

ENVIRONMENT

❖ **IEA's Global Methane Tracker 2023**

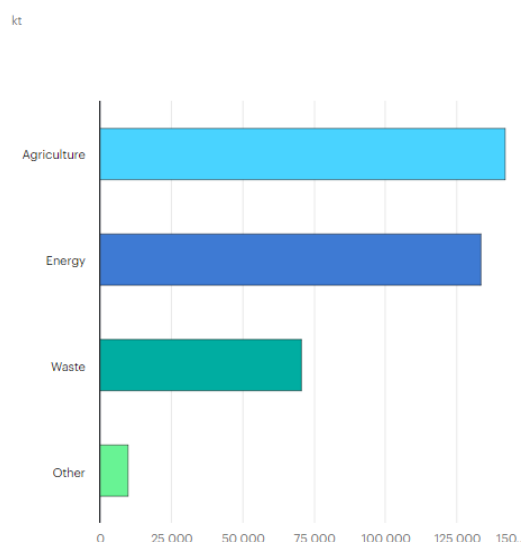
➤ **CONTEXT:** According to the International Energy Agency's (IEA) annual Methane Global Tracker report, fossil fuel companies emitted 120 million metric tonnes of methane into the atmosphere in 2022, only slightly below the record highs seen in 2019. It added that these companies have done almost nothing to curb the emissions despite their pledges to find and fix leaking infrastructure.

- The report said 75 per cent of methane emissions from the energy sector can be reduced with the help of cheap and readily available technology.
- The implementation of such measures would cost less than three per cent of the net income received by the oil and gas industry in 2022, but fossil fuel companies failed to take any substantial action regarding the issue.
- The energy sector accounts for around 40 per cent of the total average methane emissions from human activity, as oil and natural gas companies are known to release methane into the atmosphere when natural gas is flared or vented. The greenhouse gas is also released through leaks from valves and other equipment during the drilling, extraction and transportation process.
- "More than 260 billion cubic metres (bcm) of natural gas (mostly composed of methane) is wasted through flaring and methane leaks globally today;". Although it's impossible to avoid all of this amount, the right policies and implementation can bring 200 bcm of additional gas to markets.
- "In the oil and gas sector, emissions can be reduced by over 75 per cent by implementing well-known measures such as leak detection and repair programmes and upgrading leaky equipment;". 80 per cent of the available options to curb the release of methane could be implemented by the fossil fuel industry at net zero cost.
- "Based on average natural gas prices from 2017 to 2021, around 40 per cent of methane emissions from oil and gas operations could be avoided at no net cost because the outlays for the abatement measures are less than the market value of the additional gas that is captured.
- Ultimately, reducing 75 per cent of the wastage of natural gas could lower global temperature rise by nearly 0.1 degree Celsius by mid-century. This would have the same effect on the soaring global temperatures as immediately stopping greenhouse gas emissions from vehicles such as cars, trucks, buses and two and three-wheeler vehicles across the world. However, fossil fuel companies have done little to tackle the problem.
- Many companies saw hefty profits in 2022 following a turbulent period for international oil and gas markets amid the global energy crisis. Fossil fuel producers need to step up and policymakers need to step in – and both must do so quickly.

➤ **What is methane?**

- Methane is a greenhouse gas, which is responsible for 30 per cent of the warming since preindustrial times, second only to carbon dioxide. A report by the United Nations Environment Programme observed that over a 20-year period, methane is 80 times more potent at warming than carbon dioxide.
- There are various sources of methane including human and natural sources. Human sources of methane include landfills, oil and natural gas systems, agricultural activities, coal mining, wastewater treatment, and certain industrial processes, the US Environmental Protection Agency notes.
- The oil and gas sectors are among the largest contributors to human sources of methane. NASA notes that human sources (also referred to as anthropogenic sources) of methane are responsible for 60 per cent of global methane emissions. These emissions come primarily from the burning of fossil fuels, decomposition in landfills and the agriculture sector.
- In India, for instance, in 2019, the Ministry of Coal asked state-run coal miner Coal India Limited (CIL) to produce 2 MMSCB (million metric standard cubic metres) per day of coalbed methane (CBM) gas in the next 2 to 3 years.
- CBM, like shale gas, is extracted from what are known as unconventional gas reservoirs — where gas is extracted directly from the rock that is the source of the gas (shale in case of shale gas and coal in case of CBM).
- The methane is held underground within the coal and is extracted by drilling into the coal seam and removing the groundwater. The resulting drop in pressure causes the methane to be released from the coal.
- In recent years, scientists have repeatedly sounded the alarm regarding the increasing amount of methane in the atmosphere. The US National Oceanic and Atmospheric Administration (NOAA) said that the atmospheric levels of methane jumped 17 parts per billion in 2021, beating the previous record set in 2020.
 - ✓ "While carbon dioxide remains in the atmosphere for much longer than methane, methane is roughly 25 times more powerful at trapping heat in the atmosphere, and has an important short-term influence on the rate of climate change;".

