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Category: HISTORY**1. The significance of the findings in Keeladi**

Syllabus: Ancient History - Sangam age

Prelims: About Keeladi excavations, Sangam era and Indus Valley Civilisation.

Mains: Significance of Keeladi excavations

Context

Recently the [Archaeological Survey of India \(ASI\)](#) submitted a detailed report on the findings during the excavations at Keeladi which is a Sangam-era site.

Keeladi and its links with the Sangam era

- Keeladi is a small hamlet situated along the Vaigai river in the Sivaganga district in south Tamil Nadu.
- Keeladi is located about 12 km southeast of Madurai in Tamil Nadu and has become one of the most important archaeological sites discovered in south India.
- The excavations at Keeladi indicated the existence of a Tamil civilisation that had trade links with other regions in the country and abroad.
 - This civilisation has been described by Tamil poets belonging to the [Sangam period](#).
 - According to historians, the Sangam age in ancient Tamil Nadu was believed to be from the third century BCE to the third century CE.
- However, the recent excavations by the ASI and Tamil Nadu State Archaeology Department (TNSDA) have pushed the Sangam age further back.
- Excavations in 2019 by TNSDA unearthed artefacts from the Keeladi site which were believed to have belonged to a period between the sixth century BCE and the first century BCE.
 - One of the samples collected at a depth of 353 cm was sent for carbon dating in the U.S. which was later dated back to 580 BCE.
- Thus these excavations and findings of Keeladi artefacts have pushed the timelines of the era at least 300 years earlier than the previously believed third century BCE.
 - Furthermore, a recent ASI report has pushed the Sangam age to 800 BCE based on these archaeological findings.

- Additionally, Keeladi excavations might have also provided key evidence for understanding the missing links between the Iron Age (12th century BCE to sixth century BCE), the Early Historic Period (sixth century BCE to fourth century BCE) and subsequent cultural developments.
- The academia based on the Keeladi excavations has described the site as part of the Vaigai Valley Civilisation and is finding similarities or links with the [Indus Valley Civilisation](#).

Links to Indus Valley Civilisation

Keeladi graffiti

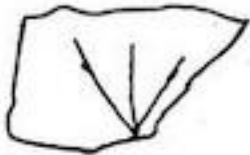
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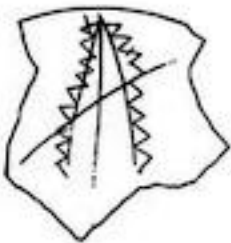
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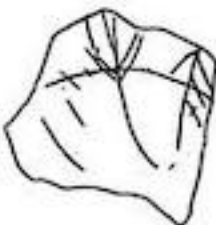
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INDUS SIGN-318

Image Source: The Hindu

- Despite there being a cultural gap of 1,000 years between the two civilizations, researchers have shown interest to compare the findings at Keeladi with that of the Indus Valley Civilisation.
- Until recent times, the gap in timelines between the two civilizations was filled with Iron Age material which acted as residual links in the south of India.
- Through recent excavations, similarities in the symbols found in the artefacts of Keeladi and Indus Valley signs have been found.
- TNSDA also says that the Keeladi site has showcased the characteristics of an urban civilisation which includes brick structures, luxury items and proof of internal and external trade and comes across as an industrious and advanced civilisation.
- However, there is a need for further studies and research in order to establish a thorough link between Indus Valley and Vaigai Valley civilisations.

Important artefacts unearthed during the excavations

- The Archaeological Survey of India (ASI) started the first round of excavations in 2015.
- ASI along with the Tamil Nadu State Archaeology Department (TNSDA) has undertaken eight rounds of excavations (the first three by the ASI).
- In the total eight rounds of excavations, more than 18,000 artefacts have been unearthed from the site and the most unique artefacts will be displayed at a museum.
- Some of the artefacts excavated include heaps of pottery, copper needles, terracotta seal, earthen vessels, Gold ornaments, copper articles, semi-precious stones, ivory bangles and ivory combs among others.

