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PROCEEDINGS  
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# ECONOMICS OF RANGE RESOURCE DEVELOPMENT

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Considering each of these papers in the order of presentation, I turn first to that of Mr. Upchurch, where he brought us up to date, as of July 1 of this year, on the interest of the Western Agricultural Economics Research Council in, and the thinking of Range Resource Committee on, this general subject. I am sure that this interest and pioneer thought will significantly augment the program of research in this important area.

It is evident from these papers that we are dealing with scarce resources, the demand for which is both varied and progressively increasing. I endorse the claims of each of the speakers that economic (as well as technological) research in this field is timely. We do not know, I believe, the impact of varying levels of grazing intensity on the marginal transformation of product between time periods for given types of ranges. This information will not be forthcoming from the range technicians until the framework for an economic model of solution has been constructed.

Any criticism that I would have of Mr. Upchurch's paper would be that of words and definitions, which may be meaningful, only if our differences would lead us to attempt to solve the problem differently.

He has begun with what he calls hypotheses, and from there, to general objectives, which seem to me not to be general objectives of a program of economic research, but to be means toward the objective of solving the economic problems. I emphasize this because I think we are guilty, particularly in this field, of devoting too little effort toward the discovery of the real problem, of determining why the problem exists, and of defining the limits of our problem as nearly as possible. When this is done the means for the solution of this problem then would become more specific.

Let us consider objective number 2 for instance: "To assemble data on the costs of range reseeding and noxious plant control in the varying range types and with various methods." Is this a worthwhile objective? This kind of objective in past research--the objective of collecting a vast store of facts--is the cause of our files being weighed down with historical facts of an unrelated nature.

However, if this objective is merely one of the necessary means of solving our problems (which is our real objective), and it has been ascertained that these are essential variables in the theoretical model of solution, then I am in accord with Mr. Upchurch. I am confident this is the case, since all six of the general objectives (means) lead toward the solution of the economic problem of optimum allocation of scarce resources among the competing ends of multiple use. Adding to this model the additional variables pertaining to resource efficiency over time we have included the problem of range development and conservation.

Following these general objectives, Mr. Upchurch outlines the hypotheses of the Committee. It is the intention of the Committee, and we must be sure we recognize it at this point, not to formulate the hypotheses to be tested, (since they have not defined specific problems) but to state the general beliefs, assumptions, and perhaps the ideologies of the Committee. The provision of a meeting place of the ideas and experiences of such leaders in the field as Dr. Kelso, Dr. Brekke, Mr. Upchurch and Mr. Hochmuth, with the outside help of men such as Dr. Clawson and Dr. Holmes is a firm vantage point for augmenting regional accomplishment.

I am sure no one is more qualified to inventory for us the importance of public lands in the economy of the West than Marion Clawson. There is little I can add.

As he outlined the dynamic growth of the western economy, I am sure he did not mean to imply that this growth occurred because 60 percent of the land area was federally owned, but simply to call to our minds that these resources that were considered uneconomic by most people for a long time, are coming into the focus of demand of vast numbers of people.

One small point of interest to me was his statement of the upward trend in applications for public lands under the Mineral Leasing Act. It seems doubtful that even the increase in mineral exploration and extraction that has occurred in recent years will account for this, and that what is shown is another outbreak of the pressure to control these land resources under subsidy.

Ninety-five million visits to national forests bespeak a nation with high per capita income, conscious of outdoor recreation. There is need to know more about the real nature of the relationship between recreation and other uses of land. It seems to me that in most areas a small investment of capital will change this use from competitive to supplementary relationship.

As can be seen in the body of Mr. Clawson's paper, those uses of public lands whose product value can be quantified are, almost without exception, within the framework of the private producing firm. Evidences of dis-equilibrium, both in the use of resources and in the marketing of product (temporal) are evident, in these papers as well as in the literature and discussions on this subject.

The relative total value of grazing, timber, watershed, etc. is not the real issue in making decisions as to public land use; but rather: What are the relative changes in return from each use resulting from a specific change?

The multi-institutional control and administration of public lands, and the impact of public policies on grazing lands are dominant forces, as Dr. Clawson and Dr. Holmes pointed out. The desire of most people to "keep this out of politics" is justifiably attacked by Dr. Holmes. In fact, he even went further to say that our present use of political machinery would neither define nor decide the issues, once they were openly placed in politics.

