



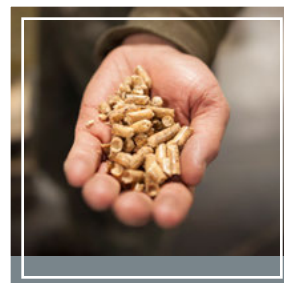
VERMONT FOREST FUTURE
STRATEGIC ROADMAP

REPORT 2 - SCENARIOS
OF THE FUTURE

MAY 2023

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VERMONT





VERMONT FOREST FUTURE STRATEGIC ROADMAP REPORT 2 - SCENARIOS OF THE FUTURE

VERMONT FOREST FUTURE STRATEGIC ROADMAP
REPORT 2 - SCENARIOS OF THE FUTURE
MAY 2023

Report 2 - Scenarios of the Future has been produced as part of the Vermont Forest Future Strategic Roadmap project which aims to develop a 10-year plan of recommended actionable strategies to protect the long-term viability of forest-based businesses and economy, via the Vermont Forest Future Strategic Roadmap.

This report summarizes the outcomes of the 'Vermont Forest Future Strategic Roadmap' scenarios of the future work. This included two 'Think Tank' workshops which were held on December 13, 2022, and January 31, 2023. Over 50 stakeholders participated in both workshops and developed the scenarios presented in this report. The Think-Tank workshops were followed by nearly 15 in-person and virtual engagement sessions, where stakeholders were able to review the scenarios and indicate their preference for a preferred future.

More details on this project and the associated survey data are available on the project portal:

lab2.future-iq.com/vermont-forest-future

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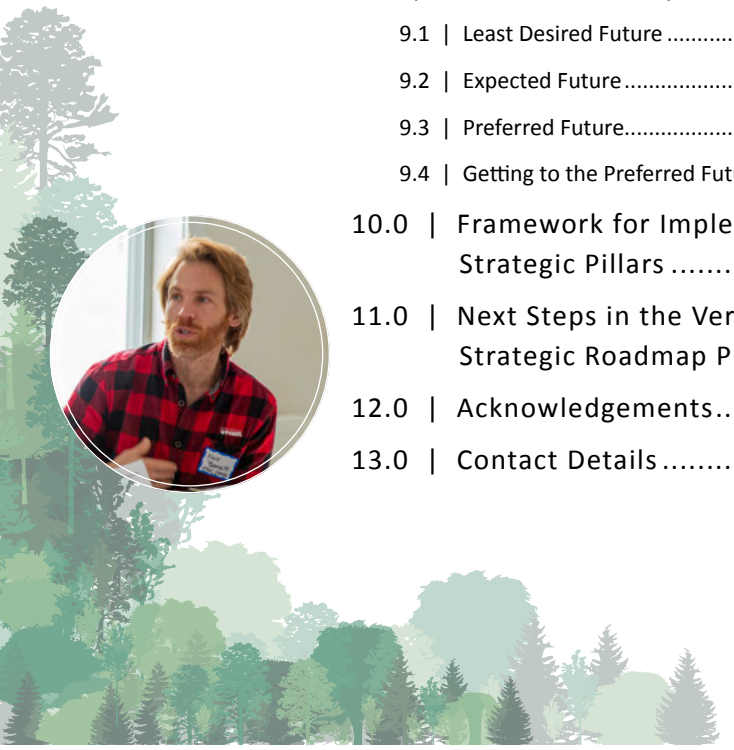


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This report lays out the findings from the future-orientated scenario planning work for the Vermont Future Forest Strategic Roadmap planning process. This work has identified a preferred future for the forest products sector and the forest economy.

KEY INSIGHTS – REPORT 2 – SCENARIOS OF THE FUTURE



DESIRE FOR SIGNIFICANT CHANGE

The scenarios of the future work, as outlined in this report, has identified that stakeholders have a significant desire for change. The exploration of the preferred future reveals that most participants are seeking significant change from the existing trajectory of the industry.



FOREST MANAGEMENT IS A KEY FUTURE SPLITTING THEME

The workshops and surveys have revealed a desire for intentional policy intervention, and public investment, to optimize conditions for healthy forests and a vibrant forest products economy. There is desire for an overarching forest management approach that focuses on maintaining forests that are resilient to climate change and support a viable and diverse forest economy.



DESIRE FOR PROACTIVE INVESTMENT IN INDUSTRY ADAPTATION

Overall, industry and community participants are seeking new investment in proactive industry adaptation. This includes proactively investing public and private resources to build strong cross industry linkages, spur new ideas and foster innovation. This would include efforts to build regional supply chains and promote the environmental credentials of new wood products. There is interest in boosting the brand awareness of Vermont forest products.



STRATEGIC FRAMEWORK FOR THE ROADMAP ESTABLISHED

A final part of the 'Scenarios of the Future' step in the overall planning process, was the development of a strategic pillar framework. This is an organizing framework that gathers stakeholder thinking into five pillars, that will help realize the preferred future.

1.0 | INTRODUCTION

This report documents key findings from Step 2 - Future Scenarios and Implications, as part of the Vermont Future Forest Strategic Roadmap.

Report 2 – Scenario of the Future, outlines a series of plausible 2035 future scenarios and their implications for the Vermont forest economy and forest products sector.

This report covers the planning work, which has included identifying key drivers, crafting a series of plausible scenarios, and identifying a preferred future for the forest economy and forest products sector.

VERMONT FUTURE FOREST STRATEGIC ROADMAP

The overall goal of the Vermont Forest Future Strategic Roadmap project is to evaluate the current state of Vermont’s forest economy and to identify the opportunities to strengthen, modernize, promote, and protect the forest economy into the future. This planning process is engaging users of Vermont’s forests in a robust public engagement process and will develop a 10-year plan of recommended actionable strategies to protect the long-term viability of forest-based businesses, via the Vermont Forest Future Strategic Roadmap.

Vermont’s forest economy provides more than 13,000 jobs, more than \$2.1 billion in total economic impact, and supports the growing outdoor recreational and tourism sectors.

The relationship between the forest economy and Vermont’s forest landscape is a balancing act of benefits and costs. Vermont’s forest economy relies on access to forestlands, while forest landowners rely on the support and benefits of a vibrant forest economy to maintain intact forestland.

VERMONT FOREST FUTURE STRATEGIC ROADMAP PROCESS



THIS REPORT



2.0 | HOW TO READ THIS REPORT

This report lays out the findings from the Scenarios of the Future work. More detail about the overall planning process can be viewed on the Vermont Forest Future Strategic Roadmap portal: lab2.future-iq.com/vermont-forest-future/.

The Scenarios of the Future process started with background exploration and analysis, through to building a range of future possible directions for the future of the Vermont forest economy. This Scenarios of the Future report addresses the scenarios developed during the Think-Tank workshops.

The work carried out in the scenario planning process represents robust 'future thinking' where stakeholders considered possible directions and the impacts and consequences of those directions. The process has drilled down deeper into what people saw as the optimal or preferred future for the Vermont forest economy. This understanding helps lay the groundwork for ascertaining 'how we get there'.

The workshops and surveys associated with the 'Scenarios of the Future' work were an opportunity for stakeholders from the Vermont forest economy to take a 'deep dive' into the future of the Vermont forest economy via a transparent scenario planning process.

VERMONT FOREST FUTURE SCENARIOS OF THE FUTURE REPORT

Steps in the process

Sections of the report

Introduce the scenario planning process and the goals for the process

Identify macro trends shaping the future of the Vermont forest economy

Identify key drivers and clusters of drivers shaping the future of the Vermont forest economy

Create plausible future scenarios for the Vermont forest economy

Identify Least Desired, Expected and Preferred Futures for the Vermont forest economy. Identification of the next steps in the planning process

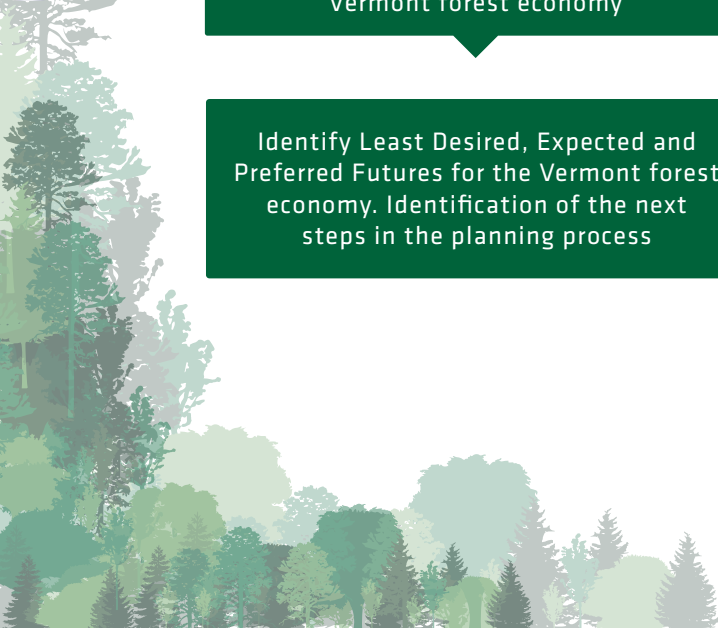
Overview of the Process (Chapter 3)

Forces Shaping the Future - Macro Trends (Chapter 4)

Key Drivers Identification and Identifying Scenario Shaping Clusters of Drivers; Cluster Map Development (Chapters 5 - 6)

Creating the Scenario Framework and Scenario Descriptions (Chapter 7)

Least Desired, Expected and Preferred Futures (Chapter 8 - 9)





Scenario planning provides a way to explore various plausible futures and considers the implications and consequences of different future pathways. This adds a richness and depth to the discussions about the preferred future, and a consideration of the intended and unintended consequences.

3.0 | THINK-TANK WORKSHOPS

The scenario planning Think-Tank workshops were held on December 13, 2022, and January 31, 2023. These scenario-based Think-Tank workshops were a tool to gain a better understanding of priorities and goals that will contribute to the creation of effective strategies and actions for the future of the Vermont forest economy.

