

Environmental Economics Program

Academic Capacity Building and Expert Advice

Activity Report 2010



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Photos:

Anna-Lena Lundqvist, Göran Olofsson, Katarina Renström, Pham Khanh Nam, Haoran He, Karin Backteman

Front cover photo by Anna-Lena Lundqvist shows PhD students 2010 at the Environmental Economics Unit:

Jorge Bonilla, Hang Yin, Haileselassie Medhin, Xiao-Bing Zhang, Marcela Jaime, Kofi Vondolia, Elizabeth Földi (academic administrator), Sied Hassen, Remidius Ruhinduka, and Hailemariam Teklewold.

Missing in the picture:

Yonas Alem, Haoran He, Pham Khanh Nam, Clara Villegas, Xiaojun Yang, Simon Wagura.

Back cover photo by Göran Olofsson:

Gunilla Ölund Wingqvist, Emelie César, Daniel Slunge, Olof Drakenberg and Anders Ekborn (project leader) all work for the EEU advisory service for Environmental Economics at the University of Gothenburg. Since 1998 the EEU has worked closely with the Swedish International Development Cooperation Agency, Sida, with the overarching goal to support the integration of environment and climate change risks and opportunities into Swedish development cooperation.

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Executive Summary

This is the activity report for the agreement between Sida and the Environmental Economics Unit for 2010. It is an extension of the agreement for the period 2007 – 2009 in support of programs pertaining to environmental economics activities (Sida ref: 2006-002684, Komponent: 73000988).

The overall **development objective** for the program is to improve welfare among poor people in developing countries by preventing pollution and natural resource depletion, and to promote sustainable use of natural resources and ecosystems through the use of environmental economics tools. To fulfill this objective the program consists of two **main activities**: (i) Doctoral studies in environmental economics, (ii) Expert advice to Sida. The more **specific project objectives** for these activities are (i) to increase capacity for environmental economics analysis and applications at universities and institutions in developing countries; (ii) enhanced integration of environmental concerns in Swedish development cooperation.

The report presents the two components of the program. It starts with capacity building through graduate training, and contains a description of the program, the specialization courses given, and a presentation of the students and their publications. This is followed by a presentation of the Expert Advice to Sida, including the integration of environment and climate change in Swedish Development Cooperation Strategies, methodological development and advice in Swedish Development Cooperation, capacity building in Swedish development cooperation and methodological development in international processes. In the original plan for 2010 we also included a component of “Joint Program Activities”. At the end of the report we show how these activities have supported and have been incorporated into the two main components.

The **PhD program in environment and development economics** has been running since 1997 with recruitment of five new students every other year. During 2010, there were 14 PhD students enrolled in the program. Two PhD students successfully defended their theses in 2010 (Clara Villegas from Colombia and Haoran He from China), while Pham Khanh Nam from Vietnam graduated in

March 2011. Two more students from the group, Yonas Alem from Ethiopia and Kofi Vondolia from Ghana, are scheduled to defend their theses in May 2011. During 2010 four new students were recruited to the program from Ethiopia, Colombia and China.

The PhD program includes a unique sequence of environmental economics specialization courses in the second year. In the past, additional PhD students from developing countries have been invited to these courses and funded by the program. However, due to the budget cuts in this extension year no such scholarships were given. Still, the courses in environmental policy instruments and systems ecology and climate change economics were given to the Sida students.

The **Expert Advice to Sida** on environmental economics has been carried out by Sida’s Helpdesk for Environmental Economics. The overall objective is to provide support to Sida in the integration of strategic environmental concerns in Swedish development cooperation. This is implemented through four main activities: (i) integration of environment and climate change in Sweden’s development cooperation strategies, (ii) methodological development and advice in Swedish development cooperation, (iii) capacity building, and (iv) methodological development in international processes.

