

# Developing Range Management in Latin America<sup>1</sup>

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## Highlight

The differences in outlook on the conservation of natural resources and multiple use of rangelands between the United States and the countries of Latin America is stressed and it is shown how technical assistance in the field of range management must take these differences into account. Proposals are made for a phased program for development of integrated grazing land management in Latin America, starting with a range resources evaluation which will be the basis for a limited intensive development of suitable areas in order to alleviate the grazing pressure on the natural vegetation. This development phase should be accompanied by range research for management applications during a second action phase. The requirements and difficulties of implementing such a programme are discussed.

## El Fomento del Manejo de Pastizales Naturales en América Latina

### Resumen

Se pone énfasis en las diferencias entre los EE.UU. y los países de América Latina en los puntos de vista sobre la conservación de recursos naturales y el uso múltiple de los pastizales naturales. La asistencia técnica en el campo de manejo de pastizales naturales debe tomar en cuenta estas diferencias. Se propone un programa para el desarrollo de un manejo integrado de las tierras de pastoreo en América Latina, empezando con una evaluación de los recursos forrajeros naturales, la cual formará la base para un desarrollo intensivo pero limitado de las mejores áreas para aliviar la presión de pastoreo sobre la vegetación natural. Al mismo tiempo se inician las investigaciones en manejo de pastizales naturales para su posterior aplicación en la segunda fase del programa. Se indican los requerimientos y dificultades para implementar un programa de este tipo.

Range management is a typical United States term, it cannot even be properly translated into Spanish or many other languages without losing the connotations associated with it in the United States. Although natural grazing land man-

agement is practised in other countries of the world, it is hardly ever known as range management. In the United States, range science developed as a response to a call for the conservation of the natural resources available on public lands. The sad state of depletion of these resources and the case for their "conservation" was well presented in the widely known Senate Document 199, "The Western Range," 35 years ago. At the same time, the Federal Government was in a position to do something about the situation, as owner of large tracts of natural grazing lands.

The U.S. range manager, as a custodian of these public lands, developed a management system based on proper use factors, seasonal grazing restrictions and other practices, designed to preserve the natural vegetation of the lands entrusted in his care in as good a condition as was practically possible. But this was not ranch management, and the livestock producer, as a part-time user of the public lands, was forced to adapt to this public land management policy by intensively developing the private property under his control and maintaining his livestock through periods of restricted natural grazing with the use of improved pastures, conserved fodders or supplements. This production system is backed up within the United States by large-scale in-

expensive feedstuff production in other parts of the country, available to the rancher through a well-developed transport system. The whole system is unique to the United States, developed through a historical pattern of settlement and home-steading laws and the active management by the U.S. Forest Service or Bureau of Land Management of the lands remaining under Government control.

In many developing countries, the philosophy of conservation of natural grazing lands is not deep-rooted, and instead productivity has priority. In spite of the fact that almost 90% of the livestock production of Latin America is dependent on natural range, grasslands are usually not even recognized as a resource. Where consideration is given to natural vegetation as a renewable resource, this usually is limited to forests, but even there this consideration does not guarantee adequate forest management. Natural vegetation is there to be used, and are often abused. As in Latin America the control of natural land resources is often in the hands of private individuals, it is not surprising that emphasis is placed on exploitation and not conservation.

On those lands not suitable for crop production, the most obvious product is livestock, principally and traditionally cattle in Latin America. Water as a product of the rangelands is rarely of much interest to the private owners and recreational values are even lower in priority while the social pressures to recognize these values are little developed in Latin America. The production system in Latin America is also influenced by the prevalence of absentee ownership and widely varying degrees of managerial control. Further complications are the value of land in an inflationary economy and the deep-rooted social tradition of equating wealth and social status with land ownership, even if the natural vegetation and soil resources of that land have been exhausted.

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It is within this framework that range management must be tackled in Latin America. This means a wider view of range management, including those associated management practices needed to maintain a viable production from the range, even if they are not directly applied to the range vegetation. Because of the low value of the land in areas where natural vegetation provides the grazing resource, and the relative ease of acquiring more land for horizontal expansion, range management needs to emphasize low capital inputs and the generation of high marginal returns on investments as the only economically feasible way to make these areas productive. Even if this program may sound logical to a United States audience, it must be remembered that Latin American agricultural scientists receive an agronomy-oriented training and their first reaction to the problems of "modernizing" natural grazing land management is to replace the whole lot with cultivated pastures. They can cite experimental evidence that pangola grass produces more dry matter or protein than the native forages, but unfortunately these studies usually do not show if the cultivated pastures produce more net dollars (or pesos, or cruzeiros) than the native range. Another important factor in Latin America is the fragmentation of range lands in private holdings and the weakness of any central government authority in such a land ownership pattern to impose management guidelines.

Range management starts with the idea that there is some sort of natural grazing available throughout most of the year. It then tries to improve the productivity from this land under native range through two basic approaches:

(1) Efficient use of available natural grazing by adapting herd requirements to the natural fluctuations in forage availability, through breeding control, seasonal sales, etc.

(2) Efficient use of capital investments to fill in the gaps in natural forage availability by concentrating

pasture, fodder and water developments around well-defined needs in the most favorable areas, instead of spreading them thinly over the whole of the large land area which forms the basis for such extensive operations.

In this way Nature takes care of the large-scale needs of native grazing lands, while Man concentrates his limited economic resources on selected key problems, which is what range management really is all about.

