



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# Nudge to Insure: Exploring Behavioral Economics in PRF-RI and WFRP Participation

Kelly Davidson (University of Delaware) and Brittney Goodrich (Auburn University)

2019 SCC-76 Meeting

April 6, 2019

Kansas City, MO

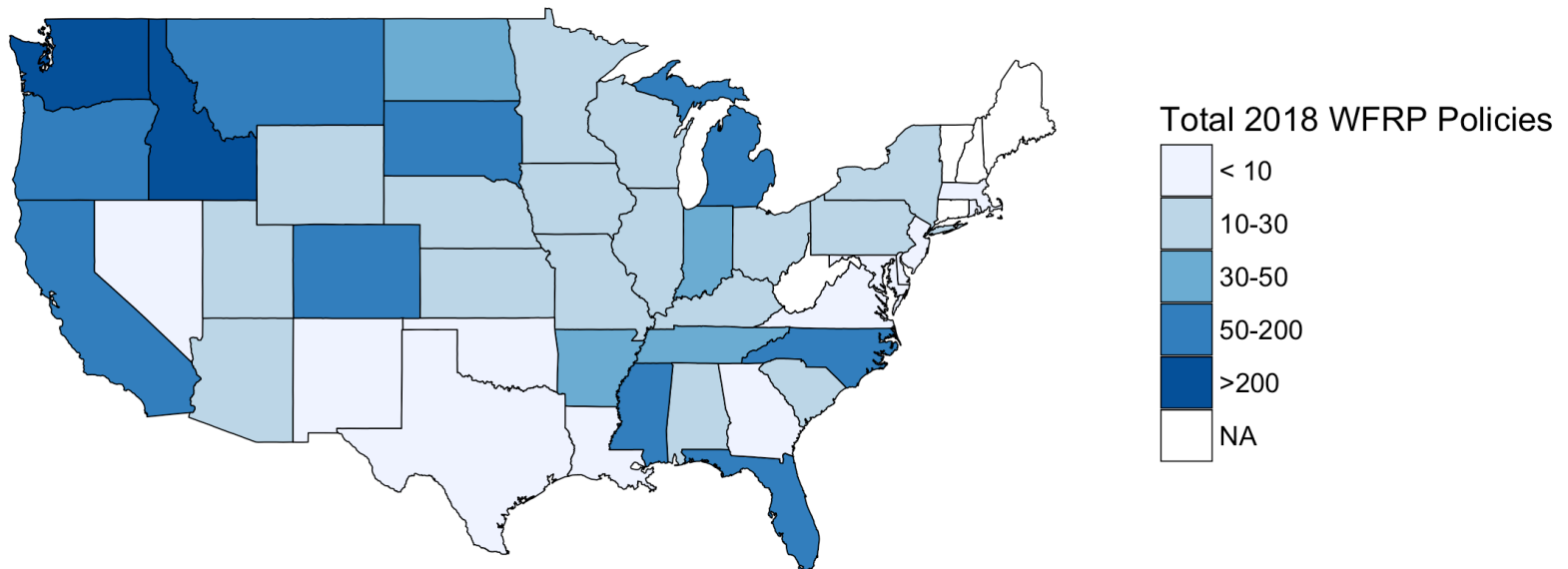
# Motivation

- Traditionally specialty crop and livestock producers underserved wrt crop insurance products
- Two products currently available meet this need
  - Whole Farm Revenue Protection (WFRP)
  - Pasture, Rangeland and Forage Insurance (PRF) for livestock producers
- WFRP and PRF have low rates of enrollment despite large subsidies
  - Especially in parts of eastern U.S.
- Objective: Can we use tools/knowledge from behavioral economics to influence insurance decisions?

