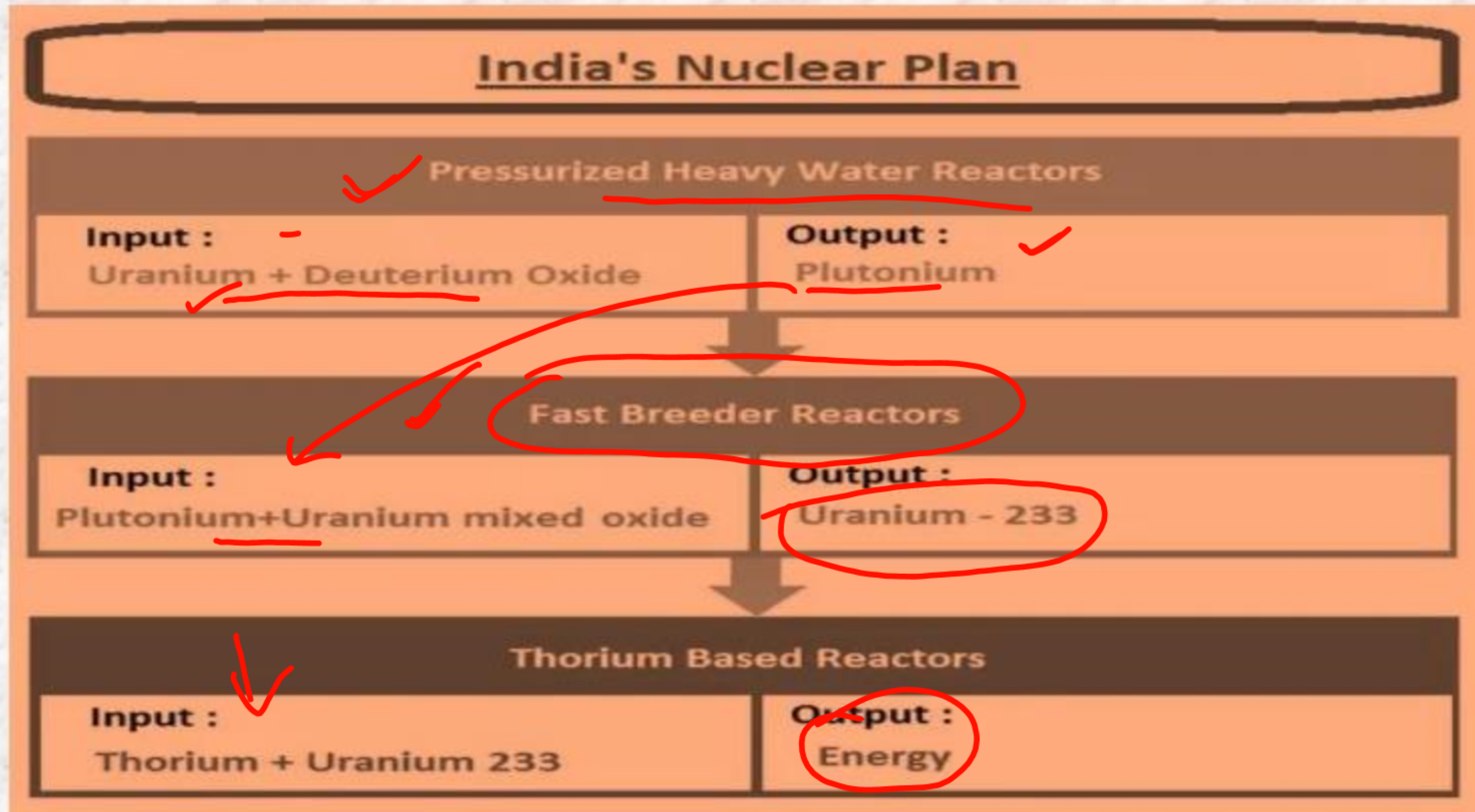
✓ **Moderator** – helps to slow down the neutrons released from fission reaction so that they cause more fission. Usually **liquid water**, **heavy water** or **graphite** is used as moderator.
 H_2O D_2O

Control Rods – These help in absorption of charged neutrons. They are made up of neutron-absorbing materials such as **Boron** or **Cadmium**.

