



Data Solutions and Value Capture Propositions to Support Bioenergy Crops

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Topics for discussion



CURRENT
AGRICULTURAL
ENVIRONMENT



FARM DATA
COLLECTION
SYSTEMS



KEY
INFLUENCES
AND NOVEL
INCENTIVES

Are We On The Edge Of An Agricultural Recession?

AUGUST 31, 2018 05:00 AM

Tweet



Containers are seen at the Yangshan Deep Water Port in Shanghai, China April 24, 2018.



By CAROL WOLF / MONEYWATCH / November 1, 2018, 10:58 AM

U.S. farmers are missing out on America's economic boom

Erin Brown / Grand Vale Creative

'A lot sobering': Ag economist's take on farm income

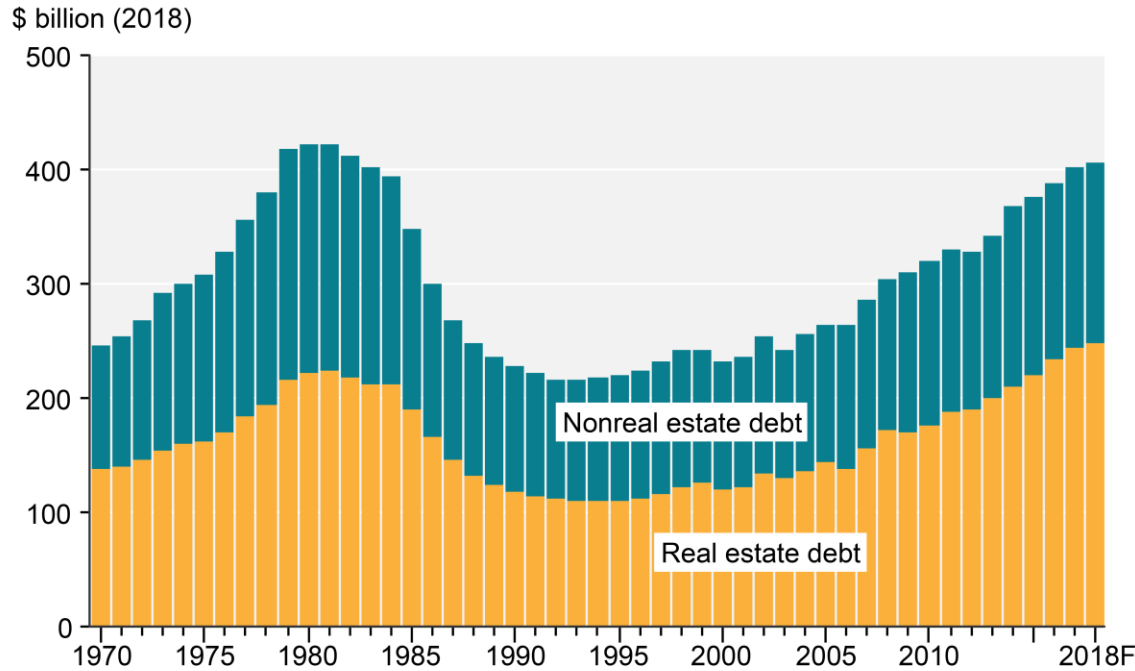
By Jonathan Knutson / Agweek Staff Writer on Nov 12, 2018 at 8:00 a.m.



