

2012 Lorry I. Lokey/Stanford University Fellowship – #1

Designing market-based climate policies in the face of uncertainty and fragmentation

Supervisor: Ruben Lubowski, Ph.D., Chief Natural Resource Economist, International Climate Program

Location: Washington, DC

Description:

EDF has been a pioneer in advocating the use of market-based policies, particularly emission trading, to solve environmental management problems including climate change. Cap-and-trade programs and carbon taxes are familiar topics for economic policy research. But to be politically relevant, research into the design of market-based policy instruments must take into account pervasive uncertainty, political fragmentation and decentralization, and imperfect harmonization across sectors. The goal of this project is to help fill the gap between theory and practice in the economic design of policies to address climate change.

With the failure of the United States to enact federal climate legislation and of countries to negotiate a binding international treaty, focus has shifted to a “bottom-up” approach to carbon markets that envisions the development of linked national and sub-national cap-and-trade programs in a range of countries. Cap-and-trade systems have been implemented in the European Union and New Zealand; are on track to begin in Australia and California; are being seriously considered in Japan and South Korea; and actively discussed (at least at a sectoral level) in Mexico, Brazil, and China. Front and center in these efforts are approaches to crediting reductions in greenhouse gas emissions in specific economic sectors, including but not limited to Reduced Emissions from Deforestation and Degradation (REDD) and climate-related agricultural activities. In this situation, interactions and linkages among national and sub-national policies and across sectors must be integral to the economics of climate policy. Finally, climate policy must be implemented in a deeply uncertain and ambiguous world – putting risk management at the center of policy design and evaluation.

The Lokey Fellow will play a key role in developing EDF’s analysis of the design of market-based policies to reduce greenhouse gases in the face of real-world political, institutional, and informational constraints. Examples of research areas include: the performance of allowance reserve pools, forest and agricultural-sector credits, and other “cost containment” mechanisms to reduce cost uncertainty in cap-and-trade programs; the design of insurance mechanisms and other features of sectoral and “nested” crediting programs to generate economic incentives for sector-wide emissions reductions, accounting for the risk created by a lack of coordination among firms and other actors within a sector; the implications of linkages and interactions among coexisting carbon markets and other policies across sectors or countries and the effect of alternative policy designs on the evolution and effect of these linkages; and the potential for governments to engage in direct purchases as well buying and selling options on future credits to jump-start carbon market development.

The Fellow’s work program will be developed based on his or her experience, interests, and EDF’s priorities. The Fellow will work with Dr. Ruben Lubowski and a dynamic team of economists and other experts in EDF’s International Climate Program and EDF’s Office of Economic Policy and Analysis, as well as external partners including leading academics and NGO partners, to develop economic research on market-based frameworks at global, national, and sub-national scales. The work will involve providing expertise and helping to inform policy makers and advocates. The Fellow will contribute to a variety of research outputs including peer-reviewed papers and presentations and gain experience on how economic analysis can influence policy development in different countries. The successful fellow will have a Ph.D. or significant graduate work in economics, business, or a related field.

2012 Lorry I. Lokey/Stanford University Fellowship - #2
Sustainable Consumption – Can You Get There From Walmart?

Supervisor: Michelle Harvey, Project Manager, Corporate Partnerships

Location: Bentonville, AR

Description:

The EDF Corporate Partnerships Program (CPP) began partnering with Walmart on sustainability in 2005; the CPP retail team opened an office in Northwest Arkansas in 2007. Our vision is to create with our partners a consumer model that sustains earth's systems critical to life.

The retail team's primary approach has been to leverage Walmart's scale and clout with suppliers to to change the way everyday products are produced, sold, used and disposed of, reducing the environmental footprint of each product throughout its life-cycle. Thus far, we have capitalized on the cost savings, risk reductions and reputational benefits that accompany many environmentally-preferable business practices. With EDF staff and interns on-site, we've explored the use of life-cycle analysis (LCA) and transparency in identifying and prioritizing the most significant environmental and social impacts associated with food and household products and their relevant supply chains. We've led the creation of transparency tools and investigated manufacturing processes for resource waste. Prioritized "hot spots" become targets for remediation strategies and innovations resulting in environmental and social improvements. Through this work, collaboration with other NGOs and organizations such as The Sustainability Consortium, and a focus on suppliers and the products they make, we're becoming very adept at improving products.

