



EFMD

EFMD

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Cover photo: Researchers and staff at the Efd Annual Meeting 2015, Shanghai, China.

Photo credits: Johan Wingborg: page 3. Daniela Linares: pages 9, 18. Trees for the Future: page 10 (right). K. Trautman: page 11 (left). Johane Dikgang: page 11 (right). Millennium Promise: page 12. Daniela Linares and Alessandra Baltodano: pages 13, 19 (left), 28-34, 36-37, 39 and 47 (middle left, middle right, right). Gunnar Köhlin: pages 14, 15. Susanna Olai: pages 16, 17. Sustainable Sanitation Alliance: page 20 (bottom). Patrick Imbert, Collège de France: page 21 (top). Thomas Sterner: page 22. Yonas Alem: page 25 (top right). Salvatory Macha: page 27. Karin Jonson: page 40.

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EfD research is addressing most of the Sustainable Development Goals. Read more on page 7.



Director's view

2015 was an important transitional year for EfD. During the year, our main donor Sida, the Swedish International Development Cooperation Agency, appraised EfD and decided not only to continue its support but also to increase it by supporting an extension of our network to another five centers during the coming five-year period. The new agreement with Sida also includes important collaborative programs such as the Ecosystem Services Accounting for Development program and the Sustainable Energy Transitions Initiative involving all EfD centers. These programs will further increase the strong interaction among EfD centers.

2015 was also an important year for global environmental action, with the UN decisions on Sustainable Development Goals (SDGs) and all the national commitments made in Paris to combat

climate change. As you will see in this report, this will also have repercussions for EfD's work. The EfD center in Ethiopia is leading the way by developing an ambitious plan for carrying out real-time impact evaluations of the implementation of the Climate-Resilient Green Economy strategy of Ethiopia. In February 2016, researchers from all EfD centers gathered in Addis Ababa for the launch of this program and also shared their own plans for policy research to address the implementation of SDGs and national climate actions in their respective countries. As you will see in this report, EfD research is already addressing most of the SDGs, and much more will happen in the coming years.



GUNNAR KÖHLIN
EFD DIRECTOR

Photo: Johan Wingborg

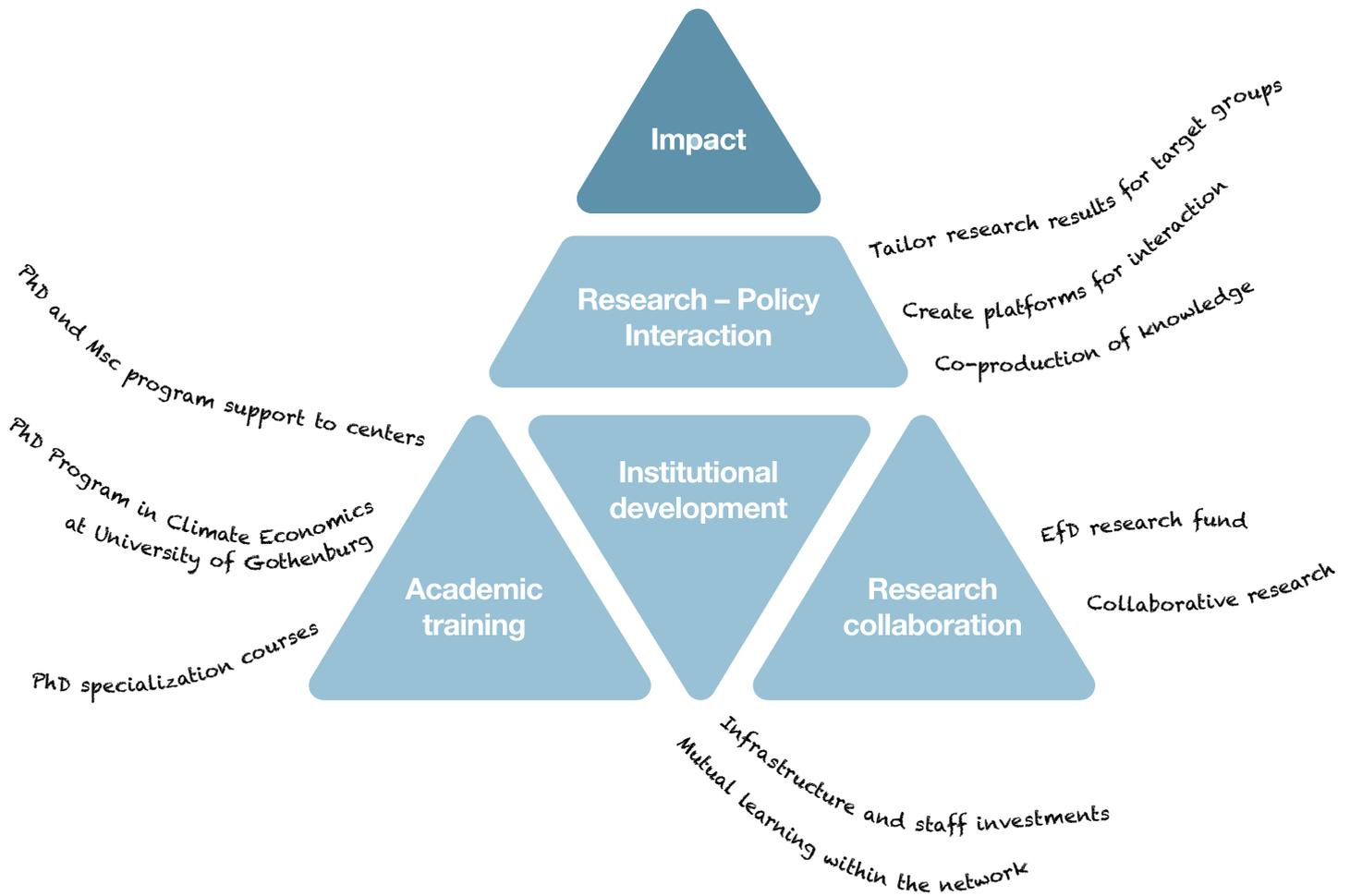
EfD – a global network of environmental economists



The Environment for Development Initiative (EfD) is a capacity building program in environmental economics focusing on research, policy interaction, and academic training. The overall objective of EfD is to support poverty alleviation and sustainable development by building environmental economics capacity in policy making processes.

EfD was established in 2007 by the Environmental Economics Unit, University of Gothenburg, Sweden. The EfD network now consists of nine full centers hosted by universities or academic institutions in Ethiopia, Kenya, Tanzania, South Africa, Central America, Chile, China, the USA and Sweden. Our most recent centers, set to become EfD members during 2016, are situated in India, Vietnam and Colombia.

The EfD impact model



Gaps and solutions

EfD program design builds on the premise that there are four important gaps that prevent research from permeating into policy processes in the developing world. Our program responds to these gaps with mutually reinforcing program components for policy impact.

Capacity gap

There are too few environmental economists in developing countries to carry out the necessary analysis of causes of and solutions to environmental problems.

Analytical gap

Too little analysis is carried out on environmental management for sustainable inclusive growth.

Communications and policy interaction gap

Even the knowledge that is created seldom makes it into the relevant policy processes.

Institutional gap

There is often no platform where researchers can be matched with resources to meet policy challenges. Similarly, academic institutions in developing countries lack the resources and infrastructure needed to support knowledge based policies.



Our research

EfD-CA Research Fellow Bárbara Viguera during an Adaptation to Climate Change in Agriculture Workshop, where farmers identify and rank climate risks in their community, Bijagual de Aserri, Costa Rica.

Applied, policy-relevant research is a core activity for the EfD Initiative. Research is a critical input in a long-term strategy to reduce environmental degradation, eradicate poverty and ensure sustainable use of natural resources. A major challenge in developing countries is, however, the lack of comprehensive research on environmental resource management and poverty alleviation to inform national strategic plans and policies. Policy makers, farmers, donors, and other stakeholders need research-based information, not only to design policies but also to evaluate their effectiveness in reaching their objectives.

EfD has created a network of domestic and international researchers who engage in high quality, policy-relevant applied research. This is achieved through the EfD research cycle, which begins with identifying relevant research problems through interaction with various stakeholders in the respective countries, evaluating research proposals by different subject specialists and the EfD research

committee, and publishing the research results in peer-reviewed international journals. EfD-funded research concludes with communicating the research findings through research and policy briefs to relevant stakeholders and policy makers who will ultimately make the decision to formulate and implement policies.

Carlos Chávez conducted field experiments with artisanal fishers, Chile.



Researchers from EfD Tanzania, the USA and Kenya during a workshop held in Arusha, Tanzania, to discuss how to strengthen collaborative research.



Sustainable development goals and EfD research themes

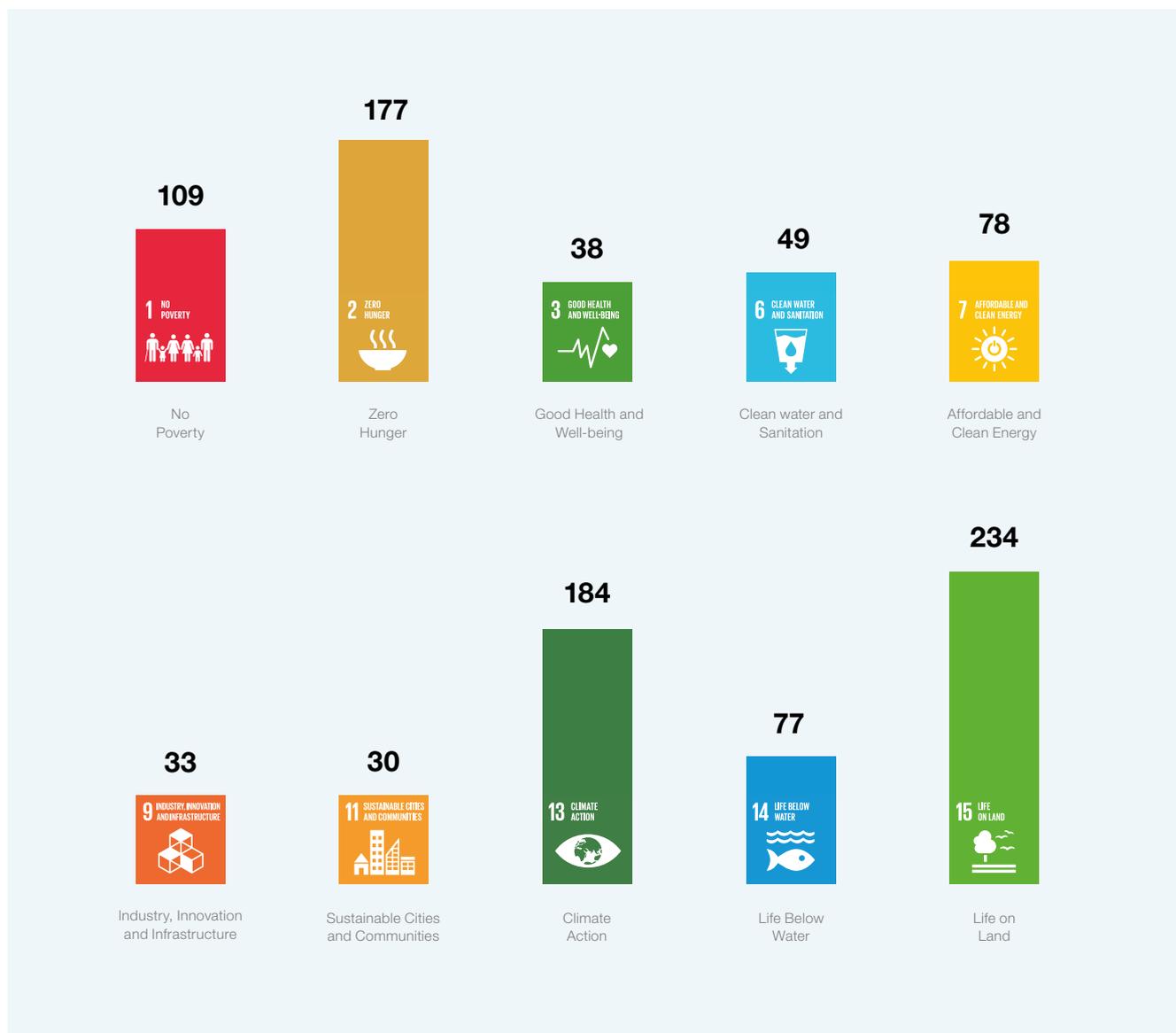
Currently, there is momentum to address environment and climate issues, and we have been presented with a unique opportunity. Reducing poverty while respecting planetary boundaries will require major policy and investment interventions.

