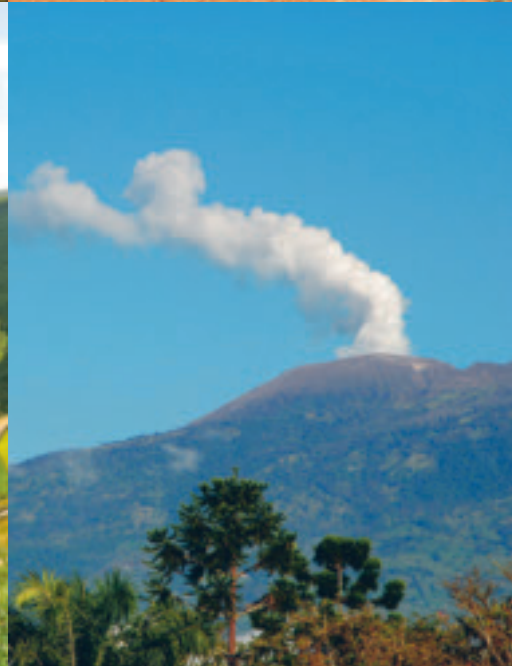
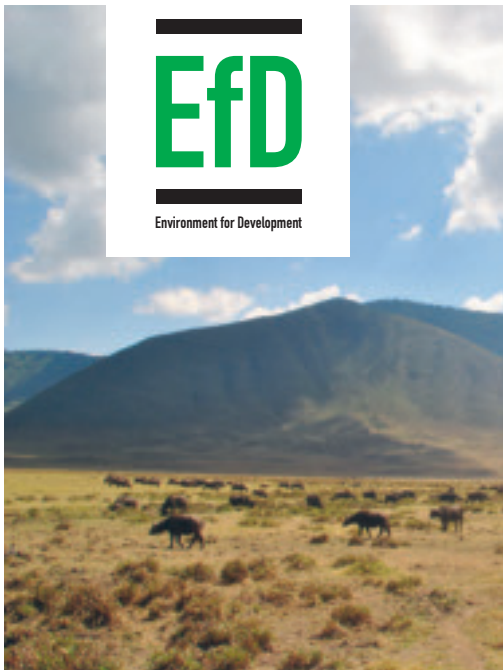


The logo for Environment for Development (EFD) features the letters 'EFD' in a bold, green, sans-serif font. The letters are stacked vertically, with the 'E' and 'F' on the top line and the 'D' on the bottom line. The 'E' and 'F' are connected at the top, and the 'D' is connected to the 'F' at the bottom. The logo is set against a white background with a thin black border.

Environment for Development



REPORT 2013/14

THE ENVIRONMENT FOR DEVELOPMENT INITIATIVE

The overall objective of the EfD Initiative is to support poverty alleviation and sustainable development through the increased use of environmental economics in the policy making process. EfD is a capacity building program in environmental economics, focusing on research, policy advice and education in Central America, China, Ethiopia, Kenya, South Africa and Tanzania.

View from Chapman's Peak, South Africa.

Our vision is a green economy with sustainable economic growth founded on efficient management of ecosystems, natural resources and climate change impacts.

The concept of the Environment for Development (EfD) Initiative is simple – we believe that natural resources and the environment should be seen as the basis for, not the constraint on, sustainable growth in developing countries. But for that to happen, we need to apply our best analytical tools to manage these resources. And that is what we do in the Environment for Development Initiative!

Institutionally, EfD is now well underway toward becoming a global network of environmental economics centers. The original six EfD centers in China, Costa Rica (for Central America), Ethiopia, Kenya, South Africa and Tanzania have now been formally joined by three more centers: Resources for the Future (RFF), Washington DC, USA; the Research Nucleus on Environmental and Natural Resource Economics (NENRE) at the University of Concepción in Chile; and the Environmental Economics Unit, University of Gothenburg in Sweden. This is the first step in forming an independent international organization in support of high quality, policy-relevant research on development and the environment, as well as academic capacity building and in-depth policy interaction.

Our initiative is starting to attract international attention. In 2013, EfD became one of the first partners of the Green

Growth Knowledge Platform (GGKP), a network of international organizations and experts who identify and address major knowledge gaps in green growth theory and practice.

There have also been productive interactions with other partners, such as the United Nations Environment Programme, the African Development Bank, the Global Green Growth Institute and the Climate and Development Knowledge Platform. We are also happy that our unique way of stimulating policy-relevant research through our EfD Research Fund has attracted funding from the World Bank, in addition to our generous core funding from the Swedish International Development Cooperation Agency (Sida).

2013 was an eventful year for EfD. In this report, you will find examples of the top policy interaction stories from each center, as well as examples of our research and academic capacity building. The productivity at the EfD centers is consistently high. In 2013 alone, 29 articles by researchers at the six original EfD centers were published in peer-reviewed international journals. More are in the pipeline; there were 18 discussion papers in the EfD Discussion Paper Series for 2013, and several papers for the 2014 series were in progress at the end of the year. These numbers don't include working papers that

EfD research associates produced through other affiliations and shared on the EfD website. The Research Fund is thus very active. In addition, seven book chapters were published, and the latest in the EfD Book Series came out. In 2013 a new, larger Research Committee was appointed. It cleared 11 new projects for funding in 2014, to be added to the 34 projects that are ongoing since the 2012 and 2013 cycles. Our research has also become even more visible through our updated website, which now features a new design, improved search options and better user friendliness on various user platforms.

But constant change is here to stay! EfD in 2014 is busy preparing itself for a dynamic future. We are now investing in video conferencing equipment for all centers to ensure that they can interact with scholars and policy makers throughout the globe – not least among each other. We will also combine this infrastructure with our ambition to be more active in supporting academic capacity building in the EfD centers. But as always, the main focus during 2014 will be to do research that can make a real difference to poor people in developing countries through sustainable growth.

Gunnar Köhlin
Director, EfD

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RESEARCH

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 which can inform national strategic plans and policies. Policy makers, farmers, donors, and others need research-based information not only to design policies but also to evaluate their efficiency in reaching their objectives.

RESEARCH TOP OUTCOMES

A SUMMARY OF EFD RESEARCH OUTCOMES 2013 IN TERMS OF PEER-REVIEWED PUBLICATIONS

EfD Central America/Research Program in Economics and Environment for Development (IDEA) at the Tropical Agricultural Research and Higher Education Center (CATIE)

published six papers in peer-reviewed journals in 2013 based on previous projects. Our publications present research on deforestation, Payments for Environmental Services (PES) and community-based organizations that manage drinking water and coastal marine resources. Highlighted results show that the main explanation for a low impact of PES on deforestation is an already low national deforestation rate. Additionally, characteristics of the water supply infrastructure, the governance structure, and the attributes of local people affect consumers' perception of water quality at home. Furthermore, individual dependence on income from the sale of marine turtle eggs, perceptions of rules and their legitimacy, and demographic factors such as age and gender are all important factors in explaining why people break the rules for harvesting and selling these eggs.

Our purpose is to contribute to the design and evaluation of public policies and local institutional arrangements that affect environmental protection, sustainable natural resource management and poverty alleviation by strengthening our understanding of the causes and consequences of human decisions as key inputs for policy making and increasing the interaction between academia and policy makers in Central America.

EfD China/Environmental Economics Program in China (EEPC)

published nine peer-reviewed journal articles in 2013, with more accepted and due to be published in 2014. In addition, a special issue of *Environment and Development Economics* on China's environmental policy was edited by EEPC fellows Jintao Xu and Peter Berck for publication in 2014. In the special issue, four papers were written by EEPC researchers.

In addition, EEPC fellows are at the core of policy shifts which drive China's transformation toward a greener economy. In a paper commissioned by Lord Nicholas Stern, author of the highly influential *Stern Review on the Economic of Climate Change*, Justin Yifu Lin and Jintao Xu argued that China must change its economic growth pattern. A government-directed structural transformation must happen, which involves pricing the pollution of dirty industries and subsidizing innovations in green industries. As a large emerging economy, China has a high level of innovative capability. To realize quick structural transformation, this capability must be utilized, which requires support for domestic technological innovation. In addition, a new international trade regime is needed. On the other hand, as a large developing economy, China must also continue institutional reform efforts. In particular, rural land reform has to be completed so that productivity of the green sector (renewable resources and energy) can grow and make a greater contribution to the country's green development.

EfD Ethiopia/Environmental Economics Policy Forum for Ethiopia (EEPFE)

published eight peer-reviewed articles in 2013. The major research themes included poverty reduction, energy, environment and climate change. For example, one of the studies responds to the question of whether biofuel production helps or hurts poor people. The findings hint that the sector could possibly be an avenue to reducing poverty and enhancing growth. The results call on policy makers, researchers and stakeholders to re-think their notions about biofuel production. Studies also suggest that institutional set-ups should be improved, particularly at the regional level, in terms of better regulatory framework and follow up, for increased production of cereals and cash crops in Ethiopia. Such results are significant inputs to the national decision making process that is geared toward sustainable development.



Master's student Tatiana Ojeda, community leader Erick Manzanera, community member, and EfD researcher Róger Madrigal in Salinas de León, Nicaragua.



EEPC faculty and students



EEPFE's field workers tasting injera baked using improved fuel saving stoves.

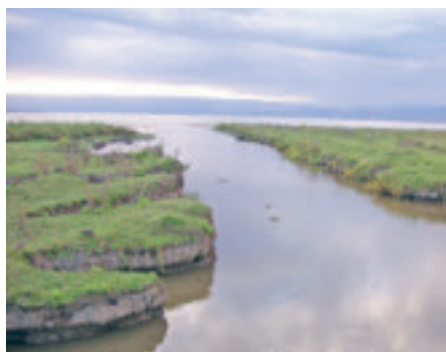
With the aim of addressing these challenges, EfD has created a network of both domestic and international researchers who engage in high quality, policy-relevant applied research in the respective countries. This is achieved through the EfD research cycle, which begins with identification of relevant research problems through interaction with various stakeholders in the respective countries, evaluation of research proposals by different subject specialists and the EfD research committee, and publication of the research results in peer-reviewed international journals. EfD funded research is concluded with communication of the research findings through research and policy briefs to relevant stakeholders and policy makers who ultimately make the decision to formulate and implement policies.

EfD Kenya published five peer-reviewed articles in 2013. These articles focused on issues as wide-ranging as the efficiency of small-scale irrigators, the factors that determine gender inequality in household food security, and the contribution of forests to rural livelihoods in Kenya. The study on small-scale irrigators found low technical and water use efficiency and recommended providing training to help farmers make appropriate choices of irrigation technologies and crop combinations; this could substantially increase efficiency and therefore income. The forest-livelihood nexus study found that forests support the living standards of the poor by allowing them to diversify household income sources, and calls for a balanced policy approach to forest management that facilitates both forest conservation and access to forests by poor households.

EfD South Africa/Environmental-Economics Policy Research Unit (EPRU) researchers published four articles in peer-reviewed journals, and one peer-reviewed book chapter during 2013. A substantial number of articles are due to appear in 2014, or are under "revise and resubmit," so the balance should be restored in the coming year. Ecotourism remains a key research theme; one paper discusses its implications for poverty in Botswana, and another its implications for mountain gorillas in central Africa. There was also one paper, widely co-authored, primarily with members of the University of Cape Town's Environmental Evaluation Unit (Department of Environmental and Geographical Sciences), on social science research in inshore waters. The use of cost-benefit analysis to drive policy was the basis of a book chapter on air pollution in South Africa.

EfD Tanzania

In 2013, the center published seven peer-reviewed publications, two book chapters and one EfD discussion paper. Out of those peer-reviewed publications, a study on Reduced Emissions from Deforestation and Forest Degradation (REDD) provides insight for REDD implementation in sub-Saharan Africa, with particular attention to monitoring and enforcement. The study suggests that implementing REDD through community-based forest management (CBFM) can create appropriate incentives and behavior changes when the recipients of the REDD funds are also key drivers of forest change. However, forest degradation is often caused by outsiders to the community, who encroach on the forest to make charcoal to sell to urban consumers. When forest degradation is caused by external forces such as the charcoal trade, REDD, through CBFM, becomes an enforcement program, with local communities rather than government agencies becoming responsible for enforcing rules in the forest. While REDD is an appealing way of bringing low and middle income countries into global efforts to reduce climate change, and a possible way of enabling reduced emissions at relatively low cost, it is a challenge for communities to enforce conservation rules, especially against people who are not members of the local community.



The shores of Lake Naivasha.



Chilongozi Village, adjacent to South Luangwa National Park, Zambia.



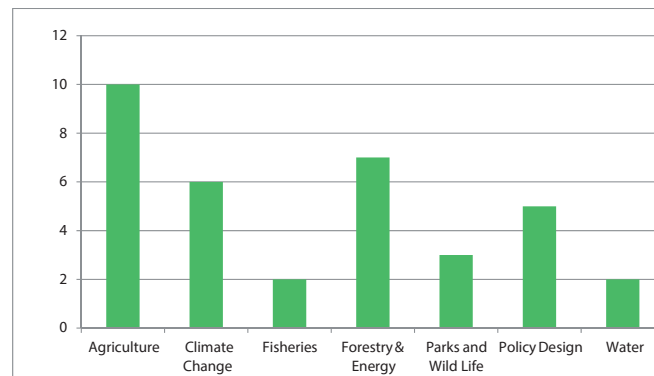
Maasai in Ngorongoro Arusha Tanzania pause with Prof. H. Jo Albers, Research Associate, Tanzania (4th from left), and Mr. Stephen Kirama, Research Fellow, Tanzania (centre).

RESEARCH PROJECTS

ALL ONGOING EFD RESEARCH PROJECTS (2013/2014) ARE LISTED IN THE PROJECT LIST ON PAGES 56-57

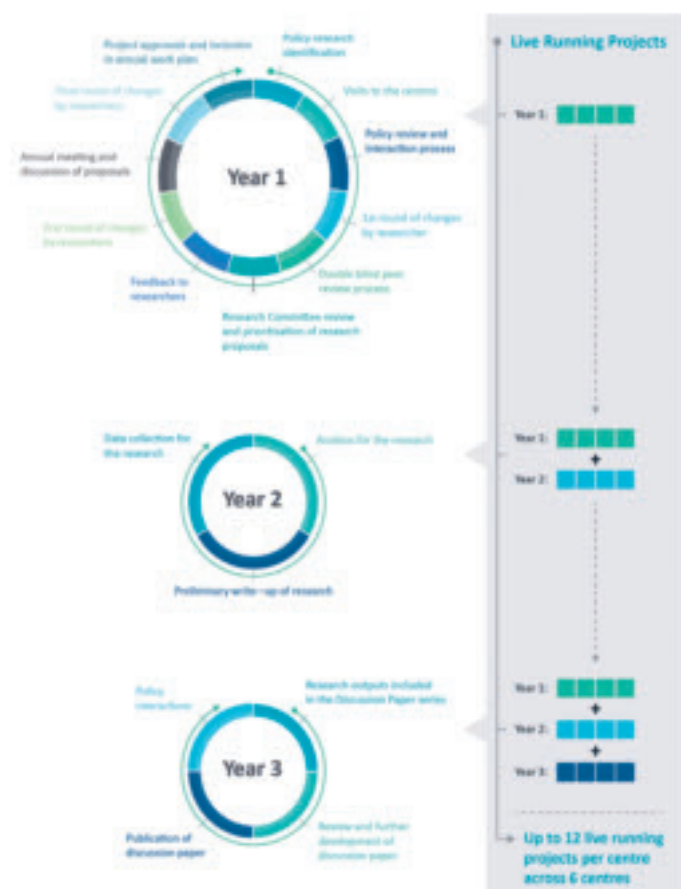
In the 2013 EfD budget, SEK (Swedish crowns) 5 million was allocated to the EfD research fund. This fund supported 35 individual and 3 collaborative research projects of various sizes across the six centers. Following an increasing trend, some centers used this funding as seed money to crowd-in other funding.

Research projects in 2013, in general, focused on all of the six major EfD themes: agriculture; climate change; fisheries; forestry and energy; parks and wildlife; and policy design. The research areas build on each other. Forestry and energy, for example, are treated as a single research focus because so many people in the developing world depend on wood fuels for cooking and heating. The use of wood fuels, and forest degradation associated with their collection, are major drivers of climate change. Similarly, carbon sequestration potential is lost when forests are cut down for the purpose of agriculture. Because of these relationships, a significant proportion of the projects dealt with agriculture, forestry and energy, and climate change, as can be seen from the table 'EfD Research projects by theme 2013'.



EfD Research projects by theme 2013

In EfD Central America, the five research projects in 2013 that were fully funded by EfD focused mainly on climate change and policy design. EfD China had four research projects focusing on policy design and climate change. Seven projects were running in EfD Ethiopia in 2013 with funding secured from EfD, focusing mainly on agriculture, forestry and climate change. EfD Kenya had six research projects running in 2013, two of which focused on household energy choice and conservation, two others on forestry and climate change, and two on water resources. These projects received full EfD funding and some of them involved collection of detailed household level data from rural Kenya; this data has been used for rigorous analysis on deforestation and land use. Researchers at EfD South Africa managed seven projects in 2013 funded by EfD. Two of these projects were on parks and wildlife, about which the center has extensive experience in conducting research. In addition, the center ran two other projects on fisheries and three others on climate change-related issues which use insights from behavioral economics. In EfD Tanzania, six projects, three of which were about agriculture, were managed by the center.



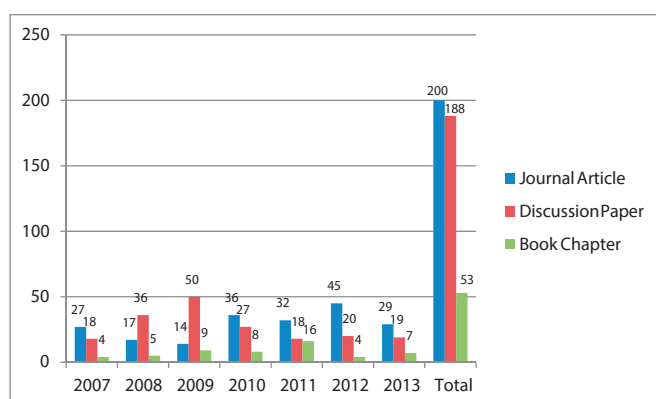
Residents of Kakamega forest transporting grass they cut in the forest back to their farms for livestock.

PUBLICATION STRATEGY

A key indicator of EfD success is, of course, the output in terms of publications. The table 'Research output by publication type 2007-2013' provides a graphical summary of these outputs by publication type, while all references for all types of publications are presented by type and center in the Publications 2013 list.

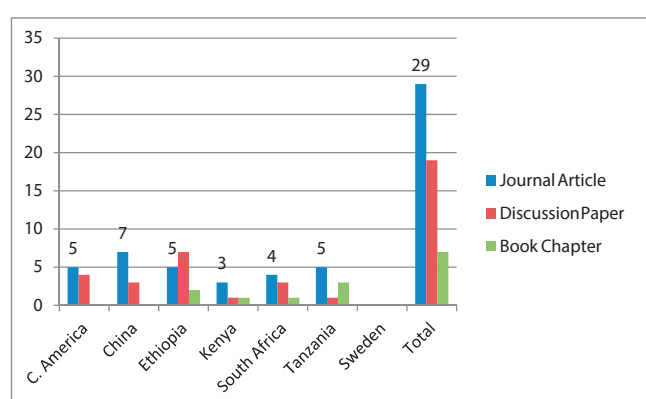
In terms of publication, 2013 has been another productive year for the whole network, with a total of 29 peer-reviewed articles in international peer-reviewed journals. In addition, 18 working papers in the EfD/RFF Discussion Paper Series and 7 book chapters have been produced, as well as the latest addition to the EfD Book Series. Although the number of publications in 2013 is less than that in 2012, the average quality of publications increased significantly, as can be seen from the list of publications. As 2013 ended, several additional discussion papers were nearing completion.