Current Agricultural Environment

Farm debt and profits

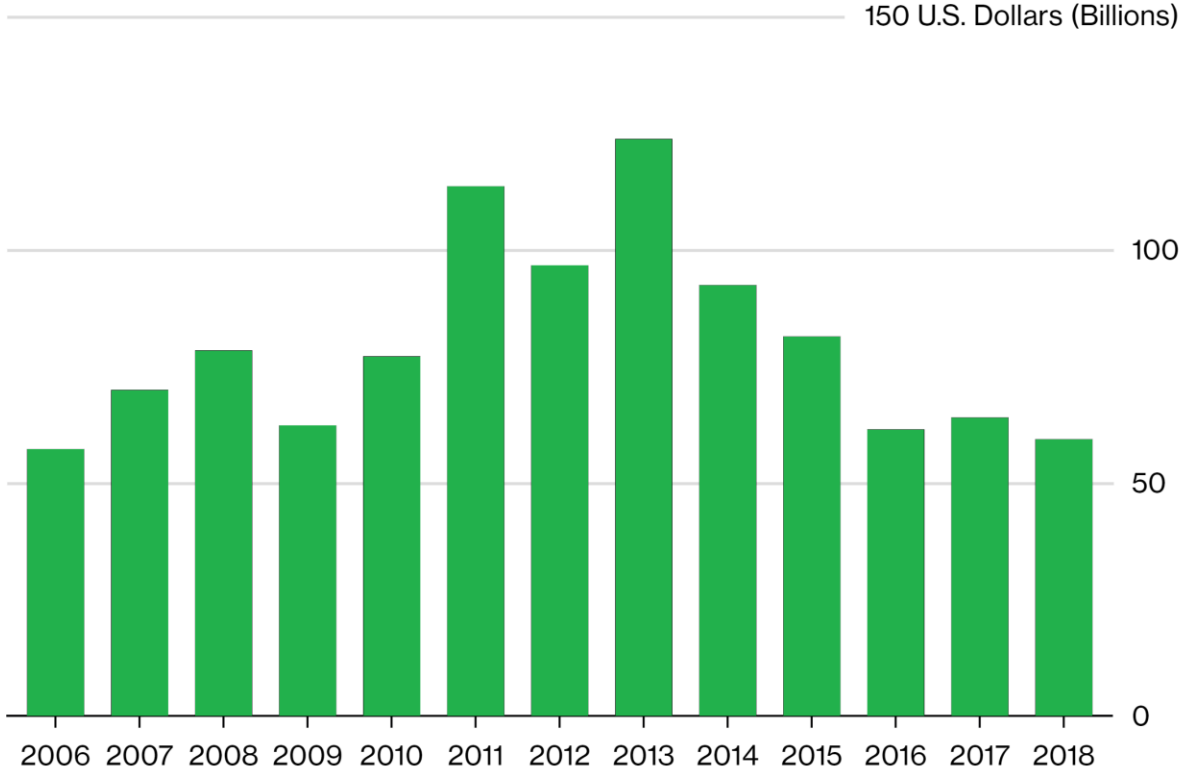
Farm sector debt, inflation adjusted, 1970-2018F



Note: F = forecast. The GDP chain-type price index is used to convert the nominal (current-dollar) statistics to real (inflation adjusted) amounts (2018=100).
 Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
 Data as of August 30, 2018.