THE THINK-TANK WORKSHOPS CONSISTED OF:

- A review of global trends and emergent issues and the connection to the Vermont forest economy
- Identification of the top 22 key drivers shaping the future of the Vermont forest economy
- Ranking of the key drivers (from 1 – 22 in importance to the Vermont forest economy)
- Formulation of the different plausible scenario ‘spaces’ and development of detailed narratives and descriptions of each
- Identification of the preferred and expected futures



The scenarios developed during the Think-Tank workshops and outlined in this report are important to provide a framework to discuss future possible outcomes and implications for the Vermont forest economy. These scenarios were subsequently presented in approximately 15 community and industry workshops, where people were asked to consider the implications of these various futures.



4.0 | FORCES SHAPING THE FUTURE – MACRO TRENDS

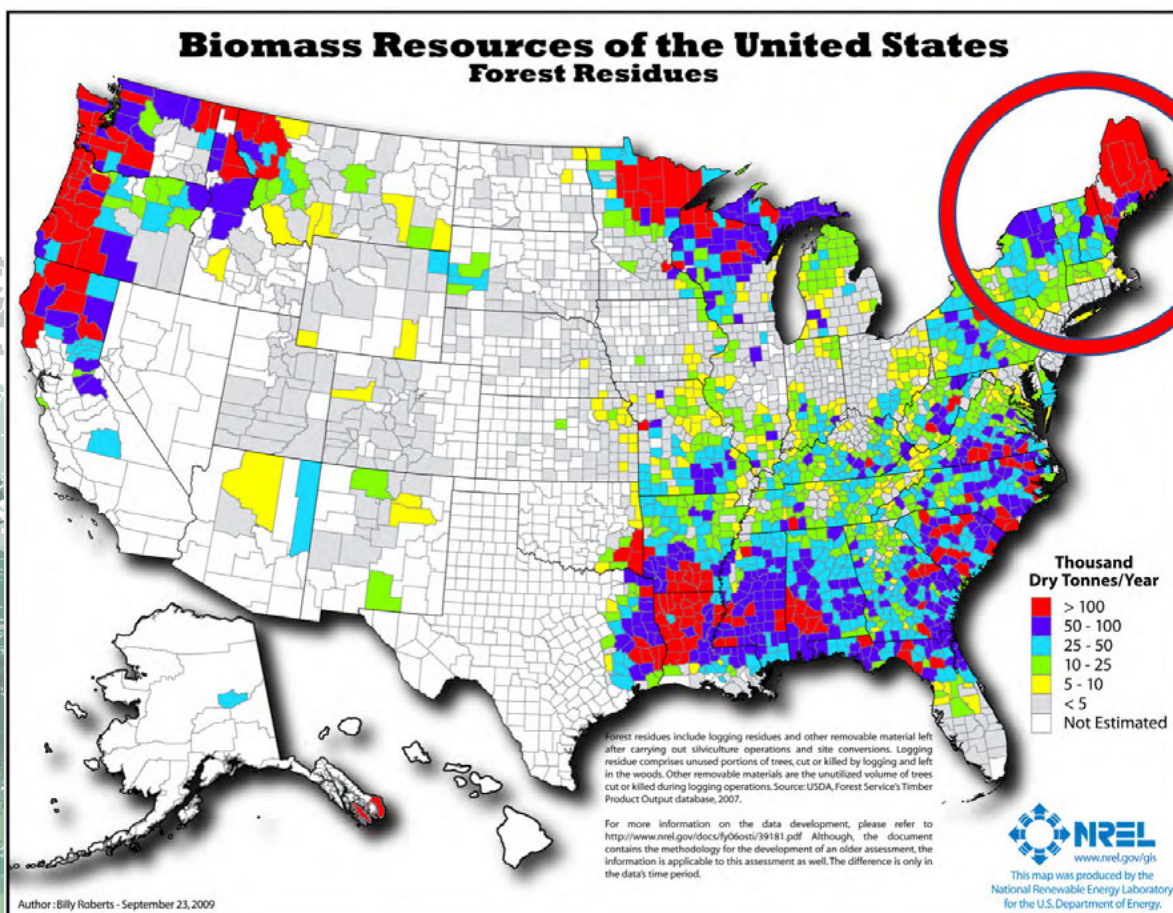
At the first Think-Tank workshop, held in December 2022, Advisory Panel members explored the forces of change shaping the future of the Vermont forest economy, including the key areas of emerging macro trends and forces of change. Perceptions around the nature of impact of these trends, both in terms of size and timing of impact, were examined to ascertain how important the participants consider the trends. Participants discussed the emerging trends on global, regional and local scales, and related them directly to the future of the Vermont forest economy.

THE KEY MACRO TREND AREAS INCLUDED:

- **DEMOGRAPHICS, POPULATION AND MASS URBANIZATION**
- **ENERGY, FOOD, WATER AND CLIMATE CHANGE**
- **TECHNOLOGY AND THE SPEED OF CHANGE**

In the face of accelerating speed of change, the key to the long-term resiliency of the Vermont forest economy is the ability to anticipate change and remain agile in response to emerging trends.

The exploration of macro trends helps understand the broader future context, and what might be emerging challenges and opportunities. For example, the regions' superior ability to produce significant volume of forest products is well documented. This important timber fiber producing region is only likely to become more significant as the impacts of climate change start to reshape major ecosystems. As an example of one of the macro trends and data points, the following chart show forest residues, which is an interesting measure in the context of potential new uses of forest materials and products.



5.0 | KEY DRIVERS IDENTIFICATION

Drivers are events, trends, developments, catalysts, or forces that actively influence or cause change. The top 22 drivers for the Vermont forest economy are seen to be those aspects that will impact the forest economy, looking out to 2035.

With the background of external trends, the Think-Tank participants identified top drivers that they considered most likely to shape the future of the Vermont forest economy. The drivers were discussed at a small group level and then at the wider workshop level. The scope of each driver was clarified until a list of 22 unique key drivers were identified.

KEY DRIVERS SHAPING THE FUTURE OF THE VERMONT FOREST ECONOMY AS IDENTIFIED BY THINK-TANK PARTICIPANTS:

- | | | |
|---|--|---|
| 1. Forest conditions | 9. Cost of energy needed for production | 16. Vermont culture for community scale |
| 2. Adaptations to climate change impact | 10. Owner attitudes toward forest management | 17. Societal polarization |
| 3. Role of land use regulations | 11. Outside pressures on Vermont | 18. Industrial cross sector innovation |
| 4. Consumer interest in wood products | 12. Supply chain dynamics and changes | 19. Departure of younger generation |
| 5. Changes in workforce availability | 13. Changes in forest economy transportation | 20. Technical innovation |
| 6. Social environmental awareness | 14. Public investment in forest economy | 21. Global market pressures |
| 7. Generational shift in values | 15. Impact of emergent carbon markets | 22. Outdoor recreation |

Please note that these drivers are not in any particular order.

After agreement on the drivers, the Think-Tank participants rated each of the 22 key drivers in terms of likely future impacts on four dimensions of the forest economy. The scale was from 1 = Low relative future impact; to being 10 = Very high relative future impact. The dimensions were:

1. Overall scale of the Forest Economy
2. Quality of Working Forests
3. Innovation in Forest Product Enterprises
4. Demand for Vermont Forest Products

The individual ratings by each participant were pooled and averaged, providing an overall rating for each driver by the participants. Then, scatter diagrams of the drivers, based on size of future impact were developed. The scatter diagram allows the identification of clusters which are relatively high in impact. This process illustrates the clusters of drivers that were seen as most critical in shaping the future – these clusters are termed ‘Scenario Shaping Clusters of Drivers.’

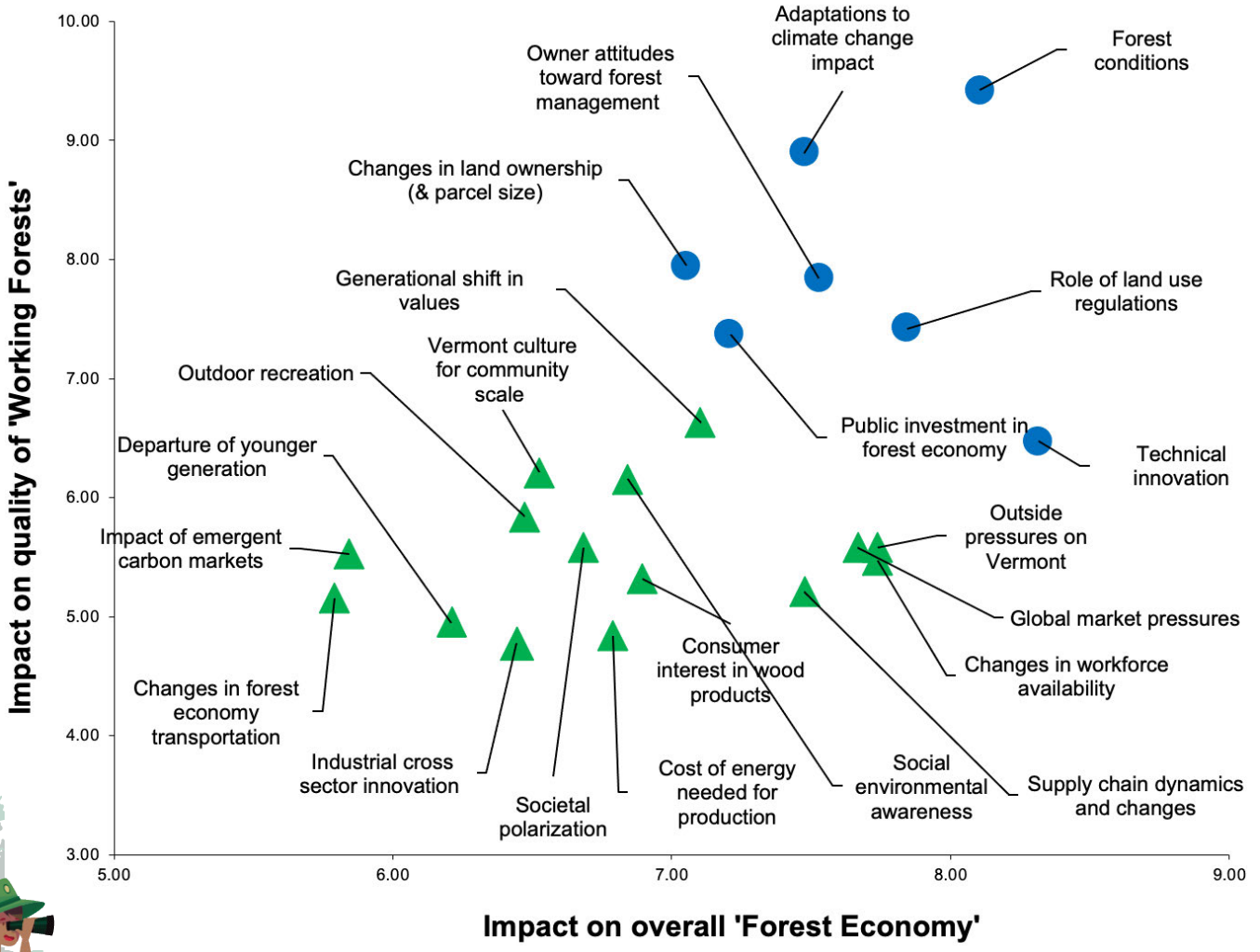


5.1 | CLUSTER OF KEY DRIVERS – VERMONT FOREST MANAGEMENT

'Forest conditions' is a driver that is seen as having a highly significant future impact. This reflects the data from the survey and the industry roundtables.

