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WHY AN ECONOMICS OF CONSERVATION?*

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We have chosen today to talk about "Why an economics of conservation?" Several reasons could be cited for a discussion of this nature. One is that as teachers, extension and research workers, or in other words, as students of agriculture, we need to use a scientific approach to the problem of exploitation. And certainly we need a more rational approach than the rigid ecological standards of the survivalist who would "liquidate"1/ (sic) those who exploit, thereby eliminating the problem. However, the primary reason for the "why" in this subject is that economics lies at the very heart of conservation, if we have a fair conceptual grasp of the two terms.

On one hand, economics is broadly the science of adapting or allocating limited resources and means to satisfying the almost unlimited wants of people. On the other hand, conservation as a concept apparently means allocating the use of a limited resource (in our case, soils) over a period of time, usually though not necessarily, in favor of the future. If these general definitions are acceptable, we see that conservation though physical in nature becomes a problem in economics. We can make exception for certain technological aspects of conservation, although even here these will have economic implications. This is not to say that only economic principles will, or even should govern conservation, but it is to say that economic evaluation is crucial in decisions to exploit or to conserve.

Parenthetically, we might recognize that the astounding amount of material being published on conservation usually omits any implied or explicit definition of the term. However, the general impression gained from most of this literature is that anything is conservation that increases production. To check our thinking on the matter, we asked about 20 persons here in various fields of activity for a definition of the term. The first reaction to the question was an abrupt realization of the difficulty of stating a clear and concise definition. However, it was evident that most definitions involved three things in land utilization--costs, returns and time. In other words, economic evaluation appeared to be the common denominator of most definitions given. A fourth factor was quite commonly mentioned, that the concept of conservation also must include the human element, or that conservational use has as its end human welfare or progress, and perhaps is not an end in itself. The economist also makes this distinction.

We must realize that conservation was conceived in, and borne out of a past of exploitation. It has its roots in history. Apparently, our needs for conservation arise out of this past. To understand the economics of conservation requires that we know something of the economics of exploitation. It is advisable to explore the policies of the past, not to condemn, but to appraise thoroughly the dilemma in which we find ourselves.

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1/ William Vogt's *Road to Survival*, New York; William Sloane Associates, 1948, p. 145.

In developing our lands we were guided by two dominant concepts. These were economic individualism and the natural-right theory of land ownership. What were the results? All forms of legal interference with free disposal of land were abolished, or essentially so. Land was made an object of possession at the disposal of the owner. Its transfer was placed on the economic basis of supply and demand. And to the west, the supply of land was almost unlimited. Individuals and the nation chose rapid expansion and development open-mindedly, and perhaps wisely. Only by the most rigid controls could the nation have confined its boundaries to increase land values to the point of making conservation an issue. Low-cost land was always available, and land was man's natural right. Production processes obviously used as little as possible of the higher cost factors, labor and capital, while lavishly using the low-cost third factor--land.

Following this policy of the free and lavish use of land, we settled the country quickly, advanced the building of cities and industries, and insured the finality of national boundaries while the nation was relatively young. This meant that from the resource standpoint, land was the plentiful commodity. Capital was scarce on the frontier. This was evidenced by the common demand for an annual return of 25 to 50 percent on investments. Also, labor was scarce because underpaid or dissatisfied workers could always move to new land.

The economics of exploitation is stated concisely by Thomas Jefferson. Records reveal that Jefferson and George Washington exchanged agricultural experiences by correspondence. In a letter to Washington, written in 1793, Jefferson had this to say: "Manure does not enter into this (good husbandry), because we can buy an acre of new land cheaper than we can manure an old acre."2/ This brings us to our first principle of the economics of exploitation; namely, historical exploitation was in reality conservation--conservation of the scarce or costly resources of labor and capital. Land was the relatively abundant or least costly resource.

