Maine Economy and Workforce

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Maine economic growth has slipped on to its own track after years of consistently tracking US growth.
Structural shifts in economy: declines in manufacturing have leveled off since 2010, while eds/meds and prof & tech svcs grow.
Big declines in pulp and paper employment; though wood products has rebounded since 2010.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Harvesting</td>
<td>3,990</td>
<td>-334 -8%</td>
<td>-132 -3%</td>
</tr>
<tr>
<td>Paper Manufacturing</td>
<td>4,635</td>
<td>-7,620 -62%</td>
<td>-2,762 -37%</td>
</tr>
<tr>
<td>Pulp, Paper, and Paperboard Mills</td>
<td>3,314</td>
<td>-6,893 -68%</td>
<td>-2,572 -44%</td>
</tr>
<tr>
<td>Converted Paper Product Manufacturing</td>
<td>1,321</td>
<td>-727 -35%</td>
<td>-190 -13%</td>
</tr>
<tr>
<td>Wood Furniture</td>
<td>882</td>
<td>-613 -41%</td>
<td>-201 -17%</td>
</tr>
<tr>
<td>Wood Product Manufacturing</td>
<td>4,875</td>
<td>-2,458 -34%</td>
<td>483 11%</td>
</tr>
<tr>
<td>Veneer, Plywood &amp; Engineered Wood Product</td>
<td>627</td>
<td>-534 -46%</td>
<td>132 27%</td>
</tr>
<tr>
<td>Other Wood Product Manufacturing</td>
<td>2,143</td>
<td>-1,520 -41%</td>
<td>115 6%</td>
</tr>
<tr>
<td>Sawmills and Wood Preservation</td>
<td>2,106</td>
<td>-404 -16%</td>
<td>236 13%</td>
</tr>
<tr>
<td>Forest Products Industry Total</td>
<td>14,383</td>
<td>-11,024 -43%</td>
<td>-2,612 -15%</td>
</tr>
</tbody>
</table>
Workforce and labor market conditions biggest constraint to economic growth and competitiveness
We have an age composition problem, and Maine is at the leading edge. Who will replace the retiring boomers?
Population and workforce challenges will differ regionally. Central and rim counties will be most strained by population out-migration and aging pop.
Expected job category breakdown of a CLT facility/industry

Example business critical occupations:

- Adhesive Bonding Machine Operators & Tenders
- Woodworking Machine Setters, Operators, & Tenders
- Sawing Machine Setters, Operators, & Tenders
- Wood Assemblers and Fabricators
- Industrial Machinery Mechanics
- Log Graders and Scalers
- Drafters & Architects
- Engineers & Engineer Technicians
Example education and job training entry level credentials of CLT business critical occupations
As a nascent industry, there will be demands for specialized workers - some industry wide, some plant specific - limited in supply, but opportunities for adaptive skill sets from related industries.

Specific knowledge and skills in areas such as:

- Building and design codes, standards, and certs
- CNC machining
- Structural lumber, connections, and engineering
- Adhesive bonding
Where will the labor supply come from?
Background

Maine Harvest by Product Class

Industry in transition
Shifting employment opportunities

Crandall and Anderson (2016)
Background

Maine mills and closures

Industry in transition

Shifting employment opportunities

Potential labor mismatch
Background

Industry in transition
Shifting employment opportunities
Potential labor mismatch
Need to target young workers
Background

Industry in transition
Shifting employment opportunities
Potential labor mismatch
Need to target young workers
Out-of-state forestry students

MePLC (2016)
Methods

Study Area: Maine

Instrument: Questionnaires

Questionnaire Design
Methods

- Soft skills (9)

  - Motivating personnel
  - Public relations
  - Presenting and public communication
  - Recreation use management
  - Customer relations
  - Dealing with change
Below is a list of soft skills that may be useful to your place of business. Please indicate first the level of importance to your company of each skill, and your estimate of overall current employee knowledge of each skill. You may leave any row blank if not applicable.