The Discussion Papers Series, produced in collaboration with Resources for the Future (RFF) in Washington, DC, is a very important part of the research, communication and publication strategy of EfD. It is expected that almost all of the research articles produced as EfD discussion papers will go through an intensive peer review process and get published in international journals, which will improve the position of the network in terms of a publication record of high quality, policy-relevant research. The Discussion Paper series is edited by Professor Peter Berck of the University of California, Berkeley, together with the EfD Research Coordinator, Dr. Yonas Alem.



Research output by publication type 2007-2013

The total research output in 2013, as decomposed by center, shows that EfD China took the lead in terms of the number of peer-reviewed journal articles, with seven articles. EfD China was followed by EfD Central America, Ethiopia, and Tanzania, which produced five peer-reviewed publications each. The similar number of publications produced by the EfD centers in 2013 is an important indicator of the increasing success of the centers in undertaking rigorous research.



Research output by center and publication type, 2013.

Finally, the EfD/RFF Book Series, edited by Professor Thomas Sterner of Gothenburg University, has continued to produce about one book a year. The 2013 contribution is entitled, *Environmental Regulation and Public Disclosure: The Case of PROPER in Indonesia*, edited by Shakeb Afsah, Allen Blackman, Jorge H. García and Thomas Sterner.

COLLABORATIVE RESEARCH PROGRAMS

In order to increase the quality of policy relevant and informative research in the EfD countries, EfD launched collaborative research projects and programs in 2012. The main aim of these projects was to design and kick off medium-sized research projects involving a minimum of three EfD centers. It is believed that collaboration among researchers and research associates in the different centers provides a unique opportunity to undertake policy relevant and high-quality research through better access to data, complementary analytical skills by researchers in the different centers and better access to a large group of policy makers and stakeholders. With this aim, EfD provides seed money which is used to kick off research projects and the development of larger research programs for which funding is to be secured from other donors. Below is a brief description of the active collaborative projects which kicked off in 2012 and continued in 2013.

Adaptation to climate change in Sub-Saharan Africa

The scientific literature on climate change documents that, over the coming decades, global warming and changes in the pattern of rainfall driven by climate change will affect agricultural output significantly. Agriculture in developing countries in general and Sub-Saharan African agriculture in particular will be affected adversely. This will threaten the survival of millions of subsistence farmers. As well as trying to reduce climate change, societies are going to have to find ways to adapt, such as by adopting different farming practices. Unfortunately, some of the countries that will be hardest hit have limited capacity to adapt; subsistence farmers in those countries lack information about new technologies, have trouble raising the capital to invest in new methods, and are cautious about risk because an unsuccessful venture would be devastating. It is therefore important to identify the drivers and impact of adaptation to climate change in the agricultural sector of this region. In view of this, the main aims of this collaborative research project are to: (i) investigate the impact of climate change on agricultural productivity, (ii) analyze the scope for adaptation, for example, in the form of crop choice, and the role of social networks, (iii) reveal the links between risk preference and decisions for adaptation, and (iv) investigate the factors that limit the adoption of productivity-enhancing agricultural technologies. The research team is led by Prof. Salvatore Di Falco of the University of Geneva and involves researchers from EfD Ethiopia, South Africa and Costa Rica. In 2013, the team undertook a study of the role

of behavioral drivers of adaptation to climate change. The research specifically looked at risk attitudes of farmers and technology adoption by using the case of farmers in Costa Rica.



An irrigation site West Gojjam zone, Amhara region, Ethiopia.

Marine Protected Areas and Small-Scale Fishing Behavior: A Comparative Analysis between South Africa, Tanzania and Costa Rica

Signatories of the Rio Convention have agreed to allocate ten percent of coastal and marine areas to "Marine Protected Areas" (MPAs) by 2020. However, progress in achieving the goal has been varying in different countries with, for instance, the Republic of South Africa almost reaching the target. One major challenge in converting coastal areas to "Protected Areas" is the impact on the livelihoods of coastal communities in the form of lost or modified access to fishing grounds. It is therefore important to understand how small-scale farmers respond

to the policy. The main aim of this collaborative project is to investigate the potential impact of MPAs on the livelihoods of poor coastal communities and come up with viable advice to policy makers. The research team is led by Professor Jo Albers of the University of Oregon and involves researchers in EfD Costa Rica, South Africa and Tanzania.

In 2013, the collaborative project continued the process of developing a quantitative model of fishers' behavior and gathering data for analysis. Researchers completed a numerical solution program and analyzed the model of small-scale fishing behavior; carried out training and capacity building in methods for writing and administering surveys, working with South African and Costa Rican collaborators in the Tanzanian center; wrote a survey form for the Tanzania survey that contains both similar information to that collected in South Africa and Costa Rica, and information specific to the Tanzanian setting, including information about income-generating projects and community benefits sharing; conducted surveys in Tanzania and began statistical analysis of the data collected; and undertook preliminary comparative survey data analysis.

Optimal Pricing of Parks and Wildlife Resources in Eastern and Southern Africa

The optimal pricing of parks and wildlife resources in Eastern and Southern Africa is a collaborative research project focusing on designing optimal pricing of parks in Eastern and Southern African countries. There are many indicators that the world-famous parks are



Róger Madrigal and Jo Albers, EfdT Research Associates (first two from right) and Stephen Kirama (third from left) taking notes from the fishermen in Mafia, Tanzania.

underpriced relative to what visitors would be willing to pay. Given the fact that the region has the potential to generate significant resources for the economy and the communities near the parks, investigating the possibilities of optimal pricing of park services is important. With this motivation, the collaborative project aims to design optimal pricing of park resources to achieve sustainable park management and to maximize the value of parks in the interests of park management, conservation, community welfare, and the national economy.

The collaborative research project, which is led by Professor Gardner Brown of the University of Washington and Dr. Edwin Muchapondwa of the University of Cape Town involves other researchers from EfD Ethiopia, Kenya, Tanzania, and South Africa, and research associates from the University of Gothenburg. In 2013, the team conducted a cross-country study about the Maasai Mara National Reserve (Kenya) and Serengeti National Park (Tanzania). The study method is called “stated preference,” in which visitors were encouraged to think realistically about how much they would be willing to pay to experience the park. The study was conducted on site to acquire relevant information for analysis of park pricing.

World Bank becomes new research donor

In June 2013, the World Bank committed to providing \$US 175,000 of funding in addition to the Sida-financed EfD research fund, on key topics for the World Bank and EfD.

“This will be a win-win opportunity,” observed Mike Toman, the leader of the initiative from the Bank’s research department. “In addition to expanding resources available for EfD fellows, the Bank will benefit from working more closely with leading environmental economics researchers in partner countries on priority research programs, expanding the Bank’s own capacities for high-quality, policy-relevant work.”



Wildlife in South Africa.

Research Committee

In September 2013, the new EfD Research Committee was appointed. There were a number of reasons for EfD to expand and renew its research committee, amongst them:

- improved research quality
- increased independence from individual research interests
- increased transparency.

The nomination process for the research committee started off during the EfD Coordination Committee meeting in June 2013 and was finalized by electing Thomas Sterner as chair of the committee in October 2013.

The committee is made up of individuals who provide strategic and academic guidance to the EfD Initiative. The Research Committee

represents a pool of credible expertise and experience with the EfD Initiative. Members are nominated by centers or the EfD Secretariat from among international leaders in relevant areas of the EfD Initiative’s research themes, and are appointed by the EfD Board for a renewable two-year term. The EfD Board also appoints the Chair of the Research Committee. The Executive Director and the Research Coordinator are ex officio members of the Research Committee without vote. The Research Committee screens the research programs of the EfD Initiative and makes decisions about the allocation of resources from the Research Fund. More specifically, the Research Committee decides the allocation of grants to researchers from participating centers to conduct research on a set of pertinent themes and also decides on the allocation of grants to Collaborative Research Programs carried out by teams of research fellows on mutually agreed themes.

Members of the current Research Committee:

- Professor Thomas Sterner (Research Committee Chair)
- Professor Peter Berck, University of California Berkeley (Member)
- Professor Fredrik Carlsson, University of Gothenburg (Member)
- Dr. Carolyn Fischer, Senior Research Fellow, Resources for the Future (Member)
- Dr. Mike Toman, Research Manager and Lead Economist, Energy and Environment Team, Development Research Group, the World Bank (Member)
- Dr. Gunnar Köhlin, University of Gothenburg (Member without vote)
- Dr. Yonas Alem, University of Gothenburg (Member without vote)



Thomas Sterner, EfD Research Committee Chair.

RESEARCH POLICY INTERACTION

The EfD Initiative is built on the premise that if relevant applied research is introduced in policy making processes, then this will result in improved policies and consequently poverty reduction and a more sustainable development. Experience highlights that a close dialogue between researchers and policy makers over an extended period is of utmost importance for policy impact. Below are some examples of successful policy interactions during 2013.

RESEARCH POLICY INTERACTION TOP OUTCOMES

The use of science-based information for decision-making is at the heart of the research agenda for **EfD Central America**. In line with this is policy and program evaluation that can be used to provide feedback to policy makers in improving programs and reducing uncertainty. As a direct contribution to policy interactions between researchers and policy makers, EfD research fellows Juan Robalino, Róger Madrigal, and Catalina Sandoval have been conducting a research project to estimate the impacts of the implementation of the Arenal-Tempisque Irrigation Project (DRAT by its Spanish acronym). Their assessment focuses on impacts on employment, income, education, deforestation, poverty, population density, and area under sugarcane and rice production. The project is funded through a collaboration between the Costa Rican government and German Agency for International Cooperation (GIZ).



Rio Caño Negro flowing into the Arenal Lake, which is then diverted to feed the Arenal-Tempisque Irrigation Project.

In 2013, the State Forest Administration (SFA) in China asked **EfD China** how to incorporate the nation's forest sector into the national green economy strategy. We were commissioned to document the potential contributions of the forest sector and to suggest policy reforms so that the sector will become an important contributor to green development in China.

Center	Policy Briefs produced (No.)	Research Briefs produced (No.)	Policy seminars, workshops or conferences organized by center (No.)	Other policy seminars, workshops or conferences that center staff participated in (No.)	In-service training courses for civil servants (No. of courses)	In-service training courses for civil servants (No. of participants)
Central America	1	3	8	12	5	118
China	1	2	8	5	1	30
Ethiopia	0	3	3	18	0	0
Kenya	0	0	3	6	0	0
South Africa	0	12	5 seminars 1 OECD workshop hosted 1 EfD conference 1 JPAL workshop 1 policy day	3 quarterly meetings 1 seminar 6 conferences	0	0
Tanzania	0	0	2	8	0	0

EfD Policy interaction in numbers 2013

Our first reaction to the question was that the forest sector could be and should be the foundation of China's green development strategy, because it is the leading green sector, sequestering a large amount of carbon annually, and is the largest land use sector, affecting the livelihoods of nearly 100 million rural households. However, there is a serious need for policy reform so that the forest sector can become the lead contributor to the country's campaign to raise the share of renewable energy from forest ecosystems and also to increase the supply of forest products in place of steel, cement, coal, etc., which are all based on extraction of non-renewable resources.

On November 27, 2013, a small but high-level workshop was held at Peking University with participation from important academics and government agencies. Important messages developed at the workshop include: 1) The government should investigate existing industrial policies which have been paying subsidies to heavy industries and remove these policies; 2)

We should also re-examine the performance and efficiency of recent forest conservation policy and how existing conservation programs limit the growth of forest productivity; 3) Efforts should also be made to remove restrictive policies and regulations in the forest sector, such as logging quotas, etc., and to continue to support forest tenure reform and improvement, so that forest farmers and the private sector have the incentive to make long-term investments for the growth of domestic forest productivity.

Partly as a result of this work, the green economy agenda is set to become the lead theme in the coming round of policy revision in China's forest sector.

EfD Ethiopia's Director, Dr. Alemu Mekonnen, made an important presentation on "Economic Costs of Climate Change and Climate Finance" at the "Bi-annual Research Workshop of the African Economic Research Consortium" held in Arusha, Tanzania. Similarly, EEPFE's researchers made

It has been an important learning experience, not least for the researchers, that policy interaction entails more listening than talking. Listening to stakeholders from the very beginning affects the research design. Dissemination of results is only the final step. The ambition within the EfD Initiative is to increase involvement even further in analysis that leads to national policies.

All EfD centers are deeply involved in local and international policy processes, with close links to policy makers. Examples from 2013 include:

- EfD Central America's extensive provision of courses aimed at civil servants;
- EfD China's involvement in work on the city of Beijing's strategies to reduce pollution and congestion;
- EfD Ethiopia's review of land certification processes, presented at the Swedish Embassy in Addis Ababa in November 2013;
- EfD Kenya's collaboration with the United Nation Economic Commission for Africa (UNECA);
- EfD South Africa's successful hosting of the EfD Policy Day 2013, as well as continuous work with the Municipality of Cape Town on saving water and reducing electricity consumption in provincial buildings; and
- the appointment of EfD Tanzania Research Fellow Adolf Mkenda as Deputy Permanent Secretary in Tanzania's Ministry of Finance in charge of policy.



A tree nursery in Gansu province, China.

Analysis on "Assessment of Agricultural Sector Policies and Climate Change in Kenya," focusing on the nexus between climate change-related policies, research and practice. The workshop presented a study commissioned by the United Nations Economic Commission for Africa (UNECA), which focused on assessing how climate change-related policies and agriculture sector policies interact and influence each other, in light of the challenges posed by climate change in the agriculture sector.



Participants at a one-day meeting on research and policy interaction.

EfD South Africa / EPRU researchers work with policy makers in municipal, provincial and central government, and elsewhere in Africa. A highlight has been the use of behavioural nudges to facilitate water savings in Cape Town and to reduce electricity consumption in provincial buildings. We have continued our relationships with public advisory bodies such as the Water Research Commission, the World Wildlife Fund and the South African National Biodiversity Institute. Macro policy involvements included trade policy in the southern African Customs Union regarding solar water heaters, work on the social and environmental consequences of reducing agricultural support following land redistribution and debates on natural gas - including natural gas exploitation in Tanzania, and the politically charged debate over shale gas fracking in South Africa.



Mandy Driver, South African National Biodiversity Institute (left) and Jane Turpie, EPRU (right) giving presentations on biodiversity and the role of economics in conservation at the EPRU Policy Day, Cape Town, 23 October 2013.

Research fellows at **EfD Tanzania** (EfDT) were given an assignment by the Tanzanian Planning Commission of the President's office to conduct a study on Poverty-Local Ecosystems Income Generation using Economic Instruments for Sustainable Utilization of Environmental Resources. The research findings and recommendations were presented in the dissemination workshop which involved policy makers and other researchers from higher learning and research institutions held between 17 and 18 May 2013 in Dar es Salaam. The study noted that most of the ecosystems services are on the decline. This decline, which is aggravated by human activities including settlement, farming and livestock and exacerbated by climate change, marks a major increase in the vulnerability of poor people in the Lake Victoria basin. The rural communities in the study areas experienced a variety of social and economic challenges, including widespread poverty. This creates the conditions for increasing uncertainty, risk and insecurity across the rural landscape. The study included recommendations such as financing beekeeping initiatives, fish farming, irrigation schemes, and small scale horticulture, as well as developing the use of biogas given the high numbers of livestock in the region.

presentations on different environmental themes such as biofuels and climate change at the 11th International Conference of the Ethiopian Economy in Addis Ababa, Ethiopia. Besides exchanging research output, such research policy interactions bring forward common problems, and the results of these studies serve as inputs for policy and decision making by the Ministry of Agriculture (Natural Resources Directorate), Ministry of Water, Irrigation and Energy, and Ministry of Environment and Forest.



Presentation by Dr. Alemu Mekonnen as part of capacity building.

EfD Kenya held its annual review meeting in February 2013. The purpose was to share and receive feedback on ongoing research, and to bring together different stakeholders to discuss research and policy interaction in Kenya and the challenges that the stakeholders face, as well as practical solutions to overcome these challenges.

In November, EfD Kenya held a joint workshop with the Kenya Institute for Public Policy Research and



The 7th Annual Meeting of the Environment for Development (EfD) Initiative at Noordhoek, South Africa.

THE EFD ANNUAL MEETING 2013 IN SOUTH AFRICA

DECISIONS AND DISCUSSIONS ON RESEARCH

A wide representation of research organizations attended the academic part of the 7th EfD Annual Meeting in Cape Town, South Africa, October 24-27, 2013. Apart from a strong presence from all six EfD centers and a selection of their associated researchers, all EfD partner organizations were present: the Research Nucleus on Environmental and Resource Economics (NENRE) of the University of Concepción, Chile; Resources for the Future from Washington, DC; and the Environmental Economics Unit of the University of Gothenburg. Also present were other organizations with which EfD collaborates, such as the World Bank, Environmental Defense Fund (EDF), International Development Research Center (IDRC), Swedish Environmental Protection Agency, Beijer Institute of Ecological Economics and Stockholm Resilience Center.

The meeting opened with an enthusiastic welcome by Gunnar Köhlin, followed by welcoming remarks by Anthony Leiman, director of EfD South Africa (EPRU), based at the University of Cape Town. During the four-day meeting, there were four keynote speeches and three other special sessions with invited speakers taking place in a plenary setting. The first keynote speech was by Peter Berck, Professor of Agricultural and Resource Economics, University of California, Berkeley on **Identification: the problem that just won't die**, discussing the problem of untangling cause and effect in complicated interactions. The second, about **Systematic Conservation**, was given by Juha Siikamäki, Associate Research Director and Fellow, Resources for the Future (RFF). The third keynote, on **Modeling Land Use**, was given by

Jo Albers, Professor of Applied Economics, Oregon State University. The fourth keynote speech, about **Accounting for Ecosystem Services**, should have been presented by Urvashi Narain, Senior Environmental Economist, World Bank, but since she was delayed, Dr Francisco Alpízar substituted and gave the speech in her absence. "Accounting for Ecosystem Services" is a process of assigning values to the services provided by natural resources – for example, the services that natural water sources provide to farmers – which, until very recently, have been ignored in calculations of national income.

The special sessions in the program had a focus on leading the way for EfD to partner in new collaborative research projects.

First out was a session about **REDD** (Reducing Emissions from Deforestation and Forest Degradation), where Randall Bluffstone, Professor of Economics, Portland State University, presented **World Bank supported REDD projects**.

REDD is a program to pay people in developing countries to avoid cutting or damaging

forests so that forests can continue to sequester carbon. This was followed by a presentation of Environmental Defense Fund's (EDF's) REDD projects, where opportunities for potential new collaborations between EDF and EfD were elaborated on. Presentations were made by Richie Ahuja, Regional Director, Asia, EDF and Ferdinand Vieder, Social Science Research Center, Berlin. Another focus was **Accounting for Ecosystem Services**, and contributions to the discussion were made by Jeff Vincent, Professor of Forest Economics and Management, Duke University and Jessica Alvsilver, Swedish Environmental Protection Agency (Naturvårdsverket), who made a proposal to EfD centers to collaborate on a number of case studies to be carried out from 2015 and beyond.

