Resilient Agriculture

Cultivating Food Systems For A Changing Climate

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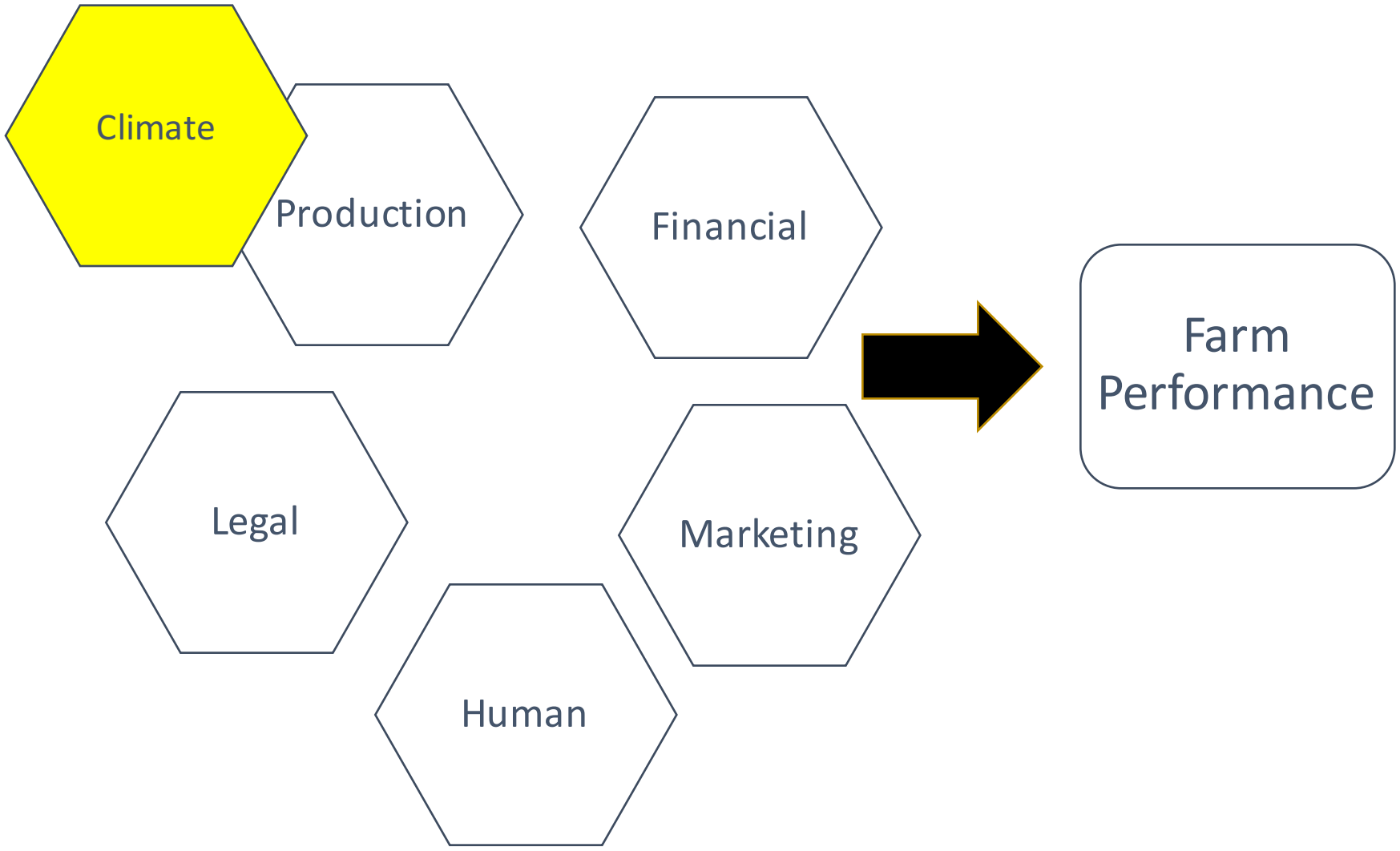
Novel Agricultural Risk



