INTERNATIONAL RELATION

India-France Defence Partnership

Recently, at the India-France strategic dialogue, both countries resolved to expand the defence and security partnership by enhancing intelligence sharing, bolstering capabilities, expanding military drills and pursuing new initiatives in maritime, space and cyber domains.

Key Points

Highlights of the Dialogue:

- **Support to 'Atmanirbhar Bharat'**: France reiterated its commitment to India's vision of "Atmanirbhar Bharat (self-reliant India)" and defence industrialisation, joint research and technology development in India across a wide range of advanced capabilities.
- **France's Indo-Pacific Strategy**: France stressed its continuing commitment to the Indo-Pacific region as a "resident power", and partnership with India as a "major pillar" of its strategy for the region.

1. Moreover, the French Presidency of the European Union (EU) in the first half of 2022 is expected to give a further shape to the EU's engagement in the Indo-Pacific region.
2. A resident power is one that does not own territory or have a territorial presence in a particular region of the world, but is nevertheless a force to be reckoned with in the international politics of that region.

- **Significance of the Meeting:** France's reiteration to expand strategic cooperation with India has come after the unveiling of a new security alliance (AUKUS) by Australia, the UK and the US.

1. The unexpected announcement of the alliance, which involves building submarines for Australia, had angered the French government after Australia pulled out of a separate submarine deal with France.
2. AUKUS is a new trilateral security partnership for the Indo-Pacific, between Australia, the UK and the US (AUKUS).

India-France Strategic Relations:

- **Background:**

1. France was one of the first countries with which India signed a "strategic partnership" after the end of the Cold War, in January 1998.
2. France was one of the very few countries to support India's decision to test nuclear weapons in 1998.

- **Defence Cooperation:**

Both countries have a defence dialogue at the Ministerial level.

The three services have regular defence exercises; viz.

1. Exercise Shakti (Army)
2. Exercise Varuna (Navy)
3. Exercise Garuda (Air Force)

Recently, the Indian Air Force (IAF) has inducted French Rafale multi-role combat aircraft.

India entered into a contract with a French firm to build six Scorpene submarines in India's Malegaon dockyards through a technology-transfer arrangement in 2005.

The two countries also signed the Agreement regarding the Provision of Reciprocal Logistics Support.

- ✓ This agreement will help to facilitate the replenishment of fuel, rations, spares, and berthing and maintenance for the other nations' warships, military aircraft and troops during routine port calls, as well as during Humanitarian Assistance and Disaster Relief (HADR).

- **Indian Ocean, the Common Shared Interest:**

1. France needs to protect its colonial territorial possessions like reunion island and Indian ocean being the zone of influence for India.
2. Recently, France became the 23rd member of the Indian Ocean Rim Association (IORA).It is the first time that a country whose mainland is not on the Indian Ocean has been brought into the fold of the IORA.

- **Counter Terrorism:** France backed the India's proposal for a global conference on terrorism. Both the countries also support organising a new "No Money for Terror" - an International Conference on Fighting Terrorist Financing.
- **France Backing India:** France also continues to steadfastly back India on Kashmir while its relations with Pakistan have plummeted in the recent past and China has become an object of suspicion.

Way Forward

- France, which had sought strategic autonomy within the framework of its alliance with the US, and India, which has valued independent foreign policy, are natural partners in building the new coalitions for an uncertain era.

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- France also opens the pathway for deeper engagement with Europe on global issues, especially after uncertainty in the region due to BREXIT.The new partnerships with France, Germany and other like-minded countries like Japan would hopefully turn out to be far more consequential for India's influence on the global stage.

SOCIAL ISSUE

Impact of Stubble Burning on Respiratory Health

A study was conducted in Punjab that showed pollution from stubble burning significantly reduced lung function and was particularly harmful to women in rural Punjab.The study was conducted in two phases: The first was in October 2018 and again the following summer from March to April 2019.