Inference from the excavated artefacts

- The finds of pottery indicate the presence of a pottery-making industry that made use of locally available raw materials.
- About 120 potsherds with Tamil Brahmi inscriptions have also been unearthed which sheds light on the script which was in use.
- The excavations of spindle whorls, copper needles, terracotta seals, terracotta spheres, earthen vessels and hanging stones of the yarn reflect different stages of the weaving industry, dyeing industry and glass bead industry.
- Gold ornaments, semi-precious stones, shell bangles, ivory bangles and ivory combs indicate that the people in that era led an artistic and prosperous lifestyle.
- The presence of agate and carnelian beads in some of the artefacts suggests that these stones were imported through some commercial networks.

Read more on the [ancient history of south India](#) in the linked article.

***Nut graf:** The excavations and findings at the Keeladi site have gained the attention of researchers and archaeologists across the country as these findings have not just pushed back the Sangam Era by three centuries but have also helped in narrowing down the gap between the South Indian urban settlements and the Indus Valley Civilisation.*

B. GS 2 Related

Nothing here for today!!!

C. GS 3 Related

Nothing here for today!!!

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: ENVIRONMENT

1. Carbon Trading Market In India

Syllabus: GS-3, Conservation-National Guidelines, Legislations & Other Programmes.

Mains: Significance of India's Evolving Carbon Market

Context: This article discusses the prospects of the carbon trading market in India.

Carbon Trade and Carbon Market:

- Carbon trade is the buying and selling of credits that permit a company or other entity to emit a certain amount of carbon dioxide or other greenhouse gases.
- The carbon credits and the carbon trade are authorised by governments with the goal of gradually reducing overall carbon emissions and mitigating their contribution to climate change.
- Rules for a global carbon market were established at the [Glasgow COP26 climate change conference](#) in 2021, enacting an agreement first laid out in the 2015 Paris Climate Agreement.

India's Evolving Carbon Market:

India's carbon market is still evolving, and the country is taking steps to develop a robust and effective carbon trading system. Here are some of the key developments and initiatives in India's evolving carbon market:

1. **Pilot carbon trading platforms:** The Union government has launched pilot carbon trading platforms in collaboration with various organisations, such as the World Bank and the Federation of Indian Chambers of Commerce and Industry (FICCI). These platforms aim to test and refine different approaches to carbon trading in India.
2. **National Carbon Market:** In February 2021, the Indian government announced its intention to establish a national carbon market. The market will be based on a "cap-and-trade" system, where the government sets a cap on emissions and allows companies to trade emissions allowances. Parliament amended the energy conservation bill in 2022 in order to establish a carbon market in India.
3. **Carbon pricing:** India has implemented several policies to put a price on carbon, such as a tax on coal and a clean energy cess. These policies aim to incentivize companies to reduce emissions by making it more expensive to use high-emitting fuels.
4. **Clean Development Mechanism (CDM) projects:** India is one of the largest beneficiaries of the [Clean Development Mechanism](#) under the Kyoto Protocol, with over 2,200 CDM projects registered in the country.
5. **Renewable Energy Certificates (RECs):** India has a market-based system for trading RECs, which represent the environmental attributes of renewable energy.
6. India has also notified the **National Designated Authority** for the Implementation of the Paris Agreement (NDAIAPA) to take decisions in regard to the type of projects that may take part in the international carbon market under Article 6 mechanisms of the Paris Agreement.

Carbon trading in European Union (EU):

- EU-Emissions Trading Systems is the world's first and the biggest major carbon market.
- Under EU-Emissions Trading Systems (ETS), government-mandated emission limits on industrial sectors such as aluminium or steel plants require industries to either cut emissions or buy government-certified permits from companies that cut more emissions than required or were auctioned by governments.

Significance of the Carbon Market:

- The significance of the carbon market lies in its ability to incentivize and facilitate emissions reductions in a cost-effective way.
- The carbon market can help developing countries access finance for low-carbon development and provide an incentive for developed countries to invest in emissions reductions in developing countries.

