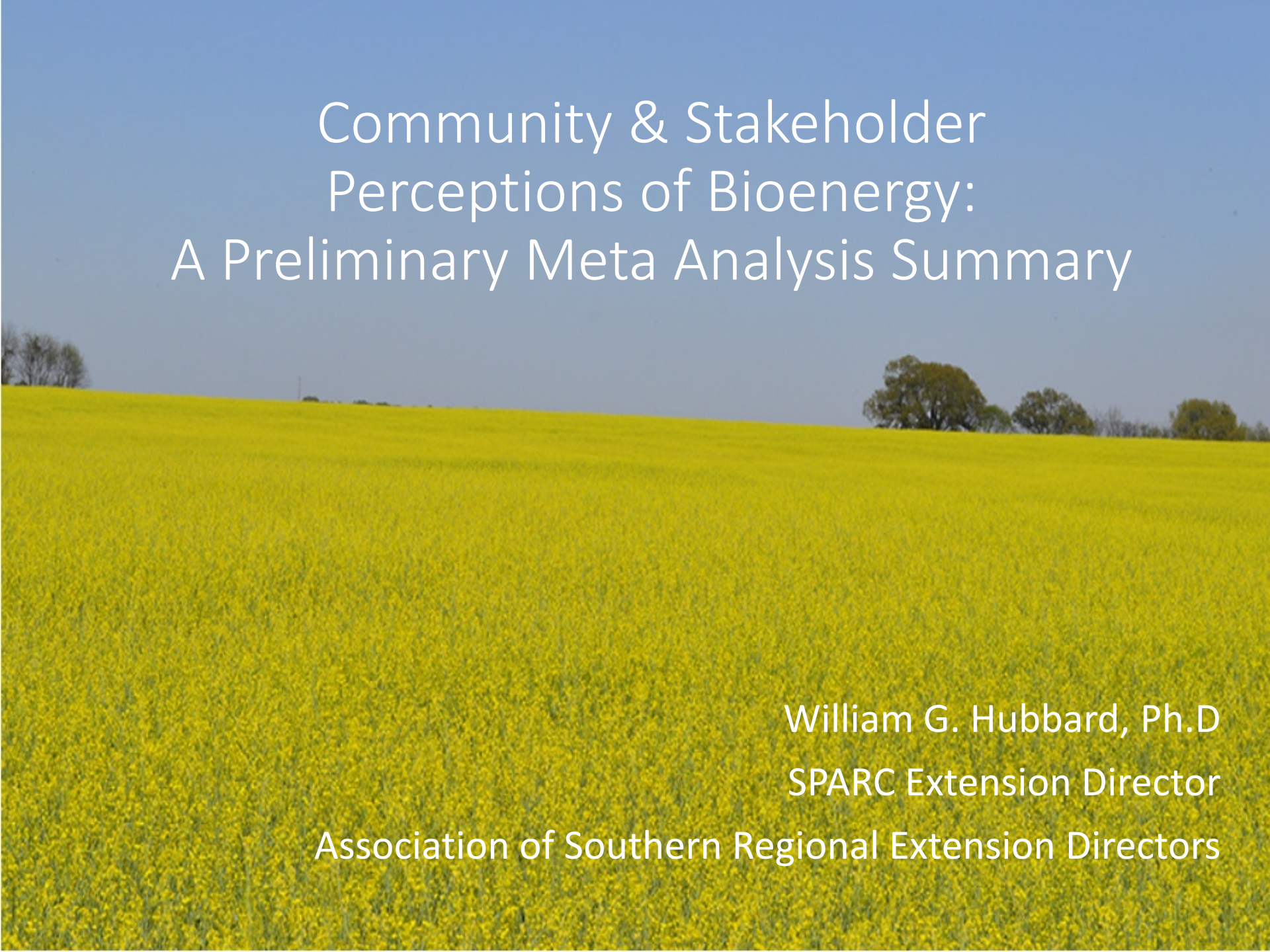


Community & Stakeholder Perceptions of Bioenergy: A Preliminary Meta Analysis Summary

William G. Hubbard, Ph.D

SPARC Extension Director

Association of Southern Regional Extension Directors

Defining “Stakeholders” and “Communities”