World methane emissions from all sources, IEA estimate from available datasets



➤ **What is the Global Methane Pledge?**

- The pledge was first announced by the US and EU, and is essentially an agreement to reduce global methane emissions. One of the central aims of this agreement is to cut down methane emissions by up to 30 per cent from 2020 levels by the year 2030.
- According to the Intergovernmental Panel on Climate Change report, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.
- “Rapidly reducing methane emissions is complementary to action on carbon dioxide and other greenhouse gases, and is regarded as the single most effective strategy to reduce global warming in the near term and keep the goal of limiting warming to 1.5 degrees Celsius within reach.

➤ **What is Methane Alert and Response System (MARS)?**

- In keeping with the relatively new focus on cutting methane emissions, the UN has decided to set up a satellite-based monitoring system for tracking it and alerting governments and corporations to respond.
- The MARS, will integrate data from a large number of existing and future satellites that have the ability to detect methane emission events anywhere in the world, and send out notifications to the relevant stakeholders to act on it.
- In the last few years, there has been a lot of emphasis on reducing methane emissions. Methane is the second-most common of the six major greenhouse gases, but is far more dangerous than carbon dioxide in its potential to cause global warming. Accounting for about 17 per cent of the current global greenhouse gas emissions, methane is blamed for having caused at least 25 to 30 per cent of temperature rise since the pre-industrial times.
- However, unlike carbon dioxide, methane is largely a sectoral gas, and there are only a few sources of emission. It is possible, therefore, to cut down on methane emissions without having widespread impact on the economy. Because its global warming potential is about 80 times that of carbon dioxide, a reduction in methane emissions also brings big benefits in a short time.

✓ Action on methane emissions is one of the most cost effective and impactful actions a country can take.

- At the Glasgow climate conference, nearly 100 countries had come together in a voluntary pledge (now referred to as the Global Methane Pledge) to cut methane emissions by at least 30 per cent by 2030 from the 2020 levels. More countries have joined in this initiative since then, bringing the total to nearly 130. A 30 per cent reduction in methane emissions by 2030 is expected to result in avoiding 0.2 degree rise in temperature by the year 2050, and is considered absolutely essential in the global efforts to keep the temperature increase below the 1.5 degree Celsius target.
- The MARS initiative is intended to strengthen these efforts. It would feed into the recently formed International Methane Emissions Observatory of the UN Environment Programme. To start with, MARS will track the large point emission sources, mainly in the fossil fuel industry, but with time, would be able to detect emissions from coal, waste, livestock and rice fields as well, a UN statement said.
- US had announced a proposal to strengthen domestic standards with the aim of reducing methane emissions from the oil and gas sector by 87 per cent from 2005 levels.

➤ **What is Global Methane Initiative (GMI)?**

- The Global Methane Initiative (GMI) is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a valuable energy source. GMI provides technical support to deploy methane-to-energy projects around the world that enable Partner Countries to launch methane recovery and use projects.
- GMI focuses on three key sectors: Oil and Gas, Biogas, and Coal Mines.

➤ **What is Harit Dhara?**

- The Harit Dhara developed by the Indian Council of Agricultural Research, through the comprehensive research over a decade is an anti-methanogenic feed supplement prepared from the natural phyto-sources. It is found very effective in reducing the enteric methane emission upto 17% to 20% when incorporated in the livestock feed.
- The partial inhibition of the enteric methanogenesis will have the dual advantage of stabilizing the global warming process and enhancing the productivity by re-channelizing the saved biological energy.

➤ **How do cows and other animals produce methane?**

- Ruminant species are hooved grazing or browsing herbivores that chew cud. Ruminants such as cows, sheep, goats, and buffaloes have a special type of digestive system that allows them to break down and digest food that non-ruminant species would be unable to digest.
- Stomachs of ruminant animals have four compartments, one of which, the rumen, helps them to store partially digested food and let it ferment. This partially digested and fermented food is regurgitated by the animals who chew through it again and finish the digestive process.
- However, as grass and other vegetation ferments in the rumen, it generates methane, a potent greenhouse gas. Ruminant animals such as cows and sheep release this methane mainly through burping.
- Given the very large numbers of cattle and sheep on farms in dairy-producing countries, these emissions add up to a significant volume. It is estimated that the ruminant digestive system is responsible for 27 per cent of all methane emissions from human activity.