The key activities of the **integration of environment and climate change in Sweden’s development cooperation strategies** include formulation of Environment and Climate Change Policy Briefs in order to support environment and climate change analyses in cooperation strategy processes and provide comments on draft cooperation strategies. EEU has supported country teams by identifying and summarizing new and relevant country-analytic work on environment and climate change, through peer reviewed draft cooperation strategies and by assisting with quality assurance in the strategy formulation process. Occasionally EEU has also participated as resource person in cooperation strategy formulation meetings of various types. At Sida’s request the EEU has developed Environmental and Climate Change Policy Briefs or similar analytical documents, and provided written comments to the draft cooperation strategies for the following countries and regions: **Botswana, Burkina Faso, Ethiopia, Mali,**



Dr. Gunnar Köhlin, Program Director

Mozambique, Rwanda, Tanzania, Sudan, Zambia Bangladesh, Cambodia, Laos, Middle East and North Africa (MENA) region, Bolivia, Belarus, Bosnia and Herzegovina, Georgia, Moldova, Serbia, Turkey and Ukraine.

The objective of the **methodological development and advice in Swedish development cooperation** is to provide relevant and timely support to Sida's development of relevant policies, systems and tools to adequately address key environmental and climate change issues in Sida's operations. Output from this component include support to Sida's development and communication of tools and methodologies for environmental policy integration, including environment and climate change analysis, integrated economic analysis, poverty and development analysis and SEA; input and expert advice to Swedish policy development processes; contribution to Sida's development of environment and climate change indicators at the country level; support to Sida for improved dialogue on sustainable environmental management and climate change; expert advice to Sida in monitoring implementation of country and regional strategies; advice in areas where EEU has specific competences e.g. environmental economics policy instruments, analytical guidance on environmental integration in PRS processes, and dialogue related to general budget support; and evaluations requested by Sida.

The objective of the **capacity building** component is to promote Sida's capacity to integrate environment and climate change analysis in its work as analyst, financier and dialogue partner. At Sida's request EEU has contributed with expertise that has strengthened the capacity of Sida staff, and to some extent partner country representatives, to address key environmental and climate change issues in their work. General output from the activities listed below include: training and e-learning materials, information shared in networks, and well communicated advice and comments; participation of EEU staff as experts and resource persons in trainings and coaching events, capacity building among Sida staff and among resource persons in partner countries; participation of EEU in dialogue with selected country teams/policy teams, including capacity development within partner countries; support to Sida in the production of training materials; sharing of best practice, research findings and international experiences pertaining to environmental economics and strategic envi-



Some of the environmental economics PhD students: Hailemariam Teklewold, Kofi Vondolia, Remidius Ruhinduka (Bilateral research cooperation with University of Dar es Salaam financed by Sida), Xiao-Bing Zhang, Elizabeth Földi (academic administrator), Marcela Jaime, Hang Yin, Jorge Bonilla, Sied Hassen, and Haileselassie Medhin.

ronmental assessment via Sida's network on environment and climate change and other relevant fora; on-demand capacity building support in areas where EEU has specific competences.

The **methodological development in international processes** is motivated by the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action for increased alignment, harmonization, and international cooperation. The objective of this activity is to provide adequate support to Sida in its participation in, and contribution to, international methodology development related to environment and climate change in development cooperation. At Sida's request, EEU has participated as expert or advisor in a number of activities related to methodological development in international processes. The work has typically been carried out in international networks or processes, in close collaboration with Sida.

Academic Capacity Building

PhD Program in Environmental Economics

Background

The Sida financed PhD program has been running full scale since 1997 with recruitment of five new students every other year. Capacity building is the key word, and the overriding objective of the PhD program is to improve welfare among poor people by preventing unsustainable use of natural resources and ecosystems in developing countries. The program has received an international reputation for its high quality and steady output of well trained environmental economists from developing countries. Besides training in economics and environmental economics, the program emphasizes links with other sciences such as natural sciences and other social sciences.

Objective

The objective of the PhD program is to build capacity in developing countries to teach, do research, and give policy advice in environmental economics and sustainable development. Developing countries are highly exposed to local and global environmental problems and face many serious environmental and natural resource related problems. It is hence important for them to possess the local capacity to analyze and give policy advice on these issues.

Our objective is to train future academic leaders who analyze and evaluate environmental problems and policies, conduct high-quality research, educate the next generation of academics and civil servants, give advice to policy makers and produce background reports for policies. Environmental economics is a useful tool to (i) analyze and understand many of the driving forces behind environmental degradation and negative poverty-environment links, (ii) reveal both the economic costs of this degradation and the benefits of sound environmental management, and (iii)

design efficient instruments to deal with these environmental problems.