A process stimulating global action to improve livelihoods of the world's poorest people was the UN member state negotiations to agree on the Sustainable Development Goals (SDGs). These were formally adopted in September 2015, with the overarching commitment to end extreme poverty through sustainable industrialization

and economic growth by 2030. These goals have become a key framework for EfD. Our researchers have worked on many of these issues over a long period of time. We have built up expertise and connections with policy makers and practitioners, and we are now ready to take on the challenge of turning the Paris climate agreement into action by contributing to planning, implementation and evaluation in order to reach these ambitious targets. Some EfD researchers are already heavily involved in the execution of national plans, including our center in Ethiopia.

EFD PUBLICATIONS AND SDG'S

The graph shows the number of EFD publications relating to the SDGs from the start of the program in 2007 to 2015.





“As an individual, I want to be a good researcher, and for that it means to do research that is relevant, research that is published. But the environment to do that has always been limited, and that’s why I’m part of Efd. My motivation is to be part of the process that creates good research and institutions in countries like Ethiopia.”

HAILESELASSIE MEDHIN, CENTER DIRECTOR, EFD ETHIOPIA

Efd original centers*	2007	2008	2009	2010	2011	2012	2013	2014	2015	Cumulative
No. of research projects	13	13	19	11	18	19	15	11	11	130
No. of Efd Discussion Papers	0	22	21	16	13	15	14	21	25	147
No. of peer-reviewed articles	13	15	17	36	68	55	44	47	43	338
No. of researchers	31	36	39	46	46	64	66	66	90	

*The data only include Ethiopia, Kenya, Tanzania, South Africa, China and Central America and not USA, Chile and Sweden

Research Highlights 2015



Coffee farmer participant in the field experiment for risk and adaptation to climate change workshop, San Carlos de Tarrazú, Costa Rica.



Agriculture is the most vulnerable sector under climate change, especially in a developing country as big and populous as China.

EfD Central America: The Research Program in Economics and Environment for Development (EEfD) at CATIE

EEfD (IDEA in Spanish) published six peer-reviewed articles, three EfD discussion papers, one research brief and two newspaper articles in 2015, focusing on conservation, donations, and recycling.

A study in Costa Rica (EfD DP 14-12) focused on the interactions between protected areas and payments to landowners to conserve forests. Our researchers find that it is less effective to locate parks and payments near each other, because, once one policy is implemented, no deforestation takes place. Also, parks reduce deforestation beyond their borders. Further, it is more efficient to make payments in areas where more deforestation would occur. Therefore, more forest will be saved if payments are made farther from parks.

Because it is more cost-effective to pay landowners who are likely to deforest, one concern is the reaction of landowners who aren't eligible for payments. Researchers used an experiment with real payments to measure voluntary contributions and found that providing payments to low initial contributors encouraged them to contribute more. However, by leaving out those who initially made the biggest contributions, that approach reduces contributions by the high initial contributors.

EfD China: The Environmental Economics Program in China (EEPC) at Peking University

Researchers at EfD China published 14 peer-reviewed articles, five EfD discussion papers and three research briefs in 2015. These focused on energy, agriculture and climate.

China has been the world's largest greenhouse gas emitter since 2008 and is responsible for nearly 30% of the world's total. So, China's actions will to a great extent determine the success or failure of the world's efforts to mitigate climate change. Agriculture is the most vulnerable economic sector under climate change. In "Impacts of climate change on agriculture: evidence from China" (Chen et al. 2015), EfD China researchers developed an empirical framework, using fine-scale meteorological data, to estimate the link between corn and soybean yields and weather in China. Findings are that crop yields increase for temperatures up to 29°C for corn and 28°C for soybeans, but higher temperatures are harmful for crop growth; global warming has caused a net economic loss of about \$820 million to China's corn and soybean sectors in the past decade; and corn yield is projected to decline by 3-12%, with soybean yields falling by 7-19%, by 2100.



Field trip to meet artisanal fishers in Laraquete, Chile.



Badingalto community forest, Ethiopia. Photo: Trees for the Future

EfD Chile: NENRE at Universidad de Concepción

Researchers at NENRE published 10 peer-reviewed papers and three EfD discussion papers in 2015, including research on fisheries.

Sustainable fishing offers poor households some protection against job loss. This research asks what factors influence compliance with fisheries regulations. Santis and Chávez (2015) conducted a field experiment with small-scale fishers to explore the effects of formal (external) and informal (local) enforcement on their compliance with territorial use rights in fisheries. The willingness to punish peers decreased when fish were scarce and increased when fish were abundant. While formal enforcement complements informal enforcement, it may crowd out efforts to control peers when fish are scarce. Dresdner, Chávez and Barriga (2015) found that individual morality, peer effects, and perception of whether the rules are established through a legitimate process are important for compliance decisions. Salgado and Chávez (2015) studied the effects of different tax schemes in combination with Individual Transferable Quotas, which allow individuals to catch a specific quota of fish, and can be bought and sold. Taxes pay for research and policy development, as well as monitoring and enforcing rules. In the red shrimp fishery in Chile, a tax of 7% on fish exports could reduce harvest demand and generate enough funding to completely eliminate quota violations, which otherwise can be more than 100% of the total allowable catch.

EfD Ethiopia: The Energy and Climate Research Center (ECRC) at the Ethiopian Development Research Institute

Researchers at ECRC published four peer-reviewed papers, four EfD discussion papers and three research briefs in 2015, covering forest management, food security, agricultural technologies and climate change adaptation.

“Community forests, carbon sequestration and REDD+: evidence from Ethiopia,” published in the *Journal of Environment and Development Economics*, analyzes the carbon sequestration potential of better-managed community forests in connection with the UN’s REDD+ program to make payments to communities that maintain healthy forests to store more carbon. It relies on the ideas of common property (how communities can manage shared resources to avoid the famous “tragedy of the commons”) and social capital (the idea that personal networks have economic benefits). The paper sheds light on whether community forest management structures should be given serious consideration as REDD+ partners in the battle to mitigate climate change. Using household and community data from four regional states in Ethiopia, the paper examines whether better-managed community forests sequester more carbon than do community systems with weaker management characteristics. The findings indicate that the quality of local institutions may be important determinants of carbon sequestration. Developing country community forests may therefore play a positive role in REDD+ and other carbon sequestration initiatives.



Woman farmer at the Nyando climate smart villages, Kisumu, Nyanza. Kenya Photo: K. Trautman



Khomani San men survey the land in the Kgalagadi area of South Africa.

EfD Kenya: at the School of Economics, University of Nairobi

EfD Kenya researchers generated six peer-reviewed papers, six EfD discussion papers, one research brief and one newspaper article in 2015, covering conservation, climate change, agriculture and forestry.

“The impact of climate change on food calorie production and nutritional poverty: evidence from Kenya” (by Jane Kabubo-Mariara, Richard Mulwa, and Salvatore Di Falco) investigates the effects of climate variables and other factors on kilocalorie production and the probability of a household being kilocalorie poor. The results show that favorable climate conditions boost production of nutrition and reduce poverty. Increased moisture is beneficial for kilocalorie production, but excess moisture is harmful. Overall, the results illustrate the vulnerability of smallholder farmers and poor households to climate change. All major crops – maize, beans, sorghum and millet – respond significantly to variations in temperature and moisture, but maize production is more sensitive than other crops. Technology adoption and adaptation to climate change are associated with better nutrition and lower poverty. Other factors include education, household size, and assets (livestock and value of buildings). Adoption of improved technologies will boost kilocalorie production and reduce the probability of households falling into poverty. Other policies should focus on boosting household assets and improving infrastructure and market access.

EfD South Africa: Environmental-Economics Policy Research Unit (EPRU) at University of Cape Town

EPRU researchers published six peer-reviewed papers, six EfD discussion papers, three reports and five research briefs in 2015, on wildlife and forest conservation, ecosystem values, climate change and fisheries.

Edwin Muchapondwa and Johane Dikgang published a topical paper entitled “The effect of land restitution on poverty reduction among the Khomani San ‘bushmen’ in South Africa.” They investigated the effect of land restitution on poverty reduction among the beneficiaries. Their results suggest that the Khomani San beneficiaries have obtained more access to natural resources but that the use of restituted land has neither increased per capita income nor reduced poverty. On the contrary, it appears to have contributed to increased poverty. This suggests that land restitution should become part of a broader, carefully crafted rural developmental strategy for it to be effective in reducing poverty. Otherwise, it may simply enable indigenous communities to continue with their “traditional” way of life, which could keep them poor. These results are important, as the government is currently evaluating and negotiating land settlements in many protected areas throughout South Africa.



Fisheries in Tanzania. Photo: Millenium Promise

EfD Tanzania: at the Department of Economics, University of Dar es Salaam

Researchers at EfD Tanzania published nine peer-reviewed papers, three EfD discussion papers, five book chapters, two research briefs and three news articles in 2015, on agriculture, climate, fisheries, forestry and health.

“Marine Protected Areas in artisanal fisheries: a spatial bio-economic model based on observations in Costa Rica and Tanzania” (EfD Discussion Paper 15-16) examines the response of small-scale fishing villagers to Marine Protected Areas (MPAs). Based on interviews with fishers and MPA managers, this research studies both the success of MPAs in protecting fish stock and the impact on rural communities. Because it is costly to travel in search of fish, the location of the MPA partly determines its impact on fish stocks, fish catch, and income. To avoid crowding or overfishing, some fishers take their boats to other areas. This can reduce the impact of lost fishing income. Also, villagers who live close to on-shore jobs can switch from fishing to wage

work. Even without MPAs, high enough wages can induce villagers to give up fishing, which further reduces the pressure on fish stocks. The MPA’s location often has opposite effects on villager income versus fishery output. Considering only the amount of fish catch may not fully explain the impact of a Marine Protected Area on rural people.