➤ **How are researchers trying to mitigate methane emissions?**

- Microsoft co-founder Bill Gates has invested in an Australian climate technology start-up that aims to curtail the methane emissions of cow burps.
- The start-up, Rumin8, has received funding worth \$12 million from Breakthrough Energy Ventures, which Gates created in 2015. Amazon chief executive Jeff Bezos, and Chinese entrepreneur and Alibaba co-founder Jack Ma have also backed the Breakthrough fund.

- ✓ Rumin8 isn't the first one to find a dietary solution to curb methane emissions from ruminant species. Scientists have been working on it for quite some time now, as they are looking to make these animals more sustainable and less gassy.
- A 2021 study found that adding seaweed to cow feed can reduce methane formation in their guts by more than 80 per cent.
- Apart from this, researchers are also trying to find gene-modifying techniques to curtail methane emissions in these animals.
- In 2022 scientists in New Zealand announced they had started the world's first genetic programme to address the challenge of climate change by breeding sheep that emit lower amounts of methane.
- New Zealand is also one of the first nations to come up with policy-related solutions to this problem. In October 2022, it proposed taxing the greenhouse gases that farm animals produce from burping and urinating.
- **Carbon dioxide emissions reached a record high in 2022**
- Communities around the world emitted more carbon dioxide in 2022 than in any other year on records dating to 1900, a result of air travel rebounding from the pandemic and more cities turning to coal as a low-cost source of power. Emissions of the climate-warming gas that were caused by energy production grew 0.9 per cent to reach 36.8 gigatons in 2022, the International Energy Agency reported. (The mass of one gigaton is equivalent to about 10,000 fully loaded aircraft carriers, according to NASA.)
- ✓ Carbon dioxide is released when fossil fuels such as oil, coal or natural gas are burned to powers cars, planes, homes and factories. When the gas enters the atmosphere, it traps heat and contributes to the warming of the climate. Extreme weather events intensified 2022 carbon dioxide emissions. Droughts reduced the amount of water available for hydropower, which increased the need to burn fossil fuels, and heat waves drove up demand for electricity.
- Recent report was described as disconcerting by climate scientists, who warn that energy users around the world must cut emissions dramatically to slow the dire consequences of global warming. Scientists warned "Any emissions growth — even 1% — is a failure, any year with higher coal emissions is a bad year for our health and for the Earth."
- ✓ Carbon dioxide emissions from coal grew 1.6% in 2022.
- According to International Energy Agency many communities, primarily in Asia, switched from natural gas to coal to avoid high natural gas prices that were worsened by Russia's invasion of Ukraine. And as global airline traffic increased, carbon dioxide emissions from burning oil grew 2.5%, with about half the surge resulting from the aviation sector. Global emissions have grown in most years since 1900 and have accelerated over time. One exception was the pandemic year of 2020, when travel all but came to a standstill.
- According to the IEA 2022 level of emissions, though a record high, was nevertheless lower than experts had expected. Increased deployment of renewable energy, electric vehicles and heat pumps together helped prevent an additional 550 megatons of carbon dioxide emissions. Strict pandemic measures and weak economic growth in China also curtailed production, helping to limit overall global emissions. And in Europe, electricity generation from wind and solar power exceeded that of gas or nuclear for the first time.
- IEA stated without clean energy, the growth in CO2 emissions would have been nearly three times as high. International and national fossil fuel companies are making record revenues and need to take their share of responsibility, in line with their public pledges to meet climate goals.
- Though emissions continue to grow at worrisome levels, a reversal that would help achieve the climate goals that nations have committed to remains possible. Nations must subsidize renewables, improve energy efficiency, electrify industry and transportation, set a high price for carbon emissions, reduce deforestation, plant trees and rid the system of coal.

