Sustainable Agriculture

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

Definition of 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."

Farm Bill (1990)

Present state of agroecosystem

The onset of the industrial age brought about various trends that have led us to

our present state.

- The quick rise in population.
  - More people to feed.
- The greater need for production.
  - Farms required to produce more.
- The increase in urbanism.
  - Less farms to do more work.
- Wide-spread ecological impacts.
  - Faith in technological, political and economic fixes.

Today, “less developed countries” are following a similar trend.

- Many farmers in these countries choose to grow cash crops rather than subsistence crops.
  - Regions reliant upon cash crops tend to develop adverse, long term environmental problems.

Negative Impacts

Our current mass production style of farming has resulted in numerous negative side-affects:

- Environmental damages
  - Reduced biodiversity
  - Habitat destruction
  - Deforestation
  - Water, air and soil pollution
  - Salinization, desertification
  - Decline in water resources and land subsidence
- Human impacts
  - Farm land destruction
  - Damage to soil fertility
  - Reduced nutritional value of food
  - Decreased economic, social and cultural values

For the past several years research has looked at sustainable agriculture

as a potential solution to correct and prevent these problems.

Goal of Sustainable Agriculture

The goal of sustainable agriculture is to minimize adverse impacts to the immediate and off-farm environments while providing a sustained level of production and profit.

Inherent to this goal is the understanding that sustainability must be extended not only globally, but indefinitely in time, and to all living organisms including humans.

Simply stated, sustainable agriculture refers to the ability of a farm to produce food indefinitely, without causing irreversible damage to ecosystem health.

Characteristics of Sustainable Agriculture

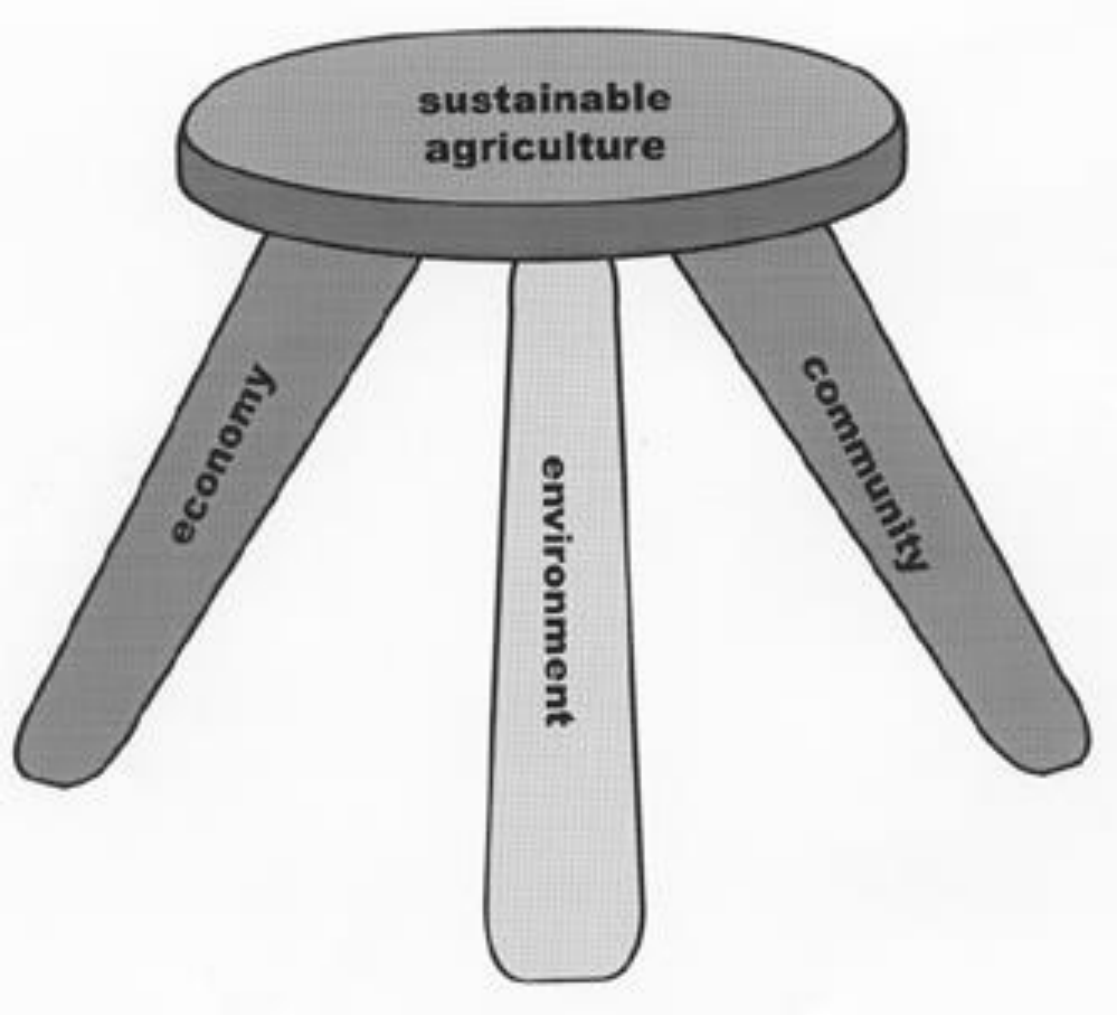
Sustainable agriculture is a way of raising food production that is healthy for men and animals, does not harm the environment, is humanitarian for workers, respects animals, and provides a fair wage to the farmer