Response Capacity

Recovery Capacity

Transformation Capacity

Key Qualities of Agricultural Resilience

Resistance

Protect Existing System

Resilience

Cultivate Response Capacity

Transformation

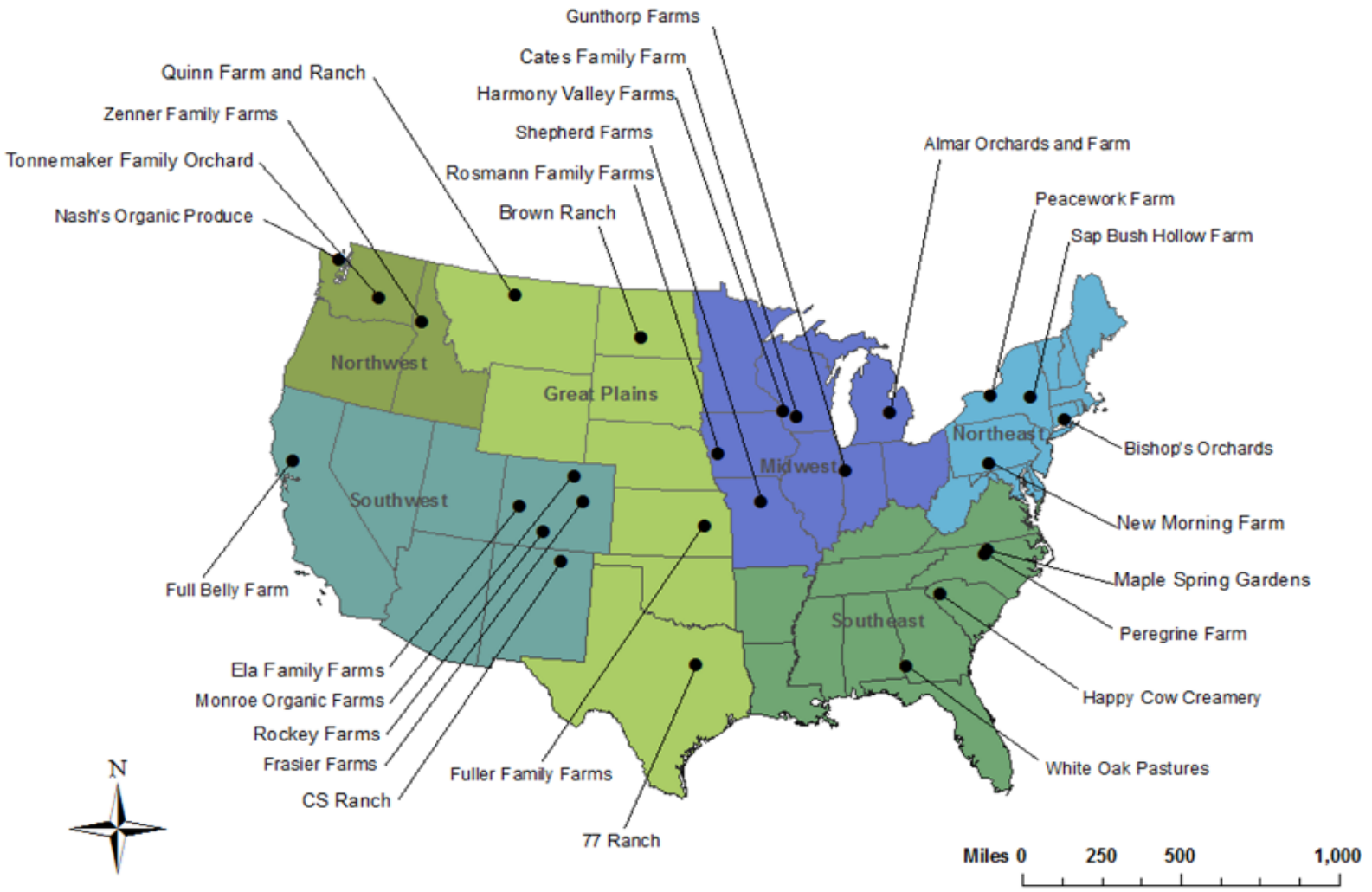
Change Structure, Form and Function

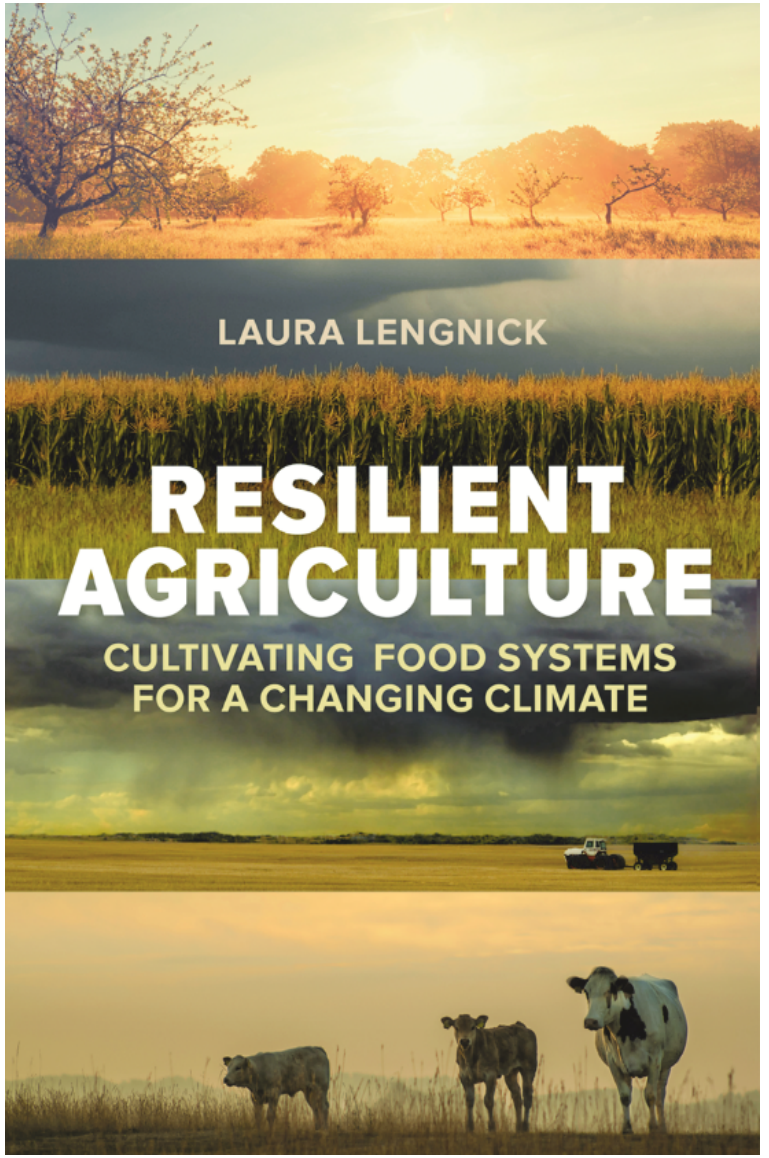
A Framework for Adaptive Action

Resilience Thinking Shifts Management Strategies From…

- Assumption of optimum to **variable conditions**
- National best practices to **local "learn as you go"**
- Imported to **place-based resources**
- Extractive to **regenerative economy**
- Efficient to **redundant systems**
- Producing products to producing **community assets**

Is Sustainable Agriculture A Resilient Agriculture?





Key Resilience Assets

- Soil health
- Planned biodiversity
- Diverse high value markets
- Irrigation/drainage
- Physical protection

Next 30 Years?

Next 30 Years: New Times, New Tools

- Promote soil health & diversification
- Reduce climate risk, capture climate opportunities
- Manage for agroecosystem resilience
- Participate in place-based resilience research, education and development
- Engage your megaregion

Opportunities in Agriculture

CONTENTS

Also available at: www.sare.org/cultivating-resilience or order a free hard copy at (301) 779-0007.

SARE
Sustainable Agriculture Research & Education

Cultivating Climate Resilience on Farms and Ranches

Sue and Gary Price are taking steps to improve the resilience of their Texas ranch to the hotter, drier conditions they have seen in recent years. – Photo by Carl Wolfschmidt

