

“SAMVED” HACKATHON 2026

TITLE PAGE

- Problem Statement ID – 6982f0e0087b2d7ffbfefbac0
- Problem Statement Title–***Data Driven Public Health Management System***
- Theme– *PRANAVAYU(BREATH OF LIFE)*
- Team ID–693589418e427b64eaaec302
- Team Name (Registered on portal)-***DIGITAL SAVIORS***



MIT

Vishwaprayas
University

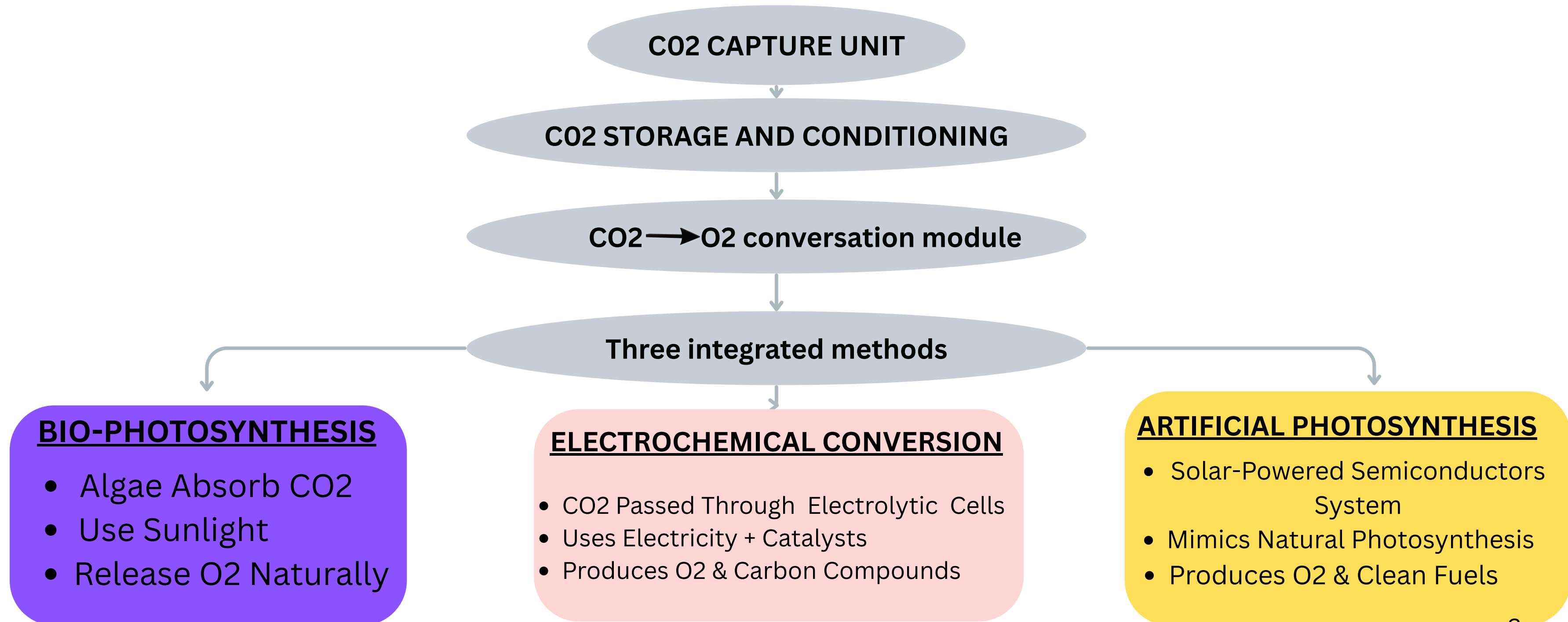


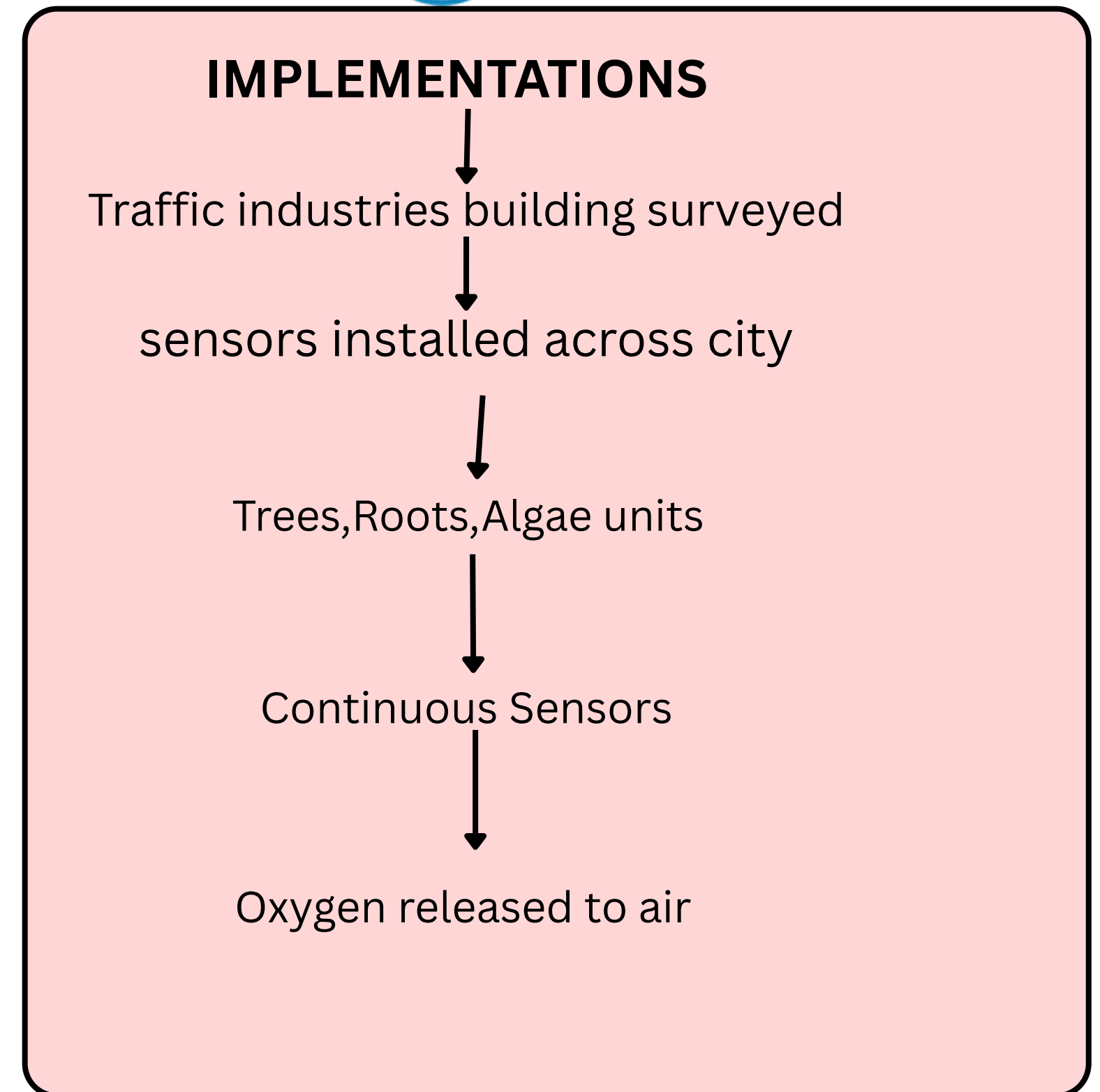