U.S. Farm Profits Tumble

Net income to be lowest since 2006

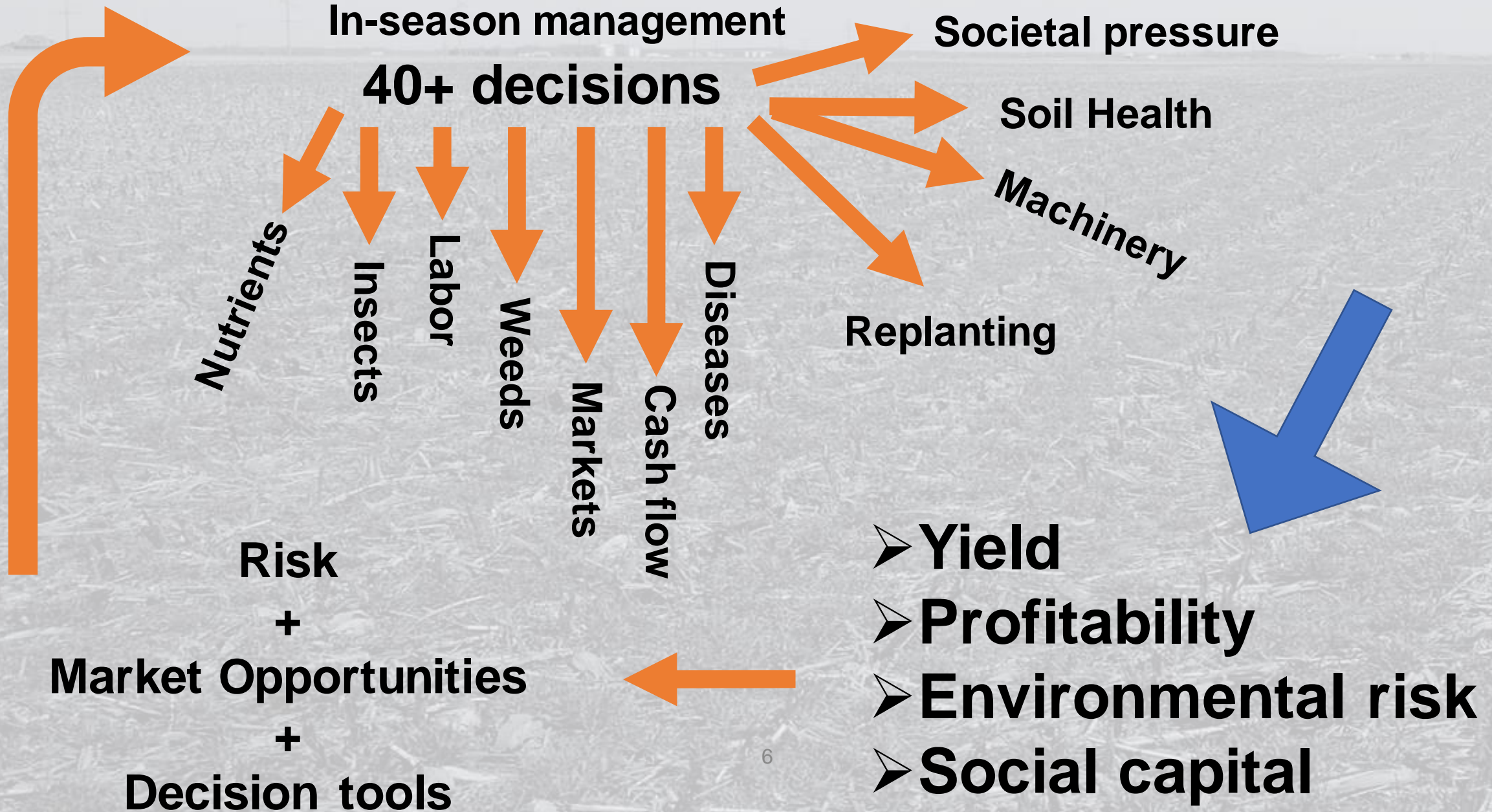


Source: U.S. Department of Agriculture.

Note: 2017 profit is an estimate, 2018 is a forecast.

<https://www.bloomberg.com/news/articles/2018-02-07/u-s-farm-income-to-hit-12-year-low-as-agriculture-rout-persists>

