

**BEEF FARM****SUSTAINABILITY CHECKSHEET**

800-346-9140

**LIVESTOCK SYSTEMS GUIDE**

ATTRA is the national sustainable agriculture information center funded by the USDA's Rural Business - Cooperative Service.

**Introduction**

This checksheet was designed to stimulate critical thinking in planning a farm on which a primary land use is production of beef cattle. The sustainability of a farm relates to many factors revolving around farm management, use of resources and quality of life. The series of questions is intended to stimulate awareness rather than serve as a rating of management practices. Carefully think about how decisions made in one area impact the results in other areas of your farm. Use this guide to define areas in your farm management that might be enhanced as well as to identify areas of strength.

**Note to the educator: Suggestions on how to use the check sheet**

The check sheet is quite lengthy and can be rather intimidating, to both educator and producer. Having evaluated the use of the check sheet on several farms, the authors make the following suggestions for its use:

- Send the checksheet to the producer prior to the first meeting. Allow 2-3 weeks for the producer to work through it.
- Be flexible. The producer and the educator should be comfortable in working through the process. Remember that the checksheet is a guide to assess the operation as to strengths and weaknesses.
- Review the questions beforehand. Then, when going through them with the producer, don't just read the questions but address them in your own words. If a question has been addressed in general conversation, or if a question doesn't need to be answered because of the way a previous question was answered, move on to the next question. If the producer doesn't have a problem in a certain area, then the subset of questions pertaining to that problem need not be addressed. Having aerial photos, soil maps and topographic maps on hand during the assessment has proven useful.
- Since the time needed to completely work through the checksheet may be longer than available for a single farm visit, two or more visits may be in order. The checksheet is most useful in making the producer aware of management alternatives. Therefore, defining the items for which he or she needs more information is most important.
- Support materials can be procured from ATTRA to use as references.

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**INSTRUCTIONS:** Complete the following questions to present an overview of the farm and management priorities.

## INVENTORY OF FARM RESOURCES AND MANAGEMENT

Size of farm (owned) \_\_\_\_\_ Acreage rented \_\_\_\_\_

Number of: Mature cows \_\_\_\_\_ Replacement heifers \_\_\_\_\_ Stockers \_\_\_\_\_

Other types of animal and farm enterprises \_\_\_\_\_

Breeds of cattle \_\_\_\_\_

Number of pastures on farm \_\_\_\_\_ Number of ponds and water sources \_\_\_\_\_

Livestock market and months you market in \_\_\_\_\_

Months you calve in \_\_\_\_\_

How many acres of the following do you have?

predominantly cool season perennial grasses \_\_\_\_\_

predominantly warm season perennial grasses \_\_\_\_\_

mixture of warm and cool season grasses \_\_\_\_\_ pastures with legumes \_\_\_\_\_

cool season annuals \_\_\_\_\_ warm season annuals \_\_\_\_\_

pastures that can be stockpiled for late fall/winter grazing \_\_\_\_\_

Which practices are part of your grazing system? short duration, slow rotation, continuous grazing

Give major soil types and productivity indexes for the farm \_\_\_\_\_

When and with what do you fertilize? \_\_\_\_\_

What are the top five strengths of your operation? \_\_\_\_\_

What are the top five problems? \_\_\_\_\_

Do you have written goals for your operation (briefly list if you do)?

**INSTRUCTIONS:** In the margin for each question, place a checkmark if it needs further thought. Leaving the item blank indicates that the area covered in that question is not a problem or an issue in the management program. Keep in mind that some questions are repeated to show interrelationships.

## I. CATTLE AND FORAGE PROGRAM

### A. Herd health and reproductive management

*Well-nourished, stress-free animals are the foundation of a sustainable beef cattle program. This means animals are healthy and perform better, are easier to manage and care for, and can more easily handle adverse conditions. While seemingly a simple question, this is intended to stimulate quick evaluation of any stress the animals may have. Simply walk into your herd and take a look at your animals.*

\_\_\_\_\_ What is the overall appearance of your whole cattle herd? \_\_\_\_\_  
\_\_\_\_\_ Do your cattle appear to be thrifty, contented, and performing to your satisfaction? \_\_\_\_\_

*A good health and reproductive management program will allow a producer to avoid problems. Most reproductive management problems involve poor nutrition during some period of the year. A well-defined breeding/calving season helps a producer manage a cow herd more effectively. Nutrition of a cowherd revolves around a well-designed forage management program including coordination of calving with forage availability and quality. The forage management plan, by ensuring an adequate supply of high quality forage throughout the year, will reduce the incidence of health and reproductive problems in the herd. If fed properly, cows will cycle and breed early in the season, preventing problems with open (non-pregnant) cows or late-calving cows. Some people presently feel it is best to calve cows when pasture is actively growing; we would advocate that when cows reach peak lactation (30-60 days postcalving), they are on pastures when forage is in peak growth.*