- Carbon markets can provide finance for low-carbon development and support sustainable development projects, such as energy efficiency upgrades, sustainable transport, and afforestation. This can help India meet its development goals while also reducing emissions.
- As a developing country with a large and rapidly growing economy, India's climate actions are closely watched by the international community. By participating in carbon markets and demonstrating its commitment to reducing emissions, India can enhance its international climate leadership and influence.
- The carbon market creates a transparent and standardized system for measuring, reporting, and verifying emissions reductions, which can help increase accountability and trust in climate action.

***Nut Graf:** India's evolving carbon market reflects the country's commitment to reducing emissions and transitioning to a low-carbon economy. As the market continues to develop, it has the potential to provide a cost-effective way for Indian companies to reduce emissions and promote sustainable development.*

2. India as a Biodiversity Champion

Syllabus: GS-3, Biodiversity and Conservation

Mains: Evidence-based implementation of 'Green Growth' Programmes for biodiversity conservation

Context: This article discusses various initiatives by India towards biodiversity conservation.

Introduction:

- Biodiversity conservation refers to the protection, management, and restoration of the variety of life on Earth, including all plant and animal species and their habitats. Biodiversity is essential for the healthy functioning of ecosystems, the provision of ecosystem services, and the survival and well-being of human societies.
- India currently hosts 17% of the planet's human population and 17% of the global area in biodiversity hotspots, placing it at the helm to guide the planet in becoming a biodiversity champion.
 - India is facing serious losses of natural assets such as soils, land, water, and biodiversity due to rapid growth in population and its after-effects.

Initiatives towards biodiversity conservation:

- The [National Mission for a Green India](#) aims to increase forest cover on degraded lands and protect existing forested lands.
- The National Mission for Himalayan Studies was launched in 2015 to support research and development in the Himalayan region. The mission aims to promote sustainable development and conservation of the Himalayan ecosystem.
- India has identified and notified over 160 [Biodiversity Heritage Sites](#), which are areas of ecological, biodiversity, cultural or aesthetic importance. These sites are protected and managed for the conservation of biodiversity and cultural heritage.
- The National Mission on Biodiversity and Human Wellbeing has been approved by the [Prime Minister's Science, Technology, and Innovation Advisory Council \(PM-STIAC\)](#).
 - This mission seeks to harness the power of interdisciplinary knowledge — for greening India and its economy and to position India as a global leader in applied biodiversity science.
- On December 19, 2022, 188 country representatives at the United Nations Biodiversity Conference in Montreal, Canada adopted an agreement to “halt and reverse” biodiversity loss by conserving 30% of the world’s land and 30% of the world’s oceans by 2030, known as the 30×30 pledge.
- In response to this call, the Union Budget 2023 mentioned “Green Growth” as one of the seven priorities or ‘Saptarishis’.

Read more on [Green Budget 2023](#).

Way Forward:

- Administration shall focus on evidence-based implementation and inclusive monitoring programmes that could result in documentation and distillation of lessons learnt for replication, nationally as well as globally.
- We must focus on reducing water use in agriculture by promoting the adoption of less water-intensive crops and by making investments in water recycling in urban areas using a combination of grey and blue-green infrastructure to maintain ecological flows that will determine the fate of our wetland ecosystems.
- Implementation of the Green India Mission should focus on ecological restoration rather than tree plantation and choose sites where it can contribute to ecological connectivity in landscapes fragmented by linear infrastructure.
 - The choice of species and density should be based on knowledge and evidence on resilience under emerging climate change.
- Under the ‘Mangrove Initiative for Shoreline Habitats & Tangible Incomes’ (MISHTI) initiative, site selection should be considered with a greater emphasis on the diversity of mangrove species with retention of the integrity of coastal mud-flats and salt pans themselves.
- Conservation efforts must be inclusive of local and nomadic communities where these initiatives will be implemented.

