



# The Geography of US Peri-Urban Agricultural Adaptation

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This project was supported by the National Research Initiative of the Cooperative State Research, Education and Extension Service, USDA, Grant # 2005-35401-15272



# Organization

- Motivation
- Review
  - agriculture in the peri-urban context
  - agricultural geography models
  - farmer adaptations
- Research Questions
- Methods
- Findings
- Discussion
- Conclusions



# Motivation

- Better understand agricultural restructuring with both vertical (scale) and horizontal pressure (place/space)
- Be able to engage in debates about contemporary food systems
- Contribute to discussions of the economic opportunities and limitations for rural development potential
- Create baseline (address lack of empirical studies with larger scope)

# Significance of Agriculture in US Peri-Urban Areas

County Type	Ag Sales, 2002	% of total Sales
Agriculturally Important	155,206,092	77.6%
Peri-Urban	109,055,754	54.5%
Ag Important + Peri-Urban	90,322,185	45.2%
Total	200,049,060	

# Background: Agricultural Change in the Peri-Urban Context

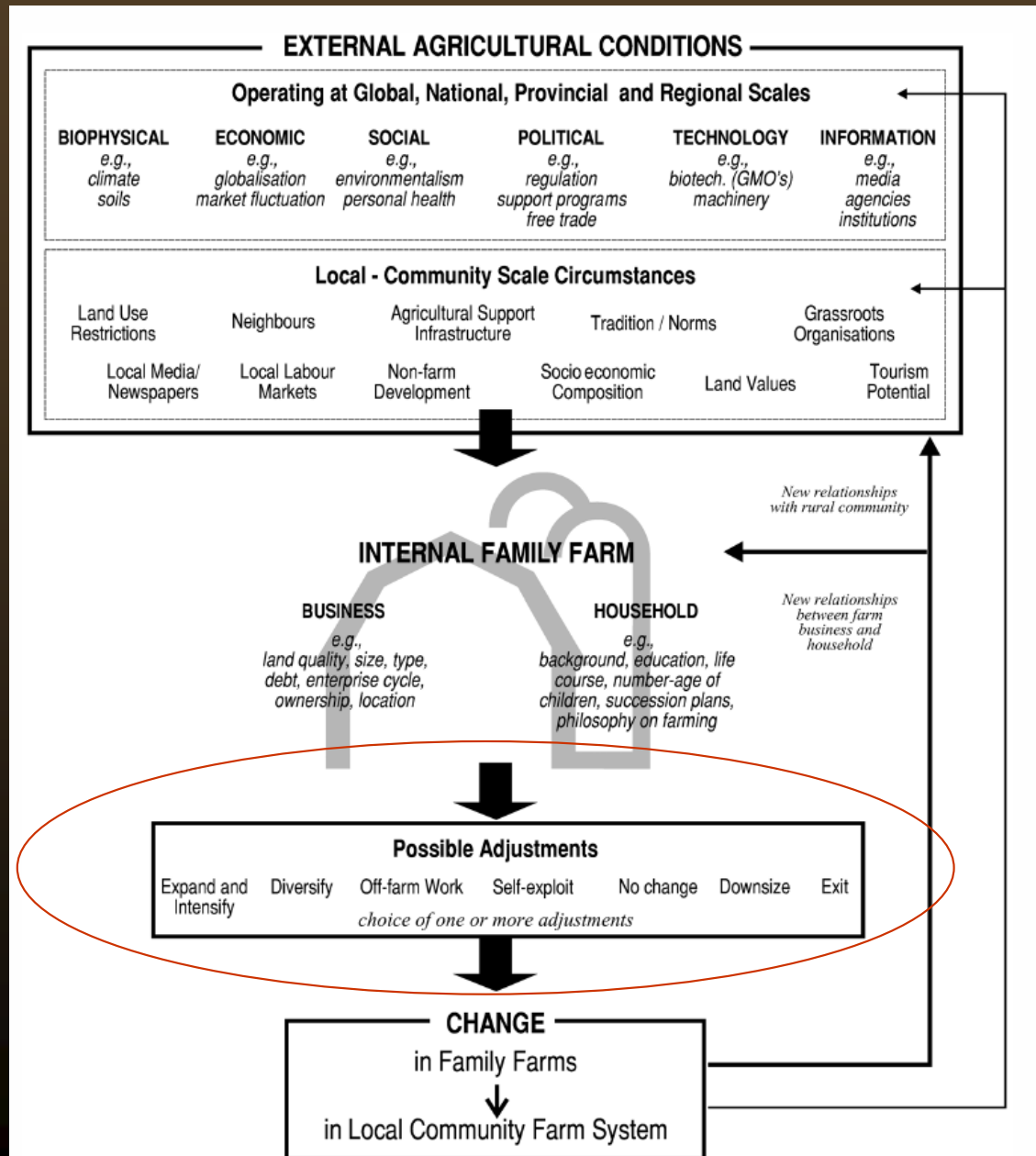
- Continued importance of peri-urban agriculture
- Competition by new users (Marsden et al, 1996)
- Opportunities are located in peri-urban areas
  - Unexploited spaces left over by capitalism are more prevalent at the rural-urban fringe (Bryant and Johnston, 1992)
- Farmer responses not homogenous given broad sweeping changes in the industry
  - Recognition that something is different about the agricultural industry (ex. Roberts, 1996)
  - Agriculture is not always a capitalistic venture (Reinhardt and Barlett, 1989)

