Current Affairs 04-10-2025

Sustainable E-Waste Management Strategies

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For Prelims: E-waste , **Heavy Metals** , **Particulate Matter** , **DNA** , **Extended Producer Responsibility** , **Central Pollution Control Board** , **Blockchain** , **Right-to-Repair** .

For Mains : E-Waste Management in India: Current Status, Challenges, Socio-Economic Impacts, Policy Initiatives, and Way Forward.

Source: TH

Why in News?

India generated **2.2 million metric tonnes (MT)** of **e-waste** in 2025, becoming the **third-largest global generator** after **China** and the **US** . However, **informal recycling** exposes **millions** , especially **marginalised communities** , to **serious health risks** , making it a major **urban challenge** .

E- Waste

- **About: E-waste** , or electronic waste, refers to discarded or end-of-life electronic devices and equipment. It includes items such as **computers, televisions, mobile phones, printers, refrigerators, and air conditioners** .
  - These products often contain **toxic substances** like lead, mercury, cadmium, and chromium.
- **Current Status of E-waste in India:**
  - **Rapid Growth:** E-waste generation recorded a **150% surge** from the **0.71 million MT** recorded in **2017–18** . At **current rates** , this **volume** is expected to nearly **double by 2030** in India.
  - **Urban Hotspots** : The **crisis** is concentrated in **cities** , with over **60% of e-waste** originating from just **65 urban centers** . **Key hotspots** include **Seelampur** and **Mustafabad** in **Delhi** , **Moradabad** in **Uttar Pradesh** , and **Bhiwandi** in **Maharashtra** .
  - **Informal Recycling: India** has **322 registered formal recycling units** with a capacity of **2.2 million MT** annually, yet over **half of e-waste** (**43% officially processed** in **2023–24**) is processed **informally or not recycled** .
- **E-waste Management Frameworks in India**
  - **E-Waste (Management) Rules, 2016:** It introduced the concept of a **Producer Responsibility Organization (PRO)** .
  - **E-Waste (Management) Rules 2022:** Under **Extended Producer Responsibility (EPR)** , **producers** must meet **annual recycling targets** through **registered recyclers** , with **EPR certificates** ensuring **accountability** for recycled products.
    - **Public institutions** must dispose of **e-waste** through **registered recyclers/refurbishers** , who handle **collection and processing** .
  - **E-Waste (Management) Second Amendment Rules, 2023:** Under **Rule 5** of the **E-Waste (Management) Rules 2022** , **Clause 4 was added** to ensure **safe and sustainable management of refrigerants** in **refrigeration and air-conditioning manufacturing** .
  - **E-Waste (Management) Amendment Rules, 2024:** The rules provide for the **creation of platforms** for trading **EPR certificates** as per **Central Pollution Control Board (CPCB) guidelines** with its approval.
    - The **CPCB** will set the **EPR certificate price range** between **30% (minimum)** and **100% (maximum)** of the **environmental compensation** for non-compliance.
  - **Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2025:** It introduces a **comprehensive EPR framework** for **non-ferrous metal scrap** , making **producers** responsible for **recycling targets** rising from **10% in 2026-27** to **75% by 2032-33** .

What are the Key Challenges Associated with Managing E-waste in India?

- **Dominance of the Informal Sector: Over 50%** of **e-waste** is managed by the **informal** sector, which uses hazardous methods like **open-air burning** , and **acid leaching** causing serious **health** and **environmental impacts** .

- **Weak Implementation:** EPR non-compliance , **false reporting** (fake certificates), and **weak penalties** fail to deter large corporations.
- **Inadequate Infrastructure:** Insufficient **authorized dismantlers and recyclers** , **lack of advanced technologies** for precious metal recovery, and the **high cost of formal recycling** limit India's e-waste management capacity.
- **Lack of Consumer Awareness:** Most citizens lack **awareness** of e-waste hazards, often mixing it with **municipal waste** , while **formal collection systems** like producer take-back or drop-off points remain little known and inaccessible.
- **Complex Nature of E-Waste:** E-waste contains **valuable metals** (gold, copper), **toxic heavy metals** (lead, mercury), and **hazardous chemicals** , while modern **compact device designs** with glued or soldered parts make safe **dismantling labor-intensive** and difficult.

