

# Ecological Approaches to Farming



Models and Practices for a Sustainable System



Ed Reznicek  
and Mary Fund  
Kansas Rural Center



# KRC History With Farming Practices

- \* 1980's -Sustainable Farming Practices Project-- on-farm research, demos.
- \* Alternative agriculture
- \*Low Input agriculture
- \* 1990's Clean Water Farming Project cost-share for farmers



## Clean Water Farm Project

- whole farm planning to help farmers and ranchers adopt farming practices or management changes to protect or improve water quality
- WRAPS focus

Whole farm planning IS an ecological approach to farming.

- holistic

- systems approach

- helps build internal strengths and prevents problems rather than dealing with them after they appear

# About sustainable agriculture

- KRC was into sustainable agriculture and sustainability before it was cool.
- Now everyone is sustainable; everyone is green.

# Three Legged Stool of Sustainability

- \* Economically viable
- \* Environmentally sound,  
or ecologically based
- \* Socially responsible

# Objectives for Today

- Why an ecological approach to farming is important
- What is the ecological approach? What are the principles of an ecological agriculture?
- Models or examples of practices or systems

# Why An Ecological Approach?



# Science



Ecological approach  
utilizes science -- but  
it is a science based  
on a systems and  
holistic approach,  
which more accurately  
reflects nature than a  
reductionist,  
mechanistic approach

Primary problems in agriculture are systemic; therefore the solutions must be also be systemic

# Problems or Challenges In Agriculture



- 1) Water Quality
- 2) Rural Community Decline

3) Heavy dependence  
on petroleum

4) Anti-biotic  
resistance in  
livestock and  
humans

## 5) Difficulty in starting new farmers



## 6) Declining biodiversity



## 7) Climate change contribution



Oil Will Not always be  
cheap or abundant

# Need to Strengthen Agriculture's Resilience & Adaptability-



-- biologically, economically and socially

# What is the Ecological Approach?



Integrated management strategies  
utilizing and supporting complex  
ecosystem processes

Versus

Command and control strategies built  
on technology

# Principles of Ecological Agriculture

- Efficiency
- Diversity
- Self-sufficiency
- Self-regulation
- Resiliency



# Awareness of spacial-temporal scales

- Farm Size
- Field Size



- Crop rotation
- Annual vs. perennial crops



Management Framework Built Primarily  
On System Design as Opposed to  
Technological Adoption

# Examples of Ecological Farming



- Integrated Crop and livestock Systems



- Organic Crop & Livestock Production Systems



- Holistic Resource Management
- Management Intensive Grazing Systems



- Permaculture
- Integrated Pest Management



- \* Disciplined Crop Rotations and
- \* Integrating cover crops
- \* Crop Diversity



- Regional Food Systems
- Renewable Energy

# Summary

- \* Ecological approach gives us a new lens with which to confront agricultural challenges
- Importance of looking at the landscape around us and asking if this is an ecological approach?