What are your herd health goals? \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Do you  
    pregnancy check cows? \_\_\_\_\_  
    fertility test bulls? \_\_\_\_\_  
    have a defined breeding/calving season? \_\_\_\_\_  
    calve the majority of your cows the first 21 days of calving season? \_\_\_\_\_  
    routinely condition score cows? \_\_\_\_\_  
    have a clean area for calving? \_\_\_\_\_  
    feed and water in clean areas? \_\_\_\_\_  
    have handling facilities which minimize stress to livestock and handler? \_\_\_\_\_  
    use handling techniques that minimize stress? \_\_\_\_\_

\_\_\_\_\_ What vaccinations do you give? \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ When, how often and on what basis do you deworm? \_\_\_\_\_  
\_\_\_\_\_

Do you have problems with (if you have problems in any area, answer indented questions; if not, go on to next one)

\_\_\_\_\_ open cows (more than 10%) or late calving cows? \_\_\_\_\_

what condition scores are your cows going into the winter? \_\_\_\_\_

at calving? \_\_\_\_\_ beginning of breeding season? \_\_\_\_\_

\_\_\_\_\_ calving difficulty (pull more than 10% of the calves)? \_\_\_\_\_

do you use easy-calving bulls for first-calf heifers? \_\_\_\_\_

are cows and heifers in good condition but not too fat at calving? \_\_\_\_\_

\_\_\_\_\_ abortions/embryonic losses? \_\_\_\_\_

from where does water flow into your farm? \_\_\_\_\_

where do cattle access water? \_\_\_\_\_

are your cattle heat-stressed before or shortly after breeding? \_\_\_\_\_

have you submitted fetuses or tissue samples to a lab? \_\_\_\_\_

do you vaccinate for infectious diseases that cause abortions in your area? \_\_\_\_\_

\_\_\_\_\_ calf scours and/or pneumonia? \_\_\_\_\_

are cows receiving adequate nutrition prior to calving? \_\_\_\_\_

do you have clean, dry areas for cows after calving? \_\_\_\_\_

are your cows heavy milkers? \_\_\_\_\_

\_\_\_\_\_ internal/external parasites? \_\_\_\_\_

do you know if you have any or do you just treat as if you do? \_\_\_\_\_

do cattle look unthrifty? \_\_\_\_\_

do you attribute a lot of unthrifty problems to fescue? \_\_\_\_\_

do you rotate cattle to clean pastures or continuously graze? \_\_\_\_\_

do you increase feed for cattle in weather extremes? \_\_\_\_\_

have you brought cattle in from arid or western range land? \_\_\_\_\_

do you have a problem with flies? \_\_\_\_\_

\_\_\_\_\_ grass tetany? \_\_\_\_\_

what are the magnesium, calcium, and potassium levels in the forage where problems occur? \_\_\_\_\_

what are the potassium and phosphorus levels in the soil where problems occur? \_\_\_\_\_

do you have legumes in problem pastures? \_\_\_\_\_

do you supplement with magnesium in late winter? \_\_\_\_\_

\_\_\_\_\_ other health problems? \_\_\_\_\_

**(skip this section if you do not have fescue pastures)**

*The endophyte level in tall fescue pastures is a management concern. Because seed that is stored for a time period before being sown reduces the infection rate, farms can have pastures with various levels of infection. While most producers make the assumption that pastures are infected, sampling each pasture to determine its specific level of infection could be worthwhile. If a pasture is less than 50-60% infected, its management might be different than if 80-90% infected. Put simply, the best way to manage high endophyte pastures is to use minimal nitrogen fertilization, include legumes, control-graze and cull animals with obvious heat stress problems. Do not mistake other stresses such as parasites, poor nutrition, or extremely hot and humid weather as indicators of fescue problems.*

- \_\_\_\_\_ Do you have problems with fescue toxicoses (or heat stress)? \_\_\_\_\_  
 are you sure it is due to fescue? \_\_\_\_\_  
 have you tested your pastures for endophyte infection? \_\_\_\_\_  
 are you aware of when fescue is most toxic to cattle? \_\_\_\_\_  
 could the signs be caused by poor nutrition or parasites? \_\_\_\_\_  
 do you graze or mow endophyte pastures to control seedhead development? \_\_\_\_\_  
 do you minimize nitrogen fertilization of infected pastures? \_\_\_\_\_  
 do you have legumes in infected pastures? \_\_\_\_\_  
 do you encourage diversity of species with good grazing management? \_\_\_\_\_  
 do you cull animals and their offspring which show extreme heat stress? \_\_\_\_\_

