

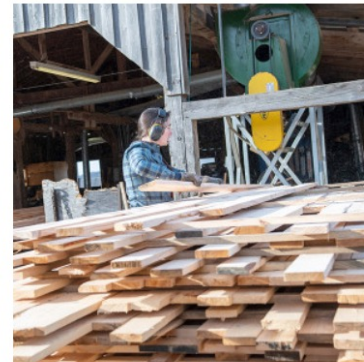


Think-Tank Part 2

Vermont Forest Future Think-Tank

PART 2

Scenarios of the future





Vermont Forest Future

Strategic Roadmap Development

STEP 1

Explore Perceptions

- Review research
- Industry Roundtables
- Stakeholder Survey #1
- Interviews

Current Conditions Report

November – February

STEP 2

Future Scenarios and Implications

- Future Think Tanks
- Vision workshops
- Stakeholder survey #2
- Identify Preferred Future

Scenarios of the Future Report

December - March

STEP 3

Develop Draft Strategic Roadmap

- Build strategic framework
- Identify key themes
- Focus Groups
- Draft Recommendations

Draft Recommendations Report

March – May

STEP 4

Forest Future Strategic Roadmap

- Future Summits

Final Roadmap Report

June - November





The Importance of Future Thinking

The key to effective future thinking...

- Explore and anticipate a range of plausible futures.
- Consider both **trajectory** (direction of change) and **velocity** (speed of change).
- Explore the combined impacts of multiple potential trends.

Explore potential 'shape and contours' of the future.





The challenge for the Think-Tank

- Explore the future -
- Ask the hard questions -
- Think creatively -

The outcome may be a new view of the future.



Vermont Forest Future - Think-Tank process

Part 1 – Forces of change

- Macro trends shaping the future
- Identify key drivers shaping the future of the VT forest economy
- Rate 'future impact' of key drivers

Part 2 – Future Scenarios

- Develop plausible scenarios of the future
- Examine implications
- Identify expected and preferred futures
- Begin identifying strategic pillars

Dec 13
2022



Jan 31
2023





Vermont Forest Future Strategic Roadmap Think-Tank Part 2: Future Scenarios

AGENDA

We are looking forward to your participation at the Vermont Forest Future Strategic Roadmap Think-Tank (Part 2). This will be an engaging and interactive scenario-planning workshop that will analyze plausible futures for the industry.

Date: Friday, January 31 2023

Time: 9:30am – 12:30pm

Location: Barre Alumni Hall
20 Auditorium Hill
Barre, VT 05641

9:30 am Recap of Think-Tank Part 1

10:00 am Develop plausible scenarios of the future

11:30 am Examine implications and outcomes

12:00 pm Identify expected and preferred futures

12:15 pm Begin identifying strategic pillars

12:30 pm Finish

Industry roundtables – key themes (unsorted)

- Deep concern about future workforce.
- Workplace mechanization not yet fully materialized; significant cost barriers. Massive challenge with transition in a workforce constrained environment.
- Differing views about larger innovation investment and capital attraction.
- Concern about future access to forest resources – timber harvest constrained.
- Changing consumer values offer great potential, if we get it right.
- Transition occurring in perception of value of forests, and highest use. Emerging competing uses such as carbon schemes and ‘lifestyle’ purchases.
- Outdoor recreation viewed as synergistic.
- Public perception and education seen as critical ‘future-splitting’ issue. Overarching key issues for the future.
- Overall, landowner investment in forest management too low, reducing the quality of the forests and products.

“We should be feeling optimistic, but are not”





Preliminary
results
N=630

Vermont Forest Future Strategic Roadmap Stakeholder Survey #1

INTRODUCTION

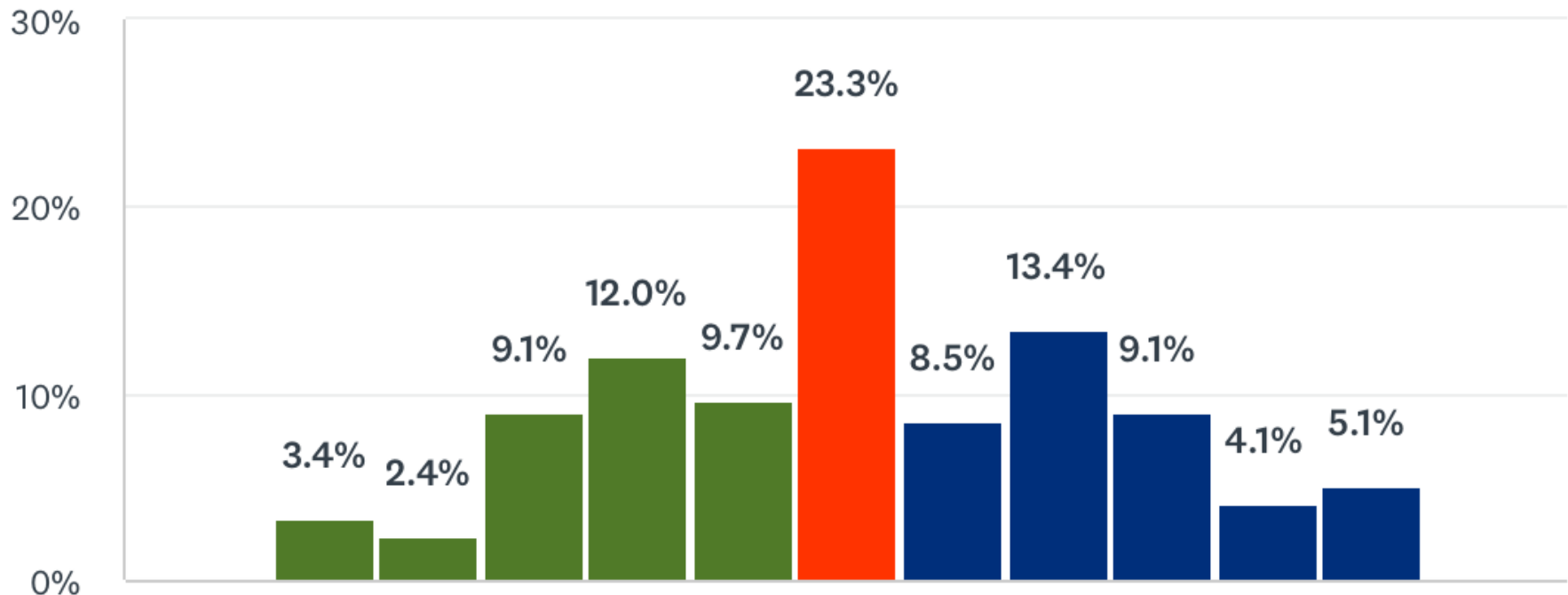
WELCOME TO THE VERMONT FOREST FUTURE STRATEGIC ROADMAP STAKEHOLDER SURVEY

This is the first survey as part of the Vermont Forest Future Strategic Roadmap project. The Vermont Department of Forests, Parks and Recreation (FPR) is embarking on a robust public engagement process through 2022/2023 to identify opportunities to help Vermont chart a path forward to protect the long-term viability of forest-based businesses - and the many benefits they provide to the state's environment, economy and quality of life. By January 2024, FPR will deliver to the General Assembly the Vermont Forest Future Strategic Roadmap – a ten-year plan to strengthen, modernize, promote, and protect Vermont's forest products sector and the broader forest economy. The project was authorized by the Vermont Legislature and signed into law by Governor Scott in Act 183 of 2022.

ECONOMIC VIABILITY and IMPACT

Overall economic impact on forest dependent towns and communities

Over the next decade, do you see the overall economic impact of Vermont's forest economy on forest dependent communities increasing or decreasing?

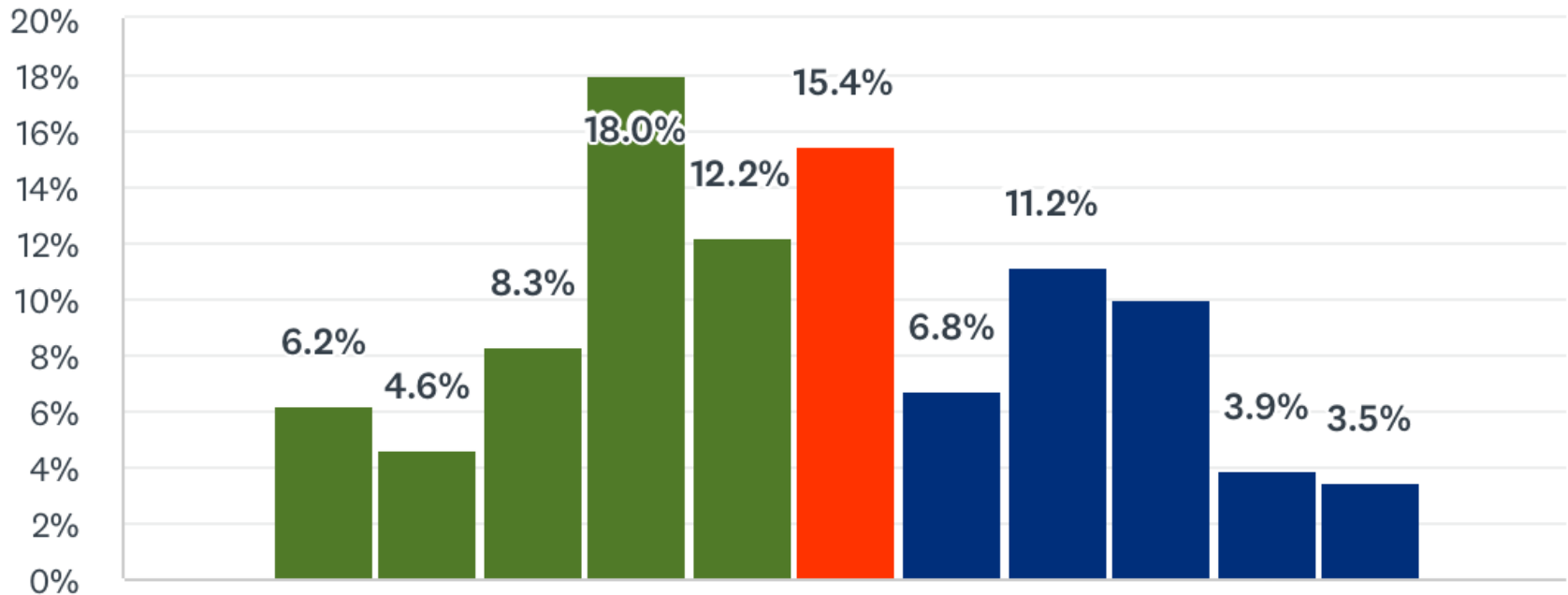


(Scale: -5 = Declining overall impact; 0 = Same; +5 = Increasing overall impact)

ECONOMIC VIABILITY and IMPACT

Economic viability of Vermont's forest products sector.

