RESOURCE POLICIES AND THE CHANGING WEST[1/]

by

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The program formulators posed an important but troublesome problem of natural resource economics when they assigned the title for this morning -- "Resource Policies and the Changing West." The importance of public policy in the development of the West has been recognized from the days of first settlement to the present time.[2/] Federal land and water policies, whether in the capacity of a sovereign proprietor or of a trustee, are important.[3/]

Although intensive settlement has been occurring in the West for over a century, 54 percent of the total land area in the 11 western states[4/] still is owned by the Federal Government. Because of the physical character of much of this resource, the percentage probably will not change drastically in the foreseeable future. The direct influence of federal policies does not stop with these lands. Federal policies with respect to water and power development directly permeate the western economy. Of course, it should be recognized that federal policy is just one aspect of the West's resource policy complex. State and local natural resource policies are also important, whether they be in fields such as water law, water development, recreation, fish and wildlife management, forest fire protection, water quality control, or the disposal of state-owned land.

1/ Prepared for the Western Farm Economics Association, Logan, Utah, July 15-17, 1959, Appreciation is acknowledged to M. F. Brewer and Christoph Beringer for reviewing a draft of this paper.

2/ The historical fact that many argued for a weak federal policy does not mean that they did not recognize that it was important.

3/ The Ivanhoe Irrigation District and the State of California, Appellants v. Courtney McCracken, et al., 122; the Madera Irrigation District and the State of California, Appellant v. Phillip and Jane E. Celonico, 124; and the Santa Barbara County Water Agency, Appellant v. Maurice A. Balaam, et al., 125. Supreme Court of the United States, October term, 1957; Date of Decision, June 23, 1958, 21p.

4/ Clawson, Marion, and Burnell Held, The Federal Lands: Their Use and Management (Baltimore, Maryland: The Johns Hopkins Press, 1957), p. 403. (Pub. for Resources for the future, Inc.)

From this brief array of policy areas in resource economics, it is not surprising that natural resource economists are so concerned with questions of public policy. The decision-making framework is not the business or the farm firm but a democratically organized society. Responsibility runs to a particular clientele or "consumers" on the one hand and to the taxpayer-citizen on the other hand. This relationship may have some similarities to the private corporation, but the differences seem to outweigh the likenesses, as the businessman in government frequently will attest. Because of this role of government, the natural resource economist is concerned with public policy analysis in his technical profession. His technical counsel must relate the economic, legal, administrative, and political elements, for it is through these institutions that the parties at interest exercise their desires rather than in the market place.

Sytematic approaches to public policy long have been a focus of interest, and within the past decade it has been attacked from several angles. Space does not permit a review of all the positions. 1/ But it should be mentioned that considerable divergence of opinion exists. For our purposes I should like to follow what has been termed the incrementalist position in policy behavior and analysis. Although these ideas have a long lineage, the argument has been formalized recently. This approach which will concern us will be discussed in a moment following another comment on the title.

The relationship between natural resource policy and economic change is of particular interest, especially the characteristics of stability and flexibility. Of necessity many natural resource development policies are effective over long spans of time; and once action has been taken the decisions are irreversible in a large measure, although not completely immutable. Thus, the consequences of resource policies likewise are effected over long periods.

1/ Boulding, Kenneth E., Principles of Economic Policy (Englewood Cliffs, New Jersey: Prentice Hall, 1958), 440p.

Ciriacy-Wantrup, S. V., Resource Conservation, Economics, and Policies (Berkeley: University of California Press, 1952), p. 395.

Commons, John R., The Economics of Collective Action (New York: The Macmillan Co., 1950), 414p.

Fox, Karl A., Econometric Analysis for Public Policy (Ames, Iowa: State College Press, 1958), 288p.

Lindblom, Charles E., "Decision Making in Taxation and Expenditure," Paper for the Conference on Public Finances: Needs, Sources, and Utilization, April 10-11, 1959, National Bureau of Economic Research, New York, p. 51 (Unpublished.)

Myrdal, Gunnar, The Political Element in the Development of Economic Theory (London: Routledge & Kegan Paul, Ltd., 1953), p. 248.

Tinbergen, J., Economic Policy: Principles and Design (Amsterdam: North Holland Publishing Co., 1956), p. 276.

These elements of stability are evident in the physical expression of these policies as well as in the social organization which gives them birth. For example, concrete or earthfill dams have a life which generally extends for many generations of water users; and a site once used may forestall alternative developments at some later date. In another area, the harvesting of timber or a period of heavy grazing may mean several years must elapse until a new harvest can be taken. Or a recreational site once destroyed may be lost for the enjoyment of future generations.

