

ECONOMIC SECURITY AND THE ENVIRONMENT

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Keywords: Basic income, carbon emissions, dematerialization, ecological economics, ecological debt, ecological distribution conflicts, environmental services, environmentalism of the poor, international trade, livelihood, needs, valuation of externalities, women and the environment

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Summary

The real economy is much wider than the market sphere. Human beings depend on environmental services provided free by nature. The economy is a system open to the entry of energy and materials, and to the exit of waste (for instance, greenhouse gases). Economic growth sometimes leads to environmental improvement but more often it implies an increase in the environmental load of the economy, unequally distributed among groups of the population and across countries. An increased share of marketed goods does not represent increased net welfare.

Negative “externalities” are not counted in the economy, while money spent to compensate or mitigate them is counted as an addition to gross national product. One instance is money spent to buy bottled water because local availability has been destroyed by pollution.

Conventional economic accounting is therefore misleading. There is a tide around the world of environmental movements of poor people against threats to their livelihood. Such threats are caused by economic growth and by unequal economic and ecological distribution. Women are often the main actors in such movements. Real economic security must then take into account the continuing provision of environmental services at local and global levels. Proposals for basic incomes or economic security for all should take such essential environmental aspects into account. Equally, international trade and economic policies should take ecological distribution conflicts into account.

1. Livelihood

Economic security refers, in the first instance, to the livelihood or subsistence of humans. While in many past societies material provisioning was secured outside the market, in today's society income earned in the market appears to be the main means of acquisition of the essentials for human livelihood. Market relations, though, have been, and still are, clearly insufficient for economic security. True, the Greek distinction (as in Aristotle's *Politica*) between *oikonomia* (the art of material provisioning of the household) and *chrematistics* (the study of the formation of market prices, in order to make money) seems irrelevant today, because material provisioning appears to be mostly achieved through market exchanges, and there is a fusion of *chrematistics* with *oikonomia*. However, many caring activities in families and in society, and many services of nature such as the provision of solar energy and rainwater, remain outside the market. Nature provides resources for the production of commodities and also provides environmental amenities. Nature, more importantly, provides essential life-support services such as the cycling of nutrients, the water cycle, soil formation, climate regulation, conservation and evolution of biodiversity, concentration of minerals, dispersal or assimilation of pollutants, and diverse forms of useful energy. The availability of energy and the cycling of materials allow life forms to become ever more organized and complex. The same applies to the economy. Dissipated energy and waste are produced in the process. At least part of the waste can be recycled or, when it cannot, the economy takes in new resources. However, if the scale of the economy is too large and its speed is too rapid, then the natural cycles cannot produce the resources or absorb or assimilate residues such as, for instance, heavy metals, phosphorous, carbon dioxide, or radioactive waste.

2. Ecological and Economic Distribution

Not all humans have equal entitlements to natural resources and environmental services. For instance, human entitlements to the carbon sinks and reservoirs (i.e. oceans, soils, new vegetation, and the atmosphere) are directly proportional to the amount of carbon dioxide each one produces, since the carbon sinks and reservoirs are in a situation of open access. There are other similar "ecological distribution conflicts," that is, conflicts about access to environmental services and to natural resources, and about the burdens of pollution. Such ecological distribution conflicts sometimes overlap with economic distribution conflicts. For instance, poor people are sometimes unable in urban situations to get access to sufficient water, and their health and environment suffer as a consequence. An increased income would allow them to buy water in the market. Also, a higher income endowment might allow poor families to "climb up" the cooking fuel ladder towards bottled LPG (liquid petroleum gas), with some good environmental consequences (less domestic pollution, less pressure on scarce fuel wood). For example, in South Africa there is a strong urban movement based mainly in Soweto claiming a "free lifeline" of water and electricity for everybody (1 kWh and 50 liters of water per person/day). The reason is that many poor people have lost access to essential services. At the same time, livelihood activists put forward policies regarding water and electricity prices that have the mining and industrial firms and large private consumers paying higher tariffs. The livelihood activists have also questioned the Lesotho dams, together with the whole energy and economic model of South Africa.