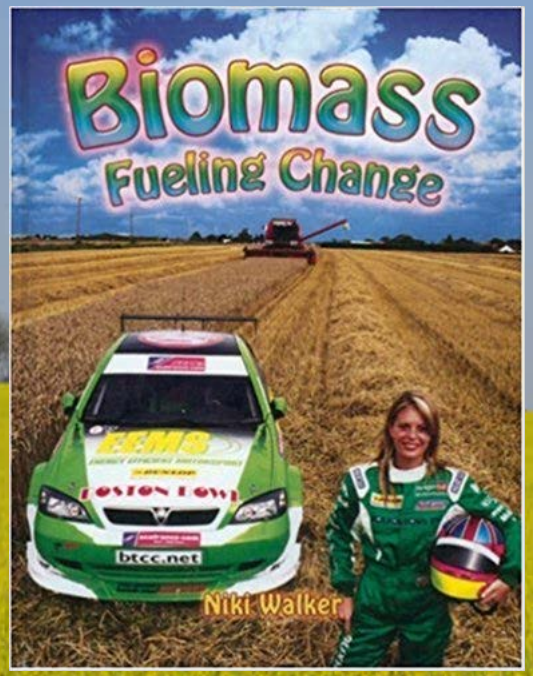
SPARC

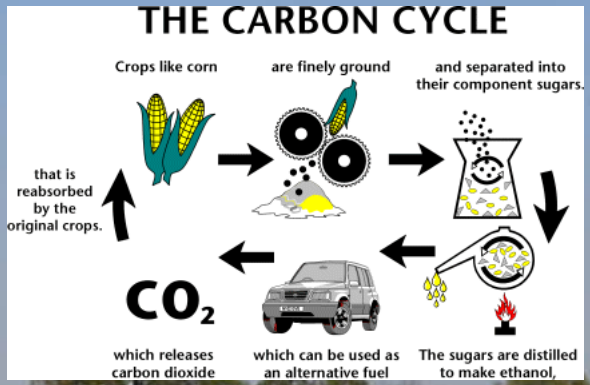
- Stakeholder:
  - any group or individual who can affect or is affected by the achievements of the organization’s objectives.
  - a group or individual who has a legitimate interest in an organization’s activities.
- Community:
  - a group of people living in the same place or having a particular characteristic in common.
  - a feeling of fellowship with others, as a result of sharing common attitudes, interests, and goals

Bioenergy Stakeholders

- Consumers of bioenergy products
- Producers of bioenergy products
- Educators such as Extension professionals and teachers
- Bioenergy industry
- Policymakers
- “The General public”
- Students and Youth
- Private sector investment community
- Basically everyone…..