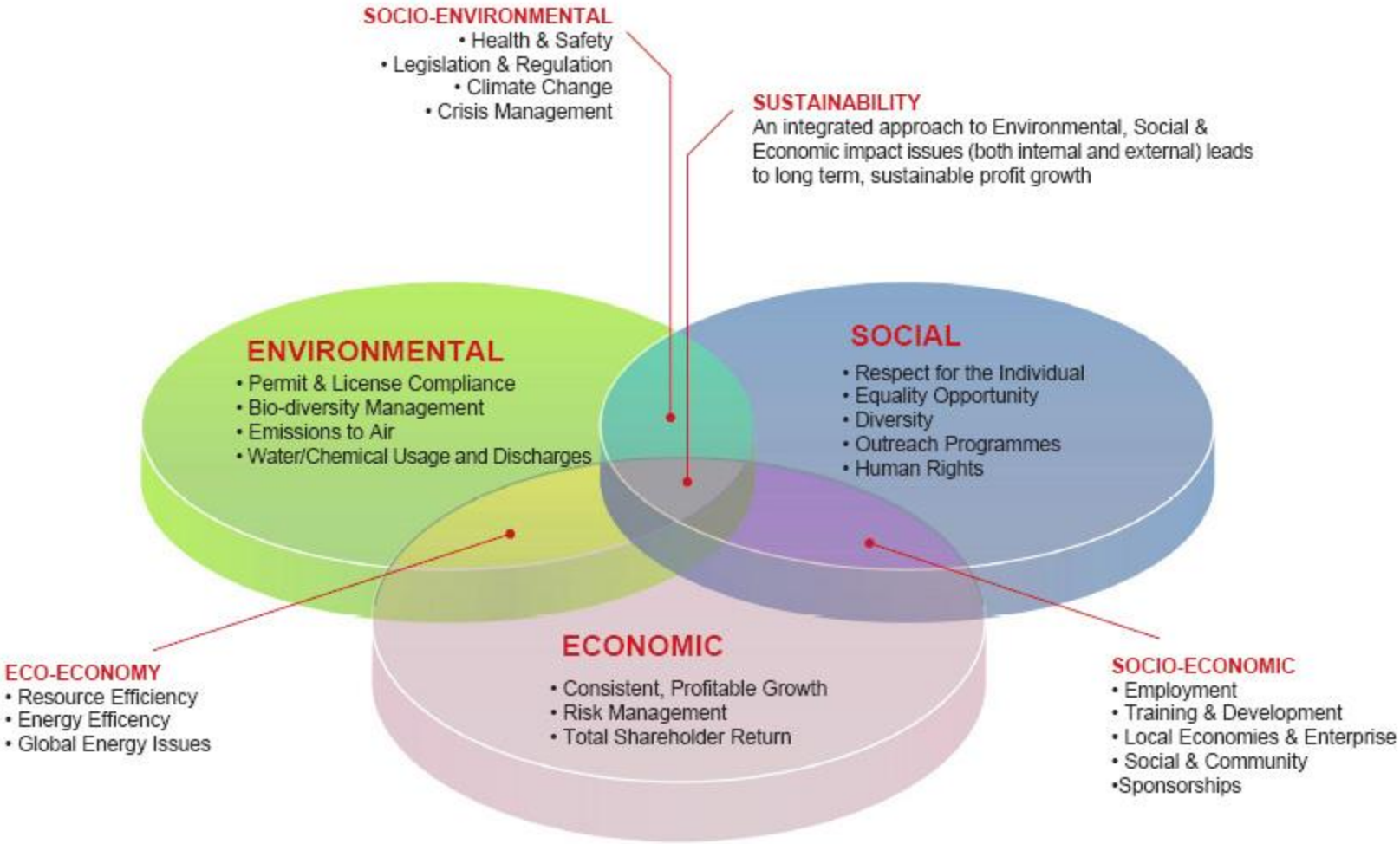
1. Conservation and preservation
2. Biodiversity
3. Animal welfare
4. Economically viable
5. Socially just
6. Productivity/Capacity
7. It also cuts costs of running a farm by requiring lower applications of inorganic fertilizers and pesticides.
8. Yields from sustainable farms are generally lower than those of conventional systems.
9. However, profits in the long-run can be higher because lower input costs and reduced environmental damage.