# Background:

## Agricultural Geography Models

- Some important model elements
  - Distance (Von Thunen, 1826)
  - Land competition (Sinclair, 1967)
  - Local trajectories can depend on dominant commodity types (Bryant et al 1973)
  - Relative influence of local and non-local forces (Bryant et al 1982)
  - Duality of business/farm household (Smithers and Johnson, 2004)
  - Farmer agency (Johnston and Bryant 1987)
  - Ability of farmers to choose more than one adaptation (Smithers and Johnson, 2004)

# Selected Model for Survey Design




(Smithers and Johnson, 2004)

# Background:

## Farmer Adaptations

- **Characterization of selected typologies** (Shucksmith and Hermann, 2002; Lobley and Potter, 2004; Johnston and Bryant, 1987; Heimlich and Anderson, 2001; Smithers and Johnson, 2004)
  - Trajectories usually described on a continuum
    - Exit to growth
    - As a spectrum that describes ‘the degree to which they can be considered to be disengaging from mainstream agriculture’
  - Added Layer: Traditional, alterative/adaptive, and recreational/hobby farming
  - Recognize that different adaptations may not necessarily be mutually exclusive

# Agricultural Trajectories

- Growth
  - Intensification
  - Persistence
  - Deintensification
  - Decline
- 
- With cross-cutting urban-oriented adaptations

# Agricultural Trajectories

- Growth: Increased farmland owned, farmland rented, livestock sold, value of total gross sales
- Intensification: Increased capital investment in farm buildings and/or equipment, decreased land in conservation programs, increased sales while land remained same, shifted to crops or livestock that generate more sales per acre
- Persistence: Stability in farmland owned, farmland rented, livestock sold, value of total gross farm sales, investment in buildings and equipment

# Agricultural Trajectories, cont.

- Deintensify: Decreased capital investment in buildings and/or equipment, increased land in conservation programs, decreased sales while land remained same, idled or left fallow some farmland
- Decline: Decreased farmland owned, farmland rented, livestock sold, value of gross sales, sold land for nonfarm development

# Urban-Oriented Adaptations

- Off-farm employment opportunities
  - Pluriactivity
- Urban-oriented production and marketing
  - Such as: diversifying commodities, selling direct, agritainment
- Accommodations for nonfarm neighbors
  - Such as: changing manure storage, moving equipment at different times

# Research Questions

What are the trajectories of US peri-urban farming?