Key Points

High PM2.5 levels:

- The concentration of PM2.5 (Particulate Matter-2.5) was found to increase more than twice between the two phases, from 100 g/m3 to 250 g/m3.

1. PM2.5 refers to particles that have a diameter less than 2.5 micrometres (more than 100 times thinner than a human hair) and remain suspended for longer.
2. It causes respiratory problems and also reduces visibility. It is an endocrine disruptor that can affect insulin secretion and insulin sensitivity, thus contributing to diabetes.

- Incidentally these are around 10-15 times the WHO (World Health Organisation) prescribed air quality standards though the permissible standards by India's Central Pollution Control Board (CPCB) are higher.

1. WHO: The annual average concentrations of PM2.5 should not exceed 5 µg/m3, while 24-hour average exposures should not exceed 15 µg/m3 more than 3 - 4 days per year.
2. CPCB: The annual average concentrations of PM2.5 should not exceed 40 µg/m3, while 24-hour average exposures should not exceed 60 µg/m3 more than 3 - 4 days per year.

Impact:

- A two to three-fold increase was noted in most of the respiratory symptoms including wheezing, breathlessness on exertion, skin rashes, itchiness of eyes etc. across all age groups (10-60 years).The highest number of respiratory complaints were reported by the elderly population (>40-60).
- There was decline in lung function with an increase in PM2.5 concentration.A 10-14% decline in lung function in men and nearly 15-18% decline in women across all age categories was noted.

Stubble Burning

About:

- Stubble (parali) burning is the act of setting fire to crop residue to remove them from the field to sow the next crop.
- In order to plant the next winter crop (Rabi crop), farmers in Haryana and Punjab have to move in a very short interval and if they are late, due to short winters these days, they might face considerable losses. Therefore, burning is the cheapest and fastest way to get rid of the stubble.
- It begins around October and peaks in November, coinciding with the withdrawal of southwest monsoon.

Effects of Stubble Burning:

- **Pollution:**

1. Emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like methane (CH4), Carbon Monoxide (CO), Volatile Organic Compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
2. These pollutants disperse in the surroundings, may undergo a physical and chemical transformation and eventually adversely affect human health by causing a thick blanket of smog.

- **Soil Fertility:**Burning husk on the ground destroys the nutrients in the soil, making it less fertile.
- **Heat Penetration:**Heat generated by stubble burning penetrates into the soil, leading to the loss of moisture and useful microbes.

Alternatives to Stubble Burning:

- In-Situ Treatment of Stubble: For example crop residue management by zero-tiller machine and Use of bio-decomposers.
- Ex-Situ (off site) Treatment: For example use of rice straw as cattle fodder.
- Use of Technology- For example Turbo Happy Seeder (THS) machine, which can uproot the stubble and also sow seeds in the area cleared. The stubble can then be used as mulch for the field.
- Changing Cropping Pattern: It is the deeper and more fundamental solution.

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- Bio Enzyme-PUSA: The Indian Agriculture Research Institute has devised a radical solution for stubble burning in the form of a bio-enzyme called PUSA.It leads to an increase in organic carbon and soil health while significantly reducing the fertiliser expense for the next cropping cycle.

Other Action Plan:

- The State Governments of Punjab, National Capital Region (NCR) States and Government of National Capital Territory of Delhi (GNCTD) have developed detailed monitorable action plans based on the framework by the Commission for Air Quality Management (CAQM) to tackle the problem of air pollution.

Way Forward

- Imposing a fine is not going to work in our socio-economic conditions for curbing stubble burning. There is a need to focus on alternative solutions.
- Although the government is distributing but everyone is not getting the machines for in-situ management. The government should ensure their availability to everyone.
- Similarly, in ex-situ management, some companies have started collecting stubble for their use, but more effort on this front is needed.

BIODIVERSITY & ENVIRONMENT

Mass Extinction

Recently, a paper published in the international journal Nature Geoscience has come up with a new reason behind the first mass extinction, also known as the Late Ordovician mass extinction.It notes that the cooling climate likely changed the ocean circulation pattern. This caused a disruption in the flow of oxygen-rich water from the shallow seas to deeper oceans, leading to a mass extinction of marine creatures.