Finally, Michael Toman, Research Manager, Development Research Group, World Bank, talked about **The World Bank's Environmental Research Priorities**, a fruitful discussion to reflect on what is already on the EfD center's research agendas in light of World Bank needs.



Jane Turpie, Deputy Director, EfD South Africa, Randall Bluffstone, Professor of Economics, Portland State University, Sue Snyman, EfD South Africa Research Fellow, Yonas Alem, EfD Research Coordinator and EfD Ethiopia Research Fellow, and Razack Lokina, Director, EfD Tanzania



Thomas Sterner, Visiting Chief Economist at EDF and EfD Sweden Research Fellow, Randall Bluffstone, Professor of Economics, Portland State University, Ferdinand Vieder, Social Science Research Center, Berlin and Richie Ahuja, Regional Director, Asia, EDF

In addition, 66 presentations were made during the parallel sessions. These covered the following themes; **Land Use, Energy, REDD, Agriculture, Parks and Wildlife, Forestry, Climate Change, Fisheries, Ecosystem Services and Water, Bioenergy, Environmental Policy Instruments, Experiments, Transport and Health.**

The next EfD Annual Meeting will be held in Tanzania in October 2014.

POLICY DAY

Since 2010, EfD has hosted a separate Policy Day as a starting point for the annual meeting. The aim of the Policy Day is to make EfD research available for primarily local policy makers and also to get policy makers and other stakeholders' input into the ongoing research.

The policy day in Cape Town on October 23, 2013, hosted by EfD South Africa (EPRU), brought together policy makers from various governmental levels, practitioners, NGOs and international and national researchers. The purpose of the day was twofold: first, to identify South African policy makers' research priorities as inputs to EPRU's work; second, to highlight examples from EPRU's research and capacities. The policy day included three distinct sessions focusing on fishery economics, biodiversity and conservation, and climate change.

Fisheries

In the first session, Kim Prochazka, Department of Agriculture, Forestry and Fisheries, presented a range of research questions where economics can provide valuable contributions. These included various efficiency and distributional implications of when to fish or not, who should be given the right to fish and how, how to monitor compliance, etc. Tony Leiman, EPRU center director, gave an overview of research questions that EPRU has worked on in recent years, acknowledging that economics can only be com-

plementary to natural sciences research. The discussion that followed allowed all participants to propose topics and ask questions. There was broad agreement that a particularly important research topic is to evaluate an upcoming reform related to communal rights for inshore fishing in South Africa. What are the impacts of reform on fisheries and fishers who previously had fishing rights, and how are benefits shared? Fisheries reform involves the well-known "tragedy of the commons" problem: if anyone can use a resource, no one has the incentive to conserve it. One solution has been to "devolve" responsibility for a resource to a group of users who can then cooperate to manage it. However, a number of participants from South Africa pointed out that experiences from devolution of other forms of communal rights for agriculture had performed poorly. Another strong message from policy makers to researchers was a call for more multidisciplinary work involving natural sciences, economics and possibly other social sciences. At least, researchers should be well informed of each other's work and make sure that case studies are made in the same area.

Biodiversity and conservation

Jane Turpie of EPRU gave an overview of the toolbox of environmental economics and how it can be applied to a number of research questions of relevance for biodiversity and conservation. Mandy Driver from the South African National Biodiversity Institute (SANBI) presented its work and gave an overview of economic related research needs. She also pointed to the important role of intermediaries in bringing research findings to policymakers. Research topics included: what proportion of the wildlife industry is linked to biodiversity? What is the importance of South Africa's biodiversity assets to jobs and livelihoods? What are the returns from investing in ecological infrastructure?

Climate change

The third session focused on climate change. Thomas Sterner, University of Gothenburg

and Visiting Chief Economist, Environmental Defense Fund, is lead author on the policy instruments chapter for the upcoming IPCC report. He discussed scientific background to the topic and the importance of taking action now despite the political challenges involved. He used Germany as a good example of political and technological leadership, not least through use of feed in tariffs, a policy to encourage investment in renewable energy, which has helped drive down the costs of solar and wind power. Martine Visser highlighted parts of EPRU's work, including the use of experimental economics to increase understanding of how vulnerable groups adapt to flood risk and how farmers respond to climate variability and change. Helen Davies, from the Western Cape provincial government, and Sarah Ward, from the City of Cape Town, gave their views of important research needs. Provincial examples ranged from the costs of not addressing climate change, to more analysis of the economics of the food-water-energy nexus, to efficient use of land, to provincial impacts of a carbon tax at the national level. Examples from the city of Cape Town included how to stimulate behavioural change for greater energy efficiency, economic impacts of green procurement and efficient revenue models for resource taxes to avoid perverse incentives (unintended effects that cause people not to save energy). Questions were asked to the panel, not least related to how provincial and city policies are aligned with decisions at the national level and how the government's agenda for growth and jobs is aligned with sustainable development. Participants appreciated the discussions and stressed the need to continue the dialogue at a more detailed level to narrow down the agenda.

Mare Sarr concluded the policy day by thanking the participants for valuable inputs to EPRU's research agenda and acknowledged EPRU's responsibility for and interest in continuing the dialogue to identify common grounds for research.



Wilfred Nyangena, EfD Kenya Senior Research Fellow, Jane Kabubo-Mariara, Coordinator, EfD Kenya and Senior Research Fellow, and Richard Mulwa, EfD Kenya Senior Research Fellow



Min Wang, EfD China Research Fellow, Marcela Jaime, PhD student at the University of Gothenburg and Róger Madrigal, Senior Research Fellow, EfD Central America



A delegate from the Climate and Development Knowledge Network poses a question to the panel on Policy Day



Mintewab Bezabih, Efd Research Associate
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THE LAND CERTIFICATION PROGRAM IN ETHIOPIA: IS IT MEETING ITS GOALS OF SECURING LAND RIGHTS FOR FARMERS, ENCOURAGING INVESTMENT IN CONSERVATION AND PRODUCTIVITY, AND EMPOWERING WOMEN?

In Ethiopia, the economy depends heavily on agriculture, and rural households depend on reliable access to productive land. Ethiopia's land certification program, which aims to improve the security of land rights, has been one of the most important reforms in that country over the last decade. Efd Research Fellow Mintewab Bezabih has reviewed the effectiveness of the program in promoting agricultural productivity, investment in soil conservation and tree planting, and gender equality. Dr. Bezabih, who works at the London School of Economics, finds that the program has by and large improved land tenure security, improved women's participation in the land rental market, increased productivity and investment in land, and reduced land conflicts.

Secure land rights are important to farmers throughout the developing world, and one way to approach this is by formalizing traditional land rights. The Ethiopian land certification program is widely viewed as an example of new approaches. The program puts in writing farmers' rights to use demarcated pieces of land; compared to other land titling programs, it is low-cost and bottom-up, and puts more emphasis on gender equity.

The land certification program, considered one of the major milestones in the history of Ethiopian land reforms, was implemented in four of the major regions in the country, where more than 20 million plots and 6 million households

had received land certificates by 2006. The program essentially provided perpetual user rights to the land. It is considered one of the largest land registration programs in the world, yet it costs much less than similar programs.

Ethiopia's contemporary land tenure system is largely shaped by the events of 1975, when the Derg regime expropriated all land, placed it under state ownership, and declared a "land to the tiller" policy. Farmers were granted use rights so that all resident households in the community had a constitutional right to land; the amount of land allocated depended on household size; and each household had a fair share of each major land quality class in the community. Through membership in peasant associations,

farmers were endowed with rights of access and some management rights. Land sales, mortgaging, and rentals were illegal and so was the hiring of labour. As a result, the only viable way of access to land for new households was land redistribution that maintained the egalitarian features of the system by taking land from the most land-rich households and giving it to the new households when other communal land was no longer available. Frequent land redistribution and the ban on land market activities have long been blamed for weakening tenure security and discouraging investment and productivity. When the Ethiopian People's Revolutionary Democratic Front took power in 1991, it kept all rural and urban land under government ownership with two notable changes: formal confirmation that land rights are to be granted to men and women and the right to lease out land, with restrictions on the period of the lease and the share of land to be leased out.

The formalization of women's right to land could be considered a major milestone in the history of land reforms in Ethiopia, as rural women in Ethiopia have historically held an inferior position in relation to men in terms of property rights. Prior to 1975, Ethiopia's feudalistic system of land tenure rarely recognized independent land ownership by women, except through marriage and inheritance. Under the 1975 legislation, spouses enjoyed joint ownership of the land, implying that on paper men and women were entitled to the same land rights. However, women's rights to land depended on marriage and were, in most cases, not registered separately. This has changed under the more recent land certification program, which is an additional stride in strengthening women's land rights.

The first step in the certification process is a meeting between farmers and the woreda (village) and kebele administration – a kebele is

a group of villages. Following the election and training of a Land Administration and Use Committee, the committee assumes responsibility for determining individual land rights. This second step starts by identifying individual household plots and plot borders by walking the fields with the farmer. Then a form is filled out showing the plot location, size, and land quality class. The information is registered in land registry books, and preliminary certificates are displayed in public. Conflicts are resolved by discussion among neighbours and help from elders; outstanding conflicts are passed to the courts, and the court's decision is presented to the public to allow for corrections. After the period for raising complaints, the third step is recording land rights into registry books. Each household is then provided a certificate, and copies of the certificates are kept by kebeles and woredas.

ENVIRONMENTAL ECONOMICS AND POLICY GROUP

To improve the outreach of EfD research, and to identify opportunities to link to international policy processes, EfD cooperates with the Environmental Economics and Policy group based at the Centre for Environment and Sustainability (GMV) at Chalmers and the University of Gothenburg. GMV hosts Sida's Helpdesk for environment and climate change, which has a strong network among donor agencies and international organizations such as the Organisation for Economic Co-operation and Development, the United Nations Development Programme (UNDP) and the World Bank.

During 2013, GMV staff coached and discussed how EfD centers can advance their policy engagement, both via Skype and during the EfD Annual Meeting in South Africa. The GMV-hosted Sida Helpdesk is also an outlet for knowledge generated within EfD. The EfD center in Addis Ababa has collaborated with the Helpdesk in providing input to the preparation of the new Swedish result strategy for Ethiopia. EfD has also acted as a resource for the Helpdesk to respond to Sida's request. For instance, an EfD research fellow was asked to participate in a United Nations Department of Economic and Social Affairs (DESA)/UNDP technical workshop on tools for the approaching green economy. The task also included reporting back to Sida.

THE LAND CERTIFICATION PROGRAM IN ETHIOPIA: A REVIEW OF ACHIEVEMENTS, CONSTRAINTS AND OPPORTUNITIES

The land certification program has been one of the most important reforms in Ethiopia over the last decade. It has therefore attracted the interest of both national and international researchers to evaluate its implications. The objective of the research was to present a critical review of available economic research examining the effectiveness of the program on various economic and social variables of interest, such as agricultural productivity, investment in soil conservation and tree plantations and gender implications. The findings generally show that the program has by and large addressed the gaps in tenure security. It has also improved women's participation in the land rental market, increased productivity and investment in land and reduced land conflicts. However, for the reduction in tenure insecurity to have permanent impacts, sustained efforts need to be carried out in the realm of public policy.

One of the most direct outcomes of the program is an increased sense of secure ownership and reduction in conflict. Particularly for women, an increased sense of security is the result of having their names and pictures appearing on the land certificates, which can strengthen their position in cases of divorce or death of their husbands. There was, however, concern by the later wives of polygamous households about how much land they would keep upon divorce.

The role of the program in conflict reduction was investigated by interviews with local conflict mediators, as well as interviews revealing households' perceptions. The results showed that the program has helped reduce the number of border disputes and inheritance disputes, particularly with better plot demarcation with neighbours as witnesses. The quality of land demarcation and measurement and involvement of local elders have helped reduce conflicts. However, there were widespread reports of suspicion over fair judgments and the perception that courts benefited the wealthy and influential.

A number of studies have shown that investment in land improvement could be enhanced by increased tenure security. Similarly, a lack of secure property rights can cause environmental problems; this is the "tragedy of the commons," in which no individual has an incentive to conserve resources that are open for everyone to use. Studies in Ethiopia showed the expected results after land certification, with an increase in investment of time and money in soil and water conservation. In some cases, farmers have planted more trees, which can provide an extra source of livelihood, but this has generally been done on plots that are not very fertile agricultural land; in fact, there are regulations limiting the planting of trees on arable land.

Previous studies have shown that tenure insecurity has major implications for agricultural

productivity. Tenure security enhances long term agricultural investments such as the planting of multi-year (perennial) crops and the adoption of irrigation technologies. Tenure security also fosters land-related investments in soil and water conservation, fertilizer and other agricultural inputs usage, which are expected to increase agricultural productivity. One estimate of the productivity increase in the Ethiopian state of Tigray following certification was as high as 45%. Another study found a substantial increase in plans to invest, although it will take some time for the results to be seen in agricultural productivity.

In addition, well-functioning land markets allow the lease or sale of land to households that have the ability to be especially productive but do not have much land. The current system does not allow for land sales, but it does allow leasing. This has particular significance for the welfare of rural women, particularly in Ethiopia. Due to the taboo against women undertaking major farming activities (such as plowing with oxen), female-headed households are heavily reliant on the land rental market for production.

Dr. Bezabih and others analyzed the productivity impacts of the program using data from the East Gojjam and South Wollo Zones in the Amhara region of Ethiopia. The general productivity impacts are strong, particularly on plots rented out to other operators. In addition, increased tenure security could lead to increased confidence to leave the farm, encouraging individuals who are land-rich but less productive as farmers to lease out their land to more productive farmers; the landowner can then get a job off the farm, possibly making better use of his or her skills, and earning cash that can be used to improve family welfare as well as productivity and conservation on the farm. Dr. Bezabih found that, as expected, the program has considerable impact on off-farm employment.

Some cautions need to be mentioned. For the program to be truly a success, it needs to be inclusive of the participants at a grass roots level. However, given the authoritarian nature of many of these settings, questions may arise as to what extent the formation of the Land Administration Committee is truly inclusive, particularly of vulnerable household groups such as the poor and female-headed households. In-depth investigation of this question is important.

One of the challenges of such a rapid approach is that demarcation of borders may not be scientific and conflicts may arise. In addition, the extent to which women are able to exercise their full land rights and access needed legal support, and how often disputes end with positive outcomes for women a few years after the certification process, will be worth investigating.

Another concern is that certain requirements may need to be relaxed. For instance, there is compulsory registration of all land rental contracts, but a system of voluntary registration might be more flexible. According to the new regional and federal land laws, consent of the family is required before a household head can rent out land, and land rental contracts should be reported to the village. This may strengthen the rights of women, but it may also increase the transaction costs in the land rental market and cause such rental arrangements to go unrecorded.

Another egalitarian aspect of the program is that consent of the family is required in relation to inheritance, as priority should be given to family members depending on the land for livelihood. However, the current program has not accommodated a fast growing landless population. In the future, such programs need to look into ways of including all groups, including those who are poor or landless, in the process.



RESEARCH POLICY INTERACTION STORIES

Central American Center helps neighborhood drinking water providers prepare for climate change



Climate change poses a threat to reliable supplies of drinking water in rural areas. EfD Central America (CATIE) is working with rural communities in Costa Rica, Guatemala and Nicaragua to develop solutions.

“The ability of local institutions to adapt to changing conditions will be critical in adapting to climate change”

“UNLIKE URBAN RESIDENTS, who usually get their drinking water from private or state-owned enterprises, neighborhoods on the edge of cities and in rural towns have created their own water delivery systems,” explained Dr. Francisco Alpizar, Director of the Economics and Environment for Development Program at CATIE, which is based in Costa Rica. These are called Community-Based Drinking Water Organizations (CBDWOs). EfD is helping them prepare for extreme weather events that are expected to become more common with rising global temperatures.

“CBDWOs are local institutions created by neighborhood-based groups,” explained Dr. Róger Madrigal, one of the lead researchers on this project. There are about 24,000 of these groups in Central America. In Costa Rica, for example, they provide drinking water to around 60% of the population in rural areas.

“These organizations have sufficient autonomy to make decisions and, in many cases, operate successfully without funding from the central government or other outside assistance,” continued Dr. Madrigal. The question of what makes a CBDWO successful is one of the questions that EfD researchers are studying as part of a three-year research project. “There is worldwide interest in decentralizing decision-making and empowering local communities. These neighborhood water systems have been operating that way for a long time, and can provide valuable lessons in what works well in community-based governance.”

Global interest in this research is reflected in international participation: a Canadian research center is funding the work, and the president of the Latin American Confederation of CBDWOs participated in a 2013 workshop in Panama, “Climate Adaptation in the Water Sector: How Can Research Best Meet the Needs of Decision Makers?” The workshop brought together experts from Latin America and the Caribbean to talk about practical problems such as wastewater treatment and re-use; using water to produce electricity; and disaster response in case of floods. More information about the workshop is available at www.wateradaptationlac.com.

“The ability of local institutions to adapt to changing conditions will be critical in adapting to climate change,” continued Dr. Alpizar. “As well as coping with more frequent and intense droughts and floods, CBDWOs will have to respond flexibly to population growth and competing demands to use water for agricultural and electricity generation.”

The research will look at both factors in nature – different climate scenarios, for example – and the human and political factors that allow a CBDWO to perform well in meeting households’ needs for safe and reliable drinking water. “We are asking these questions at a very local level,” added Dr. Madrigal. To make sure that local experiences are shared throughout the region, the research results will be shared with policy makers to become part of national strategies to adapt to climate change. “We also will share findings of best practices and recommendations for improvement with the CBDWOs themselves,” concluded Dr. Alpizar.



Dr. Francisco Alpizar

RESEARCH POLICY INTERACTION STORIES

EfD China researchers suggest solutions to reduce traffic in Beijing



Traffic jams at Xizhimen, Beijing.

A plan to reduce automobile traffic in Beijing was announced in early 2014. EfD China played a major role in figuring out what strategies would – and would not – be likely to reduce the high price in pollution and congestion that Beijing residents have been paying for economic growth.

“Traffic officials have been trying to figure out how to get cars off the road since the 2008 Beijing Olympics,” said Professor Jintao Xu, director of EEPC. “Our research has shown that restrictions such as odd-even license plates haven’t helped, and that charging a fee to cars that enter the city at peak times is more likely to reduce traffic.”

The problem lay in convincing Beijing transportation officials to take the politically unpopular step of charging a fee for driving at peak times. “The public does not want to pay to use public roads,” said EfD Research Associate Lanlan Wang, who conducted the research with Deputy Director Ping Qin. “People think it’s more fair to have a rule that applies to everyone, regardless of ability to pay a fee.”

This perception of fairness has little to do with the form of government, and has not been borne out by research. Mexico City, for instance, tried driving restrictions, only to find that wealthier people bought a second car with a different license plate to get around the rules. (A consistent theme in EfD research in many countries is that the lowest income people are not hit hardest by increases in the cost of driving because they are less likely to own cars.)

“In 2008, I knew about the failure of driving restrictions in Mexico City,” Dr. Xu continued.