Two scatter diagrams were produced. The first plotted the dimensions of the overall 'Forest Economy' against the impact of the 'Quality of the Working Forests'. The scatter diagram aims to tease out the drivers and identify those that were rated as having the highest future impact on one or both the axes. The group of drivers that rated the highest are color coded in blue circles to help identification. Together, this cluster of drivers represents a very interesting set of issues about the ability to manage the forests, and how the management will be affected by issues such as policy and climate change. This highlighted cluster of drivers were grouped under a thematic heading of 'Vermont Forest Management'.

VERMONT FOREST MANAGEMENT Scenario-shaping cluster of drivers



- The identified drivers for this Vermont Forest Management theme are focused on the landscape issues of working forests and their overall condition
- Technical innovation is a high scoring driver on the impact on the overall forest economy axis. Technical innovation is a topic that is repeated through the survey and Think-Tank data.

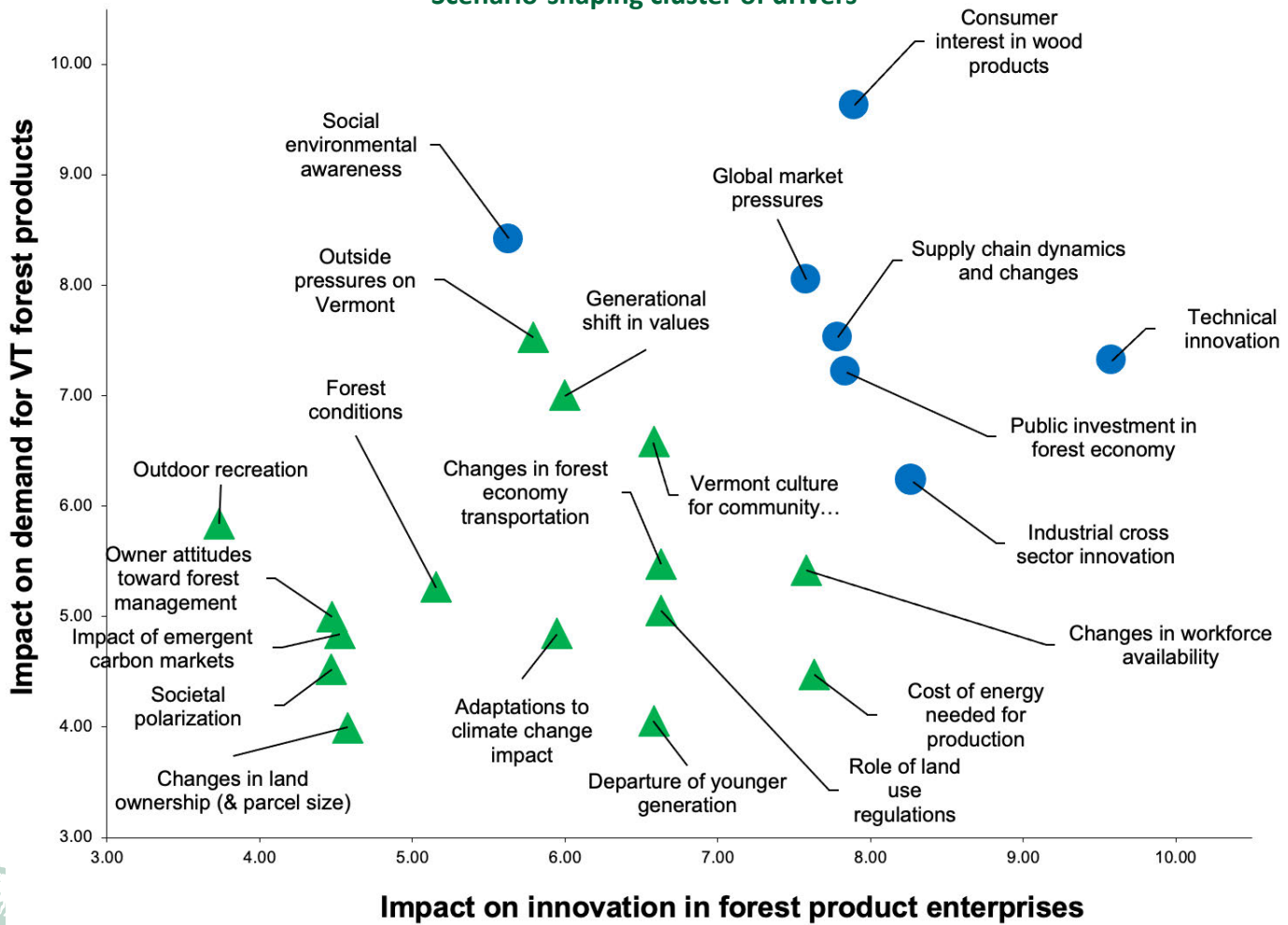


5.2 | CLUSTER OF KEY DRIVERS – INDUSTRY ADAPTATION

The second scatter diagram plotted the dimensions of the impact on the 'Innovation in forest product enterprises' against the impact on 'demand for Vermont forest products'. The group of drivers that rated the highest are color coded in blue circles to help identification. This cluster of drivers represents a set of issues that are critical to the industrial operations of the forest products economy, including the industrial supply and value chain, and the overall consumer demand. This highlighted cluster of drivers were grouped under a thematic heading of 'Industry Adaptation'.

The second scatter plot highlighted an important group of drivers that were grouped under a heading of Industry Adaptation.

INDUSTRY ADAPTATION Scenario-shaping cluster of drivers



DataInsight

- One sub-grouping of drivers is connected to consumer demands, and how this might change based on social environmental awareness. This issue offers some promising upside to the demand of timber products if they are seen as a renewable and environmentally sustainable product.
- The second sub-grouping covers a range of issues related to industrial competitiveness of the sector, and its ability to innovate and apply technology. These include 'global market pressures', 'Supply chain dynamics', 'technical innovation', and 'Industrial cross-sector innovation'.



6.0 | SCENARIO-SHAPING CLUSTERS OF DRIVERS

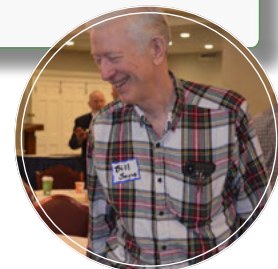
The grouping of drivers with high future impact creates two macro themes. They are referred to as ‘Scenario-Shaping Cluster of Drivers’. The two themes are defined as ‘Vermont Forest Management’ and ‘Industry Adaptation.’ These themes help create the scenario matrix, which is discussed in the next section. The two themes have the potential to create very different long-term outcomes in the Vermont forest economy and forest products sector.

VERMONT FOREST MANAGEMENT

- Forest conditions
- Technical innovation
- Role of land use regulation
- Adaptations to climate change
- Owner attitudes toward forest management
- Changes in land ownership (and parcel size)

INDUSTRY ADAPTATION

- Technical innovation
- Consumer interest in wood products
- Industrial cross-sector innovation
- Public investment in forest economy
- Supply chain dynamics and changes
- Global market pressures
- Social environmental awareness



DataInsight

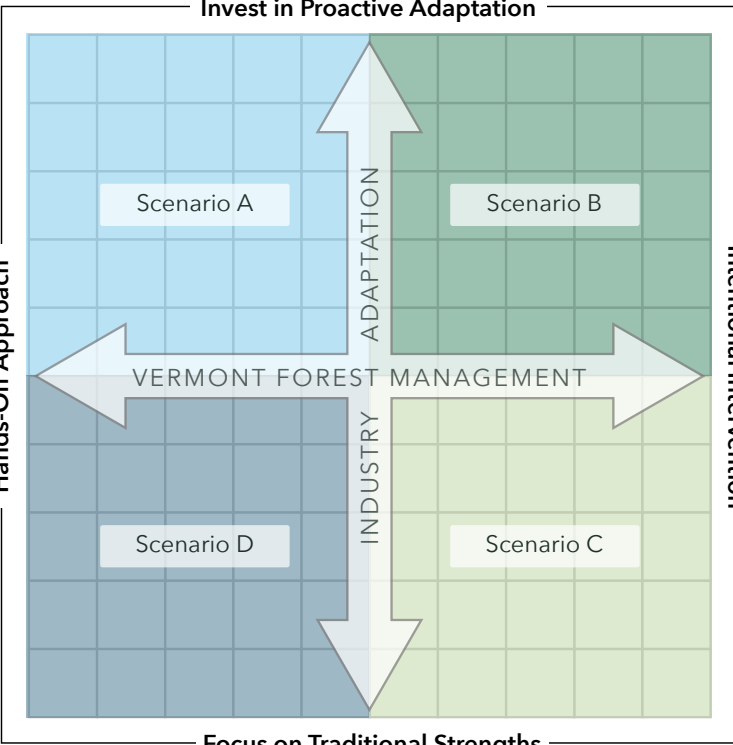
- The key driver ‘Technical Innovation’ has been rated as high in future impact in both the broad themes. This highlights the perspective that how the industry can embrace and apply technical innovation is likely to have a big impact on outcomes at the level of forest management and industry adaptation.
- Forests Conditions is a key future splitting driver and will be a focus of deliberations through the course of the strategic roadmap process. Being able to effectively manage forests to support a viable and vibrant forest products sectors is a key future-shaping issue.