- Traditional knowledge and practices of these communities should be integrated into the implementation plans.
- The National Mission on Biodiversity and Human Wellbeing shall be launched without much delay to educate and bring awareness to India's biological wealth.

Nut Graf: *Biodiversity conservation is a complex and multi-faceted challenge that requires a range of scientific approaches and strategies. It is important to engage a variety of stakeholders, including governments, communities, and businesses, to work together towards the common goal of conserving biodiversity and ensuring the long-term sustainability of our planet.*

F. Prelims Facts

1. Sinthan Pass

Syllabus: *GS-1; Geography*

Prelims: *About Sinthan Pass and other important mountain passes in India*

Context

The National Highway leading to Sinthan Top was reopened.

Sinthan Pass

- Sinthan Top is a mountain pass located in the Anantnag district of Jammu and Kashmir.
- The Sinthan Pass connects **Kashmir to the Chenab Valley** in the Jammu region.
- The pass is located between South Kashmir's Breng Valley in the Anantnag district and Chatroo in the Kishtwar district of Chenab Valley.
- Sinthan Top is also an offbeat tourist destination that attracts tourists from all over the country, especially in the winter months.

Also read - [Mountain Passes in India](#)

2. Mohiniyattam Dance

Syllabus: *GS-1; Art and Culture; Salient aspects of Art Forms*

Prelims: *Mohiniyattam Dance Form*

Context

Well-known Mohiniyattam artiste Padma Bhushan Dr. Kanak Rele has passed away.

Mohiniyattam

- Mohiniyattam is a classical dance form of India belonging to the State of Kerala.
- Mohiniyattam dance is performed by women to honour lord Vishnu in his incarnation as Mohini.
- Mohiniyattam is based on Natya Shastra's lasya style.
- Mohiniyattam dance form involves delicate footsteps, undulating body movements, and subtle facial expressions.
- The language of the lyrics or song is Manipravalam which is a mixture of Malayalam and Sanskrit.

Learn more about - [Mohiniyattam](#)

G. Tidbits

1. India remains a 'bright spot', to contribute 15% of global growth in 2023: IMF

Outpacing global growth

According to IMF, India is expected to grow at 6.8% in FY23 and at 6.1% in FY24, well above the estimated global growth rates