*Stress can be additive, in that one stressor alone may not be a problem, but when multiple stresses occur animals perform poorly or get sick. For example, parasites may not be a problem in well-nourished animals but cause problems when animals are under nutritional stress. Stress to animals can be decreased by careful design of handling facilities, proper consideration of animal behavior, adequate nutrition and awareness that drastic changes in diet (for example, weaning a calf in drylot with hay and grain) can stress animals. Behavior of animals can cause stress to both handler and animal.*

- \_\_\_\_\_ Are animals stressed  
 \_\_\_\_\_ when worked? \_\_\_\_\_ during weather extremes? \_\_\_\_\_  
 \_\_\_\_\_ at weaning time? \_\_\_\_\_ do you have wind breaks in winter? \_\_\_\_\_  
 \_\_\_\_\_ do you use handling techniques that minimize stress? \_\_\_\_\_  
 \_\_\_\_\_ do you use low-stress weaning techniques? \_\_\_\_\_  
 \_\_\_\_\_ is forage availability high enough to meet animals' needs to prevent sickness at  
 high stress times? \_\_\_\_\_  
 \_\_\_\_\_ what are the condition (body fat) scores of animals which show stress? \_\_\_\_\_  
 \_\_\_\_\_ is there good quality and adequate quantity of water during hot weather? \_\_\_\_\_

### **B. Breeding, genetics and selection program**

*Breed selection should be based on the actual merits of a particular breed for a specific marketing program or forage utilization program. Producers tend to base breed or sire selection on popularity of breed or pedigree without using a well planned breeding or crossbreeding program. Consideration of type of cattle and of the kind of environment or management the seedstock were produced in helps predict how they will perform in another person's program. For example, cattle from one geographical region may not perform well in another or cattle developed on a high grain diet may not perform well on a pasture program. In other words, your cattle may not match your resources. Evaluation of breeding stock must include traits of economic significance; for example, use bulls with low to moderate birth weights on heifers. Although we tend to emphasize traits such as adjusted 205-day weights, actual weaning weights or sale weights have more impact on income and thus should be used in making management decisions.*

- What are the goals of your breeding program? \_\_\_\_\_  
 \_\_\_\_\_ Do your animals match your resources? \_\_\_\_\_  
 \_\_\_\_\_ Do you select animals which have been raised in a management program or environment similar to yours? \_\_\_\_\_

\_\_\_\_\_ What traits do you select for or cull against when choosing sires or replacements? \_\_\_\_\_

\_\_\_\_\_ On what basis do you choose herd sires and where do you purchase sires? \_\_\_\_\_

\_\_\_\_\_ Why did you choose the breeds you have? \_\_\_\_\_

\_\_\_\_\_ Are there breeds that would better fit your present or potential marketing program?

\_\_\_\_\_ Are there breeds or breeding stock that would better fit your forage or management?

\_\_\_\_\_ On what basis do you sell surplus animals? \_\_\_\_\_

\_\_\_\_\_ Do you raise or purchase replacement heifers? \_\_\_\_\_

\_\_\_\_\_ Could you purchase them more economically than raise them? \_\_\_\_\_

### C. Nutrition management

*Grazing system and choice of forages are the key components of a cattle nutrition program. All aspects of grazing, including when and how long animals graze, change the pasture by affecting plant species diversity, plant population and plant density. In a sustainable system, these changes should improve the pasture's ability to meet the nutritional needs of the animals, minimizing the need for harvested forages and purchased feeds. Most beef cattle producers have two ways of harvesting forages: baling hay or grazing animals. We Americans have tended to allow animals to graze grass down to the ground, and then when pasture becomes limiting, feed hay and/or purchased supplements. Producers in other parts of the world avoid the prohibitive costs of baling hay (equipment needs, fertilizer costs, fuel use, etc.) by using management techniques that more efficiently utilize the forage and lessen dependence on harvested forages. By knowing what forage is produced, when and how, we can feed our animals on good pasture for a longer period of time. We can change the forage production curve through management. Additionally, we can impact the animal's needs by changing the time of the greatest nutrient requirement, peak lactation, by timing calving and matching the forage production to the lactation curve. While most people strive to have cows in condition score 5 at calving, the critical point is to have cows gaining weight before breeding.*

\_\_\_\_\_ What are your goals related to nutrition of your cattle program? \_\_\_\_\_

\_\_\_\_\_ Does your forage base match your animals' needs--can you meet those needs with pasture? \_\_\_\_\_