Over the next decade, do you see the economic viability of Vermont's forest products sector increasing or decreasing?

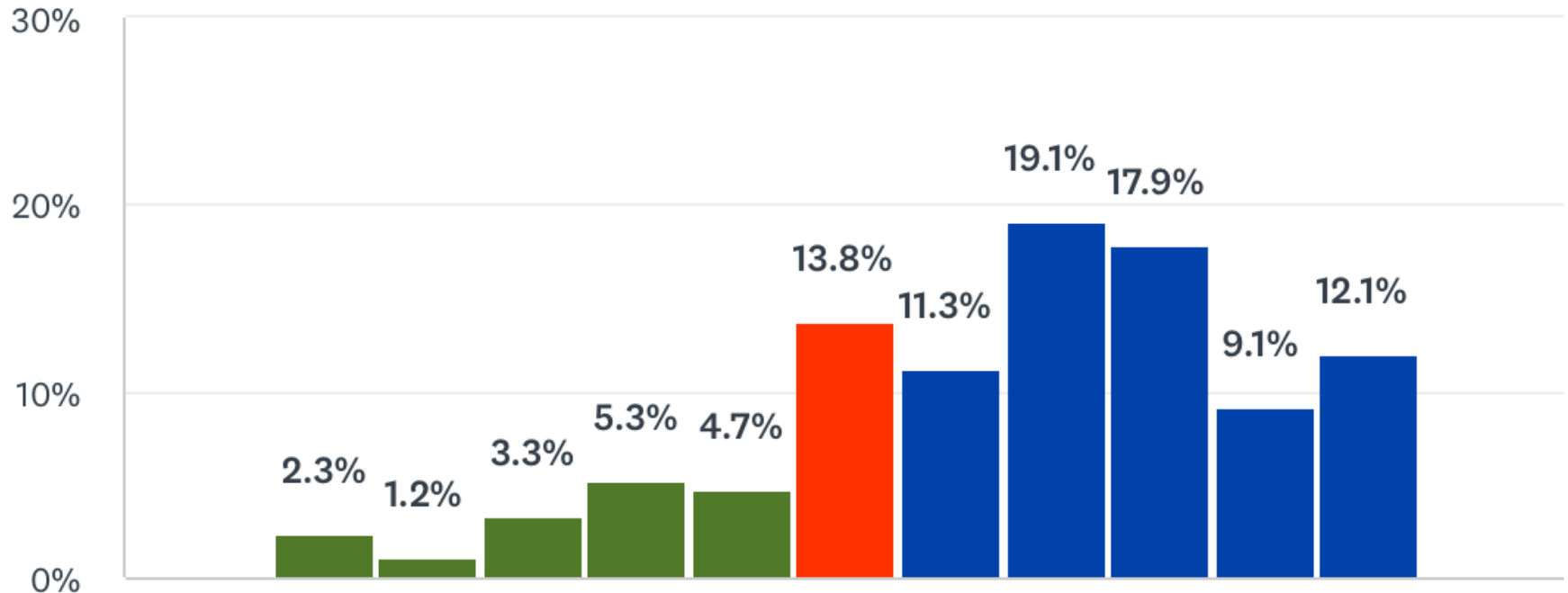


(Scale: -5 = Declining significantly; 0 = Same; +5 = Increasing significantly)

ECONOMIC VIABILITY and IMPACT

Economic impact of Vermont's forest economy NOT including the forest products sector

Over the next decade, do you see the economic impact of Vermont's forest economy not including the forest products sector increasing or decreasing?

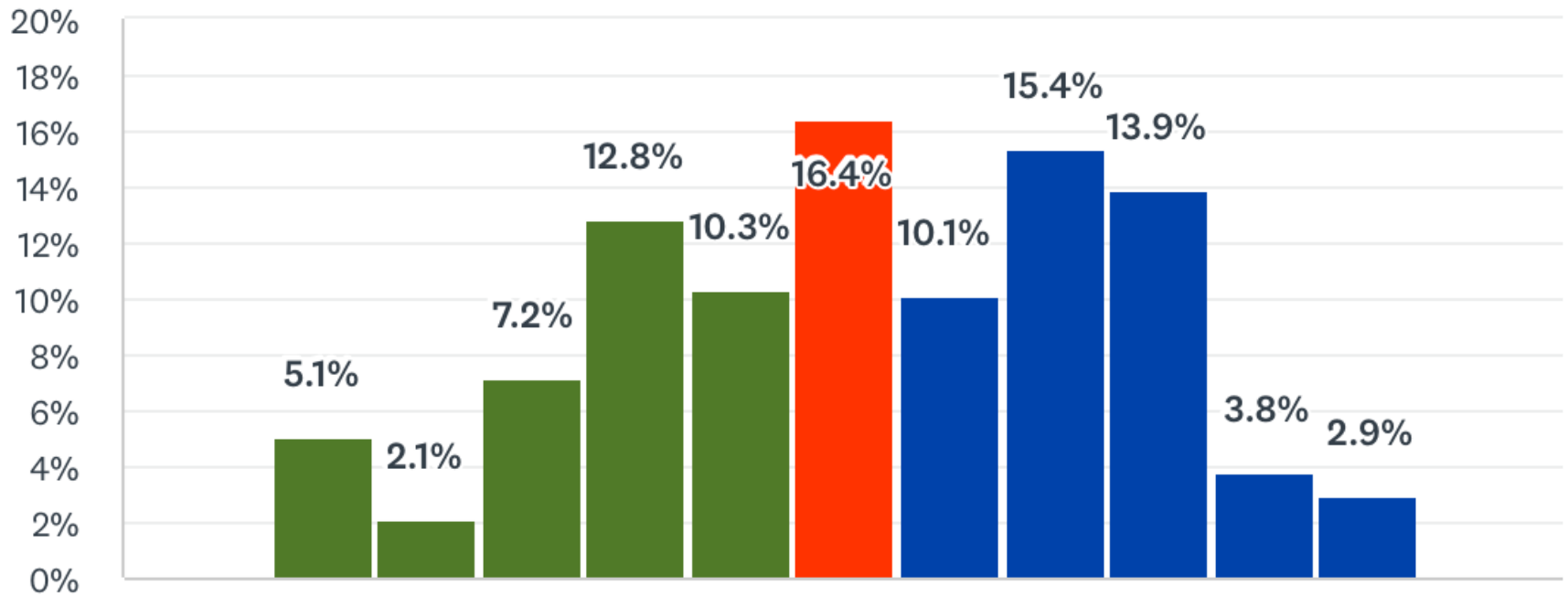


(Scale: -5 = Declining significantly; 0 = Same; +5 = Increasing significantly)

WORKING FORESTS

Quality of Vermont's working forests

From a forest products perspective, do you think the quality of the working forests in Vermont will improve or decline over the next decade?

