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### The Challenge

Maine's forest-based economy and rural communities face radical and rapid change driven by disruptive technologies and a complex array of dynamic, interactive socio-ecological factors

### The Opportunity

Maine Innovation Economy Advisory Board (MIEAB) selected Maine-FOREST as a priority topic for potential NSF EPSCoR funding due to the alignment to the state's recent Science & Technology Plan

### Our Vision

Lead a comprehensively integrated research, education, and outreach program that fosters diversified and robust forest-based economies and rural livelihoods



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# FOREST-BASED OPPORTUNITIES FOR RESILIENT ECONOMY, SUSTAINABILITY, AND TECHNOLOGY (MAINE-FOREST)

## Future Opportunities for Decarbonization

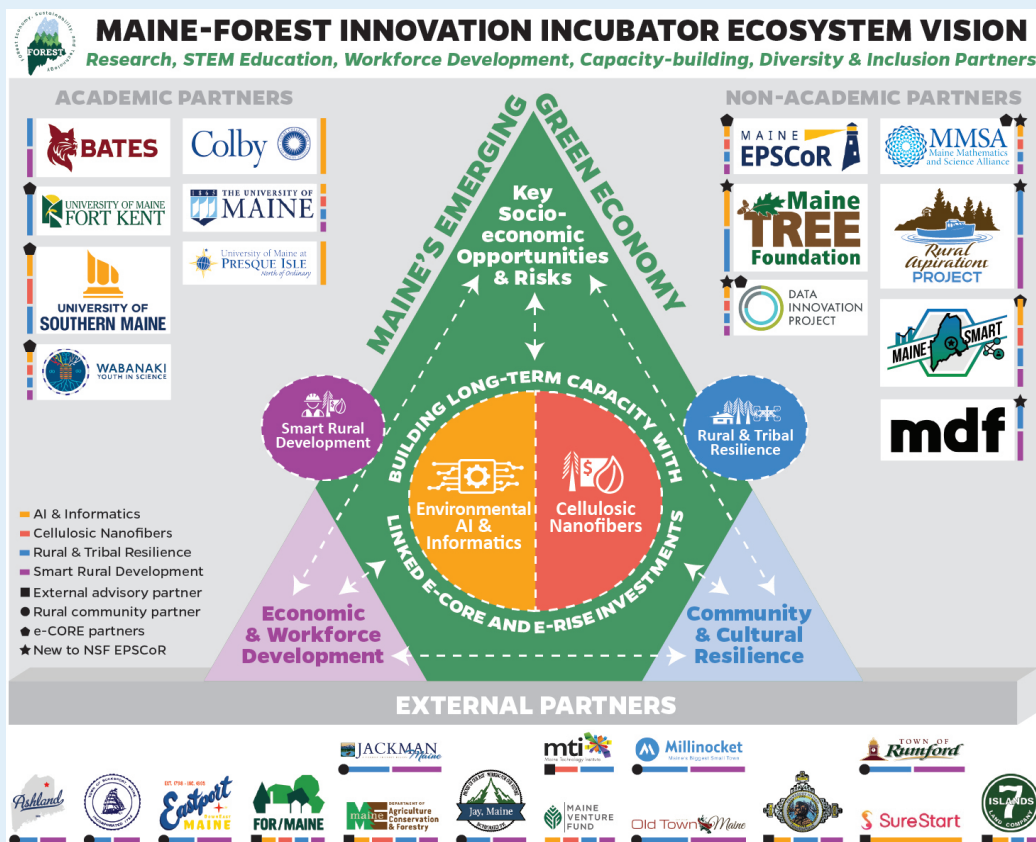


NSF EPSCoR E-Rise Award #2416915

### Background & Goals

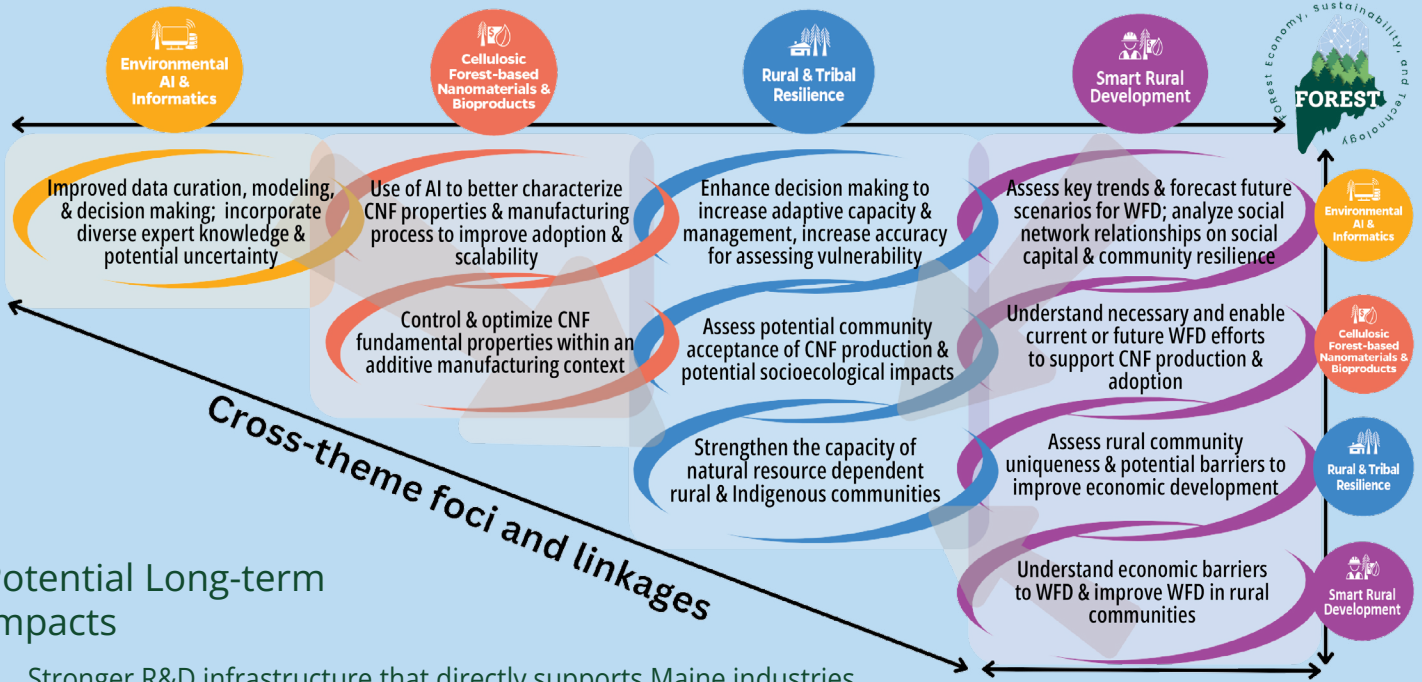
- ✧ Maine's forest products sector annually contributes \$8-10B to the state's economy.
- ✧ Negative impacts from paper mill closures, decline in available wood markets, reduced harvesting, shift in the use of paper, and critical labor market disruptions in Maine's communities that rely on a robust forest economy.
- ✧ A majority of Maine's forests have reached a critical biological tipping point due to the lack of robust fiber markets and forestland threatened by disease and pests along with the ongoing challenges created by climate change.
- ✧ Maine's forestlands and the associated products it generates offset 60-75% of Maine's greenhouse gas emissions, with the potential to offset significantly more through improved forest management and innovative wood products.
- ✧ Maine's forests can provide climate-smart products that support growth in these rural communities
- ✧ A new strategy is essential to sustainably and effectively manage resilient forests in the face of these threats.
- ✧ A more diverse forest-based economy could enhance the utilization of renewable forest goods and services, and leverage the growing advanced bioproducts sector in Maine.