Collaborative research programs

The EfD program has a significant competitive advantage in supporting successful collaborative environmental economics research programs between our centers and associated international researchers. The network provides a unique advantage in terms of better access to data, complementary analytical skills and access to a large group of policy makers and other stakeholders.

Ecosystem Services Accounting for Development

The global standard for accounting of economic performance is the Gross Domestic Product (GDP), agreed upon according to the United Nations' "systems of national accounting." But such standards do not exist for measuring the economic value of the ecosystem services provided by nature. The Ecosystem Services Accounting for Development (ESAforD) study is a unique seven-country ecosystem service valuation project in collaboration with EfD centers in Central America, China, Ethiopia, Kenya, Tanzania, South Africa and Sweden. It is led, initiated and financed by the Swedish Environmental Protection Agency. The four-year project will involve evidence-based valuation of three ecosystem services: **pollination,**

systems that improve **water quality,** and **green urban amenities.** These were selected because they are methodologically challenging and have the fewest case studies from which to draw experience. In addition, these are regulating services (meaning that they regulate ecological systems) and in that way provide positive externalities (economic benefits to the broader society). Yet, they are not usually included in policy decisions because to date no monetary value has been placed on them. The research on methods to assign monetary values to ecosystem services is being carried out in low-, middle- and high-income countries. The objective is to develop ecosystem service valuation methodologies and results that are in line with national accounting principles.

The results will support the current efforts at the World Bank and in several countries to augment conventional GDP measures to more comprehensively account for the economic contributions of nature. The project will also help directly compare valuation methodologies and estimates from seven different countries. The study on the whole will generate unique evidence to better understand the economic, institutional and ecological drivers of the value of ecosystem services.



Xiao-Bing Zhang, Sied Hassen and Remidius Ruhinduka at the SETI workshop, Duke University in April 2016



Subhrendu K. Pattanayak, academic leader of SETI

Sustainable Energy Transitions Initiative (SETI)

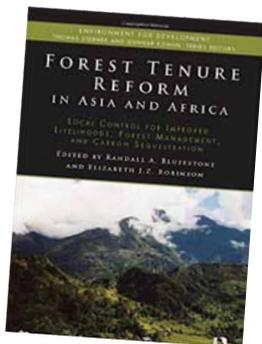
Energy poverty is one of the biggest challenges for current and future generations. Despite its importance, there is a systematic absence of the science and data necessary for sound policies on rural electrification, modern transportation, mechanized agriculture, and improved cooking, heating and lighting in the Global South. Today, 1.2 billion people are without electricity, of whom 95% live in developing countries. While the three largest and most prestigious scholarly journals published over 5000 articles on the theme of energy during the last five years, in only 10% of these articles was a developing country the focus. To address this gap, EfD promotes high-quality, interdisciplinary scholarship on energy issues by researchers based in the Global South.

To make a contribution in this field, the Sustainable Energy Transitions Initiative (SETI) was initiated in 2014. EfD, with its centers in East and South Africa, in close collaboration with the Duke Household Energy and Health Initiative, with its focus in South Asia, is well placed to drive a successful global consortium to address this fundamental science-policy gap. SETI is led by Subhrendu Pattanayak, Professor of Public Policy and Environment at the Sanford School of Public Policy & Nicholas School of the Environment at Duke University.

Forest sector reforms

Many developing countries have introduced forest tenure reforms that typically include devolution of control of forestlands to local people and communities. This has implications for ecosystem services, livelihoods and mechanisms for paying for environmental services. However, studies looking at the implications of these reforms are lacking. In this program, EfD researchers Randy Bluffstone and Elizabeth Robinson lead a team involving academics from EfD centers in China, Ethiopia, Kenya and Tanzania. They co-edited

“Forest Tenure Reform in Asia and Africa: Local Control for Improved Livelihoods, Forest Management, and Carbon Sequestration,” published in 2014. This book has been widely distributed to EfD centers and other interested institutions and organizations, and is used in teaching and in interactions with policy makers in participating countries. Follow-up work



in 2015 included two research briefs on these topics.

After a successful few years of this program, and with the theme of forestry reform continuing to rank highly on policy makers’ agendas in developing countries, an extension was granted by the EfD Research Committee due to the large knowledge gaps that still exist regarding forest sector reform in developing countries, and its importance to people in poverty.

“Here we provide insights to policy makers as to what really happens, on the ground, when policy reform is introduced and we offer those insights backed up by very rigorous economic analysis. We demonstrate where local tenure reforms have worked, and when they haven’t worked as intended, we can explain why they haven’t had the consequences that were intended.”

ELIZABETH ROBINSON, PROFESSOR, UNIVERSITY OF READING AND EFD SENIOR RESEARCH ASSOCIATE

Optimal Park Pricing in Eastern and Southern Africa

Despite the centrality of African parks and other protected areas to nature-based tourism, park entrance fees capture only a fraction of the economic value of these unique ecosystems. For this reason, national parks and other protected areas have mostly relied on fiscal transfers from the state to fund their conservation activities. However, the rise in calls for governments to also focus on other national objectives such as poverty reduction and enhancement of economic development has increased the competition for national parks and other protected areas in securing funds from the state. The result has been a general decrease in funds for conservation, which threatens the existence of national parks and other protected areas. Therefore, there is an enormous amount of pressure on park agencies to consider alternative financing mechanisms. More efficient park pricing policies can increase the financial self-sufficiency of national parks and other protected areas and therefore reduce their

dependence on fiscal subsidies. However, no formal frameworks for implementing these have been promulgated and adopted in Eastern and Southern Africa.

The EfD centers in Africa (Ethiopia, Kenya, South Africa and Tanzania) have teamed up with park agencies in seven countries over the last five years with the goal of supporting the use of optimal pricing of park resources to achieve sustainable park management and to maximize the value of parks in Eastern and Southern Africa, to promote both good management of the parks and other national interests such as economic development.

The ultimate outcome of this research program is to get the key park agencies in Eastern and Southern Africa to move a step further toward cooperation in the determination of park tariffs.

Park Pricing Research workshop, Lake Victoria.



Policy Interaction and Communications

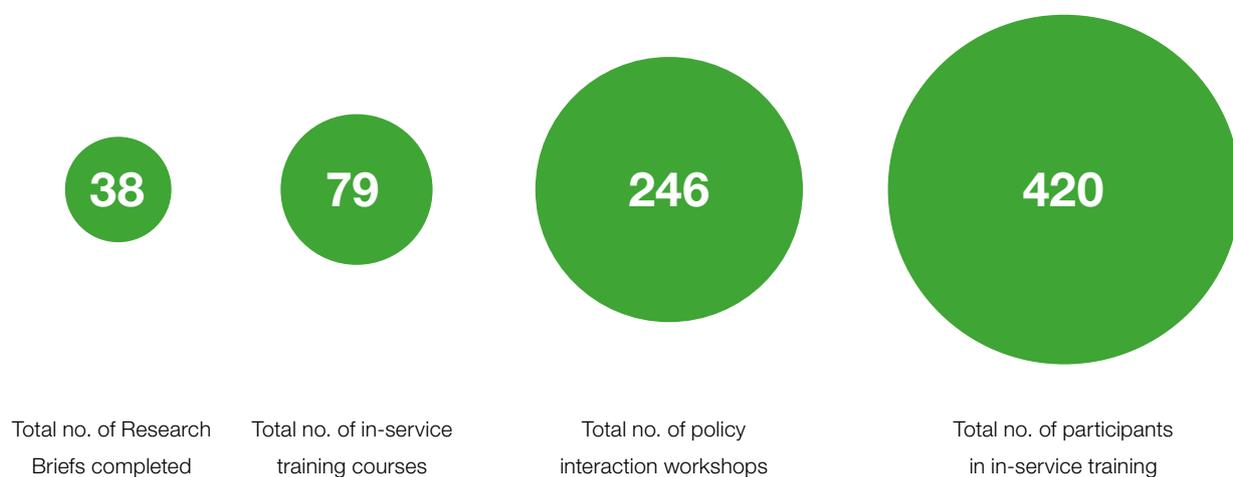
EfD centers, with their experience, local knowledge, and long-term dialogue with policy makers, have proven well placed to support the integration of environmental concerns into strategic national policy processes, such as poverty reduction strategies, national development plans, sector strategies, and plans for green growth and climate resilience. Media outreach also influences policy. Decision makers are influenced by public opinion, and households and businesses need information about how their decisions affect the environment. EfD researchers are often interviewed by news media and write their own opinion articles.

“This communication gap relates to the academics, not having an opportunity to speak to the policy makers, who are actually controlling what is going on in the country. In most of the cases, there might be capacity to do a lot of good research, but that good research often ends up on the shelves of the academics’ offices. Those results are never communicated; those results will never get to influence what actually happens on the ground. So, through these centers, we have created a platform as a meeting point between academia and the policy makers.”

EDWIN MUCHAPONDWA, SENIOR RESEARCH FELLOW, EFD SOUTH AFRICA



POLICY INTERACTION ACTIVITIES IN NUMBERS 2007-2015



EfD original centers*	2007	2008	2009	2010	2011	2012	2013	2014	2015	Cumulative
Research Briefs completed	0	0	0	0	4	3	1	19	11	38
In-service training courses held	11	5	9	5	30	6	6	6	1	79
Policy interaction workshops held	21	26	15	28	27	40	37	44	8	246
Participants in In-service training	0	0	0	0	0	147	148	118	7	420

*The data only include Ethiopia, Kenya, Tanzania, South Africa, China and Central America and not USA, Chile and Sweden

Francisco Alpizar (third from left) and Gunnar Köhlin (third from right) were panelists during the Sida Development Talks, Stockholm in May 2015.



Policy Interaction and Communications highlights 2015



Community-based aqueduct representatives of Coralillo, Guanacaste, Costa Rica. AC3 Project.

EFD CENTRAL AMERICA

Seven workshops on water resource management

EfD Central America and the Costa Rican Institute of Aqueducts and Sewers (AYA) held seven joint workshops on water resources management, developing adaptation strategies for climate change for community-based organizations in charge of water provision. EfD Central America led the workshops at different locations in the Caribbean Huetar Region, strategically chosen to encourage the participation of members of these organizations.

5th Latin American Meeting on community water management

The project “Water for Human Consumption, Communities and Climate Change: Expected Impacts and Adaptation in Central America” organized this meeting. The gathering attracted more than 400 participants from 15 countries of the region. The President of the Republic of Costa Rica, Luis Guillermo Solís, attended the opening ceremony.

Video selected for Award at Global Landscape Forum

Audiovisual material created by the “Water for Human Consumption, Communities and Climate Change” research project was selected for the Global Landscape Forum Partner Video Award, and was shown at the Forum (a side event during COP21) in Paris in December 2015.