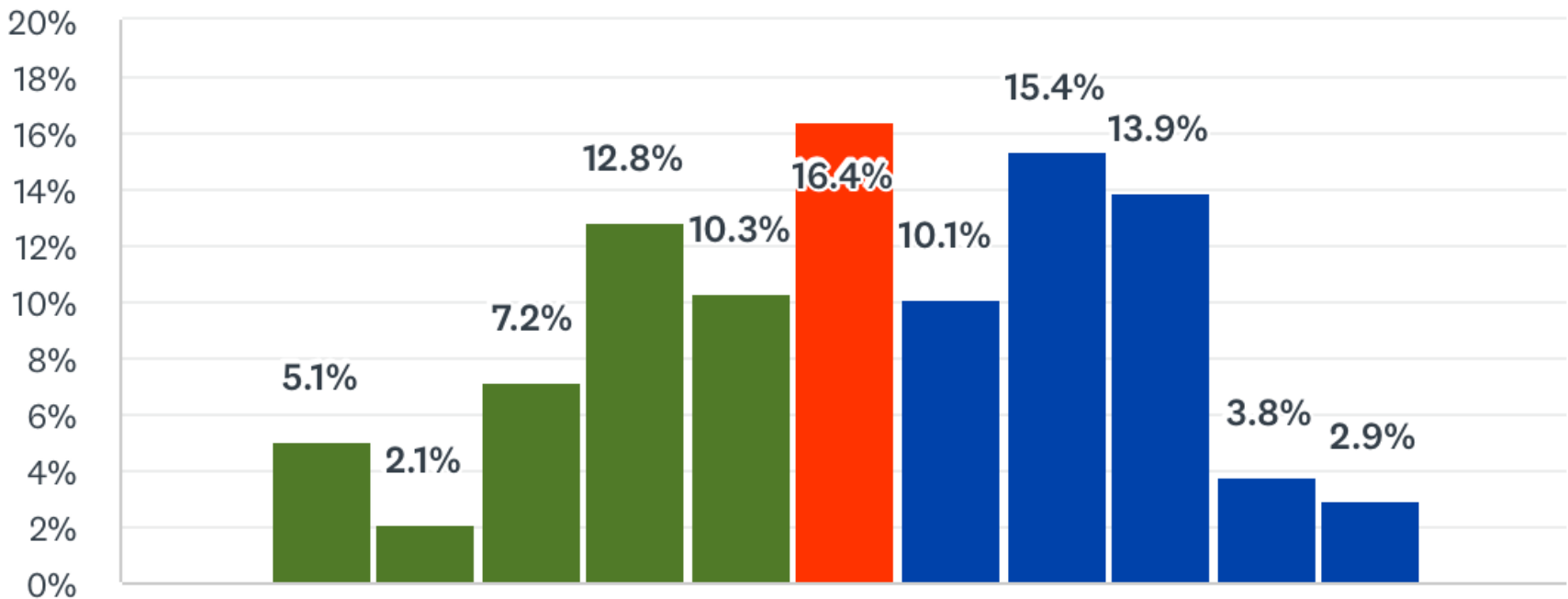


(Scale: -5 = Significant decline; 0 = Same; +5 = Significant improvement)

MARKETS and INNOVATION

Processing and Value Adding

Over the next decade, do you see Vermont having more, or less, local processing and manufacture of solid and composite wood products like those used for construction and home furnishings?

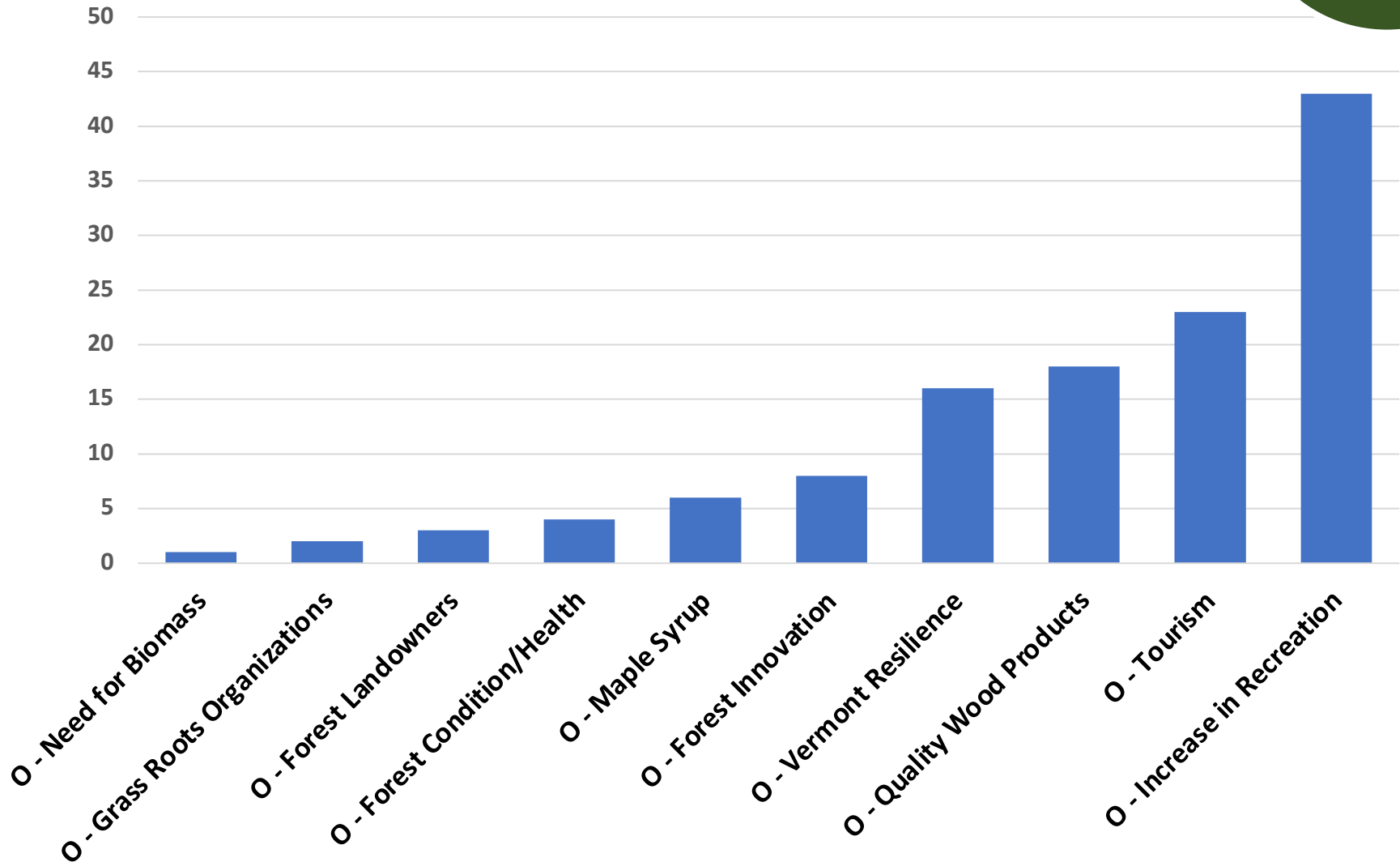


(Scale: -5 = Significantly less; 0 = Same; +5 = Significantly more)

Views of the future - overall Vermont forest economy

What are you most optimistic about in relation to the future potential of the overall Vermont forest economy?

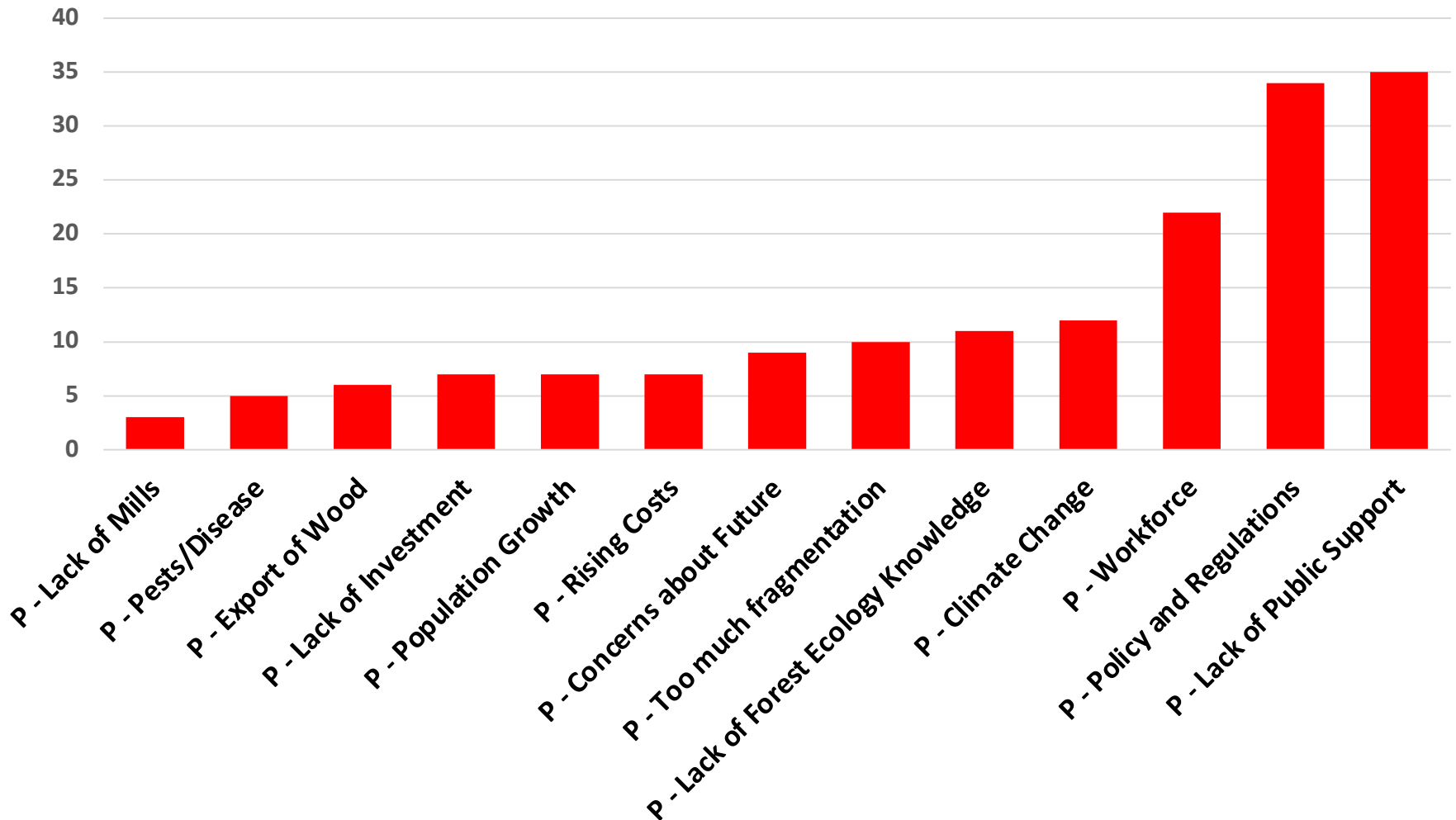
Categorized
open-ended
questions



Views of the future - overall Vermont forest economy

Categorized
open-ended
questions

What are you most pessimistic about in relation to the future potential of the overall Vermont forest economy?