\_\_\_\_\_ Are cows on best forage at peak lactation and when going into breeding season? \_\_\_\_\_

\_\_\_\_\_ Do you have adequate vegetative forage daily (1800-2500 lb DM/acre) for lactating cows to gain well before breeding? \_\_\_\_\_

\_\_\_\_\_ Are calves weaned and cows on good pasture in order to gain weight before winter? \_\_\_\_\_

\_\_\_\_\_ Does your forage management program ensure adequate forage availability

1) during the grazing season? \_\_\_\_\_

a) do you run out of forage and have to feed hay in late summer? \_\_\_\_\_

b) do short pastures decrease performance (weaning weight) of calves? \_\_\_\_\_

2) to extend the grazing season? \_\_\_\_\_

If not, would more species diversity help either option? \_\_\_\_\_

\_\_\_\_\_ Could changing calving season allow you to more adequately meet nutrition requirements of cows with forages you have rather than changing the forage base? \_\_\_\_\_

\_\_\_\_\_ Do you cut hay at the proper time to insure good quality? \_\_\_\_\_

*Under continuous grazing, as the season progresses, grazing becomes spotty, as some areas within a pasture are overgrazed and others are undergrazed. Some plants mature and quality decreases while other plants do not persist because of depleted root reserves. Consequently, animal performance declines because of poor availability of quality forage and subsequent decreased intake by the grazing animal. Controlled grazing allows pastures to be grazed sooner in the spring and later in the fall, with an availability of forage that allows high animal intake and at the same time gives other pastures the opportunity to grow and rest. Some producers can accomplish this simply by closing gates and using separate pastures in sequence.*

- \_\_\_\_\_ Do you have enough pastures to set up a rotational grazing program, i.e. move cattle at least once a week? \_\_\_\_\_ If not, can pastures be divided easily? \_\_\_\_\_  
Do your sources of water for livestock prevent dividing pastures? \_\_\_\_\_
- \_\_\_\_\_ Do your cattle have access to all your pastures in late winter when cool season forages first start to break dormancy, so that grazing defoliates the plants and keeps the forage from growing rapidly? \_\_\_\_\_
- \_\_\_\_\_ Do your animals spot-graze pastures to the point that some areas are severely overgrazed and some areas undergrazed and then mowed off? \_\_\_\_\_
- \_\_\_\_\_ Does your haying program include cutting pastures which are not needed for grazing rather than allocating areas of the farm just for hay production? \_\_\_\_\_
- \_\_\_\_\_ Do you use haying to control pasture growth and cut the excess early enough to allow adequate regrowth with optimum species diversity before hot, dry weather? \_\_\_\_\_
- \_\_\_\_\_ Are special grazing techniques such as forward grazing used to meet the needs of animals with higher nutrition requirement than others and also properly utilize available forage? \_\_\_\_\_
- \_\_\_\_\_ Is stock density high enough to allow adequate control of pastures or could you group cattle to increase stock density? \_\_\_\_\_

*The comfort zone of beef cattle is 30-75° F (effective temperature including wind chill). Outside of that temperature range, cattle have to expend energy to keep warm or cool. A cow of average condition has an increase in energy requirement of 1% per degree drop below 30 degrees; a thin cow has an increase of 3% per degree drop. Thus, having adequate condition on cattle going into the winter can help decrease maintenance costs and save feed/hay. Approximately 30 days before onset of cold weather, condition score cattle and address the following:*

- \_\_\_\_\_ Do you prepare your cows for winter by adding condition? \_\_\_\_\_
- \_\_\_\_\_ If spring calving, have calves been weaned before cold weather to decrease nutrition requirements of cows, and allow cows to regain weight by putting them on good quality pastures? \_\_\_\_\_
- \_\_\_\_\_ Are some of the mature cows too thin going into the winter? \_\_\_\_\_  
\_\_\_\_\_ too fat for good calving? \_\_\_\_\_  
\_\_\_\_\_ are replacement heifers growing adequately and in good but not excessive condition? \_\_\_\_\_  
\_\_\_\_\_ are your thin cows on the best pastures with adequate availability of quality forage? \_\_\_\_\_  
\_\_\_\_\_ do they need some grain supplementation if forage availability is limiting? \_\_\_\_\_
- \_\_\_\_\_ Have pastures been conditioned for putting weight gain on cows by stockpiling high quality forage? (over 2500 lbs of dry matter per acre of vegetative forage)? \_\_\_\_\_

## II. FARM MANAGEMENT

### A. Records

*The decision-making process needs to include a standard analysis of farm records to evaluate production and to determine if and how production might be increased economically. Many times decisions are based on recommendations to increase the biological efficiency of an operation, e.g., increasing weaning weights of calves, without any thought given to the economic efficiency (i.e., does increasing weaning weight increase net return.) Actual costs of production should be calculated for each farm, as cost averages from other operations may be quite different from your own farm's costs.*