✓ **Coolant** - A liquid or a gas is need to cool the reactor core and transfers heat from the core to the heat exchanger. Ex: Water, Na, He etc

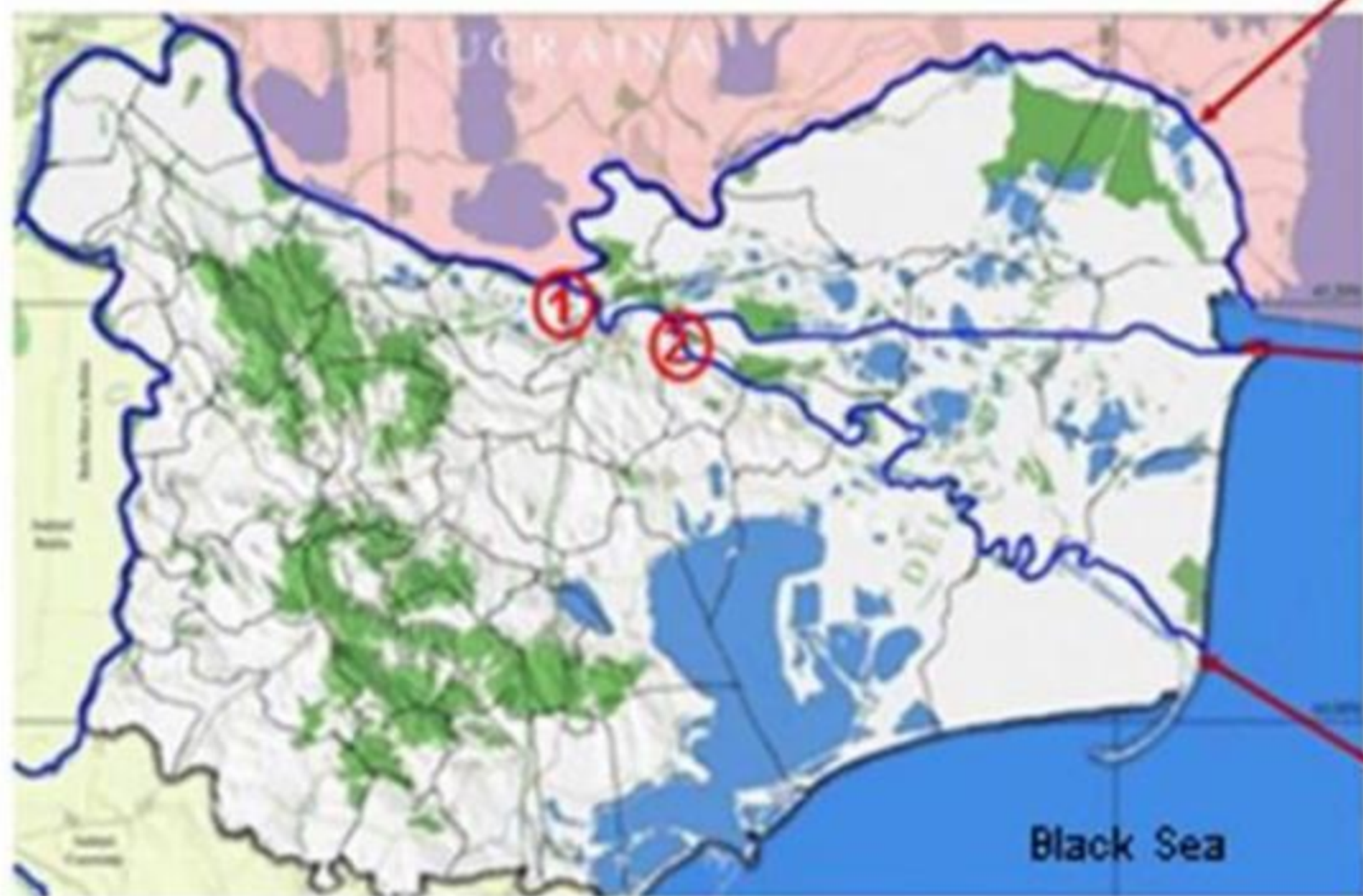
Containment System – Protection of reactor as well as protection from radiation. It is usually thick **concrete** or **steel** enclosure.

Small Modular Reactors (SMRs)



Small Modular Reactors (SMRs)

Stages	Process
Stage 1	1. Use natural Uranium to fuel a Pressurized Heavy Water Reactor (PHWR). 2. The byproduct, Plutonium (Pu) – 239 is used in Stage 2.
Stage 2	1. Develop Fast Breeder Reactor (FBR) to produce excess, Pu-239, which will then lead to the conversion of Thorium (Th – 232) to fissile Uranium U-233.
Stage 3	1. Develop Breeder Reactors, these are Thorium-based Nuclear reactors.



CHILIA BRANCH OF DANUBE

Length of 104 km
Flowrate of 58% from the Danube

SULINA BRANCH OF DANUBE

Length of 71 km
Flowrate of 19% from the Danube

SAINT GEORGE BRANCH OF DANUBE

Length of 112 km
Flowrate of 23% from the Danube



KHAN GLOBAL STUDIES

Most Trusted Learning Platform

THANKS FOR WATCHING

