

JULY 4TH WEEK VITALS COMPILATION

What is Bio-Stimulants? How they play a key role in enhancing plant growth but are now under closer scrutiny by the government. Explain (250 Words)

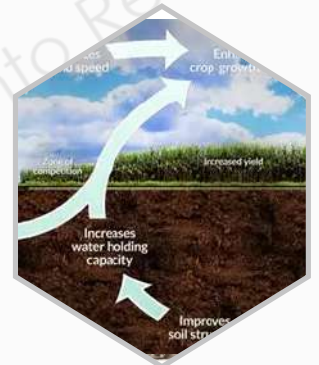
- » Bio-stimulants are **natural or synthetic substances** or **microorganisms** that, when applied to plants or soil, **enhance growth, nutrient uptake, resistance to abiotic stress (such as drought, heat, and salinity), and overall crop quality.**
- » Unlike traditional agrochemicals, **biostimulants do not directly supply nutrients or kill pests**; instead, they work indirectly by activating internal plant mechanisms.



Role in enhancing Plant Growth

Bio-stimulants offer several advantages over conventional agrochemicals:

- » **Enhanced Crop Yield and Quality:** They stimulate better nutrient uptake and physiological processes, leading to higher productivity.
- » **Stress Tolerance:** Improve plant resistance to extreme temperatures, drought, and salinity.
- » **Soil Health Improvement:** Promote microbial diversity and improve soil structure.
- » **Eco-Friendly:** Reduce dependence on synthetic fertilizers and pesticides.
- » **Cost Efficiency:** Long-term cost savings through improved crop resilience and soil fertility.



Why the focus on development of Bio-Stimulants?

- » India's growing population and the need for sustainable agriculture have led to a **surge in demand for bio-stimulants.**



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» Factors driving this growth include:

- a) Increased awareness of organic and chemical-free farming
- b) Government incentives for sustainable agricultural inputs
- c) Export potential for organic and residue-free crops

» India is also emerging as a **key manufacturer and exporter of biostimulants**, with several domestic firms investing heavily in R&D and new formulations.

Why are they under scrutiny of Government?

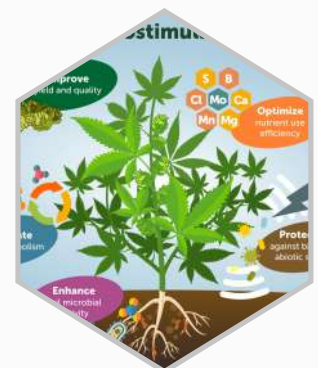
Bio-stimulants were largely unregulated in India until recently. This led to the proliferation of substandard products in the market, many of which failed to deliver promised results and are with following concerns :-

- » **Lack of standardization:** Products vary widely in composition and effectiveness.
- » **Quality concerns:** Some products may not meet efficacy or safety benchmarks.
- » **Farmer protection:** Ensuring that farmers are not misled by unproven or substandard products.

To address this, the **Ministry of Agriculture and Farmers' Welfare** has taken steps to bring biostimulants under a regulatory framework.

Way Forward

- » As India strives to make agriculture more sustainable, **biostimulants are poised to play a vital role.**
- » A policy shift that aims to ensure **transparency, efficacy, and farmer safety.**
- » The government must **Simplify and digitize** the approval process & **Support R&D through grants and incentives**



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What is Climate Finance Taxonomy? How it has failed to address the challenges posed by Indian environment? (250 Words)

- » **Climate finance is crucial for tackling climate change**, and as India works towards its climate goals, **a clear classification system is essential.**
- » To address this, the **Reserve Bank of India (RBI)** and other regulators are developing a **Climate Finance Taxonomy (CFT)** to define "green" or climate-aligned financial activities.
- » However, the draft **CFT has faced criticism** for not adequately reflecting India's specific socio-economic and environmental realities.



What Is a Climate Finance Taxonomy?

- » A climate finance taxonomy is a **standardized framework that classifies economic activities based on their environmental objectives**—mitigation, adaptation, resilience, etc.
- » It helps **financial institutions, investors, and policymakers to direct capital towards environmentally sustainable projects.**



India's Climate Finance Needs and Challenges

- » **High Climate Vulnerability:** India is among the most climate-vulnerable countries, facing frequent floods, heatwaves, droughts, and cyclones.
- » **Development Imperatives:** Over 65% of the population is still reliant on agriculture, and nearly 200 million people live in multidimensional poverty.
- » **High Energy Demand:** India's energy consumption is expected to double by 2040. Managing the energy transition while ensuring access is critical.



