

IIT KHARAGPUR | STRATEGY CASE COMPETITION | 2023

CASE THUS FAR

Globally economists widely believe that agriculture plays a key role in helping developing nations achieve high income status.

There are multiple ways to boost GDP growth and overall economy for India. While services (55%) and industrial sector (25%) are a strong part of India's economic growth, they also have a corresponding import to sustain that contribution. Trade deficits weaken the currency and limit the GDP growth quite a bit.

Agriculture on the other hand contributes 20% annually to India GDP and witnessed \$23 Billion worth of Agri exports in 2022 while requiring negligible imports since land, energy and fertilizers and labor are all available domestically. This has significantly helped India's foreign exchange in an inflationary and rising interest rate environment where major currencies across the world witnessed significant depreciation against US Dollar in 2022.

CHALLENGE: LOW CARBON, HIGH GROWTH INDIAN ECONOMY

You are a team member of Ministry of Finance, India and are tasked with developing an innate strategy to boost India's GDP through Agri sector inclusive of climate change and decarbonization (net zero) goals.

Potential strategies to accomplish this are

- Accelerating agriculture exports
- Utilizing leftover biomass from farms (after harvesting) to produce biofuels, green hydrogen or biobased chemicals.
- Produce biochar (from biomass or manure) to sequester carbon dioxide (carbon sink) as well as use it as an organic fertilizer on the farms (United Nations SDG 13 Climate Action)
- Use the dairy manure from farm cattle to produce biochar and renewable natural gas (RNG) and adhere to sustainable or regenerative agriculture practices (United Nations SDG 2 Sustainable Agriculture)
- Generate carbon credits (offsets) from above initiatives that are fully validated and build a voluntary carbon marketplace in India.

- Increase venture capital investments in agritech startups that enhance yields, protect crops, improve soil health and nutrition while reducing water as well as fertilizer consumption.

KEY OBJECTIVE

What strategy would you create here that increases Agri exports, addresses climate & sustainability goals and boosts income for farmers while increasing renewable energy/biofuels production biomass or organic waste.

Possible pathways to accomplish the objectives are endless but you need to come up with a well thought and planned strategy that convinces the committee members in an insightful way.

GUIDELINES

Below are some pointers you could use during your research.

Step 1 GDP & Economy

- What role does exports play in building a strong economy?
- How does export influence GDP and currency exchange rate?

Step 2 Sector Research

- Why does agricultural sector have a larger potential in effectively boosting GDP and Indian Rupee (₹) compared to services & industrial sector?
- What is India's historical agricultural export growth in last 10 years?
- What key factors contributed to growth in Agri exports even though its overall GDP contribution fell in India during the same time while services & industrial sector grew?

Step 3 Economic Thesis

- Does a low carbon economy strategy help Indian economy grow and compete in international arena?
- What potential revenue streams can a farmer earn annually besides regular agricultural earnings?
- What is the potential of carbon credits in India and how can it create business opportunities as well as accelerate net zero goals?

Step 4 Technology

- Which are the promising startups/technologies globally that have demonstrated early-stage results in Agritech or FoodTech space?
- What role can AI, ML, IoT & Supercomputing positively play in Agri tech or climate tech?
- What are the key Agri technologies that India needs to boost farm yields, crop sciences, product nutrition and improve soil health?
- What level of investments does India need to be successful in Agri exports as well as sustainable agriculture?
- What cash crops could India focus on for exports that haven't been explored thus far. Where does the opportunity potential (fruits, vegetables, pulses, millets, rice, spices, nuts, cereals, grains etc.) lie based on global market demand?
- Biomass from farms could be used to produce biofuels, hydrogen, biochar, and other biobased chemicals. What could be the best possible use of biomass which is currently wasted (stubble burning) and why? How are US & European countries planning to utilize biomass currently?

Step 5 Economic Model

- What would be the negative impact on Indian economy in next 10-20 years by not aggressively pursuing climate, sustainability, or net zero goals. How deep has been the impact of climate change events in India.
- What is the maximum Agri exports India can accomplish without hurting local markets to serve its 1.4 billion people?

Step 5 Conclusion

- Based on above research, how will you execute this strategy while being mindful of domestic consumption. Is there anything you would exclude, have reservations, or exercise caution? What would you rather include that hasn't been explored or thought until now?

This is a guideline meant to stimulate your thought process and by no means is a definitive approach that you should necessarily adhere to. Please feel free to proactively create your own strategy based on your personal research and analysis on this subject.