GARY PRICE, WHO HAS PRODUCED CATTLE NEAR Blooming Grove, Texas, for more than 40 years, knows something about the weather. According to him, the weather used to follow a fairly predictable pattern. "We had cold winters and then a good spring flush," he said. "We knew when our clovers were going to start growing and could almost predict to the day when we were going to have enough grass to stop feeding. If you could hang on until mid-September, when the fall rains would start, you'd be okay."

Since about 2007, however, Price has seen a new kind of variability to the weather. Heat waves have been longer and more intense, and droughts have been more persistent, including a three-month stretch with no rain in 2011 that left all of his ponds dry.

Price is not alone in grappling with more variable weather patterns and extreme weather events. Farmers and ranchers throughout the United States have been experiencing changes in weather over the last two decades that make it harder to produce crops and livestock.

In the Midwest and Northeast, more frequent heavy spring rainfalls complicate fieldwork and bring catastrophic flooding. In the Southwest, prolonged and extreme droughts have forced many ranchers to reduce herd size or exit ranching altogether. As winters warm and growing seasons lengthen, pest populations are increasing throughout the country. Warmer winters and springs cause fruit trees to bloom earlier, increasing the risk of total fruit crop failure due to freezes. In many regions, producers struggle to manage more periods of higher temperatures and dry weather, along with more heat waves and drought. This situation is made more challenging as competition for water intensifies.

Even without these kinds of changes in the weather, agriculture is a risky business. The outcome of every