7.0 | CREATING THE SCENARIO FRAMEWORK

During the second Think-Tank workshop, participants were presented with the scenario matrix, defined by the two major axes generated through the cluster development of the key drivers. Brief descriptions were also attached to the end points of each driver axes, to create a continuum along the axis. Participants were divided into four groups to develop a narrative for each scenario. Each group was asked to describe the characteristics of the Vermont forest economy in 2035 under the conditions of the scenario quadrant. After the characteristics were established, Think-Tank participants were asked to devise major events or headlines of how the scenario may occur in the years 2025, 2030 and 2035. Narratives, and descriptions of each scenario as developed by the workshop participants are included in the following sections.

This scenario-planning process provided a way to tease out plausible future scenarios and examine them from a speculative standpoint. They represent different possibilities for the future of the Vermont forest economy, looking out to 2035.

Proactively invest public and private resources, to build strong cross industry linkages, and spur new ideas and innovation. Build regional supply chains and promote the environmental credentials of new wood products. Boost brand awareness of VT forest products.



The forest landscape and land use patterns are allowed to freely follow prevailing market and economic demands, with little to reduced public policy intervention. The forest resource and landscape is allowed to evolve, driven by landholder priorities and attitudes, and is shaped by the long-term impacts of climate change.

There is intentional policy intervention, and public investment, to optimize conditions for healthy forests and products. The overarching forest management approach focuses on maintaining forests that are resilient to climate change and support a viable and diverse forest economy.

Focus is on existing industry strengths and proven approaches. Allow market forces and existing forestry programs to shape the industry trajectory and investments. Publicly promote the economic value and contribution of the forest industry. Focus on the traditional forest products and workforce.





Scenario A forecasts a future where public and private investment help enhance innovation in parts of the wood products sector, however the lack of policy intervention contributes to a long-term decline in overall forest quality.

7.1 | SCENARIO A

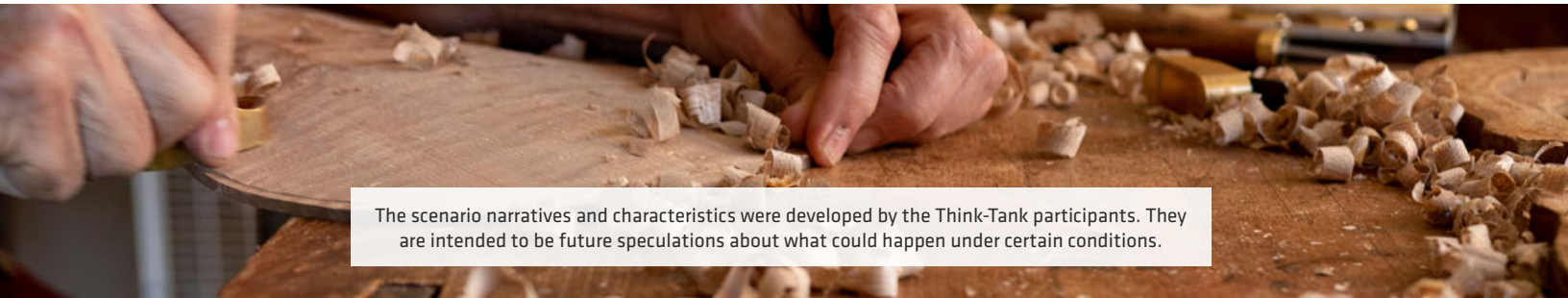
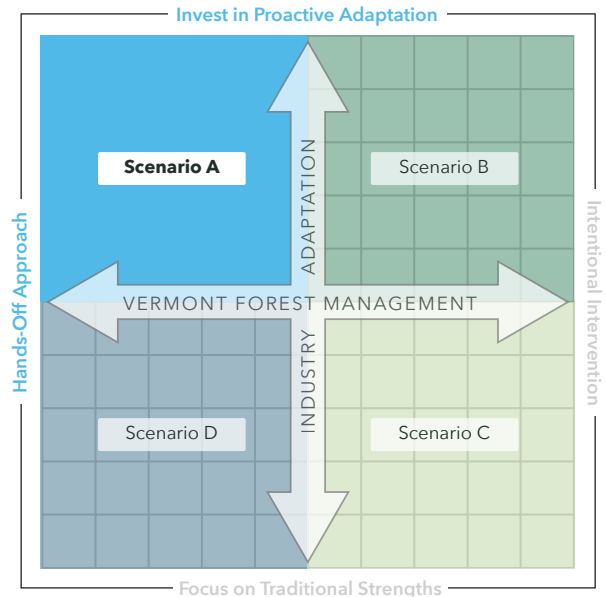
This scenario forecasts a future that is shaped by a combination of increased investment in industry adaptation, and a more ‘hands-off’ approach to the management of the Vermont forest resources.

This scenario is shaped by the following macro conditions:

- There is a proactive investment of public and private resources, aimed at building strong cross-industry linkages, and spurring new ideas and innovation.
- There is a focus on building regional supply chains and promoting the environmental credentials of new wood products. This helps boost brand awareness of VT forest products.
- The forest landscape and land use patterns are allowed to freely follow prevailing market and economic demands, with little to reduced public policy intervention.
- The forest resource and landscape are allowed to evolve unimpeded, driven by landholder priorities and attitudes, and shaped by the long-term impacts of climate change.

SCENARIO SNAPSHOT – FUTURE IMPLICATIONS

- **Innovation is boosted**, especially for entrepreneurial forest product operations, who can create new niche products.
- **Forest landscape becomes more fragmented**, as different competing land-uses break down the contiguity of the forest resource.
- **Forest quality degrades**, as there is less management for forest health, and ecological shifts are accelerated by climate change.
- **Larger forest products enterprises struggle**, due to lack of secure supply of quality timber.



The scenario narratives and characteristics were developed by the Think-Tank participants. They are intended to be future speculations about what could happen under certain conditions.

SCENARIO A - CHARACTERISTICS IN 2035

This scenario initially plays out in a positive manner, with a boost in investment in innovation, branding and building regional supply chains. However, as there is little focus on intentional forest management, the forest landscape and land use patterns are driven by changing landowner needs and development pressures. This ultimately leads to fragmented forest resources, which undermines the supply and stability of the forest products economy.



FOREST ECONOMY CHARACTERISTICS IN 2035

Overall size of forest products sector declines over time, as access to quality timber becomes more constrained.

- The forest workforce declines and there is a decline in larger scale family-owned forest product businesses.
- Intentional investment triggers surge in new wood products and wood processing plants.
- More diversification into non-traditional forest uses including recreation and habitat conservation.



FOREST LANDSCAPE CHARACTERISTICS IN 2035

Forest quality declines and forest landscapes become more rapidly impacted by climate change.

- Quality of the forest timber declines due to lack of forest management and limited policy intervention.
- More subdivision, parcellation and housing development occurs across the forest landscape.
- Management becomes more short term focused, with some 'profit-taking' in harvesting older, high-quality stands.



MARKETS & INNOVATION CHARACTERISTICS IN 2035

New investment creates more niche businesses that capitalize on unique and innovative high-quality products.

- More use of local Vermont branding especially in higher value and higher quality wood products.
- Initial investment in updating traditional timber processing businesses fails to deliver lasting competitive gains.
- Regional linkages help sustainability-focused Vermont wood producers accelerate technology adoption.

2025
Headline News

"THE 'LOCAL WOOD, LOCAL GOOD' BRAND GROWS"



2030
Headline News

"HARDWICK OPENS STATES FIRST WOOD PRODUCTS INCUBATOR SPACE"



2035
Headline News

"CONSUMERS DRIVE DEMAND – SMALL SAWMILLS OPEN IN EAST MONTPELIER!"



7.2 | SCENARIO B

Scenario B forecasts a future where intentional forest management is coupled with proactive adaptation, which helps drive innovation, resilience, and vibrancy in the forest economy.

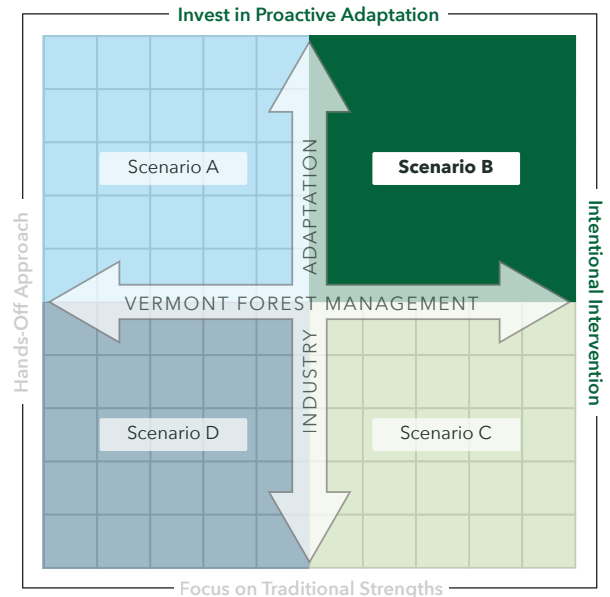
This scenario forecasts a future where intentional forest management is coupled with proactive industry adaptation – helping drive innovation and vibrancy in the forest economy.