Traditional & Emerging Discourse

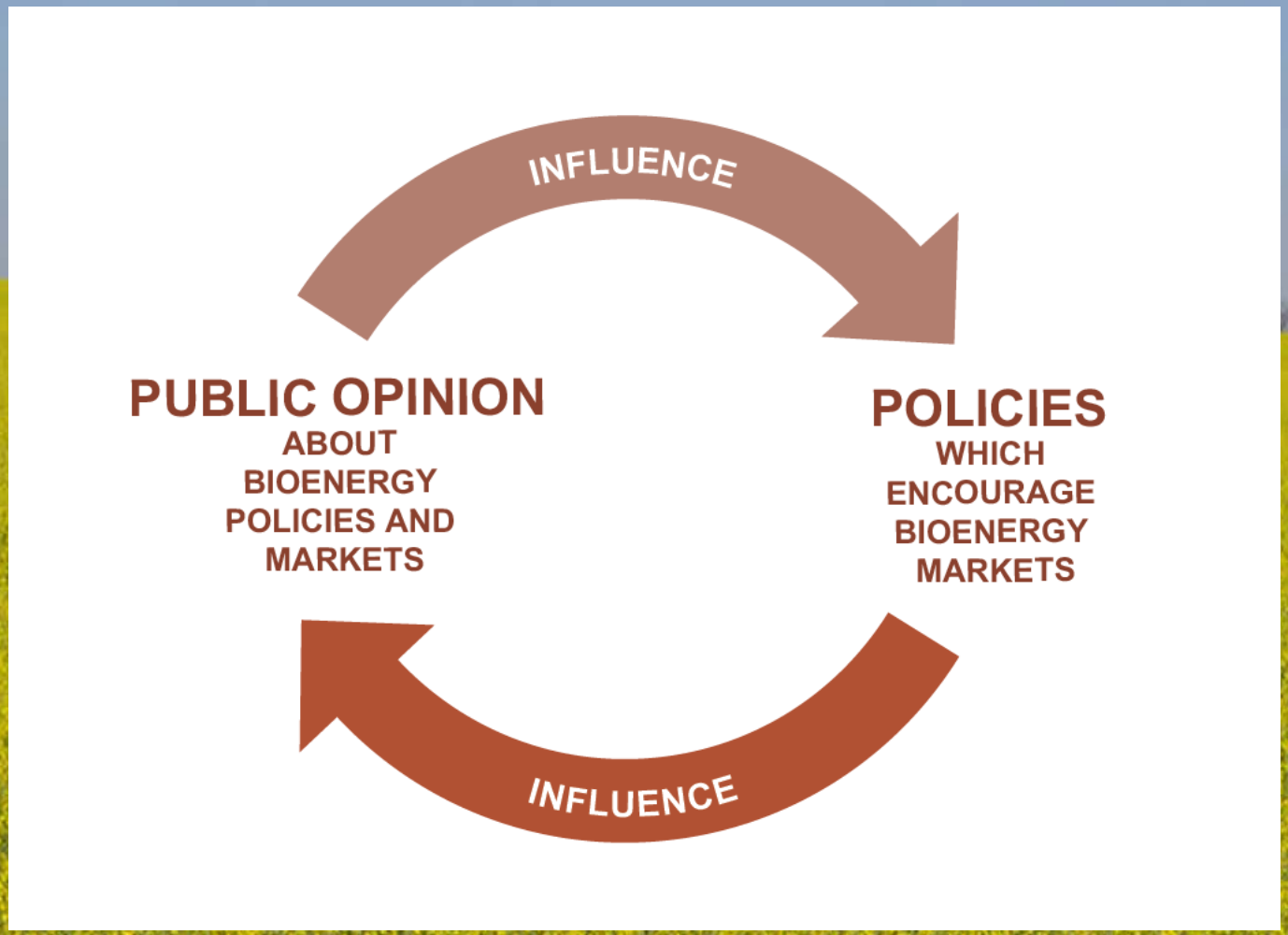




Perceptions have been correlated to:

- Age
- Gender
- Education
- Knowledge of a subject matter
- Geography
  - Urban vs. rural
  - US region or country
- Occupation
- Landownership
- Political ideology
- Income

The Perception-Policy Connection



Perception Categories

Recent Bioenergy Stakeholder Studies

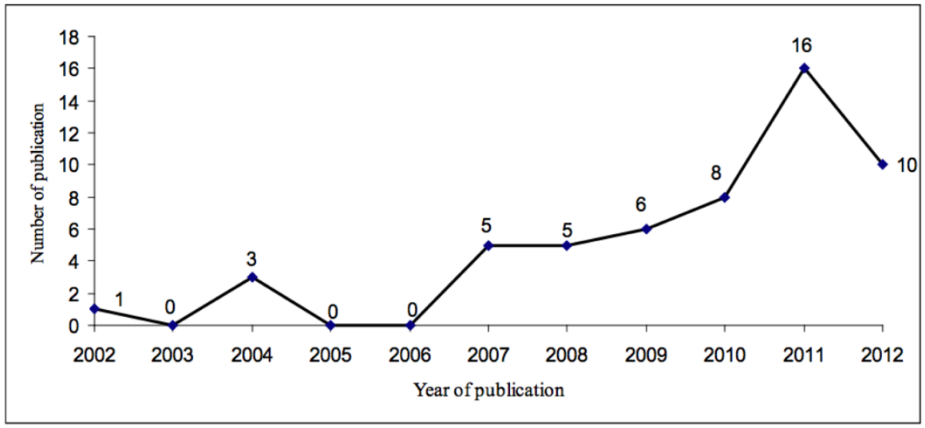


Fig 3. 2 Publications of scholarly papers on stakeholders' perceptions of bioenergy from 2002 to May 2012 (N=54)

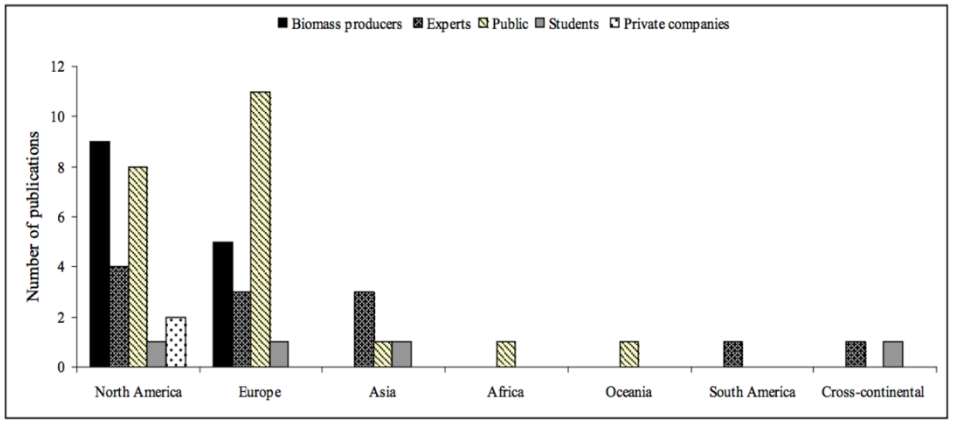


Fig 3.1 Categorization of the scholarly papers based on stakeholder groups and geographical coverage (N=54)

