

# Information Needs and Preferred Information Channels: A case example of the potential of Miscanthus adoption by Illinois Farmers

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*From the Project:*  
BioFuels Research Initiatives  
and Extension:  
Synergizing Engagement  
with Stakeholders

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# Basics of Information Gathering and Decision Making



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# Information / Gathering

Three dimensions of Information:

Content – Process

Sought – Given

Internal – External



# Information Search Motivation

Social or individual values trigger perception of information need.

- Existing information is no longer adequate in a changed world.
- Keep abreast of best practice.
- Adopt new technology to match a social or individual value.
- Solve a problem.



# Information Quality

- Data location and/or source – the closer to user the better the data
- Effectiveness - Does it help with change of practice?
- Rigor – Does it help change perception?
- Validity
- Relevance
- Popularity – Do others act on it?



# A farmer's relationship to information is a function of many variables.

- Demographic and socio-economic characteristics
- Psychological characteristics especially Advice Seeking Behavior
- Situational Characteristics
- Secondary variables





# Decision Making is Information Processing

Data is made into information on which a choice is based (Fountas et. al. 2006)

... a matter of directing and maintaining the continuous flow of behavior towards some set of goals rather than as a set of discrete episodes involving choice dilemmas (Brehmer 1990) .



# MODELS OF DECISION MAKING

Planned Behavior

Diffusion

Transactional Model



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Many, if not most, complex socio-ecological systems will remain unpredictable even if an understanding of the influences of behavior within the system is achieved. Social science is less concerned with prediction than with identifying how behavior evolves and influences other processes.

*G. Edwards-Jones*



# DECISION MAKING OCCURS IN STEPS

- Each model defines steps differently.
- Three basic phases:
  - data made into information
  - limited adoption, on-farm experimentation
    - Makes more information,
    - Makes better information
    - Basis to evaluate and predict outcomes, shaped by Evaluation Style  $\leq$  Personality
  - choose option & adopt (use repeatedly)



# A Farmer's Decision Making is a Function of Many Variables

Personal

Farm

External



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# The Illinois Context for the Study:



# A study of producer and consumer understanding and acceptance of biofuel crops.



# Project Objectives:

1. Learn farmer/producer information needs and best modes of information dissemination in Illinois.
2. Develop collaboration among scientists engaged in biofuels research, farmers and consumers.
3. Establish a communication system that links farmers, scientists and policy makers.





# Project Methods:

## Survey of 1002 Illinois farmers

- Identify the information needs of producers as they consider bioenergy crops.
- Identify potential energy crop adopters and which crops they are considering.
- Outline best methods for providing information to potential growers.

## Focus Group, average of 6 participants in 7 groups across the three Illinois agricultural regions

- Questions paralleled survey



# Survey Insights:

Factor analysis identified four main areas of information needs:

- Agronomy & Markets
- Concerns & Supporting Policies
- Market Readiness & Business Uncertainty
- Operational Advantages



# Survey Insights:

## Adoption of bioenergy crops variables:

- Consideration of other new crops
  - Each new crop planned in the upcoming season doubles the odds of adopting a bioenergy crop.
- User characteristics
  - Farmers that anticipate using biofuels are 16 times more likely to be potential biofuel crop adopters.
- Age
  - The likelihood of adopting a bioenergy crop decreases with age



# Information for Potential Adopters

Give them information they want, in this case:

- Agronomy and Markets, and
- Operational Advantages (in S IL)

Provide it in a method they prefer:

- Conferences, meetings and field days
- Printed material mailed to the farmer



# Focus group insights:

## Emphasis on:

- Agronomics and markets working well now, no need for change.
- Neighboring on-farm experimentation is best communication, seeing is believing.
- A reasonably stable market required for new crop adoption.
- Farmers ask long standing, trusted sources for information.