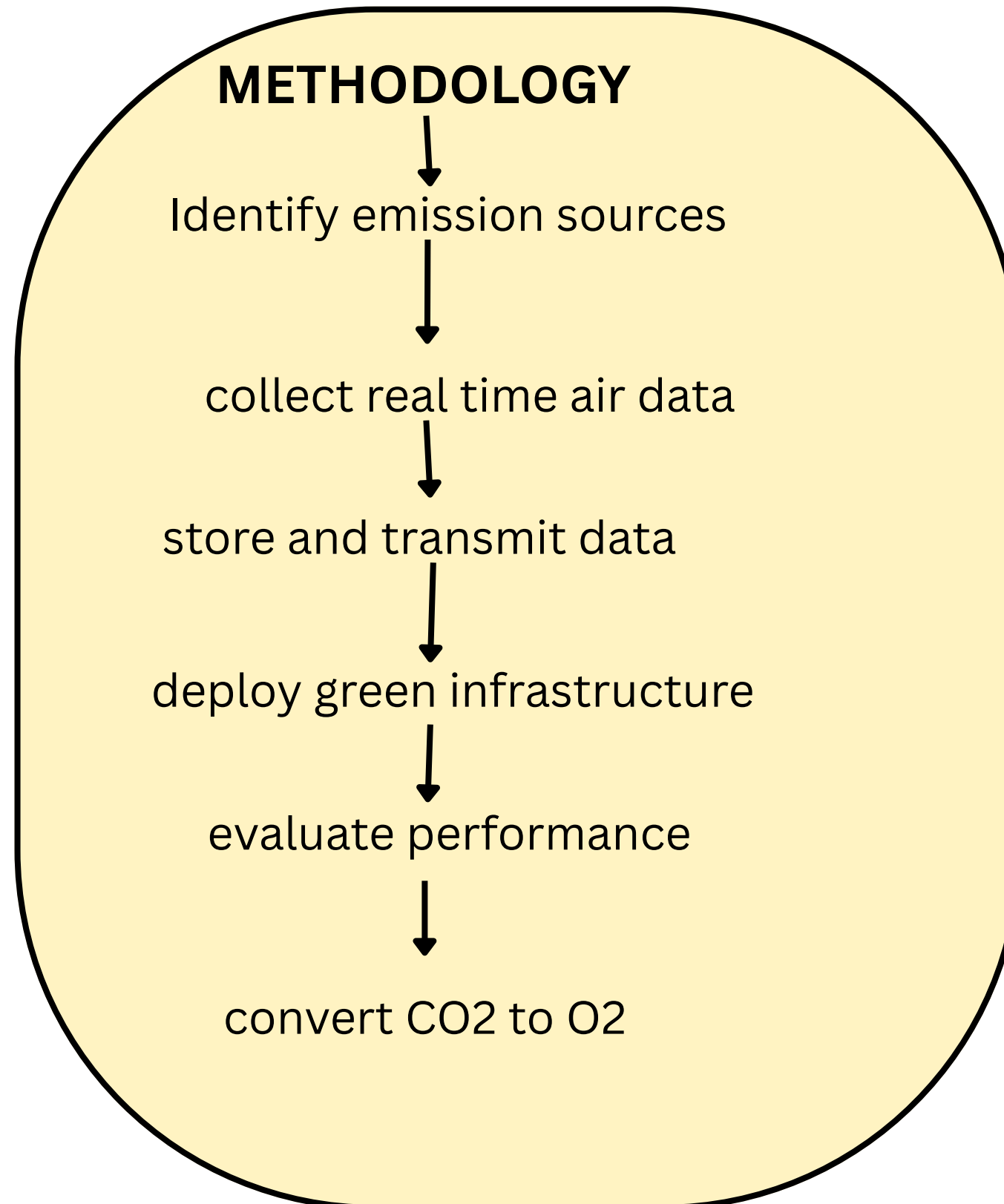
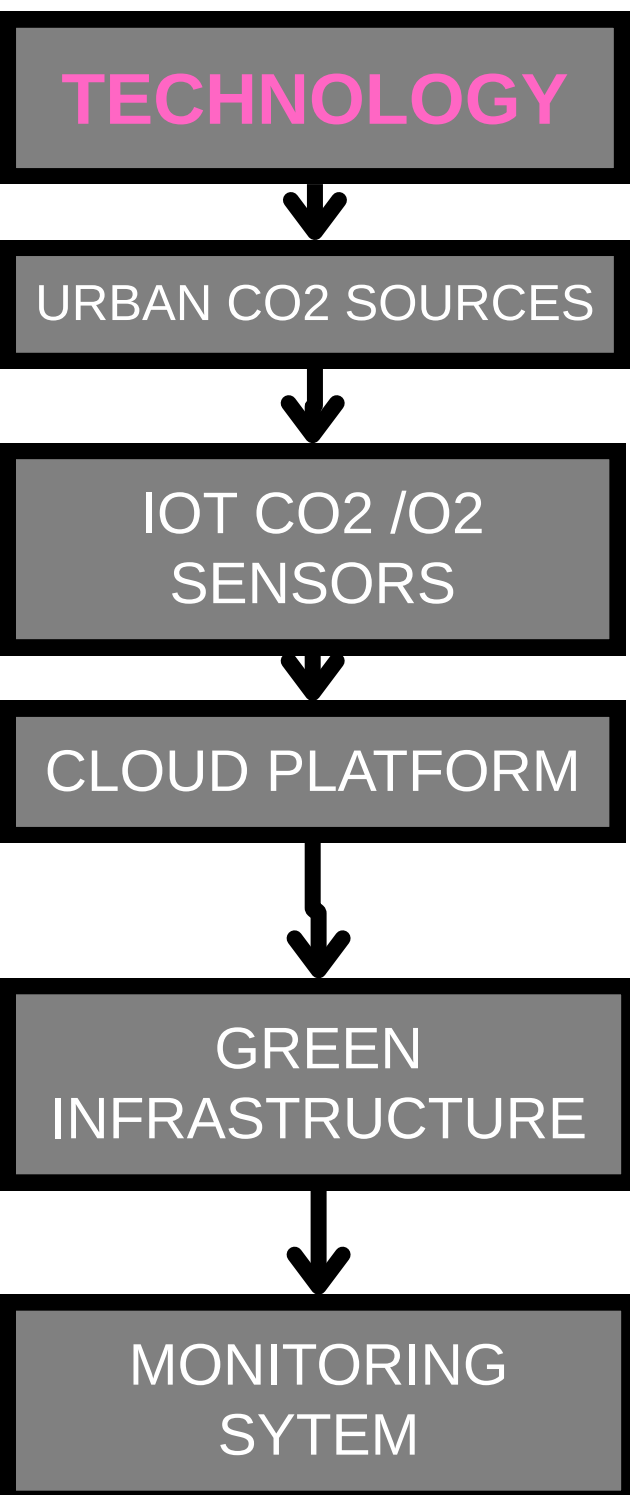
सोलापूर
महानगरपालिका,
सोलापूर

