

Agriculture

- For the last 10,000 years humans have been practicing agriculture, or simply put, farming.
- Farming has allowed us to feed many people and have food year round
- Today's farming is very different than it was in the past

Traditional Agriculture

- Traditional, or conventional, agriculture is how most of our food is made.
- It is large scale, industrial and designed to make the most amount of food with the smallest amount of space

What you think it looks like..



What it really looks like...



What you think it looks like...



What it really looks like...



Monocultures



- A monoculture is an area of land that only grows a large amount of one crop.
- This makes it very easy for pests to destroy the crops.
- As a result, pesticides are used.

Pesticides

- Pesticides damage soil and can run off into the surrounding area



Pesticides

- If a small amount of the pests survives and are resistant to the pesticide, then they will repopulate and a stronger, more toxic pesticide must be used.



Fertilizers

- Since the soil gets degraded quickly, fertilizers must be added to the soil.
- Fertilizer runoff causes “eutrophication” which means “too much of a good thing” because the added nutrients cause algae to flourish and choke out aquatic ecosystems

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 (mad cow disease, food poisoning outbreaks, antibiotic resistance, toxins and pesticides)
- 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 warming
- farmland loss to development, ugly countryside
- difficulty of starting in farming

What is *Sustainable* *Agriculture*?

“...a journey, not a destination”

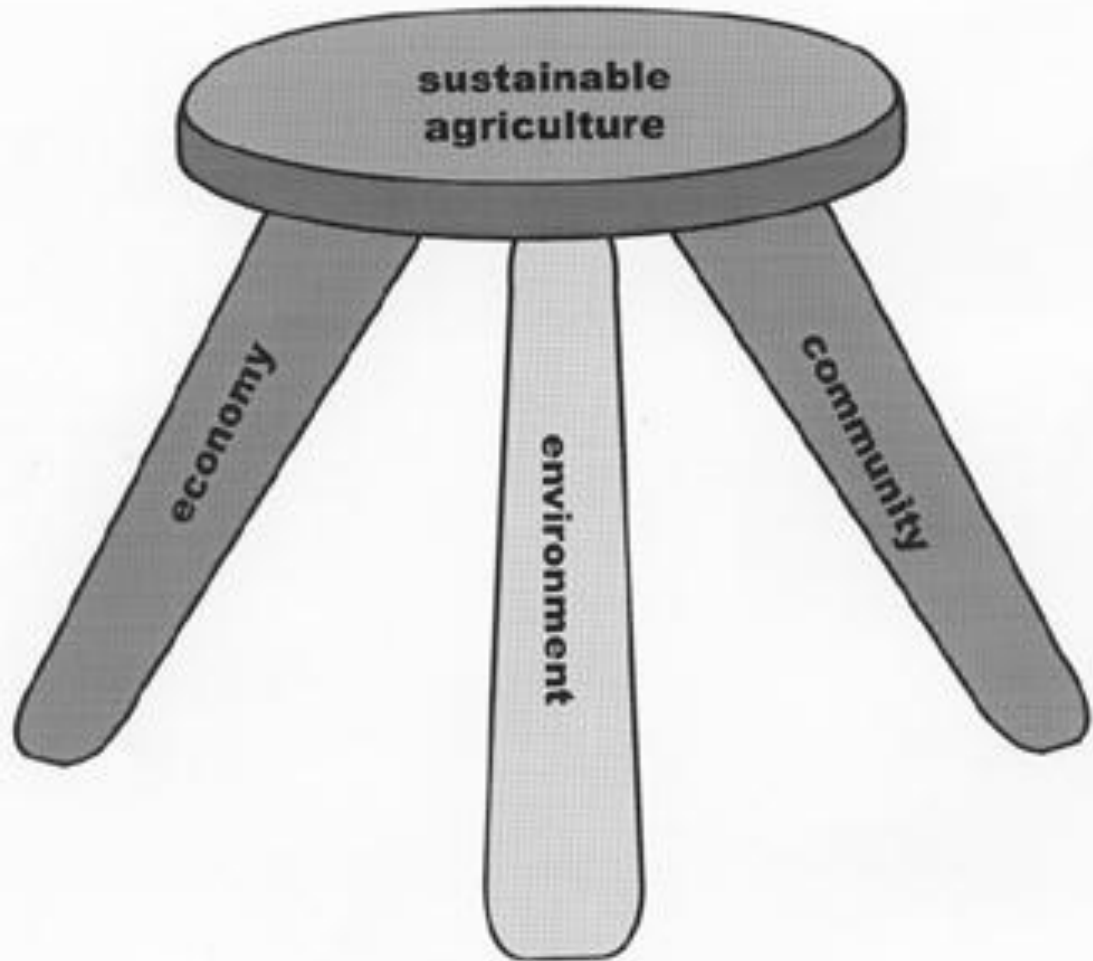
Iowa Farmer

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

The three-legged stool of sustainability



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
the
quality of
soil,
water,
and air



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Environmentally Sound

Cooperates
with and
is modeled
on natural
systems



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Socially sustainable

- Good for families
- Supports communities
- Fair to all involved



How to farm sustainably

- Farmers plant many different crops near each other so that a pest can't destroy an entire crop
- Waste products are composted and used to replace nutrients in the soil.
- Crops are rotated to preserve the nutrients in the soil.

How to farm sustainably

- Animals are treated fairly and given the freedom to move.
- Animals are not given unnecessary antibiotics.
- Animals are fed properly

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.