Recent Bioenergy Projects

- AFRI C APS
  - SE-IBSS – Agriculture and Woody (South)
  - NARA – Woody (PNW)
  - AHB – Woody (PNW)
  - SUBI – Agricultural (South)
  - NewBio – Woody (Northeast)
  - CENUSA – Agricultural (Midwest)
  - BANR – Woody (Rocky Mountains)
  - Others
- Others

Stakeholder: Public

Positives (Potential)

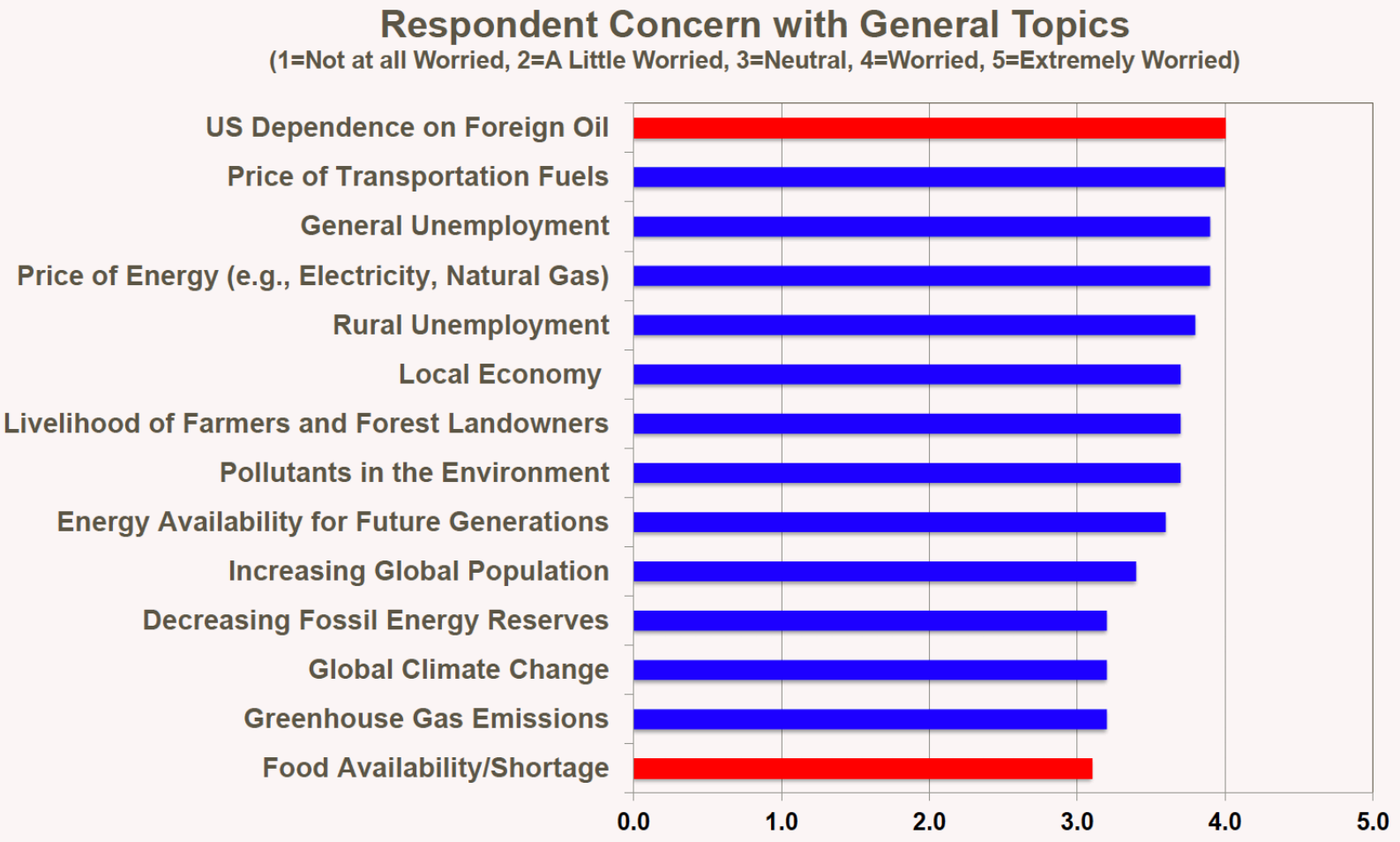
- *Renewable energy*
- *Carbon neutral or negative (does not produce carbon or absorbs carbon)*
- *Energy security*
- *Rural development*
- *Recycling waste materials*
- *Green jobs*
- *New forest products markets*
- *Keeping forests as forests*
- *Improving forest health*