Macro Trends and Forces of Change Related to . . .

- Demographics, population and mass urbanization
- Energy, food, water & climate change
- Technology driving change

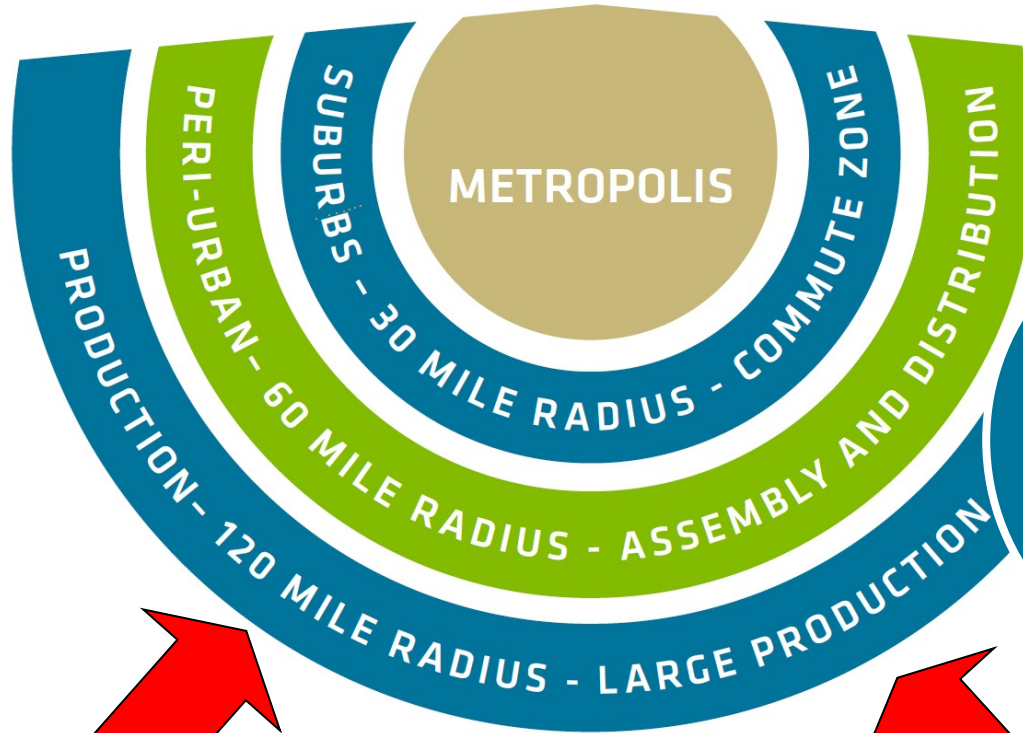


Impact of mass urbanization

Arc of Innovation



Future-Splitting
Questions™



Society is re-distributing into mega-cities and specialized regional centers

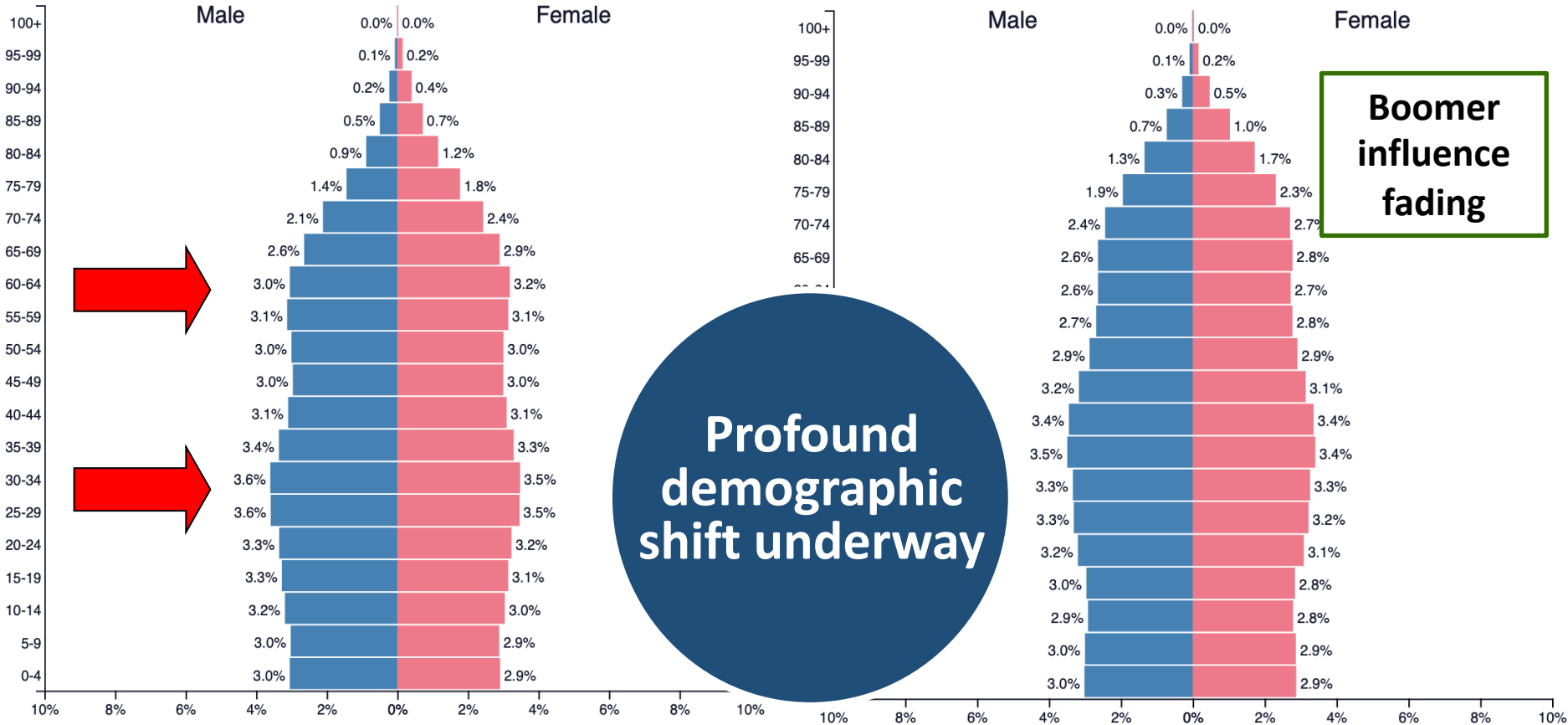
Production and recreation landscapes

United States of America ▼ 2022

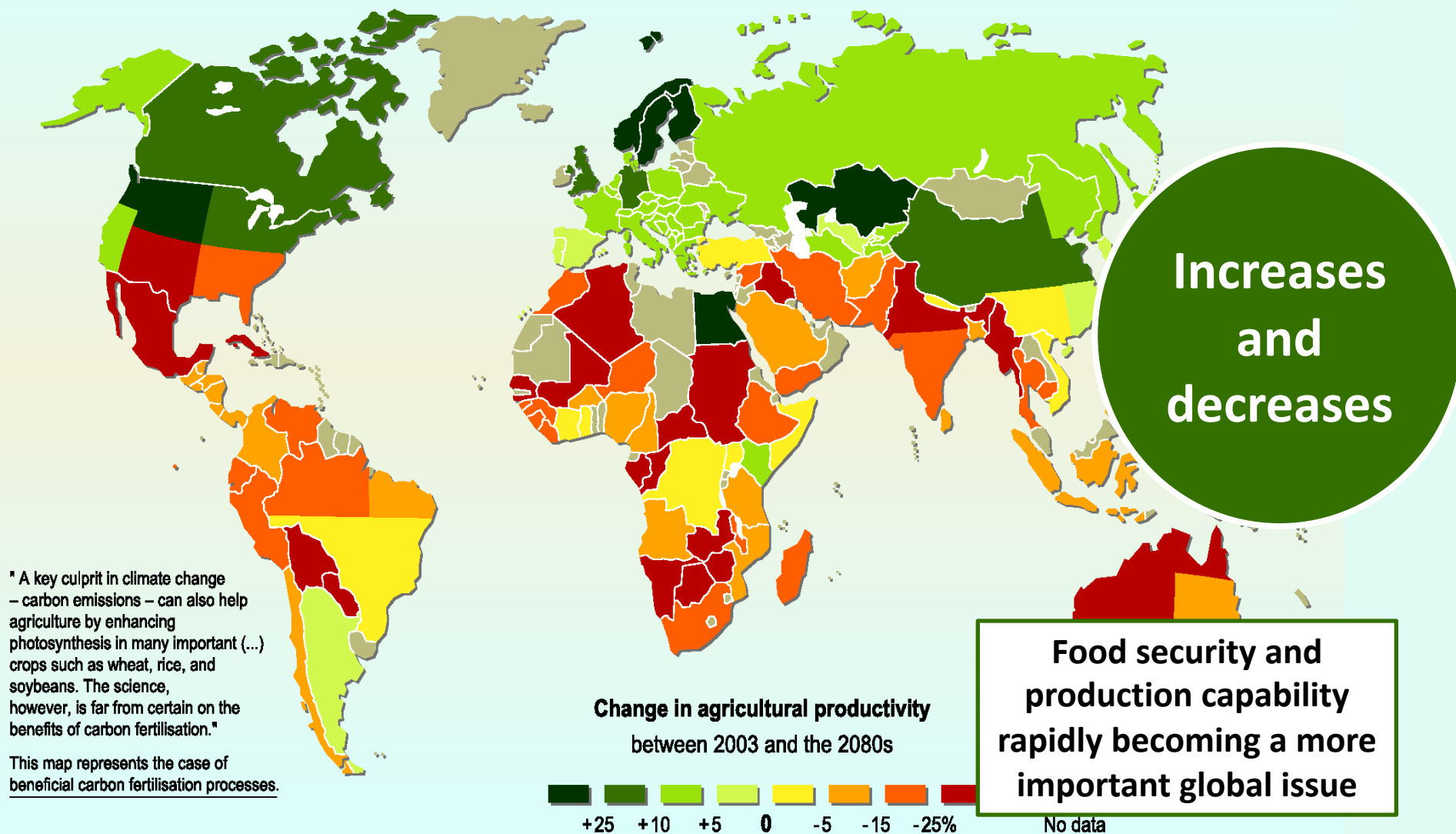
Population: 334,805,268

United States of America ▼ 2032

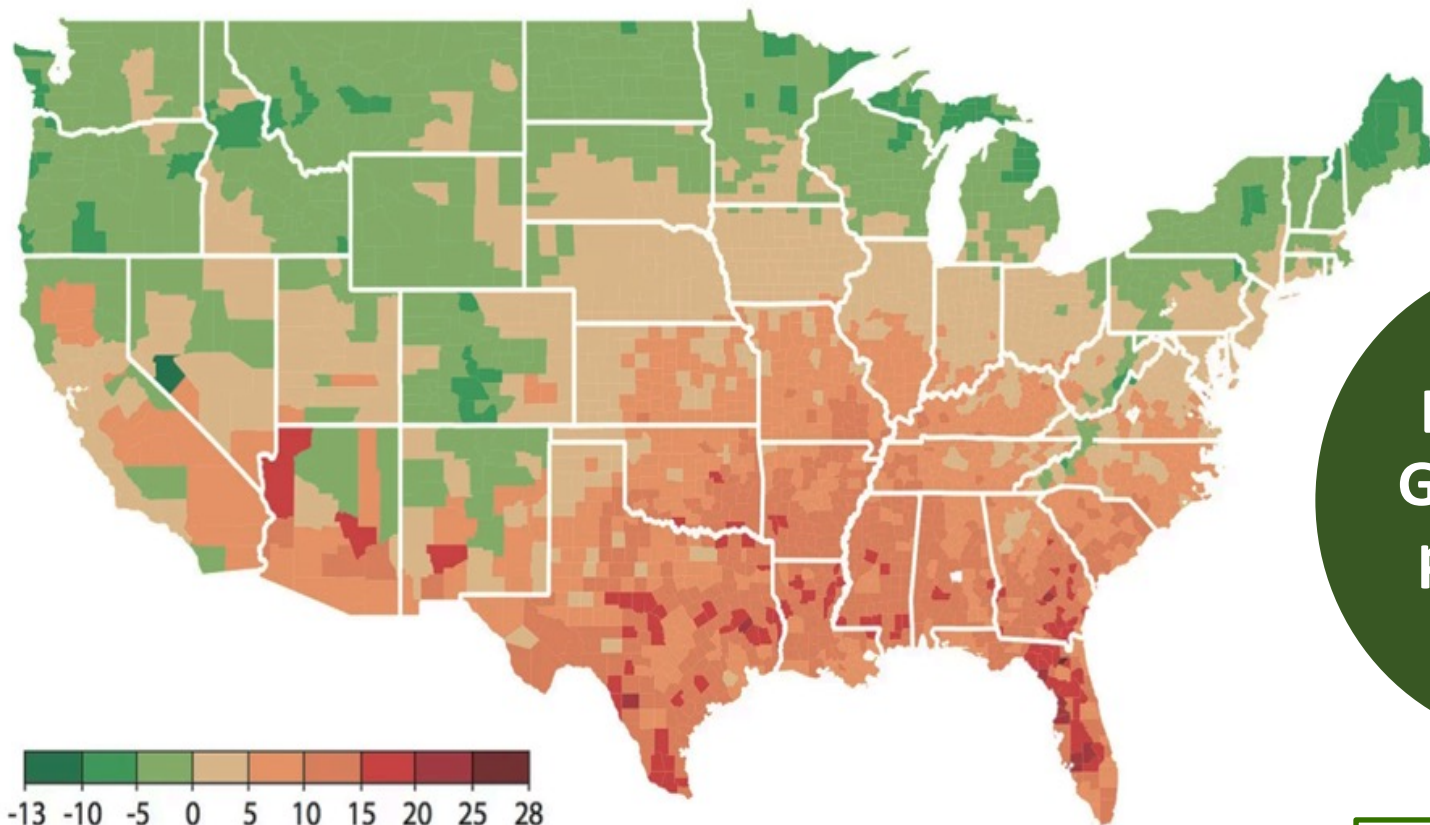