“So I started talking to planners in the Beijing Transportation Authority, to warn of possible unintended consequences of the license plate rules.” This was the start of an ongoing relationship between EfD China and the Transportation Authority, including a conference and internships.

A massive gridlock incident in late 2010 emphasized that the license plate policy wasn’t enough to control congestion. Influenced

by this incident and by EEPC researchers’ recommendations, the Transportation Authority submitted a list of new traffic measures. Higher parking fees and higher penalties for breaking the license plate rules were adopted. Finally, in early 2014, Beijing announced a congestion pricing policy: a fee to drive into the city at peak times. “This market-based approach is likely to be more effective in reducing driving,” concluded Dr. Xu.



By the end of 2012, the number of cars registered in the City of Beijing reached 5.2 million, 60% of which are privately owned.

RESEARCH POLICY INTERACTION STORIES

Ethiopian Communities Work Together to Conserve Forests

High level government officials discuss research policy



Forest conservation is getting more attention in Ethiopia, from the highest level of government to the community level. As part of these efforts, the EfD center in Ethiopia, Environmental Economics Policy Forum for Ethiopia (EEPFE), based at the Ethiopian Development Research Institute (EDRI), has been addressing the issue for a long period of time and has reflected its ideas in different forums.

IN December 2012, the EEPFE held a workshop that stressed the role of forests in sustaining livelihoods and storing carbon. The structure of the government ministries and the low attention given to the forestry sector was one of the main issues discussed by participants at the workshop. A new Ministry of Environment and Forest was created in 2013. “Now we can see forestry in the name of the ministry,” said Alemu Mekonnen, director of the EEPFE. While this organizational change was taking place, EfD researchers were busy gathering data on how forests are managed at the community level.

“Control over forests has been shifting to the local level for several years,” explained Zenebe Gebreegziabher, deputy director for research and policy interaction of EfD Ethiopia. “Communities in Ethiopia are being asked to manage forest resources, not only for livelihood needs, but also to keep in place healthy forests that can act as carbon sinks.”

Most of the population of Ethiopia lives in rural areas and depends on fuel wood for cooking and heating. These immediate needs have contributed to a deforestation rate of 0.8% per year. Although most forests in Ethiopia are publicly owned, they have traditionally been more or less “open access” resources: everyone can use them, and there is no incentive for conservation. EfD researchers have been evaluating whether the policy of “devolving” forest management rights from government agencies to local communities has resulted in healthier forests.

“We found that restrictive measures that were laid out by the government with the intent of protecting forests did not always translate well in small communities,” said EfD Research Fellow Abebe Damte. “Community-controlled forests, on the other hand, tend to have clear rules and sanctions and community participation, and are well-monitored. As a result,

community forests tend to be healthier and store more carbon than government managed forests,” he concluded. “This shouldn’t surprise us,” added Dr Gebreegziabher. “Ethiopians have a centuries-old tradition of collective action.”

These results were somewhat unexpected, however, because village leaders surveyed in 2009 had provided optimistic reports about the implementation of top-down forestry restrictions. “Perhaps some leaders attempted to portray their villages in a more positive light when reporting to the government,” suggested Dr Damte. To get around this problem, EfD researchers collected their data directly from heads of households in the 2013 survey. They also used satellite imagery, combined with on-the-ground carbon estimates. “This data can benefit policy makers, as it is generally more comprehensive as well as more accurate,” said Dr Damte.

The next question was to determine the conditions where community management worked best. Using data from 110 community forests, the research team found that local forest

management worked better in communities that had low infrastructure, such as low access to main roads, as well as clear and enforceable rules about access to forests. “It is especially important for forest users to see that the benefits they get from forest management match the sacrifices they make,” said Dr Gebreegziabher, “and for government agencies to respect the management decisions made locally.”

The same concern for forest health has brought Ethiopian officials and EfD researchers together in a conversation about stoves. “Fuel-efficient cook stoves can reduce the need to gather fire wood,” explained Dr Mekonnen. “With the newer stoves, families can cook with smaller amounts of fuel wood.” A reduced need for fire wood collection can not only protect forests but can also reduce the burden on women and free up children’s time for school, while cleaner stoves provide a healthier indoor environment. Although fairly inexpensive stoves exist in Ethiopia, they are in short supply. EfD is planning a workshop for late 2014 to disseminate research results and work with officials to promote the use of fuel-efficient and cleaner stoves.



Researchers from EfD Ethiopia.

RESEARCH POLICY INTERACTION STORIES

How Does Forest Conservation Affect Rural Poor People in Kenya?



Two women carry the firewood they have collected to sell at the market.

EfD Kenya fellows Wilfred Nyangena and Geophrey Sikei, were engaged in the review and synthesis of literature on climate change research in the COMESA region and how it has influenced policy. This was at the request of the Regional Strategic Analysis and Knowledge Support System for Eastern and Central Africa (ReSAKSS-ECA). Special focus was on the links between climate change, agriculture and food security.

“In Kenya, as in other developing countries, there has been a trend toward greater local control of forests,” said Prof Jane Kabubo-Mariara, coordinator of the EfD centre, which is hosted by the School of Economics at the University of Nairobi. “We recently completed a survey of the impacts of this trend on the forests and on the people who depend on them.”

The 2013 survey built on a 2010 baseline survey. As well as evaluating changes in forest cover, the survey enumerators asked villagers about changes in behaviour. “Have you planted trees? Have you changed your fuel source away from wood fuel? Questions of this type tell us how individuals are responding to conservation incentives,” said Prof Mariara.

One message that emerged from the survey was that community forest associations, or CFAs, need help in planning how they are going to manage local forests. “We learned that the quality of planning, and therefore the quality of outcomes, varied quite a bit from region to region within Kenya,” said Dr Wilfred Nyangena, Senior Research Fellow. Some former Kenya Forest Service officers are working in villages now, and this helps CFAs draft plans that will be approved by the Forest Service. “It would be helpful for the government to provide more training, to teach smallholders how to prepare their own development plans at the local level,” he added.

Another theme was the unevenness of distribution of the benefits of conservation. “There are costs to conservation in the short term,” Prof Mariara said. “In the longer term, however, the goal of CFAs is to generate income.” For instance, CFAs are able to collect grazing fees from livestock owners. Some CFAs have started tree nurseries and are selling seedlings. But people living farther from the centre of CFAs tend to get fewer of these benefits. “We are working with the Kenya Forest Service to document evidence in order to revise the national Forestry Act with these concerns in mind,” added Dr Nyangena. “We are encouraging attention to the needs of poor smallholders.”

Balancing local and centralized control is an ongoing issue. “The Kenya Forest Service had a greater role in managing forests before the devolution to CFAs,” explained Prof Mariara. “Now there is a process of negotiation between the local and national level, regarding both management practices and distribution of revenues.” As well as grazing fees and sales of seedlings and other forest products, international donations for forest conservation can be earned by good management practices that conserve and even increase forest cover. Because forests are carbon sinks, CFAs can earn payments for environmental services under programs such as REDD+. “EfD Kenya’s survey work has been important in measuring both the environmental and economic outcomes of community forest management,” concluded Prof Mariara.



Jane Kabubo-Mariara, Coordinator

RESEARCH POLICY INTERACTION STORIES

Conservation fees to visit national parks can help preserve South African ecosystems



Cheetahs in a national park

Africa's wild animals are the world's heritage, but they live on the land of indigenous peoples. Researchers at EPRU have been working with the South African National Parks agency (SANParks) on the challenge of balancing conservation, affordability, and community land rights in the nation's famous wildlife areas.

The Kgalagadi Transfrontier Park (KTP) has been the setting for a series of EfD research projects on these questions. This park, with land in both South Africa and neighbouring Botswana, is home to lions and leopards, two of the so-called Big Five animals that attract international tourism, as well as huge herds of gemsbok. It is also home to the Khomani San and Mier peoples. "The South African government restored land rights in the park to these two communities as part of post-apartheid land restitution," explained EfD researcher Johane Dikgang. "It is the shared obligation of SANParks and the traditional residents to manage the parks, with goals of both conserving the ecosystem and improving livelihoods in these communities, where most people are poor."

Earlier research by EPRU confirmed that the indigenous peoples living near KTP believe in the importance of biodiversity and other attributes of the ecosystem in which they live. Another research project recommended setting park fees high enough to bring in more revenue, which could both improve conservation and benefit local communities. The next parts of the analysis worked on assigning monetary values to both sides of this equation.

The entrance fee to KTP is called a conservation fee because it pays part of the cost of protecting the ecosystem. While the Khomani San can enter the park for free, as part of restitution, other visitors, including the Mier, pay a fee. (This is because the Khomani San lost more land than the Mier when the park was created during the apartheid era.) The fee is higher for international visitors than for South African residents.

When EfD's research project started in 2011, South Africans paid 45 Rand per person per day (less than US \$6) to enter KTP. "South Africans make up 80% of the visitors to the park," said Dr. Dikgang. "Both domestic and foreign visitors to remote parks such as KTP tend to be relatively well-off. For both groups, the entrance

fee was a small fraction of the total cost of the visit, including travel and lodging." An EfD survey, and analysis of the data, revealed that fees could go up without having much effect on visits. Since the survey was conducted, SANParks has raised fees for both domestic and foreign visitors. For South Africans, for example, the fee at KTP is now R62.

If the park fees were high enough, there would be some money available for "payment for ecosystem services." These are payments to local people to encourage them to manage resources in a sustainable manner. In the case of KTP, for instance, many Khomani San gather firewood in the park, and some engage in traditional hunting practices. Tourists, however, tend to want to see the landscape in pristine condition. By surveying both visitors and locals, EfD researchers determined that the sums the visitors are willing to pay are high enough to compensate the Khomani San and Mier for reducing their extraction of resources. "This could provide some much-needed income for very poor communities," said Dr. Dikgang.

One solution proposed by EfD is voluntary donations earmarked for conservation.

"International visitors are accustomed to contributing donations at museums and parks," said Dr. Dikgang, "so the introduction of voluntary donations has the potential to contribute significantly." As for South African visitors, the researchers found that most of the park visitors were willing to pay into a special fund dedicated to conservation within the park, although not for conservation of similar ecosystems outside the park boundaries. "They were afraid it would be wasted outside the park," explained Dr. Dikgang. "However, their willingness to pay for conservation inside the park creates possibilities for the sharing of conservation revenue with local communities."

"Revenue sharing is one way to demonstrate the link between ecotourism and local communities' economic development," added Professor Edwin Muchapondwa, Senior Research Associate with EPRU. "Payments for ecosystem services in KTP would directly benefit poor local communities. Clearly distinguishing the part of visitors' payments going to local communities will help visitors connect with the indigenous people, who are co-owners of national parks."



Fauna at a national park.

RESEARCH POLICY INTERACTION STORIES

Restricting Charcoal Production is a Big Challenge in Protecting Tanzania's Forests



Stephen Kirama, EfdT research Fellow and H. Jo Albers and Roger Madrigal, Research Associates.

Charcoal is the most commonly used cooking fuel for urban households in Tanzania. But charcoal use has complex implications for climate change, poverty, and health.

“Cutting trees to make charcoal is a major cause of forest degradation,” explained Dr Razack Lokina, Director of EfD Tanzania, “and forest degradation is a major cause of climate change.” Forests in Africa sequester billions of tons of carbon. Cutting down trees removes this carbon sink, and burning the charcoal releases carbon into the atmosphere. The charcoal process tends to involve degradation, in which trees are cut, but the forest still exists, rather than wholesale deforestation.

One response to forest degradation is a program called Reducing Emissions from Deforestation and Forest Degradation, or REDD. As part of international climate policy, donors have been paying communities in developing countries to avoid forest loss. Communities receive REDD payments if the rate of forest degradation is reduced under their management. In Tanzania, there are a number of pilot REDD projects. One of them, organized by the Tanzanian Forest Conservation Group (TFCG), is underway in 31 villages in Kilosa and Kilwa Districts.

The problem is that REDD sets up incentives to change the behaviour of local villagers, or forest “insiders,” but most of the demand for charcoal comes from “outsiders” – urban charcoal consumers – and much of the production is also done by outsiders. “Some trees are cut by local villagers,” said EfD researcher Prof Jo Albers. “But most charcoal is illegally produced by people who don’t live in the village that is receiving the REDD payments.”

Villagers in Tanzania struggle to prevent the illegal activities that degrade their forests. “We recently surveyed rural residents,” said EfD researcher Mr Stephen Kirama, “and the majority of those surveyed said that the condition of their local forest has been getting worse

over time.” This discouraging result is often the result of illegal charcoal activities by “outsiders.” However, “insiders” also rely on forest products for their own subsistence and livelihoods, and some of this harvesting is illegal under the community’s rules, said another member of the research team, Dr Elizabeth Robinson. “Their actions, when unregulated, can also degrade the nearby forests.”

One solution might be a trade-off in which villagers have increased legal rights to collect resources for their own needs. “We have found cases where villagers don’t report illegal charcoal activities because the villagers knew they were also breaking the rules,” said Prof Albers. “If these local people were operating legally, they might be more likely to cooperate in enforcing rules against outsiders.”

Beekeeping and other alternative livelihood activities have also been introduced into REDD villages. In some cases, trees are planted specifically for charcoal production, thus relieving pressure on existing forests and providing an alternative way for insiders to make a living. However, these initiatives rarely benefit outsiders, and so pressure on the forests is likely to continue so long as urban demand for charcoal remains high.

An integrated approach to forest management is critical, added Dr Robinson. “Otherwise, illegal harvesting will simply be displaced from a forest where enforcement is good to a different location where enforcement is weak.” For example, Kibaha’s forests are already vulnerable because they are close to the nation’s capital, Dar es Salaam. If Morogoro’s forests are successfully protected against charcoal production destined for the capital, Kibaha’s forests will be under increased pressure. While visiting the Kibaha Forest Reserve, the research

team frequently saw abandoned charcoal pits and young men transporting charcoal on their bicycles, headed for Dar-es-Salaam. Encouraging Tanzanians to cook with fuel-efficient stoves is also on the policy agenda. Cooking with either charcoal or wood on a daily basis exposes household members to dangerous particulates. In addition, reliance on forest fuels affects the ability of women and girls to escape from poverty, added Mr. Kirama. “My research shows that women do 80% of the wood collection,” he said. “That is time that women could spend on more productive economic activities.” Other researchers have found that collecting wood takes away time that girls could spend in school.

Forest conservation projects in Tanzania have made fuel-efficient stoves available to local households to reduce their reliance on forest products. For poor households in both urban and rural areas, the expense of buying a new stove is one reason that there is still so much demand for charcoal.



ACADEMIC CAPACITY BUILDING

The EfD academic capacity building component is designed to increase the synergies between existing academic programs in the academic host institutions and the EfD research and policy interaction. By encouraging policy relevant research in the academic programs, EfD supports the development of capacity that can make a real difference as the students take office in government organizations. EfD is thus lessening the shortage 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 other support. Linking research and policy interaction with graduate academic programs is one of the unique features of EfD.

ACADEMIC CAPACITY BUILDING TOP OUTCOMES

EfD Central America: Students from Latin America received training in experimental economics

EfD-CA's partner, the Latin American and the Caribbean Environment and Economics Program (LACEEP), hosted its 7th Environmental and Resource Economics Training Course on Experimental Economics with Applications to the Environment in CATIE, Costa Rica. LACEEP is a capacity building effort that provides research grants for students and researchers from the region. In addition, it provides close advice and supervision by specifically appointed scientists, access to literature, publication outlets, and opportunities for comparative research.

This year, 24 people participated in this training course. It was taught by Professor Peter Martinsson from the University of Gothenburg and EfD-Sweden, together with Dr. Conny Wollbrant, Guest Teacher at the University of Gothenburg. The course started on Monday, June 3 and ended on Saturday June 15, 2013.



Participants in the LACEEP XV Workshop - Costa Rica 2013.

EfD China/Environmental Economics Program in China (EEPC)

In 2013, EEPC faculty taught undergraduate and graduate courses on natural resource and environmental management, microeconomics, econometrics, quantitative methods in economic analysis, etc., and supervised one PhD dissertation (on industrial pollution control) and two master's theses (one on forest tenure reform and farmers' energy consumption, and the other on feed-in tariffs and wind power). These students finished their work with distinction, and the PhD is now an assistant professor of economics at Sichuan University.

A new Workshop Series on Energy and Climate Change has been established, as part of an initiative to attract students to environmental and energy economics. In 2013, 15 undergraduate and graduate students signed up for the workshop, which is jointly headed by three EEPC fellows (Jintao Xu, Min Wang and Albert Zhuo Huang).



Dr. Min Wang, Assistant Professor of Economics and Senior Fellow of EEPC, is shown teaching a graduate course in Advanced Environmental Economics, in the fall of 2013.

EfD Ethiopia/Environmental Economics Policy Forum for Ethiopia (EEPFE)

EEPFE organized three important research seminars in 2013 in collaboration with Addis Ababa University. The seminars raised legal, scientific and theoretical issues of macroeconomics and natural resource management. In addition, EEPFE has been giving support to the Department of Economics of Addis Ababa University (DoE-AAU) in the form of MSc thesis grants for students and book donations. The research fellows of the Forum are teaching at higher educational institutions including at the DoE-AAU. They also taught environmental courses at the MSc level and supervised several MSc theses on various topics at Addis Ababa University, Mekelle University, and Gondar University.



Academic seminar organized by EEPFE.

EfD research fellows mainly teach environmental economics, natural resource economics and environmental valuation courses. The table “Academic capacity building – Number of courses and students 2013” summarizes number of courses and students taught in environmental economics at the respective centers in 2013. When it comes to teaching, China stands out with 600 undergraduate students taking environmental economics courses, along with 80 PhD students. All 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 these grants, and also links coursework with experience to ensure that the academic programs are grounded in research and policy work.

	Undergraduate courses		Msc Courses		PhD courses	
	# Courses	# Students	# Courses	# Students	# Courses	# Students
Central America	4	20	5	39	0	0
China	5	600	*	*	6	80
Ethiopia	0	0	3	31	0	0
Kenya	2	431	1	16	1	5
South Africa	2	100	1	13	1	4
Tanzania	2	35	2	14	2	3

Academic Capacity Building: Nr of Courses and students 2013

** Graduate courses associated with the EfD center in China are given to both MSc and PhD students. They have enrolled at different times and they are therefore all counted in the PhD Course section.*

EfD Kenya

Kenya has some excellent environmental economists, but not enough of them. To enhance research and policy influence, there is a need for capacity building in environmental economics. While many students take courses in environmental and resource economics at the undergraduate level, very few take courses at the Master's and PhD levels. EfD Kenya has continued to encourage graduate students to take up environmental economics units. In 2013, John Mutua, an EfD research associate, graduated with a PhD focusing on energy economics. Four other PhD candidates started their PhD research in diverse areas of environmental economics: energy, climate change, environmental regulation and policy. The theses are all being supervised by EfD Kenya associates.



A PhD student presents his research to economics lecturers at the University of Nairobi.

EfD South Africa/Environmental Economics Policy Research Unit (EPRU)

Being in a university department, academic capacity building is central to EPRU's existence. The School offers an undergraduate course in environmental economics, an honours level course in the same subject, and a Master's/PhD course in Resource Economics. However, our fellows go beyond the department norms: they have offered additional classes in fisheries economics to third year students in biological sciences; a full semester course to 13 students from the master's program of the African Climate Development Initiative; and a short course in the Master's program in Conservation Biology. They also regularly teach resource economics in the African Economic Research Consortium (AERC) PhD program. We also supervise large numbers of postgraduates: last year 9 honours, 6 master's and 3 PhDs completed their dissertations.



