

**EfD**

Environment for Development



**EFD INITIATIVE CENTRE REPORT**

# **KENYA 2013/14**

EfD Kenya's focus is to build a healthy environment with sustainably managed natural resources and devoid of poverty so as to enhance the welfare of the Kenyan people. It is committed to continually improving environmental policy making and strengthening environmental economics capacity.

Cover: Children with the firewood they have collected from Kakamega Forest.

## THIS REPORT

This report presents EfD Kenya, its members and work during 2013/14. The Kenyan node of the Environment for Development Initiative is based at:

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A tea plantation in the middle of Kakamega Forest.



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**“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.”**

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Jane Mariara, Coordinator

## 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



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 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 complementary to natural sci-

ences 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 a scientific background on 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 behavioral 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 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

# RESEARCH POLICY INTERACTION

This section focuses on the policy processes in which we engaged during the year. We participated in research on forestry, water usage in urban and in rural areas, climate change, agriculture and food security research in the Common Market for Eastern and Southern Africa (COMESA) region, and other links between research and policy. These tasks inform our main policy interaction processes for this year. 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.

## How Does Forest Conservation Affect Rural Poor People in Kenya?

Who controls the forests in Kenya? Who benefits from conservation? These are some of the questions that EfD Kenya has been evaluating in 2013.



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

## POLICY INTERACTIONS

### EfD Kenya's one-day workshop on research and policy interaction

In February 2013, EfD Kenya held a one-day meeting as part of EfD's annual cross-country visit to the EfD centres around the world. The purpose of the meeting was to share and receive feedback on ongoing research and planned future research on environmental policy that EfD plans to undertake. EfD's recent research output, on topics including forestry and water policy, was presented by senior research fellows, including Dr Wilfred Nyangena and Prof Peter Kimuyu.

Stakeholders from relevant ministries, parastatals, senior research fellows and PhD students were represented. In addition to presentations by EfD research fellows, participants discussed various issues including progress, challenges and ideas on the policy relevance of the projects. Additionally, there was a panel consisting of members of the workshop that yielded very productive discussions

on the institutionalization of research, the need for capacity needs assessments in order to further focus policy research, and the role of academia in research and policy-making.

### EfD Kenya and KIPPRA joint meeting on UNECA study

In September 2013, EfD Kenya held a joint workshop with KIPPRA on Assessment of Agricultural Sector Policies and Climate Change in Kenya, discussing 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) in collaboration with the African Union Commission (AUC) and the African Development Bank (AfDB) under the ClimDev-Africa program. It focused on assessing how climate change related policies and agricultural sector policies interact and influence each other in light of the challenges posed by climate change, especially in the agriculture sector.

“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.





Dr John Omiti (KIPPRA), Naftali Ndugire (MEMR), John Mutua (ERC), Samuel Mureithi (KFS), and Prof Peter Kimuyu as moderator at a panel on the strategic focus of the centre's research and policy interaction at the one-day workshop.

## POLICY LINKS

- Kenya Institute for Public Policy Research and Analysis (KIPPRA) [www.kippira.org](http://www.kippira.org)
- School of Economics, University of Nairobi [www.uonbi.ac.ke](http://www.uonbi.ac.ke)
- Kenya Wildlife Service [www.kws.org](http://www.kws.org)
- National Environment Management Authority (NEMA) [www.nema.go.ke](http://www.nema.go.ke)
- WWF [www.panda.org](http://www.panda.org)
- African Economic Research Consortium (AERC) [www.aercafrica.org](http://www.aercafrica.org)
- Ministry of Environment and Mineral Resource (MEMR) [www.environment.go.ke](http://www.environment.go.ke)
- International Livestock Research Institute (ILRI) [www.ilri.org](http://www.ilri.org)
- International Maize and Wheat Improvement Centre (CIMMYT) [www.cimmyt.org](http://www.cimmyt.org)

## POLICY SEMINARS, WORKSHOPS AND CONFERENCES

### EfD Kenya Annual Meeting

EfD Kenya held its first Annual Workshop on 7 August 2013 at the Fairview Hotel in Nairobi. The workshop brought together researchers, policy makers, academics and other stakeholders in the environmental sector, including representatives from the Kenya Forest Service (KFS), Kenya Wildlife Service (KWS), Water Resource Management Authority (WRMA), Kenya Institute for Public Policy Research and Analysis (KIPPRA), Energy Regulatory Commission (ERC), International Livestock Research Institute (ILRI) and Office of the Deputy President, among others. Academia was also well represented, with participants from the School of Economics at the University of Nairobi and Kenyatta University.