Although this technical basis for range management remains the same throughout the world, as it concerns the management of a physical resource, these techniques must be fitted into the local social organization before they can be accepted and applied. For example, the basic concept of damage through over-grazing may lead to a recommendation to reduce grazing pressure on the range. In the United States this can be accomplished through a reduction in grazing permits on public lands and the rest of the livestock production system makes appropriate adjustments. But in countries where there is no practical control over livestock numbers on the range, a reduction of grazing pressure leads to recommendations for a wholesale reduction of the herds. This involves considerations for the economic and social status of the owners; if slaughter is contemplated, the potential of the market to absorb such a sudden influx of meat must be weighed. A possibly more feasible alternative may be to accomplish the desired reduction in grazing pressure on the native range by developing new seasonal fodder resources to supplement the critical grazing period, at the same time maintaining herd numbers at their present levels.

#### **Range Livestock Development Program**

The first action phase in a livestock development program based on range vegetation comes in the form of recommendations on tech-

niques and capital investments needed to obtain new fodder resources at the lowest possible cost. This means the development of carefully delimited areas within the range country for intensive fodder crop production to fulfill a given seasonal need. To accomplish this a prior range resources evaluation phase is needed to fulfill one of the basic requirements of range management which is a good knowledge of the natural grazing resources of the locality. The evaluation will determine the extent of the various range types, their condition and actual contribution to forage production, their normal carrying capacity and its seasonal fluctuations, and their position in the natural landscape and relation to areas of potential intensive improvement. Armed with this basic information, the range manager can relate the existing natural grazing resources with known livestock nutritional requirements and determine where the deficiencies are that form a bottleneck to higher productivity. Even at best, it can only be expected that a small percentage of all the ranchers in the area will respond to an action program to relieve these bottlenecks, even if adequate credit can be made available, but their increased production can make a significant contribution.

It is also important that their value as demonstrators of the viability of the new techniques be actively exploited by the program. The major effort must be directed to increased breeding efficiency and higher calving rates, as this is the product towards which livestock development under extensive conditions should be oriented. Cheap steers, in uniform lots and with high fattening capacity, is what the fatteners on the improved pastures are looking for in Latin America. This means rather large animals, produced through controlled breeding cycles and ready for market at the appropriate time.

Most of the applicable techniques at this stage of the program are known. The success of the program

lies in the selection of those techniques which are economically attractive and at the same time solve the critical problems of livestock production from the local range resource. These techniques are not the exclusive property of the range management profession, and often specialists in cultivated pastures and animal management are needed in this phase. The range management specialist can contribute with techniques of better range utilization through livestock distribution, range grazing systems, and others. Often an entomologist or wildlife specialist may be needed to solve a particular local problem.

With a functional integration of on- and off-range fodder sources, the limitation to production shifts back to the natural grazing lands, as productivity of intensively developed supplementary pastures can be raised to desired levels with fertilizers or other economic inputs. But practices designed to increase carrying capacity of the range, such as brush clearing, controlled burning, reseeding, or others, can only be developed after local research has shown what the reaction of the native vegetation is to such actions. The experience from other regions or other countries is of only limited help here, as the local native vegetation has its own unique relations with its environment and the local production system has its own unique economic conditions. Local range research should be carried out at the same time that the first action phase is put into practice, in order that the information is available when needed. And it will be needed, as experience has shown that once the confidence of the land owners is gained in matters of management advice, they will come back demanding more and more sophisticated information.

The second action phase would consist of applying the knowledge gained through the range research program. This application can only be successful if the first action phase has made an impact, because the effectiveness of these range man-

agement practices depends on an improved balance between livestock numbers and forage availability on the natural grazing lands, an improvement attained during the first phase of intensive development of alternative seasonal fodder sources.

The program outlined above can be summarized as alternating phases of research and ranch level action, with some overlapping to ensure that the needed knowledge is available when the time for the next action phase is at hand. Both the governments and the private ranchers will have an active role to play in this program and it is in the delimitation of these roles that the differences between the United States and Latin America show up most. The first research phase, range resources evaluation, is clearly a government action through its agricultural research services and possibly in cooperation with Universities. The results of this evaluation can immediately be applied in the first action phase by a better allocation of credit resources for livestock development in a ranching economy. Credit for such development often comes from international sources and is distributed through government-controlled banks or within an official technically supervised program. But the ultimate producer is the private rancher and it is his acceptance of the development and credit risks that make such a program a success or failure.

The concurrent range research phase will again be a government responsibility, but often no adequate land extensions are available on existing experiment stations and close cooperation between investigators and private producers is necessary in this phase. The application of the research results in the second action phase usually does not involve such large capital requirements as the intensive fodder developments of the first action phase, but certain large scale actions such as brush clearing or reseeding may require special subsidies or tax concessions to make

them attractive to the private rancher. Also, as this whole program is based on the premise that rangelands will continue to provide feeder stock to other areas where these are fattened, some active development and control of the marketing channels may be necessary on the part of the government to maintain this kind of production as an attractive land use, and prevent misguided attempts to get more out of these lands than they are capable of producing.

### Other Developments

Even while developing such a program for range management, it must be remembered that in Latin America another type of development also takes place; a socio-economic development which changes the whole infrastructure upon which extensive land use for livestock production is based. Some extensively managed areas will be advancing towards more intensive land uses, possibly developing through cultivated pastures for beef fattening or dairy production all the way to intensive crop production. But other areas will remain as range livestock rearing areas, because of natural and ecological limitations which no amount of infrastructure development can alleviate. Only their management options in the selection of techniques and capital investments for range management will develop to include a wider variety of choices.

Technical assistance in range management, as in other fields, involves more than the simple transfer of modern techniques to the developing countries. Introduced techniques are derived from existing production systems with which they are intricately interwoven, and their adaptation and testing in a different environment should not only include experimentation as to their physical applicability under the new conditions, but also a review of their place within the existing institutional organization and social structure of the country, into which they are introduced.