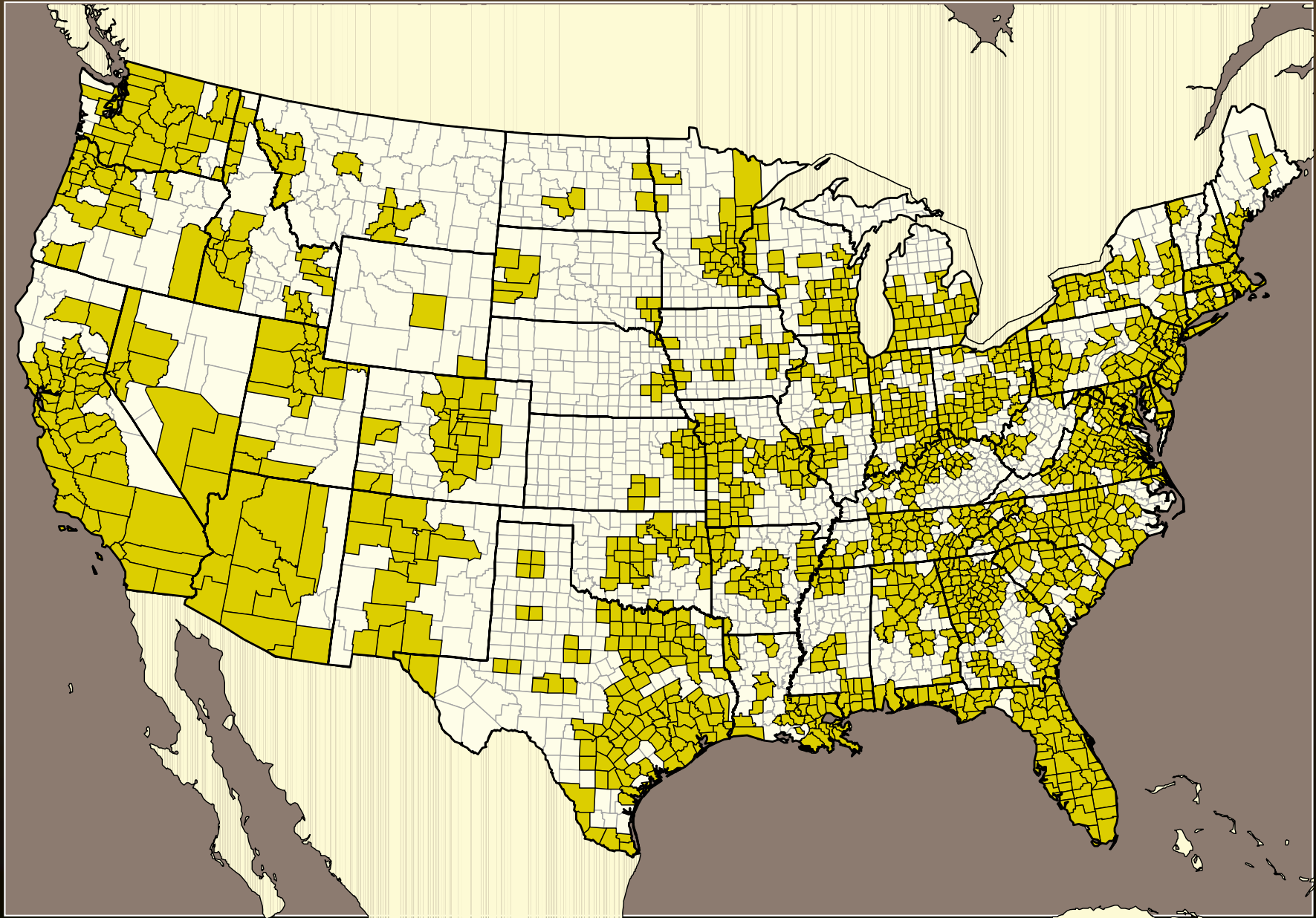
What are farmer adaptive behaviors in peri-urban areas?

What are farmer adaptation behaviors specifically in response to urban influences?