Data tools: Managing through the risk



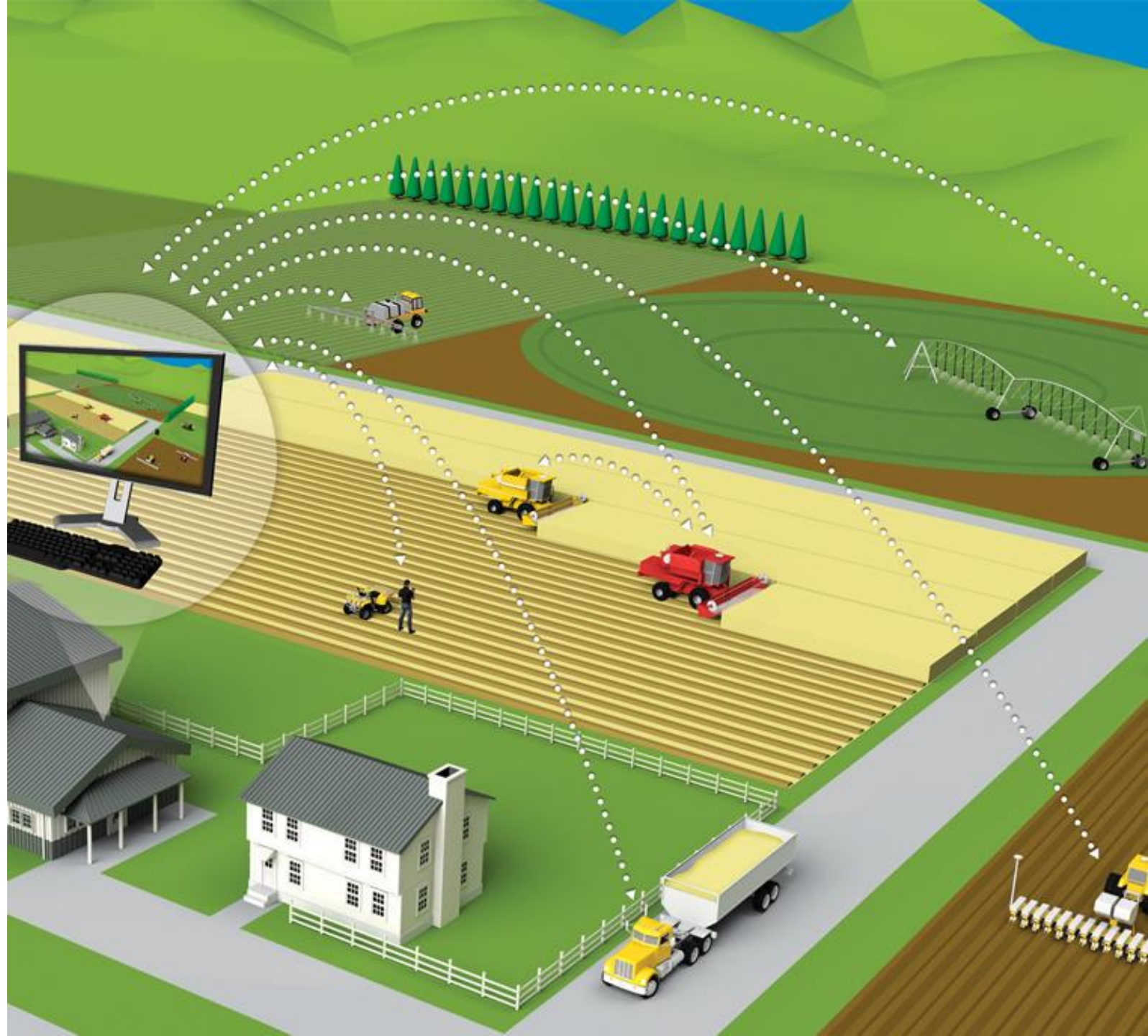
Leveraging existing data systems

Remote data collection

Application program interface (API)