What are your farm management goals? \_\_\_\_\_

\_\_\_\_\_ Do you make good use of a record-keeping system? \_\_\_\_\_

\_\_\_\_\_ Do you evaluate production based on per acre costs or per cow costs when making decisions? \_\_\_\_\_

\_\_\_\_\_ Do you know your actual cost of production per acre? \_\_\_\_\_ per animal? \_\_\_\_\_

\_\_\_\_\_ How many pounds of beef do you sell per acre? \_\_\_\_\_ per cow? \_\_\_\_\_

*Hay is a major expense for many cattle operations. Usually grass is considered cheap, but baling hay costs are quite variable, depending on land values, fertility costs, labor, and availability of equipment. Before a producer makes decisions related to producing or buying hay, using more pasture (stockpiling) or feeding hay a longer period, these costs should be calculated.*

\_\_\_\_\_ Do you know what it costs to produce, harvest, and feed a bale of hay? \_\_\_\_\_

graze an acre of pasture? \_\_\_\_\_ graze one cow for one day? \_\_\_\_\_

### B. Farm planning

*One goal of a whole farm plan is to determine whether the land can be used more efficiently; for example, grazing cattle and sheep on the same pasture or using goats to control brush. Additional enterprises such as poultry or hogs can add to the income of the farm.*

\_\_\_\_\_ Would diversification with other animal species add some benefit or add extra income? \_\_\_\_\_

Would adding other species to your grazing program better utilize the forage? \_\_\_\_\_

If so, what are the considerations? (e.g., labor, predators, fencing, market, hunting)

*Fertilization of pastures can be a great expense for cattle producers. A rotational grazing program helps to minimize these costs by having the manure from the grazing animals distributed back on pastures rather than in isolated areas, such as around shade trees, water tanks, etc. Another opportunity is to use chicken litter or similar on-farm products to increase organic matter and nutrient content of soils. Conversely, producers who have used chicken litter extensively might be able to sell litter for cash toward purchased fertilizer (lime, N). An important but often overlooked component of a good pasture fertility program is level of organic matter, which influences the microbial activity of the soil.*

\_\_\_\_\_ Are you testing soils in each pasture or field at least every three years? \_\_\_\_\_

\_\_\_\_\_ Are you making effective use of your fertilizer expenditures? \_\_\_\_\_

\_\_\_\_\_ Are you using the additional forage you produce with purchased inputs? \_\_\_\_\_



- \_\_\_\_\_ Could you decrease N fertilizer through more effective use of legumes? \_\_\_\_\_
- \_\_\_\_\_ Are you using chicken litter/animal manures/municipal sludge products? \_\_\_\_\_
- \_\_\_\_\_ Would using those products be more cost-effective than using commercial fertilizer? \_\_\_\_\_
- \_\_\_\_\_ Would using components of fertilizer, i.e. K or N, be more effective? \_\_\_\_\_
- \_\_\_\_\_ Would using lime allow a decrease in fertilizer expenditures? \_\_\_\_\_

*Equipment expenditures on a farm can be very costly, yet also be part of the tax consideration, which has an impact on purchasing decisions. Proper sizing of equipment to the job and minimizing equipment maintenance and operational costs are also important. In some cases, hay can be purchased or custom baling used to decrease farm costs. Some producers make equipment purchases for non-economic reasons and have equipment that cannot be justified based on economic return to the farm.*

- \_\_\_\_\_ Do you own more equipment than you need? \_\_\_\_\_
- \_\_\_\_\_ Could you decrease the equipment you need if you relied more on grazing? \_\_\_\_\_
- \_\_\_\_\_ Do you buy equipment for tax reasons, even though you don't need the equipment? \_\_\_\_\_
- \_\_\_\_\_ Does that equipment expenditure for tax reasons really increase your net income? \_\_\_\_\_

*Feed expenses are usually estimated at 70% of the cost of maintaining a cow for a year. Having to purchase supplemental feeds and using harvested forages can increase the expenses of a cattle operation. As referenced earlier, good grazing management can decrease those out-of-pocket expenses. Conversely, there are times when supplements can be used very effectively and buying hay might be more economical than producing it on the farm.*