Outline of the Program

The PhD program is designed to provide the students with a strong education in economics in general and in environmental economics in particular. The selection criteria have been: academic performance and potential, capacity building context and gender/age.

The first two years involve course work that provides both a full PhD curriculum in economics and a unique specialization in environmental and natural resource economics. The course offered the second year is an important part of the program. We offer four specialization courses, which are presented later on.

The rest of the time the students write their theses and are given training in teaching/policy advice and other tasks they may face when they return home. Supervision is mainly done by EEU staff, although we are now starting to involve previous graduates in supervision as well. Funds for conducting fieldwork is provided by the program. Upon returning from field

Students enrolled in the PhD program 2010

Name	Country	Home Affiliation	Enrolled	Status
Yonas Alem	Ethiopia	Addis Ababa University	2006	Graduated May 2011
Haoran He	China	Chinese Academy of Science	2006	Graduated 2010
Pham Khanh Nam	Vietnam	Ho Chi Minh City University of Economics	2006	Graduated March 2011
Clara Villegas	Colombia	National University of Colombia	2006	Graduated 2010
Kofi Vondolia	Ghana	University of Cape Coast	2006	Graduated May 2011
Haileselassie Medhin	Ethiopia	Ethiopian Development Research Institute	2008	Thesis writing and field work
Xiaojun Yang	China	Peking University	2008	Thesis writing and field work
Jorge Bonilla	Colombia	University of Los Andes	2008	Thesis writing and field work
Simon Wagura	Kenya	University of Nairobi	2008	Thesis writing and field work
Hailemariam Teklewold	Ethiopia	Ethiopian Institute of Agricultural research	2008	Thesis writing and field work
Hang Yin	China	Peking University	2010	Course work
Monica Marcela Jaime Torres	Colombia	Universidad de Concepción, Chile	2010	Course work
Sied Hassen	Ethiopia	Mekelle University	2010	Course work
Xiao-Bing Zhang	China	Chinese Academy of Sciences	2008	Course work

work, students continue working in close collaboration with faculty members, and receive support in data analysis, academic writing and publication.

The EEU is able to offer this exceptionally strong program in environmental economics largely as a result of our strong faculty. There are four full professors, three associate professors, and four post-docs that are directly involved in teaching and supervision. All researchers publish in high-ranked field journals in environmental economics and conduct research both with current PhD students and with former graduates. We have also started to involve former graduates in the supervision of new candidates.

The PhD program is particularly integrated with Environment for Development (EfD), which is a capacity building program in environmental economics that focuses on research, policy advice, and teaching in Central America, China, Ethiopia, Kenya, South Africa, and Tanzania and has the overall objective to support poverty alleviation and sustainable development through the increased use of environmental economics in the policy making process. EfD was initiated by the EEU in 2007.

Activities/Output

This report covers the calendar year of 2010. Our general agreement with Sida ended in 2009 but Sida agreed on a prolongation of the agreement for one more year, albeit, with a considerably smaller budget. This fact had implications on our recruitment for 2010. Whereas we normally accept 5 students every year, we had to cut back due to budget constraints to 4 students this year.

In 2010 we had 14 PhD students enrolled in our program at various levels. Some were about to graduate, some were in the middle of their thesis writing and some, the newly admitted students, were doing their course work.

During the year, 2 of our PhD students graduated. The first one was Clara Inés Villegas Palácio from Colombia with her thesis titled “Formal and Informal Regulations: Enforcement and Compliance”. She was followed by Haoran He from China whose thesis was titled “Environmental and Behavioral Economics – Applications to China”. Both of them returned back to their respective home countries after graduation.

The other three PhD students enrolled in 2006, Yonas Alem, Pham Khanh Nam and Kofi Vondolia, all graduated during the first semester of 2011.