The question is whether or not increasing consumer product sustainability will – or even can – lead us to sustainable consumption. Are we driving real change in the world, or merely treating symptoms? Will people buy more if they think the impacts of their purchases are lighter on the planet? Is having everyone buy less really the only path to the future, or are there alternatives, perhaps based in closed loops and maximal material efficiency and reuse?

The goal for this Lokey project is to have someone well grounded in environmental issues, environmental metrics, and global supply chains step back and examine the issue the retail team has side-stepped to date – how we can best address society's preoccupation with the acquisition of consumer goods. We need someone to synthesize the current thinking on sustainable consumption, identify and articulate the system changes that would be required to achieve a truly sustainable consumption model, and then map out those component strategies that can be initiated or implemented through retail supply chains and associated infrastructure.

The fellow will work with Michelle Harvey and members from the EDF CPP retail team to develop a ranked list of sustainable consumption action strategies based on environmental and social ROI. The fellow will have access to subject matter experts within and external to EDF, including scientists, academics, and NGO and private sector representatives. The successful fellow will have a Master's degree, Ph.D., or significant graduate work in environment and business, economics, or a related field.

2012 Lorry I. Lokey/Stanford University Fellowship – #3
Developing an On-Bill Repayment Program for California

Supervisor: Brad Copithorne, Energy and Financial Policy Specialist

Location: San Francisco, CA

Description:

On-bill repayment (OBR) programs allow customers to repay third-party loans for energy efficiency and renewable energy investments through their utility bills. During the past decade, various utilities have successfully piloted more than a dozen on-bill finance programs. These programs have used utility, ratepayer, public or mission-driven capital which has greatly limited scalability. Based on extensive consultation with key stakeholders, including banks, the three California investor-owned utilities, project developers and others, Environmental Defense Fund (EDF) believes OBR can be successfully launched statewide in California using entirely private capital, and provide building owners with low-cost funding for energy efficiency and renewable projects. If designed properly, this structure will be useful for a wide range of projects across single- and multi-family residential and commercial markets.

EDF expects legislation to be passed in September 2011 that will direct the California PUC to establish financing programs for energy efficiency projects including OBR. Once fully established, EDF believes that an OBR program could generate \$2.7 billion of annual investment in residential projects, generate 20,000 jobs and, after 5 years, reduce annual CO2 emissions by 7 million tons.

The Lokey fellow will work closely with our network of banks, utilities, contractors, building owners, consumer advocates and other stakeholders to develop a program that will deliver low-cost financing to a broad range of projects. He/she will document lessons learned from utility on-bill financing programs, while incorporating feedback from stakeholders positioned to be third party lenders in an OBR construct. Another key component of this effort will be developing a methodology to estimate cost savings for projects and strategies to protect consumers, such as impartial, government-regulated verification. This portion of the project will leverage EDF's work on measurement and verification for commercial buildings. Other components will include developing a favorable accounting treatment for commercial real estate and working with banks and utilities to analyze potential credit losses based on historical utility bill defaults.

If successful in California, the program will create jobs and reduce emissions at no cost or risk to ratepayers or taxpayers. We would then use EDF's unique geographical reach with offices throughout the U.S. to export the model to a broad range of states and possibly internationally. Implementation strategy will vary by jurisdiction to take into account each state's political, regulatory and business practices.

The successful applicant will have an educational background in Atmosphere/Energy, Earth Sciences, GSB or other related field. MS/MBA preferred; undergraduate degree with relevant work experience, particularly in financial services, will be considered. Applicants should be self motivated, flexible, have strong interpersonal skills and a good sense of humor.

2012 Lorry I. Lokey/Stanford University Fellowship – #4
Creating Sustainability in Recreational Fisheries

Supervisors: Douglas N. Rader, Ph.D. and Jack Sterne, Oceans Program

Location: Raleigh, NC

Description:

EDF's Oceans Program is known for its commitment to working with fishermen to develop and implement fisheries management programs that work both for marine and coastal ecosystems and coastal communities, with special emphasis on the suite of tools known as "catch shares." In catch shares, proportional allocations of biologically-based catch limits are made to individuals or groups, with greater flexibility in day-to-day management, but also with higher conservation expectations and performance than traditional approaches.

