

Land Constraints to Development Pathways: A Roundtable on SAFARI-DHARTI

Date: 28 May 2026
Time: 10:00 a.m.–1:00 p.m.

Venue: Hilton Bengaluru Embassy Manyata Business Park

Concept Note

The Challenge: Navigating India's Land Trilemma

India faces three competing land pressures, in addition to the usual demands of economic growth and industrialisation: feeding its growing population (food security); decarbonising and stabilising its energy system (energy transition); and protecting forests, wetlands, and biodiversity (ecological conservation).

Currently, these sectors largely function in silos. Energy targets often appropriate so-called 'wasteland' that communities rely on for grazing. Industrial and transport corridors cut through farmland, with compensation that overlooks livelihoods.

The country is witnessing a surge in land conflicts—over 68% involving common lands—as agriculture, forests, and renewable energy projects compete for limited space. This complexity cannot be addressed with disconnected maps or static surveys.

The SAFARI-DHARTI Tool

To visualise India's land not as a static map but as a living system, the Center for Study of Science, Technology and Policy (CSTEP) has developed a stock-flow simulation model called **SAFARI-DHARTI** (Sustainable Alternative Futures for India - Dynamic and Holistic Assessment of Resource Trade-offs for India). CSTEP's [SAFARI](#) is a system dynamics simulation model of India's energy, agriculture, and land-use systems. SAFARI-DHARTI is a regionally disaggregated version that provides a more detailed representation of land-use complexities across the country. It tracks how land 'stocks' (forests, cropland, wastelands, solar farms, wind farms, etc.) flow into one another based on various factors.

The model disaggregates India into five distinct hydro-meteorological zones (North, South, East, West, and Central). This allows us to see why a solar farm that works in Rajasthan might trigger a water conflict in Karnataka or why afforestation in the Eastern Ghats might shrink the food basket in Madhya Pradesh.



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The Discussion

This roundtable is not a product launch. It is a working session. We aim to present our tool, SAFARI-DHARTI, to an audience that understands land best, including experts in ecology, conflict resolution, renewable energy, and governance. Specifically, we will address the following questions:

1. What would you like to simulate? Which demand drivers or interventions should we modify to visualise your chosen future scenario?
2. Which real-world land conflict or decision should this model be able to simulate?
3. Are there areas where the model does not align with the ground reality or fails to capture key details?
4. To effectively support decision-making by government, industry, or civil society, what form should this model take: a dashboard, a policy brief, or an interactive map?