Outcome

As we have had to be very strict with the resources allocated to us by Sida for 2010 we have had to do some tough

prioritizing, which has naturally affected the outcome of the program. As we mentioned above, we could only accept 4 new PhD students 2010 instead of the usual number of 5. Regarding travel to conferences for international contacts and input on working papers, this had to be limited to one trip per year. This fact has implications on the important networking that is vital for today’s researchers. Furthermore, the allowance for books had to be limited and, as a consequence, necessary and important books were not purchased. For the third year students, the budget for field trips was severely cut and the field studies had to be financed by other research projects. In light of the above, we still feel that the quality of the program has remained high and our commitment remains solid.

Two of our students graduated during 2010. Below is a short description on their whereabouts.

Clara Inés Villegas Palacio went back to Medellín, Colombia to work at the School of Geosciences and Environment, National University of Colombia. She has kept in touch with the Environmental Economics Unit, developing research on the interaction between compliance with environmental regulations and technology adoption as well as on behavioral and experimental economics applied to environmental problems.

Haoran He went back to Beijing, China to work at the School of Economics and Business Administration, Beijing Normal University. He also has kept in touch with our unit. He has very broad interests, mainly in environmental economics and behavioral and experimental economics. His work philosophy is to bring sound economics to relevant issues. His current research covers a range of topics, including evaluating plastic bag regulation in China, the role of social distance in charitable giving, household and team decision-making under risk, and inter-temporal choice among various types of people.

Impact

As can be seen from above both our graduated PhD students have returned to their respective home countries where they are expected to do considerable impact by continuing to do relevant research, by teaching the subject of environmental economics, and by writing papers that will influence policy makers.

Furthermore, they will keep in contact with EEU through joint research with our own research staff and through the Environment for Development initiative (EfD).

Presentation of PhDs and PhD candidates 2010



Yonas Alem - Ethiopia
Enrolled 2006

Thesis title: Essays on shocks, welfare and poverty dynamics in Ethiopia

Paper 1: Does fertilizer use respond to rainfall variability? Panel data evidence from Ethiopia (Published in Agricultural Economics, 2010, Vol. 41). In this article, we use farmers' actual experiences with changes in rainfall levels and their responses to

these changes to assess whether patterns of fertilizer use are responsive to changes in rainfall patterns. Using panel data from the Central Highlands of Ethiopia matched with corresponding village-level rainfall data, the results show that the intensity of current year's fertilizer use is positively associated with higher rainfall levels experienced in the previous year. Rainfall variability, on the other hand, impacts fertilizer use decisions negatively, implying that variability raises the risks and uncertainty associated with fertilizer use. Abundant rainfall in the previous year could depict relaxed liquidity constraints and increased affordability of fertilizer, which makes rainfall availability critical in severely credit-constrained environments. In light of similar existing literature, the major contribution of the study is that it uses panel data to explicitly examine farmers' responses to actual weather changes and variability.

Paper 2: How important is environmental quality for the poor and what do policy-makers know about it? - A study on subjective well-being in Addis Ababa (completed). We investigate what determines people's subjective well-being in Addis Ababa Ethiopia, and in particular the effect of the environment and whether policy makers have correct knowledge on what affects people's well-being. By and large, we find similar factors to be important in determining happiness for people in Addis Ababa as for people in rich Western countries. Our study indicates that policy makers have a fairly poor understanding on what determines people's happiness. Interestingly, in a supplementary ranking exercise of areas to set priority to, policy makers

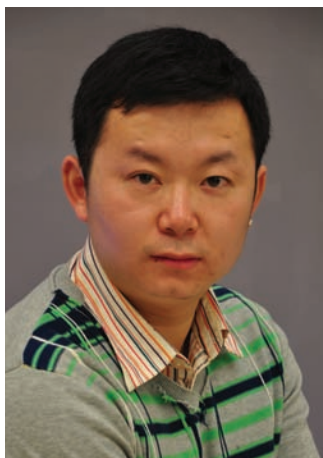
put more weight to longer-term projects compared to the people.