Negatives (Potential)

- *"Renewable" questioned*
- *Carbon positive (produces carbon)*
- *Soil compaction and erosion, impacts on water quality and quantity, and air quality*
- *Food vs. fuel*
- *Invasive/exotic species*
- *Landscape fragmentation*
- *Environmental justice concerns*
- *High subsidy inputs*
- *High-risk economic ventures*

Stakeholder: Consumer

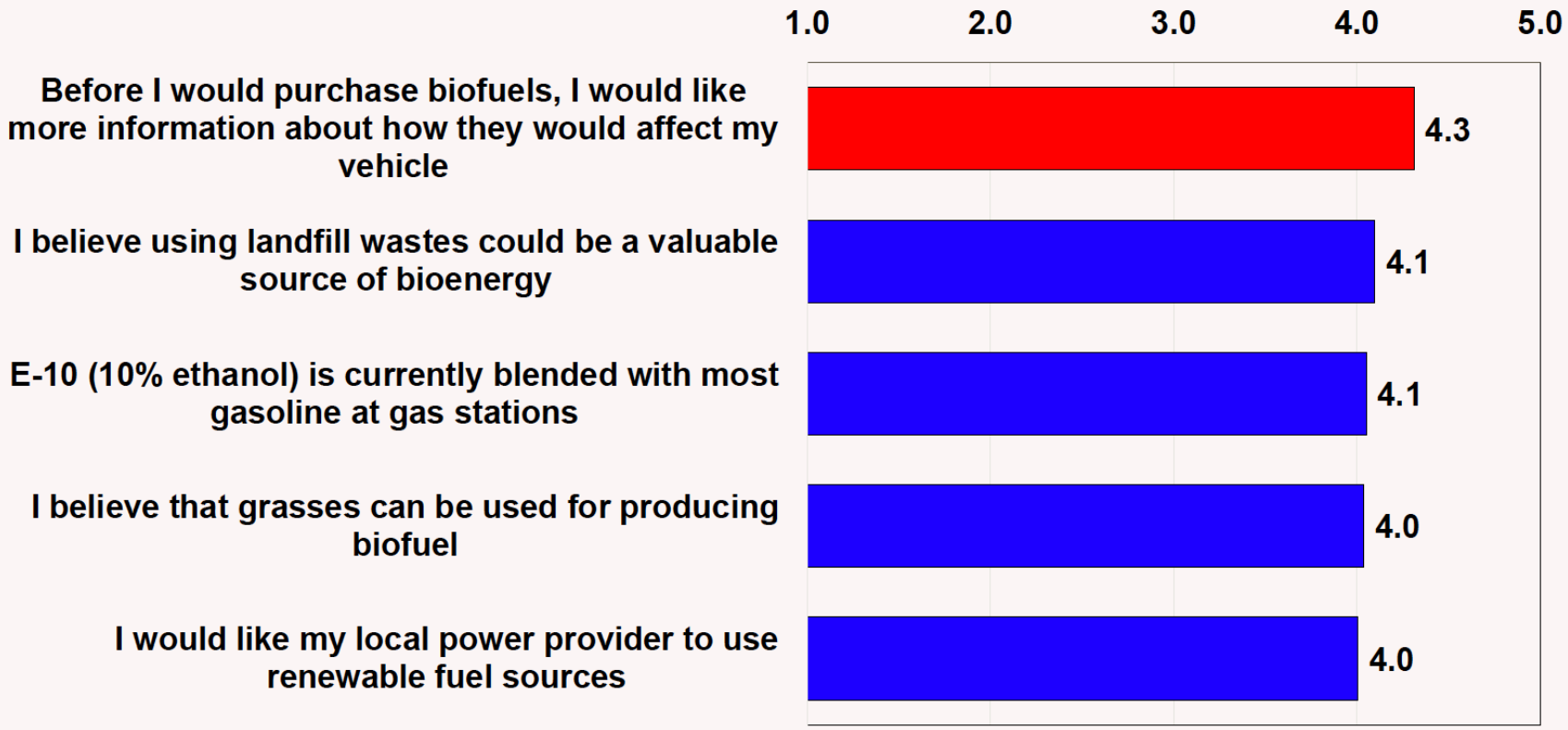
Respondent Concerns



Stakeholder: Consumer

Agreement with Biofuel Statements

1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree



Stakeholder: Producer

Farm Landowner Agreement

	Bioenergy and Biofuel for Transportation Statements	Mean*	Std. Dev
1	In my opinion, biofuel production could **increase the demand** for agriculture crops and residues	4.04	0.84
2	In my opinion, **domestically** produced fuel is **critical to the national security**	4.01	1.08
3	The **cost** of growing biomass for energy purposes **is more than the returns** from the market (not profitable)	3.94	0.61
4	Current **government regulations/policies are not helpful** to me for growing & supplying agricultural crops/residues for the bioenergy	3.92	0.62
	...	...	...
	...	...	...
25	I believe that it is **more profitable** to grow and sell crops **for the biofuels industry** vs. other agriculture markets	2.51	0.97
26	I have **sought professional advice about growing** agriculture crops for energy	2.26	0.83
27	I am **worried that bioenergy** produced from agriculture crops **will have** a **negative environmental impact**	2.16	1.00

*Agreement Scale: 1: Strongly Disagree, 2= Disagree, 3= Don't Care/Neutral, 4= Agree, 5= Strongly Agree