Real capacity building: Of the School of Economics' four PhD graduates, three were EPRU junior fellows. From left: Dr. Sue Snyman, Dr. Johane Dikgang and Dr. Byela Tibesigwa.

EfD Tanzania continues to provide support for young researchers studying environmental and poverty-related issues. Most of the students need more scientific skills in analyzing data. EfDT has provided support for five MA students writing their theses on environmental economics and poverty issues.

The center supported three researchers to attend a short course on Geographical Information Systems (GIS) practical training, which was held from 5-9 August 2013. That short course, organised by the Department of Geography, University of Dar es Salaam, covered comprehensive GIS software for Windows operating systems. This software is used for mapping, data compilation and management, spatial analysis, and creating geographic information. The modules were: data acquisition with GPS; visualizing and getting information from vector data; performing database queries; creating tables, graphs and summary reports; and GIS analysis with vector data text in table format.



First row, second and third, Aloyce Heplwa and Onesmo Selejo, Research Fellows in EfDT, in a training workshop in capacity building

COURSES TAUGHT AT EFD

Central America

Undergraduate courses

Environmental Economics, University of Costa Rica
Economic Growth, University of Costa Rica
Political Economy, University of Costa Rica
Public Economics, University of Costa Rica

Graduate courses

Economics of Adaptation to Climate Change, CATIE
Quantitative Methods, CATIE
Environmental and Natural Resource Economics, CATIE
Economic Valuation, CATIE
Environmental Policies in a Changing World, CATIE

China

Undergraduate courses

Econometrics
Intermediate Microeconomics
Environmental Economics
Natural Resource Economics

Graduate courses

Advanced Natural Resource Economics
Advanced Environmental Economics
Environmental Economics
Mathematics for Economists
Risk Analysis and Management

Ethiopia

Graduate courses

Environmental Economics and Policy
Climate Policy and Law
Environmental Valuation and Policy

Kenya

Undergraduate courses

Resource Economics
Environmental Economics

Graduate courses

Resource Economics
Environmental Economics
Environmental Valuation and Policy
Research Methodology

South Africa

Undergraduate courses

Resource Economics

Graduate courses

Honours Environmental Economics
ACDI Master's Environmental Economics and Climate Change
Master's/PhD Coursework Resource Economics
Environmental and Resource Economics Module for Conservation
Biology MSc Course

Tanzania

Undergraduate courses

Environmental and Resources Economics

Graduate courses

Master's Course 1: Environmental Economics I
Master's Course 2: Environmental Economics II

SPECIALIZATION COURSE IN RCTS OFFERED TO EFD RESEARCHERS AT THE UNIVERSITY OF CAPE TOWN

About twenty EfD researchers from around the globe have been in Cape Town to grow two trees from one seed: they took part in a unique course on Randomized Controlled Trials (RCTs) from 28 October - 1 November 2013, right after participating in the 7th EfD annual meeting.

A key component of EfD's research is impact evaluation of environmental and development interventions to inform policy makers. Traditional methods of impact evaluation often suffer from challenges of identifying the real impact of interventions from other factors that might affect outcomes. RCT is a promising method that addresses this problem head on. By randomizing interventions to control and treatment groups, it is possible to test their true impact.

Designing and implementing RCTs is, however, a very delicate and complex endeavor that involves a deep understanding of not only the research problem at hand, but also a number of ethical and practical issues.

In light of this, EfD collaborated with the Abdul Latif Jameel Poverty Action Lab (J-PAL), a pioneer research network on RCTs, to organize this unique course and give EfD researchers hands-on experience with this important research tool.

Founded by leading development economists with the motto of "translating research into action," and based at MIT, J-PAL has undertaken more than four hundred RCTs all the over world evaluating various interventions in health, education, agriculture and environment.

"The training not only equips EfD researchers with an excellent research tool, but it also creates opportunities for collaborative research across EfD centers," said Martine Visser, an Associate Professor of Economics at the University of Cape Town and EfD Research Fellow.

With a combination of lectures, discussion of case studies and creation of an RCT design in groups, the five-day intensive course covers the A to Z of designing and implementing RCTs.



EfD participants from several countries attending the J-PAL course in Cape Town.



Presentation during the J-PAL course.



J-PAL participants on a lunch break.



J-PAL participants on a tea break.

“WE MUST BE ABLE TO DESIGN THE RIGHT ENVIRONMENTAL POLICIES FOR AFRICA”



An excursion to the Sven Lovén Centre for Marine Sciences, Tjärnö included a field trip on a research vessel. Justice Tei Mensah: front row, middle. Professor Thomas Sterner: second from right.

Justice Tei Mensah from Ghana says that two key strengths of the University of Gothenburg's specialization course in natural resource economics distinguish this course from others of its kind: “Recent developments in the respective research fields are included, and the course brings students and lecturers from different parts of the world together.”

In total, 33 students from 15 countries attended the four specialization courses offered by the Environmental Economics Unit at the Department of Economics, School of Business, Economics and Law, University of Gothenburg in the spring of 2014. The lecturers came from nine countries: Chile, China, Ethiopia, France, Germany, Greece, Sweden, UK and USA.

“To become a good researcher, you need a good network. You need to know researchers not only from your country of origin, but from different parts of the world. You also need to know what is happening elsewhere, and link up and collaborate with good researchers from different countries,” says Justice Tei Mensah.

In 2012, he applied for the full PhD program in Environmental Economics at the University of Gothenburg, funded by the Swedish International Development Cooperation Agency (Sida). However, because the admissions process is highly competitive, he was not successful. In the same year, he gained admission to pursue PhD studies in economics at the Swedish University of Agricultural Sciences in Uppsala, specializing in environmental economics.

And so finally, when Justice Tei Mensah applied for the five-week long specialization course in Natural Resources Economics at the University of Gothenburg in spring 2014, he was admitted.

“My expectations were highly met,” he said, as he smiled after having completed the exam.

“I am now confident in natural resource modeling, and to some extent in policy design. Among my best experiences is that I’ve also got to know so many people here, not only from Gothenburg but from many different countries.”

Student diversity in the class room

Observations, examples and insights from young African scholars might be very different from the ones from Asian and Latin American students. Student diversity in the classroom influences and contributes to discussions in a very positive way, according to Justice Tei Mensah:

“The interesting thing is that even among the people from Africa the experiences and examples differ. This course really gives an opportunity to know what’s going on in other parts of the world.”

His professional dream is to become a researcher who influences environmental policy in Africa. Justice Tei Mensah also likes being a teacher. He teaches master’s students in Uppsala sustainable development in a course called Man, Society and Environment.

A desire to change

“My goal is to go back to Ghana. Most students from Africa that I meet in Sweden want to return, and it is all about a desire to change something. Africa is arguably the most endowed continent in terms of natural resources but very little has been received by the people,” says Justice Tei Mensah.



Students in the course in natural resource economics. Justice Tei Mensah stands front left.

At the same time, he says, there are lots of environmental issues in Africa, for instance in terms of pollution and disposal of waste. And furthermore, many people in Africa are suffering from climate change effects.

“Obviously, these environmental and climate effects are linked to development and economic growth in Africa. If we want development, then it is important that we can design the right policies to be able to manage our natural resources and environmental issues efficiently.

Praises the lecturers

Justice Tei Mensah praises the lecturers of the Gothenburg specialization courses for teaching at the very front line of their own research fields. As an example, he says that the spatial theory and econometrics component of the course was very interesting.

“To be able to design effective and well-functioning management policies for nature reserves, we must know how to take the spatial dimension into account, and not only the dimension of time.”

He explains with an example. “Let’s say that you have a forest reserve in community X. People living in this community benefit directly from using the forest resources. But, most often the activities of people in the adjoining villages Z and Y also affect the forest directly or indirectly, and often also benefit from the resources. If you then neglect this spatial dimension and control the reserve only from the point of view that community X is benefitting over time, it may be misleading. Hence, designing a policy instrument for such a reserve must control for such spatial effects and this is what modelling with spatial effects is about.”

Key difference between Ghana and Sweden

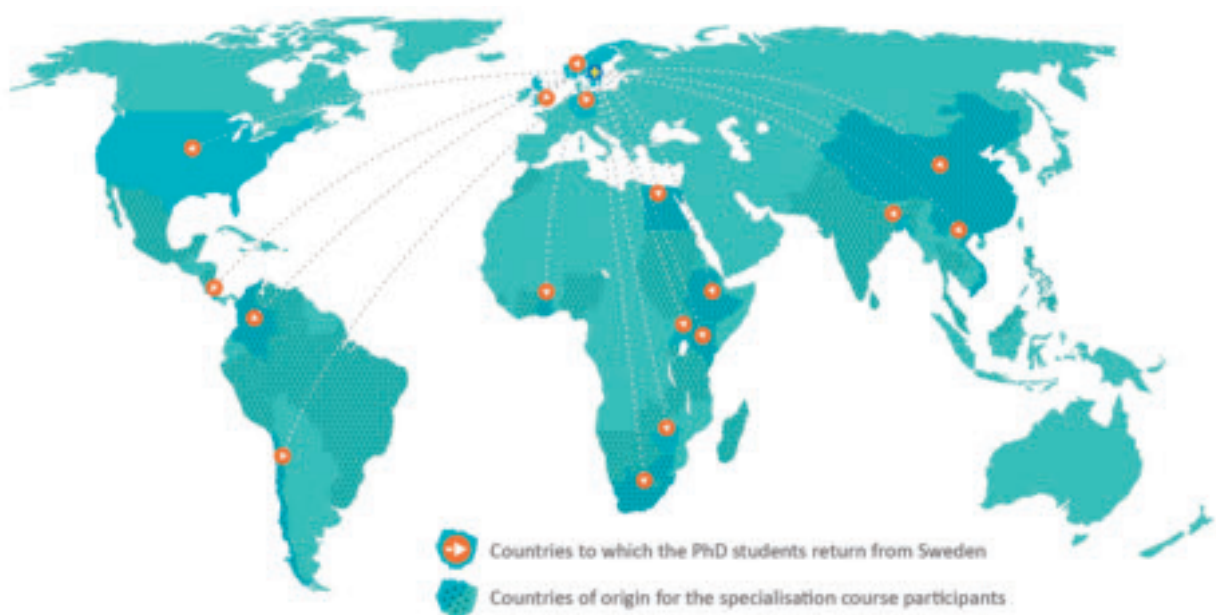
Justice Tei Mensah received his Bachelor and Master degrees in Economics from the Kwame Nkrumah University of Science and Technology and the University of Ghana respectively. He notes a key difference when comparing his education with the University of Gothenburg, and that is facilities:

“Here you have easy access to lecture notes, text books, journal articles and teaching materials, and all of good quality. When you go to the library in Ghana, there are not enough books for all students. It is a bit difficult to buy books in Ghana. There is no funding. Here you get enough funding to support yourself and to buy books.”

“Another thing is that most online bookstores do not always accept VISA cards from our part of the world. So, if you don’t find the book in the local bookshop, and in most cases you don’t, you have to go for the old books, and share them.”

Finally, when asked if he would like to add anything, Justice Tei Mensah gently suggests that the number of vacancies might be extended just a little for students coming from developing countries in the PhD program in Global Change and Climate Economics as well as in the specialization courses in Environmental and Climate Economics.

“A few more vacancies for students from developing countries will benefit a lot more people.”



Flow of individuals in environmental economics PhD and specialisation courses at the University of Gothenburg (Infographic from EnvEcon Limited)

SIX ORIGINAL EFD CENTERS

MESSAGE FROM OUR CENTER DIRECTORS

2013 has been exciting and challenging. We have managed to establish a think tank that is a compulsory reference for high quality scientific and policy relevant research in Central America, and more broadly, in Latin America. Our main achievement has been the consolidation of a dynamic research team, which was successful in terms of publications and research funding, and which has received strong international recognition for our research and capacity building efforts in the region. In 2013, we have partnered with the International Development Research Centre (IRDC) in the implementation of a large multi-country research project on community based rural water provision, and with Conservation International and the International Climate Initiative of the German government in a research project looking at ecosystem-based adaptation to climate change in Guatemala, Honduras and Costa Rica. This large, multi-year, multi-country research project is a great complement to our smaller, more focused research projects.

Our work revolves around issues of socio-economic analysis of conservation policies; socioeconomic dimensions of climate change; and management and valuation of environmental goods and services. We concluded important projects on Payments for Ecosystem Services (PES) in Costa Rica in support of FONAFIFO, the national authority in charge of

payments. This proactive and highly constructive interaction with national policy makers will likely result in additional interesting research projects in the future. We collaborated with important stakeholder and environmental organizations, such as Marviva, Forever Costa Rica, and the National Institute of Biodiversity (INBio), on sustainable management of national parks and marine protected areas. At the same time, we started an exciting group of projects on the topic of climate change. Climate change is perceived by policy makers as a real threat to human well-being in Central America. Increased drought is affecting household and irrigation water supply systems in dry areas, and the adverse consequences of higher temperatures and extreme precipitation have challenged national governments' capacity to better manage risk.

The major component of our capacity building efforts focused on the training of students in CATIE's Master's Program. In 2013, the focus of this master's program changed to Economics, Development and Climate Change. Our dedication to capacity building goes beyond CATIE's walls, as there is high demand for our staff to teach at other academic institutions such as the University of Costa Rica. In addition, we collaborate with other partner programs, such as the Latin American and Caribbean Environmental Economics Program

(LACEEP), in their efforts to build capacity for people from academic and non-academic organizations.

There is still much to be done. Our strategy for the future is to continue to grow in terms of research projects, in order to provide a suitable landing platform for the capacity we have helped create.

Francisco Alpizar
Director

María A. Naranjo
Deputy Director



María A. Naranjo, Deputy Director, and
Francisco Alpizar Director

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NETWORKS

EfD-CA, together with other initiatives within the Research Program in Economics and Environment for Development in Central America at CATIE, has an extended list of national and international partners, which provide a wide range of network support to projects and initiatives around the core issues in research, policy advice, and training. This network has been built up throughout the years that the center has been in operation. Our goal is to solidify our current alliances and to broaden our network in order to achieve greater impact in Central America.

EfD-CA staff will continue to collaborate with the Latin American and Caribbean Environmental Economics Program (LACEEP) in capacity building and training. Our collaboration with the International Development Research Centre (IDRC) in Canada is unfolding and there are two strong ongoing projects related to climate change, communities and water; this collaboration extends to research partner Paul Ferraro from Georgia State University.

We are continuously engaging with government agencies and universities. Some EfD-CA researchers teach at the University of Costa Rica and are invited as lecturers at conferences around the world. We continue our work on research and advising, for example, with Costa Rica's National Forestry Financing Fund (FONAFIFO) on ecosystem services and payments schemes; the newly created office of the Vice-Minister for Water and Seas on marine habitat protection; and the Ministry of Planning on impact evaluation of irrigation projects on poverty. Our network extends to other Central American countries, with agencies and NGOs that are working on water issues, coffee production, and small subsistence farming in the region.

DONORS AND FUNDING

Our Center offers an attractive opportunity for institutions providing financial support for research and partners interested in our activities and innovative agenda.

We are grateful for the trust and support provided by donors and partners during 2013:

Number of donors	5
List of donors	Funding by donor during 2013
1) LACEEP (IDRC and BID)	17.9%
2) CASCADA (CI)	11.7%
3) Water and climate change project (IDRC)	0.60%
4) AC3 (IDRC)	14.7%
5) Other via EfD	17.2%
Sida/EfD funding as share of total center budget (incl. univ. salaries)	37.9%

List of donors EfD Central America

CONTACT US

To find out more about our work and the EfD Initiative, please visit www.efdinitiative.org/central-america

You are most welcome to contact us:

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SIX ORIGINAL EFD CENTERS

CHINA MESSAGE FROM OUR CENTER DIRECTOR

In China, many economic analyses point to the fact that policies for environmental protection, such as pollution control, have been undercut by the heated pursuit of economic growth at the local level. Yet, at the same time, economic opportunity has been limited by the expansion of government-sponsored ecological programs that do not necessarily achieve the desired goal of sustainable development. The Chinese government, in its newly promulgated guidelines for the "Twelfth Five-Year Plan (2011-2015)," has addressed its strong determination to emphasize clean, green technology and sustainable development. Currently China is already ranked as No. 1 in clean energy investment globally, and is preparing to take the lead in the Green Race while maintaining a stable economic growth rate in the coming years.

The Environmental Economics Program in China (EEPC) is a research program focusing on applied policy research. In particular, it attempts to identify areas needing improvement in climate and environmental policy and to address policy needs in conducting social and economic assessments of ongoing public programs. Most of the work of EEPC is focused on forest policy, with attention in recent years to reforming the state forest sector and collective tenure system. These two themes have been top priorities on the agenda of the central government and have merged into the broader national agenda of establishing a new economy in the countryside. EEPC's other research arenas include water pricing policies, carbon sequestration monitoring, air pollution control and urban transportation, and environmental performance of industrial enterprises.

Research by the EEPC has provided academia and government agencies with comprehensive information with regard to the baseline situation in both state and collective forest sectors. It has been widely acknowledged that the lack of appropriate mechanisms and incentives in the state forest sector underpins severe poverty in forested areas and unsatisfactory performance of forest resource conservation. Forest tenure reform policies have been launched in more than 20 provinces in China. Policy recommendations made by EEPC researchers have been influential during the reform process.

During 2013, the EEPC conducted rigorous analyses on data from two rounds of surveys on China's collective forest sector, which were finished in 2006/2007 and 2011. A World Bank book volume based on analyses of data from the survey has been edited and is scheduled to be published in 2014. The book provides a comprehensive assessment of China's collective forest tenure reform. Experiences and lessons learnt from China's forest tenure reform will be an important reference for scholars and international organizations looking over forest sector reforms in many other developing countries.

During 2013, EEPC researchers published nine peer-reviewed publications in international journals. The main research themes of these publications are forest sector reform, environmental regulations, transportation management, and behavioral studies in household decision making.

As for capacity building, EEPC has devoted efforts to graduate and undergraduate courses

on environmental and natural resource economics at Peking University, and has collaborated with international universities and institutions such as Resources for the Future, the University of California, Berkeley, and the University of Gothenburg. By 2013, EEPC had seven faculty members, including two professors, one associate professor and two assistant professors at Peking University, as well as one associate professor and one assistant professor at Renmin University.

