Rangelands—Challenge to the Pocketbook

M. L. UPCHURCH

Highlight

Rangeland users can expect to share in the growing market for beef in the next 20 years. But they may face increasing competition from other types of producers. Good range management in the future will require prudent investment and the ability to benefit from business management and partial ownership of resources.

Any rancher who has fed $60 hay to $80 cows and has avoided foreclosure on a piece of rangeland during tough years does not need to be reminded of challenges to the pocketbook. Certainly, there have been challenges in the past and there will be others in the future. Since man first domesticated animals, the rangeland user has had to face the challenges of nature and the challenges of the economic and social environment in which he found himself. Both, at times, seemed to conspire against him; occasionally both smiled in his favor.

The “Pocketbook” problems of rangeland use during the next 20 years will be closely linked with the economics of the beef cattle industry. Sheep, wildlife, watersheds, recreation, and other uses of rangeland will all play their part, but the cow business predominates most range use.

In looking at past and probable future trends in the consumption of beef, it is easy to become optimistic about the economic future of beef producers. Population is increasing and will continue to increase. Per capita incomes are increasing and likely will continue to grow. Both factors increase the total demand for beef. The taste for beef, a relatively expensive food, seems to grow with increasing incomes. So the outlook for growth in the beef business seems probable in the long run.

These probable trends for the next 20 years suggest optimism about the future of the rangeland owner and user. Grain is a relatively cheap resource in the United States and likely will remain so despite the growing export demand and the need for grain for direct human consumption. With relatively cheap grain, and with our growing taste for grain-fed beef, the demand for feeder animals through which grain is marketed would appear to be increasingly strong. At times in the past we have seen feeder cattle bring more on the market than finished cattle; the livestock feeder operated on a negative margin. Such price relationships may occur more frequently in the future. Feeder animals are a major product of rangeland. In such a setting, one could conclude that the range user's role would be simply a judicious expansion of inputs on the range. Thus, the rancher could feel confident of an increasing estate and a comfortable retirement in 20 years.

But this does not mean that all beef producers are going to make money all the time during the next 20 years. Even with a general strengthening demand for beef, producers of feeder stock and producers of slaughter animals will continue to face challenges to their pocketbooks as costs of production and price relationships vary over time.

Range users will have opportunity to participate in expanding production of feeder cattle. But they will not necessarily be in a dominant position. The range is not the only place where feeder cattle can be raised. Beef cattle production has expanded in almost all regions of the United States, including areas dominated by crop farming, dairying, and specialty crop production. Recently we have seen a great expansion in beef cow numbers in the South and Southeast. Throughout the United States we have a great potential for beef cattle raising using many different types of feed. So the beef producer who uses rangeland will compete increasingly with producers who use other types of feed resources.

Despite this competition, we will continue to have (at least for the next 20 years) vast acreages of land used for the production of grazing animals. About half the total land area of the continental United States is now used for this purpose. Most of our present acreages of rangelands are used for livestock grazing now because they are either not suitable for or are not needed for other purposes. Simply, under present economic and technological conditions we have about a billion acres of land that are managed most profitably by permitting grazing animals to harvest the forage produced. Only in this way can the forage from such land be economically collected, concentrated, transported, and converted into a product suitable for human use.

But this condition may not persist universally and indefinitely. Our rangelands of today are generally residual lands; that is, they are lands that no one else wants or needs for more intensive uses in our present economic environment. By selection over the years we have reserved for other uses the lands most responsive to intensive inputs, and, on the other hand, we have left to range use the lands least responsive to intensification.

This process of selection is a perfectly normal result of the operations of an economic and social system where men have had the freedom to choose how to use the resources at their disposal. This process of selection, however, raises some interesting

questions about the future economic use of rangeland.

