

Seaweed

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Context:

Recently, the National Conference on the Promotion of Seaweed Cultivation was held in Koteswar (Kori Creek), Kutch, Gujarat.

Background:

It's a first national conference on seaweed cultivation which is an alternate for employment generation of seaweed products as it diversifies marine production and its opportunities for enhancing fish farmer income, reduces reliance on traditional fishing, and diversifies coastal communities' livelihoods.

What are Seaweeds?

1. The Seaweeds are macroscopic, multicellular, marine algae. They come in a variety of colours, including red, green, and brown.
2. They are referred to as the 'Medical Food of the 21st Century'.
3. Seaweeds are found mostly in the intertidal region, in shallow and deep waters of the sea, and also in estuaries and backwaters. Large seaweeds form dense underwater forests known as kelp forests, which act as underwater nurseries for fish, snails, and sea urchins.
4. India boasts approximately 844 reported seaweed species in its seas. Some specific species, such as *Gelidiella acerosa*, *Gracilaria* spp., *Sargassum* spp., *Turbinaria* spp., and *Cystoseira trinodis* are cultivated for the production of agar, alginates, and liquid seaweed fertilizer.
5. Abundant seaweed resources are found along the Tamil Nadu and Gujarat coasts, as well as around Lakshadweep and the Andaman & Nicobar Islands. Notable seaweed beds exist around Mumbai, Ratnagiri, Goa, Karwar, Varkala, Vizhinjam, and Pulicat in Tamil Nadu, Andhra Pradesh, and Chilka in Orissa.

Significance:

1. Seaweeds act as bio-indicator by absorbing excess nutrients and signalling marine chemical damage caused by waste from agriculture, industries, and households, often leading to algal blooming.
2. They play a vital role in restoring ecosystem balance.
3. Seaweed is a nutritional powerhouse, rich in vitamins, minerals, and dietary fibre.
4. It is used in various food products, from sushi and salads to snacks and thickeners.
5. Many seaweeds contain anti-inflammatory and anti-microbial agents. Seaweed is the best source of iodine.
6. Seaweed extracts are used in a wide range of products, including cosmetics, pharmaceuticals, and bioplastics. They offer sustainable alternatives to conventional options.
7. Seaweed absorbs carbon dioxide from the atmosphere as it grows, making it a potential tool in the fight against climate change. Studies suggest cultivating and sinking seaweed could

effectively store long-term carbon.

8.

Seaweed farming provides income and empowers coastal communities, particularly women and small-scale farmers. It requires minimal investment and offers relatively quick returns.

9. Seaweeds are utilized for various purposes, including laxatives, pharmaceutical capsules, goiter treatment, cancer therapy, bone replacement, and cardiovascular surgeries.

Government initiatives regarding Seaweed:

1. Seaweed Mission aims to commercialize seaweed farming and processing for value addition. It also aims to increase cultivation along India's 7,500-kilometer coastline.

2. The Indian Council of Agricultural Research (ICAR)- Central Marine Fisheries Research Institute (CMFRI) has successfully commercialized two seaweed-based nutraceutical products, Cadalmin™ Immunalginate extract (Cadalmin™ IMe) and Cadalmin™ Antihypercholesterolemic extract (Cadalmin™ ACE).

3. These products, developed with eco-friendly 'green' technology, aim to boost anti-viral immunity and combat high cholesterol or dyslipidemia (imbalance of cholesterol).

4. Multi-Purpose Seaweed Park has been established in Tamil Nadu.



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