- \_\_\_\_\_ What are your primary purchased feed expenditures? protein, energy, minerals, hay
- \_\_\_\_\_ Could you decrease these by
  - \_\_\_\_\_ better grazing management to be more efficient in pasture utilization? \_\_\_\_\_
  - \_\_\_\_\_ improving fertility of your pastures? \_\_\_\_\_
  - \_\_\_\_\_ harvesting better quality hay? \_\_\_\_\_
  - \_\_\_\_\_ having better or more diverse forage species to extend the grazing season? \_\_\_\_\_
  - \_\_\_\_\_ changing the time of year when nutrition requirements of animals are highest? \_\_\_\_\_
- \_\_\_\_\_ How do you know which, if any, of the purchased feeds you actually need? \_\_\_\_\_

### **C. Marketing**

*Marketing cattle is an area where most producers could easily increase their net income. Knowing when to buy and sell cattle has a large impact on returns. There are many options producers can consider, such as being part of a marketing alliance or cooperative, creating markets for specialty products, timing marketing better or owning cattle longer.*

- \_\_\_\_\_ What are your marketing goals? \_\_\_\_\_
- \_\_\_\_\_ Do you market your animals when the price is best? \_\_\_\_\_
- \_\_\_\_\_ Could you change your management (forage, calving season, etc.) to allow you to sell cattle on a more timely basis? \_\_\_\_\_
- \_\_\_\_\_ Other than the local sale barn, what merchandising options are there for your cattle? \_\_\_\_\_
- \_\_\_\_\_ Would it be cost effective to retain ownership of your cattle through another growth phase? \_\_\_\_\_
- \_\_\_\_\_ Could you produce a more marketable product with a change in your breeding program? \_\_\_\_\_

- \_\_\_\_\_ Are you in an area where niche marketing could be established, such as near a metropolitan area where direct-marketed lean beef would have potential? \_\_\_\_\_
- \_\_\_\_\_ Could you cooperate with neighbors to produce packages of cattle to be marketed at a premium, i.e., potload of similar cattle? \_\_\_\_\_

### III. FARM GOALS

*Farm planning is an on-going process that requires that farm families know where they want to go and how to get there. In determining goals, most farmers have a general idea but lack a specific plan. Putting goals on paper can provide a framework for making management decisions.*

- \_\_\_\_\_ As you consider the goals of your farming operation, are you  
 examining your livestock production program to make it more cost effective? \_\_\_\_\_  
 assessing the soil, plant, and water resources? \_\_\_\_\_  
 analyzing your marketing program and the diversity of products available to market? \_\_\_\_\_  
 evaluating your quality of life from a family and community perspective? \_\_\_\_\_

*Once you have written down your goals, other decisions are easier. You can plan for farm expenditures rather than buying what seems to be needed at the time.*

- \_\_\_\_\_ How do you decide your priorities for expenditures on the farm with a given amount of money?  
 equipment \_\_\_\_\_  
 feed \_\_\_\_\_  
 pasture \_\_\_\_\_  
 fertilizer \_\_\_\_\_  
 fencing \_\_\_\_\_  
 animals \_\_\_\_\_

\_\_\_\_\_ Do you know your return on investment for those expenditures? \_\_\_\_\_

\_\_\_\_\_ Is the farm income distributed over the year--are there things you can do to spread out income? \_\_\_\_\_

*The following questions are a summary of your thought processes to this point. The three sections that follow are intended to be stand alone assessment tools for evaluating pastures, soils and watershed management to finalize your farm assessment.*

- \_\_\_\_\_ Have your perceptions of your weaknesses and strengths changed? \_\_\_\_\_
- \_\_\_\_\_ What are the highest priority areas for you to emphasize? \_\_\_\_\_
- \_\_\_\_\_ Have you put on paper your goals for your family and your operation? \_\_\_\_\_

#### IV. ASSESSMENT OF INDIVIDUAL PASTURES

*Routine pasture assessment can be used effectively as a feed budgeting process as well as an evaluation of how well your grazing program is working and how individual pastures (paddocks) should be managed. Individual pastures should be regularly evaluated to determine short-term management decisions, such as grazing pressure, fertility needs, forage availability within a short time span, potential for hay production, etc. Pasture assessment can be as important to your operation as animal evaluation (and economically, may be more important). Each pasture should be assessed at various times of the year. Additionally, when assessing a pasture, evaluate how previous management and use over time has influenced the pasture.*

What are your pasture management goals? \_\_\_\_\_

\_\_\_\_\_ Do you need to make better quality forage available, which might be accomplished with haying earlier or using better grazing practices? \_\_\_\_\_

\_\_\_\_\_ Do you know how individual pastures rank in productivity? \_\_\_\_\_

\_\_\_\_\_ Are there spots of bare ground within pastures? \_\_\_\_\_

\_\_\_\_\_ Do you have any erosion problems? \_\_\_\_\_

\_\_\_\_\_ What changes in plant species are occurring? \_\_\_\_\_

\_\_\_\_\_ Are these changes desirable or undesirable? \_\_\_\_\_

\_\_\_\_\_ Is the pasture grazed fairly uniformly or are there areas of spot grazing? \_\_\_\_\_