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- » **Informal Sector Dominance:** Around 90% of India's workforce is employed in the informal sector, which remains largely unaddressed in mainstream climate finance discussions.

Shortfall of India Draft of Climate Finance Taxonomy

- » India's draft Climate Finance Taxonomy faces **key shortcomings**, including an **overemphasis on mitigation** while **neglecting adaptation needs**, **lack of focus on social inclusion and just transition**, and **reliance on global models** not suited to India's context.
- » It favours large **private projects over MSMEs and community-led efforts**, uses vague terminology without clear benchmarks, and **excludes transition finance for carbon-intensive sectors—risking economic and social disruption**.



Way Forward

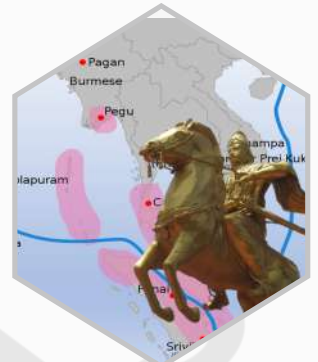
- » **Prioritize adaptation** by including sectors like agriculture and urban resilience, guided by vulnerability assessments.
- » **Embed social goals** such as job creation, poverty reduction, and gender equality, with participatory decision-making.
- » **Adopt a tiered structure** allowing for varying levels of climate alignment and transition pathways for hard-to-abate sectors.
- » **Develop regional taxonomies** tailored to local climate plans and priorities.
- » **Strengthen capacity and data systems** for better project evaluation and accountability.
- » **Ensure inclusive governance** by involving diverse stakeholders and enabling regular reviews.



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Chola dynasty's contributions to governance, infrastructure, and local democracy hold greater relevance in contemporary India. Discuss the key aspects of Chola governance that can serve as valuable lessons for modern India. (250 Words)

- » The legacy of the **Chola dynasty** in its **administration, infrastructure, and governance systems**, holds vital lessons for contemporary India.
- » During the **Aadi Thiruvathirai festival at Gangai Konda Cholapuram**, Prime Minister Narendra Modi highlighted the enduring **relevance of Chola governance**, urging **modern India to draw lessons** from the past to enhance trade, protect sovereignty, and **reform administrative structures**.



Lessons from Chola Dynasty

1. Infrastructure Resilience:

- » The Cholas built enduring infrastructure, with the **Brihadisvara Temple** as a prime example of their engineering brilliance.
- » The temple's resilience, surviving over 1,000 years and **frequent earthquakes**, highlights **advanced seismic-resistant techniques**.
- » Modern India can learn from these **ancient methods to improve infrastructure, especially in earthquake-prone regions**.



2. Addressing Modern Infrastructure Issues:

- » India faces frequent accidents involving **poorly constructed buildings and bridges**.
- » Drawing inspiration from Chola's lasting structures can improve the **safety and durability of modern infrastructure**.
- » Studying Chola techniques could help build **earthquake-resistant urban structures, preventing loss of life**.



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3. Water Management Innovation:

- » The Cholas had sophisticated **water management systems**, including reservoirs, canals, and irrigation networks.
- » This system ensured **agricultural productivity and stability by balancing water use** during both scarcity and floods.
- » Modern India could adopt these techniques to **combat water crises, particularly in regions like the Cauvery delta, which continues to face water scarcity.**



4. Decentralized Governance:

- » Chola governance included **local village assemblies for decision-making, empowering people** in administration.
- » This **decentralized system** contributed to the empire's stability and prosperity.
- » Modern India struggles with **ineffective local bodies despite constitutional provisions**, leading to poor public services and accountability.



5. Revitalizing Local Governance:

- » Modi's call to install statues of Chola rulers can serve as a reminder of their **effective democratic practices.**
- » Revitalizing **local governance**, with functional autonomy for grassroots bodies, could address **governance challenges** and improve citizen engagement.



Conclusion

·The Cholas were not only warriors and builders but also statesmen who understood the **importance of sustainable governance and the welfare of their people.**

·Their water management practices, infrastructure resilience, and democratic processes could help **modern India address its challenges, from urban disasters to water crises to inefficient local governance.**