As our market for beef continues to grow in the long run, what is the potential for the range stock producer to intensify production in competition with producers using other types of resources? During the past 30 years we have learned much about how to make rangelands more productive. Better grasses, better techniques for livestock management, water development, fencing, brush control, and a host of other practices have been developed and brought into common use. Much improvement has been made, and further improvements are possible and likely. However, the rangeland user must not forget that he is dealing with a resource that has relatively low capacity to absorb inputs profitably. Thus, the rangeland user must calculate carefully the response he can expect from added investments in range improvements and the risks of such investments, and he should compare expected returns with those he might get from alternative investments. Specifically, if a rancher has $5,000 to invest, should he reseed a section of range, or should he improve the irrigation system for his hay meadows? The answer, of course, depends on circumstances in each individual case. Generally, we find that added investments pay off best when applied to the most productive land. Similarly, an investment in beef-producing capacity on good farmland may yield more beef per dollar input than a like investment on low yielding range.

This does not mean that investments for range improvements will not continue to be made. They will be. It does mean that ranchers, or the public, who make such investments must be continually prudent to avoid misuse of resources. As land becomes more costly, the chance for errors that put the range livestock business in the red instead of the black becomes greater.

The technology of livestock production, whether on the farm or the ranch, is becoming increasingly sophisticated. Breeding and management of both sheep and cattle have been steadily improved. Drugs to increase incidence of twins, to regulate breeding cycles, and to speed growth rates are now known and could come into common use in the years ahead. To make the most of these advanced techniques will require increasing attention to livestock nutrition. Thus, we may see a time when we cannot afford to use low-capacity range for high-capacity livestock. In this case, we may very well find it more profitable to concentrate livestock production on our better land and on harvested feeds, while we leave the poorer rangeland to game, recreation, and watershed purposes.

In common with trends throughout agriculture, we can expect ranches of the future to be larger and fewer in number. The usual reason given for increasing the size of a ranch is to reduce unit costs of production. While it is true that some ranches are inefficiently small, the chief reason for the trend toward larger units is to provide the rancher with more total income whether or not unit costs are decreased. Most ranchers, like nearly everyone else, want more income. If they can increase their individual incomes by running a 500-head spread, rather than 300 head, they will do so. Modern equipment makes it possible for a man to handle more land and more animals than he did 20 years ago. With this possibility, size of ranches will continue to increase.

Traditionally we have thought of the range livestock producer as a combination entrepreneur, laborer, and investor. He wore three hats. As an entrepreneur he decided what resources were to be used and he made the management decisions. His role as a self-employed laborer was obvious. He was also an investor to the extent that he had his own money in the assets of the business.

In the future, the rancher may become more the entrepreneur and less the investor. This change will come as a result of economic forces and trends in prices of ranch property. These trends have been going on for the past 75 years, and I expect they will continue for another 20. This suggests that we take a long look at the traditional roles of the entrepreneur, the asset owner, and the investor in the ranching business.

Let us start with the investor. An investor is one who has a money equity in a production good, whether the good be rangeland, the cattle grazing on it, or the ranch equipment. The investor need not also be the owner of the good; he may be the mortgage holder. Investors are those who desire to obtain an interest return on their money. An investor may also be the owner in which case his investment is represented by his equity in the land and other property. His return as an investor is the mortgage rate of interest. This is the “opportunity cost” of his investment because presumably, he could put his money in some other business and earn the going rate of interest.

The owners of production goods obtain their returns in the form of contractual rents, which are based on “economic rents.” These, in turn, are based on, but not equivalent to, the value of the product attributable to the resources used. The net return to ownership represents the difference between contractual rent and the mortgage rate of interest. Owners may also be investors, in which case they receive both an ownership return and an investor’s return. On the other
hand, owners may have very little of their own money "invested" in the resources they own. In this case they are interested chiefly in the ownership return—not rather than the investor's return.

Entrepreneurs obtain their returns in the form of profits which result from a production process. Profits represent the difference between the value of the product derived from a resource and the contractual rent or charge for that resource. An entrepreneur may or may not choose also to be an owner of resources or an investor in them depending upon how he views the prospective value of the rent. Sometimes entrepreneurs prefer to vie for the profits of entrepreneurship rather than the rents of a landlord or the interest of the investor.

Let me illustrate the above relationship. Suppose we have an acre of meadow worth $100; the rent is $10; the mortgage interest is $6; it produces a net value product of $20 (including rent). In this example the entrepreneurial return is $10 ($20 value product minus $10 rent). The ownership net return is $4 ($10 rent minus $6 interest) the investor's return is $6.