Francisco Alpizar participated in Pope Francis’ first Encyclical on the Environment

National news articles and radio shows acknowledged the participation of EfD-CA Center Director Francisco Alpizar in the Papal Encyclical on the Environment released in June 2015. Alpizar was one of three Latin Americans who participated in the meeting held in May 2014 at the Pontifical Academy of Sciences in Rome.

Dr Jorge Dresdner, appointed expert by FAO to review the Chilean fishing law.



EFD CHILE

National Commission on Lithium presents report to the Chilean president

EfD researcher Carlos Chávez was a member of the “National Commission on Lithium,” which presented the final report to the President of the Republic of Chile, Mrs. Michelle Bachelet. Dr. Chávez was also elected President of the Higher Council of the National Fund for Scientific and Technological Development (FONDECYT) in Chile. In addition, Dr. Jorge Dresdner was appointed by the United Nations Food and Agricultural Organization (FAO) as one of the three experts to review the Chilean fishing law.

EFD SOUTH AFRICA

EPRU brings expert view to Namibia mining question

The Namibian government is considering whether to open up its offshore phosphate deposits for dredge mining. While the mining sector is in favor of the project, fisheries and conservationists have expressed concerns over its potential impacts. EPRU fellow Tony Leiman was invited to provide advice on this issue at a workshop in Windhoek in October 2015.



The Ndiara C micro hydro scheme on the Kiama River, about 50 km from Kenya's capital, Nairobi

Field trip co-hosted by the Ministry of Agriculture and Irrigation of Peru and the National Forest and Wildlife Service of Peru.



EFD CHINA

Jintao Xu in high level dialogue on forestry in Peru

On April 13-17, 2015, Jintao Xu was invited to Peru to spend a few days with the heads of national forestry administrations from the ten largest forestry countries, including the US, Brazil, Canada, and Sweden. Prof. Xu shared China's experiences in forest tenure reform and the potential role of forests in green growth.

Report on Green Transformation of Government Capacity

At the request of the China Council for International Cooperation on Environment and Development, EEPC researcher Jianhua Xu wrote part of the report “Green Transformation of Governance Capacity,” which was then submitted to the State Council.

Jintao Xu interviewed about China's energy issues

Jintao Xu was interviewed by Phoenix TV to talk about China's energy issues. He was also interviewed by PCCW Media Limited to talk about transportation and smog in Beijing.

News item on small hydro in Kenya attracted attention of German organizations

In 2015, EPRU developed a database of stakeholders and launched its regular newsletter, which carries links to the EfD website. A story about EPRU doctoral researcher Mary Karumba's analysis of small hydro in Kenya attracted the attention of the Heinrich Boll Foundation (HBF) and the German Information Center Africa. Karumba's work focuses on small-scale hydro as an alternative, affordable source of electricity, when connecting to the national grid is too expensive for rural communities. Those living close to certain rivers are opting for cheaper, more sustainable small-scale hydro plants, to power lights, charge phones, and power radios or televisions. Karumba is looking at which of these projects have worked in Kenya, which haven't, and why.



ETV covered the workshop "Clean energy transition in Ethiopia", held in June 2015.

EFD ETHIOPIA

ECRC has organized a number of workshops, conferences and seminars with researchers, policy makers, and development practitioners. The objectives included sharing research results, exploring the potential for new research, informing stakeholders about the center's research plans, avoiding duplication of effort with other institutions, improving research methodology and creating networks with other institutions.

Start-up energy workshop

The start-up energy workshop "Developing Ethiopia's huge potential for renewable energy" is the centerpiece of the country's Climate-Resilient Green Economy (CRGE) strategy. With this in mind, the Environment and Climate Research Center (ECRC), in collaboration with EfD and Duke University's Household Energy and Health Initiative, organized a three-day workshop on "Clean energy transition in Ethiopia: towards identifying knowledge gaps," held June 1-3, 2015. H.E. Engineer Wondimu Tekle, State Minister of Water, Irrigation and Energy, gave the opening remarks. The event drew local media attention and was featured in the Ethiopian news on June 1.

ECRC center launch featured in local media

ECRC's successful launch, held on February 23, 2015, was picked up by a local newspaper and national television. The report covered the mission, programs and thematic areas of the center.

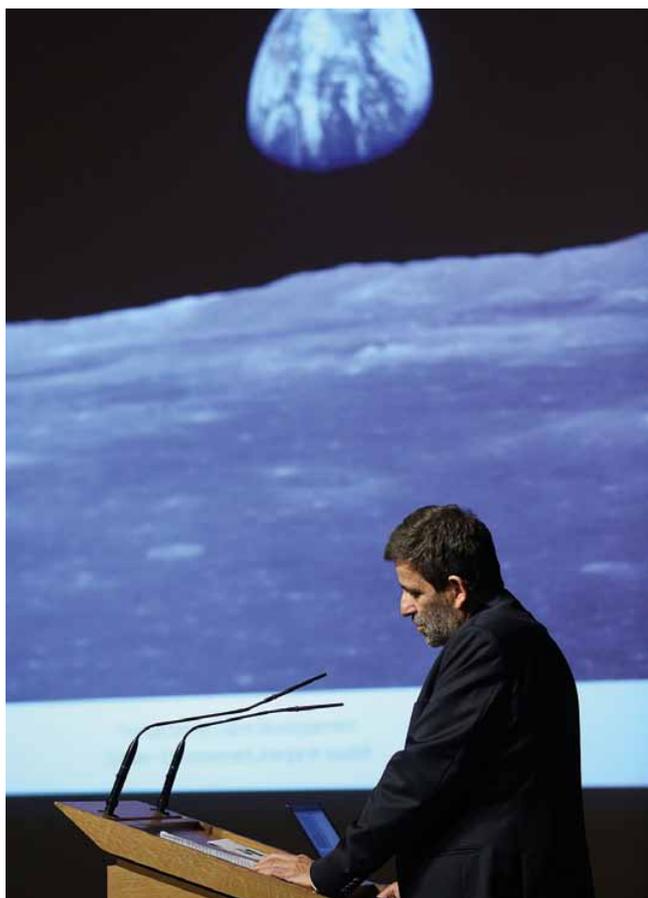
EFD KENYA

Research flows into water prices

Academic research made a real connection with the lives of poor residents of Nairobi, Kenya, when the Nairobi City Water and Sewer Company decreased the price for water bought at public kiosks. On November 20, 2015, Efd Kenya held a multi-sector research and policy workshop. Engineer Peter Njaggah, head of Technical Services at WASREB, Kenya's national water regulator, said that Efd's research on subsidies and water pricing in Nairobi directly shaped their thinking on water pricing in the sector. He stated that Efd's work clearly showed that subsidies were not reaching the poor and that households in informal settlements were paying more for water than were households with private piped connections. WASREB incorporated this insight into its review of Nairobi City Water and Sewer Company's tariff application and decreased the tariff for water bought at public kiosks from 2 KSH/20 litres to 1 KSH/20 litres. This tariff was implemented in November and WASREB is now examining the potential of applying this policy nation-wide. Published in the Kenya Gazette, October 2, 2015.



Efd Kenya's research has shown that households in informal settlements are paying more for water than households with private piped connections.



EFD SWEDEN

Thomas Sterner: high profile climate workshop at Collège de France and COP21

EfD's own Research Committee Chair, Thomas Sterner, had a busy year. He spent much of his time in Paris, as a visiting professor at the Collège de France, one of the world's most distinguished academic institutions. Sterner was elected 2015-2016 Professor of the Chair of Sustainable Development – Environment, Energy and Society.

In October 2015, Thomas Sterner, together with Roger Guesneire at the Collège de France, hosted the climate workshop "Paris 2015 and Beyond: Cooling the Climate Debate." Many of the world's leading climate economists participated, including Martin Weitzman, Christian Gollier, Scott Barrett, Michael Hanemann, and Tomas Kåberger, to mention a few.

Sterner was one of the principal authors of Chapter 15 in the IPCC's fifth assessment of climate change, and he later took part in COP 21 in Paris. His "insider" blogs from the COP21 in Paris are published on the EfD website.

In April 2016, Sterner was ranked number 9 of the 101 most influential opinion leaders in Sweden for sustainable development by the leading sustainability magazine *Aktuell Hållbarhet*.

EFD TANZANIA

Tobacco control policy in Tanzania

Legislation aimed at reducing smoking and tobacco leaf production will curb the adverse health and welfare effects of cigarettes and tobacco consumption, according to EfD Tanzania researchers. They spoke at a workshop about the economic effects of cigarette and tobacco production that brought together researchers, government officers, journalists and NGOs. EfD researchers Prof. Asmerom Kidane and Dr. Aloyce Hapelwa are among the authors of a report entitled "Health care costs attributable to smoking-induced cardiovascular disease in Tanzania." The report was presented at a half-day dissemination workshop organized by EfD Tanzania and the Department of Economics, University of Dar es Salaam, as part of a comprehensive study on tobacco control policy analysis and intervention in China and Tanzania.

East African Business Week quoted Prof. Kidane's comments on how tobacco companies' policies and practices affect high-, middle- and low-income countries. He noted that tobacco farming is responsible for more than 4% of desertification in the the Urambo area, Tanzania, one of the major tobacco growing districts in the country.

Dissemination workshop about tobacco control policy analysis and intervention in China and Tanzania, organized by EfD Tanzania and the Department of Economics.





Academic training

Domestic academic training is essential for efficient management of natural resources and the environment. The EfD academic training component is designed to increase the synergies between existing programs in the academic host institutions and EfD's research and policy interactions. By encouraging policy relevant research in academic programs, EfD supports the development of capacity that can make a real difference as students assume office in government organizations. EfD thus increases the number and quality of trained environmental economists in developing countries by supporting undergraduate and postgraduate studies in environmental economics and by building the capacity of local public universities through teaching support, research grants, books and more.

EfD research fellows mainly teach environmental economics, natural resource economics and environmental valuation courses. All EfD centers are involved in PhD programs and there is also a close collaboration between these programs and the specialization courses given at the Environmental Economics Unit, University of Gothenburg. While the actual courses are the responsibility of the academic

institutions, EfD provides support through thesis grants, and also links coursework with experience to ensure that the academic programs are grounded in research and policy work.

ACADEMIC TRAINING ACTIVITIES IN ENVIRONMENTAL ECONOMICS 2007-2015

39

Total no. of courses held (PhD)

361

Total no. of PhD students in courses

31

Total no. of PhD theses completed

109

Total no. of courses held (MSc)

1478

Total no. of MSc students

155

Total no. of MSc theses completed

“You can of course create that capacity being abroad in a good university, but being inside the country and having the local capacity here in a developing country means that you are not only there to set up a problem, find a solution to the problem, but you are also there to follow up that solution.”

