

Achievements and future challenges for environment and development economics

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Addressing the challenge of ecological limits to economic growth and protection of the commons has been the central focus of scholarly research and policy debate in the world of EDE over the past two decades. Notable progress has been realized on a number of fronts but big challenges remain. Advances in the theory and practice of sustainable development, moving away from income measures such as GDP and promoting inclusive wealth as the right indicator of change in wellbeing and sustainability for the evaluation of economic performance and associated progress with the development and use of natural resources and environmental accounts represent one major example. Another important example is the ecosystem services (ES) approach of the millennium ecosystem assessment that has now become the main framework widely adopted as the basis for the characterization, valuation and evaluation of trade-offs among the multiple services of ecosystems impacted by the pursuit of economic growth. Together with progress in the science and economics of addressing climate change, these advances moved the EDE focus from micro- to macro-environmental economics management issues. Major manifestations of progress on these fronts include: the emphasis on the green economy for 'the future we want' at Rio+20 and the intended move beyond the millennium development goals (MDGs) to redirect future efforts of the international community towards new sustainable development goals (SDGs) and targets; global consensus and support for establishing an Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES); and efforts to better define planetary boundaries.

While the mentioned advances in EDE and related fields have led to a number of key international treaties and conventions primarily addressing protection of the global commons, parallel progress in sustainable management of the local commons still hugely lags behind. Major challenges continue, limiting progress in translating such global conventions and treaties into national and local policies, measures and regulations that are needed for effective interventions to protect the local commons where the impacts of economic activity are felt. Key challenging areas in this regard include the search for the appropriate institutional and policy models and the role of social capital in the protection and sustainable exploitation of local commons. Experiences with initiatives of scaling up and out the introduction of policy instruments such as schemes of payments for ecosystem services (PES) and rewarding the reduction of emissions from deforestation and degradation

(REDD), for instance, while showing potential, have records of limited success due to major institutional and governance barriers at local and community levels.

One key remaining challenge for EDE is advancing the science and empirical methods of valuing the intangible services of ecosystems (i.e., the regulating and supporting ES underlying ecological composition, function and processes) and generating the data that is needed for monitoring changes in human wellbeing and ecosystems health metrics for evaluation of alternative courses of action and public choices. The economics of ecosystems and biodiversity (TEEB) initiative and the establishment and coordination of several global monitoring and data collection and processing networks such as the Global Earth Observation System of Systems (GEOSS) and the Global Terrestrial Observing System (GTOS) are major steps in this direction. Another major challenge that seriously limits our ability to evaluate the nature and size of future costs and benefits of increased consumption and economic growth relates to our current knowledge gap of and hence uncertainty about likely radical shifts in functioning ecosystems (e.g., non-convexities and catastrophic events). The high uncertainty about the socio-ecological future in turn increases the complexity of how to measure and discount the wellbeing of future generations over distant time horizons. The biggest challenge of all for EDE is the persistence of high poverty and inequality in the distribution of inclusive wealth and human wellbeing in spite of the fast rates of economic growth and per capita consumption.