Data sharing protocols

Data privacy and use policies

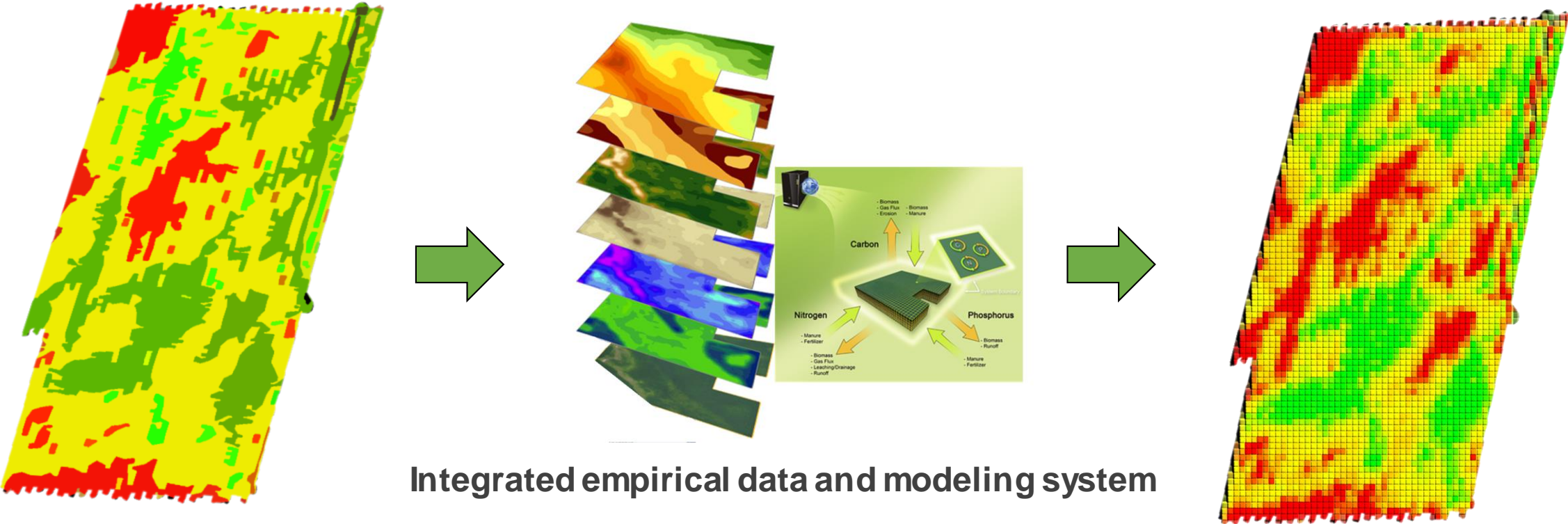


Tying it together: Business management

Precision business management

Franchising strategies

Input allocation and return



Integrated empirical data and modeling system

Before the ask

Thinking about the value and offer

Farm business management influences



2.1 million
farm businesses



Fragmentation

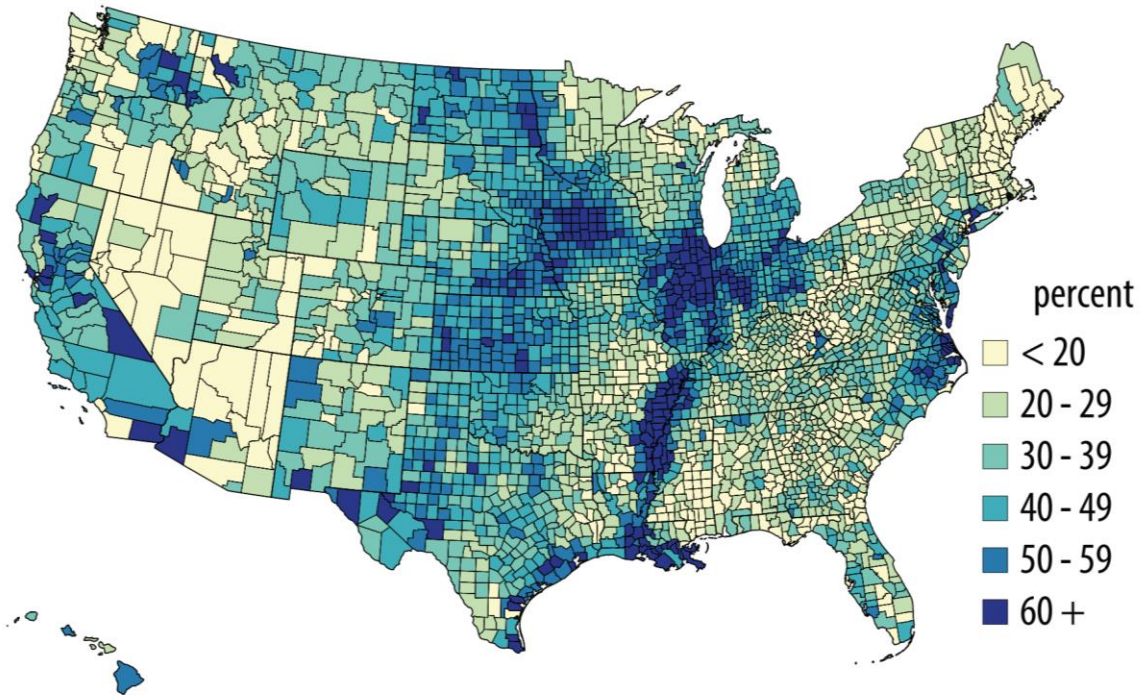


Institutional
knowledge



Operating
loans and
capital

U.S. = 38.8%



Source: USDA NASS, 2012 Census of Agriculture.