The objective of the workshop was to discuss various research outputs generated from the studies being undertaken by the network associates. Areas covered by the research included climate change, agriculture, water policy and reforms, and forestry. New research ideas on various topics were also presented at the meeting.

Other policy seminars, workshops and conferences attended by EfD associates

- i. The Agricultural Model Intercomparison and Improvement Project (AgMIP) TOA-MD Workshop, on climate impact assessment and technology adaptation analysis (29 April to 3 May 2013) in Dubai, UAE
- ii. The 25th Session of the International Coordinating Council of the Man and the Biosphere (MAB) Programme, UNESCO Headquarters, (27-30 May 2013), Paris, France
- iii. International Union for Conservation of Nature, CEM Steering Committee Seminar (24 September 2013), Nairobi, Kenya
- iv. Environment for Development Initiative (EfD) annual meeting, Cape Town, South Africa (24-27 October 2013)
- v. East African Energy Regulators Portfolio Workshop, Kigali Rwanda (23-25 October 2013)
- vi. KIPPRA/EfD-K workshop on Assessment of Agricultural Sector Policies and Climate Change in Kenya; the Nexus between Climate Change-related Policies, Research and Practice (4 November 2013)



Participants at the first EfD Kenya Annual Meeting.

# 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. Policymakers, farmers, donors, and others need research-based information, not only to design policies but also to evaluate their efficiency in reaching their objectives.



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

## PUBLICATIONS 2013

### Peer reviewed

Kassie, M., W. Ndiritu, and J. Stage. 2013. What Determines Gender Inequality in Household Food Security in Kenya? Application of Exogenous Switching Treatment Regression. *World Development* 56: 153-171.

Khoshroo, A., R. Mulwa, A. Emrouznejad, and B. Arabi. 2013. A Non-Parametric Data Envelopment Analysis Approach for Improving Energy Efficiency of Grape Production. *Energy Journal* 63: 189-194.

Mulwa, R., D. Wafula, M. Karembu, and M. Wait-haka. 2013. Estimating the Potential Economic Benefits of Adopting Bt Cotton in Selected COMESA Countries. *AgBioForum* 16: 14-26.

Njiraini, G.W., and P. Guthiga. 2013. Are Small-Scale Irrigators Water Use Efficient? Evidence from Lake Naivasha Basin, Kenya. *Environmental Management* 52: 1192-1201.

Kabubo-Mariara, J. 2013. Forest-poverty Nexus: Exploring the Contribution of Forests to Rural Livelihoods in Kenya. *Natural Resources Forum* 37: 177-188.

### EfD/RFF books

Holden, S., K. Otsuka, and K. Deininger. 2013. *Land Tenure Reform in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan.

### EfD Discussion Papers

Onjala, J., W. Ndiritu, and J. Stage. 2013. Risk Perception, Choice of Drinking Water, and Water Treatment Evidence from Kenyan Towns. EfD Discussion Paper EfD DP 13-10. Washington, DC: Resources for the Future and Environment for Development.

### Book chapters

Kabubo-Mariara, J., V. Linderhoff, G. Kruseman, and R. Atieno. 2013. Tenure Security and Ecosystem Service Provisioning in Kenya. In *Nature's Wealth: The Economics of Ecosystem Services and Poverty*, edited by P. Van Beukering, E. Papyrakis, J. Bouma and R. Brouwer. Cambridge University Press.

Ogada, M., W. Nyangena, and G. Sikei. Forest Management Decentralization in Kenya: Effects on Household Farm Forestry in Kakamega. In *Land Tenure Reforms in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*, edited by S. Holden, K. Otsuka, and K. Deininger. Palgrave Macmillan, 407-441.

## PROJECTS 2013 AND 2014

For more information on each project, please see the website.

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. However, the lack of comprehensive research on environmental resource management and poverty alleviation still remains a major challenge. The presence of this research is vital for informing national strategic plans and policies. Policymakers, farmers, donors, and others need research-based information, not only to design policies but also to evaluate their efficiency in reaching their objectives.