Why, you may ask, would anyone prefer the $4 net to ownership over the $6 net to investment? The reason is clear when you consider that for a 20% equity, or $20, an owner after paying $4.80 in interest on the $80 mortgage would realize a net of $5.20 as an owner, or 26% on his investment.

The entrepreneur earns and receives his managerial profit whether or not he "owns" the production resource. Ownership is not essential but it does give the entrepreneur a measure of security in a continuing business. Although it is not essential, many entrepreneurs and typically ranchers prefer to "own" their resources. But ownership, as we have seen, is not synonymous with investment. A rancher can participate in the advantages of ownership without being a 100% investor. The decision on whether and how much to invest is a separate matter from ownership or from entrepreneurship.

At one time, and perhaps until recently, it generally was prudent for operating ranchers to "invest" their own earnings and savings in the ranch properties they used. Many strove to increase their equities as fast as possible. These properties were perhaps as good as any other kind of investment. Nowadays it is becoming more doubtful whether ranch properties are a good, or I should say, the best investment for the operating rancher. The reason for this question is not because the properties are no longer productive. They are highly productive. The reason is because they are overpriced in today's market, overpriced, that is, for the operating rancher based on returns from production.

I have no completely satisfactory explanation for the price of ranch properties. Often current land values are not justified by current levels of economic rent. There are several other factors affecting the present price of land. For one, there are buyers who are more interested in long-term gains or value appreciation than in current return on current values. This situation is analogous to the "growth" stocks of the financial market in which the investor hopes for increased value of stocks more than current dividends. Some ranch properties are returning as little as 1 or 2% on current values. These long-term investors hope to recoup in rising land values, what they forgo in the way of current returns on investment. Most operating ranchers are not able to play that kind of game. They need their financial resources for upgrading their day-to-day operations, for improving productivity and efficiency of current operations.

This being the case, the best current strategy for the operating ranchers is to let someone else, the bank or another individual, carry most of the long-term investment. One challenge of the next 20 years to the operating rancher will be to accept this new role; that is, the role of the operating entrepreneur as distinct from the role of investor.

We are thinking of an operating manager who has a minimum equity in the ranch real estate, who is satisfied to let someone else (a banker or individual) accept a relatively low rate of return on his investment, and is willing to pay that charge. In doing this, the rancher can keep his own money invested in operating capital—better bulls, good winter rations, adequate equipment, range improvements, and so on, in which the value product is greater and for which the loan rate of interest is higher than for land mortgages.

Lending institutions will have the challenge of learning to live with a situation in which borrowers continuously have low equities in their ranch real estate. Some lenders already accept the idea of refinancing their borrowers periodically. Since lenders are in the money-lending business, they should not object to having steady customers.

Range producers are going to face increasing competition from livestock producers using other types of resources and they are going to face increasing costs, particularly costs of land. This situation will force the range livestock producer to be an increasingly prudent business manager if he is to survive another 20 years.

Prudent management will include careful choices in the kinds of range improvements he makes. As he is dealing generally with a resource having a rela-
Geographic Distribution and Factors Affecting the Distribution of Salt Desert Shrubs in the United States

F. A. BRANSON, R. F. MILLER, AND I. S. McQUEEN

Origin of Salt Desert Shrub Vegetation

In terms of geologic time, the deserts east of the Sierra and Cascade Mountains are of relatively recent origin. During epochs as recent as Pliocene (less than 10 million years before present), Axelrod and Ting (1960) propose that Sierran forests, requiring 20 to 25 inches more precipitation than now occurs, occupied lowlands of the western Great Basin. The Sierra-Nevada Mountains rose 3,000 ft. in early Pleistocene, another 3,000 ft. by mid-Pleistocene and still another 1,000 to 1,500 ft. by the end of Sangamonian time (ca 70,000 years before present). The increased aridity inland caused by the rise of Pacific Coast mountain ranges resulted in the change from mesophytic forests to drought tolerant shrubs.

Early Pleistocene (ca 1,000,000 years before present) was moist and cool in the Great Basin. From the fossils of herbivores such as bison, camel, elephant, and horse it is inferred that grasslands were widespread in the Great Basin in early Pleistocene (Axelrod, 1950). Conifers and woodlands were found at lower altitudes than today and...