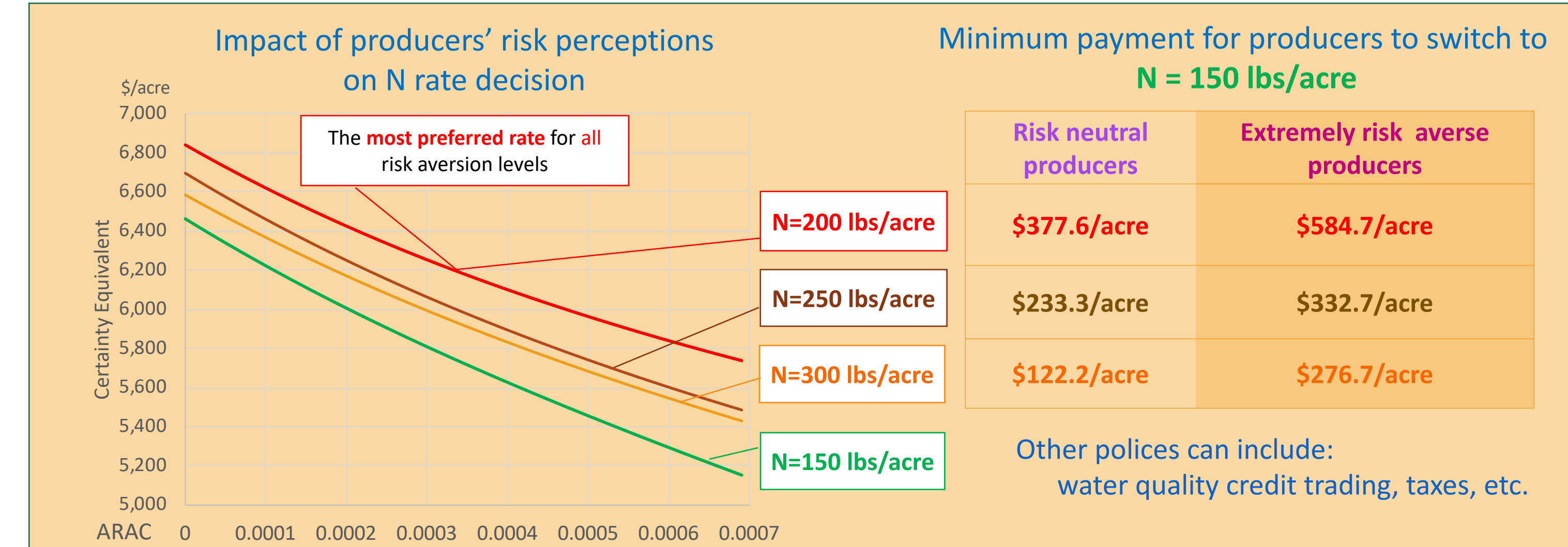
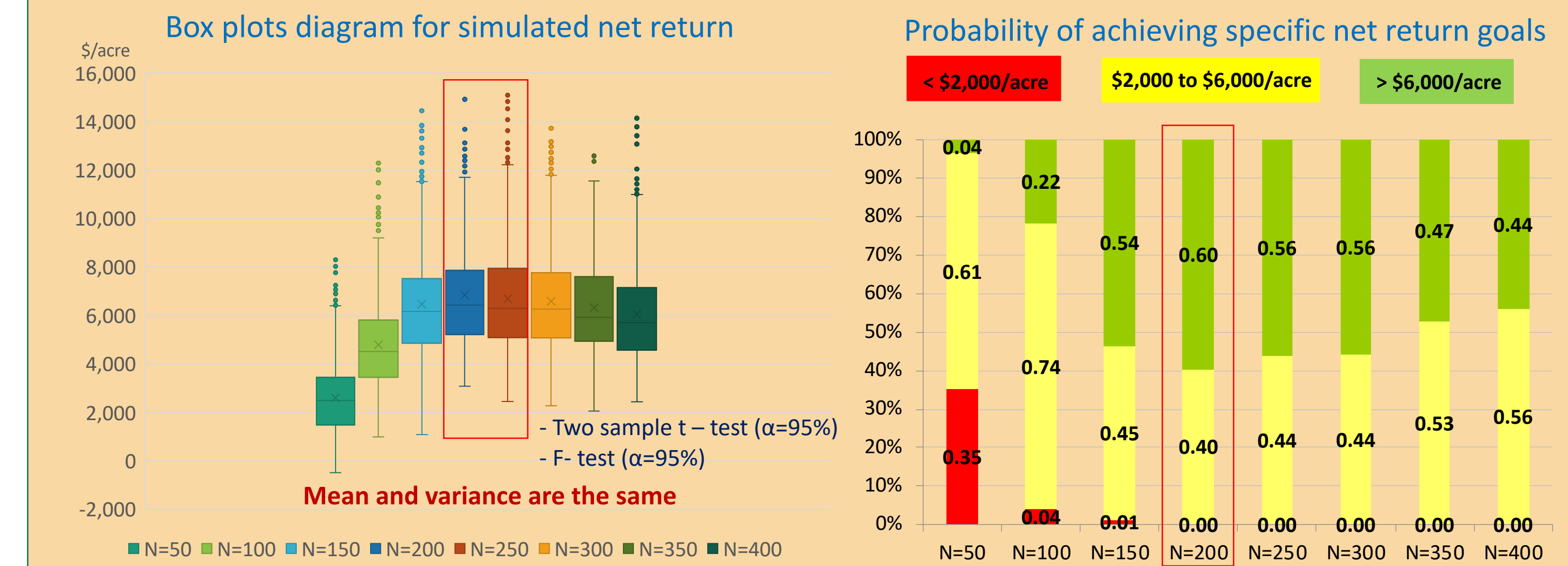