Population: 353,335,452



Projected impact of climate change on agricultural yields



Source: Cline W., 2007, *Global Warming and Agriculture*.



-13 -10 -5 0 5 10 15 20 25 28
Total economic damage (% county GDP)

Potential economic damages are shown at the county level in a scenario in which emissions of greenhouse gases continue at current rates. Green indicates areas that could see economic benefits. To see an interactive version of this map, click [here](#).

Hsiang, Kopp, Jina, Rising, et al./Science

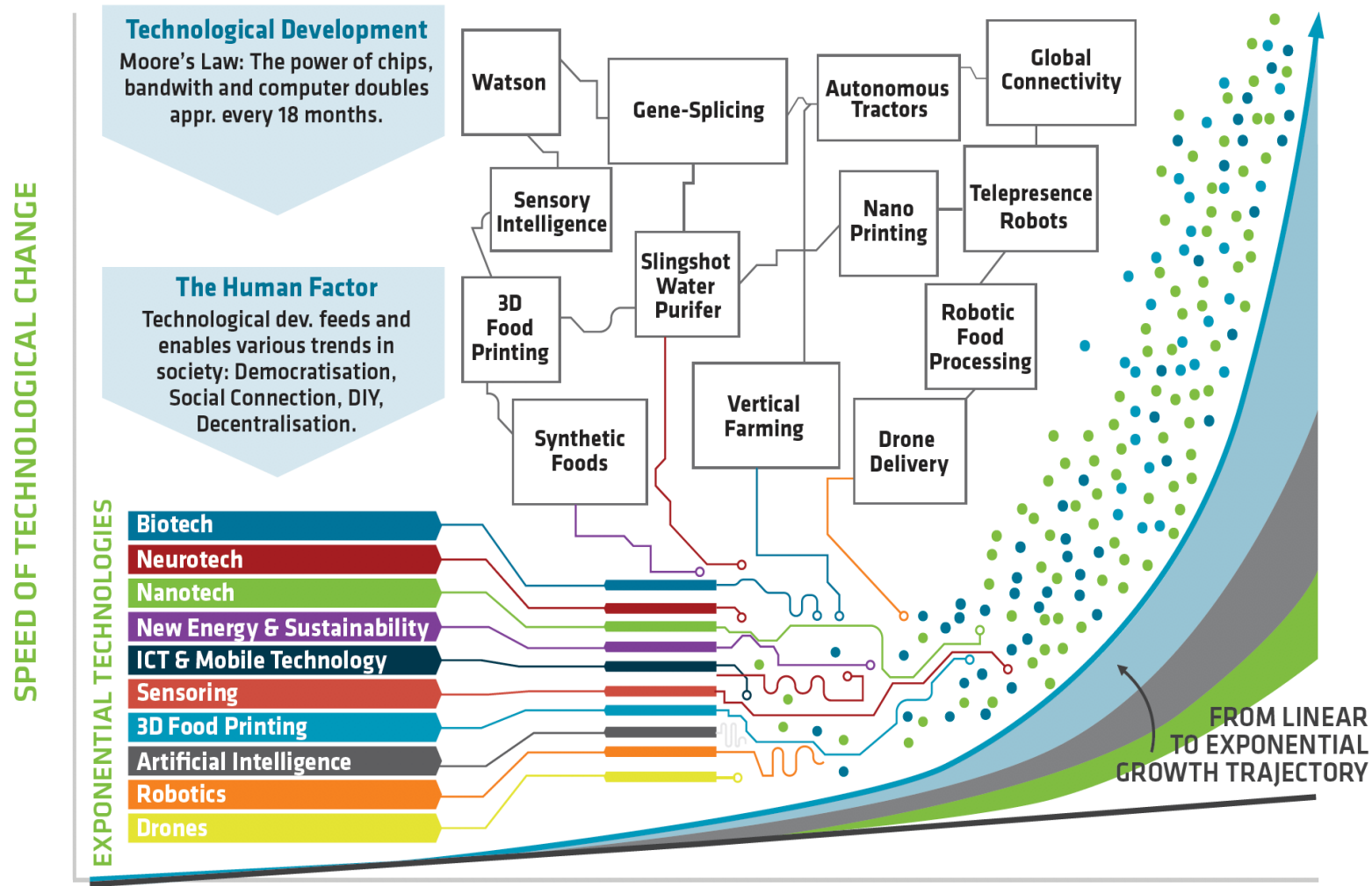
Source: [Christopher Joyce, MPR News, June 29, 2017](#)