Stability of policy is evident also in the minds and actions of men. For example, the antecedents of federal reclamation policy date well back into the nineteenth century, yet it was adopted formally in 1902 and reaffirmed as recently as the Ivanhoe decision by the United States Supreme Court. 1/ Or interstate compacts for the allocation of water are instruments which change slowly and may result in extended and costly litigation. Although these observations may be accepted, their meaning frequently is forgotten as evidenced by the surprise shown by observers of the western scene at the "heat" which is generated in the process of making western resource policies. The process of policy formulation is taken seriously because the developmental-allocative decisions will be influential upon future generations. For example California voters are beginning to seriously debate the pros and cons of a bond issue for $1,700,000,000. These funds would be used to construct a water storage and transportation project extending from the timbered Feather River Canyon north of Sacramento to the metropolitan centers of Los Angeles and San Diego on the arid southern coastal plain. These are long-term commitments.

Change is also a characteristic of our environment. Changes in the West's economy breed adaptation of old and the creation of new natural resource policies. They are not immutable. For example, increasing population, income, mobility, and leisure are factors affecting the demand for recreational use of western land and water resources. Also World War II and the postwar decade generated a westward movement dwarfing all previous experience. These changes have had a policy impact.

New technology, likewise, generates policy changes. A system of ground water law which was based upon the use of shallow well pumps takes on new meaning when submersible turbines can operate in wells of over 1,000 feet in depth. The adoption of such technological innovations in parts of the West has enhanced the possibilities for critical ground water management and has made it a necessity in some localities if continued use of the reservoirs is to be expected. Also, the automobile and modern earth-moving equipment have played parental roles in the conception of the freeway which calls for natural resource policies unknown to earlier generations. The "vastness" of the wilderness country has been placed in such close proximity that the "queueing problem" has been transplanted from the industrial metropolis to the wilderness trail.

1/ The Ivanhoe Irrigation District, op. cit.

Thus, periodically new policies must be considered and the institutional procedures through which these policies are made must be revised. In fact, a major focus of natural resource policy is upon the question of which institutional procedure will yield specified results. For this reason, questions of organization and the planning process have been of major importance to the West and a source of considerable conflict.

Because of these characteristics, analysis for policy purposes must keep the elements of stability and flexibility as central themes. Practically, this is accomplished through making incremental policy changes. Stability can be maintained since all aspects of policy are not changed at any one time, and flexibility is made functional since it is introduced by making changes at strategic points. This incremental approach is not novel as a matter of practice, nor has it gone completely unnoticed by students of policy. 1/ Yet the impact of this type of approach is frequently lost sight of by those making policy recommendations. Instead, they use an "a priori" determined decision-making rational and an exogenious system of values as valuation criteria. Although some policy changes may give the appearance of drastic reformulation, careful examination generally reveals that only one block or at best a few blocks have been added or removed.

With this background in mind, several natural resource policy issues will be discussed; and a few suggestions for future research will be made. This is a selective group of issues which seem now to have future import and not an all inclusive listing. No effort will be made to rank these policies in an order of importance; rather the list was selected to illustrate some of the breadth and type of issue which concerns natural resource or land economists. The research emphasis is to look at the research problems in their total environment, yet it is not directed toward constructing an over-all system of grand design with implicit value assumption by taking the neuter value position. Rather, the intent is to handle values explicitly as the researcher sees them. 2/

1/ Ciriacy-Wantrup, "Philosophy and Objectives of Watershed Development," Paper presented at the Symposium on the Economics of Watershed Planning, Knoxville, Tennessee, June 10-12, 1959. (To be published in Conference Proceedings and Land Economics.)

Gaus, John M., Reflections in Public Administration (University: University of Alabama Press, 1947), 153p.

Lindblom, op. cit.

2/ Myrdal's several works, for example, "Appendix, Methodological Note on the Concepts and the Value Premises," An International Economy (New York: Harper and Brothers, 1956), pp. 336-340.