Rental agreements

Contracts for practices

Relationship management

**Land ownership and
influence**

Operational Management and Environment

Soil

Water

Agronomic practices

Labor

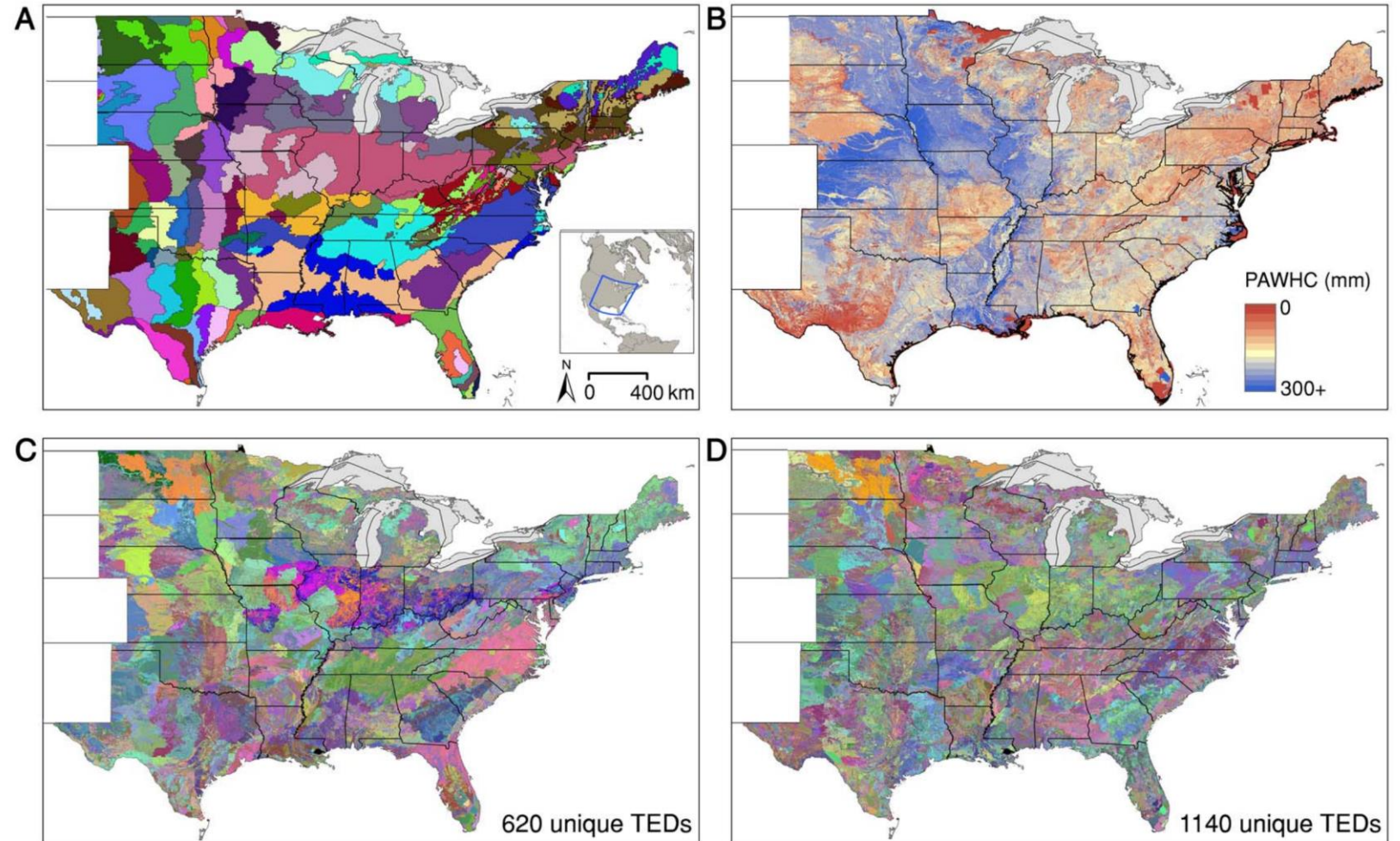
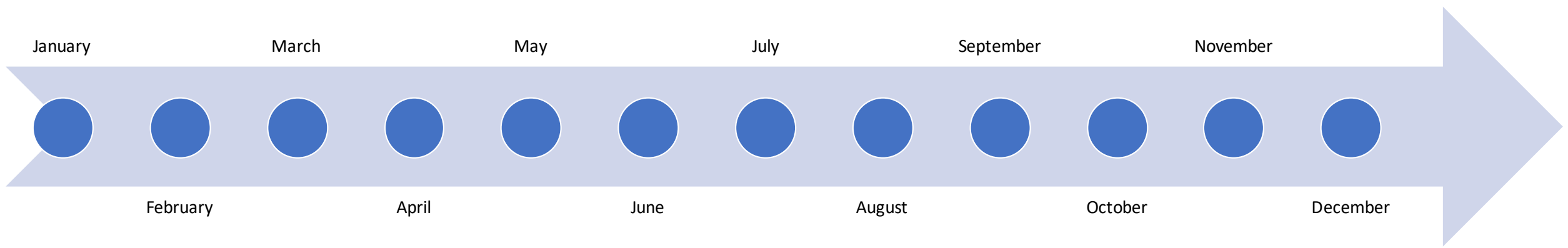
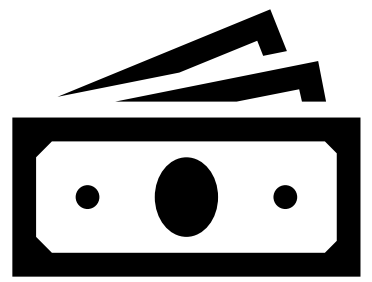


