# EDITORIAL

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The current issue of *Investigación Económica* (IE) is concerned with: *i)* the impact of productive and financial activities on the environment and natural resources; *ii)* the relationship between the exploitation —by agricultural and manufacturing production— of those resources, the level of socioeconomic well-being and the efficiency of public policy in allocating and guaranteeing social security and *iii)* the role of value added in final output and economic complexity in the structural change process of countries exhibiting different levels of economic development.

At the heart of the contemporary global environmental crisis is the blatant fact that modern production and consumption habits are exhausting the earth's natural resources beyond its sustainable capability of regeneration. The irony is that this undertaking of irrational depletion, according to received economic theory, is called income.

Indeed, in a globalized world economy where countries are not independent, climate change results from the interaction of *homines economici* seeking to maximize utility. Climate change generates persistent and potentially irreversible deleterious alterations that damage the planet's entire population's well-being. Its effects threaten economic growth and development and are so complex that they constitute today's most critical global challenge. Climate change begs the question whether economic growth can proceed indefinitely in a resources-limited planet.

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The study of climate change is usually approached from the principles of dominant economic theory with the concept of sustainability —the limited exploitation of decreasing natural resources—, an epistemological imperative insufficient to explain the current ecological problem. Therefore, it is necessary to reflect on this neuralgic issue from an ecological perspective analytically. Georgescu-Roegen (1971) criticized the conception of the economic process as an analogy of mechanics, that is, isolated, autonomous, and ahistorical which is not affected by the qualitative change of the environment, and which does not consider the irreversible role of natural resources consumption. Based on the Entropy Law, Georgescu-Roegen maintains that in the real economy there is no zero entropy; *ergo*, it is necessary to set free economics from the anachronic mechanistic yoke.

Georgescu-Roegen (1971, p. 4) contends that "[t]he Entropy Law is the basis of the *economy* of life at all levels." However, the reflection of new epistemological bases is not enough. Given the evident contradiction between economic growth and ecology, the current economic model that favors destruction of biodiversity and nuclearization of the world should be replaced by a socioeconomic setting where the satisfaction of basic needs is consistent with ecological and egalitarian criteria.

The high levels of inequality and poverty, the deterioration of the environment and the disconnection between citizens and government make it urgent to question the prevailing development paradigm. The proposal to move "From Production to Well-being" becomes increasingly valid to integrate the search for economic growth with the reduction of its social and environmental repercussions (Stiglitz, Sen and Fitoussi, 2009, p. 12). Since 1990, the Human Development Index has sought to capture this need for a broad measurement of well-being. Currently, research continues to explore ways to improve the construction of this indicator in its original dimensions and to build alternatives that integrate other relevant areas to social life such as public safety or political participation.

Growth by itself does not lead to an egalitarian increase in well-being between population groups. The agricultural sector, despite its strategic relevance, is one of those that tends to present the higher productive and technological heterogeneity, which results in large income disparities and high poverty levels. Vulnerability to the negative effects of climate change, which is largely the result of the capitalist forms of production, increasingly contributes to explain these differences. On the other hand, economic activity tends to concentrate

in certain spaces that have accumulated adequate conditions for its expansion, which usually generates a dynamic of spatial inequality. Especially, in cities connected to international markets, technology-intensive sectors capable of attracting qualified labor are developed, which coexist with a lack of income and opportunities for a large part of the population. Public, economic and social policy must promote balanced development with a general increase in well-being in its multiple dimensions.

A new approach to welfare economics must address the essential tension involved in the difficulty of making compatible the ideals of equality and freedom, on the one hand, and citizens' consciousness of the planet's ecological and physical limits, on the other. This tantamount to a radically different conception of basic needs formation where minimization of the dissipation of non-reproducible natural resources is key to the maximization of human beings' *joie de vivre*. This conception is implied by the "good economics" entertained by S.-Ch. Kolm, A. Sen and C. von Weiszäcker.

Yet, if the main "motive of dissatisfaction" with economics "pertains to the fiction of *homo oeconomicus*" (Georgescu-Roegen, 1971, p. 1) and if the economy is ruled by the Entropy Law, methodological and epistemological consistency requires that measurement of variables and value added —the flagship of economic accounting— is not to turn a blind eye to non-reproducible, non-recyclable natural resources and, most importantly, the destruction of ecosystems is not to be counted as "net product." The circular flow approach of received economic theory portrays the "value added" to matter/energy (atoms) by labour and capital as new utility without considering that production and consumption alter the system irreversibly from low-entropy to high-entropy. S. Podolinsky pioneered the analysis of the relevance of energy flows as the material basis for (*i*) the metabolism between human beings and nature, (*ii*) social reproduction (*iii*) and a viable society. ◄

## REFERENCES


Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process*. Cambridge, MA: Harvard University Press.

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