II

First, let us consider one of the currently more popular subjects--recreation. Recreation has been given some attention by economists during the past decade and a half, primarily as an outgrowth of benefit-cost analysis. Quite naturally, economic analyses for purposes of water project evaluation have had to account for these considerations; but extra-market values 1/ of this type have not received the concentrated attention that they will demand in the future. It can be anticipated that public policy debates on this issue will become more numerous and the economist will be called upon to help avert the deterioration of these debates into struggles over irrelevant issues and gross exaggerations. 2/

A major policy issue which is in the process of being decided, and it will continue into the future, is what kind and what amount of public recreational services do we want. One observation of the present scene is that the outdoor recreation field is going through a period of rapid product differentiation due to the large and varied demand for these services. Accessibility has been increased so that the type of potential service available has expanded greatly. In one sense, it might seem reasonable to assume that the accessibility of outdoor recreational opportunities was greater in prior generations than today. True, more space with a low density of use could be found within the United States. And with a higher proportion of yesterday's population living in an agricultural community, a small town, or with ready access to a nonurban environment, the outdoor space may have been more available with relatively greater ease to a larger proportion of the population. Yet, I think it can be questioned as to whether this space was really accessible for recreation, although it undoubtedly was enjoyed by those fortunate enough to live within its proximity.

The situation of today is in sharp contrast when an Indiana factory worker will camp in the West on his two-week vacation or the Los Angeles suburbanite will wait three days on the side of a road to obtain space in an organized camp site. Many mountain meadows are truly accessible through the penetration of roads and trails, with income available to finance the outing and with time available for such activities. Many of these unique areas have just become accessible.

The space for many types of outdoor recreation is filling up. Accompanying this increase in the rate of use, the recreational service which is being produced is also changing. Increased use combined with a development in technology frequently have changed the service rendered; for example, a good fishing lake will be transformed into a water skier's haven. Because changes of this type are rapidly taking place, I suggest that the opportunities for the use of many sites will be irreversibly foregone without establishing some type of property right to this space in the name of specified recreational uses.

1/ Ciriacy-Wantrup, Resource Conservation . . ., pp. 238-246.

2/ Two current illustrations are over the establishment of wilderness areas and the Dunes National Park.

In coping with these changes, a main concern is the direction of change and building flexibility into the decision-making process to make adjustment possible rather than placing undue emphasis upon projecting future use as some public agencies have emphasized recently. It would seem to be most relevant to know how the services of recreational sites change with alternate types of use. What are appropriate techniques for handling people in order to ration the services? What are the supply characteristics of various types of sites?

For recreation the West is changing and our resource policy needs to change. As indicated by the questions raised, I feel we need a broad gage research program in this field as well as study commissions and administrative reviews.

Related to recreational policy is the current debate with respect to the multiple use of public land resources. In fact, this debate unfortunately has placed multiple use and recreation as either synonymous or diametrically opposed. Of course, the multipurpose issue involves more than just recreation; but the latter has received more headlines. It might be suggested that the value of multipurpose development and use is not self-evident. I certainly am not arguing against it but assert that it is a value to be determined in specific situations. But what kind of a value is it? Multiple use in one context means something quite different than multiple use in another context. Does multiple use necessarily mean that every individual acre of land must be used for several equally important uses? Or does it mean that some users are in priority in specified situations? More appropriately, the policy issue for the future will be to determine degrees of competitiveness or of complementarity which will be useful in making specific decisions. Here again, the overriding policy is not that we should have multiple use "per se"; but that in the process of making incremental policy decisions, each issue can be expressed and decisions reached.

Emphasis up to this point has been upon policies for land which is traditionally thought of as western public land, but other policy areas also are important to the changing West. One of the big contributors to change in the West has been and will be the public highway policy. However, the contribution of any particular road in relationship to other roads is not self-evident. A major question demanding decision is the over-all level of highway service which should be sought; but the practical question is more specific--what kind of a road should be constructed, when, and between which points. With the interstate highway system, there was not much question as to which major points should be connected in a total and timeless sense. Our largest metropolitan areas and strategic defense points have rather fixed and stable locations although their relative size and importance does change. But the policy of selecting the route between major points and of timing the construction of alternate sections has been and still is of major importance, to say nothing of the important economic questions of highway design. In fact, the question of timing of construction is not too different from that of deciding which points to select for connection today and which ones shall remain for future consideration.

This suggests that the analytical question then is not one of "minimizing so-called user costs" between fixed points, but the question is to determine which points to select. Thus, the problem of route selection is tied to the problem of which points should the routes connect. It is for this reason that we would like to know the contribution of different roads. At the federal level, we need to be able to compare a freeway between say San Francisco--Los Angeles and Chicago--Detroit. The currently used sufficiency rating procedure is hardly adequate for this task. 1/ The same type of comparisons are also relevant at other decision-making levels. Of course, it cannot go unrecognized that the road programs of different levels of government will interact. The specific nature of this interaction will depend upon the type of road service being constructed.