Stakeholder: Producer

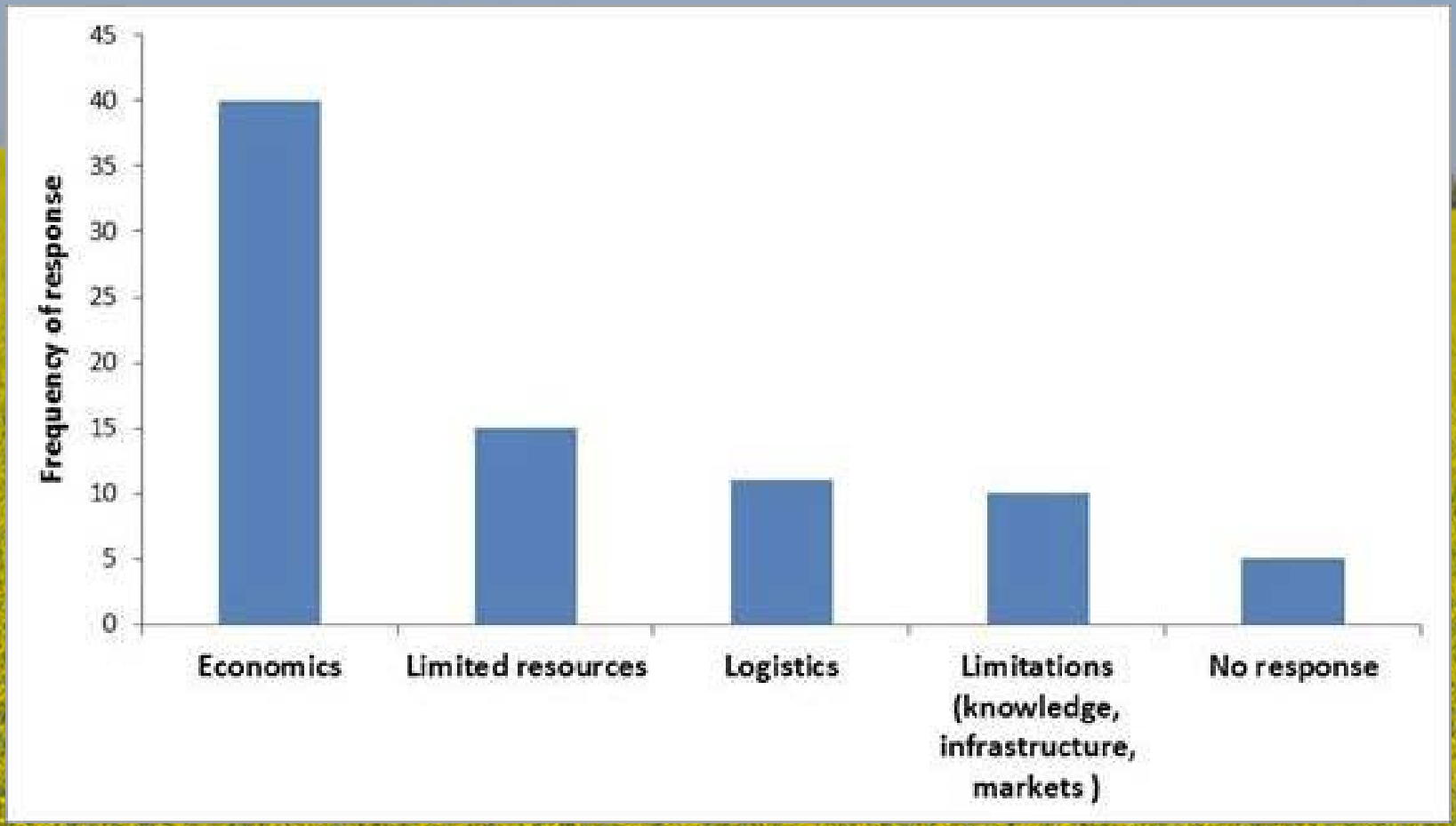
Forest Landowner Agreement

Bioenergy and Biofuel for Transportation Statements		Mean*	Std. Dev
1	In my opinion, biofuel production **could increase the demand for wood**	4.16	0.65
2	In my opinion, using **pre-commercial thinning** in forestlands for energy is a **potential income opportunity**	4.06	0.71
3	A **local** bioenergy plant/ facility will **improve the employment** in my local region	4.03	0.75
4	In my opinion, **domestically** produced fuel is **critical to the national security**	4.02	1.09
	...	...	...
	...	...	...
33	I believe **harvesting** timber for energy will be **detrimental to the site's productivity**	2.75	1.20
34	I am **worried that bioenergy** produced from wood will have a **negative environmental impact**	2.63	1.29
35	I have **sought professional advice about growing** woody biomass for energy	2.15	0.87

*Agreement Scale: 1: Strongly Disagree, 2= Disagree, 3= Don't Care/Neutral, 4= Agree, 5= Strongly Agree