Figure 1. Climate zones, plant available water holding capacity and resulting technology extrapolation domains (TEDs). Maps of central-eastern US showing (a) climate zones, (b) plant available soil water holding capacity in the root zone, and (c) moderate and (d) high resolution TED schemes defined using different class intervals for plant-available water holding capacity in the root zone (50 and 25mm, respectively).

Operational Management, Risk and Timing



Agricultural value capture propositions and incentives



Marketing



Branding



Return on investment



Defining value



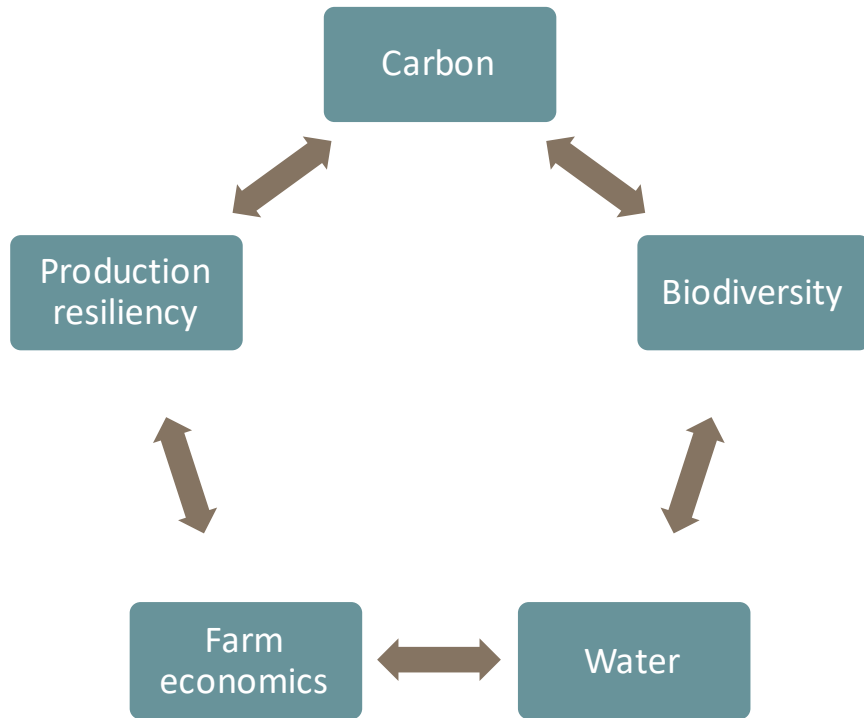
Opportunities

Partnerships and collaborations

Value capture and delivery

Opportunities

Coupling benefits



Value capture and delivery