FRANCISCO ALPÍZAR, DIRECTOR IDEA

EfD original centers *	2007	2008	2009	2010	2011	2012	2013	2014	2015	Cumulative
No. of courses held (PhD)	0	2	2	0	6	5	10	10	4	39
No. of PhD students in courses	0	40	6	0	65	63	92	92	3	361
No. of PhD theses completed	3	2	5	1	2	3	3	4	8	31
No. of courses held (MSc)	13	11	13	5	18	13	12	12	12	109
No. of MSc students	258	244	142	67	249	208	113	113	84	1478
No. of MSc theses completed	14	14	19	20	14	16	17	11	30	155

*The data only include Ethiopia, Kenya, Tanzania, South Africa, China and Central America and not USA, Chile and Sweden

Selected highlights in academic training during 2015



Tibetan area where EEPC students and staff did surveys on forest reforms in the summer of 2015.

EFD CHINA

Fruitful academic environment at EEPC

The Environmental Economics Program in China is devoted to developing productive international scholars. The program is associated with MSc and PhD programs in environmental policy, environmental economics and resource economics. There are plenty of opportunities for students to conduct surveys in factories and villages and to communicate with international collaborators. Also, multi-disciplinary

lectures, reports and workshops conducted by many excellent scholars broaden students' horizons. Incorporating such training, several outstanding graduates successfully entered academic institutions and universities to continue their study of environmental problems.

Patricia González graduated from the Master of Science Program in Natural Resource and Environmental Economics at the University of Concepción.



PhD students at Addis Ababa University who took the Econometrics course organized by EFD.



EFD CHILE

16 fresh MSc graduates from South America

Nine students from Ecuador and Colombia, and seven from Chile, earned their Master of Science degrees in Natural Resource and Environmental Economics at the University of Concepción in 2015. Most of our graduates return to their countries to work in public agencies and ministries, central banks, consulting firms, research organizations, and universities. Some of them are pursuing a PhD in Economics. We offer our students the possibility to present their research project or a paper from their thesis in our annual workshops in order to get feedback and interact with policy makers.

EFD ETHIOPIA

ECRC continues strong links to both Addis Ababa and Mekelle University

The Environment and Climate Research Center (ECRC) works closely with the Department of Economics at Addis Ababa University to build the university's capacity in training environmental economists. The center supports a seminar series at the university and encourages thesis work in the area of environment and natural resources by giving thesis grants. Also, most of the center's research fellows teach and advise graduate students at Addis Ababa University and Mekelle University.



EFD CENTRAL AMERICA

LACEEP celebrating its 10th anniversary

The Latin American and Caribbean Environmental Economics Program (LACEEP) celebrated its first 10 years of accomplishments by bringing together previous and current grantees of research funds, policy and decision makers, academicians and other key actors in

environmental and resource economics in the region. During the event, organizers highlighted the advances in the field in the region and the role that LACEEP has played in building capacity among researchers and practitioners.

SELECTED HIGHLIGHTS

Michael Jairo (left) and Steve Odiakha (right) graduated with master's degrees at University of Nairobi.



EFD KENYA

Two fresh PhD theses related to EfD research themes

Kenya continues its efforts to enhance research and policy influence, through capacity building in environmental economics. While many students take courses in environmental and resource economics at the undergraduate level, very few take up units at the master's and PhD levels. Besides teaching, the EfD research fellows are involved in supervision of MSc and PhD thesis research in various EfD thematic areas. In 2015, two candidates supervised by EfD senior fellows graduated with a PhD in Economics, focusing on EfD themes of climate change, pollution and health. Meanwhile, three other candidates are being encouraged to pursue their research on current EfD Kenya research themes, namely, rural water, urban water and agriculture.

EFD SOUTH AFRICA

EPRU has strengthened its curriculum

Being in a teaching institution, our fellows' primary task is the training of academic economists. However, we also introduce economic concepts to civil servants, engineers, and students in other faculties, via lectures and courses outside the School of Economics. In 2015, these included an intensive module given to MSc students in Conservation Biology, public lectures at the university's summer school outreach program and a block of the African Climate Development Initiative (ACDI) master's program. All senior fellows actively supervised a number of postgraduate dissertations. Within EPRU, we also benefitted from seminars given by one of our members, scientific journalist Leonie Joubert, who coached us on how to take publishable photographs, and on effective media communication.

EFD TANZANIA

Eight MSc and four PhD graduates

In 2015, the Department of Economics of the University of Dar es Salaam, in addition to the regular Master of Arts in Economics, has introduced a Master of Arts in Applied Economics (MAAE), with new courses specialized in Environmental Economics. This specialization course is taught by the Efd Tanzania staff. The course covers issues in environmental and natural resource economics, economic development and environment, analysis of environmental processes, and the linkages between ecological and economic management systems and environmental accounting, which measures the costs of resource use and the national economic impact on the environment.

Besides teaching, we supervised PhD theses on Environmental Economics, policy analysis and poverty issues. 2015 was a very successful year for us, when eight MSc and four PhD students graduated from the University of Dar es Salaam. The theses by these graduates are on themes of agriculture, energy, forestry, climate change and poverty.

Teachers engaged in academic training outside the University of Dar es Salaam

Members of the center also continued to offer training on various issues within the university's other colleges and departments, as well as at other universities. Dr. Stephen Kirama, for the academic year 2014-15, was one of the lecturers who taught two graduate courses on Monitoring and Evaluation and Transport Economics at the University of Dar es Salaam Business School. Prof. Razack Lokina participated in a two-week training course organized by the Institute of Resource Assessment (IRA) for academic members of the staff, on the topic of Climate Change and Sustainable Development, where he was involved in the Economics of Climate Change Module. The participants were drawn from different universities across Africa. Dr. Aloyce Hepelwa is teaching Natural Resource Economics at the Department of Agricultural Economics and Business, College of Agricultural Sciences and Fisheries Technology. This is a new college established by the University of Dar es Salaam and focuses on Agriculture, Livestock and Fisheries Sciences and Technology and Postharvest Management.



Dr. Wilhelm Ngasamiaku, EFD researcher (right) with PhD graduates during graduation ceremony, 2015, at the University of Dar es Salaam.

The EfD Annual Meeting 2015 in Shanghai, China



Byela Tibesigwa, Senior research fellow, EFD Tanzania.

EfD is committed to producing dynamic international research interaction. This is achieved by creating an environment where discussions take place openly, where research results can be constructively criticized, and where feedback is generated. The annual meeting is an important event to promote research interactions.

“Every time we have the annual conference, you look forward to meet all the EfD members, you look forward to discussing possible research work, and you look forward to sharing your concerns, or just asking about problems you have experienced in your own research work.”

BYELA TIBESIGWA, SENIOR RESEARCH FELLOW, EFD TANZANIA

Yuanyuan Yi, PhD student, University of Gothenburg and Researcher EFD China and Andy White, Rights and Resources Initiative.

EfD researchers engaged in their joint work during the coffee break.



In 2015, the annual meeting was hosted by EfD China. Close to 100 people from all over the world participated, and, for the first time, the meeting was opened up to a broader group of academics. The setting for the annual meeting was in beautiful, but smoggy, Shanghai. The first keynote speech was on a highly topical theme: the congestion and environmental consequences of driving-to-school trips in Beijing. Siqi Zheng, Professor and Director of the Hang Lung Center for Real Estate, Tsinghua University, China, gave the speech. The second keynote, on the impact of temperature on productivity and labor supply in Indian manufacturing, was given by a long-time EfD collaborator, E. Somanathan, Professor at the Indian Statistical

Institute in New Delhi. Dick Morgenstern, a Senior Fellow at Resources for the Future in Washington, DC, presented a talk entitled “Reflections for Environmental Economics.” Another plenary speech that was appreciated by the audience was entitled “The effective use of research for policy change – experience, emerging lessons, and promising initiatives from RRI,” by Andy White, Coordinator, Rights and Resources Initiative, Washington DC. In addition, in a program that was filled to the brim, there were several very informative presentations during the plenary session and parallel sessions, covering a range of issues such as water property rights, forest tenure, urban air quality, land certification and carbon markets, among many others.

Policy Day 2015



Maria Angélica Naranjo, Deputy Director and Research Fellow and Eugenia León, Communications Officer and Research Fellow, both from Efd Central America.

Efd Policy Day brought together researchers and policy makers to discuss improving transportation and forest policies, with a focus on China.

One consequence of China's economic growth has been an explosion in the number of cars, from 23 to 120 million in only ten years. Air pollution and traffic congestion have followed. The morning session was held against this background, with input from researchers Daoli Zhu, Ping Qin, Haitao Yin and Mike Toman of the World Bank.

Shanghai and Beijing have made significant investments to manage rapid urbanization. A large share of spending has gone into better metro and buses, as well as subsidies to make tickets affordable. Strong measures have been taken to reduce car use, by restricting certain license plates on certain days or restricting additional cars from entering the streets. In Shanghai, permits are auctioned and the cost has risen to a stunning \$16,000, excluding much of the population from registering a car. Beijing uses a lottery system where people may have to wait years for a permit. Electric cars are highly subsidized. But is it a good idea, given that electricity in China comes from coal plants? Opinions differed on whether Chinese mega-cities should introduce congestion pricing, where a fee is charged to drive at certain times and places. There was agreement on the need to better coordinate different modes of transportation, be they buses and subways or ships and rail, and to make public transit more attractive.



Ping Qin, Deputy Director and Senior Research Fellow, Efd China.

The afternoon session discussed reform in ownership and control of forests, called tenure reform. Increasingly, governments have transferred forest rights to local control. Andy White of the Rights and Resource Initiative argued that, globally, there are two trends. The first is demand for forest products and forest land. The second is a growing demand for justice, which comes from people living in or near forests and following customary rules for forest use.

In China, collectively owned forests account for about 60% of forests. Since 2008, about 90 million households have received forest-land certificates, resulting in gains in productivity, income and employment. However, according to Guangcui Dai from the State Forestry Administration, around 40% of households with certificates leave their land unmanaged, and the market for transfer of rights is inefficient.

A panel which also included Yongfan Liu, Jintao Xu, Elizabeth Robinson, and Rodney Smith discussed whether temporary subsidies for tenure reform could be seen as similar to subsidies for solar energy, for example. They compared China's focus on productive use of forest resources to the focus on protecting forests in other countries.

Environment and Climate Research Center (ECRC)



Haileselassie Medhin

2015 has been a uniquely eventful year for EfD Ethiopia. On February 23, 2015, EfD Ethiopia was re-launched as a new center – the Environment and Climate Research Center (ECRC), based at the Ethiopian Development Research Institute (EDRI). This was not a mere rebranding of our center; it was rather the outcome of a year-long effort to transform EfD Ethiopia into a center that serves as a knowledge backstop for the successful implementation of Ethiopia's very ambitious Climate-Resilient Green Economy (CRGE) strategy.

The CRGE strategy was launched in 2011 with the vision of creating a middle-income economy by 2025 while promoting resilience and keeping emissions low. The strategy is an important step in framing the direction of Ethiopia's ongoing rapid economic growth, and can potentially make Ethiopia a leader in green growth. It was, however, evident that the successful implementation of the CRGE strategy required an independent and long-term impact-evaluation research process. In response to this critical challenge, EDRI – a public institution mandated to conduct independent policy research on the Ethiopian economy – decided to work with EfD to establish a permanent EfD center in Ethiopia that fulfills its mandate in the CRGE arena. The Global Green Growth Institute (GGGI), an important stakeholder in CRGE implementation, also joined the process

along the way. The eventual outcome was a tripartite partnership agreement between EDRI, EfD and GGGI to establish the ECRC.