This scenario is shaped by the following macro conditions:

- There is intentional policy intervention and public investment, to optimize conditions for healthy forests and sustainable forest products.
- The overarching forest management approach focuses on maintaining forests that are resilient to climate change and support a viable and diverse forest economy
- There is a proactive investment of public and private resources, aimed at building strong cross-industry linkages, and spurring new ideas and innovation.
- There is a focus on building regional supply chains and promoting the environmental credentials of new wood products. This helps boost brand awareness of VT forest products.

SCENARIO SNAPSHOT – FUTURE IMPLICATIONS

- **Investment in innovation increases**, and public and private capital is deployed in innovation, technology, and marketing.
- **Forest management and health increase**, as greater policy intervention works to protect ‘forests as forests’ and help climate mitigation.
- **Skilled workforce demand rises**, as forest management and production become more technologically advanced.
- **The industry changes rapidly**, with a greater focus on regional supply chains, innovation networks, and new products.



The scenario narratives and characteristics were developed by the Think-Tank participants. They are intended to be future speculations about what could happen under certain conditions.

SCENARIO B - CHARACTERISTICS IN 2035

This scenario initially plays out in a fast paced and forward-looking manner. There is a boost in investment in innovation, branding and building regional supply chains, coupled with a policy and research environment that helps develop new products and markets. The fast rate of change is challenging to manage, as policy reshapes the industry future. Simultaneously, the industry is accelerating in its technological adoptions and modernization.



FOREST ECONOMY CHARACTERISTICS IN 2035

Overall size of forest products sector increases, driven by investment, innovation, and research.

- The forest workforce thrives, as large and small enterprises invest in value-adding and processing technologies.
- Intentional investment triggers the creation of new wood products and expansion of traditional products.
- Forest economy expands and the forest economy intervention sector grows dramatically.



FOREST LANDSCAPE CHARACTERISTICS IN 2035

Forest quality and health increase and working forest landscapes become a critical part of Vermont's climate mitigation strategies.

- Quality of the forest timber improves, as overall forest management increases, driven by policy and investment.
- Forest diversity and health improves, with proactive work to build climate resiliency and mitigation long-term impacts.
- More forests are kept as forests, underpinning the whole forest economy.



MARKETS & INNOVATION CHARACTERISTICS IN 2035

New investment boosts forest product businesses that capitalize on innovation and market premiums for renewable products.

- Public and private investment, coupled with policy intervention helps keep wood businesses in Vermont.
- Creative ways are developed that use low-grade wood, and the industry leads in new wood products and uses.
- Stronger regional linkages and networks help Vermont wood producers accelerate technology adoption.

2025
Headline News

"LEGISLATORS APPROPRIATE \$10 MILLION FOR INVESTMENT IN FOREST INDUSTRY INNOVATION"



2030
Headline News

"NEW RESEARCH CENTER DEVELOPS CLIMATE RESILIENT INNOVATIVE WOOD TECHNOLOGY"



2035
Headline News

"VERMONT HOSTS WORLD FOREST CONGRESS, SHOWCASING FOREST MANAGEMENT INNOVATION"





Scenario C forecasts a future where intentional forest management is coupled with a focus on the traditional industry strengths, with large scale timber production and lumber sawmills.

7.3 | SCENARIO C

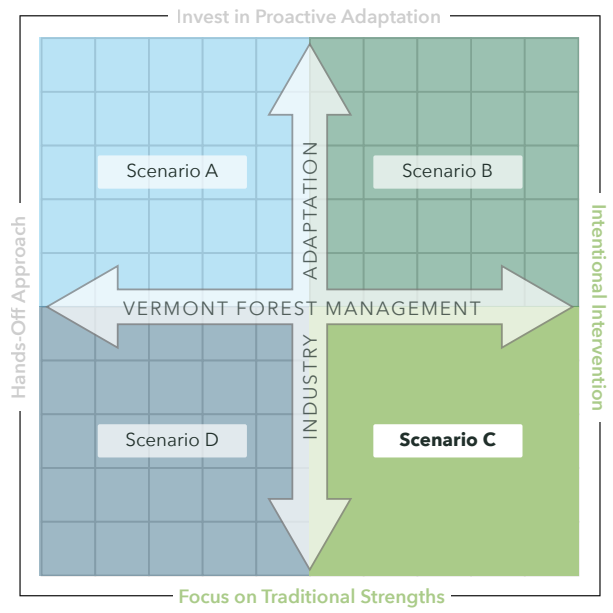
This scenario forecasts a future where intentional forest management is coupled with focusing on industries traditional strengths – helping secure supply of timber for large scale wood processors.

This scenario is shaped by the following macro conditions:

- The focus is on existing industry strengths and proven approaches. The industry and policy focus allows market forces and existing forestry programs to shape the industry trajectory and investments.
- There is a priority on publicly promoting the economic value and contribution of the forest industry, with a focus on the traditional forest products and workforce
- There is intentional policy intervention and public investment, to optimize conditions for healthy forests and sustainable forest products.
- The overarching forest management approach focuses on maintaining forests that are resilient to climate change and support a viable and diverse forest economy.

SCENARIO SNAPSHOT – FUTURE IMPLICATIONS

- **Traditional approaches prevail**, as the industry doubles down on proven approaches and historic strengths.
- **Industry promotion focuses on value**, with an emphasis on economic scale and contribution, and number of jobs.
- **Forest timber quality improves**, as forest management focuses on protecting the forest products sector and ensuring long-term supply of timber.
- **Industry declines in face of competition**, as other regions invest in innovation and adaption, which helps boost their profitability and societal support.



The scenario narratives and characteristics were developed by the Think-Tank participants. They are intended to be future speculations about what could happen under certain conditions.

SCENARIO C - CHARACTERISTICS IN 2035

This scenario starts out looking good, as the investment in forest management boosts the industry confidence in the long-term supply of quality forest timber. This especially supports the large existing timber operations and processors. However, the lack of investment in innovation begins to erode the industry competitiveness, as other regions begin out-competing the local operations. There is a growing tension between the forward-thinking intentional policy intervention to optimize the healthy forest, and a more insular inward looking forest products sector. This begins to create new conflicts with other land users and land uses.



FOREST ECONOMY CHARACTERISTICS IN 2035

The focus on the traditional strengths and proven approaches ultimately leads to a smaller and less competitive sector.

- Forest products business strives to be 'right sized' for land base, and achieve competitive scale.
- There is a continued lack of workforce in the forest and increased competition for resources with other land users.
- A smaller pool of businesses and professionals in the industry results in a loss of institutional knowledge.



FOREST LANDSCAPE CHARACTERISTICS IN 2035

Forest quality and health increase, but the industry is locked into a fight with other forest users and emerging land uses.

- Quality of the forest timber improves, as overall forest management increases, driven by tighter policy framework.
- There is increase in incentives for managing forests, reducing invasives and prioritizing of forest health.
- More programs are rolled out to 'keep forests as forests', but there is increasing pressure from other land users.



MARKETS & INNOVATION CHARACTERISTICS IN 2035

Existing traditional market forces and forest practices determine the trajectory of the forest economy.

- Traditional markets compete for higher quality raw materials, but the challenge of low-grade wood remains.
- Higher quality sawn timber is produced, as better management practices bolster supply of saw logs.
- There is some loss of higher value markets, due to the lack infrastructure investment and competitiveness.

2025
Headline News

"NEW INCENTIVE ANNOUNCED TO ENROLL FOREST LAND IN CONSERVATION PROGRAMS"



2030
Headline News

"NEW REPORT ANNOUNCES NOTABLE REDUCTION IN FOREST LOSS DUE TO POLICY CHANGE"



2035
Headline News

"TIMBER SAWMILLS DEFEATED BY COMPETITION FROM HIGH-TECH OPERATIONS IN CANADA"





Scenario D forecasts a future where the combined lack of intentional forest management and lack of investment in industry adaptation, results in a declining forest products sector and overall forest economy.

7.4 | SCENARIO D

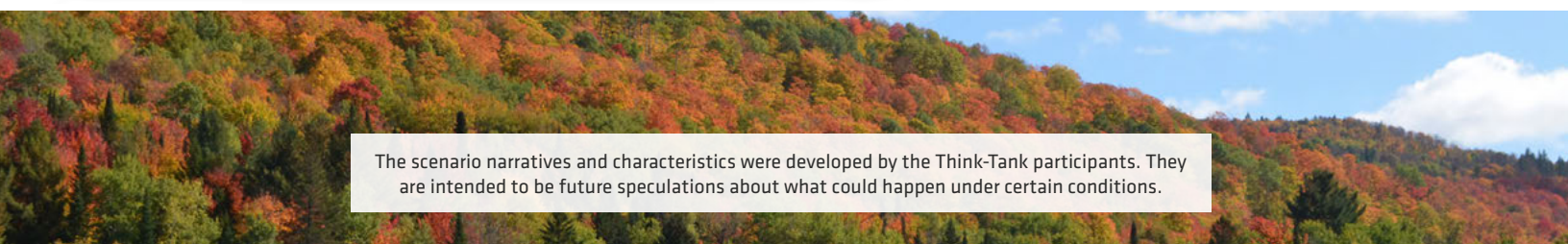
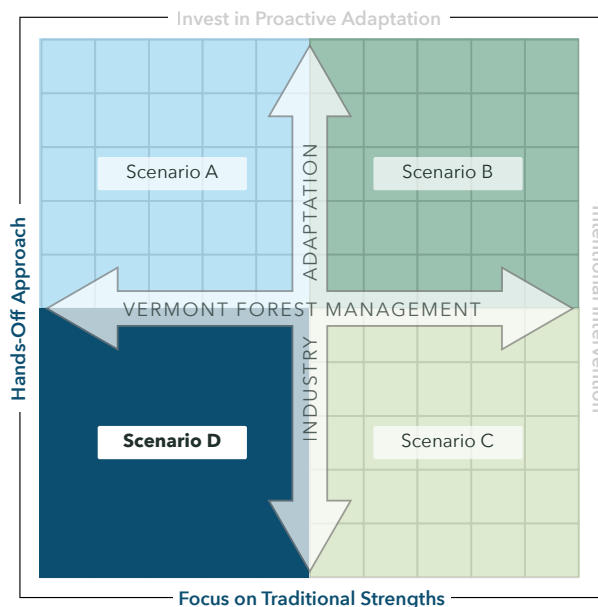
This scenario forecasts a future where a ‘hands-off’ forest management approach is coupled with a focus on traditional industry strengths. This creates a disjointed future, where the supply of timber is increasingly challenged, and the industry struggles to remain competitive.

