

RFF Establishes Major Research Initiative on Adaptation to Climate Change

The development of public policy to respond to climate change by mitigation—largely by reducing emissions of greenhouse gases—has been underway since the 1980s. The building blocks of mitigation policy are drawn from a 40-year legacy of research in environmental and resource economics that has led to the establishment of tried-and-true regulatory concepts, including emissions and performance standards, cap-and-trade permit systems, and emissions taxes.

However, even if the global community is successful in mitigating emissions to such an extent that catastrophic climate change can be avoided, the thermal inertia in the climate system itself will lead to inevitable change over the coming decades.

The recently released Fourth Assessment Report from Working Group II of the Intergovernmental Panel on Climate Change (IPCC 2007) describes the mix of impacts the United States would likely face, including a rising sea level, more moderate temperatures in the northern parts of the nation (possibly leading to longer growing seasons but also decreases in snow pack and increases in winter flooding), greater risk of drought, and more frequent wildfires and heat waves.

RFF has responded by establishing a major new research initiative on adaptation. The goal will be to supply the building blocks from which government adaptation policies can be constructed. This effort, the first in a long series of projects at RFF, will focus on the United States. The project will be led by RFF Senior Fellows Raymond Kopp, Molly Macauley, and Richard Morgenstern.

"Clearly, adaptation will be as crucial to managing climate change as mitigation," said Kopp, director of the RFF's Climate and Technology Policy Program. "To date, however, research on adaptation policy is both limited and scattershot. This work will bring a deeper and more coherent approach to the subject."

Crafting adaptation policy is complicated by both the intricacies of climate change and uncertainty about the vulnerability of natural and human-made assets to climate change and variability. In the first phase of the project, researchers will draw on available climate science as well as other natural sciences and engineering to analyze strategies and options that might enhance the ability of society to adapt. The environmental and other effects that will be studied follow the framework set forth in the IPCC report: freshwater resources; coastal and marine ecosystems; public health; agriculture; and industry, settlement, and society. Some of the questions that will be addressed include:

- How can we rank impacts and prioritize options?
- Which activities are best undertaken by the private sector and which by the government?
- Do we have all the institutions, public and private, needed to carry out these options?
- How will these options be financed?
- And for those impacts where there are no viable options, what should be done to address the distributional consequences?

In the second phase, pre-eminent social scientists will seek to answer these questions, building on the natural science assessments developed during the first phase. Findings will be discussed at a series of workshops, and col-

lected in a book to be published by RFF Press. A major dissemination conference and congressional briefings are planned.

Mapping Global Adaptation "Hotspots"

There's more adaptation work going on at RFF. In a new project funded by the MISTRA Foundation's Climate Policy Research Program, RFF Fellow Shalini Vajjhala and Research Assistant Yatziri Zepeda Medina are looking at how to set geographic priorities for building resilience to climate change. While mitigation efforts provide benefits everywhere, adaptation is an inherently local problem, where impacts and responses are likely to be highly site-specific. As a result, adaptation policy design is a spatial problem, where the locations of key populations and resources matter.

By overlaying maps of projected climate risks, including sea level rise, changes in disease vectors, and agriculture impacts, Vajjhala and Zepeda are working to create an analytic framework for evaluating multiple stressors associated with climate change and allocating international adaptation funding at the country level.

At the Bali meetings in December, the UN Framework Convention on Climate Change established an adaptation fund to be administered by the Global Environmental Facility and the World Bank, which will set global priorities for adaptation funding. However, there is still a long way to go before we have accurate forecasts of the local impacts of climate change. Vajjhala and Zepeda's study is intended to help bridge the divide between science and policy and lay the groundwork for identifying early investments that could help anticipate and avoid the worst potential outcomes even as climate forecasts improve. "In the absence of perfect foresight on where specific adaptations are likely to be most necessary and most effective," said Vajjhala, "our goal is to map out where we need to invest the greatest effort." ■

RFF Scholar Ian Parry First to Fill Kneese Chair

Senior Fellow Ian W.H. Parry is the first appointment to the Allen V. Kneese Chair in Environmental Economics at RFF, which was recently established to commemorate a long-time RFF scholar and visionary thinker. Parry, who has been at RFF since 1995, focuses on environmental regulation, transportation, tax policy, and public health issues.

The academic chair honors Allen Kneese's 40 years of pathbreaking research at the institution. Kneese, who died in 2001 at the age of 70, played a central role in developing the economic principles that have become crucial to environmental policy worldwide.

"By creating an appropriate tribute to extend the work of Allen Kneese—and pay homage to one of RFF's pioneering scholars—we will secure senior academic talent within our research staff and will recall the legacy of Allen's work for generations to come," said RFF President Phil Sharp. "Much of Parry's work over the last decade has focused on refining, broadening, and more generally applying the economic analysis of environmental policy design and instrument choice, which was pioneered by Allen Kneese and others at RFF. In particular, Parry has studied how environmental policies interact with the broader tax system, their incentives for induced technological change, and their distributional incidence across different income groups. He has applied this type of analysis to global warming and other air pollution problems as well as to policies to improve automobile fuel economy and reduce highway traffic congestion and accidents."

The Allen V. Kneese Chair in Environmental Economics will be a permanent senior research position. Contributions from Kneese's friends and colleagues, plus support from Kneese himself, provided endowment funding for the chair.

When Kneese joined RFF in 1961, economists were beginning to conclude that shortages of natural resources would not stop economic growth—and that the greater threat was the rising pollution that growth was creating. People had started "to raise the idea that you have all these waste materials coming along and maybe that's where the more important problems lie—in those quality problems rather than the quantity problems," Kneese said in a 1999 interview.

Kneese was the first to recognize and model

the relations of air, water, and other forms of pollution. Many economic historians believe he single-handedly kept alive the idea of using economic incentives to encourage environmental improvements. In 1990, he and John V. Krutilla won the first Volvo Environment Prize. The citation said that they "founded resource and environmental economics as a research discipline" and that they "lead the field in combining the sciences of economics and ecology."

The Kneese Chair is the most recent chair to be endowed at RFF since the institution's 50th anniversary in 2002. Others include the Darius Gaskins Chair and the Chauncey Starr Chair in Risk Analysis. A fourth chair, established by Thomas Klutznick to focus on urban issues, will be filled at a future date. ■



IAN W.H. PARRY

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