
The New Economics of Ecological Capital

John Vidal

Here is a conundrum, courtesy of Merv Wilkinson, one of Canada's oldest and wisest foresters. In 1938, he bought a few hectares of forest on Vancouver Island which, he reckoned, contained about 100,000 board feet of timber. Once every 10 years, he would harvest about 20 per cent of it. So, he used to ask people who visited him, how much timber would he have left after 50 years?

Most thought he would have nothing left at all, whereupon Mr. Wilkinson would show them his trees and say he had 120,000 board feet. How was this possible? Because, he said, he selected very carefully the trees he would fell in order to maximise the growth of others; and because quite simply, trees grow. The result of what Mr. Wilkinson called his "ecological forestry" was that he and his family prospered and his trees grew greatly in girth, height and value. In short, it was truly sustainable forestry, and Mr. Wilkinson - now in his 90s - was ecologically wealthy.



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Far more sophisticated calculations of "natural capital" and "ecological wealth" are being undertaken around the world, but they all, roughly, point in the same direction as Mr. Wilkinson. Academics, environmentalists, and international bodies, such as the United Nations Environment Programme (UNEP), are accumulating an overwhelming body of evidence that makes the economic case for conservation over short-term exploitation. 

Evidence of the real cost of environmental destruction is building. In the past few weeks, the European Union has said air pollution in Europe will cost up to \$700 billion a year within 15 years if nothing is done; the World Bank has calculated that almost a fifth of the burden of all illnesses in developing countries is due to environmental factors, which are in turn preventing people getting out of poverty; and it looks likely that Hurricane Katrina wreaked so much damage on Louisiana because the natural defences of the Mississippi had been progressively eroded by development and neglect. Instead of bearing the brunt of the storm surge, the levees of New Orleans were breached, at a cost of about \$200 billion – not far off what the war in Iraq has cost the United States.

This week, many of the world's leading environmental economists have been meeting in London. Their message is that unless "natural capital" is factored into national accounts, poverty in both rich and poor countries will increase. Countries that fell their old forests for quick bucks, that dynamite their reefs for fish, or that contaminate their waterways with farm and factory run-off may seem to be getting richer, says the UNEP, when, in reality, they are

sliding into poverty because they are plundering their "natural capital" – a key pillar of medium – and long-term wealth.

"Traditional economic measures such as GDP are shortchanging current and future generations," says Partha Dasgupta, a professor of economics at Cambridge University. "GDP does inform us of something – namely, the scale of economic activity. Unfortunately, in recent years it has been converted into a welfare index. My complaint isn't that GDP is meaningless, but that it has been put to wrong use." Prof. Dasgupta has studied the economies of Bangladesh, India, Nepal, and Pakistan and on the basis of their carbon emissions, timber and oil and natural gas, has found that every one of them has declined in wealth per capita since 1970. It is too early to tell with China, he says, but Africa, as a continent, has declined by 4.6 per cent. "They are crude, incomplete figures," he says, but he adds: "Poverty will only be made history when nature enters economic calculations in the same way that buildings, machines and roads do."

The new economics is turning up some extraordinary evidence. According to studies in the Peruvian Amazon by researchers at Johns Hopkins University in the U.S., for every 1 per cent increase in deforestation, there has been an eight per cent increase in the numbers of a particular malaria-carrying mosquito, which thrives in open, sunlit ponds and that runs wild once 30 per cent to 40 per cent of forest has been destroyed. Cutting trees down may have generated money, but so far no one has counted the cost of treating malaria or the value the forest has for stabilising the climate, acting as a sink for air pollution, preventing floods, providing wild foods or medicines – all services provided, traditionally, for free. The new economic argument is that if these "services" are not valued properly, they are liable to be abused.

New work also suggests that deforestation in Indonesia in the late 1990s cost about \$9 billion; and the annual tourism value of coral reefs in Hawaii can be anything between \$1 million and \$10 million a year. Studies from Algeria, Italy, Portugal, Syria, and Tunisia suggest that intact forests are worth far more than felled ones. Meanwhile, an intact wetland in Canada has been found to be worth \$6,000 a hectare, compared with \$2,000 a hectare for one cleared for intensive agriculture. Intact tropical mangroves – coastal ecosystems that are nurseries for fish, natural pollution filters, and coastal defences – are found to be worth around \$1,000 a hectare. Cleared for shrimp farms, the value falls to around \$200 a hectare.

In the past, says Klaus Toepfer, director of the UNEP based in Nairobi, "the environment has been viewed as something like a Hermes silk tie or a Gucci handbag – a luxury only affordable when all other issues have been resolved. Investments in the restoration of ecosystems are not only cost effective but have a high rate of return. We are all facing poverty."

Restoration rewards

Mr. Toepfer, a former German Environment Minister, says it is worth investing money in ecological restoration. In Tanzania, more than 800 villages have planted more than 350,000 hectares of woodland in an area that was severely deforested. The Government and Eco-capital the World Conservation Union has just calculated that the cash benefits of the restoration are worth about \$14 a person each month. The villagers now get thatch, wild foods, medicinal plants, timber, and fuel wood.

The benefits of conserving nature are not just seen in poor countries. When the New York City Council had to supply safer drinking water for its 9 million customers, it looked at spending \$6 billion on water

filtration. By managing riverbanks, forests, agriculture, and other ecosystems to reduce pollution, it had to spend \$1 billion. According to the World Resources Institute in Washington, every dollar invested in combating land degradation and desertification can generate \$3 in economic benefit in developing countries, whereas every dollar spent on delivering clean water and sanitation is likely to return \$14.

Mr. Toepfer says: "There are encouraging examples of ecosystems being managed for the long term to create wealth for poor communities, but there is a huge job to do. Natural resources can be properly used to greatly reduce poverty. The time has come to reverse the course of worsening diseases, depleted natural resources, political instability, inequality, and the social corrosion of angry generations that have no means to rise out of poverty." ▶