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News: Bioplastics

- In February 2024, Balrampur Chini Mills, Uttar Pradesh one of India's leading sugar producers, announced a Rs 2,000 crore investment in India's first bioplastics factory to produce Bioplastics.

Bioplastics

- Bioplastics are derived from renewable organic sources like sugarcane, corn, unlike traditional plastics made from petroleum. They are not always biodegradable or compostable.
- Bioplastics are produced by extracting sugar from plants like corn and sugarcane and converting it into polylactic acids (PLAs). Alternatively, they can be made from polyhydroxyalkanoates (PHAs) from microorganisms which are then polymerized into bioplastic.
- **Advantages of Bioplastics:** For sugar companies, bioplastics offer a new revenue stream beyond traditional sugar production and ethanol. The bioplastics project is expected to generate Rs 1,700 crore to Rs 1,800 crore annually.

- The production of Bioplastics absorbs carbon dioxide (CO_2) and contributes to a neutral or potentially negative carbon balance, helping reduce the carbon footprint compared to fossil-based plastics.
- Unlike traditional plastics, bioplastics do not contain harmful chemicals such as phthalates, which are known to be hazardous to human health.
- Bioplastics are as strong and durable as traditional plastics, making them ideal for use in a variety of applications such as food packaging, agricultural films, and medical supplies.
- The use of renewable resources for bioplastic production helps reduce reliance on non-renewable materials like petroleum.
- **Challenges:** While bioplastics offer many advantages, the technology is still developing, and the cost of production can be higher than that of traditional plastic.
- The supply of raw materials, such as agricultural waste, may also be limited in some regions.
- Concerns exist over India's sugar industry meeting rising sugarcane demand, as bioplastic production competes with sugar and ethanol needs. With a projected 4 million tonne decrease in sugar production in 2024-25, balancing these demands will be a challenge.

- **Future Outlook for Bioplastics:** Continued innovation in bioplastic production processes and materials will help reduce costs and improve scalability.
- Securing a steady supply of raw materials, such as agricultural waste and sugarcane, will be crucial for meeting growing demand.
- Consumer demand for sustainable products and packaging will drive the adoption of bioplastics, especially in environmentally conscious markets.