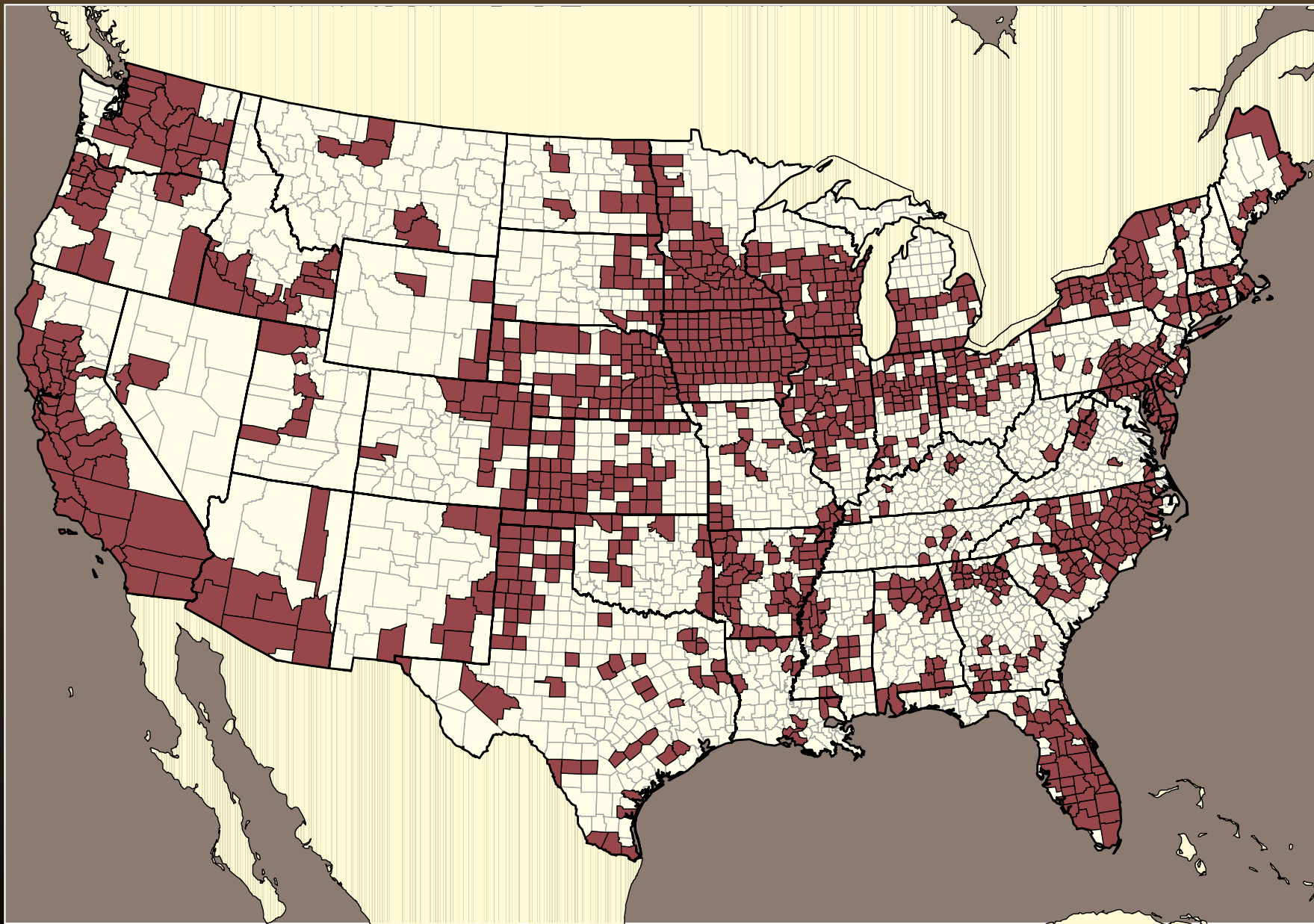
# Methods

- Select agriculturally important, peri-urban counties
- Determine county-level agricultural trajectory
- Select case study sites
- Survey landowners