Paper 3: Household-Level Consumption in Urban Ethiopia: The Impact of Food Price Inflation and Idiosyncratic Shocks (Revise and re-submit, World Development). We use survey data to investigate how urban households in Ethiopia coped with the food price shock in 2008 and idiosyncratic shocks. Qualitative data indicate that the high food price inflation was by far the most adverse economic shock between 2004 and 2008, and that a significant proportion of households had to adjust food consumption in response. Regression results indicate that households with low asset levels, and casual workers, were particularly adversely affected by high food prices. In contrast, we find that household demographics and education matter little for the impact of the shock. Our analysis of idiosyncratic shocks indicates that losing one's job is a serious, uninsurable shock. We interpret the results as pointing to the importance of growth in the formal sector so as to generate more well-paid and stable jobs. Our results also imply that aid programs responding to food price shocks can be made more efficient by targeting low-asset households with members on the fringe of the labor market.

Paper 4: The Impact of Food Price Inflation on Consumer Welfare in Urban Ethiopia: A Quadratic Almost Ideal Demand System Approach (Completed). This paper investigates the impact of food price inflation on consumer welfare in urban Ethiopia during 2004-2009. A quadratic Almost Ideal Demand System (QUAIDS) is estimated using data from 2000-2009. Statistical tests suggest the QUAIDS is preferred over the conventionally used AIDS model. Compensating variation calculated using estimated price elasticities shows that during 2004-2009, households in urban Ethiopia lost the equivalent of fifteen percent of their food budget annually due to the unprecedented food price inflation. Poor households, who spend a higher proportion of household budget on food, have been affected more adversely than non-poor households. Moreover, with a more or less uniform increase in the price of major food items, households in urban Ethiopia appeared to have limited options for substitution. These findings can provide important information to policy makers and aid organizations to design and implement better social assistance schemes in the future.

Paper 5: The dynamics of poverty and the impact of international remittances: panel data evidence from urban Ethiopia (Completed). Using five rounds of panel data spanning 15 years, this paper investigates the dynamics of poverty and the impact of international remittances on poverty in urban Ethiopia. Poverty incidence declined

consistently from 55 percent in 1994 to 35 percent in 2008/09, and international remittances, which have increased tremendously during the past five years played a significant role in urban poverty reduction. Dynamic probit models that take care of state dependence and unobserved household heterogeneity also confirm the positive impact of remittances on the likelihood of being out of poverty. In addition, education, labor market status of both household heads and other members of the household, and demographic characteristics of other household members, which didn't receive sufficient attention in previous studies, are also important determinants of poverty status of households. Discrete-time proportional hazard models that control for duration dependence and unobserved household heterogeneity also show that exit rate out of poverty is positively and strongly related to the flow of international remittances, whereas it is negatively and strongly related to having a higher number of children, and entry into poverty is negatively related to education and positively related to having a higher number of unemployed members and members depending on unstable jobs. In addition to investigating the trends, dynamics and persistence of poverty, and the role of international remittances, the paper sheds light on important policy implications that can be useful for designing effective poverty reduction and targeting strategies.



Haoran He - China
Enrolled 2006
Graduated 2010

Thesis title:
Environmental and Behavioral Economics – Applications to China

Summary: This thesis consists of five separate yet related papers. They fall into four fields of economics: environmental economics, behavioral economics, experimental economics, and development economics. Four papers (papers 2, 3, 4, and 5) aim to contribute to methodological development, while one paper (paper 1) is an empirical

analysis of a specific issue. All papers use methods of experimental economics in one way or another, and with or without survey methods, to study issues such as the impact of environmental policy (paper 1), the accuracy of predicted policy effects (paper 2), household decision-making (paper 3), and the impacts of heterogeneous conditions in laboratory and field experiments (papers 4 and 5). To this end, laboratory experiments, field experiments, and natural experiments are used.

Pham Khanh Nam - Vietnam
Enrolled 2006
Graduated 2011

Thesis title: Prosocial Behavior, Social Interaction and Development: Experimental Evidence from Vietnam.