Jintao Xu
Director



Professor Jintao Xu, Director

Local researchers and staff**Professor Jintao Xu,**

COORDINATOR AND SENIOR RESEARCH FELLOW

Dr. Ping Qin,

SENIOR RESEARCH FELLOW AND DEPUTY COORDINATOR

Professor Shiqiu Zhang

SENIOR RESEARCH FELLOW

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SENIOR RESEARCH FELLOW

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SENIOR RESEARCH FELLOW

Dr. Zhuo Huang

SENIOR RESEARCH FELLOW

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RESEARCH FELLOW

Ms. Yuanyuan Yi

RESEARCH FELLOW

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SENIOR RESEARCH ASSISTANT AND PUBLIC RELATIONS

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ADMINISTRATIVE ASSISTANT

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RESEARCH AND ADMINISTRATIVE ASSISTANT

Domestic research associates**Dr. Jing Cao**

DEPARTMENT OF ECONOMICS AT TSINGHUA UNIVERSITY

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SCHOOL OF PUBLIC POLICY AND MANAGEMENT AT TSINGHUA UNIVERSITY AND CITY UNIVERSITY OF HONG KONG

Dr. Haipeng Zhang

ASSOCIATE PROFESSOR

CHINESE ACADEMY OF SOCIAL SCIENCES

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LECTURER, BEIJING FORESTRY UNIVERSITY

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PROFESSOR, SOUTHWEST UNIVERSITY OF FINANCE AND

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Professor Thomas Sterner

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Professor Fredrik Carlsson

DEPARTMENT OF ECONOMICS AT THE UNIVERSITY OF GOTHENBURG

Dr. Gunnar Köhlin

DEPARTMENT OF ECONOMICS AT THE UNIVERSITY OF GOTHENBURG

NETWORKS

EEPC has close collaborations with a broad range of internal and international research networks, including the National Natural Science Foundation of China (NSFC) and our fellow research institutes and universities, such as the Chinese Academy of Social Sciences (for example, the Rural Development Institute, <http://rdi.cass.cn>), the Chinese Academy of Sciences (for example, the Center for Chinese Agricultural Policy, [www.ccap.org.cn](http://ccap.org.cn)), the Chinese Academy of Agricultural Sciences (for example, the Institute of Environment and Sustainable Development in Agriculture, www.ieda.org.cn), the Chinese Academy of Forestry Sciences (for example, the Research Institute on Forestry Policy and Information, www.lyzc.org.cn/kxs.htm), Tsinghua University (www.tsinghua.edu.cn), City University of Hong Kong (www.cityu.edu.hk), Renmin University of China (www.ruc.edu.cn), Beijing Forestry University (www.bjfu.edu.cn), Beijing Normal University (www.bnu.edu.cn), China's Forestry Economics and Development Research Center (FEDRC) of the State Forestry Administration, the Beijing Transportation Research Center, etc.

Internationally, EEPC's research network embraces the entire Efd family, the World Bank, the Ford Foundation, the Rights and Resources Initiative, Forest Trends in the US, the International Institute for Environment and Development (IIED), UNEP, UNDP, EEPSEA (IDRC), the Environmental Defense Fund, and universities such as the University of California, Berkeley, the Norwegian University of Life Sciences, the University of Gothenburg, Pacific Lutheran University, the University of Rhode Island, Pennsylvania State University, Michigan State University, University of Cambridge, Aichi University Japan, etc.

DONORS AND FUNDING

During 2013, EEPC received both financial and organizational support from the Efd Initiative, the World Bank, the State Forestry Administration of China, the Ministry of Environmental Protection (MEP), and the Rights and Resources Initiative (RRI).

During the six years since the founding of EEPC, we have also received extensive support from the Ford Foundation, Forest Trends, the Rights and Resources Group, the International Institute for Environment and Development (IIED), the International Development Research Center (IDRC), the National Natural Sciences Foundation of China (NSFC), and others.

Number of donors	4
List of donors	Funding by donor during 2013
1) State Forestry Administration, P.R. China	7.5%
2) Sida	30%
3) Rights and Resources Initiative (RRI)	17.5%
4) Peking University In-kind Contribution	45%
Sida/Efd funding as share of total center budget (incl. univ. salaries)	30%

List of donors Efd China

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SIX ORIGINAL EFD CENTERS

ETHIOPIA MESSAGE FROM OUR CENTER DIRECTOR

The Environmental Economics Policy Forum for Ethiopia (EEPFE) based at the Ethiopian Development Research Institute (EDRI) is one of nine EfD (Environment for Development) Centers located on five continents. EEPFE has the main objective of supporting sustainable development and poverty reduction through increased use of environmental economics in policy making processes in Ethiopia. It attempts to achieve its objective through research, policy interaction and training.

As in previous years, 2013 was a year of important achievements for EEPFE. The main research projects implemented during the year using Sida funds included economy-wide and macro-level approaches for assessing the demand and impact of the electricity sector in Ethiopia; empirical evidence from household level data on local institutions and better forests; the potential role of sustainable land management practices adaptation to climate change in Ethiopia; and economic valuation of irrigation water in smallholder irrigation systems in Ethiopia. During this year, the Forum also started implementing a World Bank funded research project on forests and REDD+ in Ethiopia. Unlike previous projects implemented by the Forum, this research project involves examining behavior of rural households through actual distribution of improved biomass cook stoves under different conditions.

Researchers of the Forum participated in a number of seminars, workshops and conferences in and outside of Ethiopia. Some of these seminars were organized or co-organized by the Forum. Workshops and conferences in which the Forum's researchers participated included the third Conference on Climate and Development in Africa, organized by the African Climate Policy Center (ACPC) based at the United Nations Economic Commission in Africa (UNECA), and held in October 2013 in Addis Ababa. The Forum's researchers also presented papers at the annual International Conference on the Ethiopian Economy, held in Addis Ababa in July 2013, and organized by the Ethiopian Economic Association. A member of the staff of the Forum was also invited to present a paper on the economic costs of climate change and climate finance in Africa at the plenary session of a bi-annual research workshop of the African Economic Research Consortium, held in June 2013 in Arusha, Tanzania.

Following previous practices, the Forum plans to continue its work on research, policy interaction and capacity building over the coming years, building on the achievements in the past. Details of the Forum's work during 2013 (presented in this report for 2013) as well as other information about the Forum can be found at www.efdinitiative.org/ethiopia.

Alemu Mekonnen
Director



Alemu Mekonnen, Director

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Alemu Mekonnen, PhD

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RESEARCH FELLOW

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NETWORKS

To achieve its goals, EEPFE is working with different governmental and non-governmental organizations, including the Ministry of Agriculture (MOA), Ministry of Environment and Forests (MoEF), Ministry of Water, Irrigation and Energy (MoWIE), African Climate Policy Center (ACPC), Forum for Environment (FfE), Climate Change Forum for Ethiopia, Sustainable Land Use Forum (SLUF), and the International Food Policy Research Institute (IFPRI).

DONORS AND FUNDING

Sida, the Swedish International Development Cooperation Agency, is the main funding agency for the EfD initiative. The World Bank and Ministry of Water, Irrigation and Energy were the other sources of funding in 2013.

Number of donors	3
List of donors	Funding by donor during 2013
World Bank Ministry of Water, Irrigation and Energy	41.8% 3.5%
Sida/EfD funding as share of total center budget (incl. univ. salaries)	54.7%

List of donors EfD Ethiopia

CONTACT US

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SIX ORIGINAL EFD CENTERS

KENYA MESSAGE FROM OUR CENTRE COORDINATOR

EfD Kenya is hosted by the School of Economics, University of Nairobi. EfD Kenya aims to strengthen the existing capacity in training and research in environmental economics at the School of Economics, University of Nairobi and the Kenya Institute for Public Policy Research and Analysis (KIPPRA). The Centre aims to become a leader in research and policy advice in environmental and resource economics in Kenya. It recognizes the importance of environmental concerns in achieving economic development and poverty reduction. EfD Kenya therefore continues to make substantial contributions in promoting the use of environmental economics tools to shape policy directions in Kenya. We are delighted to share with you our annual report for 2013, detailing some of the activities in which we engaged. The year marked the second year that the centre operated in a university environment and has seen the EfD family embark on new directions and test new waters.

In 2013, the centre engaged in a number of research activities and policy interactions. In February, EfD Kenya held a one-day meeting to share and receive feedback on ongoing research and planned research for 2013. We held our first Annual Workshop on August 7, 2013 at the Fairview Hotel in Nairobi to discuss research outputs and proposals for 2014. In November, we also held a joint workshop with KIPPRA on Assessment of Agricultural Sector Policies and Climate Change in Kenya, based on findings of a study commissioned by the United Nations Economic Commission for Africa (UNECA) in collaboration with the African Union Commission (AUC) and the African Development Bank (AfDB) under the ClimDev-African program. The meetings saw active participation by stakeholders from relevant ministries, parastatals, research institutions and academia.

On the research front, two research projects were completed in 2013: "Climate Change, Food Security and Vulnerability"; and "Energy Choice and Pricing". "Water Sector Reforms" background research is at an advanced stage. In addition, some very interesting research activities were initiated. A study on rural water demand was kicked off, bringing in an exciting dimension of collaboration between EfD Kenya researchers and researchers from the University of North Carolina. A study of urban water tariffs and water use also involves researchers from EfD Kenya and the University of North Carolina. I am quite excited about these two studies, as they have great promise to expand the centre's output compared to the recent past.

With regard to staffing at the Centre, Dr Wilfred Nyangena left coordination of EfD Kenya as he proceeded on sabbatical, and the coordination duties were taken up by Prof Jane Mariara. The centre also initiated recruitment of a research officer, who took up the position in January 2014. Mr John Wainaina, a recent Master's graduate of the school, will join Ms Maimuna Kabatesi, the program officer, to energize the centre. He will take charge of data and knowledge management, support EfD Kenya's analytical work and support other EfD Kenya activities.

On behalf of the University of Nairobi and of all EfD Kenya members, I would like to thank Sida for its support. I also thank the EfD Initiative team at the University of Gothenburg for their tireless efforts to ensure the success of EfD Kenya. Finally, I thank all of our members, collaborators, associates and well-wishers for their support in 2013. We look forward to working together to make EfD Kenya a centre of excellence.

We hope that you will find this report informative and interesting. Your feedback regarding the information contained here will be highly appreciated. Enjoy your reading.

Jane Mariara, PhD
Coordinator, EfD Kenya



Jane Kabubo-Mariara, Coordinator

Local researchers and staff**Jane Mariara, PhD**

COORDINATOR AND SENIOR RESEARCH FELLOW

Maimuna Kabatesi, MA

PROGRAM OFFICER

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SCHOOL OF ECONOMICS, UNIVERSITY OF NAIROBI

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SCHOOL OF ECONOMICS, UNIVERSITY OF NAIROBI

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KENINVEST

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Maurice Ogada, PhD

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UNIVERSITY OF NAIROBI AND ENERGY REGULATORY COMMISSION OF KENYA

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KENYA WILDLIFE SERVICES (KWS)

John Omiti, PhD

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CENTRE FOR ADVANCED STUDIES IN ENVIRONMENTAL LAW AND POLICY (CASELAP), UNIVERSITY OF NAIROBI

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LAND O'LAKES INC

International research associates**Menale Kassie, PhD**

CIMMYT, NAIROBI

Kofi Vondolia, PhD

UNEP, NAIROBI

NETWORKS

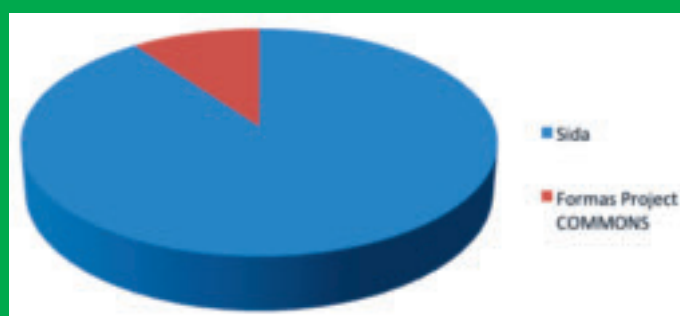
In order to effectively make an impact in its mandate, EfD Kenya has developed good working relationships with other regional and national research and policy oriented organizations in the country. It has gained considerable trust and credibility with both public and private institutions. It has a strong working relationship with reputable institutions in the country that include the National Environment Management Authority (NEMA), Kenya Institute for Public Policy Research and Analysis (KIPPRA), United Nations Environment Programme (UNEP), World Agroforestry Centre (ICRAF), World Wildlife Fund (WWF), Kenya Wildlife Service (KWS), Consultative Group on International Agricultural Research (CGIAR) centres (International Livestock Research Institute ILRI and International Maize and Wheat Improvement Centre CIMMYT), United Nations Economic Commission for Africa (UNECA), Ministry of Environment and Mineral Resources (MEMR), Ministry of Finance, and Office of the Prime Minister, among others.

DONORS AND FUNDING

EfD Kenya is supported by the Swedish International Development Co-operation Agency (Sida).

Number of donors	1
List of donors	Funding by donor during 2013
Sida	90%
Formas project COMMONS	10%

List of donors EfD Kenya

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SIX ORIGINAL EFD CENTERS

SOUTH AFRICA MESSAGE FROM OUR CENTER DIRECTORS

Since its establishment seven years ago, EPRU has striven to produce policy-relevant research in areas important to South Africa. Topics such as community/wildlife interactions and management, air and water pollution, and natural resource management all remain central to our work, especially in respect of property rights and poverty, climate change, sustainability and issues of irreversibility and resource depletion. Our close collaborations with the South African National Biodiversity Institute, the Department of Agriculture, Forestry and Fisheries, the Water Research Commission, and the City of Cape Town illustrate our continued commitment to the economics of environmental policy and development. Also important is our continuing interaction with other Efd centres, particularly those in Tanzania and Kenya. Four of our senior fellows are engaged in international collaborative research and policy work with Efd members.

In 2013, EPRU was jointly coordinated by Anthony Leiman and Jane Turpie. We continued to meet off-campus on a quarterly basis to discuss our research ideas and outputs, thrash out research problems, and discuss policy interaction issues. These interactions have been important in strengthening the group and

improving research. The final quarter of the year, however, was marked by two significant events: our first 'five year' audit, and our hosting of the Efd annual conference. The latter was preceded by a 'policy day' in which EPRU and Efd staff interacted with senior environmental staff from central and provincial government departments, and was followed by a training workshop for Efd members on the conduct and design of randomised control trials. All four events were a great success.

While endeavouring to develop and improve its policy interaction strategy, EPRU has also been working hard toward diversifying its funding sources. In 2012, we became tied to two UCT-based groups: the African Climate Change Development Initiative (ACDI) and Aquad'UCT (dealing with water issues), which will bring many opportunities for collaborative and policy-relevant research. It was therefore particularly gratifying to see this translated into real funding this year as Martine Visser succeeded with a R (Rand) 3.65 million funding application to SANCOOP on the Role of Behavioural Interventions in Climate Change Mitigation and Adaptation. She has another R2.3 million of applications still awaiting finalisation and has

also confirmed funding from the South African Water Research Commission on a new behavioural economics project on water savings, to be undertaken with Kerri Brick in 2014.

EPRU continues to attempt to convert all research into high-quality academic outputs. Four have been published, four are awaiting publication and a number are currently under revision. In the course of the year, EPRU fellows have published four articles in peer-reviewed journals and two chapters in peer reviewed books, as well as 12 discussion papers and 16 conference papers. Two of our Senior Research Fellows – Edwin Muchapondwa and Martine Visser – and their postgrad students continue to dominate our publications. EPRU contributed three of the four PhDs who graduated in the Faculty of Commerce this semester; one of them, Sue Snyman, has punched far above her weight and has added one paper, four conference papers, and three papers in press. We have invited her to continue her association with us as an EPRU research fellow. Also joining us as a research fellow this year has been Dambala Gelo, who has a post-doctoral position in the School.



Anthony Leiman, Director



Jane Turpie Deputy Director

Local researchers and staff

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DIRECTOR

Jane Turpie
DEPUTY DIRECTOR

Anthony Black
SENIOR RESEARCH FELLOW

Edwin Muchapondwa
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Mare Sarr
SENIOR RESEARCH FELLOW

Martine Visser
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Dambala Gelo
RESEARCH FELLOW

Sue Snyman
RESEARCH FELLOW

Byela Tibesigwa

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Kerri Brick
JUNIOR RESEARCH FELLOW

Reviva Hasson
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Esther Kimani
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Coretha Komba
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Mintewab Bezabih

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NETWORKS

EPRU has successfully worked with a number of local and national stakeholders on medium-sized projects, such as the South African National Parks in the wildlife sector, the Department of Water Affairs and Forestry in the water sector, the Department of Environmental Affairs and Tourism on marine and coastal management, and the City of Cape Town on air quality management and energy savings. In the next few years, EPRU plans to bid for larger research projects that will enhance collaboration among EPRU research fellows, with other researchers and, importantly, with key stakeholders.

DONORS AND FUNDING

We are fortunate that over half of our expenses are met by our parent institution, the University of Cape Town, which employs all but one of our senior fellows and also some of our junior fellows. Some of our fellows, most notably Martine Visser, have shown themselves assiduous and successful seekers of external research funding. In 2013, EPRU received funding from the School of Economics, University of Cape Town (UCT), the Swedish International Development Cooperation Agency (Sida), the United Nations Environment Programme (UNEP), the Carnegie Foundation, United Nations University – World Institute for Development Economics Research (UNU-WIDER), the UCT Vice-Chancellor's funds and Center for Environmental Economics and Policy in Africa (CEEPA).

Number of donors	7
List of donors	Funding by donor during 2013
UCT School of Economics	41.6%
Sida (EfD funding)	29.7%
UNEP	12.3%
Carnegie Scholarship (UCT School of Economics)	8.6%
UNU Wider	3.3%
VC Strategic Fund	2.7%
CEEPA	1.8%
TOTAL	100%

List of donors EfD South Africa

On behalf of all EPRU members, we would like to thank Sida for its continued support. Our thanks extend to the coordination team of the EfD Initiative for helping us build what we hope will soon become a centre of excellence in the area of natural resource management in southern Africa.

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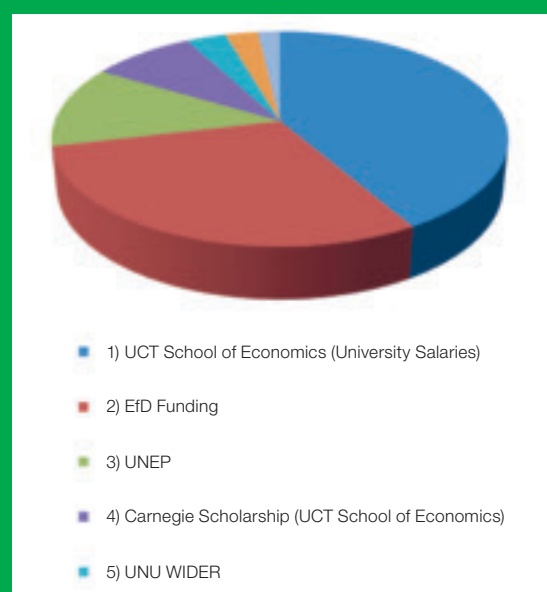
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SIX ORIGINAL EFD CENTERS

TANZANIA MESSAGE FROM OUR CENTER DIRECTOR

Dear Colleagues and Friends:

I hope this note finds you well. I'm writing to reconnect with you after a busy and successful year, and to report on the EfD Tanzania centre's progress in capacity building, research, training, policy advice and study of poverty alleviation for the year 2013. In a way, the past years since 2007 have been all about links for EfD Tanzania – strengthening existing links and making new ones. We continue linking with our department, colleges, university, government departments, ministries, and non-governmental organizations, and developing new links with service-minded undergraduate students interested in environmental economics and poverty. We also continue enhancing existing links with graduate students from a range of disciplines who are on their way to becoming our next innovators in environmental economics, resource and poverty research, policy, and practice.

We also have stayed connected with policy makers and fellow researchers, whose work informs and enhances our own. We continue to collaborate with our peer EfD centres through the Environmental Economics Unit at Gothenburg University. We have connected with and benefitted from the guidance of our centre advisory policy board, made up of distinguished scholars, practitioners, and policy analysts, as well as the members of EfD Tanzania who have stepped up to higher ranks of policy-making positions, and who continue to shepherd our goal of becoming a think-tank of the nation.