\_\_\_\_\_ Is there adequate but not excessive residue in the pasture? \_\_\_\_\_

\_\_\_\_\_ Is the residue decomposing properly or is it thick enough to contribute to lack of seedling development of other species, such as clover? \_\_\_\_\_

\_\_\_\_\_ Are the animals doing a good job of controlling the edible weeds, such as ragweed, when vegetative? \_\_\_\_\_

\_\_\_\_\_ Which weeds or brush are not being controlled by grazing? \_\_\_\_\_

\_\_\_\_\_ Are there compaction or pugging problems? \_\_\_\_\_

\_\_\_\_\_ Could a change in water/mineral feeder location or the shape of pasture impact the grazing pattern? \_\_\_\_\_

\_\_\_\_\_ Is wildlife habitat appropriate? \_\_\_\_\_

\_\_\_\_\_ Is water runoff excessive, especially on slopes? \_\_\_\_\_

\_\_\_\_\_ Do you need more forage, which might be gained through an application of fertilizer or a longer rest period? \_\_\_\_\_

\_\_\_\_\_ Are pastures resting long enough to allow proper plant regrowth and replenishment of root reserves? \_\_\_\_\_

\_\_\_\_\_ Are there areas of pastures which need fertilizer and other areas which don't? \_\_\_\_\_

\_\_\_\_\_ Which field areas dry out first, second, and last under drought conditions? \_\_\_\_\_

\_\_\_\_\_ Do you have a plan for which pastures are used at various times of the year? \_\_\_\_\_

\_\_\_\_\_ Do you drive on pastures, which may retard pasture growth and create compaction problems? \_\_\_\_\_

## V. ASSESSMENT OF SOILS

*Soil is the natural resource foundation of any farm. Proper management of the soil is the basis for managing the plant-animal interface necessary for a sustainable livestock farm. Whole farm planning includes assessment of soil characteristics. First, study how everyday management influences nutrients, moisture levels and tilth. This is the basis for decisions on fertility and grazing, which will affect species diversity and erosion problems. It is important to understand where your quality soil is as well as how to improve the quality of all your soil. A nutrient management plan can be used to determine sources of nutrients that can improve the farm's productivity at minimum costs.*

- \_\_\_\_\_ Do you have soil maps of your farm and understand the productivity index of each soil type? \_\_\_\_\_
- \_\_\_\_\_ Do you have specific problems to address, such as fragipans, poor drainage, compaction? \_\_\_\_\_
- \_\_\_\_\_ What is the microbial activity in your soil? \_\_\_\_\_ What does the soil smell like? \_\_\_\_\_
- \_\_\_\_\_ What is the tilth? \_\_\_\_\_ What does a handful feel like? \_\_\_\_\_
- \_\_\_\_\_ Do you have a nutrient management plan for each pasture? \_\_\_\_\_
- \_\_\_\_\_ When was your last soil test? \_\_\_\_\_
- \_\_\_\_\_ What is soil pH, salinity and sodium (Na) saturation? \_\_\_\_\_
- \_\_\_\_\_ Do you routinely use lime? \_\_\_\_\_
- \_\_\_\_\_ What is the organic matter level in your pastures/fields? \_\_\_\_\_
- \_\_\_\_\_ How deep is the dark surface layer? \_\_\_\_\_
  - \_\_\_\_\_ Is it less than the natural undisturbed soils in your area? \_\_\_\_\_
- \_\_\_\_\_ How many days does it take grass or crops to exhibit drought stress? \_\_\_\_\_
- \_\_\_\_\_ How hard are earthworms to find? \_\_\_\_\_
- \_\_\_\_\_ Is there evidence of earthworm activity such as castings on the surface? \_\_\_\_\_
- \_\_\_\_\_ How fast do manure piles and forage thatch degrade? \_\_\_\_\_
- \_\_\_\_\_ Are any plants yellow, spotty or purple-colored? \_\_\_\_\_
- \_\_\_\_\_ Do you have any soil nutrient deficiencies or imbalances that impair forage and animal production? \_\_\_\_\_
- \_\_\_\_\_ Do you have considerable variation of productivity level and nutrient level within pastures? \_\_\_\_\_
- \_\_\_\_\_ Are soil fertility levels adequate to meet forage production targets? \_\_\_\_\_
  - \_\_\_\_\_ Are forage production targets too high, leaving inputs that are undesirable for environmental or economic reasons? \_\_\_\_\_
- \_\_\_\_\_ Would a change in fencing allow better use of pastures based on productivity of soil? \_\_\_\_\_
- \_\_\_\_\_ Are any erosion problems due to a lack of water flow control, lack of adequate cover or lack of infiltration? \_\_\_\_\_
- \_\_\_\_\_ Do you have soil compaction problems in any fields? \_\_\_\_\_
- \_\_\_\_\_ How long does it take for standing water to seep in? \_\_\_\_\_
- \_\_\_\_\_ Do you regularly sample soil of individual fields or soil types? \_\_\_\_\_