INTERNATIONAL RELATION

- ❖ **INDIA-ITALY RELATIONS**
- **CONTEXT: India and Italy announced the elevation of the bilateral relationship to the level of strategic partnership while also concluding a memorandum of understanding (MoU) on defence cooperation.**
- The meet led to establishment of a 'Startup Bridge' between India and Italy.
- Another important area of mutual cooperation is defence. They also decided to organise the joint military exercises and training courses on a regular basis.
- Italy had decided to join the Indo-Pacific Ocean Initiative (IPOI).
- The two countries also concluded a Declaration of Intent (DOI) on migration and mobility.
- **Raisina Dialogue:**
- Prime Minister Narendra Modi inaugurated the eighth edition of the Raisina Dialogue in New Delhi.
- Italian Prime Minister Giorgia Meloni is the Chief Guest of the three-day Dialogue.
- Speaking on the occasion, the Italian Prime Minister said, India's leadership in G20 and the Raisina Dialogue together can send a message of cooperation and peace to the world.
- Raisina Dialogue is India's flagship conference on geopolitics and geo-strategy.
- The theme of the 2023 Edition is "Provocation, Uncertainty, Turbulence: Lighthouse in the Tempest."
- **About Raisina Dialogue:**
- It is a multilateral conference held annually in New Delhi, India.
- Since its inception in 2016, the conference has emerged as India's flagship conference on geopolitics and geo-economics.

- The conference is hosted by the Observer Research Foundation, an independent think tank, in collaboration with the Ministry of External Affairs of India.
- The conference is structured as a multi-stakeholder, cross-sectoral discussion, involving a variety of global policymakers including heads of state, cabinet ministers and local government officials.
- It is designed on the lines of Singapore's Shangri-La Dialogue.
- The name "Raisina Dialogue" comes from Raisina Hill, an elevation in New Delhi, seat of the Government of India, as well as the Presidential Palace of India, Rashtrapati Bhavan

➤ **India - Italy Relations**

✚ **background:**

- India and Italy are ancient civilizations but young states (Italy having been reunified only in 1861).
- The classical languages, Sanskrit and Latin both belong to the Indo-European language family.
- Peoples of these two ancient civilizations have known, interacted and traded with each other for over 2000 years.
- Italian port cities were important trading posts on the spice route. The Venetian merchant Marco Polo, during his travels to the east, also traveled to India in the 13th century and wrote about his experiences.
- Indian troops, serving with the British Indian Army, were active in Italy during the World War II. These included the Rajputana Rifles and Gurkha Rifles. The 10th Indian Division took part in the East African Allied campaign against the Italians in Somaliland and Abyssinia.

✚ **Political Relations:**

- Political relations between India and Italy were established in 1947. Both countries regularly hold an institutionalized Senior Officials Dialogue (Foreign Office Consultations). An Italy-India Parliamentary Friendship Association was established in the IPU Italy Chapter in 2004.

✚ **Economic Relations:**

- Italy is among India's top 5 trading partners in the EU. The balance of trade has been in India's favour since the early eighties. India ranks 19th as country of origin of Italian imports, accounting for 1.2% of Italian imports.
- Main items of Indian exports to Italy are ready-made garments, leather, iron ore, motor vehicles, textiles, chemicals, gems & jewelry.
- Main items of import from Italy are general and special purpose machinery, machine tools, metallurgical products, and engineering items. Around 140 large Italian companies are active in India.
- The Joint Economic Commission is an institutional mechanism chaired by the respective Commerce Ministers of both countries.

✚ **Defence:**

- There are visits by the Chief of Army Staff, defence ministers of the two countries. Lot of untapped potential is there in this field.

✚ **Cultural Exchange, Scientific Co-operation etc:**

- The agreement for cultural cooperation was signed in 1976. It was replaced by a new Agreement in July 2004.
- An Executive Programme for Cultural Cooperation/Cultural Exchange Programme (EPCC/CEP) is signed periodically, under the bilateral cultural agreement.
- An Agreement on S&T Co-operation exists since 1978. The Agreement envisages three yearly action plans under which a maximum of thirty joint research projects can be undertaken.
- Indian Community: The Indian community in Italy (estimated at 2.5 lakhs including PIOs) is the third largest community of Indians in Europe after UK and the Netherlands.

PRELIMS

1. Samarth Scheme

➤ **CONTEXT: The Ministry of Textiles has called for applications for implementing partners for its Samarth scheme, which will be on till the end of March 2024.**

- Nearly 1.50 lakh persons (86% women) had been trained under the scheme so far and 70% of them were placed in the organised sector

➤ **About:**

- Samarth (Scheme for Capacity Building In Textile Sector) is a flagship skill development scheme approved in continuation to the Integrated Skill Development Scheme for 12th Five Year Plan (FYP), Cabinet Committee of Economic Affairs.
- The office of the Development Commissioner (Handicrafts) is implementing the SAMARTH to provide skill training to handicraft artisans under the component 'Skill Development in Handicrafts Sector' of National Handicrafts Development Programme (NHDP).
- Objectives: To provide demand-driven, placement-oriented skilling programmes to incentivize the efforts of the industry in creating jobs in the organized textile and related sectors to promote skilling and skill up-gradation in the traditional sectors through respective sectoral divisions/organizations of the Ministry of Textile.
- ✓ To provide livelihood to all sections of the society across the country.