In short, never has EfD Tanzania had so many diverse donors and so many fruitful links and interactions with the people and institutions dedicated to evaluating trends in environmental and resource management and poverty, as

well as the effectiveness of resource management and poverty reduction policies. To take full advantage of these links, we have a busy agenda in 2014, which includes:

A multidisciplinary collaborative research and policy analysis in the coming EfD annual conference (October 2014) that will bring leading policy makers and scholars in environmental economics to examine the nature and dynamics of environmental issues, the extent to which resource management complexity is a particular challenge for low-income households and individuals, and the ways in which public policy is responsive to these contemporary environmental issues.

Our participation in training, workshops, and seminars allows dissemination of scientific research findings and policy briefs on environmental resource management and poverty. This allows us to share our expertise, developed over the whole period of existence of EfD Tanzania. The overall objectives are to expand the capacity of the community on matters related to environment economics, which are targeted to the national effort in natural resources management and environmental protection; to promote policy relevant and academically rigorous research by trained resource and environmental economists; and to enhance interaction between researchers and policy makers.

EfD Tanzania in the future aims to design and provide course materials to the Department of Economics to develop environmental and poverty-related short course content for any postsecondary institution – university, college, or community college – that wants to establish and inculcate the importance of environmental and resource management to the community, in line with the national strategy for growth and poverty reduction.

We continue to hold research workshops and seminars, invite eminent researchers from inside and outside the university, promote joint research, and make our databases and publications available. We are looking forward to your participation and support for our activities and invite donors and stakeholders interested in environmental economics and poverty analysis.

I would enjoy hearing from you about your own work and your feedback about ours at EfD Tanzania. Please feel free to get in touch with us at email: tanzania@efdinitiative.org

Finally, to learn more about our activities, please see our website www.efdinitiative.org/tanzania

Here's wishing you all the best wishes for the year 2014 from all of us at EfD Tanzania.

Razack B. Lokina
Director



Razack B. Lokina, Director

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NETWORKS

The EfD Tanzania centre has been working with international agencies, government departments, and nongovernmental organizations on policy issues. Our closest association is with the Environment Division of the Vice President's Office. This is the unit that is responsible for coordinating environmental management for the improvement of the welfare of Tanzanians. <http://www.vpo.go.tz/>

EfDT researchers work with the International Food Policy Research Institute (IFPRI) to seek sustainable solutions for ending hunger and poverty. We also work together to understand the economics of land degradation. Recently, the discussion paper titled "The Supply of Inorganic Fertilizers to Smallholder Farmers in Tanzania: Evidence for Fertilizer Policy Development" was published, <http://www.ifpri.org/>

The centre has drawn policy board members from the following ministries: Ministry for Finance, Ministry of Natural Resources and Tourism, and the National Environment Management Council (NEMC). These governmental sectors are important for networking, especially on the question of prioritising the research themes.

The centre continues to work with the Tanzania Forest Conservation Group (TFCG) and the Institute of Resource Assessments, which are part of a REDD task force in Tanzania.

DONORS AND FUNDING

We sincerely thank the Swedish International Development Cooperation Agency (Sida), through the EfD Initiative based at the Environmental Economics Unit at University of Gothenburg, for their continuing core support. We also thank the University of Dar es Salaam and the Department of Economics, in particular in the area of office space and facilities. We further extend appreciation to United Nations Development Programme (UNDP), to the President's Office - Planning Commission, and to the Ministry of Finance - Poverty Eradication Division, for the support of centre activities.

EfD Tanzania welcomes donors and partners interested in supporting our centre activities, especially on issues related to environmental economics and poverty, as well as supporting training and policy workshops.

Number of donors	11
List of Donors	Funding by Donor during 2013
1) University of Dar es Salaam (UDSM)	32.3%
2) The United Nations Development Programme (UNDP)	11.5%
3) Catholic Relief Services (CRS)	1.6%
4) District Agricultural Sector Investment Project (DASIP)	2.1%
5) Economic Social Research Foundation (ESRF)	5.3%
6) Ministry of Finance (MoF)	4.4%
7) Pathfinder	0.6%
8) President's Office Planning Commission (POPC)	0.5%
9) The World Society for the Protection of Animals (WSPA)	1.2%
10) Ministry of Lands, Housing and Human Settlements Development	2.4%
11) Sida/EfD funding as share of total centre budget (incl. univ. salaries)	38.1%

List of donors EfD Tanzania

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(From left) Jorge Dresdner and Carlos Chávez Rebolledo, Efd Research Fellows from NENRE, Chile.

THREE NEW EFD CENTERS IN 2013

During the Efd Coordination Committee meeting in June 2013, a decision was made to accept the Research Nucleus on Environmental and Resource Economics (NENRE) at the University of Concepción, Chile; Resources for the Future (RFF) in Washington, DC, USA; and the Environmental Economics Unit (EEU) at the University of Gothenburg, Sweden as partners of “the future Efd.” This implies that the Efd centers in Chile, USA and Sweden will not be part of the Sida-financed core support and Efd research fund aimed exclusively at the six original Efd centers during the existing program period that comes to an end in December 2014. However, the new centers can be part of proposals that will be aimed at a number of diversified donors in future program phases. Leading up to 2014, there will be parallel management processes and decision making for the original six Efd centers and “Future Efd.”

To safeguard quality for the future organization, all of the original Efd centers will also go through a re-application process to join the future Efd, during 2014. The first original Efd center to fulfill the re-application process during 2013 was Efd Central America.

RESEARCH NUCLEUS ON ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS (NENRE), UNIVERSITY OF CONCEPCIÓN

Efd is proud to welcome the Concepción team into the Efd family. “The NENRE was following with interest the Efd Initiative for a long time,” said NENRE Director Carlos Chávez.

“The reason is that we understand that the institutions share a mutual vision and strategic goals.” There are many similarities. NENRE is a research group, funded by the Chilean government, with the aim of strengthening and promoting research on proper use of natural resources, protection and improvement of the environment, and biodiversity conservation for sustainable development. Like Efd, the research nucleus works to build up human capital, establish links and interactions with policy makers, and develop a national and international network that favors research in these areas. NENRE is committed to developing high quality research in three main areas: environmental economics, fishery economics, and conservation of terrestrial ecosystems.

“We believe that the aims of the NENRE are coincident with the vision and strategic objectives of the Efd Initiative,” said Dr. Chávez. “Therefore we made efforts to develop contacts with the Efd Initiative long before becoming a center.” Specifically, members from the research nucleus participated in the annual Efd meetings. Similarly, members of the Efd Initiative participate in the meeting that the NENRE holds every year in Southern Chile.

There have also been educational exchanges. Efd researchers have provided training to master’s level students in Concepción by teaching short courses. The exchanges also included opportunities for faculty members at the Departamento de Economía, Universidad de Concepción, and several Latin American students enrolled in Concepción’s master’s program to participate as visiting researchers at the University of Gothenburg or as students enrolled in doctoral level courses offered by the

Environmental Economic Unit in Gothenburg. The research also attempted to develop inter-institutional research with members of the Efd centers.

“Our interest in becoming a full member of the Efd seemed natural to us, given the mutual interest shown in developing contacts between the institutions and the coincidences in vision and strategic goals,” concluded Dr. Chávez. “We believe that there are important synergic gains to be obtained from this exchange.”

Local researchers and staff

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Hugo Salgado

DEPUTY CENTER DIRECTOR AND RESEARCH FELLOW

Walter Gomez Bofill

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RESEARCH FELLOW

Manuel Estay

RESEARCH FELLOW

Miguel Quiroga

RESEARCH FELLOW

Jorge Dresdner

RESEARCH FELLOW

Claudio Parés Bengoechea

RESEARCH FELLOW AND COMMUNICATION OFFICER

Carolina González

JUNIOR RESEARCH FELLOW

Marcela Alveal

SECRETARIAL SUPPORT



Miguel Quiroga, Research Fellow, NENRE.

RESEARCH POLICY INTERACTION STORY

Sustainable Fisheries Law Promotes Reliable Fishing in Chile

"We make the connection between the fishers' living conditions and the fish stock's status." The newest EfD Center is not a newcomer to influencing fisheries policy. The Research Nucleus on Environmental and Natural Resource Economics (NENRE) at the Universidad de Concepción has been active for several years in bringing an economics perspective into fisheries management in Chile.

"Fisheries management has social and economic consequences," said Dr. Carlos Chávez, Principal Investigator of the research nucleus and coordinator of EfD Concepción. "It's important for policy makers to consider market behavior as well as marine science."

Shaping governmental policies to better protect the environment and use natural resources more sustainably has been a goal of the research nucleus for years. The researchers also develop activities designed to create relationships between NENRE and those involved in designing and implementing policies at various levels of the government with the aim of contributing to the conversation leading to the design and implementation of policies, and to review and recommend changes to policies already in place.

The Research Nucleus played a major role in the debate preceding the approval of the 2012 Chilean Fisheries Law and in making several suggestions that were later included in this law. Chile adopted its first law to regulate fisheries in 1991, but it was the El Niño effects on climatic conditions in 1997 that created an urgent need to revise these regulations. Jack mackerel landings, for example, fell dramatically in 1997, seriously impacting the livelihood of fishing communities. In 1999, Chile adopted its first limits on Total Allowable Catch (TAC) for its main species. But how should that total catch be divided among the companies and individuals engaged in commercial fishing? The solution was a market-based plan inspired by the idea of Individual Tradable Quotas (ITQ). The system was called Maximum Individual Harvest Limit, and set catch shares that could be transferred between fishers.

The idea behind ITQs is simple. Each fisher is assigned a quota for each species. The quota is tradable; for example, a fisher who wants to

retire can sell a quota to another who wants to expand. This system creates an incentive to fish in a sustainable manner that can conserve fish stocks. The trading price of a quota will decrease in value if a fish stock falls, but will increase in value if the stock increases. Fishers no longer have an incentive to rush to catch all they can before someone else does; each share is guaranteed. Chile adopted a one-year harvest limit plan in 2001 and a ten-year plan in 2002.

How did harvest limits work in practice? The Concepción researchers were asked to evaluate the results mid-way through the ten-year plan. Since 2006, the Research Nucleus has been deeply involved in evaluating the impact and proposing revisions to the system.

"The economic impacts of ITQs were good," said Dr. Chávez. "Because the right to a share of the catch is assured, companies can plan to work throughout the season, creating more stable employment." The work place also became safer; the competitive atmosphere before harvest limits encouraged unsafe operation of fishing vessels.

Companies that process fish as well as catching them found that the security of fishing rights allowed them to diversify into more products. Instead of selling mostly fish meal under the old system, companies added canned and frozen fish and even fish burgers into their product lines. "Now they are assured that they will get fish at the proper time and in the right condition, so they can sign contracts to export these products," explained Dr. Chávez.

The Concepción team also identified several weaknesses in how the 2002 fisheries law operated in practice. "Enforcing quotas is always a challenge," said Dr. Chávez. There are also problems with "by-catch" (netting species that weren't targeted) and "high grading" (catching the right species but at a size that's not desirable for processing, for example, and not wanting those fish counted against the quota.) In both cases, the unwanted fish are dead by the time they are thrown back in the water. Interviews with crews showed that high grading was a serious problem, said Dr. Chávez.

Another serious problem is political: who decides on the total allowable catch for each species of fish? Under the 2002 law, the TAC was determined by the Undersecretary of Fisheries in consultation with stakeholders sitting on the National Council of Fisheries. While scientific

evaluations of the level of each fish stock were taken into account, the council was weighted toward owners of fishing fleets and processing plants, as well as crew unions and small-scale fishers. "The council tended to vote against the science-based proposal and offer a counter-proposal with a higher catch allowance, especially for high-value fish," explained Dr. Chávez. "The counter-proposal was then negotiated in a closed political process."

As a result of these findings, the Concepción economists – along with marine scientists, oceanographers, and sociologists – made recommendations to the Chilean public and Congress to improve the 2002 fisheries law when it expired in 2012.

NENRE generally interacts with policy makers through lectures and workshops on environmental, fisheries, and forestry topics. These workshops are designed to be a meeting point between researchers and policy makers and to encourage an academic debate. These activities keep the research nucleus involved in the conversation around design, implementation, and evaluation of environmentally relevant policies.

In this way, NENRE researchers contributed an extensive analysis of the new Chilean Fisheries Law. Members of the research nucleus worked with a multidisciplinary team to analyze and prepare a response that explored the economic, social, and environmental impacts of the law, including fishery management, sustainability, economic efficiency, and participation of the citizenry. They responded with a presentation to the Undersecretary of Fisheries and a discussion paper, and participated in a panel for politicians and others focused on the shortcomings of the law and proposals for reforms. They further participated in the discussion by contributing newspaper articles, giving interviews, participating in seminars, and meeting with government officials. Several of the recommendations made by researchers were adopted and incorporated into the revised New Fisheries Law.

"We didn't get everything we wanted," said Dr. Chávez. But the new law includes improved enforcement, including a new design for sanctions that is more closely tied to economic incentives. For instance, the penalty for violating the quota is now three or four times the value of the fish that are illegally taken. Operators will be required to pay a fee that will fund the administration and enforcement of the system.

The media campaign also sent the public a message that violating quotas is a criminal offense.

The process for setting the total catch has also changed, with greater weight for scientific expertise, and a requirement to base the catch allowance mostly on scientific recommendations. “We asked that social scientists as well as marine scientists sit on the scientific committee recommending the catch allowance, but that suggestion wasn’t adopted,” said Dr. Chávez.

RESOURCES FOR THE FUTURES (RFF)

Resources for the Future (RFF) was founded in the 1950s and was one of the first research groups in the United States to concentrate on environmental research, particularly around natural resources, environmental concerns and energy. Located in Washington, DC, RFF has been a leader in applying environmental research to policies related to energy, transportation, pollution, climate change, biodiversity and environmental issues, not only in the United States but in developing countries as well. Their goal has always been to improve environmental and climate policies by basing these policies on research performed by some of the top researchers in the field of environmental economics.

RFF researchers hold doctorates in economics, engineering, law, ecology, public policy and more. RFF also has a development office, communications office, and a specialized library, and has long had a reputation for high quality research and policy analysis. The non-partisan research results are shared with government policy makers, as well as environmental organizations, academic organizations, media and the public.

Environment for Development and RFF have had a relationship since the inception of EfD. The concept behind EfD was to create “mini-RFF” centers focused on environmental research in poverty-stricken areas of developing countries around the world. EfD’s founders hoped to use RFF as a model for building a network of research centers all over the world. The concept for EfD was first presented to researchers at RFF in the early 2000s.

RFF has been a partner with EfD since 2007. The partnership began informally. Initially, RFF helped bring researchers from the US and the UK together with EfD. These researchers embarked on collaborative projects in developing countries. Additionally, RFF originally edited and published all of EfD’s discussion papers stemming from the collaborative research. RFF continues to publish EfD discussion papers and books. RFF also helps organize short-term exchanges for researchers, as well as facilitating seminars.

EfD has been interested in expanding the membership of EfD to include centers with which there was an informal relationship, such as RFF, and to attract other universities to become partners and expand the research possibilities of EfD. While RFF has long been involved with EfD, there are benefits to becoming a full EfD member. RFF submitted a formal application and was formally voted into membership in the spring of 2013. RFF is very excited to be officially recognized as an EfD center, and researchers there look forward to expanding their research in environmental issues in developing countries.

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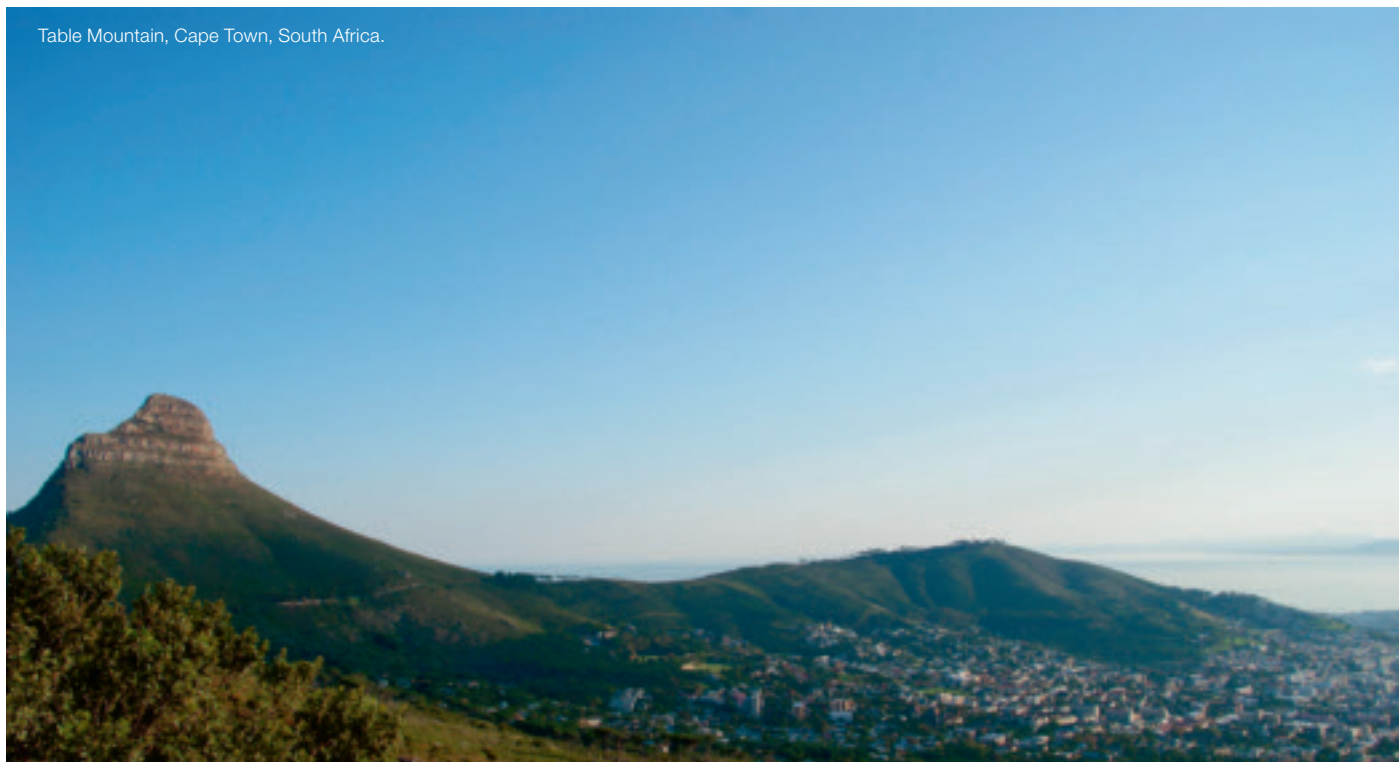
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EFD ORGANIZATION

EFD COORDINATION COMMITTEE

The highest decision making organ of EfD is the Coordination Committee. The committee's task is to oversee the overall planning and organization of the EfD Initiative. It consists of the Directors/Coordinators from all six centers, the EfD Director and the Chair of the EfD Research Committee. All members of the EfD Secretariat attend the Coordination Committee meetings, but they have no vote. The Coordination Committee convenes twice a year during the EfD Annual Meeting and the European or World Environmental Economics Congress. During 2013, this meant a meeting in Toulouse, France in June and in Cape Town, South Africa in late October. During these meetings, issues regarding sustainability and collaborative research were the main focus, as well as a separate meeting on the new proposal and program phase.