This scenario is shaped by the following macro conditions:

- The focus is on existing industry strengths and proven approaches. The industry and policy focus allows market forces and existing forestry programs to shape the industry trajectory and investments.
- There is a priority on publicly promoting the economic value and contribution of the forest industry, with a focus on the traditional forest products and workforce
- The forest landscape and land use patterns are allowed to freely follow prevailing market and economic demands, with little to reduced public policy intervention.
- The forest resource and landscape are allowed to evolve unimpeded, driven by landholder priorities and attitudes, and shaped by the long-term impacts of climate change.

SCENARIO SNAPSHOT – FUTURE IMPLICATIONS

- **Land user conflicts increase**, as there is increasing competition for a range of uses of the forest landscape, such as development, recreation, and conservation.
- **Forest economy declines**, as the major forest products sector declines, which negatively impacts rural communities.
- **Forest quality and health declines**, as there is less management for forest health, and ecological shifts are accelerated by climate change.
- **Forest fragmentation accelerates**, as different competing land-uses break down the contiguity of the forest resource, and result in more uncontrolled developments.



The scenario narratives and characteristics were developed by the Think-Tank participants. They are intended to be future speculations about what could happen under certain conditions.

SCENARIO D - CHARACTERISTICS IN 2035

This scenario represents a change adverse future, where there is a lack of intervention and investment, and issues are left to unfold and emerge in an unimpeded manner. At first this will provide some regulatory relief, but quickly unintended consequences emerge, and forest health declines. The forest resource begins to become fragmented as new landowners diverge from the traditional Vermont ethos. The local forest products economy suffers as it loses reliable access to timber supply and faces increased competition from more efficient and technically advanced regions. Public support for the forest product sector declines.



FOREST ECONOMY CHARACTERISTICS IN 2035

With lack of incentives, local processing declines and most of Vermont's wood is transported to other states and countries.

- The impacts of climate change further affect 'traditional' logging practices, resulting in negative business and environmental outcomes.
- Increased competition for other land users results in year-on-year declines in the forest products sector workforce.
- The forest products sector is increasingly seen as behind the times, with poor technology update and lagging public support, and is seen as 'out of date'.



FOREST LANDSCAPE CHARACTERISTICS IN 2035

With limited policy intervention, land use freely follows prevailing market and economic demands with little direction or control.

- There are fewer acres of forest available for timber harvest, and there are more unmanaged forest tracts.
- Fragmentation of the forest landscape increases as 'climate refugees' buy up all available land and reduce intentional management practices.
- The quality and health of the forest degrades with lack of cohesive overall policy and management, and new concerns emerge such as new pests and diseases.



MARKETS & INNOVATION CHARACTERISTICS IN 2035

Macro-market forces drive further shifts to commodity products and there is no discernible Vermont brand.

- Brand awareness of Vermont products declines, and locally sourced products struggle to compete in large commodity markets.
- There further increase in public sentiment about leaving forests untouched, and there is a burgeoning anti-timber harvest movement.
- There is a loss of access to higher value markets, due to the lack of infrastructure investment which erodes access and competitiveness.

2025
Headline News

"BIGGER TREES BUT FEWER ACRES"



2030
Headline News

"RECREATION SURPASSES THE TIMBER INDUSTRY IN VALUE"



2035
Headline News

"THE NEW VERMONT FOREST - LESS TIMBER; MORE MAPLE SYRUP"

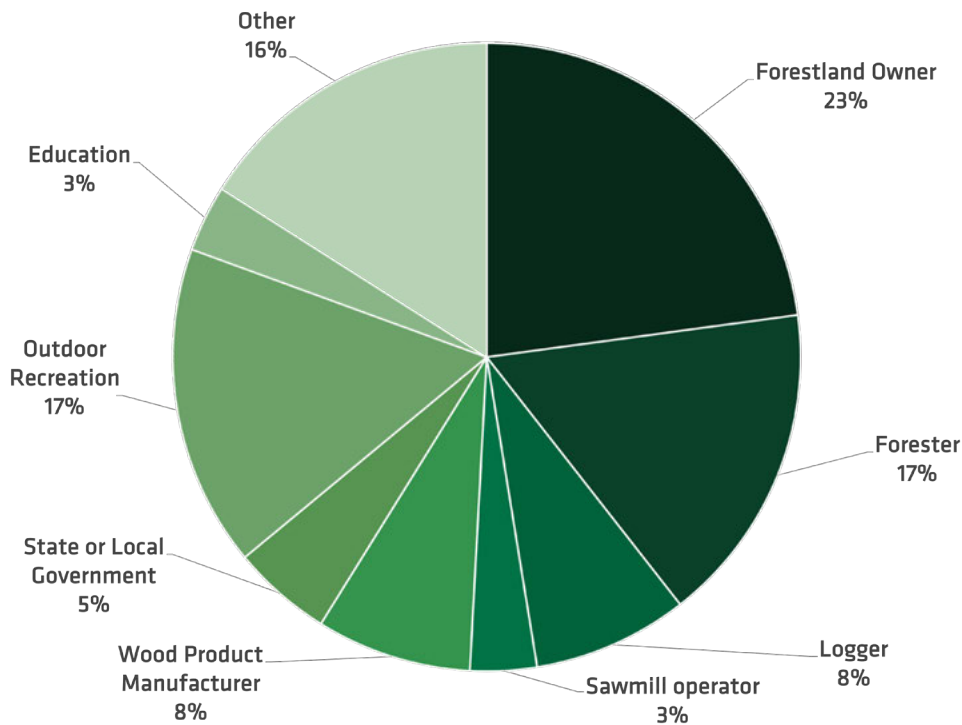




8.0 | COMMUNITY AND INDUSTRY STAKEHOLDER WORKSHOPS

During the strategic roadmap planning process, an important priority has been to encourage strong community and industry stakeholder engagement. Following the Think-Tank workshops, a series of approximately 15 community and industry stakeholder workshops, and agency roundtables were held through February, March, and April. These were held as a mixture of in-person and virtual sessions. In addition, an online version of the workshop was offered, with an instructional video. These sessions reviewed the outcomes of the Think-Tank workshops, and invited participants to take a post-workshop survey, where they were asked their thoughts on the future scenarios. This survey gathered important input on the concept of the least desired, expected, and preferred futures for the Vermont forest economy. This survey built on the work that was done at Think-Tank workshops and aimed to explore appetite for change.

SURVEY PARTICIPANTS - SECTOR REPRESENTATION



- In total, approximately 200 stakeholders and community members participated in these in-depth sessions. The participants represented a broad cross section of interest groups.
- The 'Other' category included people who self-described in a range of ways, including beekeeping, interested citizen, conservation groups, and land trusts organizations.



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9.0 | LEAST DESIRED, EXPECTED AND PREFERRED FUTURES

This survey gathered important input on the concept of the least desired, expected, and preferred futures for the Vermont forest economy. This approach helps identify the perception about the current trajectory, and importantly helps define the preferred future. The preferred future represents a broad vision for the future. These futures were described as:



- **LEAST DESIRED FUTURE**

The Least Desired Future is the future that you think will be most undesirable (or least optimal or least desired) future in 2035.

- **EXPECTED FUTURE**

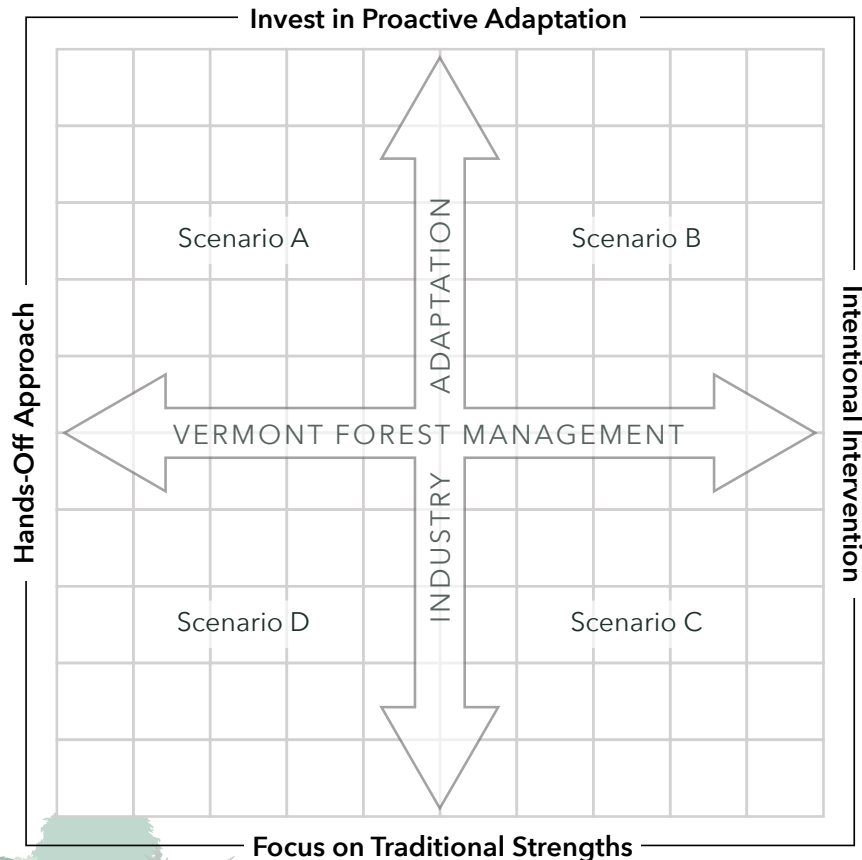
The Expected Future is the future you expect most likely to eventuate by 2035, if existing trends and trajectory persists.

- **PREFERRED FUTURE**

The Preferred Future is the future you think is optimal and creates the best outcome for Vermont forest economy in 2035.