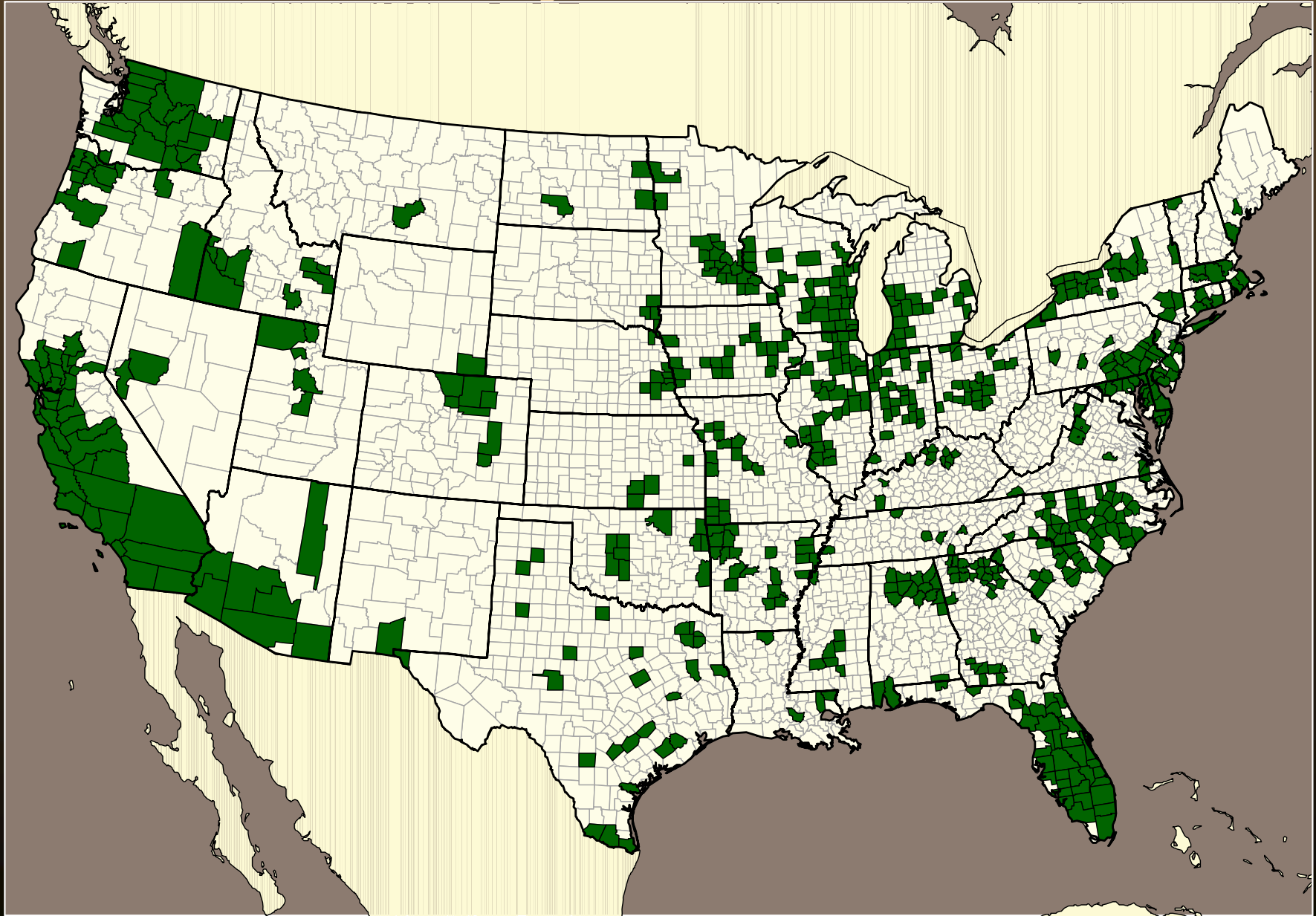
# Peri-Urban Interface Counties



# Ag. Important Counties at RUI



# Study Counties



# Methods

- Select agriculturally important, peri-urban counties
- Determine county-level agricultural trajectory
- Select case study sites
- Survey landowners

# Case Study Sites

	Midwest	Northeast	South	West
<b>Decline</b>	Shelby, KY Spencer, KY	-	Forsyth, Georgia Hall, Georgia	-
<b>Deintensification</b>	-	Frederick, MD	-	-
<b>Persistence</b>	Kent, Michigan	-	-	-
<b>Intensification</b>	-	-	-	Cache, Utah
<b>Growth</b>	-	-	-	Yamhill, Oregon

