Economics and Ecology: Development Concepts

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Abstract: This paper asks whether environmental economics of the neoclassical type is all that is needed to deal efficiently with problems of the environment and natural resources, or whether a misfit exists between the problems on the one hand and the mainstream paradigm on the other. To the extent that environmental problems are formulated through neoclassical spectacles, such a misfit will not occur. But some politicians and citizens who regard the environment as a top priority issue are not altogether satisfied with the neoclassical way of formulating environmental problems. Looking upon the problems through some other spectacles, such as institutional economics, may add to ones possibilities to articulate environmental policies. This paper focusses on development concepts related to the environment such as ecological imperatives for public policy and ecodevelopment

Introduction

Environmental and natural resource issues are receiving increased attention in many political and scientific circles. Those issues represent a challenge to economics as a science, and one may well ask whether the theory exists to deal efficiently with them. Is the neoclassical paradigm really helpful in ones attempts to understand the issues and to suggest measures to deal with them? Is "environmental economics," in the neoclassical sense, all that is needed? Or does something of a misfit exist between the character of environmental problems and the neoclassical framework?

Some of the conceptual tools of the neoclassical paradigm could be useful in attempts to deal with environmental and natural resource issues. But a major change in perspective—a conceptual framework that is partly different from the conventional one—is needed. Some of the concepts and thinking habits of neoclassical economists may well be dangerous to society.

Environment and Natural Resources

Economic and Ecological Interdependence (OECD, 1982) lists long-term environmental issues as being of critical importance: carbon dioxide and climatic change, the ozone layer, acid rain, chemicals, the international movement of hazardous wastes, maintaining biological diversity, loss of cropland, and soil degradation.

The first five are called "environmental pollution issues," whereas the last two are referred to as "resource issues." Such a labelling may be relevant for some purposes but one could argue that all seven are "resource issues," with natural and human resources involved. Pollution certainly influences the qualitative aspects of natural resources, such as forest or agricultural ecosystems. Pollution may also have short- or long-run impacts upon the health of human beings.

The above issues may be interpreted as an actual or possible degradation of the human environment. Some forms of degradation can be added, such as the exploitation of natural resources other than for cropland (for housing, transportation, or other purposes), the exhaustion of nonrenewable resources (such as oil and phosphorous), and the mismanagement of renewable or "conditionally renewable" resources—the latter resources being renewable provided that man's behaviour meets certain conditions.

Neoclassical economists (e.g., textbook writers on "environmental economics" or "economics of natural resources") tend to formulate the environmental problem (or problems) in a specific way. They seek to perceive the problem through the usual spectacles, looking for specific commodities, demand and supply characteristics, and optimal degrees of pollution control (Freeman *et al.*, 1973).

Nobody can approach a problem area without being preconditioned in certain ways. Each academician has a specific academic background and specific experiences from roles outside the university. And differences exist in ones willingness and ability to reconsider ones thinking habits.

Scientists should not accept the role of imitators of their colleagues at home or abroad. Instead, scientists should be ready to reconsider what their colleagues are doing and look for new concepts or combinations of concepts. Those who look for new things may put on a different kind of spectacles or climb a new mountain.

Some of the characteristics of environmental problems are that the: degradation of natural or human resources is often irreversible or very difficult to reverse; resources involved are unique or very rare; problems are intersectoral; problems are interdisciplinary; problems involve uncertainty and risk (where only part of the uncertainty can be reduced through further research efforts or the

acquisition of knowledge available elsewhere in the economy); and problems involve conflicts between different interests and ideologies in society.

The neoclassical approach is not the best conceptual framework for dealing with problems defined in that way. A possible way to proceed in such situations is to reconsider or reformulate the problem to make it fit better into the neoclassical framework. Such a strategy may save the neoclassical paradigm for some time but may be dangerous from the point of view of society and the environment.

Another way of responding is to abandon economics altogether, arguing that economics is irrelevant to some of the most important problems of the time. A third possibility, however, is to look for some kind of economics other than the neoclassical type. Some people argue in favour of "The New Economics" (e.g., the Ecology Party in the UK and other organizers of "The Other Economic Summit" in June 1984). An alternative to that is to look in the direction of "institutional economics," which goes back to the American institutionalism of the 19th century and the German historical school in Europe. A new version of the institutional paradigm seems to respond well to the demand of many environmentalists and politicians of different parties who regard the future states of the environment as a top priority issue.