How Does E-Waste Impact the Environment and Human Health?

- **Health Impacts:** Informal e-waste recycling exposes workers and nearby populations to **respiratory illnesses** , **neurological damage** , **skin, and eye disorders** , and **genetic impacts** like **DNA** damage and immune alterations.
- **Impacts on the Environment:** Open burning releases **particulate matter** , **heavy metals** , and **dioxins** , creating hazardous **air pollution** ; meanwhile, **toxic slurries** contaminate **groundwater** , threatening drinking and irrigation sources.
- **Impact on Agriculture:** Leaching from e-waste turns soil into a sink for **heavy metals** (cadmium, lead, chromium), which are absorbed by **crops** and **livestock** , while chemical contamination harms **soil microbiota** , reduces **organic matter** , and alters **soil pH** .
- **Socio-Economic Impacts:** Hazardous low-cost informal recycling hinders **formal green industry growth** , while improper handling of data storage devices risks **fraud** and **identity theft** .

How can India Make E-waste Management More Sustainable and Efficient?

- **Formal Integration of the Informal Sector:** Train informal **e-waste workers** as **Green Collar technicians** , provide **safe recycling zones** with **protective gear** and link **formal registration** to **healthcare, insurance** , and **pension benefits** .
  - Use a **blockchain** **-style digital ledger** to **track e-waste** from consumers to recyclers, **mandate annual audits** , and **streamline the EPR framework** to ensure **accountability** .
- **Leveraging Technology & Innovation: Fund R&D** for **advanced shredding** , **bioleaching** , and **non-thermal recovery methods** ; establish **decentralized recycling hubs** , and incentivize **"urban mining"** by treating **e-waste** as a **valuable resource** .
- **Fostering Consumer Responsibility:** Run **campaigns** on the **health impacts of informal recycling** and **proper e-waste disposal** ; teach **e-waste** and **circular economy** in **schools** ; and simplify **disposal** via **producer take-back** and **reverse vending machines** with **incentives** .
- **Circular Economy:** Promote **Right-to-Repair** laws, encourage **durable** and **easily disassembled electronics** through **incentives** , and support **green public procurement** by prioritizing **repairable** and **recycled-content products** .
- **Global Collaboration:** Strictly enforce the **Basel Convention on the Control of Transboundary**

Movements of Hazardous Wastes and Their Disposal (1989) , a global treaty aimed at limiting the international movement of **hazardous waste** , including **e-waste** . **India** is a signatory to this convention.

Conclusion

India's booming digital transformation has intensified its **e-waste crisis** , disproportionately affecting marginalized communities. Sustainable solutions require **formalising the informal sector, strengthening enforcement, leveraging technology, promoting consumer responsibility, and embracing circular economy principles** . Urgent multi-stakeholder action is essential to safeguard **public health, environmental integrity, and long-term economic resilience** .

> *Drishti Mains Question:*
>
> "India's digital leap has an unintended consequence: a silent e-waste epidemic." Critically examine this statement, analyzing the socio-economic and environmental challenges posed by informal e-waste recycling in urban India.

Frequently Asked Questions (FAQs)

1. What is India's current e-waste generation status?
India generated 2.2 million MT of e-waste in 2025, ranking third globally, with urban hotspots like Delhi, Moradabad, and Bhiwandi contributing over 60%.

2. What is the concept of 'urban mining' in the context of e-waste management?
It treats e-waste as a valuable resource by recovering precious and rare-earth metals from discarded electronics, promoting a circular economy and reducing the need for virgin material extraction.

3. What are the major health risks associated with informal e-waste recycling?
Informal recycling exposes workers to respiratory illnesses, neurological damage, skin disorders, DNA damage, and developmental delays, especially in children.

