

Розділ 2

Економіка природокористування і еколого-економічні проблеми

The Challenge of Ecological Economics: Historical Context and Some Specific Issues

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In this paper author looks at economic system as a part (subsystem) of ecosystem. The nearer the subsystem approaches the total system in scale, the more it must become like the total system in its basic characteristics – finitude, nongrowth, material closure, and reliance on the flow of sunlight as its main energy source. The path of progress for the economy must shift from quantitative growth to qualitative development. It must enter a phase of sustainable development – qualitative improvement without quantitative expansion – a steady-state economy.

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I. Historical context

Over the past century and a half, three major criticisms have been raised against the economic orthodoxy of the time. Malthus criticized economists for abstracting from population growth as a cause of impoverishment; Marx criticized economists for abstracting from class struggle and inequality; Keynes criticized economists for abstracting from uncertainty and from the very possibility of a level of aggregate demand insufficient to provide full unemployment. Modern economists have earnestly tried to repair the defects pointed out by these major critics. Overpopulation, class inequality, and involuntary unemployment have each received much attention from several generations of economists. In each case, however, their solution has been the same—to advocate more economic growth.

To the Malthusians and neo-Malthusians, economists reply, rich countries have lower birth rates than poor countries; therefore we will automatically solve the population problem by more economic growth in poor countries. It helps poor countries to grow if rich countries are also growing and providing bigger export markets and accumulating more capital to invest in the poor countries. Malthus was wrong to claim that wealth can only grow arithmetically while population grows geometrically. Both populations of people and populations of goods can grow geometrically. The whole economy can and must grow exponentially.

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To the Marxists and neo-Marxists, economists reply,

we will take care of poverty by more growth—if the poor are getting better off in absolute terms, that is enough, don't be envious of the relative position of the rich. Inequality does not justify class warfare and in fact helps provide incentives which are good for growth, and ultimately for the poor. A rising tide lifts all boats, garbage scows as well as luxury liners. Focus on aggregate growth—distribution, like population, will take care of itself.

To, and along with the Keynesians and post-Keynesians, economists say,

we will increase aggregate demand and provide full employment by stimulating investment. Investment means growth, and therefore even more productive capacity to keep fully employed tomorrow. But that just means we need still more growth, and that is good because growth makes us richer and assuages our anxieties and uncertainties about the future, leading us to consume and invest still more, further boosting confidence, aggregate demand and employment. Economic growth is a self-reinforcing spiral without limit. It is our destiny, as well as the solution to our problems. In the face of this formidable historical consensus favoring growth as the general panacea, now come the ecological economists to challenge and criticize today's standard economists for "growthmania" – for abstracting from environmental and social limits to growth. Growth, yesterday's panacea, is rapidly becoming today's pandemic. Economists are so devoted to growth in GNP that they prejudge the whole growth question by calling GNP growth "economic growth"—thus ruling out from the beginning the very possibility that growth in GNP might be "uneconomic"—might at the margin cost more in terms of environmental and social sacrifices than it is worth in terms of production benefits. Such growth would make us poorer rather than richer, in an inclusive sense, and should be called "uneconomic growth". For now I only call attention to the theoretical possibility of "uneconomic growth." Later I will briefly consider empirical evidence that the US and a few other northern countries have already entered the phase where growth has become uneconomic.

But if growth is uneconomic, if it makes us poorer rather than richer, then how in the world do we deal with poverty? The answer is clear, if unpalatable to many: by redistribution, by population control, and by increases in natural resource productivity. The first two are considered politically impossible. The third is endorsed by all until it is realized that we have bought increasing productivity and incomes for labour and capital by using resources lavishly, by sacrificing resource productivity and the interests of resource owners (landlords). This has seemed a small price to pay for reducing class conflict between labour and capital and buying industrial peace. Nobody loves a landlord. But now it has become evident that, however unworthy of his rents the landlord may be, the social cost of today's low resource prices is being shifted to future generations, and to the other species whose habitats we are taking over.

In addition to making every technical effort to increase resource productivity, reducing poverty will also require facing up to the moral issues of income redistribution and population limitation. Growthmania is the attempt to grow our way around these moral problems by means of technical pseudo-solutions. But if we simply cannot grow that much for ecological reasons, then we must find new solutions to the problems raised by Malthus, Marx, and Keynes. The challenge of ecological economics is therefore enormous. It is by no means confined to just reducing depletion and pollution – it requires a rethinking of the major problems of the past century and a half – problems that were temporarily solved by economic growth, but are now being made worse by uneconomic growth!

As the economic subsystem grows physically it must become larger relative to the

nongrowing ecosystem of which it is a part. The nearer the sub-system approaches the total system in scale, the more it must become like the total system in its basic characteristics—finitude, nongrowth, material closure, and reliance on the flow of sunlight as its main energy source. The path of progress for the economy must shift from quantitative growth to qualitative development. It must enter a phase of sustainable development— qualitative improvement without quantitative expansion—a steady-state economy, or to use John Stuart Mill’s classical term, a “stationary state of population and capital.” The classical economists other than Mill all recognized the ultimate necessity of the stationary state, but dreaded it. Mill, however, welcomed it:

It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement. There would be as much scope as ever for all kinds of mental culture, and moral and social progress; as much room for improving the art of living and much more likelihood of its being improved, when minds cease to be engrossed by the art of getting on. To meet the challenge of ecological economics we must first abandon the illusions of growthmania and start from Mill’s vision as the foundation. Next, we must face a number of more specific issues, to which I now turn.