**Long term
GDP impact
positive in
north**

**Climate change may
drive migration patterns
within US may move to
'north', and from 'west
to center'**

Rapid systemic change and technology integration

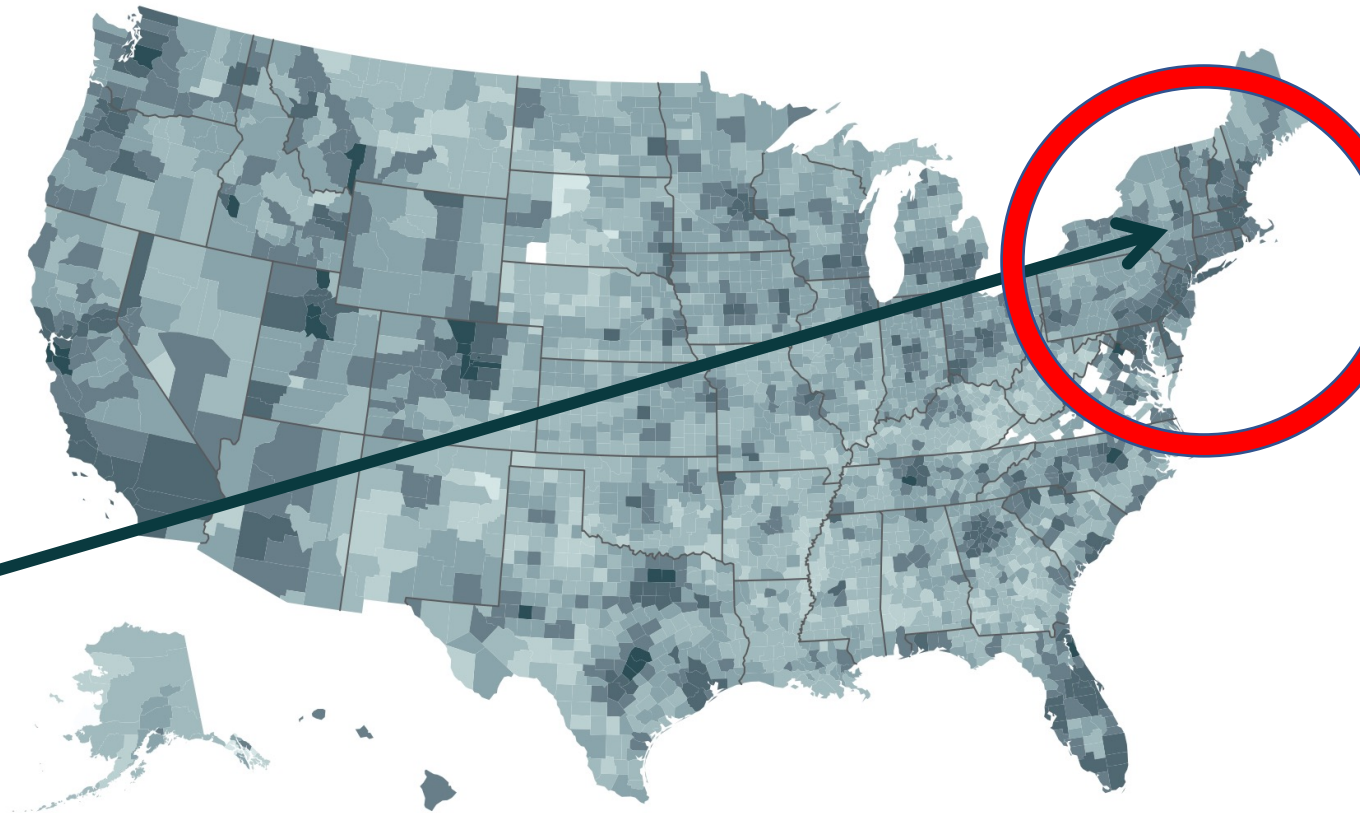
Adapted from: Source: Deloitte. 2014. Industry 4.0 Challenges and solutions for the digital transformation and use of exponential technologies



Headline Innovation Index

- Headline Innovation Index
 - Human Capital and Knowledge Creation
 - Business Dynamics
 - Business Profile
 - Employment and Productivity
 - Economic Well-Being

The Innovation Index includes both innovation inputs and outputs in order to measure both innovation capacity and innovation outcomes.



Vermont forest sector and economy – is it part of the Northeast innovation cluster?

Key Drivers:

What key drivers do you think are most important for the future of the Vermont forest economy (and forest products sector)?

(Key drivers are events, trends, developments, catalysts or forces that actively influence or cause change.)



Key Drivers Identification

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



IMPACT MATRIX HANDOUT

VERMONT FOREST FUTURE STRATEGIC ROADMAP

Think-Tank Part 1

December 13, 2022



Rate each driver in terms of likely future impacts on the following dimensions of the forest economy.

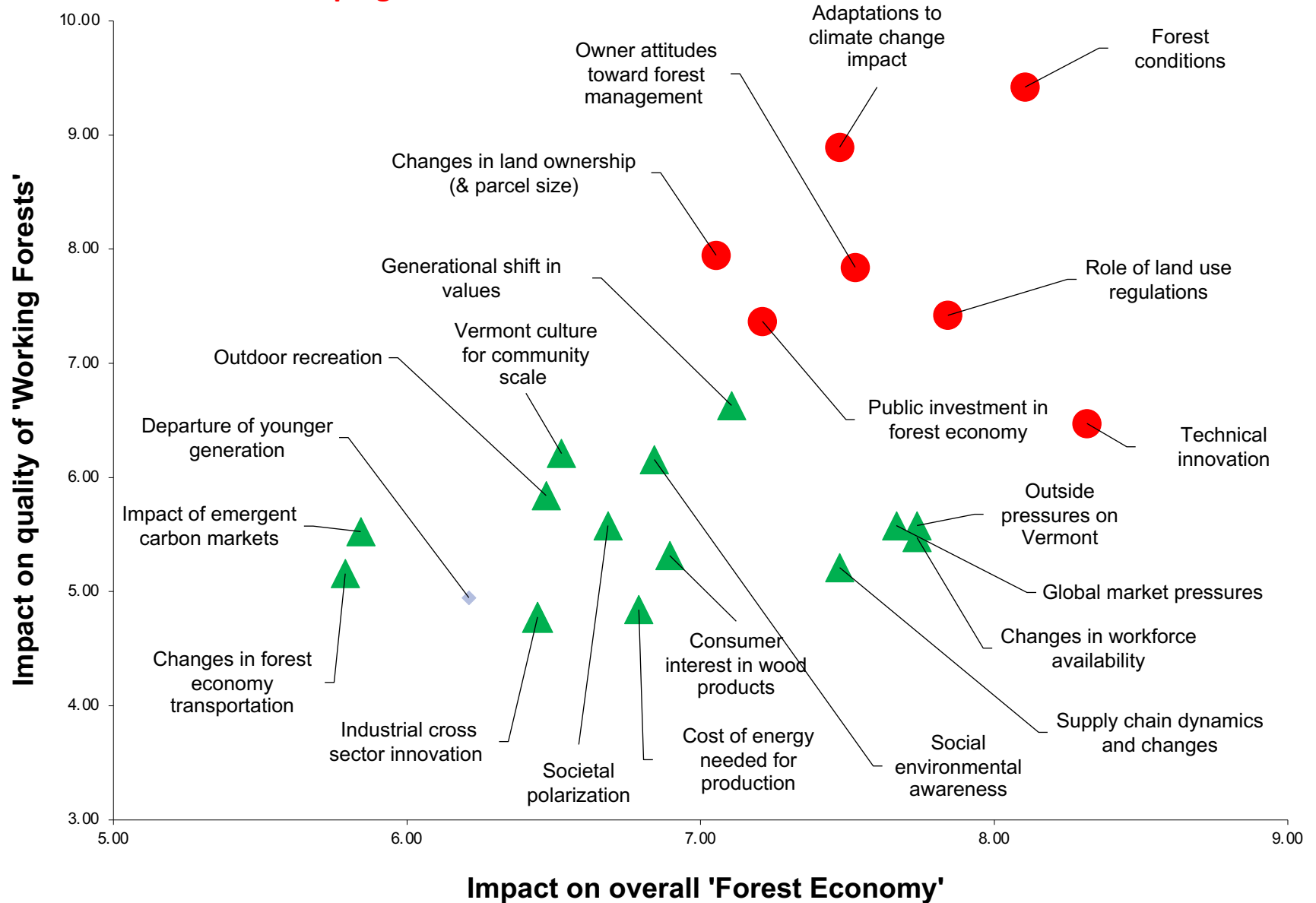
IMPACT SCALE: 1 = Low relative impact; 10 = Very high relative impact

	Dimensions			
Driver	Overall Forest Economy	Quality of Working Forests	Innovation in Forest Product Enterprises	Demand for VT Forest Products
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Rating future impact
of each driver –
individual scoring