A sustainable form of agriculture must be….

- Economically viable
- Environmentally sound
- Socially just

The three-legged stool of sustainability




SOCIO-ENVIRONMENTAL
• Health & Safety
• Legislation & Regulation
• Climate Change
• Crisis Management
SUSTAINABILITY
An integrated approach to Environmental, Social & Economic impact issues (both internal and external) leads to long term, sustainable profit growth
ENVIRONMENTAL
• Permit & License Compliance
• Bio-diversity Management
• Emissions to Air
• Water/Chemical Usage and Discharges
SOCIAL
• Respect for the Individual
• Equality Opportunity
• Diversity
• Outreach Programmes
• Human Rights
ECONOMIC
• Consistent, Profitable Growth
• Risk Management
• Total Shareholder Return
ECO-ECONOMY
• Resource Efficiency
• Energy Efficency
• Global Energy Issues
SOCIO-ECONOMIC
• Employment
• Training & Development
• Local Economies & Enterprise
• Social & Community
•Sponsorships

Benefits Of Sustainable agriculture

1. Contributes to environmental conservation
2. Improved soil and water conservation
3. Prevents pollution
4. Reduction in cost
5. Biodiversity
6. Beneficial for animals
7. Economically beneficial for farmers
8. Social equality
9. Beneficial for environment
10. Increased food nutrient density
11. Better conditions for farm workers

- There is no policy exist that directly support sustainable agriculture. Even in National Agriculture Policy (2010) have no specific clause or agenda on sustainable agriculture. Also National Seed Policy (1993) has no specific clause or agenda on sustainable agriculture. However, there are some reflection in the national Agriculture Policy 2018.

কৃষির উৎপাদনশীলতা ও আয় বৃদ্ধি এবং কর্মসংস্থান সৃষ্টির মাধ্যমে বিশাল জনগোষ্ঠীর আর্থ-সামাজিক উন্নয়নে কৃষি খাতের গুরুত্বপূর্ণ ভূমিকা রয়েছে। মধ্যম আয়ের আধুনিক বাংলাদেশ গড়ার অঙ্গীকার বাস্তবায়নকে সামনে রেখে উদ্ভূত চ্যালেঞ্জ মোকাবিলার লক্ষ্যেই 'জাতীয় কৃষি নীতি ২০১৮' প্রণয়ন করা হয়েছে। কৃষি খাতের সমস্যা ও সম্ভাবনা, সমস্যাগুলোকে সম্ভাবনায় রূপান্তর, গবেষণা ও উন্নয়ন, কৃষিতে তথ্য প্রযুক্তির ব্যবহার, কৃষিতে ন্যানো প্রযুক্তির ব্যবহার, কৃষি সম্প্রসারণ, কৃষিতে সমবায়, কৃষি বিপণন, বিশেষায়িত কৃষি, উদ্যান কৃষি, ভাসমান কৃষি, বিশেষ আঞ্চলিক কৃষি, কৃষিতে নারী ও যুব শক্তি, জ্ঞান ও দক্ষতা উন্নয়ন, কৃষি যান্ত্রিকীকরণ ও কৃষিতে সৌর বিদ্যুৎ এর ব্যবহার ইত্যাদি উল্লেখযোগ্য বিষয়সমূহ নতুন প্রণীত এ নীতিতে অন্তর্ভুক্ত করা হয়েছে। পাশাপাশি প্রাকৃতিক সম্পদের যথাযথ সংরক্ষণপূর্বক ফসলের উৎপাদনশীলতা ও শস্যের নিবিড়তা বৃদ্ধি, উৎপাদনশীল এবং লাভজনক কৃষি ব্যবস্থা প্রবর্তন সর্বোপরি খোরপোষ কৃষি এখন বাণিজ্যিক কৃষিতে রূপান্তরিত হচ্ছে, যা এ নীতিতে প্রতিফলিত হয়েছে। আধুনিক কৃষির বিজ্ঞানভিত্তিক প্রযুক্তি প্রয়োগের মাধ্যমে সমন্বিত কৃষি সেবা কৃষকের দোরগোড়ায় পৌঁছে দেওয়াই 'জাতীয় কৃষি নীতি ২০১৮' প্রণয়নের প্রধান উদ্দেশ্য।

'জাতীয় কৃষি নীতি ২০১৮' প্রণয়নে সংশ্লিষ্ট মন্ত্রণালয়/বিভাগ, দপ্তর, সংস্থা, সর্বস্তরের কৃষক, জনসাধারণ, জনপ্রতিনিধি, কৃষি বিজ্ঞানী, সম্প্রসারণ কর্মী, বিভিন্ন পেশাজীবী সংগঠন এবং এনজিও প্রতিনিধিদের মতামত গ্রহণ করা হয়েছে।