II. Some specific issues in the challenge

1. Recognizing a changed pattern of scarcity. The world was relatively empty of us and our furniture, now it is relatively full. But we have not yet switched our thinking from empty-world economics to full-world economics. Manmade capital has become relatively plentiful, and remaining natural capital is becoming more and scarcer. This changed pattern of scarcity would not be very important if manmade and natural capital were good substitutes, and since standard economists seem to believe in easy substitution they do not worry about the changed pattern of scarcity even when they recognize

It, of course, if manmade capital were a good substitute for natural capital then natural capital should also be a good substitute for manmade capital. One then wonders why we went to the trouble to accumulate manmade capital in the first place if we were originally endowed with such a good substitute! The answer is that manmade and natural capital is complements, not substitutes (except over a very small margin). When factors are complements then the one in short supply is limiting.

Economic logic tells us to focus on the limiting factor—to economize on it in the short run and to invest in its increase in the long run. Economic logic has not changed, but the identity of the limiting factor has—it was manmade capital, now it is increasingly natural capital. The fish catch is no longer limited by the number of fishing boats (manmade capital), but by the remaining populations of fish in the sea (natural capital). Cut timber is no longer limited by saw mills, but by standing forests. Energy from petroleum is no longer limited by pumping and drilling capacity, but by remaining geological deposits— indeed it is limited more stringently by capacity of the atmosphere to absorb the CO₂ from combustion, but that too is a service of natural capital. Irrigated agriculture is limited not by pipes, pumps, and sprinklers, but by the amount of fresh water in aquifers and rivers; and so on. In sum, full-world economics must focus on natural capital—but we are still following the dictates of empty-world economics to grow, to convert more natural capital into manmade capital. Ecological economists are trying to correct this error.

2. Stop counting natural capital consumption as income. Income is the maximum amount that a community can consume over some time period, and still be in a position to produce and

consume the same amount in the next period. In other words, income is maximal sustain-able consumption, the maximum consumption that will still leave productive capacity intact at the end of the period. How, then, can there be a problem of sustainability if the standard definition of income explicitly incorporates sustainability? The difficulty is that the condition of maintaining productive capacity intact has in the empty world been applied only to manmade capital. Natural capital has not been maintained intact by any depreciation or depletion set-asides.

3. The unsustainable depreciation and depletion of natural capital has there-fore been counted as income, as if it were sustainable consumption. This error is pervasive. It is committed in the System of National Accounts (macroeconomics); in Balance of Payments Accounts (inter-national economics); and in Project Evaluation (microeconomics). Ecological economists are trying to correct these errors. Recognize three economic problems (allocation, distribution, and. Scale—not just one (allocation). Efficient allocation of resources among Alternative uses is the most discussed economic problem. The decentralized market system of pricing solves this problem very well under certain conditions. It does not solve the problem of providing the “certain conditions” that markets require (perfect information, competition, no externalities), discussed below in (5). But in addition to providing its own institutional base, there are two other economic problems that the market cannot solve—the problem of a just distribution of ownership of natural and manmade capital, and the problem of a sustainable scale of the macro economy relative to the ecosystem— that is, a sustainable scale of manmade capital relative to the complementary natural capital that remains. In fact, the individualistic market solution to the problem of efficient allocation presupposes prior political and social solutions to the problems of just distribution and sustainable scale. In general, for each independent policy goal we need a separate policy instrument (Jan Tinbergen). To kill three birds we have to be very lucky to do it with less than three stones. For allocation we have the market. For distribution we have separate income and welfare policy. For scale we have at present no clear goal aiming at sustainability, nor any institutions for serving that goal. We are trying to kill three birds with two stones.

4. Discounting, intergenerational distribution, and scale. In some ways the scale question overlaps with the issue of just distribution in its intergenerational aspect—an unsustainable scale of the present macro-economy is unjust with respect to future generations since it will leave them with an unsustained and therefore diminished macro economy. The attempt of standard economics to solve the intergenerational distribution problem by discounting is illegitimate. The discount rate (interest rate) is a price, and like all prices it is determined subject to a given distribution of income and a given scale of the macro economy. Different distributions of the ownership of the resource base over generations, and a different scale of the macroeconomy, will result in different prices, including different interest rates. Since the interest rate is determined by the scale and intergenerational distribution of ownership of the resource base, it cannot be used as the criterion for deter-mining either scale or intergenerational distribution via discounting. To do so would be circular reasoning. Ecological economists are trying to straighten out proper relations among allocation, distribution, and scale—and how these relate to discounting.