Institutional Economics

Institutional economics is a unconventional approach to economics (see, for instance, Gruchy, 1968; Kapp, 1976; and Myrdal, 1978) that can be described as holistic (whereas the neoclassical paradigm tends to be atomistic or reductionistic) and that emphasizes the problem of values or ideologies in economics.

As a first example of the holistic ambition, the institutional economist is open minded in relation to other disciplines. He or she is ready to learn from representatives of other sciences, such as psychology or social anthropology (rather than being self-sufficient and expecting others to accept the "laws" of economics). According to the institutional mode of thinking, assumptions made about the *behaviour* of human beings in different roles should be related to the current state of knowledge within other behavioural sciences such as psychology and sociology.

Institutionalists are also holistic in the sense that they are less restricted to markets and market relationships in their research focus. Technology is another focus of attention and institutions and actors a third. The concept of an institution could be defined as the "rules of the game" when individuals act in different roles. Such rules may be formal (i.e., "institutionalized" into laws and guidelines) or informal. They may be looked upon as ideas about how to behave, which individuals perceive as part of the cultural environment and choose to accept or not accept depending upon the expected rewards or punishments connected with each kind of behaviour.

Related to that emphasis on institutions is the issue of power in society. Some actors command the necessary resources to influence the rules of the game (i.e., the institutions), whereas other actors are less powerful.

A third example of the holistic attitude of institutional economists has to do with the way one perceives economics as a concept. Neoclassical economists and institutionalists do not differ much in their definition of economics as the management of resources, where resources may be of different kinds. But, in practice, mainstream economists tend to assume that analysis and management of resources are best handled by the use of money "as a common denominator." Monetary resources and the monetary aspects (price) of other resources (such as land or human beings) is brought into the focus of analysis.

Such operations may certainly simplify things and therefore be preferred by some decision makers. But people may argue that the loss in relevance outweighs the gain in manageability. From the point of view of institutional economics, attempts to capture complex sets of impacts in one-dimensional monetary terms is called "monetary reductionism." Conventional cost-benefit analysis, with its aim of trading everything against everything according to some idea of correct prices, is a good example of what is here called monetary reductionism. No consensus exists in society about such a valuation procedure or about a concept of efficient resource allocation (see Mishan, 1980).

The alternative to a one-dimensional concept of resources is a multidimensional concept. What happens in monetary or financial respects to specific parties is still important, but analysis that is limited to monetary aspects is looked upon as a *partial* economic analysis only. To qualify as economic analysis, a parallel study of monetary *and* nonmonetary impacts has to be carried out and nonmonetary impacts can never be reduced to some alleged monetary equivalent. Such a way of

looking at things rests upon the belief that monetary reductionism may have detrimental impacts upon society.

Institutionalists also differ from most neoclassical economists in the way they handle values and ideologies. Most mainstream economists certainly realize that they are influenced to some extent by subjective attitudes and ideologies and by the values of people in their neighbourhood. At the same time, they are largely conditioned by a positivistic tradition according to which the scientist is assumed to be a neutral observer. Neoclassical economists therefore seldom warn their readers or listeners about the possible subjective or ideological bias of their messages.

The institutionalist, by contrast, prefers to be explicit about the role of values in the research process. Gunnar Myrdal is very clear on this point:

> *Valuations are always with us. Disinterested research there has never been and can never be. Prior to answers, there will be questions. There can be no view except from a viewpoint. In the questions raised and the viewpoint chosen, valuations are implied.* (Myrdal, 1978, p. 6)

Ones "viewpoints" have to to do with ones subjective values, ones own interests, and ones relationships to different interests in society. Choosing one theory or conceptual framework may be good for some interested parties in society but bad for others. Each theory, conceptual framework, way of formulating a problem, or terminology (as compared with a different theory) has a specific ideological or valuational content. Against that background, three rules of behaviour seem important. The scientist should: try to be conscious of how values and ideologies influence the research process, try to be open as regards such influences, and try to be many-sided with respect to possible valuational standpoints.