# What is Whole Farm Revenue Protection?

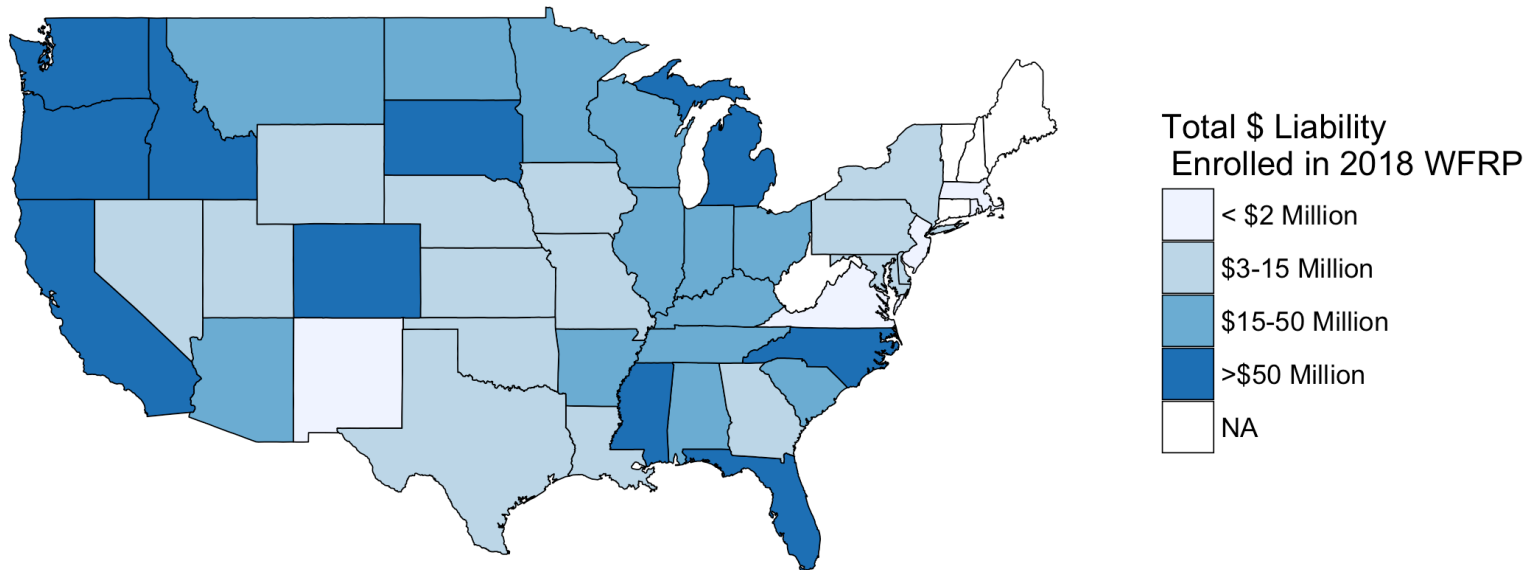
- WFRP: Crop insurance policy to cover all commodities on one farm
  - Stand alone or in addition to standard crop insurance
- Helps specialty and diversified farms receive coverage
  - Allows coverage of traditionally uninsured items
  - Includes specialty and organic commodities
  - Allows coverage under one insurance policy
- Available in all counties
- Up to \$8.5 million insured revenue

# WFRP Participation



Source: USDA RMA Summary of Business Reports, 2019

# WFRP Participation



Source: USDA RMA Summary of Business Reports, 2019

# Barriers to WFRP-Farmer Perspective

- Not aware
- Difficulty in understanding WFRP
  - How can WFRP be used with existing crop insurance?
- Too costly
  - Thinks farm not large enough to be advantageous
- Does not fit their operation
  - Other crop insurance products better serve needs
- Reluctance to share tax info
- Worried about WFRP covering growing operation

Source: Johnson et al. (2017) *"New Option for Farm Risk Management: Whole Farm Revenue Protection Usage in Nebraska"*  
Report Center for Rural Affairs

# Barriers to WFRP-Crop Insurance Agent Perspective

- Agents unfamiliar
  - WFRP policies difficult to write so there is a disincentive for selling
- Crop year vs tax year differences
- Potentially a temporary program
  - Another disincentive for selling/becoming more familiar with policy writing

Source: Johnson et al. (2017) *“New Option for Farm Risk Management: Whole Farm Revenue Protection Usage in Nebraska”*  
Report Center for Rural Affairs