ECRC has four core programs: the Policy Research and Impact Evaluation (PRIE) program, Policy Interaction and Communication (PIC) program, Data Management and Knowledge Repository (DMKR) program and Capacity Building (CB) program. The main focus in 2015 has been developing the center's organizational capacity and research infrastructure, mobilizing research capacity, and developing detailed plans for the center's programs, as well as mobilizing funding for the implementation of its programs. The first draft of our first five-year PRIE plan, solidly grounded on the CRGE strategy's plans for different sectors of the economy, was underway in late 2015 and early 2016. In addition to the support from EfD, the center received generous support from the Government of Norway, and is on course to achieve its target of a full-fledged core program launch in 2016.

HAILESELISSIE MEDHIN, DIRECTOR, ECRC

List of Donors 2015

- International Development Research Centre (IDRC), Canada
- Government of Norway
- Sida/EfD

EfD Kenya



Jane Mariara

I am delighted to share with you our annual report for 2015, a very busy and quite exciting year. The centre engaged in a number of research activities, policy interactions and workshops.

Research at the centre has focused on several themes: climate change, water sourcing and pricing, forest reforms, park pricing, and ecosystem services accounting, to ensure that accounting of national wealth includes the value of natural resources.

The 2015 EfD Kenya Research Day was held on February 26. The objective of the workshop was to share ongoing research in EfD Kenya and the Kenya Institute for Public Policy Research and Analysis (KIPPRA), as well as to discuss future policy research options. The meeting was officially opened by EfD Director Gunnar Köhlin, while EfD Research Director Yonas Alem made a brief presentation on EfD activities. Five papers were then presented, focusing on water supply in rural Kenya (Peter Kimuyu, EfD Kenya); Water and Sanitation Policy Agenda (Victor Mose, KIPPRA); Environmental and Social Effects of Minerals, Oil and Gas Discovery (Joshua Laichena, KIPPRA); Climate Change and Household Nutrition (Jane Mariara, EfD Kenya); and the Natural Resource Curse Hypothesis, regarding the mixed blessings of resource wealth (Richard Mulwa, EfD Kenya).

The presentations were followed by a policy panel facilitated by

three experts in the water, extractive industry and climate change sectors (Engineer Peter Njaggah of WASREB, Kenya's national water regulator; Monica Gichuhi of Quadz Consulting; and Dr. Anne Omambia of the National Environment Management Authority), who had been invited to guide EfD Kenya on priority research issues in these sectors. During the workshop, the EfD team also talked with the Environment Secretary, Dr. Alice Kaudia, who pledged to collaborate with EfD Kenya on capacity building in environmental economics.

Jane Mariara represented EfD Kenya at the European Association of Environmental and Resource Economists (EAERE) annual conference in Helsinki, while Richard Mulwa attended the meetings on Ecosystem Services Accounting for Development (ESAforD), which were parallel to the conference. A large delegation from EfD Kenya also participated actively at the EfD 9th annual conference, as well as the ESAforD workshop held in Shanghai, China in November 2015. Finally, EfD Kenya held her annual research and policy workshop on November 20, 2015. The meeting was officially opened by the Coordinator for the United Nations Environment Programme (UNEP) Kenya Country Programme, Mr. Henry Ndede. Collaborators and stakeholders participated very actively during this workshop and committed to continue collaborating with EfD Kenya.

The most exciting news from the centre is that one of the research projects on urban water use and tariffs has influenced the charges for water to ensure that the cost is truly friendly to the poor. The change was based on EfD research findings that the previous system was not achieving its goal of targeting subsidies to the poorest residents.

On behalf of the University of Nairobi and EfD Kenya, I would like to thank Sida and the EfD Initiative for continued support. I also thank all our members, collaborators, associates and well-wishers for all the support in 2015. We look forward to working together to make EfD Kenya a centre of excellence. As always, your feedback regarding the information contained here will be highly appreciated.

JANE MARIARA, DIRECTOR, EFD KENYA

List of Donors 2015

- United Nations Environment Program (UNEP)
- Sida/EfD

EfD Tanzania



Razack Lokina

2015 has been an exciting and challenging year. This year, the center has managed to complete many of the research projects that were funded some years back. We had a good number of publications through EfD-funded projects and other projects funded by other donors, as per our mission of diversifying our funding portfolio. In short, we had ten peer-reviewed papers, three EfD Discussion Papers and two research briefs. In 2015, EfD Tanzania research fellows supervised eight theses for MA students based on environment, poverty and policy analysis. Also, research fellows supervised four PhD students who successfully completed their PhD theses.

This year, on different occasions, we conducted meetings with senior officials at the University of Dar es Salaam in the area of research and knowledge exchange. These meetings were also attended by EfD Director Gunnar Köhlin and Director of Research Yonas Alem. These included the meeting with Prof. R. Kangarawe, the former director of research at the University of Dar es Salaam, and Prof. C. Z. M. Kimambo, Deputy Vice Chancellor for Research. Both recommended formalizing EfD Tanzania's role as a research center.

We continued to organize and attend seminars and workshops in different capacities. For example, we held an EfD Policy Day,

which was also attended by various stakeholders from ministries, department agencies and non-governmental organizations. Again, the workshop was very exciting and drew huge interest among the participants, as most of the presentation focused on current issues that affect the environment and the daily welfare of the community. I thank them all for their positive contributions.

We further extended our policy interaction as we organized a dissemination workshop in Arusha, Tanzania. This workshop involves a collaboration with researchers from the USA and Kenya. The study was on "tobacco control and policy analysis and intervention evaluation in Tanzania and China." I thank Prof. Asmerom Kidane, Dr. Aloyce Hepelwa and Mr. Salvatory Macha for organizing the event. I would be unfair if I didn't mention Prof Teh-wei Hu from the US National Institutes of Health, who organized funding for this study. The event was very successful.

Our achievements did not end with workshops and seminars. EfD Tanzania had the opportunity to be part of a university project that targets work that has impacts on utilization of research results for improved livelihoods. EfD Tanzania as a project was awarded third prize in the College of Social Sciences for the science projects carried out at the college. As 2015 ends, EfDT is in the process of finalizing its application as a research center within the University of Dar es Salaam. For now, the center is well-placed to significantly contribute in the areas of research and policy advice, as the country plans to implement the sustainable development goals in 2016.

These achievements could not have happened without the support we continue to receive from Sida through the Environmental Economics Unit, University of Gothenburg; the President's Office Planning Commission; and the United Nations Development Program country office. I personally, my fellow EfDT research fellows, and our Governing Board thank all donors, collaborators and well-wishers for our center.

RAZACK LOKINA, DIRECTOR, EFD TANZANIA

List of Donors 2015

- University of Dar es Salaam
- UNDP/ Ministry of Finance
- US-National Institutes of Health
- World Bank
- International Growth Center
- Sida/EfD

Environmental Economics Policy Research Unit (EPRU)



Jane Turpie

EPRU has continued to focus on the three main themes of climate change, biodiversity conservation and fisheries, as well as studies on mining, water allocation and water and electricity demand management, throughout the southern and eastern Africa region. Tony Leiman investigated the impacts of imperfect information on decisions about mining marine phosphate deposits, grappled with how climate change impacts the decisions around major hydro-power investments in the Zambezi Basin, and continued his work on competition and sustainability in industrial fisheries. We have also been making strides in producing research relevant to the looming water shortages in the Western Cape Province. Kerri Brick and Martine Visser rolled out their ambitious project involving a randomised controlled trial of households, which is investigating the best way to nudge people toward using water and electricity more efficiently in two municipalities in South Africa. Jacob Muller and Jane Turpie commenced a project on the potential tradeoffs involved in meeting water demands for planned industrial growth in Saldanha Bay. This year, EPRU also entered the realm of environmental accounting. Mandy Driver started work on physical ecosystem accounts with Tony Leiman, while Jane Turpie and Dambala Gelo embarked on various studies on ecosystem services, including a three-year project on Ecosystem Services Accounting for Development (ESAforD). They undertook a study on the demand for outdoor recreation in Kampala, which was presented to the Kampala city authorities in October, and have been working on the valuation of a natural system that improves water quality – an example of a valuable ecosystem service – and the amenity value of urban green open space. Herbert Ntuli wrapped up his PhD work on the effects of wildlife resources

on community welfare and the role of institutions in community wildlife conservation in Zimbabwe. Our work on wildlife has also extended into the private sector, with Jackson Otieno addressing the question of the impacts of climate change on wildlife ranching.

We are very proud of EPRU Research Fellow Kerri Brick, who was awarded the prize for the best Ph.D. in Economics in 2015 by the Economics Society of South Africa. Kerri already had several papers published in top journals in economics before she got her PhD. – and at this stage, she is published in the *European Economic Review*, *Journal of Behavior and Organization*, *American Journal of Agricultural Economics*, *Environmental and Resource Economics*, *Climate Policy*, and others. There are really only a handful of South African economists who have published in such journals, so it is really phenomenal that she has reached such a peak so early in her career! Congratulations are also due to Edwin Muchapondwa on his promotion to full Professor and to Mare Sarr for his promotion to Associate Professor as of 2016.

JANE TURPIE, DIRECTOR, EPRU

List of Donors 2015

- University of Cape Town
- Department of Science and Technology
- Energia International Network on Gender and Sustainable Energy
- Centre of Interdisciplinary African Studies of the Goethe University of Frankfurt
- National Research Foundation Water Research Commission
- Sida/EFD

Environmental Economics Program in China (EEPC)



Jintao Xu

In 2015, one of EEPC's main themes was pushing a green growth agenda within China's forest sector. As the country embarks on a new growth path, the forest sector, which historically has been considered the main green sector, has been lagging behind in initiatives. In 2014, during a high-level meeting with national government officials and prominent scholars, I proposed a bold policy for the forest sector, stating that "China's green growth should be forest-based growth," to encourage forest sector decision makers to be more proactive in response to the tremendous challenges and opportunities. Since then, we have been commissioned by the State Forest Administration (SFA) to do a number of small projects to look at the potential in several areas of forest production. We have started a PhD dissertation study on forest-based bio-fuels. Together with the commissioned report for SFA on the development potential of wooden housing and forest bio-energy, we are at the forefront of this policy development to promote the forest sector as a greater contributor to the country's green growth. Our view was presented to forestry leaders of the ten largest forestry countries in the world in Peru, in April 2015.

Our second major initiative was to complete a survey in Sichuan

Province on forest tenure change (changes in ownership and control rights) in ethnic minority areas surrounded by state forests. The state forests used to share revenue and production opportunities with the local communities before more constraining policies were implemented. After 1998, when a logging ban was implemented (the Natural Forest Protection Program), not only were shared production and revenue eliminated, but the freedom for communities to make production decisions in their own forests was also severely restricted, which affected the outcomes of forest tenure reform patterns occurring in the last decade. We also anticipate that farmer households' welfare will be affected; this is worth examining in light of such policy modifications. At the same time, interest has been growing on the government side in developing eco-forests with a market approach, such as a tender scheme. Under a tender scheme, farmers are allowed to bid for participation in an eco-forest program funded by the government, submitting tenders with proposed prices and land area. Government officials are curious, though, about the feasibility of these schemes and what the prices will look like. The survey in Sichuan incorporated both forest tenure reform and market-based forest land acquisition.