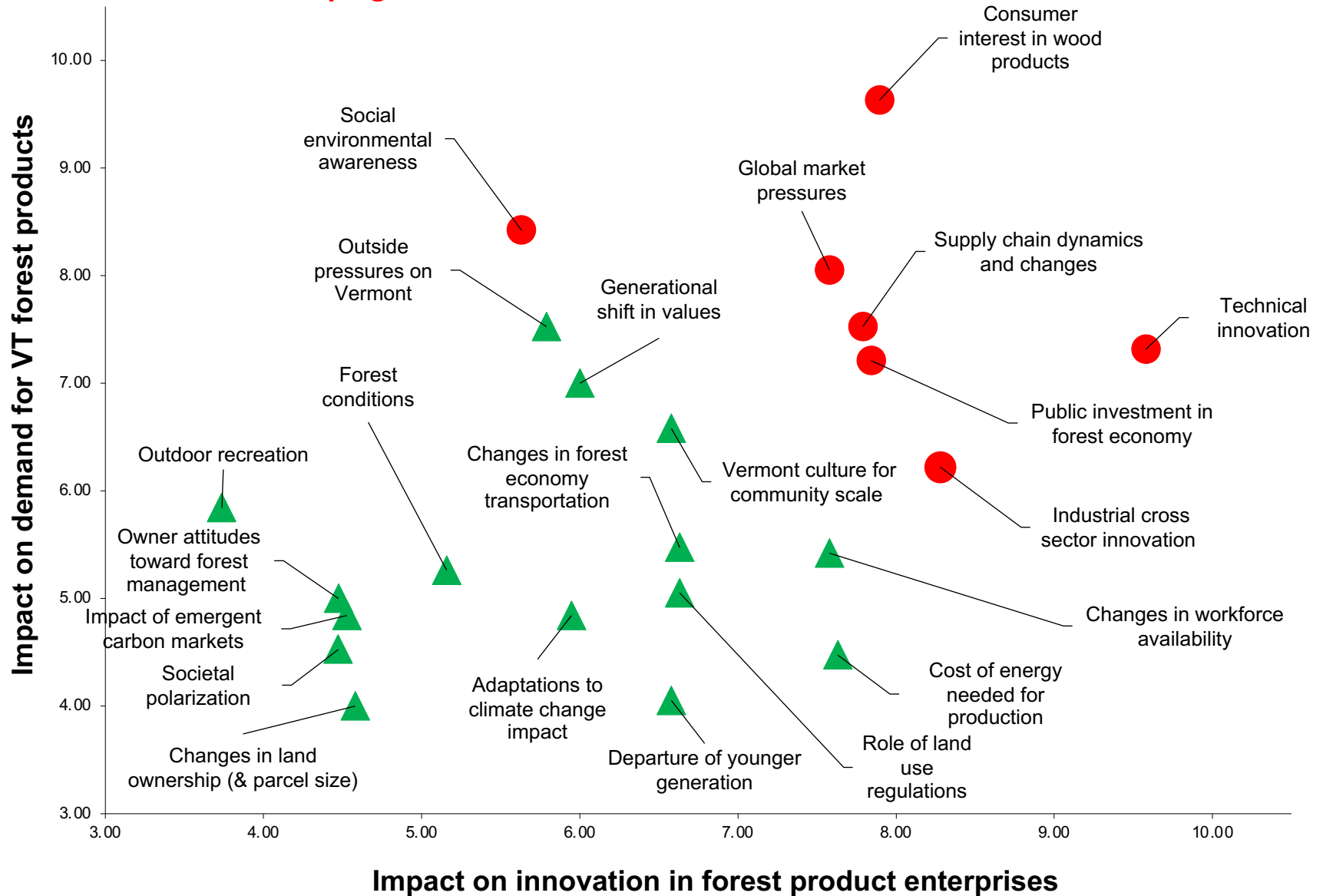
VERMONT FOREST MANAGEMENT

Scenario-shaping cluster of drivers



INDUSTRY ADAPTATION

Scenario-shaping cluster of drivers



Future-splitting clusters of drivers

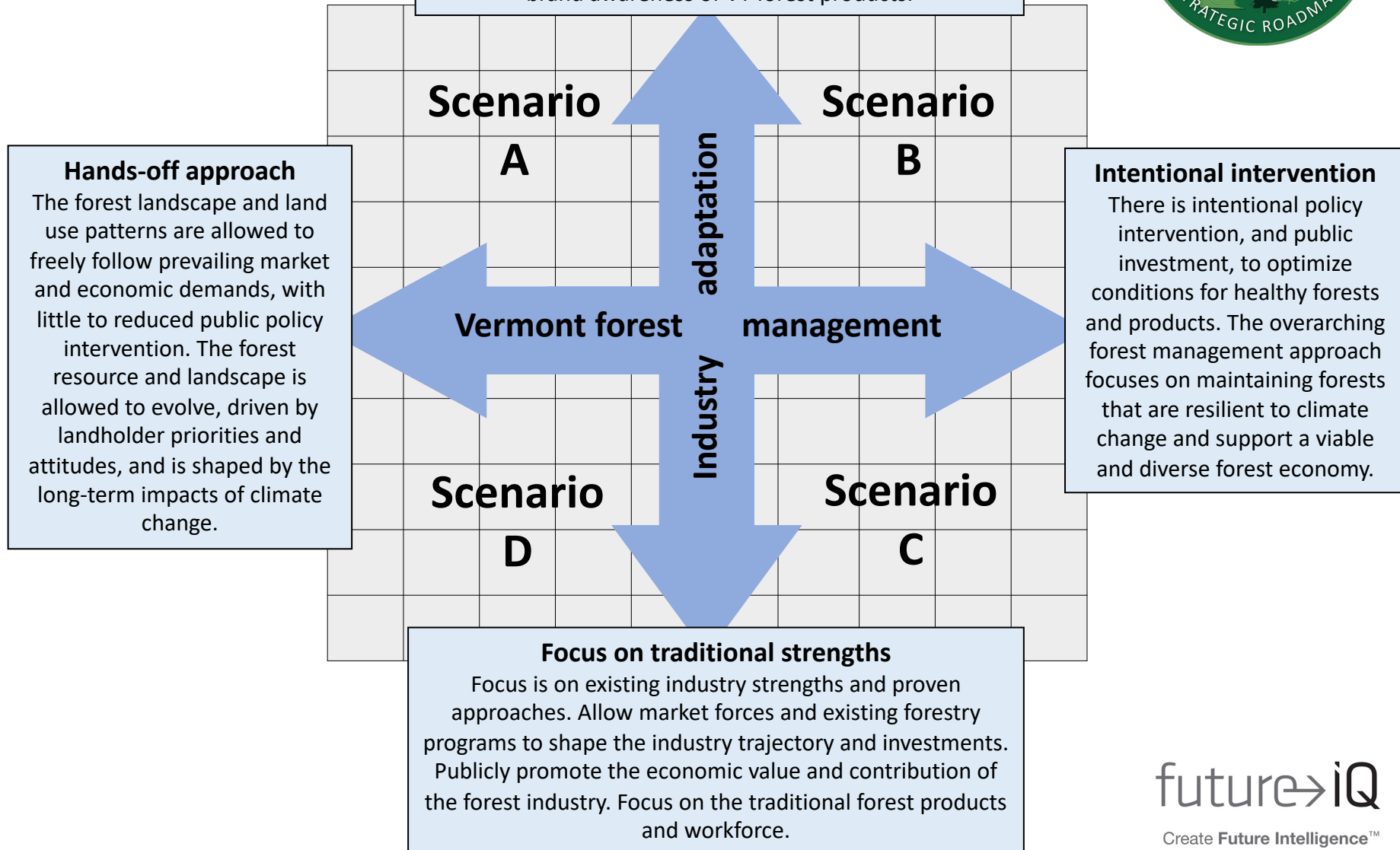
VERMONT FOREST MANAGEMENT

- **Forest conditions**
- Technical innovation
- Role of land use regulation
- Adaptations to climate change
- Owner attitudes toward forest management
- Changes in land ownership (& 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

Plausible Scenario Matrix 2035



Scenario Development

Breakout Group Handout Packs

Vermont Forest Future



Roles

- Facilitator
- Timekeeper
- Recorders
- Presenter(s)



Suggested Scenario Group timeline (elapsed time - minutes)

0:00 min	Group to meet and scope out scenario (10m)
0:10 min	Develop Characteristics & Narratives (35m)
0:45 min	Develop Headlines News – 2025, 2030, 2035 (10m)
0:55 min	Short scenario name and description (5m)
0:60 min	Return; ready to present

Scenario Characteristics and Impacts- Dimensions to Consider

Forest Economy

- Type and size of forest dependent industries and activities
- Types and size of wood products businesses
- Location of industry activities and clusters of activity
- Scale of non forest product industries (e.g. recreation)
- Changes in overall economic impact and viability
- Levels of public investment and support
- Nature of regulations

Forest Landscape

- Quality of working forests and locations across Vermont
- Land ownership and attitudes to forestry
- Forest health and composition
- Forest uses and management practices
- Overall landscape appearance and character
- Impacts of climate change
- Reputation of Vermont forests
- Public understanding, awareness and perception of forest landscape

Markets and Innovation

- Types of innovation and level of application
- Level of automation and mechanization
- Supply chain dynamics and ownership
- Types of use of Vermont wood products
- Product reputation and certifications



Scenario name:

Forest Economy - Characteristics in 2035:

Forest Landscape - Characteristics in 2035:

Markets and Innovation - Characteristics in 2035:

