Iron Age and and Urbanization

For Prelims: <u>Iron Age, Indus Valley Civilisation, Bronze Age, Arthashastra</u>, <u>NBPW Culture,</u> <u>Vindhyas, Megalithic Culture, Urbanization, Ganga Valley</u>.

For Mains: Iron age in India, Role of iron technology in states formation and urbanisation

Source: IE

Why in News?

A report titled 'Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu', claims that use of iron in Tamil Nadu dates back to the first quarter of the 4th millennium BCE.

The <u>Iron Age</u> in India is believed to have emerged between 1500 and 2000 BCE, closely following the <u>Indus Valley Civilisation</u> (Bronze Age).

What is the Iron Age?

- About: The Iron Age is a prehistoric period that followed the Bronze Age, characterized by the widespread use of iron for tools, weapons, and other implements.
 - Iron metallurgy involves multiple stages, including ore
 - procurement and manufacturing tools.
- Antiquity of Iron in India:
 - Rigvedic Period: No knowledge of iron was recorded.
 - Early Historic Period: References to iron smithing are found in early Buddhist literature and Kautilya's <u>Arthashastra</u>.
- Significant Excavation Sites:
 - Raja Nal Ka Tila (North-Central India): Iron tools and slag found in pre-NBP (Northern Black Polished) deposits (1400-800 BCE).
 - Malhar (Chandauli, Uttar Pradesh): Evidence of iron tools, furnaces, and slag indicates it was an important iron metallurgy center.
- Cultural Associations:
 - Black-and-Red Ware (BRW): Characterized by distinctive pottery with black interiors and red exteriors due to inverted firing techniques.
 - It is found in Harappan context (Gujarat), Pre-PGW context (northern India), and Megalithic context (southern India).
 - Painted Grey Ware (PGW) Culture: Characterized by grey pottery with black geometric patterns.
 - Iron reported at multiple sites in the Ganga valley and South Indian Megaliths (1st millennium BCE).
 - Northern Black Polished Ware (NBPW) Culture: Wheel-made pottery which is fine, black, and highly polished. Significant in north India.
 - During 700 BCE-100 BCE (<u>NBPW Culture</u> period), the formation of states and emergence of urbanism in the Ganga valley crystallized.

- NBPW Culture was associated with 2nd Urbanization in the Ganga Valley (6th century BCE) during which <u>Buddhism</u> flourished.
- Ahar Chalcolithic Culture:
 - Middle phase (2500-2000 BCE): Evidence of iron artifacts.

• Late phase (2000-1700 BCE): Iron usage became more prominent.

 Megalithic Culture: Megaliths (large stones used to construct a prehistoric structure), linked to iron, are found in the <u>Vindhyas</u> (southern Uttar Pradesh), Vidisha region, and much of South India.



Megalithic Culture Relationship with Iron

 Megalithic Culture: It is a prehistoric phase marked by large stone structures used for burials, sacred spaces, and rituals.

• The <u>Megalithic culture</u> in south India is closely associated with the **beginning of iron** usage.

- Iron Uses: Around 33 types of iron tools have been identified from Megalithic burials. These served various purposes:
 - Agriculture: Hoes, sickles, and axes.
 - **Domestic use**: Dishes and tripod stands.
 - Artisanal activities: Chisels and nails.
 - War and hunting: Swords, daggers, spears, and arrowheads.
- Notable Evidence of Iron Use:

- Naikund (Vidarbha): Discovery of an iron smelting furnace.
- **Mahurjhari (Nagpur)**: **Head ornaments for horses** made of copper sheets with iron knobs.
- Paiyampalli (Tamil Nadu): Large quantities of iron slag, indicating local iron smelting.
- Advancements in Iron Technology: People learned to control fire and extract iron from ore, marking a key technological advance.

How Iron Technology Helped in Urbanization in the Ganga Valley?

- About Urbanization: According to historian, and archaeologist Gordon V.
 Childe, <u>urbanization</u> relies on surplus production, leading to ruling classes, social stratification, and monumental architecture.
 - It refers to the shift from agriculture-based economies to industries, services, and trade as the primary sources of income.
- Role of Iron Technology: The 2nd Urbanization in the <u>Ganga Valley</u> (6th century BCE) was marked by the proliferation of settlements and Iron technology played a pivotal role by:
 - Clearing Forests: Iron tools enabled deforestation, creating arable land.
 - Boosting Agricultural Productivity: Iron plows enhanced efficiency and yields.
 - Agricultural Surplus: Increased productivity supported large populations and complex societies.
 - The **first urbanization (2500 and 1900 BCE)** in India was during the Indus Valley Civilization.
- Impact on Urbanization: It led to development of 16 Mahajanapadas in the Indian subcontinent.
 - **Population Growth:** The agricultural surplus facilitated **population growth**, essential for the development of urban centers.
 - **Development of Settlements**: Settlements grew in **number and complexity**, showing a clear hierarchy.
 - Social Stratification and State Formation: Surplus production enabled the emergence of ruling classes, <u>social hierarchy</u> (e.g., varna system), and centralized power structures.
 - **Trade and Craft Specialization**: Surplus allowed people to engage in non-agricultural activities like **trade and crafts**, leading to economic diversification and urban growth.

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Conclusion

Iron technology played a crucial role in the **development of urban centers** in ancient India, especially in the **Ganga Valley**. It boosted agricultural productivity, supported **population growth**, and enabled **the rise of social hierarchies and state formation**, marking a significant shift towards urbanization during the second urbanization phase.

Drishti Mains Question:

Q. Discuss the role of iron technology in the urbanization of the Ganga Valley.

UPSC Civil Services Examination Previous Year Question (PYQ)

<u>Prelims</u>

Q.With reference to the difference between the culture of Rigvedic Aryans and Indus Valley people, which of the following statements is/are correct? (2017)

- 1. Rigvedic Aryans used the coat of mail and helmet in warfare whereas the people of Indus Valley Civilization did not leave any evidence of using them.
- 2. Rigvedic Aryans knew gold, silver and copper whereas Indus Valley people knew only copper and iron.
- 3. Rigvedic Aryans had domesticated the horse whereas there is no evidence of Indus Valley people having been aware of this animal.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (c)

Q. Which of the following Kingdoms were associated with the life of the Buddha? (2014)

- 1. Avanti
- 2. Gandhara
- 3. Kosala
- 4. Magadha

Select the correct answer using the code given below:

- (a) 1, 2 and 3
- (b) 2 and 4
- (c) 3 and 4 only
- (d) 1, 3 and 4

Ans: (c)

<u>Mains</u>

Q. The ancient civilization in the Indian sub-continent differed from those of Egypt, Mesopotamia and Greece in that its culture and traditions have been preserved without a breakdown to the present day. Comment. **(2015)**



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