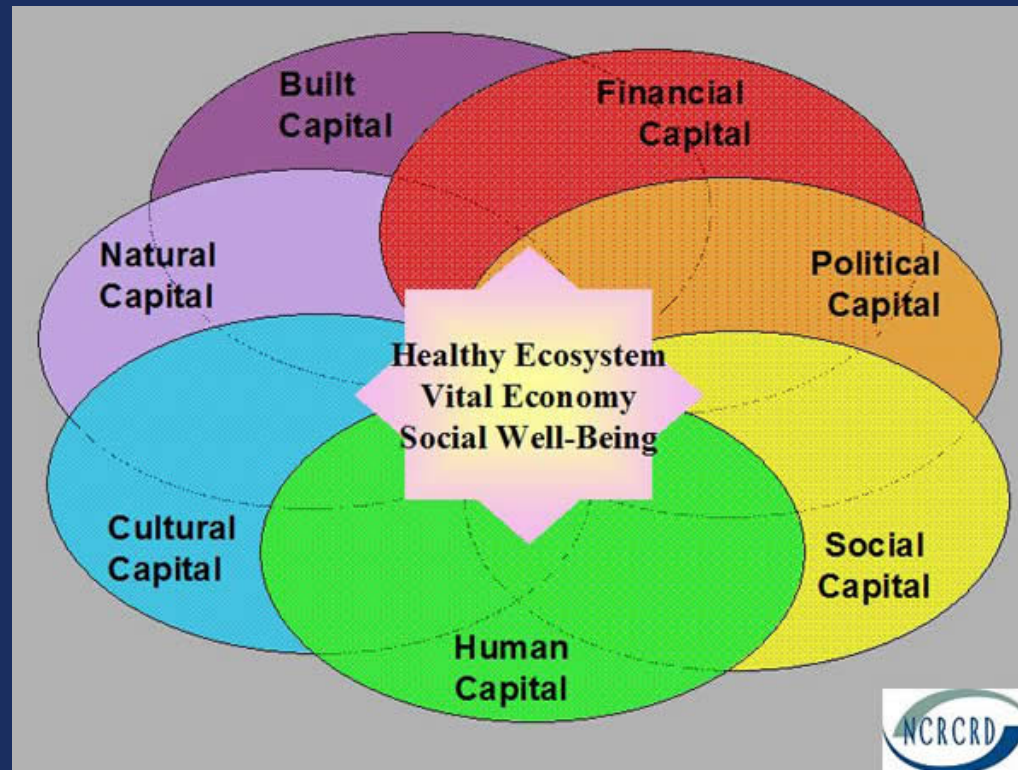


# Extension Applications



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# Community Capitals Model



North Central Regional Center for Rural Development

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# Community Capitals at Work

Repeated interactions allow for the development of “social capital,” in particular norms of reciprocity, trust, and networks of civic engagement *Lubell*

Lack of social capital results in a lack of capacity for change, financial capital can substitute for social capital *Flora & Flora*





# Information Gathering & Decision Making Variables Related to Community Capitals

	INFORMATION SEEKING	DECISION MAKING	COMMUNITY CAPITALS
<b>Personal Variable</b>	demographics & socio-economics  values psychology, especially advice seeking behavior media preference	socio-demographics of the farmer  psychological make up of the farmer attitudes beliefs (world view) values personality	Human  Human Cultural Cultural Cultural Human, Social



# Information Gathering & Decision Making Variables Related to Community Capitals

	INFORMATION SEEKING	DECISION MAKING	COMMUNITY CAPITALS
Farm Variable	technology use		Human, Cultural
	advice seeking behavior	characteristics of the farm household kinship and social ties	Human, Cultural Social
	internet use	access to information, e.g. Internet connection	Human, Built
		characteristics of the farm	Natural
		structure of the farm business	Human
		farm type	Natural, Social, Cultural
		farm size	Financial, Natural, Political
	search motivations	debt to asset ratio profit motivation	Financial Financial, Cultural, Social



# Information Gathering & Decision Making Variables Related to Community Capitals

	INFORMATION SEEKING	DECISION MAKING	COMMUNITY CAPITALS
<b>External Variable</b>	situational	<p>wider social milieu &amp; institutions</p> <p>attitude of trusted friends</p> <p>characteristics of the innovation considered</p> <p>structure of agri-environment/policy incentives</p>	<p>Human, Social, Cultural</p> <p>Social, Political, Cultural</p> <p>Social</p>
	temporal pattern: emergency or opportunity	length of interruption between renewal of innovations	<p>Political</p> <p>Financial</p>



# Bioenergy Crop Adoption Variables “Potential User” and “New Crop” Related to Community Capitals

	COMMUNITY CAPITALS
Potential User	Human Cultural
New Crop	Natural Human Cultural



# Preferred Media Related to Community Capitals

	COMMUNITY CAPITALS
Conferences and Meetings	Human Social Cultural Political
Field Days	Natural Human Social Cultural Political
Printed Material Mailed to the Farmer	Cultural



# Conferences and Meetings

- Human capital – appeals more to particular personalities
- Social capital – use bridging capital of existing networks to market events
- Social capital – use events to increase bonding and bridging social capital
- Cultural capital – take advantage of agribusiness oriented farmers orientation to professional events and formal research
- Political capital – conference size events are more likely to catch attention and participation of power brokers



# Field Days and Neighboring Farm Experimentation

- Natural capital – depends on local soil & climate conditions
- Social capital – direct experience in face of weak bridging capital and low trust of institutions,
- Social capital – take advantage of stronger bonding capital among farmers & strength of social networks
- Human capital – appeals more to certain personalities
- Cultural capital – take advantage of farmer beliefs & attitudes about practical learning from experience
- Political capital – power and influence to encourage and fund experimentation



# Printed Material Mailed to Farmer

- Cultural capital – appeals to hands-on, direct experience information gathering
- Human capital – includes the older but not yet old demographic





# Markets

- Financial capital – won't grow crop without reasonably certain & stable market
- Political capital – lobby for & hold out for subsidies & incentives to make new crops profitable
- Cultural capital – not deviate from norms
- Built capital – adopt after processing capacity in place



# In Conclusion

- There are basics of information gathering and decision making that are helpful to know.
- Farmers seek information and make decisions much like everyone else.
- There are characteristics to farmer information searching and decision making.
- Farmers have particular information needs and information channel preferences.
- The Community Capitals framework is a tool for Extension educators/agents to focus intervention efforts in response to those needs and preferences.