Key Points

Mass Extinction (Meaning):

- A mass extinction event is when species vanish much faster than they are replaced.
- This is usually defined as about 75% of the world's species being lost in a 'short' amount of geological time - less than 2.8 million years.

Mass Extinctions So Far:

- **First Mass Extinction**: The Ordovician mass extinction that occurred about 445 million years ago killed about 85% of all species.
- **Second Mass Extinction**: The Devonian mass extinction (about 375 million years ago) wiped out about 75% of the world's species.
- **Third Mass Extinction**: The Permian mass extinction (about 250 million years ago) also known as the Great Dying caused the extinction of over 95% of all species.
- **Fourth Mass Extinction**: The Triassic mass extinction (about 200 million years ago) eliminated about 80% of Earth's species, including some dinosaurs.
- **Fifth Mass Extinction**: This Cretaceous mass extinction (about 65 million years ago) is known for wiping out non-avian dinosaurs.

About the Latest Findings:

- **New Explanations**: There have been several theories behind each mass extinction and with advances in new technologies, researchers have been uncovering more intricate details about these events.
- **Traditional Thought:** For decades, the prevailing school of thought was that volcanism-induced global warming causes the oceans to lose oxygen and thus impact marine habitability, potentially destabilising the entire ecosystem.
- **New School of Thought**: In recent years, mounting evidence points to several episodes in the Earth's history when oxygen levels also dropped in cooling climates.

1. Ordovician climate and marine biogeochemical cycles during that period showed "seafloor and upper-ocean oxygenation in response to ongoing global cooling."This led to deep-sea anoxia affecting ocean circulation.
2. Thus, the paper concludes that climate cooling may have led to changes in nutrient cycling, primary producer communities which ultimately drove the Late Ordovician mass extinction.

Ongoing Sixth Mass Extinction and Impact:

- **Sixth Mass Extinction:**

1. Some researchers have pointed out that we are currently experiencing a sixth mass extinction as the result of human-induced climate change (referred to as the Anthropocene extinction).Currently, only an estimated 2% of all of the species that ever lived are alive but the absolute number of species is greater than ever before.
2. It is described as the most serious environmental problem since the loss of species will be permanent.The loss of species has been occurring since human ancestors developed agriculture

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over 11,000 years ago. Since then, the human population has increased from about 1 million to 7.7 billion.

Possible Impact:

- The extinction of the species causes tangible impact such as in the form of a loss in crop pollination and water purification.
- Further, if a species has a specific function in an ecosystem, the loss can lead to consequences for other species by impacting the food chain.
- The effects of extinction are expected to worsen the genetic and cultural variability which would change entire ecosystems.When genetic variability and resilience is reduced, its contribution to human welfare may be lost.

IMPORTANT FACTS FOR PRELIM

Kaho Village: Arunachal Pradesh

Arunachal Pradesh is planning to make a documentary on Kaho, a village on the China border to mark the 75th year of Independence.

Key Points

About:

- Kaho is the first village from the China border in Anjaw district.Anjaw is one of the 11 districts of Arunachal Pradesh that share their border with China.
- According to the 2011 census, Kaho has only 65 residents and a literacy rate of 64.15%.
- A documentary on the village and the locals who belong to the Meyor tribe will be made.

1. Meyor is a small tribe constituting a small population that dwells in Kibithoo and Walong circles of the district.
2. Meyors are also animists like the Mishmis but they have also adopted Mahayana Buddhism.
3. All tribes of Arunachal Pradesh include: Abor, Aka, Apatani, Dafla, Galong, Khampti, Khowa, Mishmi, Monpa, Momba, Any Naga tribes, Sherdukpen, Singpho".

- One of seven villages in the Kibithoo block bisected by the Lohit river, Kaho had weathered the Chinese attack in 1962. Its people had assisted the Indian soldiers who had been outnumbered.

