valuation, which may be classified as the most specific area of environmental economics, whereas the main focus in Europe was on theory and in the developing countries on applied research. After 20 years a lot of cross-fertilization has led to a broad established field that is practiced all over the world. The challenge is still enormous. Economic theory has to be rewritten in order to take account of the interactions with the natural environment, methods valuing non-marketed goods and services have to be improved, resource management especially on the global scale raises difficult issues, and data collection and applied research are still in their infancy. It is also important to become more visible in the societal debate. My advice to graduate students is to jump in there and to see it as a joy to be able to take part in this historic mission.

The field and its academic organizations such as the European Association of Environmental and Resource Economists and its North American counterpart have been very successful in the last 20 years but this may also have a drawback. One can build a career by participating in the yearly congress, publishing in the field journals and networking within this community. It creates a comfort zone for the researchers in this field. However, a lot of the research is still a simple twist of standard economics: integration with the insights of the natural sciences is far from completed. Moreover, new developments in economics only slowly trickle down into environmental economics. My advice to graduate students is to stay connected to economics in general and to open up to one of the areas in the natural sciences. Some choices are needed here, of course, because research has to go deep and cannot go deep everywhere at once.

Summarizing, my advice is this: go for it. The field is very important and challenging, but be aware of comfort zones and realize that innovation usually occurs when you cross the borders, to natural sciences and back to economics again.

What has changed in EDE research? A comment

MARIA A. CUNHA-E-SÁ

Nova School of Business and Economics, Universidade Nova de Lisboa, Campus de Campolide, P-1099-032 Lisboa, Portugal. Tel: +351-213801600. Email: mcunhasa@novasbe.pt

doi:10.1017/S1355770X14000242

Climate and global economic integration have contributed to a refocusing of research in EDE in the two last decades. The disclosure of new scientific evidence, namely after the publication of the *Stern Review* and the following debates, has definitely granted economists a central role in defining the key elements of the debate on climate change.

The global public good nature of climate change, and the fact that the greatest damages are projected to occur in today's developing countries

https://doi.org/10.1017/S1355770X14000242 Published online by Cambridge University Press

– which are also expected to be the largest emitters of GHGs in the near future (China is the world's top carbon dioxide polluter) due to GDP growth and energy consumption – has made clear that the problem is global and not only local. Therefore, the state of environmental quality in those countries and their expectations concerning future economic development pose important challenges when designing successful worldwide mitigation and/or adaptation policies.

Climate change and global economic integration have also contributed to an increasing awareness that local/regional environmental quality often feeds back to global environmental quality. This fact has consequences for the perspective under which researchers address the role ecosystems play in supporting and sustaining human welfare, and the challenges raised by conservation versus sustainable development. Since the economic value of ecosystems derives from the value of the goods and services they provide, conservation priorities are motivated by the costs imposed by the degradation of those services. Hence, conservation at the local and/or regional scales may also pay off for local communities, as they are primarily affected by the reduced environmental quality. Since many of the most important life support ecosystems are located in developing countries which are home to much of the world's poor, conservation may also contribute to alleviating poverty. Recently, systems of payments for ecosystem services (PES) have been designed and implemented in developing countries, targeting poverty and environmental goals such as deforestation and land use patterns in general. Benefits may accrue not only locally but also globally.

Since the quality of the environment affects local communities' living conditions, environmental policies should not be designed without taking into account the impact on those communities and, therefore, how they react to those policies. Therefore, policy evaluation is required. As the results obtained are conditional on the underlying context, the latter cannot be ignored. Moreover, besides the typical market failures from public goods, developing countries are characterized by other market failures associated with market imperfections, such as ill-defined property rights and lack of enforcement, missing risk markets, labor market rigidities, rent seeking and imperfect information.

This naturally raises the following question: to what extent does the context that characterizes developing countries affect policy evaluation results? For instance, many recent studies show that the estimated WTP for environmental quality improvements is quite low by affected households, despite the rather poor environmental quality observed in developing countries. Hence, a promising research area aims at better understanding of the underlying reasons that may explain those results, which may be due to the individual preferences, attitudes and choices, market failures or poor institutional design that characterize developing countries.[5] Given

[5] Interestingly enough, this research may also be relevant to developed countries, namely to those that have recently been severely hit by the economic recession following the sovereign debt crisis. The role of the institutional environment for the effectiveness of policy and market functioning is also at stake in those countries.

https://doi.org/10.1017/S1355770X14000242 Published online by Cambridge University Press

the potential interaction of the different market failures mentioned above, it represents a challenge to applied work based on classic elicitation methods. This is an area in which environmental economics may learn from development economics' experience. Recently, in development economics, applied field research studies have been making use of experimental and non-experimental econometric methods for designing and conducting policy impact evaluation, in order to identify those that truly benefit from the policies. Although these techniques are already applied at that interface, this is a promising area to be developed. How all these efforts can be translated into better living conditions for those populations is also a relevant research question.

Finally, evidence is also found that spatial patterns of costs and benefits are very important to minimize conservation–development tradeoffs at different scales, from local to regional or national, so the availability of reliable data at the study site becomes very relevant, which often is not the case in developing countries. However, the availability of satellite imagery to measure outcomes including pollution, deforestation and economic activity allows researchers to overcome well-known problems of data availability and credibility in developing countries. Thus, these new techniques open new research opportunities. This is not without costs, however, since it becomes more difficult to obtain general results, also increasing complexity. Given the interdisciplinary nature of these issues, further collaboration efforts between economists and other natural scientists are essential for informing and improving policy and management decisions.



Deforestation in the Amazon rainforest
Source: http://www.shutterstock.com, 22364917.

https://doi.org/10.1017/S1355770X14000242 Published online by Cambridge University Press