Coming closer home, we know that Texas, although it determined its own land-disposal system, pursued about the same land settlement policy as followed by the nation as a whole, and for the same reasons. The entire economy was geared to exploitation. Take one area as an example. All of us know that the economy of the Blackland Prairie was built and supported by a highly exploitative system of cotton farming. Cotton was the basic raw material which furnished a livelihood not only to farmers, but to bankers and lawyers, to carpenters and plumbers, to wholesalers and retailers, to ginners and compressors, and also to the railroads that plied the area. Farmers sold the raw material in the open market and bought immense quantities of supplies and equipment in a partially protected market. To carry on this process year after year, decade after decade, meant mining from the soil the very sustenance to maintain and build even faster the growing urban economy.

This, too, is part of the economics of exploitation and, therefore, is a factor in the economics of conservation. Is the farmer to be looked upon as the despoiler of land? It was not his greed, and it still is not greed that drives the individual operator or landowner to maximize his returns. A great deal of misunderstanding on this point has been prevalent among even the staunch advocates of conservation. True, the farmer was often wasteful in his use. At times, lack of knowledge was a factor.

2/ *Jefferson and Agriculture*, edited by E. E. Edwards, Agricultural History Series No. 7, 1943, p. 30.

But the farmer cannot be condemned for wasteful practices that conformed, in fact, to accepted theories about the profit motive, and the freedom and right to use land. He was caught up in the demands of legal and economic institutions that extracted exorbitant interest rates and high fixed prices for services and supplies, and which, on the other hand, brought him returns which fluctuated, sometimes drastically, from year to year. At the same time, his land was to be paid for in every generation. Thus, the whole society should recognize its responsibility and assume a very big share of the obligations to remedy the situation. The farmer cannot pick up the check for the nation's need to conserve.

This leads to the second principle of the economics of exploitation; which is, that for historical reasons, as well as others, the costs of exploitation must be shared between the farmer and the general public.

These two principles are our heritage from the past. Restated they are: (1) historical exploitation was in reality conservation of the scarce resources that existed during pioneer development, that is, capital and labor; land was the least scarce commodity; (2) the costs of land exploitation are a joint obligation, the public's and the farmer's.

If we understand these two principles, we can move from the past into the present in terms of the economics of today's job of conservation. One obvious economic assumption in making this transition is that somewhere along our path of development we passed a milestone when land ceased to be the abundant factor and became the scarce commodity. Someone has suggested that this milestone was passed with the passing of the frontier. Apparently, we continued the exploitation of land for too long a period.

In recognizing this milestone, we are holding that the other factors, particularly capital, have become relatively more plentiful (or cheaper) and should be used in much greater proportion. In general, this has proved to be the case. That is, with a given state of technology, larger amounts of capital and labor were required to continue producing the same returns. Does some land still not require conservation investments as it produces as much as ever with the same relative applications of labor and capital? Perhaps this is the case in some instances. However, such land may be the exception rather than the rule. Therefore, we can say that, in general, conservation or investment in land for greater production in the future is economic.

Immediately, the question arises, economic to whom? Who profits from conservation? And when are the profits realized? A large and articulate group of moral conservationists and survivalists grants no consideration to the questions just asked.[3/] But as we are dealing with farmers and landowners who operate within an institutional framework which demands consideration of costs and returns, we may again emphasize that we are concerned with the rational, not the metaphysical approach.

The answer to the question, "Will conservation pay?," apparently has different answers for different individuals and for the general public, based on the period of time involved. That there is a distinct difference between the time preference of an individual as compared with that of the public has long been acknowledged. This means that in terms of conservation economics, an individual's preference is for income this year, or for only

3/ William Vogt, *op. cit.* p. 146.

a few years in the immediate future. Time preference for the public is for a future indefinitely long. And it may not always be expressed in terms of income, but often in terms of an assured abundance of food and fiber, in reduced ravages of floodwaters, in the prevention of siltation of urban and industrial water supplies--in a strong nation.

In decisions that involvd time preference, individual farmers apparently adopt conservation measures and practices in this order: first, practices that improve production and operating efficiency in an annual operating period; and second, practices the benefits of which are not reflected in the current year, but which require two or more years for full realization.