FUTURE EFD BOARD

The following is taken from the "EfD institutional arrangements," a strategy document passed during the Coordination Committee in October 2012, and explains the development of a future EfD Board:

The EfD Foundation Board is the highest level governance body for the EfD Initiative and is a forum for identifying a coherent package of work amongst Centers for implementation as well as overseeing the work of the EfD Initiative. The EfD Board will meet at least twice a year to develop the EfD Initiative strategy, ensure legal, fiscal and managerial oversight, and monitor progress in achieving the objectives of the EfD Initiative. The EfD Board consists of one representative each from all approved EfD Centers. The Chair of the EfD Research Committee is an ex officio member of the EfD Board with vote while the EfD Executive Director is an ex officio member of the EfD Board without vote. The members of the EfD Foundation Board elect an external Chair for a term of three years that can only be renewed once. The Chair should not be a member (employed) of one of the approved EfD centers. The Board also elects within itself two Deputy Chairs.

Responsibilities of the EfD Board include:

- Consideration, updating and approval of the institutional arrangements of the EfD Initiative;
- Consideration and approval of all major policies, work plans and budgets of the EfD Initiative;
- Overseeing the nominations process for Centers;
- Consideration and approval of new Centers who meet all Center criteria and submit a formal request to become an EfD Center;
- Seek input from Center representatives regarding EfD Initiative program and governance;
- Allocation of work amongst Centers and responsibility to represent the EfD Initiative on specific events;
- Allocation of part of the EfD Initiative's annual budgets into a Research Fund;
- Determination of forums and events for full representation of the EfD Initiative;
- Keeper of EfD Initiative brand-name and use of EfD Initiative logo;
- Monitoring the progress of the EfD Initiative on the basis of annual progress reports;
- Monitoring the resources and activities and their adequacy for the emerging challenges;
- Appoint the Chair and other members of the EfD Research Committee;
- Appoint the Executive Director and the other international officers of the EfD Secretariat; and
- Monitoring of the EfD secretariat.

In the interest of efficiency, the Chair and the Deputy Chairs can be constituted into an Executive Committee to meet throughout the year, as deemed necessary, to execute business on behalf of the EfD Board. The EfD Executive Director is an ex officio member of the Executive Committee without vote. Representatives of Donors are invited to participate in meetings as non-voting observers. The Board has a quorum when at least half of the Board members are present. All meetings of the Executive Committee shall be considered as the meetings of the EfD Board itself and minutes from these meetings should be attested and circulated to the full EfD Board.

EFD GENERAL ASSEMBLY

The General Assembly consists of all EfD Senior Research Fellows, Research Fellows, EfD Research Associates and EfD Partners. It meets at least once a year, usually at EfD annual meetings (but could also meet alongside other academic events such as the AERE, EAERE, World Congresses in Environmental and Resource Economics and at webinars) to discuss research and policy interaction strategies. The General Assembly is not intended to be a decision making body but a platform for the EfD Initiative's members to interact and make direct contributions to issues that are strategic to the EfD Initiative for further consideration by the EfD Board. Accordingly, the discussion outcomes from the General Assembly shall be fed directly to the agenda of the EfD Board for consideration. The Chairman of the EfD Board (or the EfD Executive Director) chairs the General Assembly.

EFD RESEARCH COMMITTEE

The Research Committee is made up of individuals who provide strategic and academic guidance to the EfD Initiative. The Research Committee represents the pool of credible expertise and experience of the EfD Initiative. Members are nominated by Centers or the EfD Secretariat from amongst international leaders in relevant areas of the EfD Initiative's research themes, and are appointed by the EfD Board for a renewable two-year term. The EfD Board also appoints the Chair of the Research Committee. The Executive Director is an ex officio member of the Research Committee without vote. The Research Committee screens the research programs of the EfD Initiative and makes decisions about the allocation of resources from the Research Fund. More specifically, the Research Committee will decide the allocation of grants to Senior Research Fellows from participating Centers to conduct research on a set of pertinent themes and also decide the allocation of grants to Collaborative Research Programs carried out by teams of Senior Research Fellows on mutually agreed themes.

Members of the current Research Committee appointed during 2013 are:

Professor Thomas Sterner, University of Gothenburg: Chair
 Professor Peter Berck, University of California, Berkeley: Member
 Professor Fredrik Carlsson, University of Gothenburg: Member
 Dr. Carolyn Fischer, Resources for the Future: Member
 Dr. Mike Toman, World Bank: Member
 Dr. Gunnar Köhlin, University of Gothenburg: Non-voting member
 Dr. Yonas Alem, University of Gothenburg: Non-voting member

EFD SECRETARIAT

The EfD Secretariat at EEU, University of Gothenburg is the administrative hub of the EfD Initiative and the main support function. The secretariat serves the EfD centers with research management, central communication functions, core support management and administration, and acts as an incubator for policy interaction issues to share experiences between the EfD centers and other relevant actors.

The functions of the EfD Secretariat include:

- Raise financial resources for itself and the broader EfD Initiative;
- Coordinate with Centers all EfD Initiative-

sanctioned activities and events, ensuring flow of information between Centers and the EfD Initiative and seek to catalyze effective collaboration and synergies among Centers;

- Lead the global information “campaign” of the EfD Initiative, including communications and media work of the EfD Initiative and “championing” the EfD Initiative to other sectors and potential Centers and donors;
- Support the country and region-specific work conducted by the Centers and Collaborating Partners;
- Keep “ears to the ground” on issues relevant to the EfD Initiative agenda and explore strategic opportunities to bring ideas, issues, organizations or constituencies to the attention of the Centers and the EfD Board;
- Build and manage the EfD Initiative brand and logo;
- In collaboration with Centers, represent the EfD Initiative at meetings, public events and forums; and
- Prepare annual plans, budgets and reports on progress of the program.

Members of EfD Secretariat 2013:

- Gunnar Köhlin, EfD Director
- Yonas Alem, EfD Research Manager
- Karin Backteman, Communications Manager

- Tsehay Ataklt, Communications support
- Cyndi Berck, Editorial, writing, and analytical services
- Karin Jonson, Program Manager
- Po-Ts'an Goh, Project Administrator (Employed in September 2013)
- Thomas Sterner, Chair of EfD Research Committee
- Mona Jönfors and Selma Oliveira, Financial Administrators
- Anders Ekblom, Head of GMV's Environmental Economics and Policy group

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Firewood collectors near Dar es Salaam, Tanzania.

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RESEARCH PROJECTS 2013

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Central America

Analyzing the Effects of Extreme Weather Events in Guatemala

Theme: Climate Change

Household Adaptation to Seasonal Droughts in Rural Drinking Water Systems

Theme: Climate Change

Analysis of the Potential and Challenges of Property Tax in Latin American Countries

Theme: Policy Design

Analyzing Land Use Change (1992 - 2008) and Formulating Future Scenarios of Deforestation and Degradation of Forests in Panama

Theme: Policy Design

Strengthening Research Capacity in Environmental Economics to Study the Links between Water and Climate Change in Latin America and the Caribbean

Theme: Climate Change

Water for Human Consumption, Communities and Climate Change:

Expected Impacts and Adaptation in Central America (AC3)

Theme: Climate Change

Ecosystem-based Adaptation for Smallholder Subsistence and Coffee Farming Communities in Central America (CASCADE)

Theme: Agriculture and Climate Change

Impact Evaluation of the Arenal Tempisque Irrigation Project

Theme: Agriculture, Climate Change and Policy Design



Farmers in Guatemala benefit from better farming practices and know-how. This family takes advantage of leftover fertilizer to grow corn in the same plant holes where they once had tomatoes planted.

China

Evaluation of Forest Tenure Reform in Western China Minority Areas

Theme: Policy Design



Rich soil loaded with nutrients from organic composting ready to be used in farming; the raw materials include livestock feeds leftover (grasses, sugarcane, and others), and manure. This is one of the alternative measures subsistence farmers in Central America are implementing to increase land productivity.

China's Climate Change Policies: Competitiveness and Distributional Effects — An Ex-Post and Ex-Ante Analysis

Theme: Climate Change, Policy Design

A Behavior Model of Transport Mode Choice in Beijing

Theme: Policy Design

Automobile Demand Analysis in Beijing

Theme: Policy Design

An Experimental Analysis of Auctioning Subsidy for Carbon Emission Reduction: Evidence from China

Theme: Climate Change, Policy Design

Environmental and Economic Policies in China:

An overall design and demonstration funded by the Ministry of Environmental Protection (MEP), China. EEPC is responsible for one of the sub-projects:

The Economic Methodology of Environmental Policy Instruments, funded by the Ministry of Environmental Protection, China.



EfD researchers and a local official in Gansu province, China.

Ethiopia

Economic Valuation (Pricing), Institutions, and Water Use Efficiency in Smallholder Irrigation Systems in Ethiopia

Theme: Policy Design

Economy-wide Impact of the Electricity Sector in Ethiopia

Theme: Energy

Local Institutions and Better Forests: Empirical Evidence from Household Data

Theme: Managing the Commons



Distribution of fuel saving stoves to the community in Ethiopia.

Adaptation to Climate Change in Ethiopia: The Potential Role of Sustainable Land Management Practices

Theme: Agriculture and Climate Change

Kenya

Investment in Data for Sustainable Land Use and Forest Management in Kenya

Theme: Agriculture, Forestry, Water

Climate Change, Water, Food Security, and Adaptive Capacity of Vulnerable Households in Kenya

Theme: Agriculture, Climate change, Water

Evaluating Water Reforms in Kenya – Setting the Agenda

Theme: Institutional Reform, Policy Design, Water

Water Sourcing and Sanitation in Rural Kenya

Theme: Water



Children with firewood they have collected from Kakamega Forest, Kenya.

Co-management Framework for Natural Resources in Kenya

Theme: Water, Forestry

Increasing Block Tariffs and the Relationship between Income and Water Use in Nairobi, Kenya

Theme: Water

South Africa

Poverty, Resource Scarcity, and Climate Variability: Constraints to Adaptation

Theme: Climate Change

The Role of Institutions in Wildlife Conservation in South Africa and Zimbabwe: A Social-ecological Systems Approach

Theme: Parks and Wildlife

The Demand for Recreational Angling in South Africa: Implications of Alternative Management Options for a Depleted Fishery

Theme: Fisheries

Marine Protected Areas and Small-scale Fishing Behavior: A Comparative Analysis between South Africa, Tanzania and Costa Rica

Theme: Marine and Coastal Conservation

Optimal Pricing of Parks and Wildlife Resources in Eastern and Southern Africa

Theme: Parks and Wildlife

The Economic Impact of Climate Change in Sub-Saharan Africa

Theme: Climate Change

Tanzania

Land Conservation Technologies Adoption and its Impact on Smallholder Agriculture in Tanzania: A Case Study of REDD Implementing Areas

Theme: Agriculture

Sustainable Financing Options for Climate Change and Climate Variability Adaptation Measures by Rural Smallholder Farmers in Tanzania

Theme: Agriculture and Climate Change

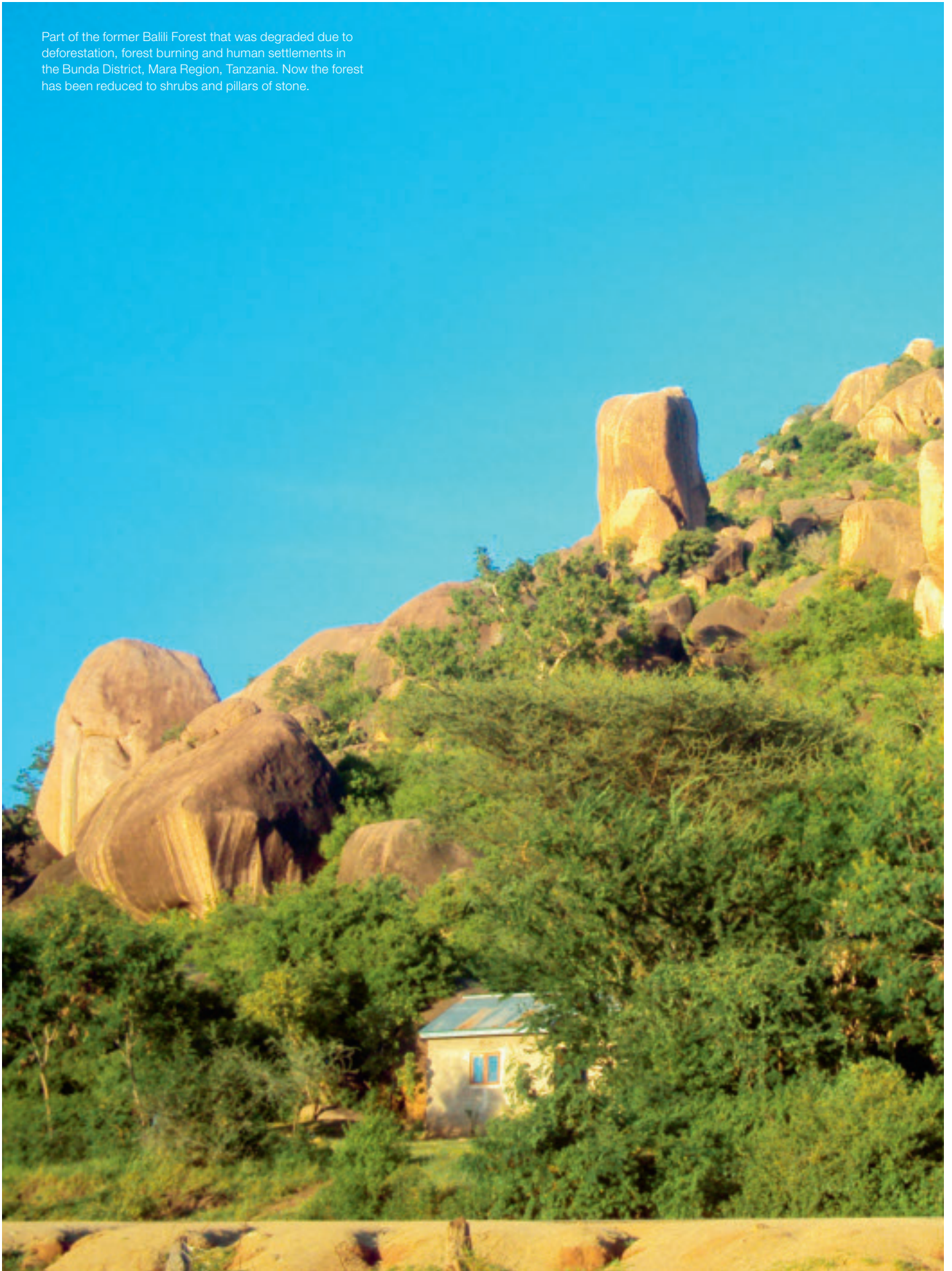
The Vulnerability of Household Welfare to Shocks in Tanzania

Theme: Climate Change/Policy Design



Aloyce Hepelwa (third from left) and team of enumerators getting details from fish farmers at Nyatwali Village in Mara, Tanzania. The view behind is of Lake Victoria.

Part of the former Balili Forest that was degraded due to deforestation, forest burning and human settlements in the Bunda District, Mara Region, Tanzania. Now the forest has been reduced to shrubs and pillars of stone.



EFD CENTERS

There are nine Efd centers hosted by academic institutions. For more information on each center, please contact the Center Director or Coordinator:

EFD CENTRAL AMERICA

Research Program in Economics and Environment for Development (IDEA) in Central America
Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)
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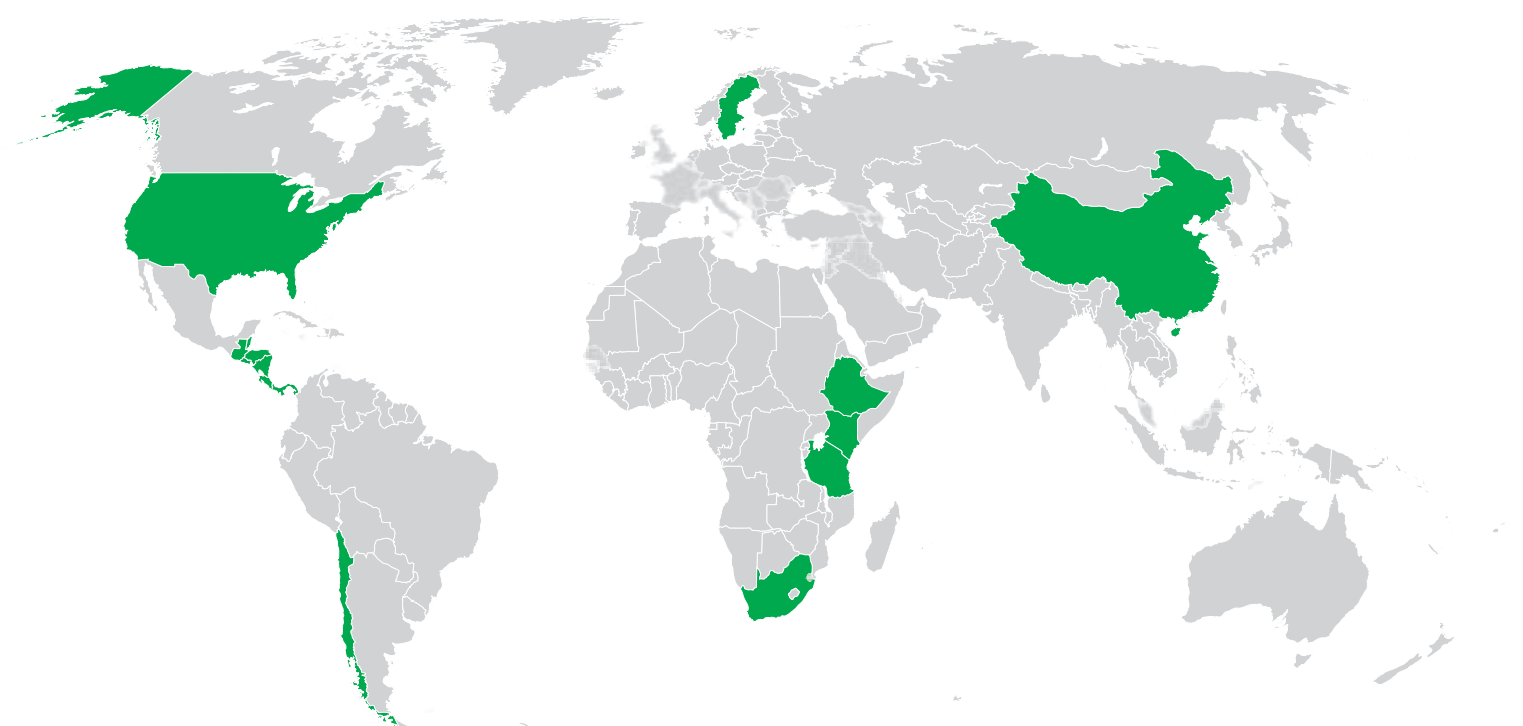
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Sida

The Swedish International Development Cooperation Agency, Sida, provides core funding for the Efd Initiative.



EfD CENTERS

Central America, Chile, China, Ethiopia, Kenya, South Africa, Sweden, Tanzania, USA

DONOR

Sida