➤ **Status of the Textile Sector in India**

- Textiles & garments industry is a labour intensive sector that employs 45 millions people in India and is second only to the agriculture sector in terms of employment.

- India's textiles sector is one of the oldest industries in the Indian economy, and is a storehouse and carrier of traditional skills, heritage and culture.
- It can be divided into two segments:
 - ✓ The unorganised sector is small scale and uses traditional tools and methods. It consists of handloom, handicrafts and sericulture (Production of silk).
 - ✓ The organised sector uses modern machinery and techniques and consists of the spinning, apparel and garments segment.
- **Other Schemes of the Textile Sector:**
 - Scheme for Integrated Textile Park (SITP): Launched in 2005, it aims to provide the industry with world-class state of the art infrastructure facilities for setting up their textile units.
 - Power-Tex India: It is an all-inclusive scheme that's made for the development of the power loom sector which further addresses the unheard needs of the power loom sector.
 - Silk Samagra Scheme: It focuses on improving the quality and productivity of domestic silk thereby reducing the country's dependence on imported silk.
 - Amended Technology Upgradation Fund Scheme (ATUFS): It is a credit linked Capital Investment Subsidy (CIS) scheme to catalyze capital investments for technology upgradation and modernization of the textile industry.
 - National Handloom Day: National Handloom Day is observed every year on 7th August to mark the importance of the handloom weaving community in India.
 - National Technical Textile Mission: The mission aims to position India as a global leader in Technical Textiles by increasing the domestic market size from USD 40 billion to USD 50 billion by 2024.

2. **World bank's women, business and the law 2023 report**

➤ **CONTEXT: In the World Bank's index of working women, India gets a score of 74.4.**

➤ **Highlights of the Report**

- India's score on a World Bank index on the life cycle of a working woman dropped to 74.4 out of a possible 100 due to rules influencing working women's income and pensions that do not guarantee equality with Indian males.
- According to the Women, Business and the Law 2023 study from the World Bank, a score of 100 on the Index indicates that women and men are on equal footing across all variables.
- India outperformed the South Asian region's average score of 63.7 but fell short of Nepal, which achieved the best score in the area (80.6).
- Only 14 of the 190 countries have received a score of 100 out of 100; Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Latvia, Luxembourg, The Netherlands, Portugal, Spain, and Sweden.
- The report stated that India received a perfect score for restrictions on freedom of movement, legislation impacting women's employment options, and restrictions relating to marriage.
- The report stated that India received a perfect score for freedom of movement, legislation impacting women's employment options, and restrictions relating to marriage.
- India remains behind other countries in terms of legislation governing women's wages, pensions, and ability to work after having children, barriers to women beginning and running their businesses, and differences in property and inheritance between men and women.

ANSWER WRITTING

Q Aquaculture can help promote livelihood and make people self-reliant. Discuss the significance of aquaculture for India.

According to Food and Agriculture Organisation (FAO), Aquaculture refers to the farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants. Farming implies some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. India has become the world's 2nd largest aquaculture nation and the 4th largest exporter of fish and fisheries products taking Brand India from 'Local to Global'.

Significance of aquaculture for India:

- Recognised as the sunrise sector: Fisheries is one of the fastest growing sectors amongst the primary producing sectors. The sector plays a vital role in the economic and overall development of the country and is hence referred to as the "sunrise sector". It is poised to bring immense potential through equitable and inclusive growth.
- Generating employment: The sector is recognized as a powerful engine for providing employment to 14.5 million people and sustaining a livelihood for the 28 million fishermen community of the country.
- Helping women generate income: For example, in Lakshadweep community-based ornamental fish aquaculture, using local resources is helping women in generating income and making them self-reliant.
- Promoting food security: Aquaculture can help in filling the gap between the demand and supply of food for the growing population.
- Rising online seafood consumption: The pandemic-induced lockdowns accelerated the adoption of e-commerce alternatives, as a result of which the seafood industry has witnessed an increase. This could lead to higher profitability for those engaged in this sector.
- Promoting health and nutrition: Fish and aqua products play an important role in providing a balanced protein intake. Fish is one of the healthiest options to mitigate hunger and nutrient deficiency thereby contributing to the fulfilment of the SDGs.