### Investment in data for sustainable land use and forest management in Kenya

Theme: Agriculture, Forestry, Water  
PI: Wilfred Nyangena

In 2010, EfD-Kenya embarked on a pilot study analysing the effects of forest devolution in Kenya with a specific focus on the Kakamega forest. In particular, the research focuses on the formation

of Community Forest Associations (CFA) that are expected to manage forests after Kenya's recent devolution process. Intensive data collection on this was undertaken in 2012 and 2013 in forests in five different provinces in Kenya. The overall aim is to invest in a large and credible data set that can be used to analyse related socio-economic issues at the household level.

### Climate change, water, food security, and adaptive capacity of vulnerable households in Kenya

Theme: Agriculture, Climate change, Water  
PI: Jane Kabubo-Mariara

This project investigated the effects of climate change on food security in Kenya. The project further assessed the vulnerability of agriculture to climate variables. The study was based on county-level panel data for yields of four major crops and daily climate variables data spanning over three decades. The study found that climate variability and change will increase food insecurity. Food security responds positively to favourable agro-ecological zones,

soil drainage and depth, and high population density. The most vulnerable counties suffer severe exposure to climate parameters; have relatively low population densities; and have high food crop insecurity. The paper recommends strengthening policies on mitigation of, and adaptation to, climate change.

### Evaluating water reforms in Kenya-Setting the agenda

Theme: Institutional reform, Policy design, Water  
PI: Moses Ikiara

In Kenya, successive governments have faced the challenge of managing national water resources and maximizing the availability of potable water to the majority of Kenyans. This project has focused on setting the stage for long-term rigorous research in Kenya's water sector by evaluating the performance of reforms in the sector. These reforms have often been cited as a model that should be replicated in other sectors, hence the importance of generating sufficient evidence on performance of these reforms before they are considered for replication in other sectors.

## Water sourcing and sanitation in rural Kenya

Theme: Water

PI: Peter Kimuyu

In Kenya, every citizen has a right to water, and the National Water Strategy commits to ensuring that the formal water supply system is accessible to everyone. However, in practice this does not happen. Millions of Kenyans have inadequate access to clean, safe water and rural areas suffer the brunt of this lack of access. This project will explore household water sourcing and sanitation behaviour, using primary data collected from carefully selected Kenyan sites that are currently optimizing water sourcing and sanitation options. The study will use a mixture of methodologies, including choice experiments and revealed and stated preferences; these are methods to study people's preferences based on what they reveal by their actions and on what they state that they would be willing to pay.

## Co-management framework for natural resources in Kenya

Theme: Water, Forestry

PI: John Omiti

Worldwide, co-management, joint management of the commons by local communities

and the state, is recognized as an approach with considerable benefits across many natural resources. However, in recent years, questions and concerns have emerged regarding its effectiveness in delivering sustainable resource management and increasing benefit flows to the target communities. This study seeks to review the extent to which co-management has actually worked in Kenya's water and forestry sectors and to evaluate the associated outcomes. The goal of the research is to explore how co-management could contribute to sustainable resource management and poverty reduction in Kenya.

## Increasing block tariffs and the relationship between income and water use in Nairobi, Kenya

Theme: Water

PI: Dale Whittington

This is an empirical study of how much water is consumed by households of different income levels and the implications for water rationing and water use efficiency issues at the household level in Nairobi, Kenya. Despite the fact that utilities often employ an increasing block tariff with a lifeline block to nominally protect the poor, little is actually known

about the empirical relationship between household water use and income. This study addresses this gap and attempts to directly link measured water use to household income and other demographic characteristics. This study will be the first to directly link household income and demographic characteristics to measured household water use and it will provide a strong empirical foundation for identifying ways in which the Nairobi City Water and Sewerage Company can modify its water tariff.

## COLLABORATIVE RESEARCH

### Optimal pricing of parks and wildlife resources in Eastern and Southern Africa

Program/Project leader: Edwin Muchapondwa, Gardner Brown

EfD-K project partner: Wilfred Nyangena

The goal of this study is to improve park revenues and management in a manner that both supports sustainable resource management and alleviates poverty, which are the stated goals of park agencies. The project is being carried out with Edwin Muchapondwa (University of Cape Town) and Gardner Brown (University of Washington).