## VI. ASSESSMENT OF WATERSHED

*Every farm is part of a watershed. Water flows onto the farm and leaves the farm. What happens in the process is the responsibility of the farm owner and can have an impact on the water quality downstream as well as influencing the soil erosion problems on the farm. An understanding of the geological formations of the farm may assist in evaluating water flow and managing the water quality.*

- \_\_\_\_\_ What are the water drainage patterns into and from your farm? \_\_\_\_\_
- \_\_\_\_\_ Are there litter banks (debris piles, usually wood) present anywhere on your land? \_\_\_\_\_
- \_\_\_\_\_ How efficient are you in retaining water on your farm and in your soils? \_\_\_\_\_

*Riparian areas are the edges of streams, wet weather creeks, ditches or any area where water flows through at various times of the year. Management of these areas can have an impact on erosion and water quality.*

- \_\_\_\_\_ Do you have major riparian areas, with flowing water in them most of the time? \_\_\_\_\_
- \_\_\_\_\_ Do you have riparian areas with large amounts of water at limited times during the year? \_\_\_\_\_
- \_\_\_\_\_ Do you have a management plan for your riparian areas? \_\_\_\_\_
- \_\_\_\_\_ Does your plan allow livestock frequent, limited access to help manage the vegetation of riparian areas? \_\_\_\_\_
- \_\_\_\_\_ Are riparian areas managed for wildlife habitat? \_\_\_\_\_
- \_\_\_\_\_ Do you have buffer zones adjacent to the riparian areas? \_\_\_\_\_
- \_\_\_\_\_ Are farm ponds full of algae? \_\_\_\_\_
- \_\_\_\_\_ Considering your whole farm as a watershed, do nutrients which contribute to poor water quality leave your farm? \_\_\_\_\_
- \_\_\_\_\_ Do you time your fertilizing or spreading of litter/manure to prevent runoff of nutrients? \_\_\_\_\_
- \_\_\_\_\_ Do aquatic organisms downstream indicate good water quality? \_\_\_\_ Has this changed? \_\_\_\_\_
- \_\_\_\_\_ Do you use pesticides/herbicides tactically for localized infestation? \_\_\_\_\_
- \_\_\_\_\_ If using poultry litter or other manures, do you test soil to monitor nutrient management of individual pastures? \_\_\_\_\_
- \_\_\_\_\_ Does your soil absorb and retain rainfall? \_\_\_\_\_
- \_\_\_\_\_ Is the vegetation adequate to allow water penetration into the soil and prevent excessive water flow? \_\_\_\_\_
- \_\_\_\_\_ Are some areas overgrazed to the extent that water flow is excessive? \_\_\_\_\_
- \_\_\_\_\_ Do you have an understanding of the nutrient flow on your farm (inputs and outputs) and know what percentage retained on the farm? \_\_\_\_\_

## VII. SUMMARY

*Now that you have completed the assessment of your farm, go back through the questions you indicated as high priority for increasing economic or environmental sustainability. Then use appropriate reference materials/educators to explore potential changes in your management program or planning. Spend time reviewing the areas that could be emphasized to allow you to meet your goals.*

### A. Manual

An information manual is planned for 1999 that can be used to address the points in the check sheet that are determined to be high priorities. ATTRA technical specialists are always available to suggest further resources and references.

### B. Related ATTRA materials

Listed below are ATTRA publications that may be useful for addressing many of the questions presented in the check sheet. These may be ordered at no charge by calling the ATTRA office, 1-800-346-9140.

- Sustainable Pasture Management
- Rotational Grazing
- Matching Livestock and Forage Resources in Controlled Grazing
- Meeting the Nutritional Needs of Livestock with Pasture
- Nutrient Cycling in Pastures
- Whole Farm Nutrient Management
- Sustainable Soil Management
- Integrated Parasite Management for Livestock
- Introduction to Paddock Design and Fencing-Water Systems for Controlled Grazing
- Alternative Beef Marketing
- Financial Tips and Resources for Grass Farmers
- Sustainable Beef Production
- Alternative Fly Control
- Grass Based and Seasonal Dairying

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