

Carbon Impacts Tracer (CIT)

Prelims: Current events of national and international importance | Environment

Why in News?

Recently, climate scientists and environmental researchers introduced a pioneering open-source spatial modelling framework known as the Carbon Impacts Tracer (CIT).

Key Capabilities

- **Aim** - The CIT isolates an individual mine's spatial footprint to forecast site-specific environmental and public health externalities over its projected operational lifespan.
- **Developed by** - International Finance Corporation - World Group.
- **Integrated Multi-Pollutant Modelling**
 1. **Global Climate Impact**- Quantifies cumulative direct (CO₂) and fugitive methane (CH₄) emissions generated during extraction and subsequent coal combustion.
 2. **Localized Health Externalities** - Models atmospheric dispersion of fine particulate matter (PM₅), sulfur dioxide (SO₂), and nitrogen oxides (NO_x) down to a 1 km grid to estimate premature mortality, respiratory hospitalizations, and lost workdays in surrounding communities.
- **Biodiversity Valuation**- Integrates satellite land-use data to measure forest canopy loss, groundwater table depletion, and habitat fragmentation caused by surface mining and overburden dumps.

Significance

- **Transforming Environmental Impact Assessments (EIAs)**
 - Traditionally, project EIAs evaluate localized air/water pollution in isolation from long-term systemic climate impacts.
 - CIT bridges this gap by combining hyper-local public health risks with global carbon accounting, providing a scientifically rigorous basis for regulatory bodies to review Environmental Clearances.
- **Empowering Climate Litigation**
 - Provides verifiable, site-specific evidentiary data for judicial review in national green tribunals and environmental courts.
 - Enhances accountability by assigning measurable, financialized social costs to individual fossil fuel extraction assets.
- **Informing Just Transition Frameworks**
 - Helps policymakers identify high-risk mining projects where localized human health costs and ecological damage far outweigh short-term economic benefits, facilitating prioritized phase-outs.

Carbon Impacts Tracer (CIT)

A global tool to measure the real-world climate impact of corporate investments.



What is CIT?

Measures actual greenhouse gas emissions impact of investments.



Purpose

Helps investors identify investments that support a low-carbon transition.



Developed by

International Finance Corporation (IFC) – World Bank group.



Significance

Enhances transparency and enables evidence-based decisions on climate impact.

Reference

[The Hindu | Carbon Impacts Tracer](#)



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