# RESEARCH PRESENTATIONS

## Academic seminars

### EfD Research and Policy Interaction Workshop

Dr Wilfred Nyangena: Forest Management Decentralization in Kenya: Effects on Household Farm Forestry in Kakamega

### Regional Workshop of Agricultural Model Intercomparison and Improvement Project

Dr Richard Mulwa: TOA-MD Results of Climate Change in Embu

### EfD Kenya Annual Meeting

Prof Jane Mariara: Climate Change, Food Security and Vulnerability in Kenya

Dr Richard Mulwa: Climate Change, Agricultural Adaptation and Food Security in Kenya

Prof Peter Kimuyu: Water Sourcing and Sanitation Choices in Rural Kenya

Prof Jane Mariara: Household Energy Conservation in Kenya (presented on behalf of Prof Peter Kimuyu)

Dr Wilfred Nyangena: Impact of Improved Farm Technologies on Yields: The Case of Improved Maize Varieties and Inorganic Fertilizer in Kenya

Dr Wilfred Nyangena: Co-management Framework for Natural Resource Management (presented on behalf of Dr John Omiti)

Prof Jane Mariara: Climate Change, Food Security and Vulnerability in Kenya

Dr Richard Mulwa: Climate Change, Agricultural Adaptation and Food Security in Kenya

### 3<sup>rd</sup> Annual African Growth and Development Policy (AGRODEP) Modelling Consortium

Richard Mulwa: Explaining Natural Resource Curse in Africa: The Role of Dutch Disease and Institutions



Bricks laid out to dry before being fired, a common economic activity in the Kakamega forest.

## ACADEMIC CAPACITY BUILDING

The EfD academic capacity building component is designed to correct 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 policy research with academia is one of the unique features of EfD.

EfD Kenya fellows teach both undergraduate and graduate courses in environmental economics at the School of Economics, University of Nairobi. Besides teaching, the fellows are involved in supervision of MSc and PhD thesis research.



Prof Jane Mariara, Prof Peter Kimuyu and David Fuente (a PhD student from the University of North Carolina) discuss an ongoing EfD project.

## COURSES TAUGHT BY EFD KENYA

### Undergraduate courses

- Resource Economics
- Environmental Economics

### Graduate courses

- Resource Economics
- Environmental Economics
- Environmental Valuation and Policy
- Research Methodology

### Recommended Masters programs

- Master of Science in Economics with a track in environmental economics at the Graduate School, University of Gothenburg, School of Business, Economics, and Law
- Masters of Arts in Economics, University of Nairobi
- Masters of Arts in Economic Policy Management, University of Nairobi

### Recommended PhD programs

- PhD in Economics, School of Economics, University of Nairobi
- PhD in Environmental Economics, Environmental Economics Unit, Department of Economics School of Business, Economics and Law, University of Gothenburg
- PhD in Environmental Economics, University of Pretoria



Wildlife near urban area, Kenya.

# THE KENYAN NODE IN THE EFD NETWORK

EfD Kenya is one of the nine centres in the EfD Initiative. The centre works closely with individuals and institutions in academia, the public sector, and policy research institutions, at both at the local and international level. At its inception in 2007, the centre's host and main executing institution was the Kenya Institute for Public Policy Research and Analysis (KIPPRA), a public policy think tank. KIPPRA has been rated as one of the most reputable public policy research institutions in Africa (McGann Think Tanks Report). Through KIPPRA, EfD Kenya was able to establish important networks with policy makers, both locally and internationally. In July 2012, EfD Kenya relocated its secretariat from KIPPRA to the University of Nairobi, School of Economics (SoE).

Supported by the Swedish International Development Cooperation Agency (Sida), EfD Kenya, in collaboration with the School of Economics at the University of Nairobi and the Environmental Economics Unit (EEU) at the University of Gothenburg, continues to conduct research and training in environmental and resource economics.

EfD Kenya is committed to, and focused on, improving and strengthening the integration and mainstreaming of environmental issues in planning and public policy in Kenya.