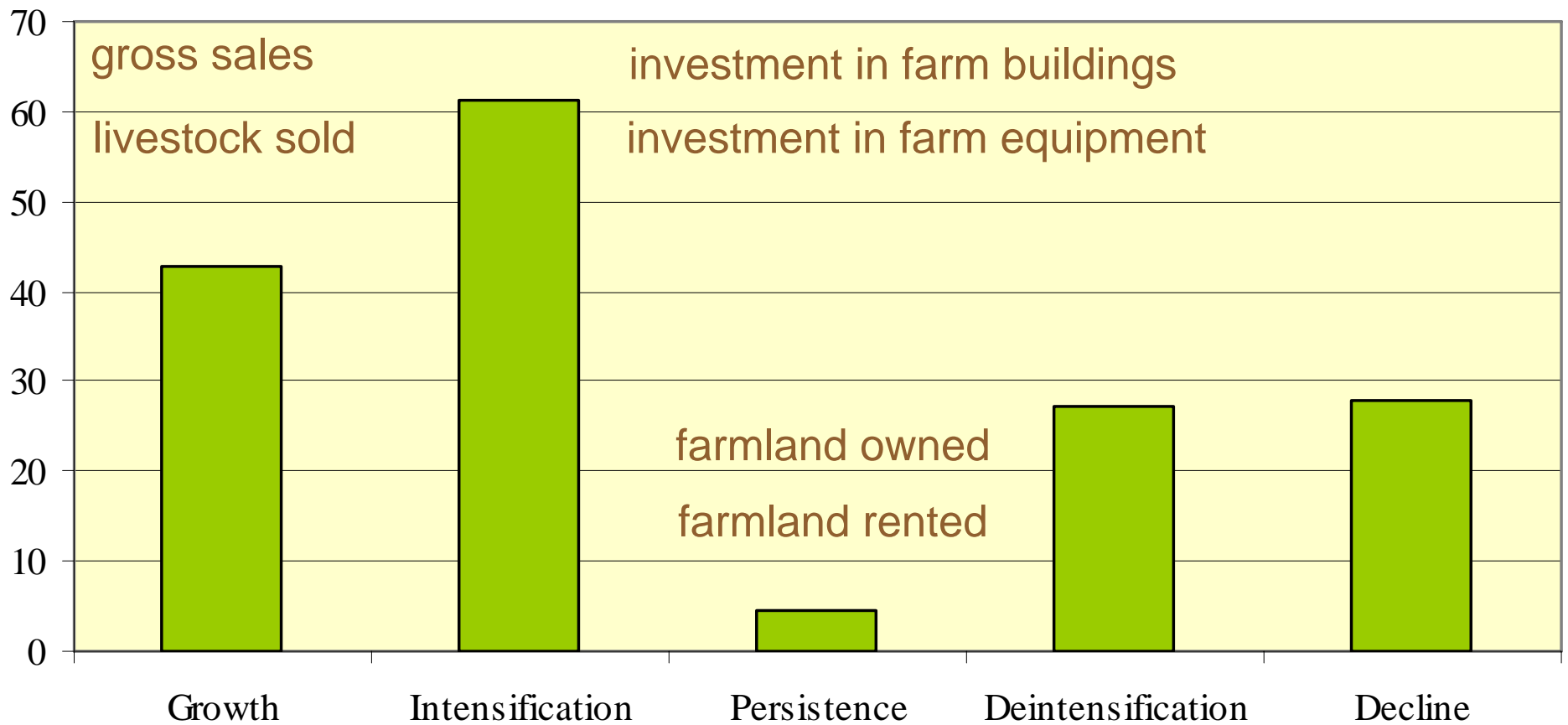
# Methods

- Select agriculturally important, peri-urban counties
- Determine county-level agricultural trajectory
- Select case study sites
- Survey landowners
  - 200-300 randomly selected landowners, owning > 5 acres
  - 40-50% response rate from all but two counties
  - About 40% active farmers

# Results



# Agricultural Trajectories Last Five Years

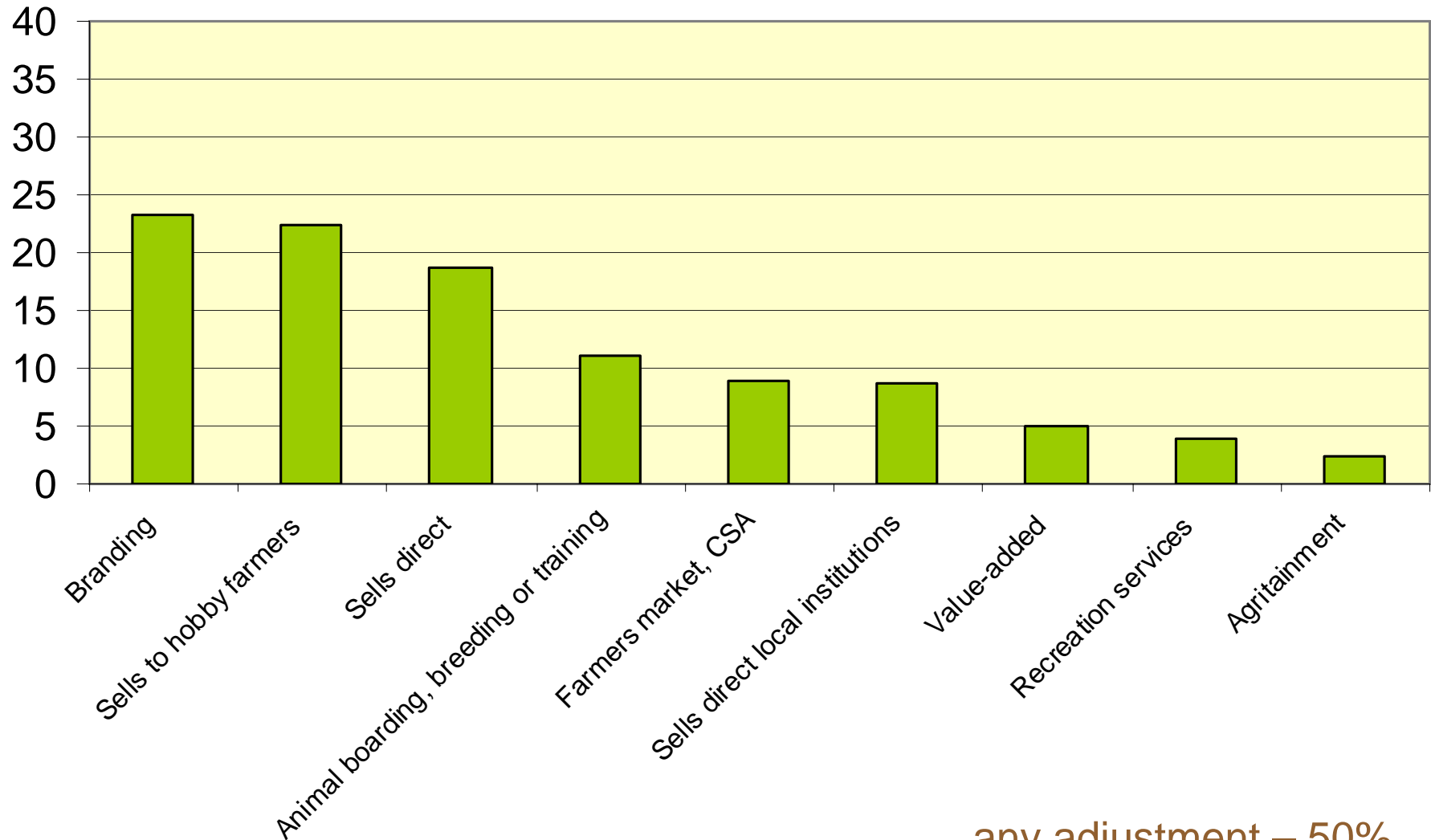


# Urban-Oriented Adaptations

- Off-farm employment opportunities
- Urban-oriented production and marketing
- Accommodations for nonfarm neighbors