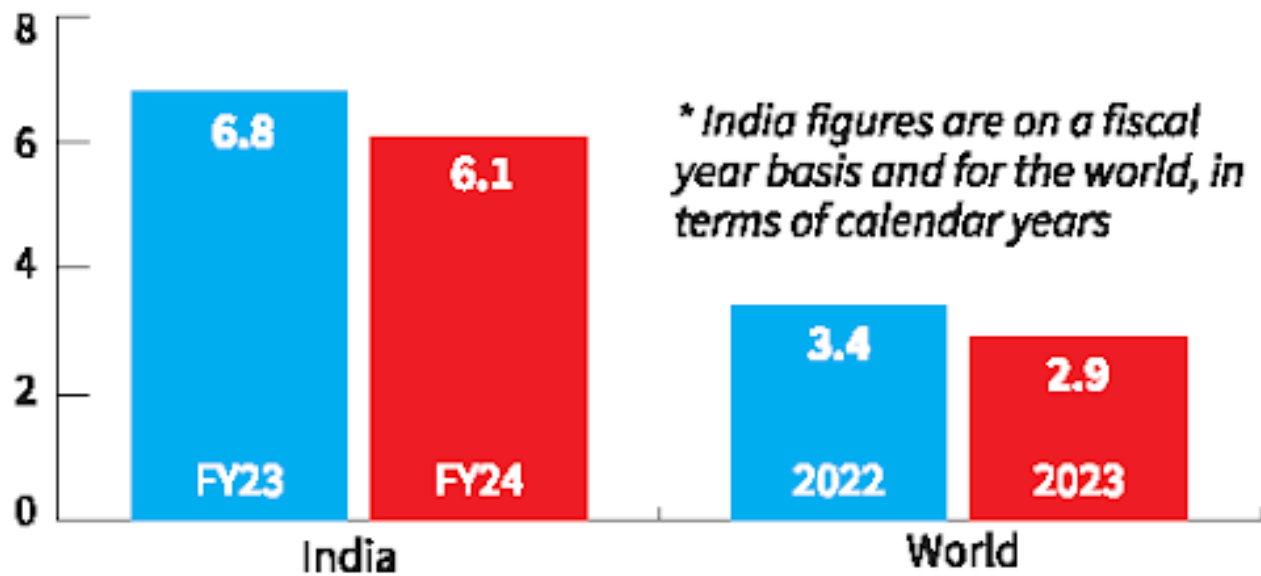


Image Source: The Hindu

- The Managing Director (MD) of the [International Monetary Fund \(IMF\)](#) has said that India has remained a “bright spot” in the global economy, and is expected to contribute about 15% of the global growth in 2023.
- According to the IMF MD, India's growth performance has been quite impressive and has the fastest growth rate among major economies.
- India has been regarded as a “bright spot” because India has managed to turn digitalisation into a major driver of overcoming the impact of the pandemic and creating growth and employment opportunities.
 - Further, India's fiscal policy has also been responsive to economic conditions as the country has looked for fiscal consolidation along with providing significant financing for capital investments.
- The MD of IMF has also appreciated the extended focus of India on investing in the green economy or the transition towards cleaner energy, building public digital infrastructure, and women empowerment.

2. Withdrawal of French troops from Burkina Faso



Image source: World Atlas

- Burkina Faso has announced that the operation led by France in the country has come to an end.
- France had, in 2018, signed a military agreement with Burkina Faso to bring about stability against the threat of Islamist militant groups.

- The French troops were asked to withdraw from Burkina Faso after it pulled out its troops from Mali and the key reason for the withdrawal is the failure of its counter-insurgency operations in the Sahel region against Islamist groups.
 - Further, the Islamist insurgency has intensified in recent times and France's military presence in Burkina Faso has come under scrutiny and anti-France demonstrations have increased in Burkina Faso.
- The French President however has said that victory against terror is not possible if it is not supported by the state itself and France has also been critical of the growing Russian influence in Africa.
 - It is said that the Russian private military company Wagner Group is working closely with the military governments in West Africa.

For more information on this topic, refer to the following article:

[International Relations This Week - Episode 94: France ends military operations in African Sahel](#)

3. 'Dickinsonia fossil' found in Bhimbetka is old beehive

- The findings of fossils of an extinct species of animal from India's [Bhimbetka Rock Shelters](#) in 2021 have been found to be untrue.
- Researchers had found what looked like a 44-cm-wide fossil of Dickinsonia in a cave in Bhimbetka.
 - Dickinsonia is an animal that lived at least 538 million years ago.
- However, the Dickinsonia fossils found in other parts of the world were found to be circular or oval in shape, somewhat flat, with rib-like structures radiating from a central column which pointed out discrepancies in the one found in the Bhimbetka cave.
- More research has revealed that the fossil impression found in the Bhimbetka cave is the result of the decay of a modern beehive that was attached to a fractured rock surface.

H. UPSC Prelims Practice Questions

Q1. Which of the statements are correct about Jute? (Level – Moderate)

1. India is the world's largest jute producer.
2. The Jute Packaging Materials Act makes it mandatory for all foodgrains to be packed in jute sacs.
3. Jute requires high temperatures, high precipitation and humid conditions for its growth.
4. India has imposed anti-dumping duty on the import of certain jute products from Nepal and Bangladesh.