FOOD & RESOURCE  
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## Results



## Study Area: Suwannee River Basin

## Objectives

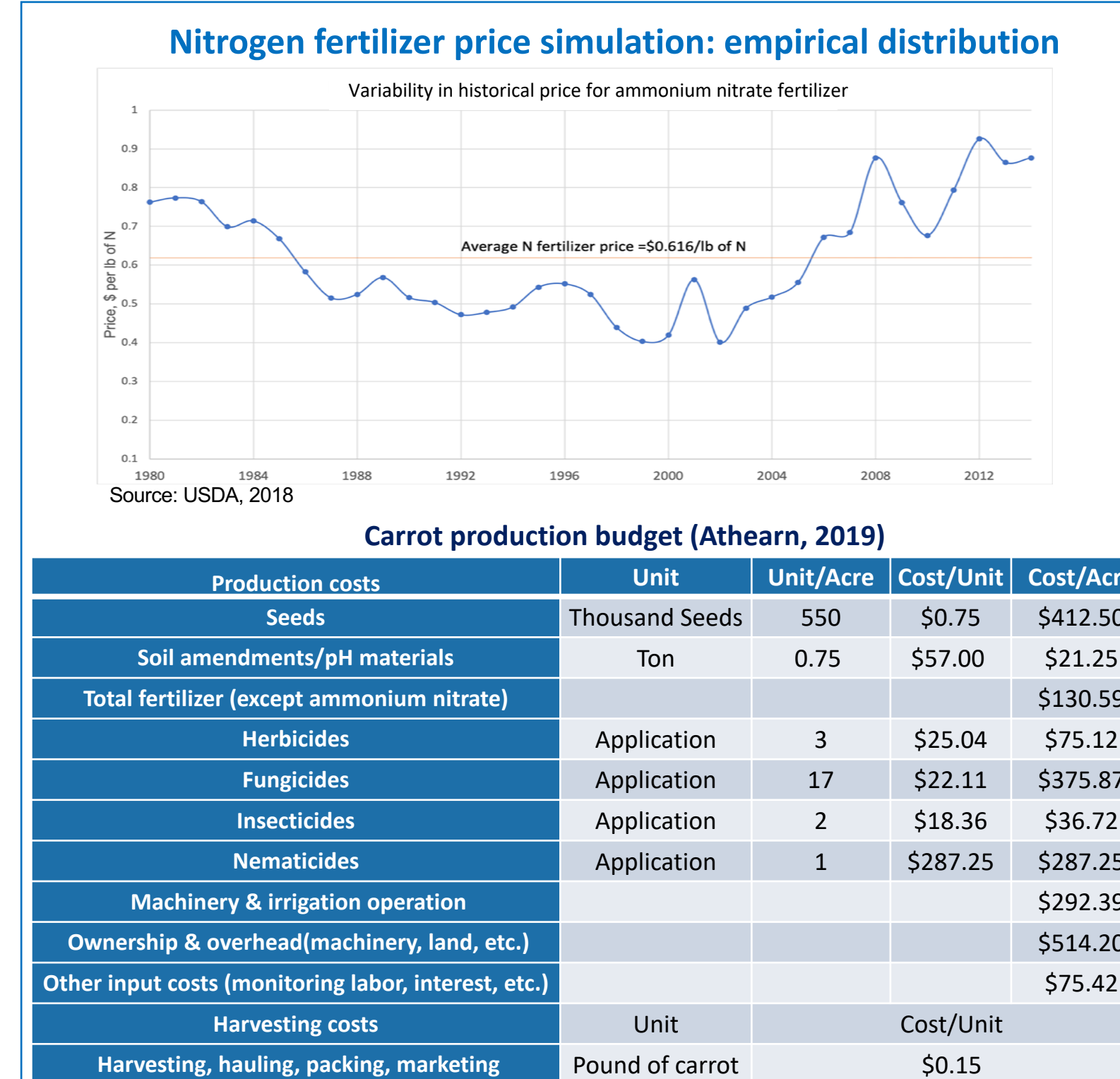
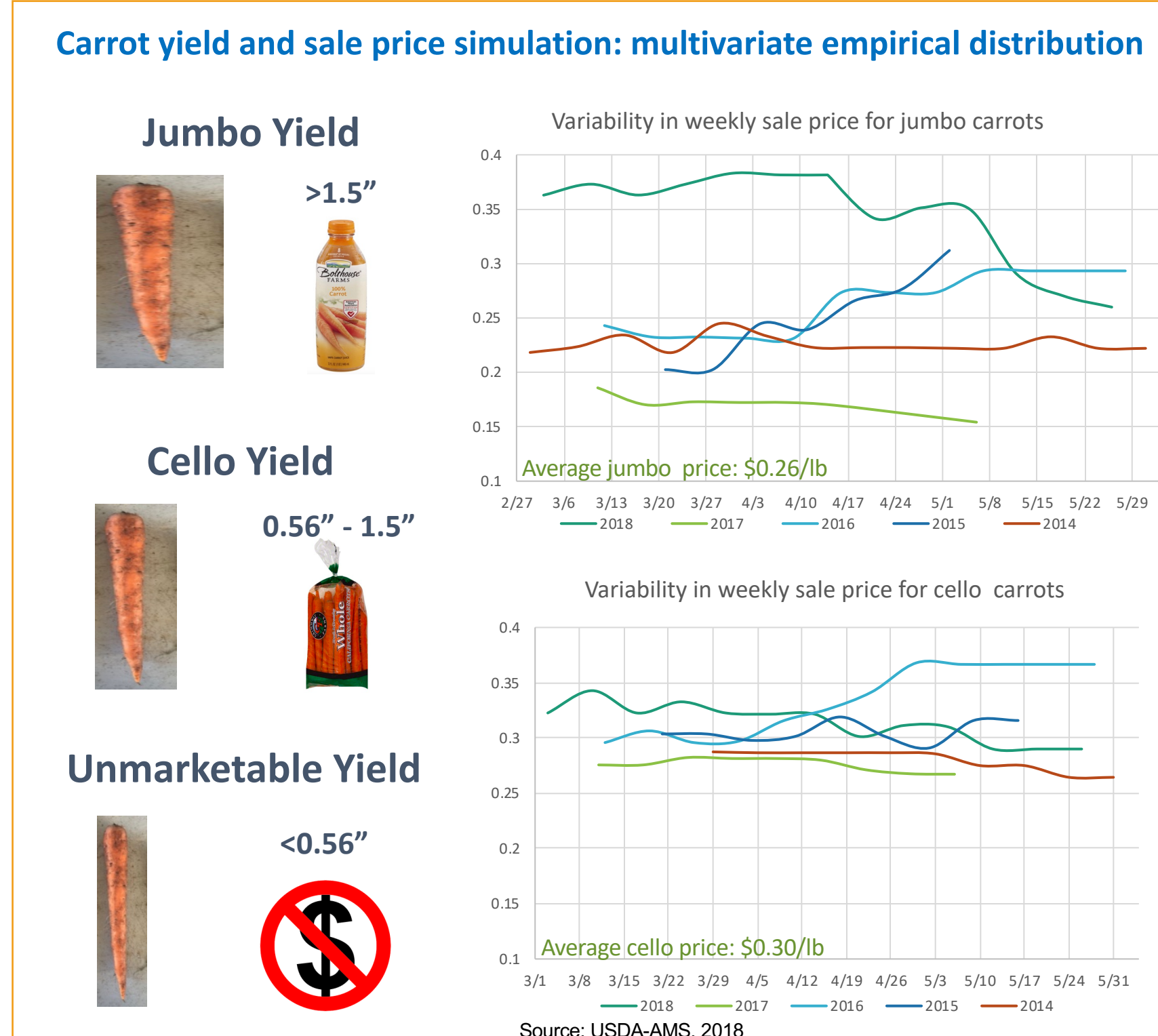


