Understanding and managing the unequal consequences of environment pressures and policies

by
Shardul Agrawala,
Head of Environment and Economy Integration Division,
OECD Environment Directorate, and
Rob Dellink,
Principal Administrator, Environment and Economy Integration Division, OECD Environment Directorate

The consequences of the degradation of environmental quality, as well as the consequences of environmental policies, are typically unevenly distributed. In general, poorer countries and lower income households are more severely affected by environmental degradation and at the same time have less capacity to adapt.

Outdoor air pollution kills more than 3.5 million people a year globally (WHO, 2012). Poor health caused by air pollution is especially problematic for children and the elderly in major emerging economies. Between 2005 and 2010, the number of premature deaths in China and India increased by 5% and 10%, respectively. Road transport is a significant source of air pollutant emissions, and rapid growth in traffic has outpaced the adoption of tighter regulations, leading to increased vulnerability of the urban population. The welfare costs of road transport alone are projected to amount to around USD 1.7 trillion in OECD countries, USD 1.4 trillion in China and USD 0.5 trillion in India (OECD, 2014).

Despite the role of international trade in smoothing the economic costs of environmental feedbacks across regions, OECD estimates suggest that climate change impacts will be substantially more severe in most countries in Africa and Asia than in most of Europe and America. Despite large regional differences, market consequences from climate change are projected to be negative in almost all regions, and the economic consequences of greenhouse gas emissions are unavoidable and enduring for a century or more. Changes in crop yields and in labour productivity are projected to affect the economy most strongly, each amounting to several percent of GDP loss in the most vulnerable regions. Moreover, there are significant non-market impacts as well as risks of crossing essential tipping points and moving towards a climate system with the potential for very severe impacts on regional economies over the longer term.

In OECD countries the sectoral shifts in employment, resulting from global climate mitigation policies, are substantially larger than the effect on overall employment. Moreover, as skill requirements differ across sectors, skills mismatches could appear thereby significantly increasing the transition costs associated with these

policies, and increasing inequality between skilled and unskilled workers.

Mitigation and adaptation policies can reduce the negative impacts of climate change globally, yet the costs of these policies will not be borne by all sectors and regions proportionally to their expected benefits, that is they are unequally distributed. These differential impacts pose key political economy challenges to policy reform.

Distributional aspects are often used as an argument against implementing or reforming environmental policies. A key economic question then becomes whether policy reforms can be designed in such a way that they are not regressive. For instance, OECD work finds large differences in regressiveness of different energy taxes between energy carriers and between regions in 21 OECD countries.

The case of Indonesia is particularly illustrative: the country is facing severe environmental challenges, not least from climate change and air pollution, and until very recently had significant subsidies for fossil fuel consumption. As part of the New Approaches to Economic Challenges (NAEC) initiative, an innovative analytical framework was developed to simultaneously assess the macroeconomic, environmental and distributional consequences of energy subsidy reforms in Indonesia. The study found that if Indonesia were to remove its fossil fuel and electricity consumption subsidies, it could record real GDP gains of around half a percent in 2020, while also substantially reducing a range of energy-related emissions. The simulations showed that replacing the fuel subsidies with cash transfers, and to a lesser extent food subsidies, can make reform more attractive for poorer households and reduce poverty. Food subsidies tend to create other inefficiencies, however. Mechanisms that compensate households through payments proportional to labour income were, on the contrary, found to be more beneficial to middle- and higher-income households and increase poverty. This is because households with informal labour earnings, which are not eligible for these payments, are more represented among the poor.

Indonesia has reformed its subsidies to fossil fuel consumption, providing real world evidence of what policy reform can achieve. The conclusion from OECD work – confirmed in practice by the way Indonesia went about its reforms – is that the design of any redistribution scheme will be crucial in determining the overall distributional performance of the reform. Well-designed policies with adequate accompanying measures can ensure a triple win on economic efficiency, environmental effectiveness and reduced inequality. The right policy mix is very sensitive to local circumstances, but the OECD's analysis confirms that inequality concerns do not have to hamper environmental policy.

Both environmental pressures and environmental policies clearly affect different countries and different groups within them unequally. These differences are essential to take into account in the design of more targeted and more equitable policies, but in order to do so measurement and quantification of these differential effects is an important first step. The tools and frameworks developed in this area, particularly as part of the NAEC exercise, are an important methodological contribution in this regard.

Useful links

Original article: Agrawala S. and R. Dellink (4 March 2016), "Understanding and Managing the Unequal Consequences of Environmental Pressures and Policies", OECD Insights blog, *http://wp.me/p2v6oD-2pQ*.

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