At first sight, economic growth seems to improve environmental conditions. Thus, health and environmental damage from sulfur dioxide or lead poisoning have decreased in rich countries, not only because of income growth but also because of social activism and public policies. Research by Lovins and Weizsaecker shows that rich countries have scope for a decrease in material intensity by “factor 4” or even “factor 10” without a decrease in welfare. However, such optimistic beliefs (the “gospel of eco-efficiency”) cannot overcome the realities of increased resource exploitation in environmentally fragile territories, increased physical flows of materials and energy between the developing and the developed world, the increased greenhouse effect, the awareness of past and recent “robbery” of genetic resources, the pressures on surface and underground water, often at the expense of human livelihoods and of ecosystems, and many other conflicts. Accepting the argument that rich economies have the financial means to correct reversible environmental damage and the ability to introduce new production technologies favorable to the environment, it might be that such turning points in negative environmental trends are reached when considerable damage has already accumulated or when thresholds have been surpassed. Moreover, technological and social “lock-in” (consumption habits, and patterns of urban settlement), make it difficult to de-link economic growth from growth in material and energy flows.

In the debate on the trickle-down effects of economic growth, optimists believe that economic distribution becomes more equal with economic growth, but commonly, economic growth benefits the poor only in proportion to their initial position. If the lower 20% of the population receives only 5% of income, after a period of economic growth it will still receive 5%, but of a larger total income. Disparities in absolute terms will have increased, but the level of income of the poor will also have increased. However, income growth does not imply greater economic security because it hides environmental degradation and some other negative social effects.

An increased share of marketed goods does not represent increased welfare. For instance, buying water, eating more often outside the home, traveling increased distances to work, and expending money to compensate for environmental damage are part and parcel of the trend toward urbanization. A single metric for the measurement of welfare apart from money incomes is not available. The United Nations Human Development Index is an interesting attempt to consider a number of social issues, but it does not take environmental effects into account (see *Global Ethics* and *Environmental Justice*).

3. Cost Shifting and Compensation

Environmental conflicts often take place outside the market economy. For instance, a decision to produce nuclear energy requires a decision on the distribution of the waste—will it be kept in the nuclear power stations themselves; will it be shipped to a final disposal site (such as Yucca Mountain in the United States)? The siting of nuclear power stations also involves a decision on the geographical and social distribution of the uncertain risks of nuclear radiation. Another example is the new awareness of the disappearance of the peasantry and of agricultural biodiversity. A conflict has emerged between the seed companies (often multinationals) who demand royalties for their

improved seeds and the local peasants and farmers who kept seeds *in situ* and who are now losing them after having given away gratis genetic materials and knowledge.

The polluter-pays principle sometimes implies that ecological impacts may be compensated for by an improving economic distribution. This is not such a new idea and there are many well-known historical cases. For instance, sulfur dioxide and heavy metals produced by the copper mine of Ashio in Japan at the end of the nineteenth century damaged not only crops but also human health. The waste water ran off into the Watarase River, reducing rice yields of the farmers who irrigated fields with this water. Newspapers from 1892 reported that the Fukurawa corporation, owners of the copper mine in Ashio, argued in cost-benefit language saying that if the copper effluent were responsible for the damage to farmlands on either side of the Watarase the public benefits accrued to the country from the Ashio mine far outweighed any losses suffered in the affected areas and that any damage could be adequately taken care of by compensation. In today's parlance, a Pareto improvement means in the strict sense that a change such as a new mining project improves somebody's circumstances, and does not worsen anybody's situation. In this sense, Ashio did not fulfill the criterion. However, a Pareto improvement in a wider sense allows for compensation, so that those better off can (potentially) compensate those worse off and still achieve a net gain. This was Fukurawa's claim.

The agents of ecological distribution conflicts are not so well identified as the agents of Ricardian or Marxian economic conflicts—landlords and capitalist farmers in one case, capitalists and proletarians in the second case. It might be that a fight against effluents is led by a group of naturalists, or by a group of local women, or by a residual group of indigenous people demanding compensation (i.e. demanding in the language of economists the “internalization of externalities”) or appealing to non-chrematistic values (such as human livelihood or the sacredness of the land). If these or other groups are successful, costs will be different for the firms concerned in every different case; production decisions will also be different.

