Socioeconomic factors of Sustainable Agriculture

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Changing an existing farm to a sustainable property

It can be both disruptive and expensive to change an existing farm from a 'traditional' operation, to a 'sustainable' one. The change should not, however, be expected to take place overnight. A realistic approach is often to convert to a low input-sustainable system over a period of 5–10 years, one paddock at a time. There is no sense in trying to make a farm environmentally sustainable overnight if in doing so you lose both financial sustainability and ownership of the farm.

Making the change will always involve some trade-offs. For example, the quality or quantity of production might decrease but the cost of production might also be reduced. In balance, the profitability remains the same. The farm will have lost very little in the short term in order to achieve sustainability in the long term.

Other changes that can be gradually introduced might include:

- reducing or eliminating the use of pesticides (e.g. by embracing integrated pest management or biological controls)
- changing cultivation methods to reduce damage to soils
- changing or rotating the varieties of plants being grown as crops or pastures
- changing the types of animals being farmed, or managing animals in a different way (e.g. restricting their movement)

Diversification

By diversifying and producing several different products, the disadvantages of a monoculture and all the associated problems that arise from weather, difficult growing seasons and market changes are minimized. Diversification advantages include:

- providing a buffer against financial catastrophe if one of the products fails
- averaging profits and losses over the different products
- providing an opportunity for value adding by combining two products (eg cheese and herbs)

Diversification will allow the farm to be sustainable, both ecologically and financially.

While financial considerations will always influence the final product mix, all farm products must be assessed in terms of their effect on the environment. Some things that should be considered when deciding what to produce include:

- choosing plants and animals that are more drought tolerant, require less maintenance and feeding, attract fewer pests, are disease resistant, and have less physical impact on soil and resources
- the use and/or creation of alternative food sources, e.g. fodder tree plantations, roadside grazing dual-use products (e.g. plants that provide fruit can also provide fodder or support bees; sheep that produce both wool and milk)

New farm products

When assessing a new farm product, consider:

- What will the demand for this product actually be? Once the initial novelty dies down, will the market continue?
- New products do not have the same expertise or experience to support their production that established products have. Is your farm sufficiently diversified to support the trial and error period necessary to establish a new product?
- How does the product fit in with the long-term sustainability of your enterprise?

- Because it is scarce, the cost of purchasing stock may initially be high.
- Markets are not established, so more work and expense will be involved to sell the product.

Prerequisite of growing a new crop/products

- Grow crops or animals which are appropriate for soil, water and climatic conditions
- Grow products which are properly serviced (eg adequate storage, transport facilities, production machinery)
- Have financial, manpower and other necessary resources
- Integrate crop and livestock nutritional needs
- Ensure you have an accessible market
- Integrate the effect of new crop/livestock (income and expenditure) on total farm cash flow

Farm activities

Look at the alternatives available when dealing with:

- control of pests and diseases (including vermin)
- control of weeds
- rotation of crop/pasture use
- contingency plans for drought, flood and other catastrophes
- land use capability (e.g. be conservative with stocking rates)
- condition of physical resources (equipment, materials, land, etc)
- conservation of physical resources (e.g. don't waste water)
- review of production systems (e.g. improve/develop better ways of production)

Management

- Adapt and change to more appropriate production systems (e.g. tillage, harvest, storage, pest control)
- Make the farm layout as efficient and useful as possible (e.g. existing and incorporated windbreaks, seasonal and permanent water sources)
- Adjust record keeping systems to monitor areas of importance for both financial and ecological sustainability (e.g. record problems when they occur, to be investigated when time allows; record breakthroughs in previous problem areas)

Socioeconomic options

- Calculate the costs and savings that can be expected in the shift to the sustainable farm. Sustainable farms often use less fuel, fertilizer, chemicals, etc. and hence have lower production costs.
- Plan to get more involved with the community. Find out what programs and organizations exist that may be of help. Look toward developing a more cooperative approach to property use and management. Don't try to reinvent the wheel, use the information and experience that others can provide.
- Sustainable farms may be more viable on a small scale than 'traditional modern farms'. Estimate what land area you will actually need to be sustainable and consider leasing or share cropping extra land available. This type of action is supportive of the local farming community and will help to maintain rural population numbers. The result is better infrastructure and more services available.

Political/legal considerations

- Legislation sometimes restricts the way in which something can be farmed. Ensure you are aware of any legal ramifications in terms of quarantine, chemical treatments, interstate transfer laws, etc.
- Ensure you are aware of local zoning regulations; especially in areas close to the rural/urban interface, some restrictions can be prohibitive to what and how you produce.

Monitoring and reviewing the farm system

Sustainable farming requires continuous monitoring of the condition of the farm. Continually check for the following, and adjust your management and long-term plans whenever a problem is identified.

Deterioration of soil

- Lowering of organic content
- Lowering of EC (electroconductivity)
- Changes in pH
- Preliminary signs of erosion
- Salinity (white caking on soil surface or indicator plants)
- Reduced plant growth

Deterioration in water quality

- Increased EC
- Algal blooms
- Clarity or color changes

Weeds and pests

- Watch for dramatic changes in their populations
- Monitor for changes in susceptibility of pests or diseases to treatments (this can indicate resistance is developing in new generations of the pest)

Crop and livestock health

- Watch for deterioration in crop or livestock health, including increased susceptibility to disease; discoloration of plant foliage, etc
- Be aware of any drop in crop or livestock yields

Socioeconomic considerations

Sustainable agriculture can be seen in many different lights. Some managers choose to pursue sustainability to the full extreme in enterprises such as permaculture systems, where the human inhabitants become an extension of the system. Some see sustainable agriculture as a shrewd business decision, to ensure the longevity of the business enterprise.

Regardless of personal views, decisions must be made in regard to both social and economic effects of the system.

Profitability

Liquidity needs to be maintained within the enterprise. Will the production mix and levels support the ongoing operation of the farm? Can what has been identified as ecologically sustainable support the property financially? Will the changes to the property force a severe change in lifestyle on the property owner in terms of income? These are all important questions that need to be answered.

Measuring the short-term costs against the long-term gains will often show that the financial cost of sustainable farming in the short term will return both financial and environmental benefits in the long term. When considering changes to the property, ask the following:

- What is the initial cost of the change?
- What will be the loss in production/potential income?
- What will be the savings in labor, maintenance, materials?
- How long will it be before the new product is in full production?
- How will this change affect the ability to service existing debts?
- Will additional debt be required to make the desired changes?

Social aspects

Business is all about making advances and making money. However, with all businesses the time of making money at all costs is gone. Being a 'responsible corporate citizen' applies as directly to farming as to any other enterprise. This is why the move to sustainable farming is so important.