# Benefits to WFRP-Farmer Perspective

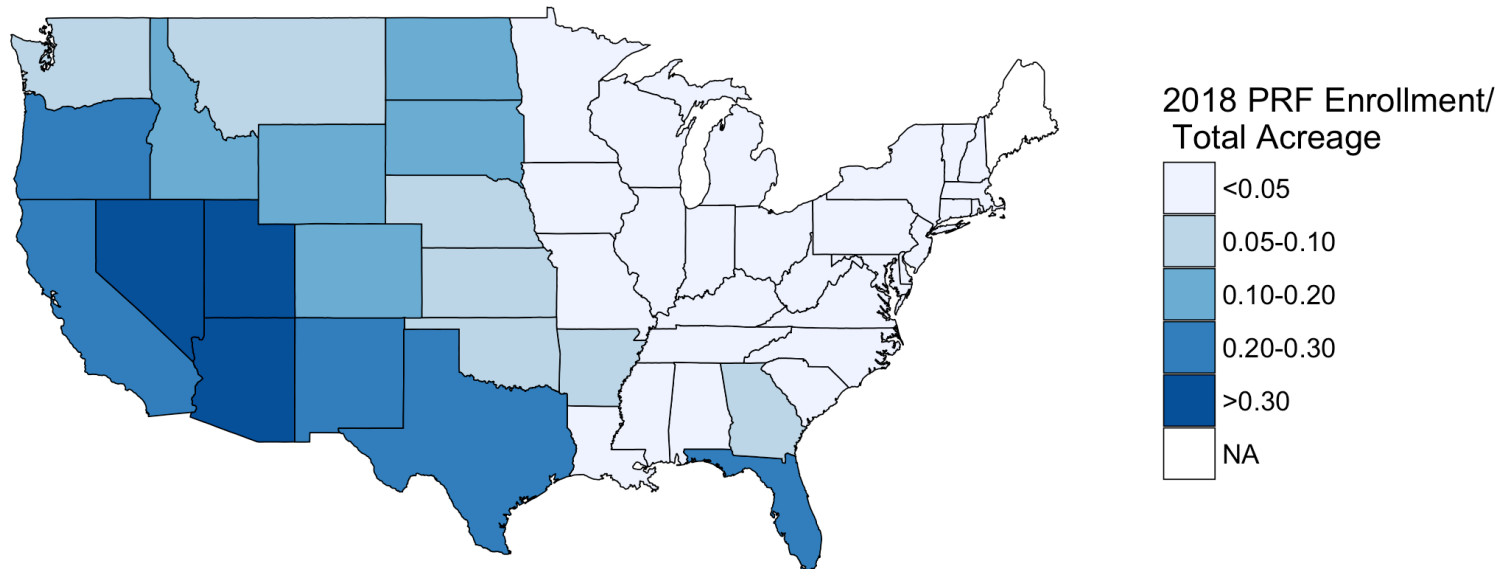
- Increased access to credit
  - Crop insurance often prerequisite for receiving loans
- Experimentation
- Flexibility in conservation

Source: Johnson et al. (2017) *“New Option for Farm Risk Management: Whole Farm Revenue Protection Usage in Nebraska”*  
Report Center for Rural Affairs

# What is Pasture, Rangeland and Forage Insurance?

- Index Insurance for livestock producers to insure against drought-like conditions
- Based on ~12x12 mile grids
  - Rainfall index: Weighted average of 4 closest weather stations to grid
- Guarantee from 70% to 90% of average rainfall
- Policy runs January to December
- Farmer picks months to insure

# PRF Participation



Source: USDA RMA Summary of Business Reports, 2019; USDA Ag Census 2012  
\*2018 Enrolled Acreage/ 2012 Ag Land, Pastureland, Hay (Excl Cropland & Woodland)

# Suspected Barriers to PRF Participation

- Not aware
- Can you use with other programs?
  - Livestock Indemnity Program
  - Livestock Forage Disaster Program
  - Emergency Assistance for Livestock, Honey bees and Farm-raised Fish
- Too complicated
- Crop insurance agents unfamiliar
- Policy design issues

# Behavioral Insights

- Information campaigns are insufficient to increase enrollment if potential participants face behavioral or psychological constraints
  - Choice overload
  - Complexity – lack of understanding about costs and benefits
  - Misperception of risk
  - Present bias
  - Contextual cues or channel factors, “Hassle costs”
  - Reference dependence and framing can lead to status quo bias
  - Social comparisons

Source: Baicker et al. (2012) *“Health Insurance Coverage and Take-Up: Lessons from Behavioral Economics.”*  
The Milbank Quarterly, Vol. 90, No. 1, 2012 (pg. 107-134).

