Value of Sustainability Indicators for Rangeland Management and Policy

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Abstract

The process we are currently using to develop criteria and indicators to measure rangeland sustainability involves a diverse group of individuals representing a wide-spectrum of values and interests. It is a cooperative process that incorporates ecological, social, and economic facets of rangelands. Agencies need to be able to provide a comprehensive and common language that is nationally consistent. This information is important to make decisions at the national policy level and for outlining resource management priorities. It will also: 1) lead to improved efficiencies by focusing measurements on what has been agreed to, 2) understanding the connection to what is measured and overall rangeland sustainability, 3) improve our accountability to the public, Congress, and other partners, 4) build a foundation of common understanding which will improve the debate on the management of our nation's rangelands.

Introduction

Currently it is difficult, if not impossible, to assimilate all the economic, social, and ecological information on the state of our Nation's rangelands. This is because of:

- Differing jurisdictions.
- Differing laws affecting those jurisdictions enacted at different times.
- Differing uses on different areas of the rangelands.
- Differing societal values.
- Differing scales.
- Changes over time (ecological, societal, economic).
- Data collections costs & budgets not always equal nor stable.

The result has led to some confusion and frustration on the public's part and, over time, a variety of policies by the different Federal agencies. If agencies were able to provide comprehensive, easily understood, and nationally consistent information on the social, economic and ecological status of rangelands, then comparisons could be made on a spatial and temporal basis. Accordingly, decision makers at the national level would have much better information with which to develop sound policy.

Indicators

Indicators for rangelands are objective and verifiable measurements that provide information about the criteria to which they pertain to help determine the economic, social and ecological status of the Nation's rangelands. Indicators should be value neutral, that is, the outcome of what we are measuring should not lend itself to any particular individual value. It should be noted, however, that we as individuals will interpret these measurements differently, each of us placing our own held values against this interpretation.

For instance, let's say indicators are colors. In general, we can all agree that blue is blue, red is red, and yellow is yellow. However, if we were each to paint a picture of the same object using these colors, we would probably mix them differently giving more weight to certain colors; thus, each of our pictures would look different. Given the opportunity, most of us will choose our own object to paint, but we all rely on the same basic colors.

As each of us use different sustainability indicators, similar to using the different colors as described above, we will mix them differently, and reach different conclusions. Just as individuals have held values, so do groups. Groups of people with a set of similar values range from a youth baseball team to a political party. This means that the interpretations of rangeland indicators may be different and therefore conclusions of what is sustainable on the rangelands may also be different when changes in administrations occur every four or eight years. What is foremost to the concept of using criteria and indicators to assess sustainability is the agreement among people and groups holding different values that these variables all deserve consideration when making evaluations or reaching conclusions.

Examples of Policy Change

Let's examine a few examples of policy changes. An indicator of production is *acreage of lands available for livestock grazing*. This acreage is decreasing over time. If we looked at only this one indicator, resulting policy options might be to de-emphasize the grazing program and perhaps shift dollars to other programs. Other potential policy changes might be opening more acreage to grazing through land use planning or reducing fees paid to graze livestock to stimulate the demand.

Let's look at another indicator in addition to a livestock grazing indicator. This ecological indicator is *acres of weeds occupying rangelands*. Over time, this has been increasing dramatically. A potential resulting policy is more dollars directed towards weed control and eradication, which results in native forage plant increases and increased livestock production over the long-term. The policy options indicated in the previous paragraph would not be necessary.

Now, let's consider a social indicator, which measures *accessibility to rangelands for a variety of uses*. Examination of this indicator finds that accessibility to public rangelands restricts livestock use due to land ownership patterns. This situation could trigger a policy to focus on land exchanges to realign lands ownership patterns and/or emphasize right-of-way and easement acquisition. When coupled with the second indicator above, weed control could be targeted to those areas being retained or acquired.

As illustrated, the resulting policies from the scenarios described above are dependent on which indicators are considered and in what combination. From the examples, it is demonstrated that, as we look at different indicators from the economic, social, and ecological criteria, our concept of what it takes to ensure rangeland sustainability changes and, along with it, what policy changes are needed. Therefore, it should be apparent that a comprehensive set of indicators can provide a great value to policy makers.

Other Important Uses of Indicators

In addition to the examples above which show how indicators could be used to modify policies, a common set of indicators can also improve efficiencies by federal and state land management agencies and other organizations interested in rangelands. These efficiencies would be accomplished by:

- Monitoring only what has been identified as important.
- Providing for the development of common techniques to avoid redundancy.
- Allowing agencies, universities, and organizations to focus research on developing accepted methodologies and protocols to measure these ecological, economic, and social indicators.
- Helping establish national workload priorities to those areas most at risk or in need of restoration. This could provide a basis for recommending funding for new appropriations or shifts in funding among agencies and departments.

In addition, a common set of indicators will improve accountability to our partners, stakeholders and Congress by:

- Setting the stage for multi-level coordinated data reporting which improves accountability.
- Helping to determine compliance with applicable laws. For instance, if an indicator was *number of watersheds with impaired waters*, and over time this number was decreasing, such a trend would indicate compliance with the Clean Water Act.
- Most importantly, criteria and indicators developed by a diverse group of individuals representing a wide spectrum values will provide for understanding the sustainability of rangelands now and in the future. Doing so will improve the debate on the management of rangelands.

Summary

Once the indicators are identified and information collected, the effects of current management strategies can be determined, thus becoming the catalyst for new rangeland policies and management actions to sustain rangelands. We might disagree about the interpretation or the conclusions derived from the different indicators: however, the roundtable process should ensure that we won't be arguing about the indicators.