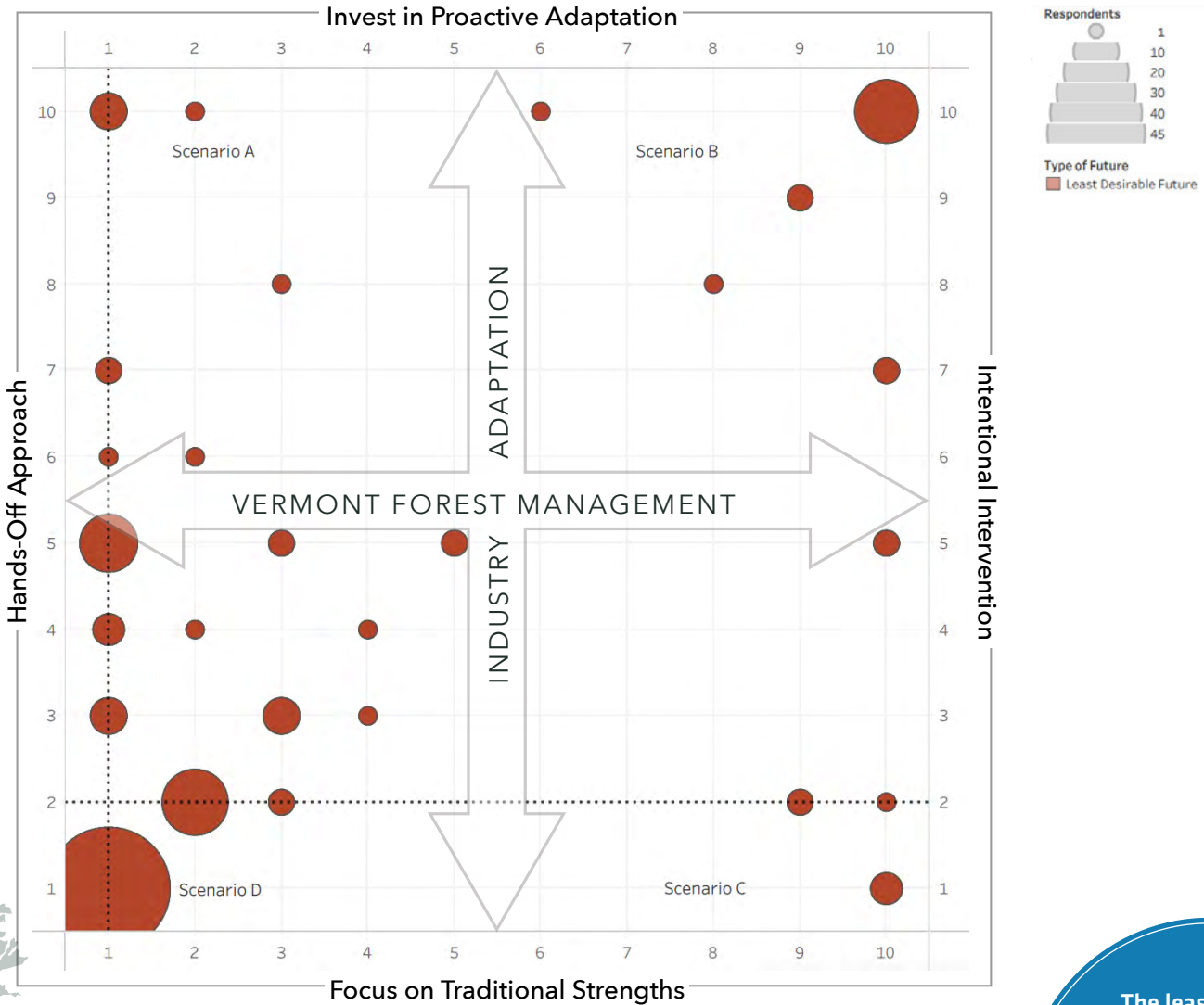


Survey participants were asked to identify the three types of future on the modified scenario matrix. This layers a 10 x 10 grid over the scenario matrix, creating 100 subtly different possible versions of the future. Participants were able to locate their different futures based on the two main continuums, and understanding the description of the broad scenarios.

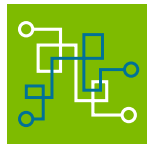


9.1 | LEAST DESIRED FUTURE

The least desired future is defined as the future that will be most undesirable (or least optimal or least desired) for the future of the Vermont forest economy in 2035. The dashed line represents the median response coordinates. The size of the circles represents the number of responses in each location.



The least desired future is one where stakeholders have said, 'We don't want that.' This provides direction to change the trajectory of the forest economy to avoid this avoidable scenario.

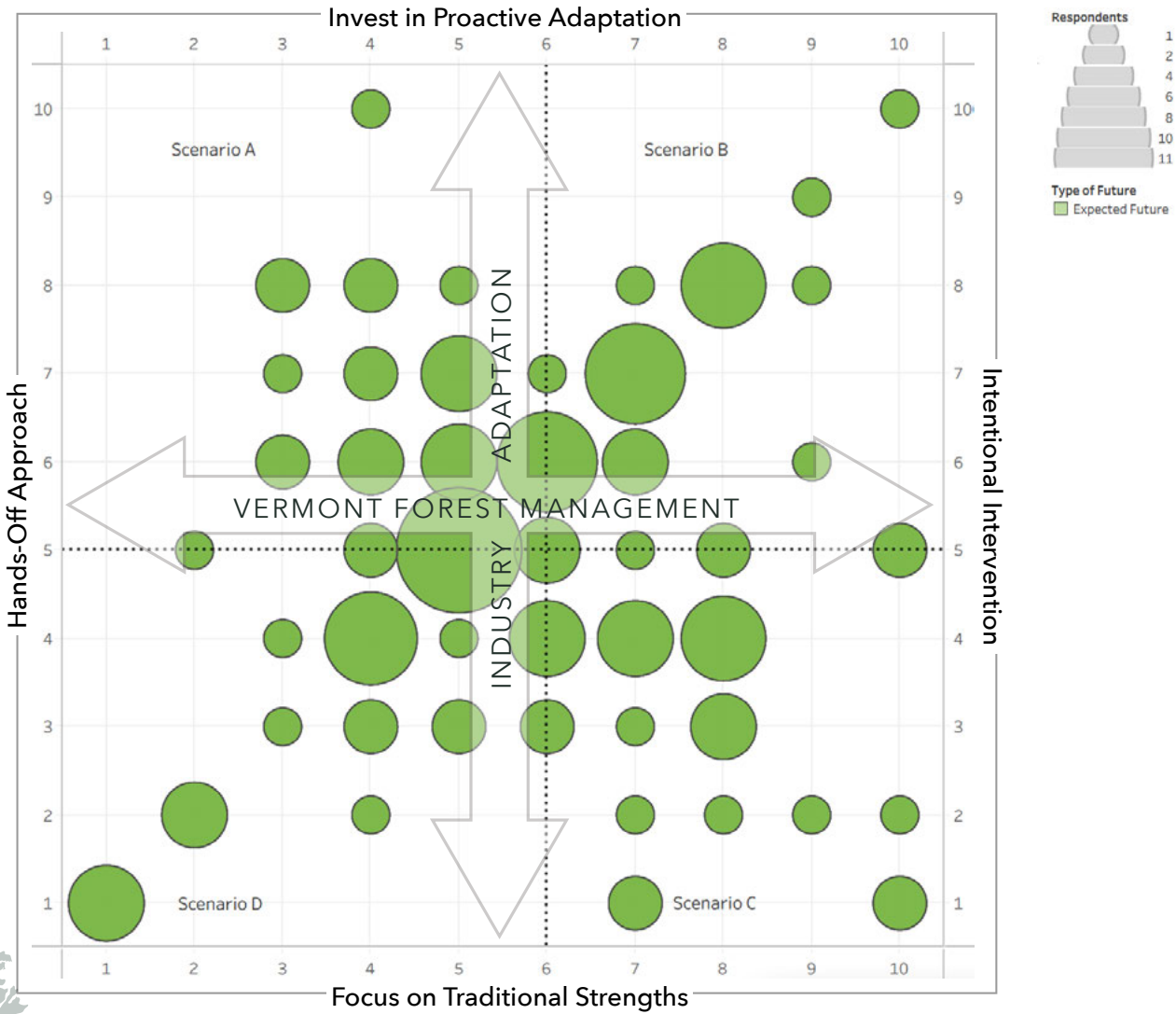


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- The data of the least desired future shows a strong concentration along the bottom-left quadrant of Scenario D.
- There are also responses in the extremities of the other three scenario, which are the amplified versions of these future scenarios.

9.2 | EXPECTED FUTURE

The expected future is the one deemed most likely to happen if there is no change in the current trajectory of the Vermont forest economy. The dashed line represents the median response coordinates.