Lohit River:

- It is a tributary to the Brahmaputra River.Brahmaputra River originates under the name of Siang or Dihang, from the Chemayungdung glacier of the Kailash range near the Mansarovar lake (Tibet). It enters India west of Sadiya town in Arunachal Pradesh.
- It originates in eastern Tibet, in the Zayal Chu range and surges through Arunachal Pradesh for 200 km, before reaching in the plains of Assam.

Goddess Annapurna Idol

Recently, an ancient idol of Goddess Annapurna was brought back to India after over a century from Canada.The Idol was received by the Archaeological Survey of India (ASI). It will be placed in its original location - the Kashi Vishwanath temple.

- This idol was smuggled out of the country somewhere around 1913.

Key Points

About:

- **Goddess Annapurna**: She is the goddess of food. She is also known as the manifestation of the goddess Parvati, partner to Lord Shiva.The idol holds a bowl of kheer in one hand and a spoon in the other.
- **Benares Style:** The 18th-century idol, carved in the Benares style, was part of the collection at the MacKenzie Art Gallery at the University of Regina, Canada.Varanasi, also known as Benares, Banaras, or Benaras or Kashi or Kasi, is a famous Hindu holy city situated on the banks of the river Ganges in the Indian state of Uttar Pradesh. It is the rich cultural tradition of Varanasi that makes it the cultural capital of India.

Kashi Vishwanath Temple: It is one of the most famous Hindu temples dedicated to Lord Shiva.
It is located in Varanasi, Uttar Pradesh.

- The temple stands on the western bank of the river Ganga, and is one of the twelve Jyotirlingas, the holiest of Shiva temples.
- It was constructed in the year 1780 by the Maratha monarch, Maharani Ahilyabai Holkar of Indore.

DAILY ANSWER WRITING PRACTICE

Qns. Metaverse is well and truly taking off and India must put in place policy and regulatory mechanisms to maximise benefits and minimise risks of the novel technology. Examine. (250 words)

Ans:

Introduction

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The term "metaverse" is used to describe the vision whereby the internet will evolve into a virtual world. The idea was first conceptualised in 1992 by the American novelist Neal Stephenson in his science fiction classic, Snow Crash. It foresees the internet as a 3D virtual living space, where individuals dip in and out, interacting with one another in real time.

- The metaverse is a form of mixed reality that is fast becoming commonplace in everyday tech products. The combination of augmented and virtual reality will not only introduce digital elements in the real world, but it will also merge Internet with the virtual world.

Body

Many in Silicon Valley, USA still view the metaverse as the future. For example, Google is heavily invested in augmented reality (AR), which is where you use technology to look at the real world but with digital 3D objects layered on top. But Facebook appears the most committed of all to this new vision. In his quest to turn Facebook into a metaverse company, Zuckerberg is seeking to build a system where people move between virtual reality (VR), AR and even 2D devices, using realistic avatars of themselves where appropriate.

Working of Metaverse:

- Simply put, the metaverse is the next stage of the internet's evolution that will allow us not just to access it, as we now do, but also immerse ourselves in it—in a shared virtual experience where everyone is simultaneously present.F
- It is the realization of virtual worlds like those described in science-fiction classics such as Snow Crash and Ready Player One.
- But the metaverse is not just an immersive world you can escape to by putting on a virtual-reality headset.
- When fully realized, it will be an entirely new way of interacting with the world around us, and could transform every aspect of our lives in much the same way as the mobile internet did.

