Swachhta Saarthi Fellowship: Waste to Wealth Mission

Why in News

The **Office of the Principal Scientific Adviser** to the Government of India under its **"Waste to Wealth"** Mission launched the **"Swachhta Saarthi Fellowship".**

Key Points

- **About the Swachhta Saarthi Fellowship:**
    - **Objectives:** To **recognize students, community workers/self-help groups, and municipal/sanitary workers** who are engaged in tackling the enormous challenge of waste management, scientifically and sustainably.
    - **Three Categories of Awards under the Fellowships:**
        - **Category-A:** Open to **School students from 9th to 12th standards** engaged in waste management community work.
        - **Category-B:** Open to **College students (UG, PG, Research students)** engaged in waste management community work.
        - **Category-C:** Open to **Citizens working in the community and through SHGs, municipal or sanitary workers** working beyond specifications of their job requirements/descriptions.
- **Waste to Wealth Mission:**
    - This mission will identify, develop, and deploy technologies to treat waste to generate energy, recycle materials, and extract worth.
    - The Waste to Wealth Mission is **one of the nine national missions** of the **Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC).**
    - The mission will **assist and augment the** Swachh Bharat **and** Smart Cities **projects** to **create** circular economic models that are financially viable for waste management to streamline waste handling in the country.

E-waste to Wealth: New Technology (IIT Delhi)

- Indian Institute of Technology, Delhi has developed **a zero-emission technology** to manage and recycle e-waste to wealth.
- The new methodology uses e-waste as an **"Urban Mine"** for **metal recovery and energy production.**
    - The e-waste is **shredded and pyrolyzed** to yield liquid and gaseous fuels, leaving behind a metal-rich solid fraction.
    - On further separation, the leftover solid residue yields a 90-95% pure metal mixture and some carbonaceous materials.
    - The carbonaceous material is further converted to aerogel for oil spillage cleaning, dye removal, carbon dioxide capture, and use in supercapacitors.
- This technology will cater to the needs of **"Smart Cities," "Swachh Bharat Abhiyan," and "**Atmanirbhar Bharat**" initiatives.**

Source: PIB