[Watch Video on YouTube: ► **https://www.youtube.com/embed/Nr0igorjIKI**]

USA's Comprehensive Plan to End Gaza Conflict

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For Prelims: Gaza Strip , Hamas , Mediterranean Sea , India-Middle East-Europe Economic Corridor , Chabahar Port , Haifa Port.

For Mains : The US President unveiled a 20-point Gaza Peace Plan titled "Comprehensive Plan to End the Gaza Conflict" aimed at stabilizing the region, disarming Hamas, and rebuilding the Gaza strip.

Why in News?

The **US President** unveiled a **20-point Gaza Peace Plan titled "Comprehensive Plan to End the Gaza Conflict"** aimed at stabilizing the region, disarming Hamas, and rebuilding the **Gaza strip.**

- While **Hamas** has **not yet accepted** the plan, it has been welcomed by several **Arab nations** and carries important implications for **regional stability** and **Indian interests** .

What are the Key Highlights of the USA's Gaza Peace Plan?

- **Disarmament and Surrender of Hamas:** The plan's core goal is the **disarmament of Hamas** , making Gaza a **terror-free zone** . Hamas members will receive **amnesty** for peaceful coexistence or **safe passage** to countries like **Jordan, Egypt, Qatar, and Iran** , with **no forced eviction** of Gaza residents.

- **International Security Force:** A temporary **International Stabilization Force (ISF)** will be deployed to **train Palestinian police** and **secure Gaza** .
  - The **Israeli Defense Forces (IDF)** will **withdraw** based on agreed **milestones** , maintaining only a " **security perimeter** "—a potential **buffer zone** —until the **threat** is neutralized.

- **A New Governance Structure: Gaza** will be governed by a temporary, " **technocratic, apolitical Palestinian committee** " overseen by an international " **Board of Peace** ," to be chaired by **Trump** himself.

- **Humanitarian Aid and Hostage Exchange:** The plan mandates an immediate surge in **humanitarian aid** for **rebuilding infrastructure** .
  - A **hostage-prisoner swap** is also outlined: all **hostages** will be returned within **72 hours** of **Israel's acceptance** , in exchange for the release of **Palestinian prisoners** .

- **Regional Guarantees:** Many **muslim and Arab nations** , including **Qatar, Jordan, UAE, Saudi Arabia, and Pakistan** , have jointly welcomed the plan, providing **regional backing** to ensure **compliance** .

Israel-Gaza Conflict

- **Historical Background:**
  - **Balfour Declaration (1917):** Issued by **Britain** , supporting the establishment of a **Jewish homeland** in **Palestine** , heightening tensions between the **Jewish minority** and **Arab majority** .
  - **Creation of Israel (1948):** Following a 1947 **UN proposal** to divide **Palestine** , **Jews** declared **Israel's independence** . **Arabs** rejected the plan, leading to multiple **wars** .
  - **1967 Middle East War** : **Israel** gained control of the **West Bank** , **Gaza** , and **East Jerusalem** , affecting about a **million Palestinians** .
  - **Yom Kippur War (1973):** Led to the **Camp David Accords** (1978), where **Egypt** became the

first **Arab country** to recognize **Israel** . **Israel** returned the **Sinai Peninsula** to **Egypt** in 1979 but retained control over the **West Bank** .

- **Location:** The **Gaza Strip** is a densely populated **coastal territory** in **west Asia** , measuring about **41 km in length** and **10 km in width** , located along the **Mediterranean Sea** .
  - It shares borders with **Israel** to the north and east, and **Egypt** to the southwest.
- **Role of Gaza in Israel-Palestine conflict:** As a strategically important region, the **Gaza Strip** remains at the heart of the **Israeli-Palestinian conflict** , facing ongoing **humanitarian, political, and security challenges** .
  - The **United Nations** has officially declared a **famine in Gaza** following a sharp escalation of the **Israel-Hamas conflict** , widespread **displacement** , and severe restrictions on **humanitarian and commercial food supplies** .

What Has Been India's Policy on the Israel-Palestine Conflict?

