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Shortcomings of Indian Chemical Industry: TIFAC

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Why in News

Recently, a report by the **Technology Information Forecasting and Assessment Council (TIFAC)** has **highlighted the shortcomings of the Indian chemical industry** which prove to be barriers in competing with China.

Key Points

- India **does not have enough technology, plants and infrastructure** to manufacture key chemicals in a cost-effective and less polluting manner.
- India has nearly **stopped manufacturing several key Active Pharmaceutical Ingredients (API)**.
 - India has **given up the manufacturing of APIs** for ascorbic acid, aspartame and antibiotics like rifampicin, doxycycline, tazobactam acid and even steroids.
 - **Production of intermediates** such as atorvastatin, chloroquine, gabapentin, ciprofloxacin, cephalosporins, immunosuppressants has also been **stopped**.
- India **depends on China for 67% of chemical intermediates and API** that it needs to manufacture drugs and export.

India **also depends on the USA and Italy** for API.
- The chemical industry is almost entirely **dependent on China for chloroquine and hydroxychloroquine (HCQ)**.
 - Hydroxychloroquine is an **oral drug** used in the **treatment of autoimmune diseases** like rheumatoid arthritis.
 - In March 2020, the **Indian Council of Medical Research (ICMR)** **suggested its use to contain the spread of Covid-19** for restricted populations.
- Manufacturers are **unable to meet the price** at which chemicals are produced by China.

Solvent and chemicals **manufacturing costs in India are over 15% more** than in China.

- The **share of Indian bulk drugs and intermediates in the total pharmaceutical export mix reduced** to 20% in 2018 from 42% in 2008.

Active Pharmaceutical Ingredients

- These are significant ingredients in the manufacturing of drugs and are also called bulk drugs.
- The Hubei province of China is the hub of the API manufacturing industry.

Pharmaceutical Intermediates

These are chemical compounds which form the building blocks of the APIs and are produced as a by-product during the production of API.

Suggestions

- **Need for mission mode chemical engineering** with defined targets for uninterrupted synthesis of API molecules.
- **Creation of mega drug manufacturing clusters** with common infrastructure in India.
- **Development of a technology platform for biocatalysis** for cost optimization and investing in the fermentation sector of large capacity.
Biocatalysis refers to the use of natural substances from biological sources (such as enzymes) to speed up (catalyze) chemical reactions.
- **Government encouragement for Indian companies** working in chemical segments.

Way Forward

- Implementation of **various recommendations** by TIFAC will help India to become **Atmanirbhar** (self-reliant) in the pharmaceutical sector by reducing its import dependence.
- More schemes like the **Promotion of Bulk Drug Parks and Production Linked Incentives** (PLI) are needed to reduce the manufacturing cost of bulk drugs and promote domestic manufacturing.