

What is *Sustainable Agriculture?*

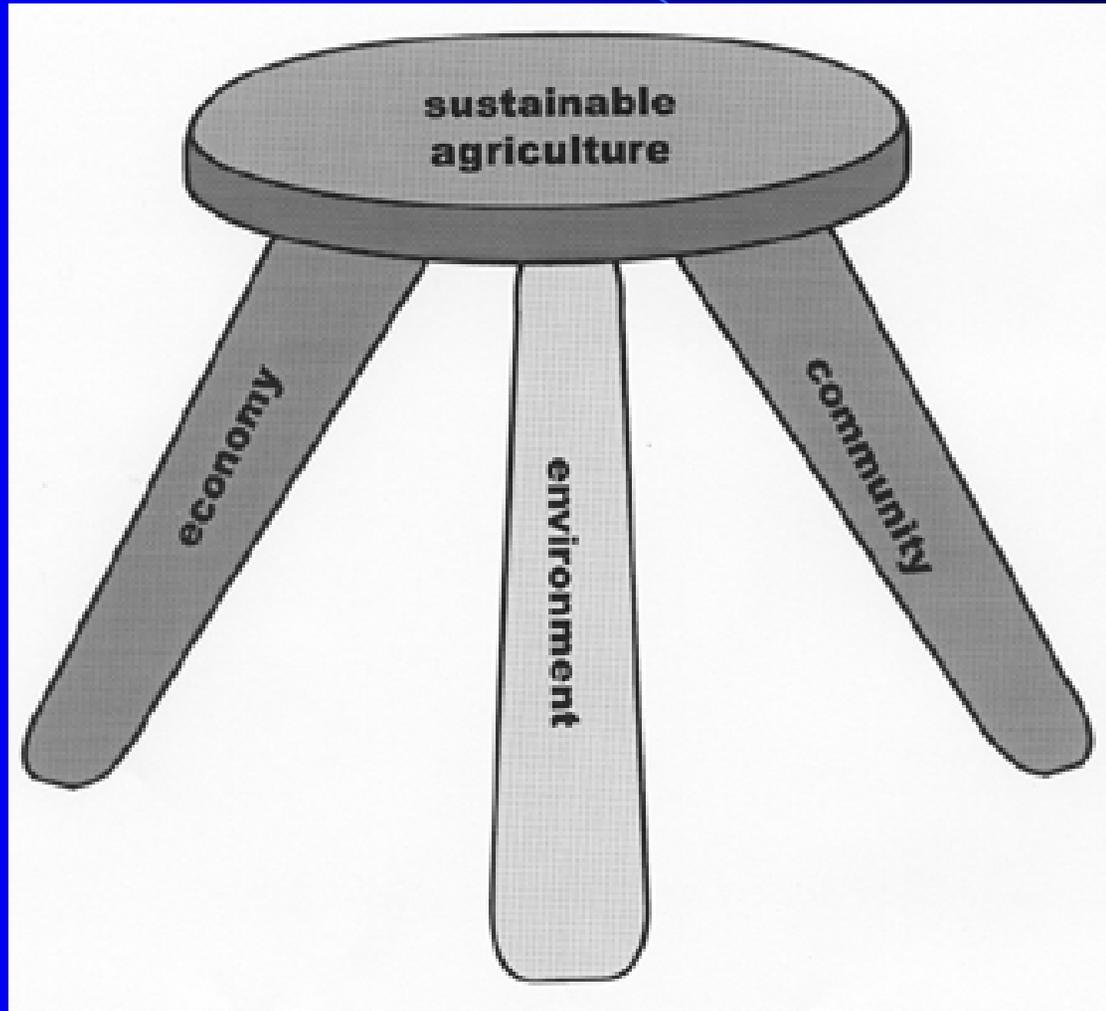
Sustainable Agriculture

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.?

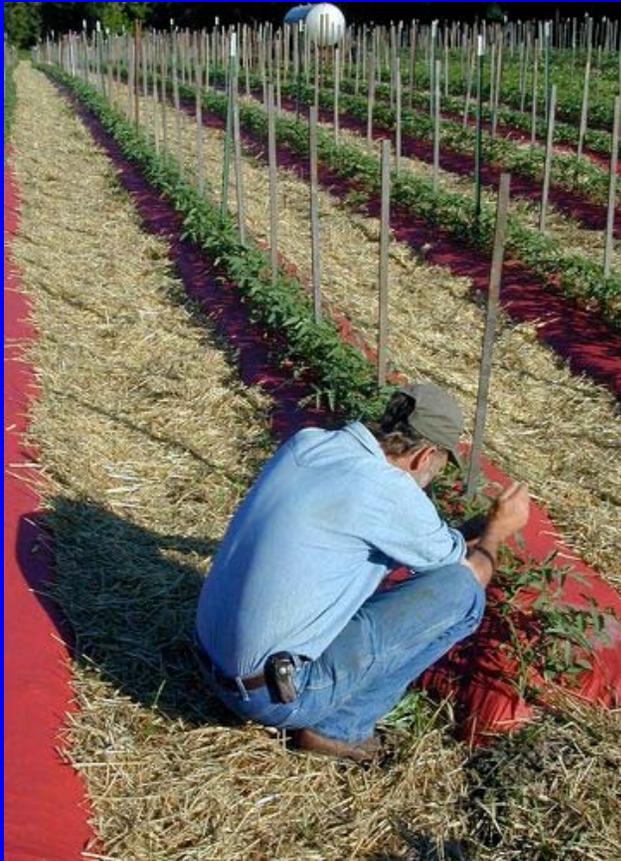
How does it fit with the principles of sust. ag.?



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.?



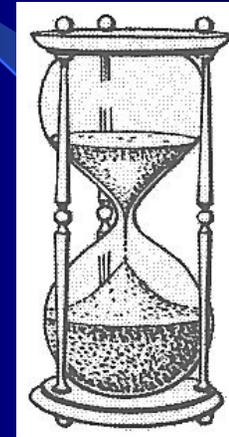
Marketing & local foods



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



Dave Perkins, CSA
Dane County

> 40 Wisconsin CSAs serving Madison, Milwaukee, Minneapolis

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

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