What is Sustainable Agriculture?
Sustainable Agriculture

an integrated system of plant and animal production practices…that will

- satisfy human food and fiber needs
- enhance environmental quality
- make the most efficient use of nonrenewable resources
- sustain economic viability
- enhance quality of life.

1990 Farm Bill
A three-legged stool that balances...
Economically sustainable

- Provides a secure living for farm families
- Provides a secure living to other workers in the food system
- Provides access to good food for all
Environmentally Sound

- Preserves or improves the quality of soil, water, and air
- Cooperates with and is modeled on natural systems
- Minimizes reliance on non-renewable resources
Socially sustainable

- Good for families
- Supports communities
- Fair to all involved
Sustainable agriculture must meet the needs of the present without compromising the quality of life for future generations.

Adapted from definition of sustainable development in 1987 Brundtland Report “Our Common Future.”
All these definitions are goal-based

Goal:
A desired end

Practices:
Actions to achieve a goal
How do you get to goals?

- Figure out where you are
- Analyze your strengths and weaknesses
- Select strategies (practices)
- Keep monitoring your progress
- Re-evaluate your goals and plans
Where are we?

What are the **Strengths** and **Weaknesses** of our current agricultural system?
Successes

- abundant food supply in the developed world
- fresh fruits and vegetables available year-round
- cheap food
- luxury foods such as coffee, tea, chocolate, and spices easily available around the world
- effective food preservation technologies (refrigeration, freezing, canning, packaging)
- convenience foods
- mechanization produces high labor efficiency
- improvements in soil conservation
- availability of agricultural inputs for quick solutions to production problems
Problems

- continuing soil loss
- food safety concerns (food-borne illnesses, antibiotic resistance, pesticide residues, mad cow disease)
- water pollution, air pollution (& odors), habitat loss, water depletion
- continuing hunger – and rise of obesity
- failing farms, economic uncertainty and stress
- declining communities
- farm accidents, chronic diseases linked to agricultural chemicals
- reliance on fossil fuels, global climate change
- farmland loss to development, ugly countryside
- difficulty of starting in farming
What practices can we use to move to a more sustainable agriculture?

A few examples from Wisconsin, but first…
**Principles to keep in mind**

- Consider the whole system
- Work with ecosystem processes instead of trying to overpower them
- Accept variability
- Respect farmer and citizen knowledge
- Remain critical and open to change
Grazing
Wisconsin cows usually stay indoors and eat corn, alfalfa, hay, and other grains.
All their feed must be

- Raised
- Harvested
- Transported
- Stored
And the manure must be:

- Cleaned out of the barn
- Stored
- Transported
- Disposed of
23% of WI dairy farms graze

Also beef farmers

Scott Trautman
Grass-finished beef
Dane County
Benefits of Grazing

- Grass covers soil year-round – less erosion
- Manure goes to replenish soil nutrients
- Less need to harvest, dry, transport, and store feed – lower energy costs
- Quality of life for farmer & animals
- Profitable
- Nutritional benefits
How does grazing fit with the 3 legs of sustainability?
How does it conform to the principles of sustainable agriculture?
IPM

integrated pest management
Integrated Pest Management

Manage pests with cultural and biological as well as chemical tools

- Crop rotation to stop build-up of pests
- Use of natural pest enemies
- Monitor pest populations & only use pesticides when economically beneficial
- Knowledge-intensive
Main WI IPM projects

Apples and potatoes
IPM Benefits:
Less pollution from pesticides
Reduced health risks for farmers and consumers
Farmers can save money and sometimes get a better price.
How does IPM fit the 3 legs of sust. ag.?
How does it fit with the principles of sust. ag.?
Organic Agriculture
A growing market:

20% growth

659 WI organic farms in 2005; ca. 900 in 2007

92,000 acres (2005)

Richard DeWilde
Organic vegetable farm
Vernon County
Organic Farming

- No synthetic fertilizers
- No synthetic pesticides
- No hormones or antibiotics for animals
- Crop rotation required
- Must be inspected by 3rd party
- Must help biodiversity
- Regulated by US Dept. of Agriculture
- & many more requirements
**Benefits**

- Lower health risks for farmers and farmworkers
- Lower health risks for consumers
- Better for environment
- Kinder to animals
- Higher income for farmers

WI has 33% of US organic dairy cows
How does organic fit the 3 legs of sustainability? How does it fit with the principles of sust. ag.?
Marketing & local foods
Key to economic sustainability

Commodity model:
Farmers and consumers have little power

Sustainable marketing goals:
More income for farmers
More access to sustainable food for consumers
CSA – community supported agriculture

> 40 Wisconsin CSAs serving Madison, Milwaukee, Minneapolis

Dave Perkins, CSA
Dane County
Other sustainable markets

- Farmers’ markets
- On-farm sales (web and atlases)
- Eco-labels
- Institutions, including schools
- Specialty stores
How does marketing fit the 3 legs of sustainable ag.? How does marketing fit the principles of sust. ag?
Conclusion

- Agriculture has accomplished much
- There are still many problems to solve, both old and new
- Sustainable agriculture is about trying to solve these problems – without creating new ones.
Sustainable Agriculture Research and Education

A USDA program
SARE

Provides grants for

- Research & Education
- Professional Development
- Farmer-Rancher Research and Education
- Graduate Student Research
SARE

Disseminates information through its

- website  www.sare.org
- bulletins
- books
- list serve