The highlight of the year was the EFD 2015 Annual Conference in Shanghai. We received more than 100 participants from all over the world, presenting first-rate environmental studies from both developed and developing countries. A series of collaborative initiatives were developed during the conference and continued discussions afterward. Best of all, our student, Ms. Zhumei Huang, received the Gunnar Köhlin Award for best master's thesis.

Our research remains solid and diverse. Fourteen papers have been published or accepted into academic journals. Topics range from public participation in air pollution control, to energy policy, to climate change impacts. One paper was accepted by the *Journal of Environmental Economics and Management* and another by the *China Economic Review*.

JINTAO XU, DIRECTOR, EEPC

List of Donors 2015

- State Forestry Administration, P.R. China
- Rights and Resource Initiative
- Peking University
- Sida/EFD

Programa IDEA CATIE



Francisco Alpizar

A friend once told me that one should start a nice meal with the specialty of the restaurant, and then he proceeded to ask for dessert as the first course. In this introduction to the 2015 Annual Report, I want to do the same. Before listing the highlights of our work during 2015, I want to start by thanking the team of scientists, visiting scholars and administrative staff who made those highlights possible. The Economics and Environment for Development Research Program for Central America (EEfD/IDEA) is privileged to have such an inspired and inspiring team. Their impressive intellectual curiosity and their commitment to applied science and policy impact have left a mark of excellence in every paper, every set of data collected, every presentation and every meeting with policy makers. Thank you.

The year 2015 has certainly been a whirlwind of activities. We have secured a strong presence in the media, with multiple radio and newspaper interviews in Mexico, Guatemala and Costa Rica. A good example is the work of Juan Robalino and Laura Villalobos on protected areas, which became a chapter in the State of the Nation Annual Report, and was also featured on the front page of the most important local newspaper in Costa Rica.

We also had a strong presence in international congresses in economics, such as EAERE and AERE (the European and American associations of agricultural and resource economists), as well as in meetings organized by theme. For example, Róger Madrigal presented his work at the World Water Congress in Edinburgh, and Milagro Saborío presented at the Climate Smart Agriculture Congress in Montpellier.

We are ever more committed to strong interaction with policy makers. In 2015, we organized a “policy day” focused on water for

human consumption. The workshop was a complete success, and has led to closer work with authorities in Costa Rica, including an ambitious training program for managers of community-based water organizations on the topic of adaptation to climate change. Similarly, our team was part of the National Dialogue on the Economy of Climate Change, a training program for mid-level to senior staff of ministries (from finance to planning) in Costa Rica.

Finally, we celebrated the 10th anniversary of the Latin American and Caribbean Environmental Economics Program. As academics do, we celebrated with a conference of Latin American economists. The event had outstanding keynote speakers and an extraordinary presence of scholars from practically every country in the region. It inspired the creation of the Association of Latin American and Caribbean Environmental and Resource Economists (LACERE), whose launch was announced in the closing ceremony.

All this happened while keeping a good publication record (15 publications, including book chapters, papers, etc.), resulting from a nurturing and constructive research environment. This year in particular, we had the visit of Erin Sills and Subhrendu Pattanayak, whose input into our research environment was simply impressive. As you see, I had good reasons to start with a thank you paragraph.

FRANCISCO ALPÍZAR, DIRECTOR IDEA

List of Donors 2015

- LACEEP (IDRC and BID)
- Water and climate change project (IDRC)
- Other via EFD
- CASCADA (CI)
- AC3 (IDRC)
- Sida/EfD

Research Nucleus on Environmental and Natural Resource Economics (NENRE)



Carlos Chávez

The Research Nucleus on Environmental and Natural Resource Economics (NENRE) is a research group supported by the Millennium Social Sciences Initiative, Ministry of Economics, Promotion and Tourism, Government of Chile. Our aim is to conduct research to produce high-quality scientific knowledge to help shape sound policies to protect the environment and achieve sustainable use of natural resources. We also develop specific activities to strengthen the links between the Nucleus researchers and people involved in the design of environmental and natural resource management policies at the regional, national and international levels, and we promote the formation of national and international scientific collaboration networks.

In 2015, the Nucleus continued focusing on building collaborative relationships among researchers. In addition, we produced new scientific knowledge in our research fields, including design of environmental policy, economics of marine resources, and climate change and ecosystem services. The Nucleus researchers developed an extensive international research network and conducted several activities to work closely with policy makers. We published seven articles in peer-reviewed journals; taught more than 200 undergraduate students and more than 20 master's and doctoral students; and organized and hosted the Fourth Workshop on Environmental and

Natural Resource Economics in Chile, with the active participation of national and international researchers, as well as policy makers from the Ministry of the Environment, the Undersecretary of Fisheries, and the Fisheries Research Institute. Nucleus researchers also actively participated in technical discussions of the regional development strategy for the Biobío Region and national commissions reviewing the fishing law. In addition, they gave talks at elementary and high schools during the science week in the "thousand scientists in thousand classrooms" program, where students are exposed to environmental and natural resource problems faced by our society, and learn about economics research and the need for sustainable management of the environment and natural resources.

There are several relevant commitments for 2016. We will keep expanding the scope of collaborative research to new topics, strengthen networks in our areas of expertise, teach graduate and undergraduate students, build capacity in public policy analysis among public servants, and continue outreach to society. Finally, we are already working on all the necessary arrangements to host the 10th EFD Annual Meeting. We warmly welcome you to Chile in November 2016.

CARLOS CHÁVEZ, DIRECTOR, NENRE

List of Donors 2015

- Ministerio de Economía – core funding (ICM)
- Ministerio de Economía (Outreach + Networks)
- Ministerio del Medio Ambiente
- Sida/EfD

Resources for the Future's Efd Center



Allen Blackman

2015 was an exciting and productive year for RFF's EFD Center, which is staffed by eight RFF researchers who have made long-term commitments to studying environmental and natural resource issues in developing countries. The center's work focused on more than a dozen countries and four broad topics: terrestrial ecosystems, transportation, oceans and water, and energy and climate.

Most of the center's projects concerned terrestrial ecosystems. Juha Siikamäki was recruited to direct the Ecosystem Services Accounting for Development (ESAforD) project, a multi-country assessment of the value of ecosystem services, funded by the Swedish EPA and RFF. With funding from the InterAmerican Development Bank (IADB) and the World Resources Institute, Allen Blackman directed evaluations of the effect on forest cover change of various conservation and development policies, including protected areas in Mexico and Guatemala, forest certification in Mexico, and land titling among native communities in Bolivia, Brazil, Colombia, and Ecuador. He also led a NASA project to develop interactive web tools for targeting and evaluating forest conservation policies in Latin America. For the World Bank, Siikamäki headed both a rigorous meta-analysis of forest ecosystem service valuation and a stated preference study that is estimating the value of the Amazonian rainforest based on people's statements about willingness to pay to maintain this ecosystem. Finally, for the IADB, Siikamäki directed a large-scale assessment of Latin American and Caribbean ecosystems' potential

as targets for conservation investments, and a global study of wood-based energy use, a project funded by MISTRA's INDIGO program.

Several RFF Efd center projects focused on transportation. Josh Linn and Zhongmin Wang collaborated with researchers at Efd China on four studies. Specifically, a study of the effect on travel behavior of Beijing's license plate lottery, an analysis of the effect on travel behavior of housing location within that city, a study of the effect of urban rail transit on air quality in several Chinese cities, and an analysis of how Beijing's new policy of charging fees to drive in congested areas at certain times affected poorer versus wealthier residents. In addition, Blackman led studies of the cost of driving restriction policies in Mexico City and Beijing, both collaborations with researchers in other Efd Centers.

Three RFF Efd center projects analyzed energy and climate issues in China. Carolyn Fischer led a study of the link between shale gas and carbon emissions and Clayton Munnings examined clean development mechanism projects and pilot programs for carbon trading.

Finally, three RFF Efd center projects focused on oceans and water. Working with researchers at Efd Chile, Kalin Kroetz analyzed individual transfer quota programs in Chile and Peru, a project funded by IADB that will soon be extended to consider other types of rights-based fishery management. Fischer completed a project on salmon aquaculture in Chile. And Yusuke Kuwayama analyzed non-consumptive water rights sales in Chile.

Altogether in 2015, RFF Efd Research Fellows published six articles in highly-regarded peer-reviewed journals and made dozens of policy and academic presentations worldwide. Finally, RFF Efd center researchers were appointed to serve in a variety of editorial and advisory positions, including associate editor of Environment and Development Economics, World Bank advisory and review panels, and the steering committee of the new Forests and Livelihoods Assessments, Research and Engagement (FLARE) network.

ALLEN BLACKMAN, DIRECTOR, RFF'S EFD CENTER

List of Donors 2015

- Energy Foundation
- Formas
- RFF
- InterAmerican Development Bank
- Lincoln Institute
- Gates Foundation
- NASA
- World Bank
- Sida

Environmental Economics Unit (EEU), University of Gothenburg



Thomas Sterner

Firmly rooted in a long tradition of applied microeconomics, researchers at the Department of Economics, School of Business, Economics and Law at the University of Gothenburg are prolific in fields such as behavioral economics, development economics and environmental economics.

Established in 1990, the Environmental Economics Unit today has four full professors, five associate professors, several research fellows and post docs, about ten PhD candidates, four policy advisors, a communications officer and a number of support staff. We also have a large international network of research associates who have been students, visiting researchers or lecturers at various points in time or with whom we have other forms of collaboration.

The unit offers a PhD program in Environmental and Climate Economics for students from lower and middle income countries, and so far 35 students have graduated. The purpose of the Climate Economics program, which is financed by the Swedish International Development Cooperation Agency (Sida), is to strengthen global capacity, in particular the capacity to teach environmental and climate economics at the university level, as well as to establish a firm basis for research that can be used for policy advice. Apart from the PhD program, we provide specialization courses in climate and environmental economics; so far, approximately 350 persons from countries in Latin America, Africa, China and other regions have participated in these specialization courses since 1998.

Most of the EEU's research concerns climate, transport, industry and natural resource management, particularly in countries where growth is essential for poverty alleviation. The work includes the selection and design of policy instruments; the management of natural resources; and a close interaction between traditional economics approaches and the emerging applications of behavioral and experimental approaches in the field.

Interdisciplinary collaboration with climate scientists, fishery biologists, psychologists, anthropologists and others is of great importance. The research project COMMONS – Human Cooperation to Manage Natural Resources – includes research teams at Indiana University, the University of Gothenburg, and Resources for the Future. Recently we have been involved in the formation of a number of University of Gothenburg prioritized research areas (UGOT Challenges). We have also just been awarded the honour of hosting the World Congress of Environmental and Resource Economists 2018.