- **Historical Support for Palestine:** India was among the first **non-Arab countries** to recognize the **Palestine Liberation Organization (PLO)** as the sole legitimate representative of the **Palestinian people** in **1974** . It also recognized the **State of Palestine** in **1988.**
- **Two-State Solution:** India has consistently advocated for a negotiated **two-state solution** , emphasizing the establishment of a **sovereign, independent, and viable Palestinian state** alongside **Israel** within recognized borders. This position is reflected in its **voting patterns at the**

United Nations .

- **De-hyphenation Policy:** India has consciously moved to treat **Israel** and **Palestine** as separate, independent **relationships** , rather than a **zero-sum game** where support for one means opposition to the other.

- **Consistent Diplomatic Support:** India has actively supported Palestinian self-determination at the **UN General Assembly and UN Security Council.**
  - India voted in favor of Palestine's **UNESCO membership in 2011, i** ncluding contributions to the **United Nations Relief and Works Agency for Palestine Refugees (UNRWA)** .

- **Developmental Cooperation:** India has provided **USD 141 million** in aid, including projects like the **Palestine-India Techno Park** and **Jawaharlal Nehru Secondary Schools** in Gaza.
  - India signed **Quick Impact Projects** (QIPs) like the rehabilitation of **Yasser Arafat Square** and the **solar grid system in Nablus** .

- **Strategic Importance for India:** India's engagement with Israel and Palestine supports its **energy security** and **economic ties** with the Middle East, while fostering **regional stability**

Conclusion

US's 20-point Gaza Peace Plan , if successfully implemented, could stabilize the **region** , ensure **diaspora safety** , and bolster **India's energy** and **economic interests** . However, challenges like **Hamas acceptance** , **Iran's exclusion** , and **Pakistan's involvement** create **strategic uncertainties** . **India** must carefully navigate **regional dynamics** to safeguard its **long-term projects** and **strategic interests** .

Drishti Mains Question:

Examine the implications of the Gaza Peace Plan for India's strategic, economic, and diaspora interests.

Frequently Asked Questions (FAQs)

1. What is the Gaza Peace Plan?
It is a 20-point US proposal by Trump to stabilize Gaza, disarm Hamas, rebuild infrastructure, and ensure regional security.

2. What role will international forces play in Gaza?
A temporary International Stabilization Force (ISF) will train Palestinian police, secure Gaza, and oversee IDF withdrawal.

3. How will Gaza be governed under the plan?
A technocratic, apolitical Palestinian committee, supervised by the Board of Peace chaired by Trump, will run Gaza temporarily.

[Watch Video on YouTube: ► **https://www.youtube.com/embed/5QDNzOtDwQc**]

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Mediterranean Sea is a border of which of the following countries? (2017)

1. Jordan
2. Iraq
3. Lebanon
4. Syria

Select the correct answer using the code given below:

(a) 1, 2 and 3 only

(b) 2 and 3 only

(c) 3 and 4 only

(d) 1, 3 and 4 only

Ans: (c)

Q. The term "two-state solution" is sometimes mentioned in the news in the context of the affairs of (2018)

(a) China

(b) Israel

(c) Iraq

(d) Yemen

Ans: (b)

Mains

Q. "India's relations with Israel have, of late, acquired a depth and diversity, which cannot be rolled back." Discuss. **(2018)**

Extension of the RoDTEP Scheme

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Source: TH

The **Government of India has extended the Remission of Duties and Taxes on Exported Products (RoDTEP) scheme** for exporters until **March 2026** . The move comes as a relief to exporters struggling with **rising US tariffs** and global trade uncertainties.

RoDTEP Scheme

- **About & Objective:** Introduced in **2021** , the scheme refunds **embedded taxes, duties, and levies** incurred during production and distribution of **exported goods.**
    - It addresses **costs not reimbursed under other central, state, or local tax** mechanisms.
    - **Refund Rates** range from **0.3% to 3.9%** , applicable across all export items.
    - It is compliant with **WTO norms** and is implemented via a comprehensive **end-to-end digital platform** to ensure transparency and efficiency.
- **Beneficiaries:** Domestic Tariff Area (DTA) units, Advance Authorization (AA) holders, **Special Economic Zone (SEZ)** units, Export-Oriented Units (EOUs).
- **Significance:** By the end of March 2025, total disbursements under the RoDTEP scheme had crossed **nearly ₹57,000 crore** , underscoring its significant role in supporting **India's merchandise exports.**
- **Policy Implications:**
    - Encourages **sustained export growth** , especially for units in SEZs and EOUs.
    - Operates within **budgetary limits** , highlighting fiscal prudence.
    - Reinforces the government's commitment to **support the export sector** .