Challenges posed by Metaverse:

- The metaverse requires infrastructure that currently does not exist, and the current form of Internet is limited in its design to hold the digital space. The space will need a broader and more complex set of standards and protocols than traditional Internet. This means large technology companies like Amazon, Google, and Facebook will need to prepare for cross integrating their systems.
- Unlike the internet, which was built using patient capital, the metaverse will most likely be created by big tech companies, giving rise to concerns of walled gardens and cartelization.
- That said, it is clear that if the metaverse is to become as ubiquitous as the internet, it needs to remain open so that everyone can participate in it.
- The interoperable metaverse could also raise questions of data protection since industry-wide consensus on data security and persistence will be harder to establish.
- One of the key features of the metaverse will be its ability to replicate the physical world within its virtual environment.The creation of these mirror-worlds will call for mega-scans of our physical surroundings—enormous centimetre-resolution images of the physical world that we can render within the metaverse to faithfully recreate our physical environs in a virtual space.
- The metaverse will need altogether new rules for censorship, control of communications, regulatory enforcement, tax reporting, the prevention of online radicalisation, and many more challenges that we're still struggling with today.
- It's hard not to then start thinking about how these new technologies will shape our society, politics and culture, and how we might fit into that future.
- This idea is called "technological determinism": the sense that advances in technology shape our social relations, power relations, and culture, with us as mere passengers. It leaves out the fact that in a democratic society we have a say in how all of this plays out.
- Another element of the metaverse that is still being worked out is its payment rails. While cryptocurrencies are widely touted as the ideal payment system of the metaverse, it is unlikely that they will be able to operate at the velocity at which transactions are likely to occur in these virtual environments.

Way forward for India:

- To achieve this, we will need to agree on a set of open standards that govern its essential aspects, ensuring interoperability across environments.
- We may ultimately need to pass regulation to ensure that other aspects of the metaverse—the devices we use to interface with it, the payment systems that drive its economy and the portals that connect the virtual world to the physical—comply with open protocols framed to ensure that we are not locked into any single device or service provider.

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- India needs to put in place regulations that encourage the development of these new virtual environments while ensuring that they can still function in an open, interoperable manner.
- If this is the next evolution of internet technology, we should ensure that the many features it is likely to offer are deployed to our advantage.
- India's digital payments platforms, on the other hand, have demonstrated that they can operate at population scale—processing 10 billion transactions a month without breaking a sweat.

Conclusion

A new iteration of the internet is being worked on and this will have massive implications for society. Marketing, communications, and branding professionals will face new challenges but also new opportunities. This new era of the metaverse will unleash amazing creativity and open up new frontiers and horizons for brands and businesses.

India was a relatively late adopter of the internet, and, as a result, was unable to take advantage of its many features until much later. We have an extraordinary opportunity now to actively participate in the development of the metaverse. We would do well to dive right in.

DAILY QUIZ

Q1. Consider the following statements about United Nations Climate Change Framework Convention (UNFCCC):

1. It was established to work towards "stabilisation of greenhouse gas concentrations in the atmosphere."
2. It is the parent treaty of the 2015 Paris Agreement.

Which of the statements given above is/are correct?

a. 1 only
b. 2 only
c. Both 1 and 2
d. Neither 1 nor 2

Q2. Consider the following statements:

1. Palk Strait is a semi-enclosed shallow water body between the southeast coast of India and Sri Lanka.
2. The strait is named after Robert Palk, who was a governor of Madras (1755–1763) during the Company Raj period.

Which of the statements given above is/are correct?

a. 1 only
b. 2 only
c. Both 1 and 2
d. Neither 1 nor 2

Q3. Consider the following statements about National Mission for Clean Ganga(NMCG):

1. It was registered as a society on 12th August 2011 under the Societies Registration Act 1860.
2. It has a two tier management structure and comprises of Governing Council and Executive Committee.
3. The Director General(DG) of NMCG is an Additional Secretary in Government of India.3

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

Q4. Consider the following statements about the Ganges Dolphin:

1. The Ganges river dolphin is the national aquatic animal of India.
2. It is listed as 'endangered' under the IUCN Red List Assessments.
3. The Ganges river dolphin can only live in freshwater and is essentially blind.

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

Q5. Which one of the following countries is not a member of the BASIC grouping?

a. China
b. Argentina
c. India
d. South Africa

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