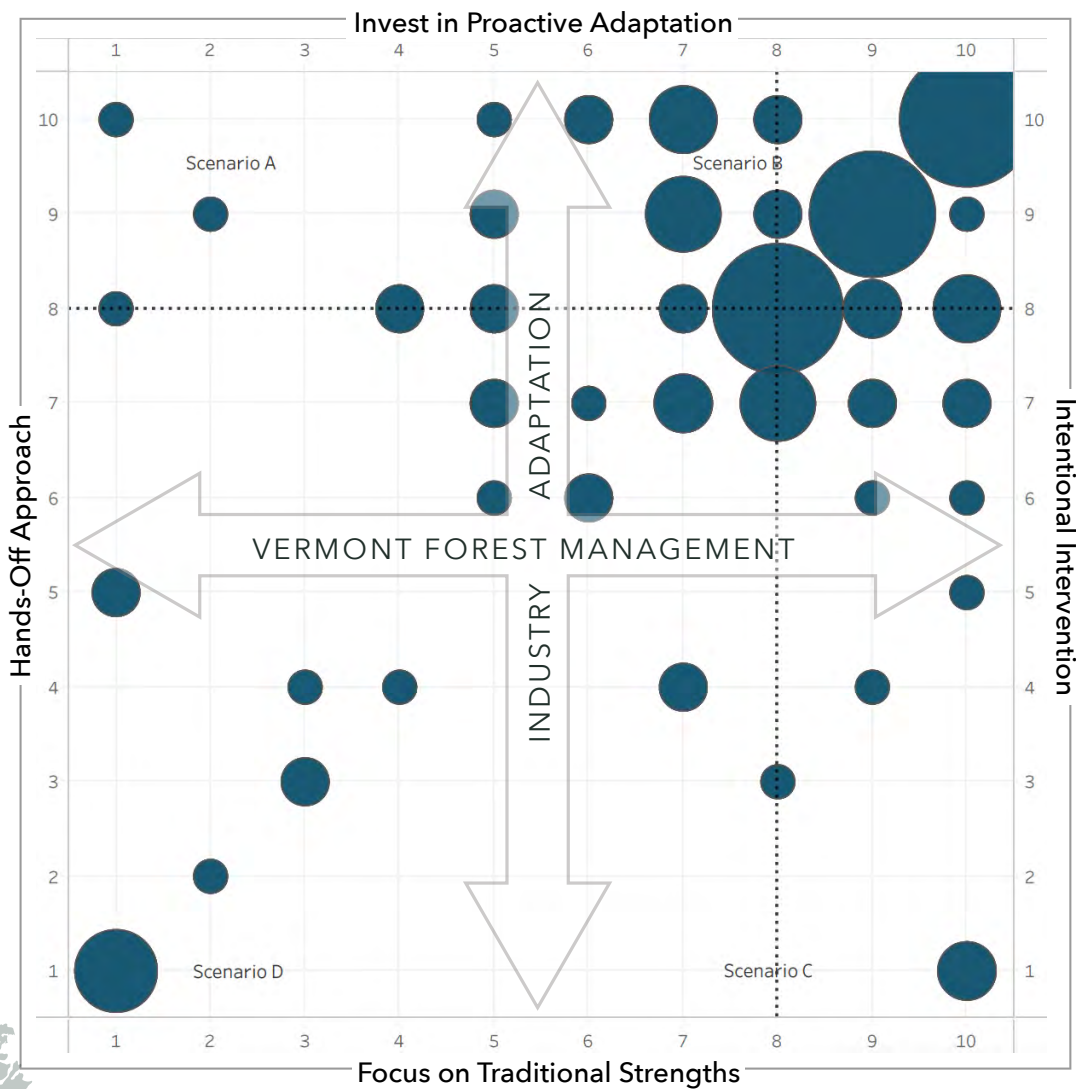
The Expected Future represents the future that is most likely to happen if the Vermont forest economy continues on the same future trajectory.



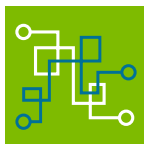
- Survey responses show a general pattern of responses that are clustered around the center of the overall scenario matrix.
- There are some significant outliers to this cluster, but overall, the responses are aggregated fairly tightly in the central area.

9.3 | PREFERRED FUTURE

The preferred future is the future you thought to be optimal and create the best outcome for Vermont forest economy in 2035. The dashed line represents the median response coordinates.



The preferred future for the Vermont forest economy includes working toward a combination of intentional public and private investment, policy intervention and a diversified forest economy.



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- Survey participants expressed a strong preference for the preferred future in the upper right of the scenario matrix. This future combines strong investment in proactive adaptation and intentional intervention at both an investment and policy level.
- There are some outliers to this cluster, including several responses in the lower left. However, the 'point of consensus' is in the scenario B space, and there is a relatively tight concentration of responses. The three largest response locations are in the center and very upper right of the scenario B space, which reflects a significant appetite for change.

9.4 | GETTING TO THE PREFERRED FUTURE

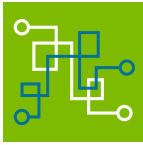
There was alignment that Scenario B represented the preferred 2035 future for the Vermont forest economy, for most survey participants. In terms of the overall Strategic Roadmap planning process, the gap and direction between the expected and preferred future helps set the framework for strategic actions. The ultimate challenge is to pivot the trajectory towards the preferred future. This will require movement on both the axes, with a focus on investing in proactive adaptation of the industry, and more intentional intervention at the level of forest management.



Because of the long-term nature of the scenario planning methodology, stakeholders often see the 'distant future vision (2035)' as unattainable and unrealistic. However, this underestimates the progress that can be made during the next 10-12 years, and the cumulative positive impacts of change.



- Arriving at a broad point of consensus amongst stakeholders is very important to the planning process as it serves to provide a focus for strategic planning efforts.
- The pivot to the preferred future is seen as plausible, as it represents an achievable shift in trajectory.



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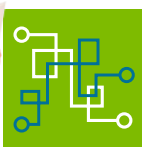
10.0 | FRAMEWORK FOR IMPLEMENTATION - STRATEGIC PILLARS

Following the survey work on the expected and preferred future, the strategic roadmap project focused on the development of a framework of action. This framework is designed to allow the pivot towards the preferred future. The organizing framework has grouped ideas into 'Strategic Pillars'. These have been identified as the major areas of work that will help achieve the preferred future.

STRATEGIC PILLARS FRAMEWORK



- The strategic pillars have been developed by grouping ideas suggested from stakeholder discussions, surveys, and workshops. These have been further refined by the project Advisory Panel, who helped refined the language and themes.
- Initial validation surveys with a cross-section of industry stakeholders have indicated that these five pillars are all seen as important for the future. This framework is intended to represent inter-dependent pillar topics, where the ultimate outcomes will require coordinated work.



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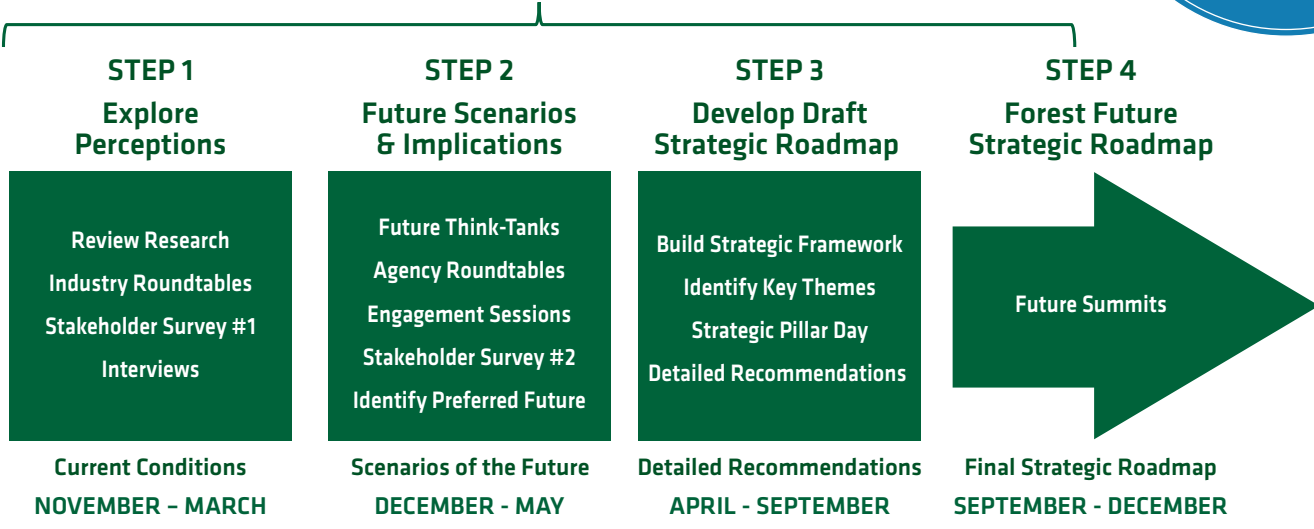


11.0 | NEXT STEPS IN THE VERMONT FOREST FUTURE STRATEGIC ROADMAP PROCESS

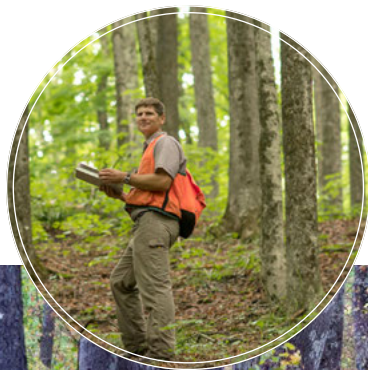
The Strategic Roadmap process has a strong focus on maximizing stakeholder engagement and input. To date, nearly 1,000 people have participated in surveys and workshops as part of the process.

The next major step in the process is Step 3 – the development of a draft strategic roadmap. This will validate and build on the Strategic Pillars framework, and craft a series of recommended actions under each pillar.

VERMONT FOREST FUTURE STRATEGIC ROADMAP PROCESS



**NEXT STEP -
DEVELOP DRAFT
STRATEGIC
ROADMAP**



12.0 | ACKNOWLEDGEMENTS

Future iQ acknowledges the substantial work and on the ground support from the core team involved with this project from the VT Department of Forests, Parks & Recreation and Vermont Sustainable Jobs Fund.

VERMONT FOREST FUTURE STRATEGIC ROADMAP CORE TEAM

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Future iQ would also like to acknowledge the support of the Vermont Forest Future Advisory Panel who have been instrumental throughout this step of the process. Learn more at: lab2.future-iq.com/vermont-forest-future/overview/advisory-panel.

VERMONT FOREST FUTURE STRATEGIC ROADMAP ADVISORY PANEL

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Future iQ also would like to acknowledge the participation of the individuals who took part in the Think-Tank workshops and community engagement sessions. Taking part in these sessions was a commitment regarding time, energy and intellect. Thank you to the Think-Tank participants.

Photos courtesy of Erica Houskeeper, Vermont Sustainable Jobs Fund and Future iQ.



13.0 | CONTACT DETAILS

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FOLLOW THE ROADMAP PLANNING PROCESS

Please stay connected to the Vermont Forest Future Strategic Roadmap project by visiting the project portal:

lab2.future-iq.com/vermont-forest-future





VERMONT FOREST FUTURE
STRATEGIC ROADMAP

REPORT 2 - SCENARIOS OF THE FUTURE

MAY 2023