Farmers have been rather quick to adopt the measures of the first class. Here the primary task has been education in terms of technology. However, the second class of measures is in direct conflict with the individual's preference for current rather than delayed income. A large proportion of these measures may increase income in the future at the expense of current income. A shift in major land use from a cash crop to pasture, or a sizable reduction in stocking rates of range land are examples of measures that require some years before gains outweigh the costs involved. Costs of such measures can be very heavy either in terms of a cash outlay or in terms of reduced income for a period, or both. The relationship between this type of measure and the tenure status of farmers is of special significance in conservation, although we can only mention it here.

Coupled with delayed benefits from conservation is the risk, or uncertainty factor involved in a fluctuating price level. For example, at present, a cost of from $25 to $50 an acre is required to convert cropland to permanent pasture in most parts of the Blackland Prairie. What are the probabilities that the man who makes such an investment for conservation will receive returns in the future large enough to justify this expenditure? Although we cannot use the past as the sole basis for forecasting the future, it has been shown that the probabilities for loss must also be reckoned with.

For example, one student has examined a 140-year period to determine whether an investment in conservation would have paid off the investor during this period.[4/] His conclusion is that the man who invested in conservation would have taken a loss 3 times in 10 during any 10-year payoff period. He points out that the cotton grower has had only one decade during the entire 140 years in which there was not at least one year of loss.

Although many new factors, such as increased technology, price supports and more orderly marketing may have removed some of this risk, there is still no real certainty in the mind of the landowner that future values would be realized from this required expenditure for adjustment in the Blackland Prairie. As technicians, we may be convinced that these values will be realized, but the landowner and these who extend credit for such investments still are concerned with risks.

These two concepts, the individual's preference for income now rather than in the future, and the marked uncertainty of ever regaining present costs through future income, leads us to a third economic principle of conservation. Stated simply, it is this: the economic conflict between

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4/ Stephen Raushenbush's *Economic Considerations in Conservation and Development*, United Nations Conference on the Conservation and Utilization of Resources, Lake Success, N. Y., 1949.

the present and the future, which is often inherent in conservation, generally will be resolved by the individual in favor of the present. This does not say that individuals cannot institute conservation practices. Neither does it say that programs for conservation cannot make progress in attacking exploitation problems. Indeed, some areas show excellent progress. It merely takes account of economic pressures that frequently push in one direction, that is, toward exploitation.

In this discussion, we attempted to make the following points:

Economics, or the allocation of resources, is basically the problem involved in conservation;

Early exploitation of land was in reality conservation--conservation of the scarce or costly resources of labor and capital;

Because the entire economy was built on early exploitation of natural resources, its costs cannot be charged solely to the farmer;

Labor and capital, especially the latter, more recently have replaced land as the abundant factor in production; and

Given our institutional framework and a state of technology, individuals will tend to postpone or delay conservation when it involves heavy costs in the present which have to be realized over a period of years in the future.

These are submitted as answers to the "why" in our subject today. We have outlined them not to present an outlook of pessimism for conservation progress, but to call attention to some basic postulates that will help us in problem-solving research. Their implications for research are many. It is our feeling that through an awareness of these postulates, we may identify and thus strike at the strategic factors that encourage and prolong exploitation of land. With these guides we can seek those data that are relevant and reliable, and winnow out the statistics that are merely startling. The case for a positive conservation approach can be resolved with reason. The same ingenuity and technology that were used to exploit land can be remolded and expanded in the interest of rational conservation aims.

Research, guided by these principles, can get at the fundamental issue, that of associating the economic interests of the individual more nearly with that of the public, and more nearly with the potentialities of the resource base. We can discover and emphasize positive economic pressures that push in the other direction--toward conservation.

Our research challenge in conservation as well as our task in that effort has been stated by Dr. Charles E. Kellogg, whom many of you know. He has stated concisely our "Why:" "The emphasis must always be on the people who care for the land, not directly on the land."[5/]

5/ Charles E. Kellogg, *The Soils that Support Us*, The Macmillan Co., New York, 1949, p. 203.