Dr. Holmes has pointed out the difficulty of obtaining a policy decision between means. It seems to me a more serious problem is to obtain policy decision between competing ends. The means must forever be competing if there is no decision between ends that conflict.

This is important to us because the selection of ends need not be (and frequently are not) economic. But the economic implications of each of the competing ends need to be understood before an intelligent policy decision can be made. Once a policy objective is decided upon, the question of means becomes paramount. The science of economics makes its greatest contribution at this point.

And now, it seems to me, we are back facing the original problem. Under the assumption that our objective is to produce a maximum social product from our resources our criteria of decision becomes that of efficiency, and the problem of range resource conservation becomes a problem of determining the level of plant capacity in the theory of production economics.

To those who are interested in this field, the problem of objectivity needs to be faced. I mean by objectivity the capacity of research workers, working separately, but with the same assumptions, hypotheses, and facts, to arrive at the same conclusions as to the solution of the problem.

Few things are so evident as the lack of objectivity in the research dealing with western range and public land resources. Competent and honest men have come

out with vastly diverging recommendations. It is the responsibility of our science to point out why this has been the case, and to work for increased objectivity.

The following are suggested as some of the reasons for lack of objectivity in this field.

1. Because of the multiple-use of the resources, branching into different disciplines, we have sometimes been working in different tributaries, and not on the main stream. An individual's knowledge and capacity is limited. The fable of the six blind men and the elephant apply.
2. The impact of differing ideologies, and personal and professional biases are difficult to overcome. While it is probably true that the most impelling forces in research are the ideologies and convictions of the researcher, high professional integrity and the skill of scientific method must be employed to insure that these forces are not carried over into the findings.
3. Conflicting objectives in the use and administration of the resources. When the competing ends of a society fail to become articulate through the price mechanism with reasonably free competition, we are aware of the difficulty of defining those ends.

To cite an example, I suggest that the objective of the public land administration should not necessarily be that of guarantying permanence of resource per se, but should coincide with society's objective of maximizing the social product of this resource over the planning period (or economic horizon) of society. Permanence of resource would be the solution to this problem only under the assumption that value expectations are not only single valued and linear, but are constant.

The entrepreneurial objective of the private operator using these resources is to plan to use the public lands during the period over which he has future control of it, so as to maximize his net profit from the use of all of his resources over his entire economic horizon. Conflict of objectives can and does arise. This facet is, primarily, a problem in land tenure and should be attacked as such.

4. This ties in very closely with the first three. It arises as result of attempt at partial solution to the problem, when we measure costs and benefits to the individual operator differently than we measure them to society. Mr. Upchurch referred to an example of this when he mentioned the impact of the recent high level income tax rates on capital investment in range improvement. If the rancher achieves equilibrium investment for himself under these circumstances, there will be over-investment from the standpoint of society. Failure to measure full costs or full benefits might lead to honest differences of opinion.
5. Let us suppose that the first four suggestions were all fully met, objectivity might not yet obtain if each of us were using different--either incomplete, inaccurate, or non-applicable--theoretical models of solution. Progress has been made in this area, and I would refer primarily to work done by Kelso, Breckle, Clawson and Hochmuth. But I am sure none of these gentlemen will claim that they have yet formulated the complete theoretical framework for economic analysis of range lands (including public lands). This, I believe, is our first and greatest need, for until there is objectivity among the research workers of the several groups involved, confusion and continued accusation will result. Assuming high professional honesty among those doing professional research in this field, no other one thing will be as influential in overcoming the pressures of personal and

professional bias, conflicting objectives, and other forces giving rise to honest differences of opinion, as will a rigorous theoretical framework of analysis. It will come slowly, and will never be as all encompassing as many will desire. Most of the tools with which to build this framework have been forged, and are patent free that we might adapt them to our needs.

In conclusion, may I suggest that we accept the inventory of facts as presented by Dr. Clawson, and keep them in mind whenever we are considering problems of range land use and development. Then let us turn briefly to the perplexing problem raised by Dr. Holmes to bring to light the experience and thinking of this group. Then let us return to Mr. Upchurch's outline of the Range Resource Committee's Program of Research.

What can and should be done toward formulating the theoretical framework of analysis and toward increasing objectivity? Can the Committee's objectives, hypotheses, and procedures be more clearly defined without defeating their purpose? You will want to consider, individually, as many of the objectives as time permits. And finally, where do we go from here, individually and collectively, in striving to solve some of these important economic problems?