A Partnership between FOR/ME, the University of Maine’s Center for Research on Sustainable Forests & Maine EPSCoR
Introduction

On July 10, 2023, members of the University of Maine’s EPSCoR team were invited to attend a meeting of the Forest Opportunity Roadmap / Maine (FOR/Maine) Executive Council in Augusta, ME. FOR/Maine, formed in 2018 after the closure of several paper mills in the state, is a collaborative organization that brings together representatives from the forest industry, state and local governments, schools, and nonprofits to help guide Maine to strategically adapt and capitalize on changing markets in the global forest economy. The Executive Council includes representatives from each of the aforementioned sectors who are collaborating on a roadmap for Maine’s forestry future with additional recent assessment studies and strategic plans.

At this meeting, the Maine-FOREST Track-1 planning grant team was invited to discuss opportunities and needs that National Science Foundation (NSF) research funding might address in the context of Maine’s forest sector and related rural communities. Further, council members were provided information on the state’s Science & Technology plan (Maine Innovation Economy Action Plan) and the future of NSF EPSCoR flagship programming.

FOR/Maine members were asked to discuss their interests for future NSF EPSCoR proposals, to help ensure that the Maine-FOREST team develops proposals that will effectively advance Maine’s economy if awarded.
Members of the FOR/Maine Executive Council had the opportunity to travel to Finland in spring 2023 and meet with forest industry leaders. The trip included tours of mills and other forest-product facilities and inspired thoughtful discussions about the similarities and differences between the forest industries in Maine and Finland.

Many of the components for Finland’s successful wood-building ecosystem also exist in Maine, but key differences lie in the social license to operate and public acceptance of intensive forestry. Finland provides significant state support that helps enable the industry, and the public in turn has enthusiasm for wood and forest products that reinforces state support. Finland also encourages collaboration between the forest industry and art institutions, which brings together young people and other creative individuals in an ongoing discussion about forestry in the nation.

Maine’s forests differ from Finland’s in several key ways:

- The forests of Maine are rich in biodiversity that is not as visible in the forests in Finland.
- Finland has four commercially managed species of trees, Maine has 39.
- Relative to the US, forest management is much simpler in Finland. That is, the industry as a whole is connected to the forest, such that a mill operator could approach a landowner and discuss the number of trees on a parcel of land which are ready and available for commercialization.
- Finland utilizes a logging training school that provides education opportunities in the industry for anyone who might be interested. The school offers a two-year training program to ages 16 and up, including programming for young adults as well as professionals looking to make a career change. Finland has exported this training school model to other nations and has shown willingness to do the same in the United States.
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A key takeaway from the trip was the high level of automation on display in Finland, where several facilities are run by much fewer staff than might be expected. An outcome of Finland’s investment in the industry as a way for the state to generate revenue has allowed for quicker turnover of technology and greater efficiencies in its use. The public display and access to forest products and their applications across multiple sectors, not just in building and housing, serve to encourage buy-in for the industry from the general public. Finally, Finland also invests heavily into research and development for the forest sector, with strong support for universities, national laboratories, and a network of researchers linked to the industry.
The FOR/Maine group has partnered with the Maine Department of Labor (DOL) to promote the forest industry. This partnership is working towards developing career pathways throughout the industry that will be mainstreamed into the state’s workforce platform and online career portal, with the hope that this will help improve public awareness about forest product careers. The FOR/Maine’s workforce development committee has sought to identify priority occupations throughout the industry and build skills development programs for individuals interested in those occupations.

In addition to the DOL partnership, FOR/Maine has been hosting focus groups throughout the state to identify public perceptions of the industry and aid in connecting communities to training. Four focus groups were held in Livermore Falls, Bangor, Presque Isle, and Machias. Key takeaways surrounded the reported perceptions of the forest industry, which represent a challenge for the field to overcome. The public in Maine views forest product occupations as volatile and unattractive. Industry participants emphasized the strong need for drivers and a new commercial driver’s license program, and the need to develop interchangeable skills across industries to ensure workers have options as they enter a more volatile landscape for employment.