5. Improving market allocation by internalizing environmental and social costs—while recognizing the conflict with globalization. The goal of cost internalization is shared by all economists in principle. Probably ecological economists take it more seriously, however, and are more willing to defend it in the face of conflict with other principles, especially in the

conflict with globalization (free trade combined with free capital mobility). In today's world it is the nation that internalizes environmental and social costs into prices. If a cost-internalizing nation establishes relations of free trade and free capital mobility with cost-externalizing nations, then it will lose out in the competition. Its own producers will move to the cost-externalizing countries since capital is mobile, and still sell without penalty in the market they just left, since trade is free. Many ecological economists therefore argue for a new kind of protectionism—not protection of an inefficient national industry, but protection of an efficient national policy of cost internalization.

Free trade and free capital mobility lead to a standards-lowering competition—a kind of Gresham's Law in which bad cost accounting drives out good cost accounting—cost externalization drives out cost internalization. Ricardo's nineteenth century comparative advantage argument that guaranteed mutual benefit from free trade was explicitly premised on internationally immobile capital. In the twentieth century world of free capital mobility it is no longer applicable. Free traders must either advocate capital immobility to keep the world safe for com-portative advantage, or else abandon the comparative advantage argument and recur to arguments based on absolute advantage. Certainly one can argue that world output will increase under free trade based on absolute advantage, but it no longer is the case that each nation must gain. Some may lose, and it would be necessary to face the issue of compensation for countries that lose. The gains from counting all costs at the national level are considered more important by ecological economists than the gains from international trade based on absolute advantage. Standard economists seem unable to give up the comparative advantage argument even when its main premise no longer holds, and also seem willing to give up the gains of national cost internalization in favour of “globalization”—an unexamined ideal that they mistakenly identify with nineteenth century free trade.

6. Facing uneconomic growth as an empirical fact. Some countries, the USA for one, seem already to have entered the era of uneconomic growth, of growth in GNP that results in extra environmental and social costs that are greater than the extra production benefits. Economists tell us that GNP was never designed to be an index of welfare—only of economic activity. That is certainly true. However, it is also true that economists believe that GNP is sufficiently well correlated with welfare to serve as a practical guide for policy. But this belief fails a simple test.

One can construct an index designed to measure economic welfare and then see how well it correlates with GNP. This has been done for the US, and the finding was that since about 1980 the positive correlation disappeared and has actually become negative. Measuring welfare is very difficult, but given the conservative assumptions of this particular study, it seems safe to say that the usual ASSUMPTION of a good positive correlation between GNP and welfare has no empirical support in recent years in the US. Policies designed to increase GNP make little sense if there is zero or negative correlation between GNP and welfare! The data are consistent with the hypothesis that we have entered the era of uneconomic growth. The challenge of ecological economics is to recognize this and to shift the path of progress from quantitative growth to qualitative improvement – to move from an economics of bigger to an economics of better.

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**Вызовы экологической экономики:
исторический взгляд и некоторые специфические проблемы**

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В данной работе автор рассматривает экономическую систему как составляющую (подсистему) экосистемы. Чем ближе подсистема к общей системе по своему размеру, тем больше она должна быть похожа на общую систему по своим характеристикам – целостность, отсутствие роста, физическая закрытость и использование энергии солнечного света в качестве основного источника энергии. Прогресс для экономики должен перейти от количественного роста к качественному развитию. Он должен вступить в фазу устойчивого развития – качественное улучшение без количественного расширения – стационарность экономики.

Ключевые слова: развитие, рост, система, устойчивое развитие, экологическая экономика, экосистема.

**Виклики екологічної економіки:
історичний погляд та деякі специфічні проблеми**

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За останні півтора століття існуючі економічні устої були піддані широкій критиці. Так Мальтус критикував економістів за абстрагування від проблеми постійно-зростаючого народонаселення; Маркс критикував економістів за абстрагування від класової боротьби та нерівності; критика Кейнса полягала в критиці ігнорування питання невизначеності і повної зайнятості як такої через стимулювання сукупного попиту. Сучасна економічна думка намагається вирішити питання поставлені критиками-економістами в попередні роки.

Автор відповідає на критику попередників таким чином. По-перше, що до мальтузіанської критики: багаті країни мають менші показники народжуваності ніж бідні країни, і відповідно якщо питання народонаселення само по собі автоматично вирішиться якщо бідні країни будуть розвиваються швидшими темпами. По-друге, критика марксистів вирішується через покращення умов для бідних через економічне зростання як таке і не потрібно зважати на відносно позицію багатих. І нарешті критика Кейнса вирішується, через стимулювання сукупного попиту, який і забезпечить повну зайнятість через стимулювання інвестицій.

Друга частина роботи присвячена актуальним питанням екологічної економіки. Економічна система зростає досить значними темпами і стає все більшою у порівнянні з екосистемою планети, хоча економічна система є лише підсистемою екосистеми. Чим ближче економічна система за своїми розмірами наближається до своєї материнської системи, тим більше вона повинна бути їй подібна (за такими характеристиками як цілісність, відсутність зростання, фізична закритість, використання сонячного світла як головного джерела енергії). Шлях прогресу економіки повинен перейти від кількісного зростання до якісного розвитку.

Ключові слова: екологічна економіка, екосистема, зростання, розвиток, система, сталий розвиток.