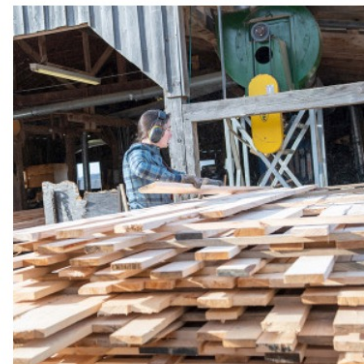
Headline News (Scenario)

Forest Economy	Forest Landscape	Markets and Innovation
2025	2025	2025
2030	2030	2030
2035	2035	2035

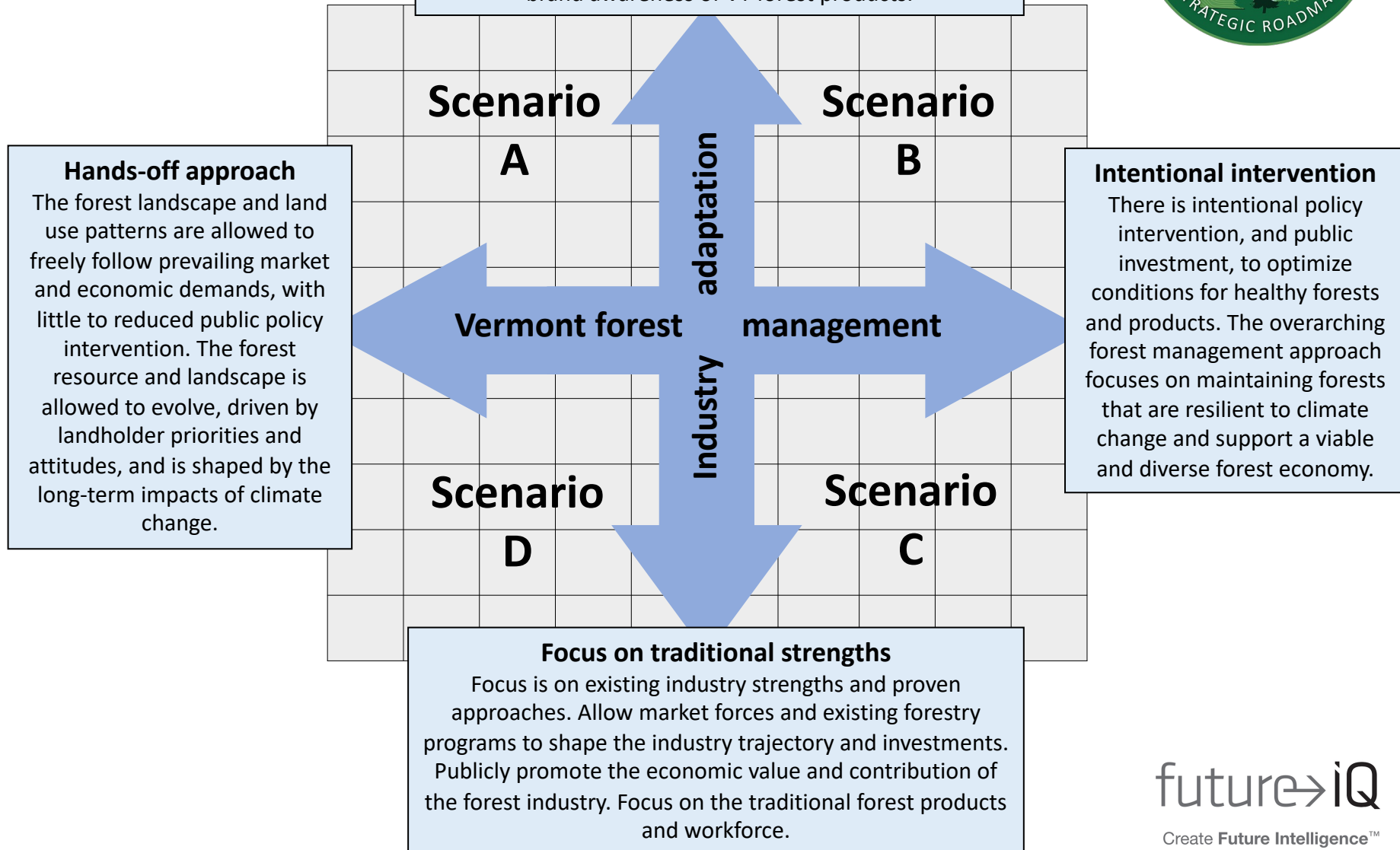
Potential Pitfalls.....



- Not staying in your swim lane (your scenario)
- Trying to 'fix' the scenario
- Emotional reaction; not objective forecasting
- Remember - we are exploring possible futures; not deciding on preference
- People dominating the discussion (not listening)



Plausible Scenario Matrix 2035



Invest in proactive adaptation

Scenario A

Scenario B

adaptation

Vermont forest management

Industry

Scenario D

Scenario C

Hands-off approach

Intentional intervention

Focus on traditional strengths



Vermont Forest
Future

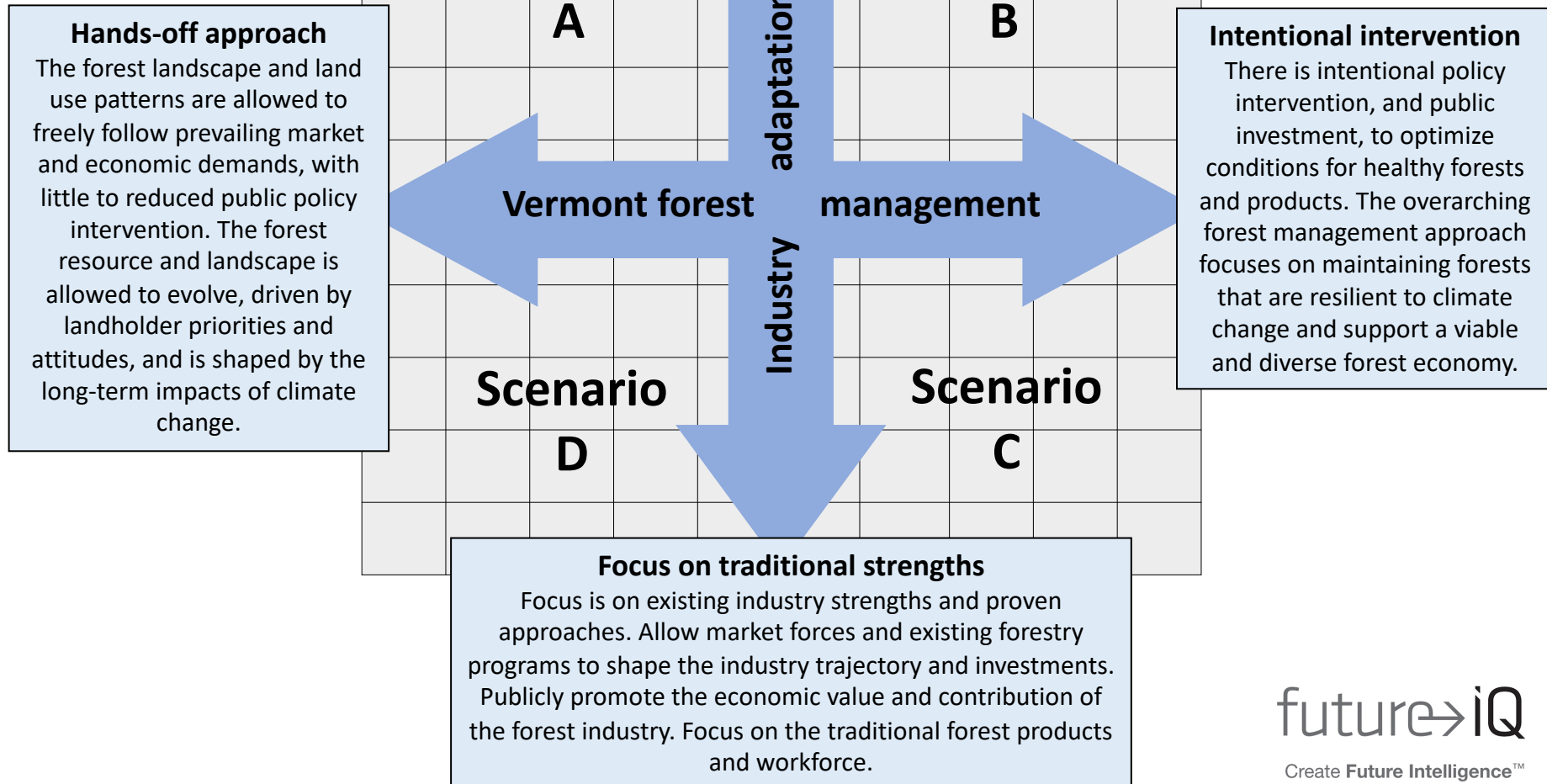
- LEAST
DESIRABLE
FUTURE (L)
- EXPECTED
FUTURE (E)
- PREFERRED
FUTURE (P)

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Plausible Scenario Matrix 2035





Strategic Pillars:

What key strategic pillars (themes) do you think are most important to help build a pathway to the preferred future of the Vermont forest economy (and forest products sector)?





Vermont Forest Future Strategic Roadmap Development

STEP 1 Explore Perceptions

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- Interviews

**Current Conditions
Report**

November – February

STEP 2 Future Scenarios and Implications

- Future Think Tanks
- Vision workshops
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**Scenarios of the
Future Report**

December - March

STEP 3 Develop Draft Strategic Roadmap

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- Identify key themes
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- Draft Recommendations

**Draft Recommendations
Report**

March – May

STEP 4 Forest Future Strategic Roadmap

- Future Summits

**Final Roadmap
Report**

June - November