Catch shares is rapidly growing as the tool of choice for U.S. domestic commercial fisheries, and in other places around the world. Now, high-performance approaches are needed to solve recreational fishing problems, which are increasingly important in many regions of the U.S. and elsewhere, dominant in mixed-use fisheries in the Southeast, and also of growing political importance. Under current approaches, for-hire and private angler management programs routinely fail both in keeping track of recreational fishing mortality, and in hitting conservation targets. The consequences for recreational fishermen include shorter seasons, larger minimum sizes and smaller bag limits for many species, and unacceptable waste when fish must be discarded. In the past few years, conservation-minded recreational fishermen around the world have begun stepping forward to help develop approaches that work better, both for fishermen and fish, including recent advances to minimize unintended mortality of recreationally caught fish.

The goal of this Lokey project is to work with conservation-minded recreational fishermen and fishing groups to learn the lessons from that recent experience, by evaluating successful programs to understand what works and what doesn't. Increasingly, high-technology applications are breaking new ground in this area, and we expect such tools to figure prominently in the future of recreational fishing. The prospective fellow will work with fishermen to assemble a catalog of the most effective recreational fishing management programs, the best recreational monitoring systems, and the best recreational fishing practices, which can then be used to create pilot programs that work, and to improve the overall management of recreational fisheries.

EDF has identified and begun to work with an array of progressive recreational fishing groups on recreational pilot programs. We expect to collaborate with these groups and with academic scientists whom we would tap to help evaluate success criteria and identify successful programs, and to serve as a review board for these results. Once completed, this material will feed into the EDF Catch Share Design Center, and be widely available to fishermen and managers around the world.

The fellow will work with Chief Oceans Scientist, Dr. Doug Rader, and Director of Strategic Initiatives, Jack Sterne, as well as other Oceans Program staff, to complete this work. The successful fellow will have a Master's degree, Ph.D., or significant graduate work in environmental science, business, economics, or a related field, and have a passion for fishing.

2012 Lorry I. Lokey/Stanford University Fellowship - #5

Marine Reserves Revisited: Spatial Management in the Age of Catch Shares

Supervisor: Jake Kritzer, Senior Scientist, Oceans

Location: Boston, MA

Description:

The EDF Oceans Program has worked with fishermen, fishery managers and other stakeholders to implement catch share systems in some of our nation's most important, but also most mismanaged, marine fisheries. Our first significant catch share initiative transitioned the Gulf of Mexico red snapper fishery to an individual transferable quota system. That system has since been expanded to include other commercially important reef fish species in the Gulf, and has allowed this once depleted fishery to turn a corner toward sustainability and profitability. Subsequently, we helped implement catch share systems in the multispecies groundfish fisheries on both the Pacific coast and off New England, which had also been severely depleted under traditional management measures but are already showing promising signs of improvement.

When the Pacific and New England groundfish fisheries were managed primarily by input controls, stock assessments regularly showed that management was failing to meet fishing mortality targets, and consequently that overfishing was rampant. In order to better control fishing mortality, managers on both coasts created a series of closed areas as a buffer against the ineffectiveness of input controls. However, an important benefit of catch share management is the potential to strip away layers of complex and inefficient input controls, and fishermen have been calling for spatial restrictions to be lifted, or at least relaxed.

In both fisheries, it is too early to simply eliminate closed areas, particularly given that the catch share systems are new and still in need of refinements, and that no stock assessments have yet been conducted to confirm that fishing mortality is being managed more effectively. Still, there are multiple indicators showing that catch shares have already improved management, and closed areas on both coasts have been in place long enough that an evaluation of their effectiveness is warranted. The transition to catch shares provides further motivation for that evaluation, and importantly opens new possibilities for use of spatial management tools.

Although the original goal of closed areas in both groundfish fisheries was to rein in fishing mortality, these reserves have likely had other benefits that are worth preserving and enhancing, such as protection and restoration of habitat, biodiversity and age structure. Catch shares have afforded us an opportunity to work more purposefully toward these goals, and to do so in a way that improves fishing opportunities for fishermen at the same time. Members of the EDF Oceans team in both the Pacific and New England regions are working together and with fishermen, fishery managers, scientists, NGO partners, and other stakeholders to lead an integrated evaluation of existing closed areas and development of new network designs in both fisheries.

We seek a Lokey Fellow to contribute to this exciting initiative. The project calls for a wide range of skills, and we are interested in candidates with expertise in science, policy, economics, law or other disciplines needed to both evaluate and design spatial management systems. The most important attributes are a deep interest in marine conservation and fisheries management, creative and innovative thinking, and willingness to build partnerships and develop new skills needed for the project to succeed. An advanced degree is preferred.