Externalities (i.e. cost shifting), whether local or international, must be seen as part and parcel of the economy, which is necessarily open to the entry of resources and to the exit of residues. Conflicts about access to natural resources or about exposure to environmental burdens and risks may be expressed:

- In one single standard of valuation (usually monetary). How should the externalities caused by a firm be valued in money terms, when asking for compensation in a court case? An appeal to economists versed in cost-benefit analysis and contingent valuation is appropriate.
- Through a value standard contest or dispute, that is a clash in the standards of value to be applied, as when losses of biodiversity, or in cultural patrimony, or damage to human livelihoods, or infringements on human rights or loss of sacred values, are compared in non-commensurable terms to economic gains from a new dam or from a mining project or from oil extraction. There is a clash in standards of valuation when the languages of environmental justice, or indigenous territorial rights, or environmental security are deployed against monetary valuation of environmental burdens. Non-compensatory multi-criteria decisions or participatory methods of conflict resolution are appropriate for this type of situation.

Any social group can simultaneously use different standards of value in support of its economic and environmental security. This is particularly true of subordinate social groups: they have a better chance of defending their interests by arguing in a non-economic terrain. The claims to environmental resources and services of others who are differentially empowered and endowed can be contested by arguing for a single standard of value or across plural values. Moreover, in complex situations marked by uncertainties and synergies, the disciplinary approach of experts is not appropriate. So, incommensurability of values arises not only because of different interests but also because of complexity that entails a plurality of legitimate perspectives and values.

This divergence in valuation perspectives, write the ecological economists O'Connor and Spash, can be introduced in terms of two different conceptions of internalization. The diagnosis is that decision makers have failed to take proper account of the impacts of human activity, and the remedy is taking the environment properly into account. The two formulations are:

- Internalization of environmental damages in a narrow sense, referring to an idea of Pareto efficiency in resource allocation.
- Internalization in a broad sense, referring to political processes and institutions for expressing and resolving or accepting [or exacerbating] conflicts over environmental concerns.

Therefore, ecological distribution conflicts are sometimes expressed as discrepancies of valuation in one single standard of value (as when there is a disputed claim for monetary compensation for an environmental liability), but they often lead to value system contests or multi-criteria disputes (or dialogues) that rest on different standards of valuation.

This latter point is made vivid by two questions asked in contexts where a narrow economist assessment misses important considerations. Thus, "What is the cost of living?" asked Arundhati Roy in the Narmada Valley, and "What is the price of oil?" asked Human Rights Watch in 1999 in a report on the Niger Delta.

Externalities must be seen not as "market failures" but as "cost-shifting" successes, where "cost" is used not only in the monetary sense. The "shifting" is obvious in an intergenerational context, where future generations have no voice and no guarantee of security. Economists explain discounting by subjective "time preference," or because economic growth per capita caused by today's investments will make the marginal utility of consumption lower for our descendants than it is for us today.

Accepting this second argument, namely, that discounting arises from the productivity of capital, and taking into account that such productivity is a mixture of true increases in production and a lot of environmental destruction, then the discount factor should be the per capita rate of sustainable economic growth, subtracting therefore the destruction of environmental resources and services.

To determine the present economic value of such destruction caused by economic growth (loss of biodiversity, filling up of carbon sinks, production of radioactive waste, etc.), one needs not only to put a monetary value on it, one also needs a discount rate.

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Biographical Sketch

Joan Martinez-Alier has been a full professor in the Department of Economics and Economic History, Universitat Autònoma de Barcelona (UAB), Spain, since 1975. He has held a research fellow position at St. Antony's College, University of Oxford, and visiting fellowships or professorships at Universidade Estadual de Campinas, Sao Paulo (1974), Freie Universitaet Berlin 1980/81), St. Antony's College, Oxford (1984/85), Stanford University and University of California (Davis) (1989), FLACSO, Quito (1994/95), and Yale University (1999/2000). Professor Martinez-Alier is the director of the doctoral

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