Beema Bamboo Crash Barrier

Why in News

Experts from the **Visvesvaraya National Institute of Technology (VNIT), Nagpur**, are working on the **design of crash barriers made of beema bamboo and coir.**

> These are being developed as **a low-cost alternative to steel barriers** to reduce accident deaths on highways.

Key Points

- **Background:**
  - **Road Accidents:**
    - Around **1.5 lakh people die every year** in close to **5 lakh road accidents** in India. Over a third of those accidents happen on the highways.
    - Currently, India is engaged in a project to remove accident-prone **"black spots"** and **rectify road designs on highways** with loans to the tune of **Rs. 14,000 crore** from the **Asian Development Bank** and **World Bank.**
  - **Cost of Conventional Crash Barriers:**
    - Crash barriers are typically meant to prevent vehicles from going off highways and should there be an accident, the barrier will cushion the impact and minimise the chance of fatality to the extent possible.
    - **Conventional crash barriers made of metal and alloy** may **cost around Rs. 2,000 per metre.** Around **5% of the cost** of the entire bouquet of work involved in making India's highways **go into road furniture.**

- **About Beema Bamboo Crash Barrier:**
  - **Crash Barrier:**
    - There will be five feet fencing of the bamboo installed deep into concrete slabs and held together by strong coir ropes.
    - The **beema bamboo barrier cost is estimated to be one-third** of conventional metal barriers.
  - **Beema Bamboo:**

    Beema or Bheema bamboo is a type of bamboo engineered to be **a stronger, durable, fast-growing and tall clone of the traditional bamboo** found in the Indian subcontinent, especially the **North-East.** This variety of Bamboo **grows well in southern India.**

    It is the **local product of mainly Karnataka and adjoining areas.**
- **Coir:**
  - Coir, or coconut fibre, is a **natural fibre extracted from the outer husk of coconut** and used in products such as floor mats, doormats, brushes and mattresses.
  - The name **Coir comes** from ***kayar,*** the **Tamil and Malayalam word for cord or rope.**
- **Significance:**
  - **Tensile Strength:**

    Bamboo has higher tensile strength than steel because its fibers run axially.
  - **Fire Resistance:**

    Capability of bamboo to resist fire is very high and it can withstand temperatures up to 400 degree Celsius.
  - **Elasticity:**

    Bamboo is widely preferred in earthquake prone regions due to its elastic features.
  - **Weight of Bamboo:**

    Bamboos due to their low weight are easily displaced or installed making it very easy for transportation and construction.

Source: IE