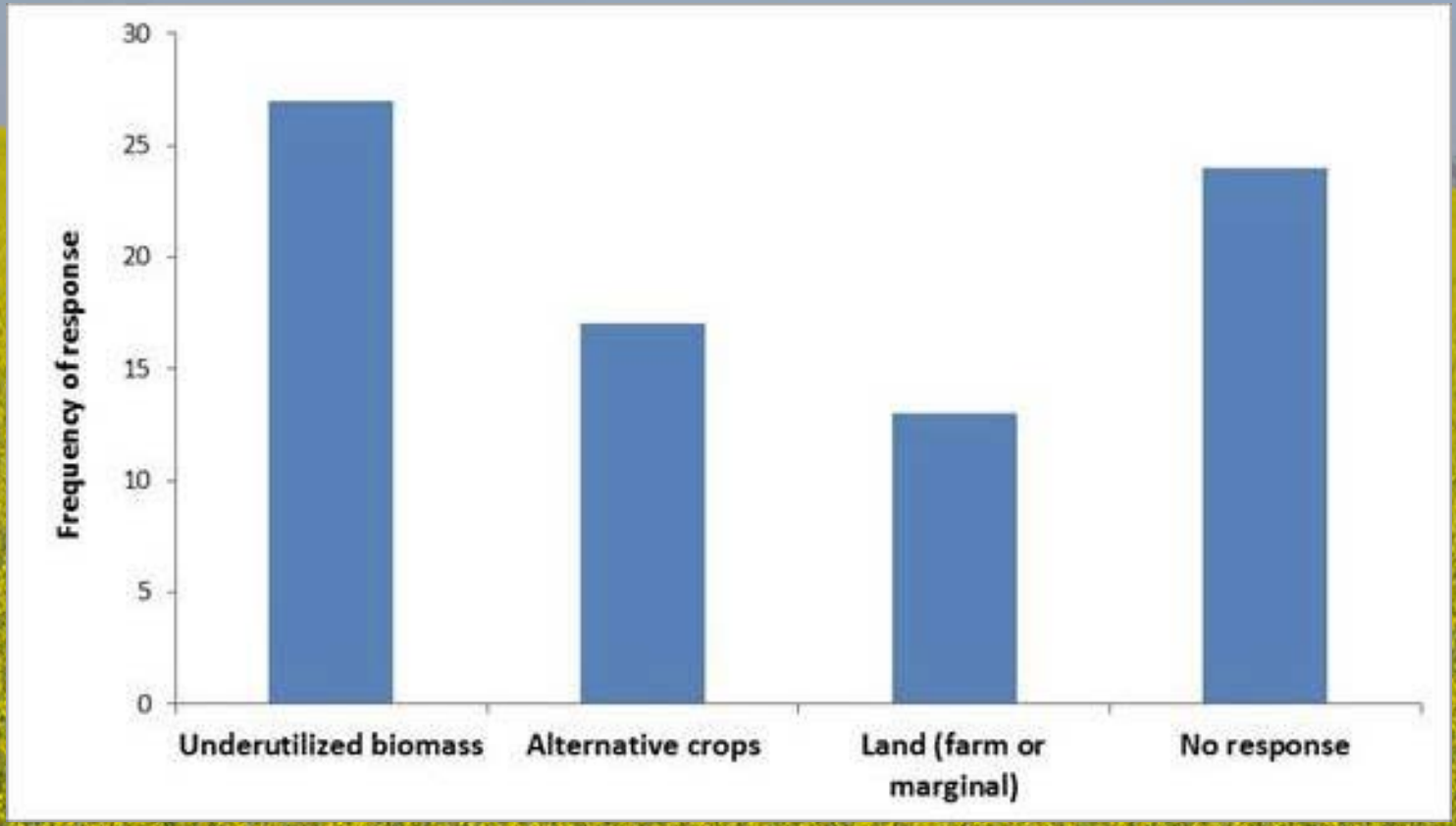
Stakeholder: Extension

Extension Professionals' Perceptions About Barriers
Related to Producing Biomass for Biofuels in Their Regions



Stakeholder: Extension

Extension Professionals' Perceptions About Opportunities Related to Producing Biomass for Biofuels in Their Regions



Conclusions

- Stakeholders' perceptions of bioenergy were not uniform and varied considerably even within a particular stakeholder group.
- More support for second and third-generation biofuels is apparent compared to corn-based ethanol production.
- Factors such as age, gender, education, income level, land-ownerships appear to influence stakeholders' perceptions of bioenergy.

Recommendations

- Raise awareness of bioenergy among different stakeholders and involving them while planning future bioenergy projects to improve their perceptions of bioenergy and reduce the chances of opposition.
- Enhance collaboration between renewable energy and educational policies so that young students become aware of bioenergy and can act as agents of change in our quest for renewable energies

Key Informant Interviews

Ben Christ
SPARC Research Assistant
University of Florida

Key Informant Interviews

<u>Qualitative</u> interviews with professionals involved with SPARC and carinata production at various points of the value chain

15 participants interviewed between September – October 2017. Each interview lasted approximately 60 minutes

21 questions across a range of topics:

participant's background

perceptions on producers and carinata

barriers and drivers of establishment of carinata in the Southeast

roles of Extension and the private sector

visions of success

Key Informant Interviews

Ideal** Producer Traits

- Specific capital available, ranging from irrigation to financial security
- Relies on science to guide agriculture
- Understands and appreciates the value chain of carinata
- Personality=innovative, self-aware of limitations, critical thinker, patient, ability to adapt

***Ideal ≠ Required*

Drivers of Establishment

- Economics, in various senses – especially that Southeast production compliments global production
- Need of valuable winter cover crop
- Marketing power and support provided by Agrisoma