Options:

- a. 1, 2 and 3
- b. 1, 3 and 4
- c. 2, 3 and 4
- d. 1, 2, 3 and 4

Answer: d

Explanation:

- **Statement 1 is correct**, India is the world's largest producer of raw jute and jute goods, contributing to over 50 percent and 40 percent respectively of global production.
 - India is followed by Bangladesh, China and Thailand.
- **Statement 2 is correct**, Government of India approved Reservation Norms for the mandatory use of jute in the packaging of rice, wheat and sugar for the Jute Year 2022-23.
 - The Mandatory norms provide for full reservation for packaging of foodgrains and 20% reservation for packaging of sugar in jute bags.
- **Statement 3 is correct**, For proper growth and development, jute requires a humid tropical to warm subtropical climate, and about 500 mm of well-distributed rainfall.
 - Jute requires high temperatures varying from 24°C to 35°C and heavy rainfall of 120 to 150 cm and 80% to 90% relative humidity.
- **Statement 4 is correct**, India has imposed anti-dumping duty on the import of certain jute products from Nepal and Bangladesh.
 - Further, the government has recently extended anti-dumping duty for five years to protect domestic players from cheap inbound shipments.

Q2. How many of the statements is/are correct about Tejas? (Level – Easy)

1. It is a Light Combat Vehicle.
2. It is developed in collaboration with France.
3. It has the capacity to carry Beyond Visual Aid missiles.

Options:

- a. Only 1 statement
- b. Only 2 statements
- c. Only 3 statements
- d. None of the statements

Answer: b

Explanation:

- **Statement 1 is correct**, Tejas is a Light Combat Aircraft variant and a supersonic aircraft used by the Indian military.
- **Statement 2 is not correct**, LCA Tejas is being **designed and developed indigenously by HAL (Hindustan Aeronautics Limited)**.
- **Statement 3 is correct**, LCA Tejas is equipped with advanced electronically scanned array (AESA) radar and a network warfare system comprising software-defined radio (SDR) and can carry out beyond visual range (BVR) missiles.

Q3. Consider the following statements about Mohiniyattam: (Level – Moderate)

1. Mohiniyattam is a classical dance form developed in Karnataka.
2. It is performed mostly by female dancers.
3. It involves the Lasya style of dancing.
4. Temple jewellery is an important part of the dancer's attire.

How many of the above are correct?

- a. Only 1 statement
- b. Only 2 statements
- c. Only 3 statements
- d. All 4 statements

Answer: c**Explanation:**

- **Statement 1 is not correct**, Mohiniyattam is a classical dance form of India belonging to the **State of Kerala**.
- **Statement 2 is correct**, Mohiniyattam dance is performed by women to honour lord Vishnu in his incarnation as Mohini.
- **Statement 3 is correct**, Mohiniyattam is based on Natya Shastra's lasya style.
- **Statement 4 is correct**, Temple jewellery is an important part of the dancer's attire.

Q4. Identify the correct statement(s): (Level – Easy)

1. The Election Commission is responsible for allocating Party Symbols in India.
2. A symbol given to a state party can be allocated to another party in a different state.

Options:

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

Answer: c

Explanation:

- **Statement 1 is correct**, The Election Symbols (Reservation and Allotment) Order, 1968 empowers the Election Commission (EC) to recognise political parties and allot symbols.
- **Statement 2 is correct**, A symbol given to a state party can be allocated to another party in a different state.
 - Such parties are allowed to contest on their election symbols as long as they are not pitted against each other in an assembly seat.
 - If they are contesting against each other, then they will not be able to use their party symbols, and will be allotted free symbols in those constituencies.

Q5. Consider the following: (Level – Moderate) [PYQ 2021]

- 1. Bacteria
- 2. Fungi
- 3. Virus

Which of the above can be cultured in artificial/synthetic medium?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

Answer: a

Explanation:

- Only bacteria and fungi can be cultured through an artificial or synthetic medium.
- Viruses replicate only within living cells and some viruses are restricted in the kinds of cells in which they replicate.
- Thus viruses cannot be grown in standard microbiological broths or on agar plates, instead, they have to be cultured inside suitable host cells.

1. What do you understand by carbon trading? Discuss India's approach to establish a carbon market in the country. (15 marks, 250 words) [GS-3, Environment]
2. Examine the growth prospects of India in the coming financial year by evaluating the inherent strengths of the Indian economy. (15 marks, 250 words) [GS-3, Economy]