It aims to do this by:

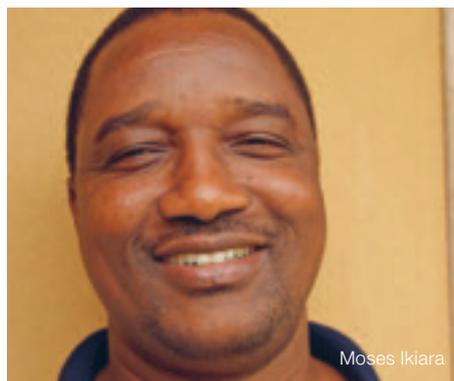
- Providing an interface between policy makers and academia
- Conducting high quality research and policy analysis in the area of environment and natural resources and their optimal exploitation for sustainable development
- Building capacity in environmental economics by strengthening the existing academic programs in the discipline, collaborative research and advanced short courses for forum members
- Building capacity in the realm of environmental policy analysis through in-service training and short courses for policy makers and implementers
- Policy outreach and dissemination of research findings through policy briefs, research papers, workshops, seminars and publications
- Peer networking and learning through regular forum meetings and exchange programs with other regional and international centres



EfD Kenya staff. From left: Jane Mariara, Peter Kimuyu and Maimuna Kabatesi



Wilfred Nyangena



Moses Ikiara



Richard Mulwa

## EFD KENYA CENTRE STAFF

EfD Kenya has undergone a few staff changes in the past year. In September 2013, Prof Jane Mariara took over coordinator duties from Dr Wilfred Nyangena, who proceeded on sabbatical. In addition to a Program Officer, the centre initiated recruitment of a research officer, who takes up office in 2014. The centre also has an executive committee comprised of the coordinator; the Director, School of Economics; the Executive Director, KIPPRA; and a senior professor from the School of Economics. In addition to the centre staff, the centre continues to engage various research associates in its research interactions.

### Local researchers and staff

- Jane Mariara, PhD, Coordinator and Senior Research Fellow
- Maimuna Kabatesi, MA, Program Officer

### Senior Research Fellows

- Peter Kimuyu, PhD, School of Economics, University of Nairobi
- Wilfred Nyangena, PhD, School of Economics, University of Nairobi
- Moses Ikiara, PhD, KenInvest

### Domestic research associates

- Paul Guthiga, PhD, International Livestock Research Institute (ILRI)
- Maurice Ogada, PhD, International Livestock Research Institute (ILRI)
- John Mutua, PhD, University of Nairobi and Energy Regulatory Commission of Kenya
- James Njogu, PhD, Kenya Wildlife Services (KWS)
- John Omiti, PhD, KIPPRA
- Richard Mulwa, PhD, Centre for Advanced Studies in Environmental Law and Policy (CASELAP), University of Nairobi
- Fred Owegi, PhD, candidate, World Bank and Wageningen University
- Simon Wagura, PhD, Strathmore University
- Geophrey Sikej, MSc, Land O'Lakes Inc

### International research associates

Menale Kassie, PhD, CIMMYT, Nairobi  
Kofi Vondolia, PhD, UNEP, Nairobi

More details about each person are available on the EfD website, in the "Centers" section for Kenya. [www.efdinitiative.org/kenya/people](http://www.efdinitiative.org/kenya/people)

## NETWORKS

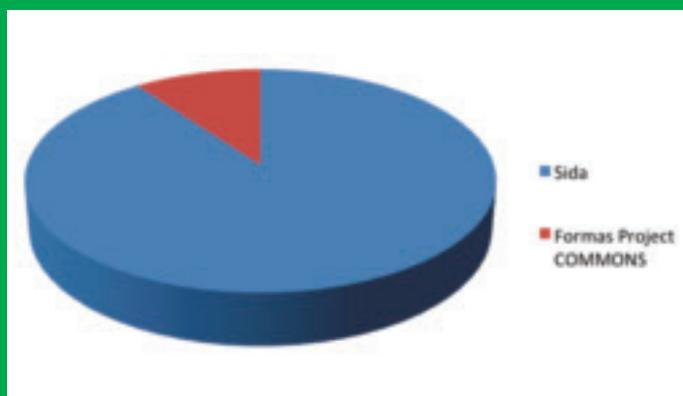
In order to effectively make an impact in its mandate, EfD Kenya has developed good working relationships with other regional and national research and policy oriented organizations in the country. It has gained considerable trust and credibility with both public and private institutions. It has a strong 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 Cooperation 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



## CONTACT US

You are most welcome to contact the EfD Kenya centre.

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Lake Naivasha, Kenya.

## THE EFD INITIATIVE IN BRIEF

*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 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 how to manage these resources. And that is what we do in the Environment for Development Initiative!

Our mission is to contribute to poverty alleviation and sustainable development through increased use of environmental economics capacity in policy design and policy-making processes pertaining to management of ecosystems, natural resources and climate change impacts. We use environmental economics tools to both identify the roots of environmental problems in modern economies, and to find what social and economic mechanisms can be used to solve them.