Paper 1. Funding a New Bridge in Rural Vietnam: A Field Experiment on Conditional Cooperation and Default Contributions (with Fredrik Carlsson and Olof Johansson-Stenman)

The ability to provide public goods is essential for economic and social development, yet there is very limited empirical evidence regarding contributions to a real local public good in developing countries. This paper analyzes a field experiment where 200 households in rural Vietnam could make real contributions to an archetypical public good, a bridge. In particular, we study the role of two kinds of social influence: i) conditional cooperation, i.e., that people may be more willing to cooperate if others do, and ii) the effects of the default alternative, i.e., that people are influenced by the default alternative presented to them in the choice situation. We find significant and substantial effects of both kinds of influence. For example, by either giving the subjects the additional information that one of the most common contributions by others is 100,000 dong (a relatively low contribution) or introducing a zero-contribution default alternative, the average contribution decreases by about 20% compared to the baseline case.

Paper 2. Are Social Preferences Stable over Time? (with Fredrik Carlsson and Olof Johansson-Stenman)

We use a combination of two natural experiments and one field experiment to measure people's prosocial behavior in terms of voluntary money and labor time contributions to an archetypical public good – a bridge

– in rural Vietnam, at three different points in time from 2005 to 2010. Since the experiments are far apart in time, potentially confounding effects of moral licensing and moral cleansing are presumably small, if at all existent. We find a strong positive and statistically significant correlation between voluntary contributions in these experiments, whether correcting for other covariates or not. This result suggests that prosocial preferences are at least partly stable over long periods of time.

Paper 3. Conditional Cooperation and Disclosure in Developing Countries (with Peter Martinsson and Clara Villegas)

Understanding the patterns behind people's voluntary contributions to public goods is crucial for the broader issues of economic and social development. By using the experimental design by Fischbacher et al. (2001), we investigate distributions of contribution types in developing countries (Colombia and Vietnam) and compare our findings with those previously found in developed countries. We also investigate the effect of introducing disclosure of contribution. Our experiments show that, on average, the distributions of contribution types are similar both in the two countries and compared to previous findings, except for free-riders, and overall remain unaffected by disclosure of contributions.

Paper 4. Social Capital and Private Adaptation to Climate Change: Evidence from the Mekong River Delta in Vietnam

Farmers in developing countries often face capital constraints in adapting to climate change. Can farmers' own social capital be utilized to facilitate the adaptation? This study uses four components of social capital – formal institutions, informal institutions, trust, and cooperativeness – to examine whether social capital is systematically linked to adaptation to climate change. The results suggest, in general, that social capital at the individual level does not affect farmers' private adaptation to climate change. Yet, some forms of social capital are significantly associated with the choice of some particular adaptation measures.

Paper 5. Are Vietnamese Farmers Concerned with their Relative Position in Society? (with Fredrik Carlsson, Peter Martinsson and Martin Linde-Rahr)

This paper examines the attitude towards relative position or status among rural households in Vietnam. On average, respondents show rather weak preferences for relative position. Possible explanations are the emphasis on the importance of equality and that villagers are very concerned with how the local community perceives their actions. We also investigate what influences the concern for relative position and find, among other things, that if anyone from the household is a member of the Peoples

Committee then the respondent is more concerned with the relative position. (Published in *Journal of Development Studies*)



**Kofi Vondolia -
Ghana
Enrolled 2006**

Paper 1: Enforcement of exogenous environmental regulations, social disapproval and bribery, joint work with Wisdom Akpalu & Håkan Eggert, *Journal of Socio-Economics* 38 (2009): 940 – 945.

Many resource users are not directly involved in the formulation and enforcement of resource management rules and regulations in developing countries. As a result, resource users do not generally accept such rules. An enforcement officer who has social ties with the resource users may encounter social disapproval and possible social exclusion from the resource users if he/she enforces the regulation zealously. The officer, however, may avoid this social disapproval by accepting bribes. In this paper, we present a simple model that characterizes this situation, and derive results for situations, where the officer is passively and actively involved in the bribery.

Paper 2: Bioeconomic model of spatial fishery management in developing countries, joint work with Wisdom Akpalu. Fishers in developing countries do not have the resources to acquire advanced technologies to exploit offshore fish stocks. As a result, the United Nations Convention on the Law of the Sea requires countries to sign partnership agreements with distant water fishing nations (DWFNs) to exploit offshore stocks. However, for migratory stocks, the offshore may serve as a natural marine reserve (i.e., a source) to the inshore (i.e., sink); hence these partnership agreements generate spatial externality. In this paper, we present a bioeconomic model in which a social planner uses a landing tax (ad valorem tax) to internalize this spatial externality. We found that the tax must reflect the biological connectivity between the two patches, intrinsic growth rate, the price of fish, cost per unit effort and social discount rate. The results are empirically illustrated using data on Ghana.