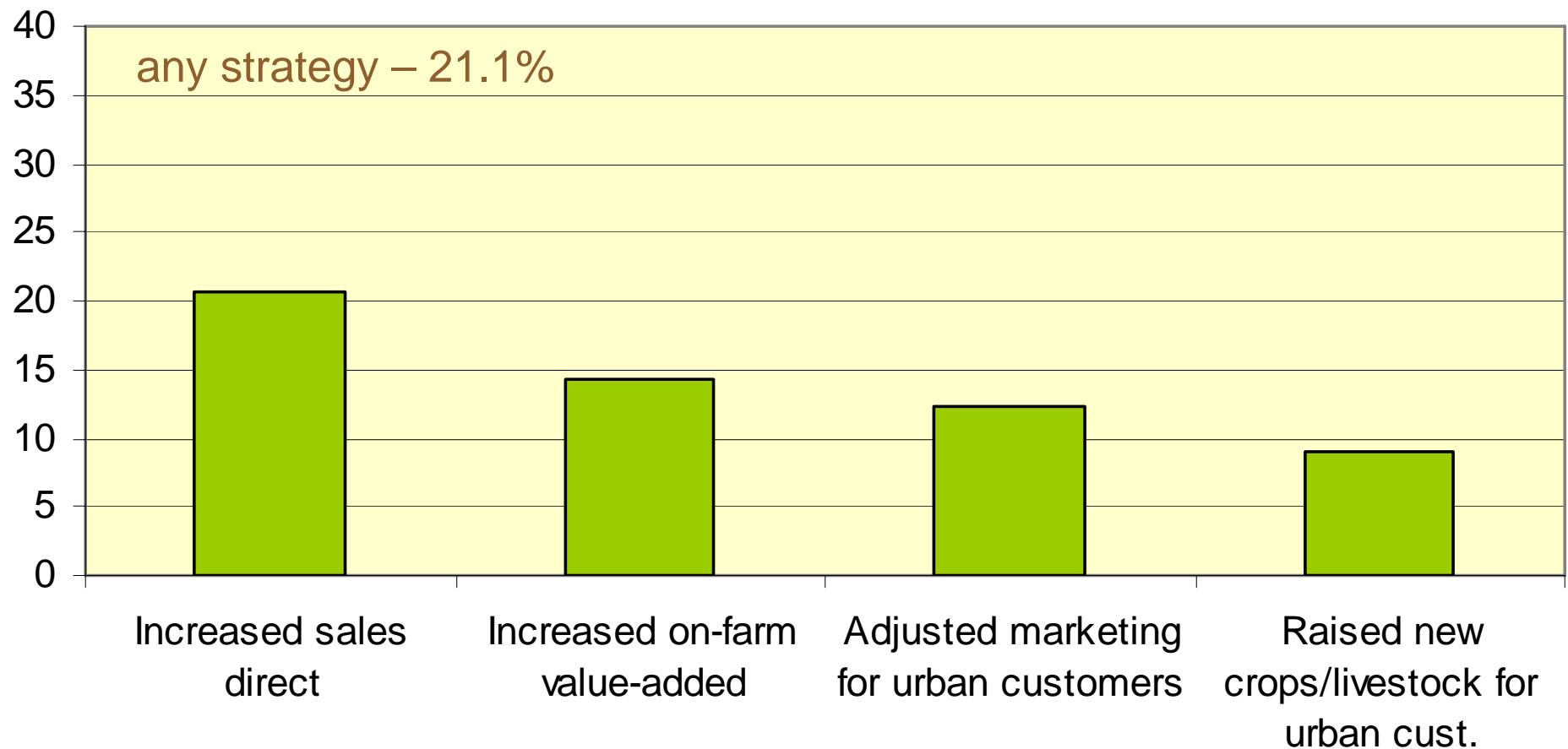


# Urban-Oriented Profiles

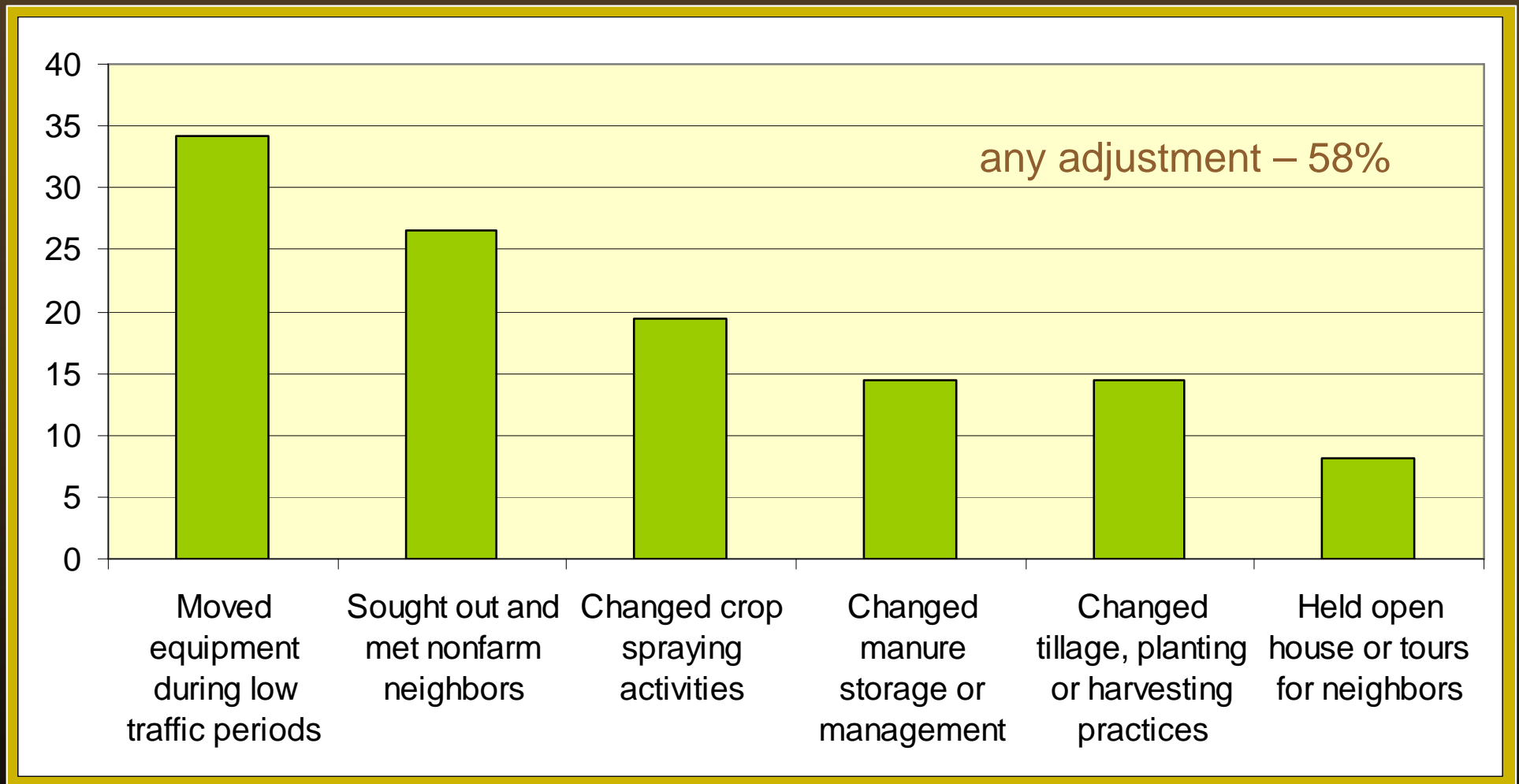


any adjustment - 50%

# Adjustments Made in the Last Five Years



# Accommodations Made for Neighbors in the Last Five Years



# Major Findings

- Coarse trajectories mask diversity at rural-urban fringe
- Growth and Intensification are dominant
  - Farmland remains stable
- Stability across factors is extremely low
- Deintensification and Decline lower than expected
  - No major drivers

# Major Findings, cont.

- Farmers are engaged in multiple adaptations and, therefore, diverse trajectories
- Reduction in pluriactivity and dependence on non-farm income in last five years
- High level of urban-oriented adaptations
  - Wide range of urban-oriented operations
  - Focus on direct sales over past five years
  - Impacts from nonfarm development
    - High cases of negative urban-oriented adaptations – making accommodations for neighbors

# Conclusions

- Empirical study across eight study sites provide benchmarks and a baseline
- Macro-economic agricultural trends combine with uniquely urban opportunities
- Some trends counter to expectations
- Opportunities for rural economic development
- Further study required for full understanding of complex picture



## Contact Information

<http://exurban.osu.edu/agadapt.htm>

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# Research Program

- Phase I
  - Characterize the diverse trajectories of ag adaptation in US peri-urban counties
- Phase II
  - Collect detailed info. about community responses to urbanization and farmers adaptive strategies
- Phase III
  - Develop and test multivariate model analyzing aggregate patterns of ag change

