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Natural Resources Information for Economic Development

BY

ORRIS C. HERFINDAHL

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Inadequate natural resource information can lead to disastrous resource development decisions, and often has. This is widely recognized and the view that development decisions should be made only after full resource information is collected is often expressed. "The more information the better" is a common assumption. It may come as a surprise to some that Orris Herfindahl of the staff of Resources for the Future attacks this view in *Natural Resource Information for Economic Development*, and convincingly demonstrates that too much information can be as wasteful as too little in the field of natural resources.

Full resource information, Herfindahl points out, is impossible. Nothing approaching a complete, detailed inventory ever has been prepared anywhere, nor could it be. The relevant questions posed are: how much information is needed? What types of information? In what areas? In what detail? On what time schedule?

The answer offered is that outlays for information about natural resources should be considered as a capital investment. More data costs money and may take more time to collect. It is only worthwhile if it will increase the value of the stream of net revenues (through better decisions) more than the cost of collecting the data, and, in some cases, the cost of postponement of the stream of net benefits while waiting for more data to be collected.

Precise figures for such costs and values rarely exist, however, and Herfindahl seems to be aiming mainly at sensitizing those responsible for resource data collection to a way of thinking about information needs, and the need for a questioning approach. The problem of assigning the numbers necessary for resource information decisions receives little attention in the book. The examples tend to be simple, essentially single-purpose projects. Perhaps in the developing country Herfindahl uses as an example, a dam construction decision requires information limited mainly to streamflow data. In many places, however, the decision to delay construction while data are gathered

might involve research on fisheries, recreation impacts, and a host of other factors besides basic hydrology.

The discussion is keyed to the situation in developing countries and Latin America in particular. The book has a distinctly practical, rather than theoretical tone, and touches on much beyond the economics of resource information.

The first chapter deals with the general role of natural resources in economic development. The dominant role played by the location of natural resources is stressed.

Next, the capabilities and limits of the most important specific ways of gathering resource information are presented. Aerial photography, planimetric and topographic maps, geologic investigations, soil surveys, forest surveys, and remote sensing from orbiting satellites (not a panacea, in Herfindahl's opinion) are all covered in a general way with references to the technical literature.

Then, the costs of a large number of actual resource surveys are presented. The detailed coverage of costs is surprisingly scanty for forest surveys which are discussed in one sentence. Why the United States and Canadian examples, abundantly supplied for other programs, were omitted for forest surveys, is unclear.

The state of natural resource information and information activities in Latin America is reviewed in the next chapter.

The economic evaluation of resource data collection is covered next. This section probably has the most general interest and widest applicability. The high costs of premature information are emphasized.

Some thoughts on organization and administration of resource information collection follow. The experience of Peru and Chile with small, general resource information agencies in addition to specialized organizations is considered. Herfindahl thinks such general agencies may be useful, although some kinds of information, topographic mapping, for example, are probably best left separate, and others, soil and forest surveys, for example, are better integrated into operating departments. The concept of integrated resource surveys, which sounds so appealing, is shown to be appropriate only in certain special circumstances.

Although the book is aimed primarily at readers in or concerned with developing countries, the same principles apply everywhere. The emphasis on making resource data useful for decision making, and avoiding the pitfalls of gathering data for data's sake seems so obvious that one may wonder if Herfindahl is belaboring the issue. The fact that mountains of resource data gather dust on the shelves, at the same time that resource decisions are still made without the

relevant information leads me to feel he is on target. The introduction and the unusually full summary, at least, would help many resource managers and students in the United States or other developed countries.

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