### Our Vision



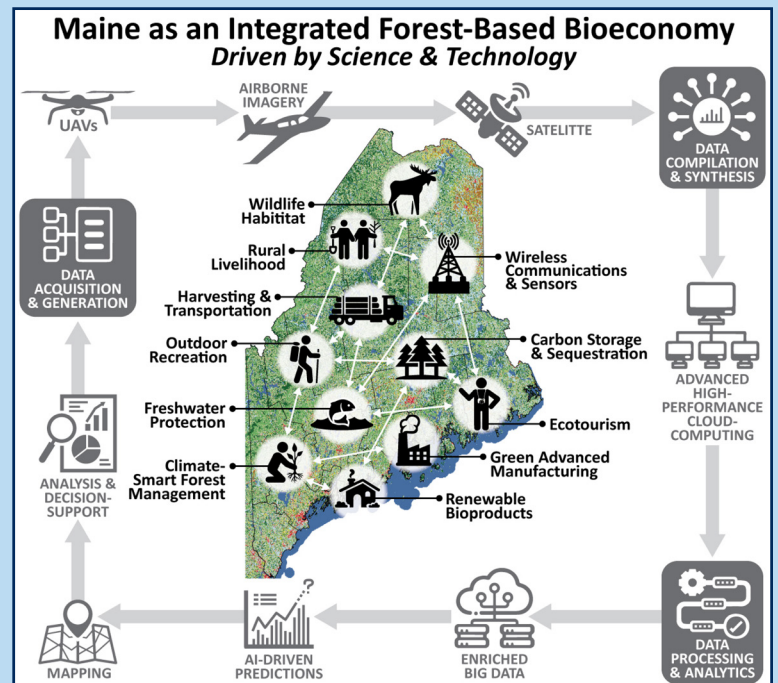
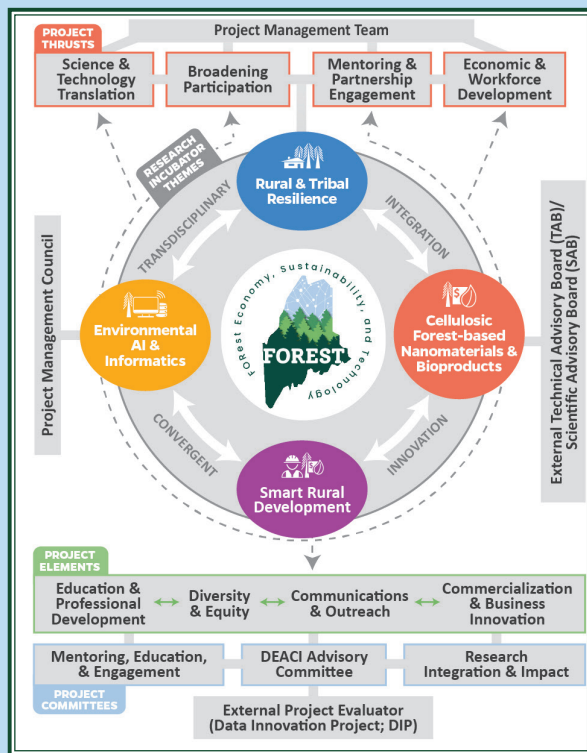
# Our Approach

Expand on the University of Maine's comprehensive research capacity to build a program that considers the entire forest socio-ecosystem across all potential dimensions within the broader context of rural economic and livelihood diversification, through a 4-pronged approach:



## Potential Long-term Impacts

- Stronger R&D infrastructure that directly supports Maine industries.
- Utilization of data science and AI to understand forest conditions and forecast future changes using deep learning algorithms.
- Expanded framework for new product development and the role of diverse stakeholder values and perspectives in shaping these decisions.
- Provide opportunities for STEM engagement and workforce development (e.g., AI and bioproducts).
- Collaborative knowledge network comprising members from research, green economy, Indigenous, landowner/manager, and conservation groups who will sustain growth and innovation for the project.
- Increased awareness, interest, and capacity for green collar opportunities.



Maine-FOREST is well aligned with key priority focal areas of the state's recently released Science & Technology plan ([umaine.edu/mieab](http://umaine.edu/mieab)), which includes formal and informal learning opportunities.

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