

The Economics of Ecosystem and Biodiversity

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Summary

The overarching message of TEEB is that the loss of biodiversity or the degradation of ecosystems have direct economic repercussions that we systematically underestimate. The cost of these losses is felt on the ground but can go unnoticed at national and international level. Most services provided by the natural environment to human society are indeed not captured by conventional economic indicators. They are not part of national accounts either. And you cannot manage what you do not measure.

Nature is missing from decisions, policies and markets. Investing in a functioning environment is often considered a luxury. This is astonishing given the role nature plays for jobs and mainstream economic sectors as well as its contribution to future economic development. The continuous availability of vital ecosystem services is often taken for granted, erroneously. The result is that abrupt collapses of whole ecosystems are the rule rather than the exception. They require costly, effort-intensive restorations – provided that a recovery is possible at all. If that is the case, maintaining healthy ecosystems is often the less expensive option.

TEEB suggests a shift in focus. Many decisions are currently made without knowledge of their environmental consequences, while other needs and objectives may seem more pressing and desirable. As an example, rural development often promotes high market-value crops and land uses, to the detriment of equally important, but less evident, regulating services. Water retention is thus often sacrificed to intensive farming and logging, even if that causes soil erosion and reduced fertility in the near future. By integrating state-of-the-art ecological and economic knowledge into decisions, we can avoid all that.

Ecological knowledge, exploring the links between species in a certain environment, can help us achieve a better picture of the consequences a decision can have on the environment. Furthermore, by adopting state-of-the-art valuation and decision-support techniques, we can assess the desirability of different options and translate ecological knowledge into values. In certain situations, it is even possible to provide monetary figures and compare the cost and benefits of different alternatives. TEEB has collected considerable evidence that, by looking at choices from this point of view, the most sustainable, cost-effective solutions to meet human needs are those offered by nature.

- In the Shinyanga Region (central Tanzania), a government initiative revived the traditional practices of soil conservation. It restored the local heavily deteriorated forests through a traditional system called *Ngitilior* “fodder reserve”. The forests brought back multiple benefits: they reduced the time needed to collect essential goods (fuelwood, pole, thatch, water, fodder); they provided fodder and different tree products; and they contributed to carbon sequestration worth millions on the carbon market. This system helped protect the environment *and* improve the livelihoods of the local communities.

- In the Sourou Valley wetland (Burkina Faso) development efforts focussed on agriculture. Recently, a valuation of the wetland’s benefits revealed that more than 80% of its value related to a variety of forest products, fodder, and fisheries, whereas agriculture accounted for 3% only. These figures now help reorient management strategies.

- In Aceh (Sumatra, Indonesia), timber resources came under increased pressure due to the reconstruction after the 2004 tsunami. A study was carried out to compare the impact of different forest use scenarios on several ecosystem services. Conservation and selective use scenarios were found to provide the highest benefits, mostly for the rural population. Deforestation, instead, would generate *less benefits in total*, concentrated in the industrial sector, and *high costs to the rural population and to the local governments*. Eventually, it took a change of government to translate these findings into actual policies: a moratorium on all logging activities was declared and the Green Economic Development and Investment Strategy for Aceh ("Aceh Green") was commissioned.

Considering ecosystem services in policy making can save on future municipal costs, boost local economies, enhance quality of life and secure livelihoods. This approach also helps tackle poverty by revealing the distribution of scarce and essential resources and services. This is of utmost importance for Middle East and North African (MENA) countries, where poverty eradication will still be on the agenda for many years to come.

Taking action against poverty, it is crucial for MENA countries to achieve a clear understanding of both nature's present and potential contribution to the livelihood of the least advantaged portions of their populations. Pathways of economic development that promise employment and prosperity at the cost of soil erosion, forest fires, draught and biodiversity loss are likely to exacerbate poverty and cost (to many) far more than what they bring (to few) – nations must not misestimate what development produces *in the net sum*.

Key Recommendations

Moving towards a better consideration of nature's contribution to our economies will imply many changes in the way MENA decision-makers in policy and in the economy approach their tasks:

- *Assessing ecosystem services and considering their value in policy choices.* Decisions made without knowledge of their environmental consequences are risky and can prove costly far beyond the benefits they are supposed to bring.
- *Reforming environmentally harmful subsidies in order to reward environmental stewardship.* Subsidies that are inefficient, outdated or harmful make little sense during a time of economic and ecological crisis. Instead, well crafted schemes and instruments can make environmentally beneficial practices economically viable.
- *Investing in ecological infrastructure.* This can provide cost-effective opportunities to meet policy objectives, e.g. increased resilience to climate change, reduced risk from natural hazards, improved food and water security as a contribution to poverty alleviation.

Finally, these policy solutions need tailoring to be socially equitable. Engaging in a dialogue with affected parties is a crucial starting point for the abovementioned strategies to be effective and to make nature's contribution to our economies evident.

Keywords

Ecosystems and Biodiversity; Economics; Well-Being; Poverty; Instruments and Policies.