## Methodology - Objective I

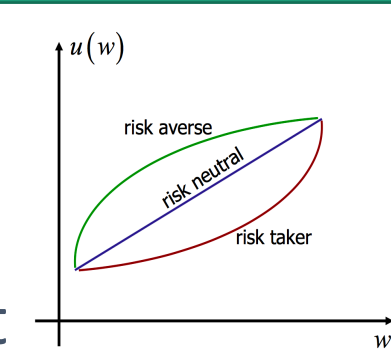
$$\text{Net Return} = \text{Total Revenue} - \text{Total Cost}$$

$$\text{Carrot Yield} * \text{Sales Price} - \text{N fertilizer price} + \text{N application cost} + \text{Other input cost}$$

## Monte Carlo simulation to capture production and market risks



## Methodology - Objective II



## Methodology - Objective III

### Participatory modelling process

3 commonly used N rates 200, 250, and 300 (lbs/acre)

Protect water quality → 150 lbs of N/acre

Minimum payment for producers to switch to a lower N rate is calculated

## Conclusions



## Limitations

- **Only 2 years** of carrot production experiments
  - Limited weather variability
  - Limited data to differentiate two carrot varieties
- **No consideration of water quality implications**



## Next Steps

- Analyze a more comprehensive dataset to simulate carrot yield
- Account for crop rotation
- Evaluate economic / environmental tradeoffs