**THOMAS STERNER, HEAD OF EFD RESEARCH COMMITTEE
AND FOUNDER OF EEU**

List of Donors 2015

- The Swedish Research Council Formas
- Riksbankens Jubileumsfond
- Swedish Energy Agency
- IVL Swedish Environmental Research Institute
- Vetenskapsrådet – The Swedish Research Council
- University of Gothenburg
- Sida/EfD

Three more centers on the doorstep



Pham Khanh Nam, University of Economics Ho Chi Minh City, Vietnam and Mudit Kapoor, Centre for Research on the Economics of Climate, Food, Energy, and Environment, New Delhi, India.



Jorge Bonilla, director for The Research Group on Environmental, Natural Resource and Applied Economics Studies (REES), Universidad de los Andes, Colombia.

The EfD network is expanding, which will allow more countries to take advantage of EfD’s collective experience and knowledge sharing within the network. New centers will also increase the knowledge pool of EfD and thereby strengthen the “best practice” approach and improve the quality of research in all EfD countries and regions. EfD’s expansion to an increasingly global network is part of its long-term strategy and is viewed as a great opportunity to increase visibility for the network and to be increasingly successful in attracting support from a more diverse group of funders for future sustained expansion.

Currently, there are three aspiring EfD centers, in India (Centre for Research on the Economics of Climate, Food, Energy, and Environment, or CECFEE at the Indian Statistical Institute), Vietnam (at the University of Economics Ho Chi Minh City) and Colombia (network hosted by Universidad de los Andes). These centers are being evaluated and a decision on full-fledged membership is expected in November 2016.

“At the moment, there is great interest in EfD around the world, and many academic institutions see the benefit of being part of other, larger international networks.”

GUNNAR KÖHLIN, EFD DIRECTOR

“We are like a big family. We care about each other, and we have a lot of fun together. We are very generous with our ideas and our time to help and support each other. I think that is what makes us strong. We are really making a difference and we will be making more of a difference in the coming years.”

GUNNAR KÖHLIN, EFD DIRECTOR

Research projects

2016

How resilient are social ecological systems in the face of climate change? Evidence from rural drinking water in Central America. 2016. EfD Central America. Theme: Water, Climate change.

The effects of urban rail transit on air quality: New evidence from multiple Chinese cities. 2016. EfD China.

Short- and long-term effects of exogenously reducing water collection times on school attendance, hours studying and time use: Meru County, Kenya. 2016. EfD Kenya. Theme: Climate change.

The impact of the System of Rice Intensification on small-holder farmers' welfare: Does partial adoption matter? 2016. EfD Tanzania. Theme: Forestry.

Forest tenure and forest management: Implications for ecosystem services. 2016. Theme: Forestry.

Sustainable Energy Transitions Initiative (SETI). 2016. Theme: Energy, Forestry.

2015

Improving energy efficiency in Costa Rican households: the effect of pecuniary and non-pecuniary incentives in shaping the timing of consumption. 2015. EfD Central America. Theme: Energy.

Individual incentives to cooperate within community-based resource management. 2015. EfD Central America. Theme: Conservation.

Combining state of the art science with practitioner's wisdom in the design of PES schemes: Lessons from the Costa Rican experience. 2015. EfD Central America. Theme: Conservation, Climate change.

The social cost of Beijing's driving restrictions program: A stated preference approach. 2015. EfD China. Theme: Climate change.

Cooperation and informal social institution: experimental evidence from rural irrigation canal management in northwestern China. 2015. EfD China. Theme: Agriculture.

An economy-wide analysis of GHG emissions tax in Ethiopia: Towards inclusive green growth. 2015. EfD Ethiopia. Theme: Climate change.

Influence of climatic factors and climate change adaptation strategies on farm productive efficiency in Kenya. 2015. EfD Kenya. Theme: Climate change, Water.

Water pricing and the demand for municipal water and sanitation services in Kenya. 2015. EfD Kenya. Theme: Water.

The role of behavioral interventions in climate change adaptation and mitigation. 2015. EfD South Africa. Theme: Climate change.

Peak load pricing and welfare effects of policy changes for national parks in South Africa. 2015. EfD South Africa. Theme: Conservation.

Wildlife corridors and communities in the East and West Usambara Mountains: Toward integrating social and biological information in conservation policy and priorities. 2015. EfD Tanzania. Theme: Conservation, Forestry.

Publications

PEER REVIEWED 2015

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EFD DISCUSSION PAPER SERIES 2015

15-01: Parés, C., J. Dresdner and H. Salgado. Who should set the total allowable catch? Social preferences and legitimacy in fisheries management institutions.

15-02: Ibanez, M. and A. Blackman. Environmental and economic impacts of growing certified organic coffee in Colombia.

15-03: Chávez Rebolledo, C. and H. Salgado. Using taxes to deter illegal fishing in ITQ systems.

15-04: Mutua, J. and P. Kimuyu. Household energy conservation in Kenya: estimating the drivers and possible savings.

15-05: Kabubo-Mariara, J. and M. Kabara. Climate change and food security in Kenya.

15-06: Chen, X. Assessment of the potential biomass supply from crop residues in China.

15-07: Guta, F., A. Damte and T. Ferede. The residential demand for electricity in Ethiopia.

15-08: Cook, J., P. Kimuyu, A. Blum and J. Gakii Gatua. A simple stated preference tool for estimating the value of travel time in rural Africa.

15-09: Cook, J., P. Kimuyu and D. Whittington. The costs of coping with poor water supply in rural Kenya.

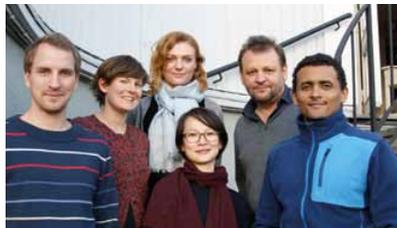
15-10: Blackman, A., F. Alpizar, F. Carlsson and M. Rivera Planter. A contingent valuation approach to estimating regulatory costs: Mexico's day without driving program.

15-11: Ferede, T., Z. Gebreegziabher, A. Mekonnen, F. Guta and J. Levin. Biofuel investments and implications for the environment in Ethiopia: an economy-wide analysis.

15-12: Komba, C. and E. Muchapondwa. Adaptation to climate change by smallholder farmers in Tanzania.

- 15-13: Mekonnen, A., A. Damte and R. Deribe. The impact of natural resource scarcity on agriculture in Ethiopia.
- 15-14: Mutua, J. and P. Kimuyu. Exploring the odds for actual and desired adoption of solar energy in Kenya.
- 15-15: Chen, X. When the wind blows: spatial spillover effects of urban air pollution.
- 15-16: Albers, H. J., L. Preonas, R. Madrigal, E. J. Z. Robinson, S. Kirama, R. Lokina, J. Turpie and F. Alpizar. Marine Protected Areas in artisanal fisheries: a spatial bio-economic model based on observations in Costa Rica and Tanzania.
- 15-17: Fuente, D., J. Gakii Gatua, M. Ikiara, J. Kabubo-Mariara and D. Whittington. Water and sanitation service delivery, pricing, and the poor: an empirical estimate of subsidy incidence in Nairobi, Kenya.
- 15-18: Gelo, D. and E. Muchapondwa. Decentralization, market integration, and efficiency-equity trade-offs: evidence from joint forest management in Ethiopian Villages.
- 15-20: Tibesigwa, B., M. Visser, M. Collinson and W. Twine. Gender differences in climate change risk, food security, and adaptation: a study of rural households' reliance on agriculture and natural resources to sustain livelihoods.
- 15-21: Ntuli, H. and E. Muchapondwa. Effects of wildlife resources on community welfare: income, poverty and inequality.
- 15-22: Yang, J., S. Chen, P. Qin and F. Lu. The effects of subway expansion on traffic conditions: evidence from Beijing.
- 15-23: Ntuli, H. and E. Muchapondwa. The role of institutions in community wildlife conservation in Zimbabwe.
- 15-24: Santis, O. and C. Chávez. Quota compliance in TURFs: an experimental analysis on complementarities of formal and informal enforcement with changes in abundance.
- 15-26: Hassen, S. Disadoption, substitutability, and complementarity of agricultural technologies: a random effects multivariate probit analysis.
- 15-27: Robinson, Elizabeth J. Z., H. J. Albers, R. Lokina and C. Meshack. Allocating community-level payments for ecosystem services: initial experiences from a REDD pilot in Tanzania.
- 15-28: Ntuli, H. and E. Muchapondwa. A bioeconomic analysis of community wildlife conservation in Zimbabwe.
- 15-29: Robalino, J. and C. Sandoval. Direct and indirect effects of extreme weather events and potential estimation biases.
- 15-30: Li, S., J. Yang, P. Qin, and S. Chonabayashi. Wheels of fortune: subway expansion and property values in Beijing
- 15-31: Turpie, J. and J. de Wet. Economic value of the Kogelberg Coast, Western Cape, South Africa.
- 15-32: Turpie, J., Goss, J. and Forsythe, K. Factors determining the spatial distribution of shore anglers in South Africa: implications for management.

Organization



From left to right:
Daniel Ternald,
Karin Jonson,
Susanna Olai, Po-
Ts'an Goh, Gunnar
Köhlin, Yonas Alem,
Olof Drakenberg,
Eugenia León,
Cyndi Berck

Secretariat

The Efd secretariat is the administrative hub and the main support function of the Efd Initiative. It is hosted by the center in Sweden. The secretariat serves the Efd centers with research management, central communication functions, core support management and administration. It also acts as an incubator for policy interaction issues to share experiences between the Efd centers and other relevant actors.

During 2015/2016 the Efd secretariat is comprised of:

Gunnar Köhlin, Efd Director

Yonas Alem, Efd Research Director

Susanna Olai, Program Manager

Karin Jonson, Communications Manager

Daniel Ternald, Research Officer

Po-Ts'an Goh, Project Administrator

Olof Drakenberg, Policy Analyst at GMV's Environmental Economics and Policy Group

Thomas Sterner, Chair of Efd Research Committee

Eugenia León, Communications Officer and Researcher, Efd Central America

Cyndi Berck, editorial services

Coordination Committee

The Efd Coordination Committee oversees the overall planning and organization of the Efd Initiative. It consists of the Directors from all Efd centers, the Efd Director and the Chair of the Efd Research Committee. The Coordination Committee convenes twice a year.

Research Committee

The Research Committee is made up of individuals who provide strategic and academic guidance to the Efd Initiative. The research committee prioritizes research themes and allocates resources from

the Research Fund. Members are nominated by the Efd centers and are appointed by the Coordination Committee for a renewable two-year term.



Peter Berck, Professor, University of California, Berkley



Mike Toman, Lead Economist on Climate Change in the Development Research Group and Manager of the Energy and Environment Team, The World Bank



Carolyn Fischer, Senior Research Fellow, Resources for the Future



Fredrik Carlsson, Professor, University of Gothenburg



Yonas Alem, Senior Research Fellow and Efd Research Director



Thomas Sterner, Professor, University of Gothenburg and Chair of the Efd Research Committee



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