PRANAVAYU

[BREATH OF LIFE]

Pranavayu (co2-to-o2)delivers social well-being, economic growth, and environmental sustainability through clean technology.”





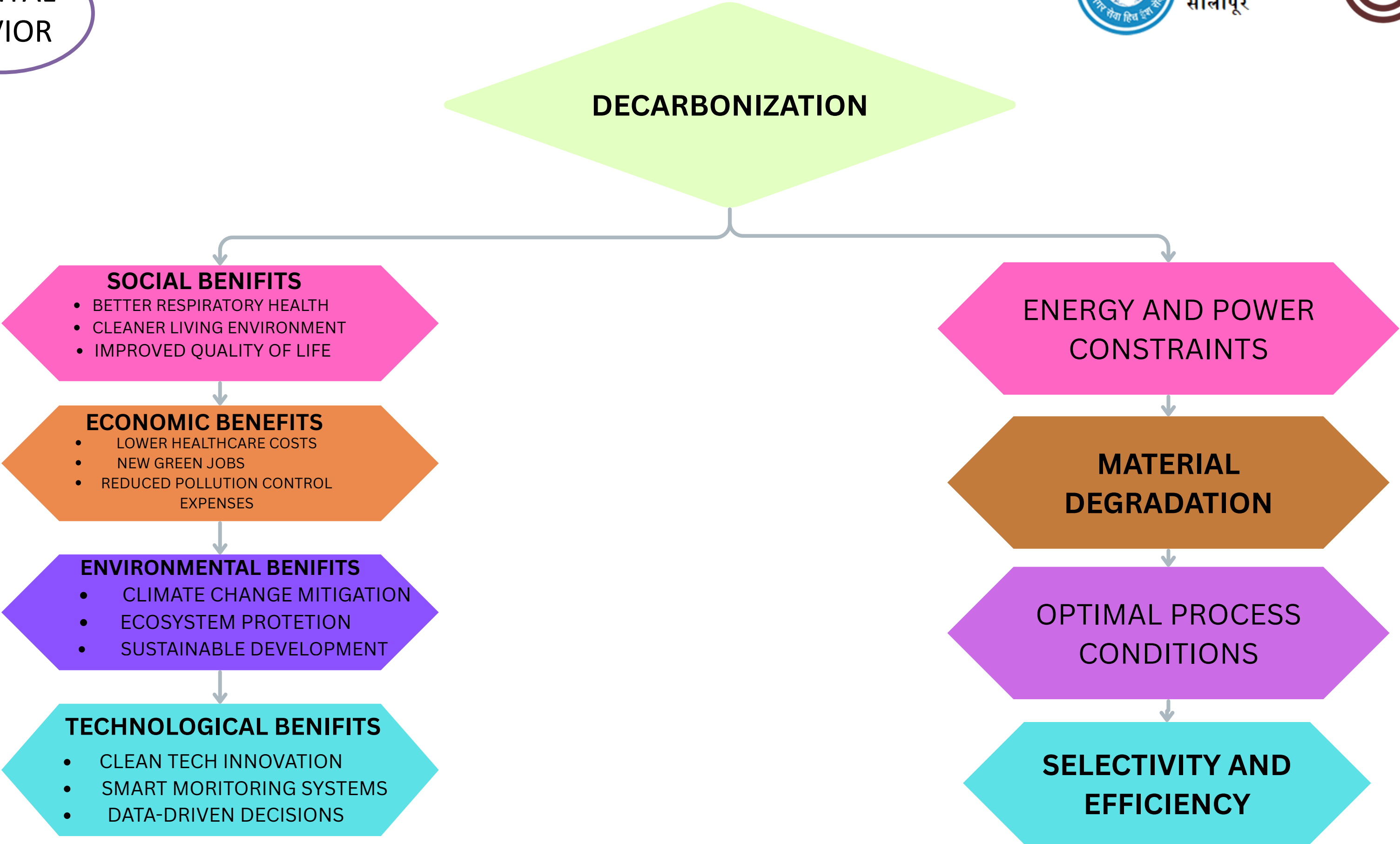
**SCIENTIFIC
FEASIBILITY****ECONOMIC
FEASIBILITY****ENVIRONMENTAL
FEASIBILITY**

- Technical feasibility
- Too slow at industrial co2 scales
- Feasible in nature

METHOD	COST	SCALABILITY
<i>Photosynthesis</i>	low	very low
<i>Artificial splitting</i>	very high	low
Algae reactors	medium	medium

- Bio-method:Eco-friendly
- Algae:needs water,nutrients,land

- **TECHNECAL CHALLENGES:**
 - High Energy Requirement
 - Low Conversion Efficiency
- **ENIVIRONMENTAL RISKS:**
 - Indirect CO2 Emission
 - Resource Consumption
- **OPERATIONAL CHALLENGES:**
 - System Stability
 - Safety Management



- Nanjing University:98.6% Efficient Direct Electrochemical Splitting (2025) in March 2025,Researchers From Nanjing University and Fudan University Published a landmark Paper in Angewandte Chemie.
- NASA'S MOXIE:(Mars Oxygen In-suit Resource Utilization Experiment) converts martian CO₂into breathable O₂ using solid oxide electrolysis, a process tested successfully on the perseverance rover.
- E. D. Wachsman, Electrolytic Reduction of CO₂ to O₂ and CO for ISRU with High Conductivity Solid Oxide Electrolytes, NASA Report Contract # NAG 10- 303 (2003).
- Zhou, G.; Yang, J.; Zhu, X.; Li, Q.; Yu, Q.; El-alami, W.; Wang, C.; She, Y.; Qian, J.; Xu, H.; Li, H. Cryoinduced closely bonded heterostructure for effective CO₂ conversion: The case of ultrathin BP nanosheets/gC₃N₄. Journal of Energy Chemistry 2020, 49, 89-95, <https://doi.org/10.1016/j.jechem.2020.01.020>.