The first two points have been stressed by Myrdal (1973). The third is that of the present author, referring to situations where public policy issues are made the subject of study. In a democratic society, illuminating a decision situation from two or more possible valuational standpoints is preferred to a situation with only one "social welfare function." The task of scientists is to provide an opening for public discussion among politicians and citizens with different values. Scientists may claim to be experts where ways of carrying out an analysis are concerned, but they can never claim an expertise in societal values.

Development Concepts and Environmental Problems

For a long time, societal development was equated to "economic development," and "economic" mostly referred to monetary indicators such as GNP growth. In addition to "rapid economic growth," a number of subgoals were added as restrictions or to allow for some desired balance between different indicators; e.g., inflation should be kept down, and imports should be balanced against exports. Unemployment and regional imbalances have also received attention as part of that traditional development concept.

Such an idea of development is closely related to Keynesian macroeconomics and to the system of national accounting developed for practical economic policy making purposes. The usefulness of those concepts and macroeconomic indicators is beyond question. But such analysis is often insufficient. Environmental and natural resource issues do not easily fit into those conventional ideas about development. Suggestions that certain ecological imperatives for public policy be respected tend to be rejected by neoclassical economists with arguments about ecology being a discipline "outside" economics and for reasons of inconsistency with the idea of the neutral observer.

However, to institutionalists, with their holistic ideas and ambitions to be explicit about values, statements in terms of ecological imperatives do fit well into the general framework and do not appear alien. Obeying some "ecological imperatives of public policy" may in fact be a good way of managing natural resources. In other words, GNP growth is no less ideological than is the idea of ecological imperatives. Ideology will always be with us.

Another term used in the development dialogue (see Sachs, 1976 and 1984) is "ecodevelopment." Ecodevelopment, which focusses on some of the nonmonetary sides of development, can be seen as an imperative to observe changes in the composition of GNP. Ecodevelopment involves a distinction between products that are sound from an ecological point of view and those that are not. Some growth may be negative and "cancerous," while growth of other commodities may be mainly beneficial (see Leipert, 1983). Ecodevelopment also focusses on the state (or position) of the environment at specific points in time; e.g., will the present development trends lead to a degradation or improvement in the state of the environment?

Ecological imperatives could be formulated to avoid alternatives that involve a degradation of the environment, either in the region or nation where the planning occurs or outside it (Söderbaum, 1982). Where uncertainty exists as to possible serious degradation of future living conditions, a policy of cautiousness is suggested. Research and development to design new technologies and alternatives that are compatible with the nondegradation aim is generally a good thing and sometimes the only reasonable long-run solution.

The imperatives suggested may be further elaborated into behavioural rules in relation to nonrenewable resources, renewable resources, and toxic materials with different characteristics. The concept of ecology may also be extended to include human beings or human resources. One may then speak of human ecology as part of ecology and "ecodevelopment." Such an approach has the advantage of bringing in the social aspects of development; e.g., personality development, human rights, and employment. In that way, human, social, or sociocultural resources may be considered part of ecological imperatives. Development policies that increase the number of unemployed are certainly doubtful and may degrade human resources in a way that is similar to the degradation of natural resources.

Concluding Remarks

A final expression from the development debate is "ecologizing the economy." Economies should be designed in ways that reflect ecological or biophysical realities. To do that, one should work at three different levels: paradigmatic (using concepts and theories as building stones), ideological (pointing to different ideological standpoints and conclusions that follow from each of them), and practical (suggesting practical solutions within different fields of human activity; e.g., designing "ecological agriculture," "ecological forestry," or, more generally, "rural ecodevelopment").

In this short paper, paradigmatic and ideological viewpoints have been stressed. Institutional economics is a useful approach to current development problems. Such an emphasis on concepts and ideology does not mean that the design of practical solutions is less important. Such efforts to make technology, institutions, and behaviour within the scope of such conditions better adapted to ideas of development should certainly be considered carefully by different actors in society. Very often, ideas about philosophy and values stem from practical achievements. The three levels are, therefore, interconnected and mutually reinforcing.

Note

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