- Ecosystem services rendered by carinata

Tips for Moving Forward

- Constant relaying of information of new advancements to Extension and producers
- Expansion of stakeholder community – and keep them ENGAGED!
- Do not lose sight of policy issues
- Producers should have buy-in to the whole value chain of carinata – must know and appreciate what is being done with the grain post-harvest

Chicken or the Egg?

Recurring response in nearly all Key Informant interviews

- Participants noted that producers want to see the establishment of infrastructure across the value chain in the Southeast United States before adopting carinata

- Participants defined infrastructure as appropriate storage silos, transportation that can handle small grains, and crushing facilities

- However, infrastructure can be more easily established if there is an existing grower base

- Which comes first?

Results from SPARC Survey

Please rank (1 through 10) the following factors on **their likelihood to serve as barriers to producers adopting *Brassica carinata* in the southeast United States**, with "1" representing the most significant barrier and "10" representing the least significant barrier.

Ranking of Barriers (1 = largest barrier)

1 – Difficulty attaining high yield

2 – Low selling price per bushel

3 – Producer unfamiliarity with crop

4 – Poor fit into existing rotation

5 – Negative prior experiences

6 – Equipment constraints

7 – Insufficient cash reserves to offset failure

8 – Too much time & energy demanded

9 – Poor soil quality

10 – Limited size of growing area

Ranking activity responses from 10 members of SPARC Outreach, Education, and Workforce Development Team

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Similar activity being implemented with Extension agents in Florida, Georgia, and Alabama

More on this at 1:00 PM today…

In the meantime, tell us YOUR carinata story

- Contribute to the growing timeline of its establishment in the Southeast United States and beyond

SPARC Carinata Field Days

Jay, FL Tuesday February 27th

Quincy, FL Thursday March 29th

Milstead, AL Thursday, April 5th

Tifton, GA Tuesday, April 17th

WWW.SPARC-CAP.ORG

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