Institutionally, EfD is now well underway to become a global network of environmental economics centres. The original six EfD centres in China,

Costa Rica (for Central America), Ethiopia, Kenya, South Africa and Tanzania have now been formally joined by three more centres: 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.

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).

# 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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## EFD ETHIOPIA

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## UNIVERSITY OF GOTHENBURG SCHOOL OF BUSINESS, ECONOMICS AND LAW

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### Sida

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



Environment for Development



**To find out more about our work and the EFD Initiative:**

Please visit [www.efdinitiative.org/kenya](http://www.efdinitiative.org/kenya)

You are most welcome to contact us:

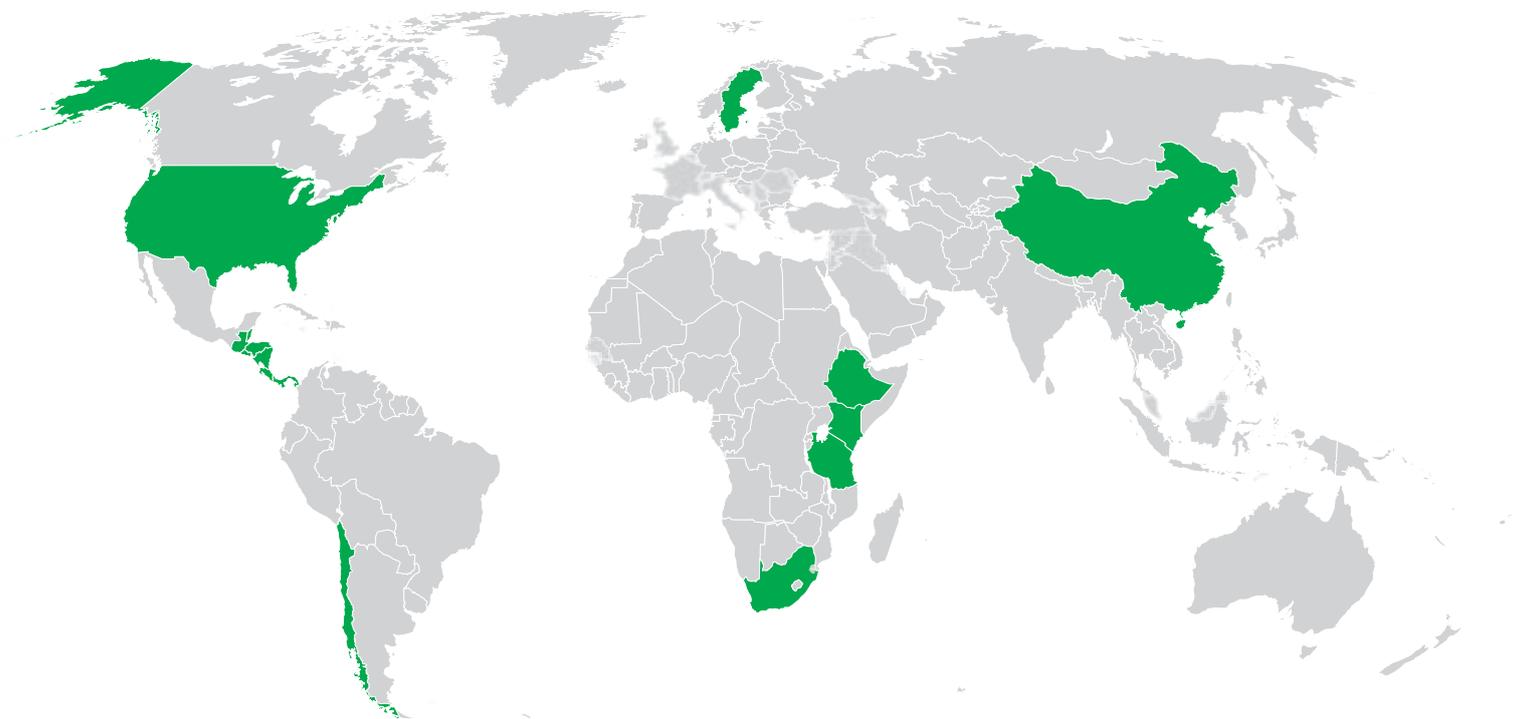
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**EfD CENTERS**

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

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