> **Read More: RoDTEP**
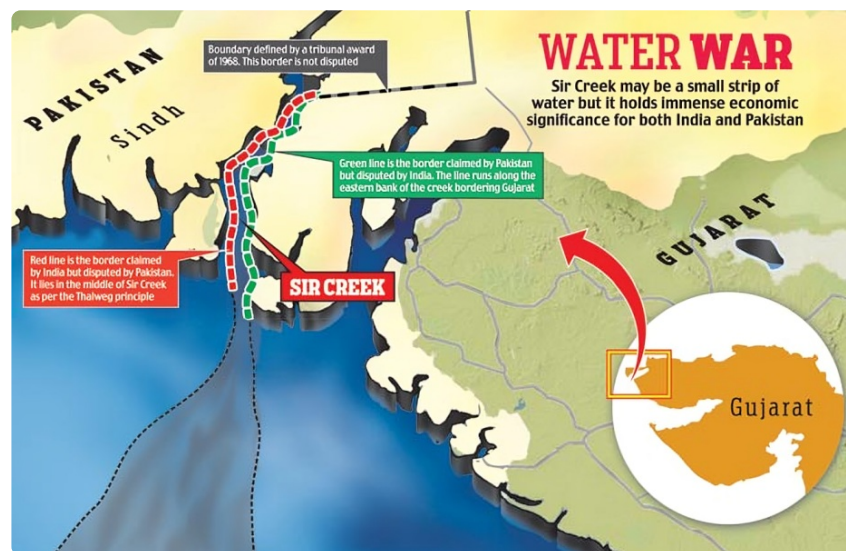

Sir Creek

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Source: TH

India's Defence Minister has stated that any aggressive action by Pakistan in the **Sir Creek area** would be responded to firmly, highlighting India's readiness and vigilance.

- **Sir Creek:** It is a 96-kilometre tidal waterway in the marshlands of the **Rann of Kutch, Gujarat**, forming the boundary between **India's Kutch region and Pakistan's Sindh province,** and opening into the **Arabian Sea.**
  - Historically known as **Ban Ganga**, it was renamed "Sir Creek" during the colonial period after a British official.
- **Sir Creek Dispute:** The dispute centers on differing interpretations of the maritime boundary. After 1947, Kutch went to India and Sindh to Pakistan.
  - Pakistan claims the **entire Sir Creek under a 1914 resolution.** However, India argues that the same resolution also invoked the **thalweg principle**, which sets the boundary along the **middle of the navigable channel**.
    - India further cites a **1925 map and mid-channel pillars** to back its position, and maintains the **creek is navigable during high tide**, so the boundary should follow **international norms along the mid-channel.**
  - Pakistan argues that the Thalweg Principle applies only to rivers and **contends Sir Creek is non-navigable,** so it shouldn't be applied.
- **Importance of Sir Creek:**
  - **Strategic Significance:** Sir Creek a sensitive border area where India and Pakistan have historically clashed. Control over the **creek impacts maritime security, surveillance, and defense preparedness.**
  - **Economic Value:** It is one of Asia's largest fishing grounds, supporting thousands of fishermen. The seabed may also hold potential **oil and gas reserves.**
  - **Ecological Importance:** The creek is an ecologically sensitive area, hosting **flamingoes** and other migratory birds, making it crucial for biodiversity conservation.