# Potential Solutions

- Designing solutions first depends on understanding the barriers
  - Focus group discussions with stakeholders
- Simplified choice/menu
  - Evaluating the PRF decision support tool
  - Default options
- Behavioral nudge
  - Nudge within the decision support tool
  - Enrollment reminders via text message
  - Social comparison – display average enrollment or payout

### Pasture, Rangeland, Forage Support Tool

Grid Locator | Historical Indexes | **Decision Support Tool** | Estimated Indemnities

---

**Location Information**

State: Alabama | County: Geneva | Grid ID: 13378 | Search By Grid ID:  Enter Grid ID |

---

**Protection Information**

Intended Use:

Irrigation Practice:

Organic Practice:

Coverage Level:

Productivity Factor:

Insurable Interest:

Insured Acres:

Sample Year:

---

**Policy Information**

County Base Value:

Dollar Amount of Protection:

Total Insured Acres:

Total Policy Protection:

Subsidy Level:

Maximum Percent of Value per Index Interval:

**Protection Table** [Export to CSV](#)

Index Interval	Percent of Value (%)	Policy Protection Per Unit	Premium Rate Per \$100	Total Premium	Premium Subsidy	Producer Premium	Actual Index Value	Estimated Indemnity
Jan-Feb	N/A	\$0	13.07	\$0	\$0	\$0	178.1	\$0
Feb-Mar	N/A	\$0	9.49	\$0	\$0	\$0	64.0	\$0
Mar-Apr	30	\$2,949	15.24	\$449	\$247	\$202	45.0	\$1,388
Apr-May	N/A	\$0	17.10	\$0	\$0	\$0	102.8	\$0
May-Jun	40	\$3,932	12.22	\$480	\$264	\$216	150.1	\$0
Jun-Jul	N/A	\$0	8.82	\$0	\$0	\$0	111.1	\$0
Jul-Aug	30	\$2,949	8.90	\$262	\$144	\$118	91.6	\$0
Aug-Sep	N/A	\$0	9.27	\$0	\$0	\$0	110.8	\$0
Sep-Oct	N/A	\$0	17.30	\$0	\$0	\$0	145.4	\$0
Oct-Nov	N/A	\$0	19.31	\$0	\$0	\$0	80.4	\$0
Nov-Dec	N/A	\$0	15.14	\$0	\$0	\$0	33.9	\$0
<b>Per Acre</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>\$29.81</b>	<b>\$16.39</b>	<b>\$13.40</b>	<b>N/A</b>	<b>\$34.69</b>
<b>Total</b>	<b>40</b>	<b>\$9,829</b>	<b>N/A</b>	<b>\$1,192</b>	<b>\$656</b>	<b>\$536</b>	<b>N/A</b>	<b>\$1,388</b>

This tool is using insurance data from 2018.  
This tool is for illustration purposes only. Your actual information may differ.

<https://prodwebnlb.rma.usda.gov/apps/prf>

## Policy Options

Location	Basic	Interval	Percent
County: <input type="text"/>	Coverage: <input type="text" value="90"/>	<input type="text"/>	<input type="text"/>
Grid: <input type="text"/>	Productivity: <input type="text" value="100"/>	<input type="text"/>	<input type="text"/>
Historical Rainfall	Insured acres: <input type="text"/>	<a href="#">+ Add</a>	

Submit



# Evaluating Potential Solutions

- Current research: designing a lab-in-the-field experiment that simulates farmer decisions
  - Measure difference in farmer interest/engagement around WFRP and PRF insurance when exposed to a behavioral nudge
  - Convenience sample of farmers at the Sunbelt Ag Expo
- Hopeful for future research using administrative data to test a nationwide program roll-out

Thoughts?