Many of the changes this program effects are readily evident to the local resident as well as to the passing motorist. For example, an effect of new road construction can be seen in the expansion path followed by urban communities as they press upon agricultural land and the rapidity with which people can move to areas which were lightly populated a decade ago. Thus, by developing our highways, we are developing new services which can be rendered by publicly owned land and contributing to the expansion in alternative land uses. These effects need to be considered in evaluating future highway proposals.

As an outgrowth of the highway program, as well as of recreation and other programs, land is being transferred from private to public use. This type of transfer has not received the attention in the West which it has in other sections of the country. 2/ Yet, it is a policy question of increasing concern. Conflicts over these issues have lead to proposals in California that the condemnation aspects of this process be transferred from court procedures in the first instance to an independent commission. This commission would specialize in condemnation proceedings instituted by all public agencies. Suggestions such as these also are being voiced in other states.

Research in this broad area could helpfully be initiated prior to the enactment of new legislation. Of particular interest will be the procedure used for appraisal and for handling incremental economic pluses or minuses. The basis for such additions or subtractions is an area in which additional information is needed. For example, it is clear there will be some added water management costs due to new road construction, especially of the limited access variety. Also, can the future effect of a freeway through an inten-

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1/ Oglesby, C. H., and E. L. Grant, "Economic Analysis--The Fundamental Approach to Decisions in Highway Planning and Design," Highway Research Board Proceedings (Washington, D. C.: National Academy of Sciences, National Research Council, 1958), pp. 45-56.

2/ Kristjanson, Kris, TVA Land Acquisition Experience Applied to Dams in the Missouri Basin (Brookings, South Dakota: August, 1953), 47p. (Agricultural Experiment Station Bul. 432.)

sively irrigated rural area be assumed comparable to a freeway cutting through an irrigated location but in an urban environment? The very asking of such a question suggests the answer, and it also suggests another area of research. These questions are currently being answered in one way or another due to the fact that the West is changing. Highways are being built.

III

The effect of water policy upon the changing west, past and future, has been of a nature and magnitude difficult to evaluate in precise terms yet clearly evident. I shall not devote much time to the question of economic evaluation of projects since this subject has been a central concern of economists interested in water resource development for the past decade.[1/] Recent efforts in this direction have been toward refinement and restatement until the question can well be asked whether the refinements and elaborations are all relevant to the precision of the decisions which must be made. Benefit-cost type of analysis can be a helpful aid in the decision-making process if we realize that it provides a framework for organizing a limited, specified set of variables to help us think about the economic evaluation problem for purposes of project planning. Through this devise, certain ideas can be tested which are used in making the final policy decisions and minimum standards can be set. However, it would be asking too much for such techniques to place a priority ranking in a policy sense to encompass all of the economic values let alone handling the noneconomic considerations.

Again, it must be remembered that these decisions are public in character. The realities of the situation are that a project must meet the requirements of political acceptability to be approved. Because of this, the budgetary restraints frequently suggested for analytical purposes take on new meaning in practice since its size is determined politically and upon the showing which any particular project can make.

There is one set of problems with us, however, long after the project is completed -- the policies of pricing,[2/] repayment, and conditions of water delivery. These questions can be considered in a different context if commitments to go ahead with the project have been made. Here again the questions of stability and flexibility in decision making play a role. Each of these problem areas has certain requirements of stability. An irrigation farmer desires a long-term assurance of supply of a specified quality. The bond holders or a federal act generally stipulate the length of time and amount of the repayment requirements. Yet, provisions for changing conditions over

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1/ For example, the proceedings of the Committee on the Economics of Water Resource Development, Reports 0 through 7, Washington State College, Pullman, Washington.

2/ Brewer, M. F., "Water Pricing and Allocation with Particular References to California Irrigation Districts" (PhD thesis, University of California, June, 1959), 261p.

this period need to be worked into the procedures. For example, as more water is used, it may become increasingly difficult to meet the original quality standards. And the price policy may need to change as the objectives of water management change. Cropping pattern, ground water conditions, bond commitments, and tax revenues are among the other variables which come into play in reaching this judgment.