- Increasing farmer's income: The Government has set a national target to increase fish production to 22 million metric tons by 2024-2025, which will have a positive impact on 2.80 crore fishers and fish farmers. Therefore, the fisheries sector holds the potential for bringing economic revolution through Blue Revolution in the country.

Recognising the importance of fish production and aquaculture government has taken various measures such as Fishery and Aquaculture Infrastructure Development Fund (FIDF), Pradhan Mantri Matsya Sampada Yojana (PMMSY) and Tilapia aquaculture project. The thrust provided by the government will play a pivotal role in achieving the ambitious target of doubling seafood production.

MCQs

- Consider the following statements with reference to the SAMARTH Initiative.
 - It is an initiative of the Ministry of Women and Child Development.
 - It will provide benefits to aspiring and existing women entrepreneurs.
 - It will provide online funds to existing women entrepreneurs on Medium Scale Business only.

Which of the statements given above is/are correct?

a) 1 and 2 only **b) 2 only** c) 2 and 3 only d) 3 only
- The Mukundra Tiger Reserve (TR) recently seen in news in the context of Cheetah introduction from South Africa, is located in which of the following state?

a) Haryana b) Madhya Pradesh c) Maharashtra **d) Rajasthan**
- With reference to the Raisina Dialogue, consider the following statements:
 - The Raisina Dialogue is a multilateral conference committed to addressing the most challenging issues facing the global community.
 - Every two years, global leaders in policy, business, media, and civil society are hosted in New Delhi to discuss cooperation on a wide range of pertinent international policy matters.
 - On the lines of Shangri-La-Dialogue it is structured.

Which of the statements given above is/are correct?

a) 1 and 2 only b) 2 and 3 only **c) 1 and 3 only** d) 1, 2 and 3
- Consider the following statement regarding Observer Research Foundation
 - It is an independent global think tank based in Delhi, India.
 - Its mandate has extended to security and strategy, governance, environment, energy and resources, economy and growth today.
 - It holds multiple international conferences including a flagship multilateral conference called Raisina Dialogue in collaboration with the Ministry of External Affairs.

Which of the following statement is correct?

a) 1 and 2 only b) 2 and 3 only c) 1 and 3 only **d) 1, 2 and 3**
- With reference to Global Methane Pledge, consider the following statements.
 - It is a pledge to cut global methane emissions by nearly 30% in the next decade.
 - The pledge is jointly made by US and European Union (EU).
 - India is part of Global Methane Pledge

Which of the statements given above is/are correct?

a) 1 and 2 only b) 2 and 3 only **c) 1 and 3 only** d) 3 only
- With regards to Pradhan Mantri-Ayushman Bharat Health Infrastructure Mission consider the following
 - It is one of the largest Pan-India health schemes for strengthening healthcare infrastructure.
 - It was launched in 2015 to accomplish the vision of comprehensive healthcare across the country.

Which of the above statement/s is/are correct?

a) 1 only b) 2 only c) Both 1 and 2 d) Neither 1 nor 2
- Which of the following country started the world's first genetic programme to address the challenge of climate change by breeding sheep that emit lower amounts of methane?

a) India b) France **c) New Zealand** d) Australia
- With reference to 'Harit Dhara', recently in the news, which one of the following options given below is correct?

a) It is a programme launched to create awareness regarding the harmful impacts of monoculture

b) It is an initiative for rejuvenation of land which is deteriorated by overgrazing of cattle.

c) It is a feed supplement developed to cut down methane emissions by cattle

d) A Centre-state initiative to connect renewable energy grids across India.
- "Biorock technology" is talked about in which one of the following situations?

a) Restoration of damaged coral reefs

b) Development of building materials using plant residues

c) Identification of areas for exploration/extraction of shale gas

d) Providing salt licks for wild animals in forests/protected areas
- The recently declared Public Health Systems for Pandemic Preparedness Program (PHSPP) and Enhanced Health Service Delivery Program (EHSPP) are 2 complementary loans for preparedness for future pandemics as well as to strengthen India's health infrastructure. These are loans provided to India by which of the following?

a) International Monetary Fund (IMF) b) New Development Bank (NDB)

c) World Health Organisation (WHO) **d) World Bank (WB)**