Read more: Disputed Territories of India

White Rhino

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Source: IE

The Resurrection Quest , a documentary on **cloning, gene editing, and species de-extinction** , won the Gold Dolphin Award for showcasing efforts to save the **northern white rhino.**

White Rhino

- **About: White rhinos** are the **second-largest land mammal** .
- **Subspecies** : The **species** is split into **two genetically distinct subspecies** – **Northern white rhino** and **Southern white rhino** .
- **Habitat:**
  - **Northern White Rhino** : Only **two females left (functionally extinct)** , both living in **Ol Pejeta Conservancy, Kenya** .
  - **Southern White Rhino** : Found mostly in **South Africa, Namibia, Zimbabwe, and Kenya** (98.8% population).
- **IUCN Status of White Rhino:** Near threatened.
- **Social Behavior:** Groups of up to **14 rhinos** form, mainly **females with calves** . **Adult males** defend **territories** marked with **scraped dung piles** .
  - **Adult females** have **larger home ranges** , while **breeding females** stay within a **dominant male's territory** .
- **Primary Threat: Poaching** is the **primary threat** . The **northern white rhino** nears extinction from decades of **horn poaching** .

RHINOCEROS
World Rhino Day - 22nd September (declared by WWF in 2010)

5 Main Species of Rhino

Species	Found in	IUCN Red List Status	Habitat
African White	Africa	NT	Long/short grass Savannah
African Black	Africa	CE	Semi-Desert Savannah
Greater one-horned	Asia	Vu (CITES - Appendix I, WPA - Schedule I	Tropical grassland
Javan	Asia	CE	Tropical, subtropical forests
Sumatran	Asia	CE	Same as Javan

Ujung Kulon National Park (a UNESCO WHS) is home to the last remaining wild Javan rhinos on Earth

Greater One-Horned Rhino
Only species found in India (aka Indian Rhino)

CHARACTERISTICS
- Largest of the 5 species
- Identified by a single black horn and a grey-brown hide with skin folds

Threats
- Poaching for horns
- Habitat loss
- Decreasing Genetic diversity

Protected Areas (India)
- **UP**
  - Dudhwa TR
- **West Bengal**
  - Jaldapara NP   • Gorumara NP
- **Assam**
  - Pabitora WLS
  - Orang NP
  - Kaziranga NP **(max no. of Rhinos: ~2400)**
  - Manas NP

Conservation Efforts (India)
- National Rhino Conservation Strategy
- Indian Rhino Vision 2020 (launched in 2005)

New Delhi Declaration on Asian Rhinos 2019
Signed by 5 rhino range nations (India, Bhutan, Nepal, Indonesia and Malaysia)

Drishti IAS

Read More: White Rhinos

Model Youth Gram Sabha(MYGS)

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Source: IE

The **Centre is set to launch the Model Youth Gram Sabha (MYGS)** , a school-based initiative inspired by **Model UN simulations** , to provide students practical exposure to **local governance and Panchayati Raj functioning** .

- **Model UN simulations** involve hundreds of **thousands of students** each year, helping them learn about the **UN's principles** and **functions** .

MYGS

- **About:** It is a **school-based initiative** that introduces the **democratic process of Gram Sabhas** into classrooms across India, marking the **first structured effort** to involve **students in grassroots governance** .
- **Objective:** It aims to develop **informed and responsible citizens** who understand **local governance** , with students **discussing issues** and preparing **village budgets** and **plans** .
- **Launched By:** It is an initiative of the **Ministry of Panchayati Raj** , in collaboration with **Ministries of Education and Tribal Affairs.**
- **Implementation:** It will be launched in a **phased manner** , beginning with **Jawahar Navodaya Vidyalayas (JNVs)** and **Eklavya Model Residential Schools (EMRS)** .
  - Each participating **school** will receive **Rs. 20,000** to conduct the **mock Gram Sabha** .
- **Key Features:** Students of **Classes 9–12** to role-play as **sarpanch, ward members, village secretary, Anganwadi worker, ANM, junior engineers** , etc.
  - **Teacher training** provided through **National Level Master Trainers (NLMTs)** .
  - It features **regional and national competitions** with substantial **prize money** , along with **certificates** .

> **Read More: Driving Digital Transformation in Gram Panchayats**