Another water policy issue concerns the rights to use water. This issue has played an important role in western growth, and it will continue to have a very significant effect in the future as the character of the western economy changes. First, water development today, and to a greater extent tomorrow, is largely beyond the capabilities of most individual water users with the exception of ground water development. Because of the financial magnitude of the project, the technical and management skills required, and the length of time involved, public bodies have been the most common type of organizations for large-scale water development. It seems reasonable to anticipate that their importance will grow as the remaining, more expensive projects move from the drawing boards to concrete. Thus, future water rights will tend to be held not by a large number of individuals but by a relatively small number of organizations which will then provide water service to the water users. The irrigation and other public districts have a long and noteworthy record in this field. Not only have they been used to place water management in the hands of the water user, but they have combined the use of the ad valorem assessment on land exclusive of improvements with the water toll so that land development has been encouraged, yet with the incidence of cost generally falling on the benefited water users. Emphasis for the future will center upon the relationship between the large water development agency and the local distributing group and in turn upon its relationships to the individual water user. In some states such as California, the development of new water will in large part supplement the existing sources whether these be surface or ground water. In terms of numbers of rights, the older ones will be significant; however, in terms of volume of water, they are less important. Consequently, an understanding of water law as it relates to economic change will be important if pressure for new uses grows upon existing older rights. But our legal system of appropriative rights should not be thought of as completely inflexible in such a situation. It is through this law that property rights are defined so that they are given economic meaning.

Where urbanization takes place and replaces agriculture, the substitution of water delivered is approximately one for one on a per-acre basis with the use on some crops being higher. If an irrigation district is urbanized, it may take on the functions of a utility or some other district form. However, if manufacturing or mining interests want a water right in its own name, the business may purchase water rights from the farmers. In California, but not in some other western states, this right may be purchased without disturbing the ownership of the land. A few such transactions have been located in some preliminary research into this field. To point out both the importance of water and the transfer process, one farmer sold his farm to another farmer but retained the water right as security for payment. 1/ Of course, shares

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1/ Files, State Water Rights Board, Sacramento, California.

of mutual irrigation companies commonly have changed hands in a market fashion thus transferring the rights to water; or small water organizations have been purchased by larger water organizations.

These future transfers probably will not take place between individuals wanting water. Developments in this field would suggest that the water rights market would be of a different character than the land market. But this is not the same thing as saying transfers will not be made. In practice there is frequently more flexibility built into a legal system than the straight-forward written record will show. Our western water rights will be important as the West changes, and better understanding now of the working of the transfer process will aid in making incremental policy adjustments as they are called for. Hypothesizing about this process without the benefit of empirical study will tend toward confusion.

As intimated a moment ago, the importance of large-scale water development will be even more important as the West changes in the future than it is today. Thus, the problem of organizing this public activity takes on a new dimension. One element of this dimension is the interregional transport characteristics. Today California is considering the Feather River project and at the same time litigating with Arizona over diversions from the Colorado River. But is the interregional allocation on this river stable? The next quarter century will undoubtedly see problems arise between the upper and the lower basin as well as a sharpening of the federal-state water rights conflict as expressed in a series of recent cases. The interregional characteristic of future development poses organizational problems differently than the traditional upland-lowland conflict. The new situation places a large organization in a working relationship with many smaller organizations. Therefore, the contract and its negotiations will be all important in the future.

Many localities also will be faced with questions of ground water management and integrating the management of ground and surface water. 1/ Again, the public district can be an effective organization. It can relate the ground water basin interests to those of other local organizations as well as the interregional transporting agency. The examination of the experience with these agencies can be valuable in meeting future situations. Building policy flexibility into organizational structure may be one way to meet change. In saying this, I am mindful that at times the only way to achieve policy change is to create a new organization.

1/ Smith, Stephen C., "Problems in the Use of the Public District for Ground Water Management," Land Economics, vol. XXXII, no. 3, August, 1956, pp. 256-269.

Smith, "The Role of the Public District in the Integrated Management of Ground and Surface Water," Water Resources and Economic Development of the West: Ground Water Economics and the Law (Berkeley, California: December 20 and 21, 1956), pp. 81-91. (Report No. 5, Conference Proceedings of the Committee on the Economics of Water Resources Development.)

IV

A primary characteristic of natural resource economics is its focus upon issues of public policy and its economic analysis. Consequently, law, governmental organization, and administration are central institutions of decision making and action rather than the institution of the market. Resource policy will change as the western economy changes, and this policy will help in effecting economic changes. These changes will be largely incremental in nature, thus, establishing limits within which to judge economic analysis for relevance to policy.