The economics of climate change

Two major events last week bear directly on global debates about climate change and how to address it. The fi rst was the release of a report from the United Nations Intergovernmental Panel on Climate Change (IPCC), which sets out precisely what must be done to achieve the objectives of the 2015 Paris climate agreement. The second was the announcement that Yale University economist William Nordhaus will share this year's Nobel Prize in economics for his work "integrating climate change into longrun macroeconomic analysis." The fi rst event should serve as a wakeup call for the international community. The IPCC report appeals to governments to take urgent action to reduce greenhouse-gas emissions signifi cantly within the next decade. It warns that if average global temperatures are allowed to exceed 1.5C – or, at worst, 2C – above pre-industrial levels, the consequences could be catastrophic, and they will be felt as soon as 2040. Worse, the report shows that the Nationally Determined Contributions set voluntarily by signatories to the Paris accord are vastly insuffi cient. Even if they are met, the increase in average global temperature will surpass 3C by 2100, and will continue to rise still further after that. Clearly, when policymakers revise their countries' NDCs, they must raise them signifi cantly.

But substantive action needs to come well before 2030. Otherwise, the world will suff er irreversible damage in the form of rising sea levels, loss of biodiversity, and deterioration of both land and marine ecosystems, including the potential extinction of the world's coral reefs. These developments will have far-reaching implications for water supplies and the health and living standards of the global population. And, needless to say, the greater the warming, the more severe these eff ects will be.

The selection of Nordhaus for the Nobel Prize is a more welcome development. Even so, it is worth noting that his approach to addressing climate change tends to be rather conservative, which is to say gradualist. Nordhaus relies on traditional economic analysis, which "discounts" the present value of future consumption by the return on capital, or interest rates. In other words, $100 a half-century from now is worth $15, $10, or even less today, depending on the assumed interest rate. But, because the costs of any initiative to combat climate change must be borne in the present, they are necessarily higher at present values. The implication is that they must be incurred slowly. The problem with this approach is that it is inequitable toward future generations, which, of course, have no say in decisions that we make today. By defi nition, their welfare is being discounted. Yet were we to take intergenerational equity seriously, the leading factor to consider is that future generations will have better technologies than what we have today. Therefore, the appropriate social rate of discount should be equal to the rate of technological change, which is much lower than market interest rates. One could also argue that the traditional economic analysis is even inequitable toward individuals, in addition to future generations. Just ask an older person with an inadequate (or nonexistent) pension whether his present welfare is worth less than his past consumption. A much better approach has been developed by Nicholas Stern of the London School of Economics. In his now-

famous “Review on the Economics of Climate Change,” Stern was calling for accelerated action to combat climate change as early as 2006. In his view, the costs of dealing with runaway global warming would far exceed the expense of addressing it early. Another alternative has been developed by Martin Weitzman of Harvard University.

Weitzman relies on analytical tools similar to those used by Nordhaus, but his work also accounts for the catastrophic risks associated with climate change. As such, his approach is also similar to that of the IPCC and the UN Environment Programme (UNEP), both of which have concluded that global warming above a certain level will have truly disastrous eff ects. To my mind, the Nobel Committee should have recognised not just Nordhaus but also some of these other economists of climate change, particularly Stern. The fact is that humanity cannot aff ord to act gradually on this issue. The Stern Review, the latest IPCC report, and the UNEP have all concluded that current eff orts to reduce emissions must be stepped up substantially. That means accelerating the global transition to clean-energy technologies (including in transportation), improving the effi ciency of energy production/consumption, reversing deforestation, improving land use, and promoting technological innovation to facilitate all of these processes. The message from the IPCC report is clear. All countries must raise their emissions-reduction targets and strengthen their commitments under the Paris agreement. And the country that is historically responsible for the largest share of greenhouse-gas emissions – the United States – must return to the agreement and show leadership on this issue once again. – Project Syndicate O José Antonio Ocampo is a board member of Banco de la República, Colombia’s central bank, professor at Columbia University, and Chair of the UN Economic and Social Council’s Committee for Development Policy.