<table>
<thead>
<tr>
<th></th>
<th>Importance to your company</th>
<th>Current employee knowledge</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Low 1</td>
<td>2</td>
</tr>
<tr>
<td>Sales</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Promotion</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Motivating personnel</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Public relations</td>
<td>✔</td>
<td>✔</td>
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</tbody>
</table>
Methods

- Soft skills (9)
- Areas of knowledge (10)

  Regulations: local and state

  Safety

  Wood properties and quality

  Certification standards

  Developing business plans

  Inventory, quality, and process control
Methods

- Soft skills (9)
- Areas of knowledge (10)
- Technical skills (15)

**Lumber grading**

**Log scaling and tree quality**

**CAD/CAM/CNC**

**GIS/mapping**

**Using growth and yield modes**

**Creating harvest plans/silviculture**
Methods

- Soft skills (9)  
  Living remotely in the field regularly

- Areas of knowledge (10)  
  Extended absences from home

- Technical skills (15)  
  Working in areas without cell phone coverage

- Work culture (5)  
  Living in areas without internet
  Non-traditional work hours (outside 7am-6pm)
Results: Employer and Student Gap Analysis

- No skill gap or unimportant: 41%
- Learn skill on the job: 32%
- Skill gap: 26%
# Results: Skill Gaps

<table>
<thead>
<tr>
<th>Soft Skills</th>
<th>Knowledge</th>
<th>Technical Skills</th>
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</thead>
<tbody>
<tr>
<td>Negotiating contracts</td>
<td>Finding market info.</td>
<td>Growth and yield models</td>
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<tr>
<td>Customer relations</td>
<td>Marketing</td>
<td>Financial analysis</td>
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<tr>
<td></td>
<td>Developing business plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product pricing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inventory and controls</td>
<td></td>
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Work Culture: Preliminary Survey Results

- **Living remotely in the field**
  - Employer level of importance
  - Student level of acceptance

- **Extended absence from home**

- **Non-traditional work hours**

- **Living in areas without internet**

Results: Spatial
Conclusions

- More need for soft skills may indicate that natural-resource based fields are less specialized than they used to be.
- Preparing students with soft skills is translatable to a number of career paths, while reducing existing skill gaps will enable them to secure better jobs following graduation.
- Despite perceptions that younger generations are less willing to accept conditions required in many natural resource jobs, we did not find evidence of a work culture mismatch.
- Do we have enough students in our forestry programs?
Strategies and ideas for building local workforce pipeline?

1. Training and Professional Development
2. Role of the Family
3. Recruitment
Training and Professional Development

- Available training
- Career opportunities
- Professional development
- Better manager/supervisor relationships
- Apprenticeship and training programs
- Workers council or union
- High quality incumbent workers
- Positive work culture and labor relations
Role of the Family

- Strong influence on career aspirations
- Foster family relationships
- *Bring your child to work day*
- Spousal employment
Recruitment – local and global

- Identify target groups
- Utilize recruitment agencies
- Business websites and social media
  - About section
  - Careers section
  - Translation

Richardson (2015), Weber (2016)
Cultivating internal pipeline includes bringing displaced workers back into the job market.
Strategies and ideas for attracting and retaining seasoned workers with adaptable skill sets and experience

Wage premiums

Selling on Quality of Place in Maine

Infrastructure support

Leverage workforce investment incentives or create new ones
The economic impact potential of CLT in Maine is sizeable, but should not be expected to replace pulp and paper.

Estimated economic impacts of a single CLT facility upon build-out. Five year average reported.

<table>
<thead>
<tr>
<th>Category</th>
<th>Units</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Total Employment</td>
<td>Individuals (Jobs)</td>
<td>404</td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>$ 32.373</td>
<td></td>
</tr>
<tr>
<td>Wages and Salaries</td>
<td>$ 15.230</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>$ 76.115</td>
<td></td>
</tr>
<tr>
<td>Value Added</td>
<td>$ 33.723</td>
<td></td>
</tr>
<tr>
<td>Jobs Multiplier</td>
<td>3.2</td>
<td></td>
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</tbody>
</table>
Thank you.
Questions?