To address education challenges, FOR/Maine is working to develop an industry-based course that will be held through Washington County Community College (WCCC). The Sunrise County Economic Council and WCCC are developing this program based on an existing course at WCCC that introduces students to the lobster industry, building on the success of that structure to support the forest industry. The program will be held online and provide a credential upon completion. At the secondary level, there has been a resurgence in high school training programs, with Brewer High School and Washington County both reviving their training courses for students interested in forestry.
FOR/Maine is working to attract new businesses to Maine, speaking with both domestic and international groups about investment opportunities in the state. Feedback has been mixed, with companies expressing concerns about the macroeconomic conditions in the state and a lack of certainty in the regulatory environment, as well as the cost of raw materials for forest products. The state’s 10-Year Economic Development Strategy (2020-2029) presents a regulatory continuity and predictability plank that will help ease some of these concerns.

The FOR/Maine group also partnered on a successful NSF Engines Development Award proposal led by the Northern Forest Center, Coalition of Northern Forest Innovation & Research. Along with University of Maine researchers, FOR/Maine will collaborate with other research institutions and community organizations across Northern New England to devise new forest products and management strategies. The project focus is on the development of the bioeconomy and an assessment of how New Hampshire, Vermont, and Maine can collaborate towards a shared vision of a forest products development roadmap in the region. Areas of focus will include planning and alignment within the region, use-inspired development, translating innovation into practice, and aligning workforce development with current and future opportunities in the forest products industry.

Representatives from the University of Maine and Maine EPSCoR were invited to present information on the 2023 Maine Innovation Economy Action Plan (i.e., the state’s Science & Technology plan) as well as the NSF EPSCoR E-CORE and E-RISE programs, with a particular focus on research and development in the forest sector. The FOR/Maine council was asked to provide feedback and ideas on how the five goals of the Science & Technology plan could tie-in to the industry. It was noted that Maine has been weighted towards service and tourism sectors in recent decades and a pivot to building a stronger manufacturing presence could aid the state’s GDP. Although there are building blocks to work with in the state, such as the Maine Technology Institute and the FOR/Maine council, state government funding will be important for developing and incorporating new technologies in Maine’s heritage industries.

FOR/Maine council members reflected on the lack of R&D funding from larger corporations, which is common nationally in most sectors, due to a focus on newer companies and the risk-averse nature of those more established firms in Maine. However, larger corporations may be able to use R&D budgets and external funding sources to accelerate their R&D programs and bring new innovations to the market on an advanced timeline.

Discussions about the NSF E-CORE and E-RISE programs centered on proposed projects to evaluate the state’s research and development capacity over time. Metrics proposed to measure the state’s research capacity included the number of faculty, percentage of research personnel, number of degree programs, number of research centers, and the percentage of funding dedicated to research in forestry related technologies (Figure 1). Feedback from the council suggested that the state should be looking to compare itself not only to regional competitors, but to states with

Infographic courtesy FOR/Maine.
CONCLUSIONS

The expertise that members of the FOR/Maine council have collected under the organization’s umbrella will be invaluable as Maine develops its research and education programming to better support the forest industry. Although the council is currently undergoing a change in leadership and returning to in-person work, including among their subcommittees, the ongoing partnership between Maine EPSCoR and FOR/Maine will benefit both parties as each looks to ensure the future of forest products in the state.

larger, more developed forestry sectors, such as Arkansas, Alabama, Mississippi, Pennsylvania, and Wisconsin. This broader comparison should further strengthen the R&D capacity assessment.

Education components of the E-CORE and E-RISE programs were also discussed, including building forestry relevant skills among K-16 students and adult professionals. Planned programming includes introducing indigenous knowledge into university-level science education, the expansion of a forest ecology research network, and creating learning opportunities for Maine’s educators. These programs will be aiming to pull the industry together under one umbrella for education and R&D, similar to what FOR/Maine has accomplished. Of note, the scope for the planned future programs stretch beyond the traditional forest sector by encompassing AI and computer science, which might create additional opportunities to increase career awareness in this sector. At the same time, FOR/Maine has developed a detailed workforce development plan and is working to implement it, which creates numerous synergistic opportunities that will be further explored in the coming weeks.

Figure 1. Comparison of forest sector R&D state capacity across both EPSCoR and non-EPSCoR jurisdictions.
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