Paper 3: Nudging Boserup: The Impact of Fertilizer Subsidies on Investment in Soil and Water Conservation, Fertilizer subsidies are back on the agenda of policymakers in Sub-Saharan African with an essential caveat: they must be smart i.e., temporary and help develop fertilizer markets. However, the extent to which these requirements are met is contingent on the provision of complimentary inputs (e.g., soil and water conservation) for higher productivity. As a result, the present study evaluates the impact of fertilizer adoptions and subsidies on the provision of soil and water conservation effort in Ghana. The results indicate that beneficiaries of the fertilizer subsidy programme do not invest significantly more in soil and water conservation. This result suggests that fertilizer subsidy programmes should be designed and implemented as an integrated soil fertility management programme that promotes both fertilizer adoptions and investment in soil and/or water conservation.

Paper 4: What do respondents bring into contingent valuation? A comparison of monetary and labour payment vehicles. In Contingent Valuation Method (CVM), both the goods being valued and the payment vehicles used to value them are mostly hypothetical. However, although numerous studies have examined the impact of experience with the good on WTP, less attention has been given to experience with the payment vehicles. The paper examines the effects of experience with payment vehicles on quality of responses to CV scenarios on maintenance of irrigation canals. Specifically, the paper uses a split-sample survey to investigate the effects of experience with monetary and labour payment vehicles on the acceptance of CV scenarios, uncertain responses and protest bids. Using convergent validity tests we found that having used both payment vehicles reduces the asymmetries in acceptances rates and reduces uncertain responses. However, this does not affect the protest bids. These findings support the Discovered Preference Hypothesis.

Clara Inés Villegas Palácio – Colombia
Enrolled in 2006
Graduated 2010

Thesis title: Formal and Informal Regulations: Enforcement and Compliance

Abstract: The question I address in the thesis is how cooperation in social dilemma situations and compliance with environmental regulations are determined by legal

enforcement, intrinsic motivations and culture. In light of this, the thesis consists of five independent chapters.

Chapter 1 analyzes the effects of the interaction between technology adoption and incomplete enforcement on the extent of violations and the rate of abatement technology adoption. We focus on price-based and quantity-based emission regulations. First, we show that in contrast to uniform taxes, under tradable emissions permits (TEPs), the fall in permit price produced by technology adoption reduces the benefits of violating the environmental regulation at the margin and leads firms to modify their compliance behavior. Second, we show that the regulator may speed up the diffusion of new technologies by increasing the stringency of the enforcement strategy in the case of TEPs, while in the case of uniform taxes, the rate of adoption does not depend on the enforcement parameters.

In *Chapter 2*, I study the effects of targeted monitoring strategies on the adoption of a new abatement technology and, consequently, on the aggregate emissions level when firms are regulated with uniform taxes. My results suggest that a regulator aiming to stimulate technology adoption should decrease the adopters' monitoring probability and/or increase the non-adopters' monitoring probability. In contrast to previous literature, I find that, in some cases, a regulator whose objective is to minimize aggregate emissions should exert a stronger monitoring pressure on firms with higher abatement costs. In some contexts, weak law enforcement results in only a fraction of detected transgressors actually being sanctioned. The standard theoretical models of enforcement predict that, as long as the joint probability of detection and sanction is constant, the extent of violations does not vary with different combinations of the probability of being monitored and the probability of being sanctioned given detection.

In contrast, in *Chapter 3* we propose an alternative theoretical model that predicts that the extent of violation is sensitive to such combinations, i.e., these two probabilities are not perfect substitutes. By using a laboratory experiment, we investigate the hypothesis of imperfect substitutability of monitoring and sanctioning probabilities. Our subjects include both environmental managers in Colombian firms and university students. Different combinations of the probabilities resulting in the same joint probability of detection and sanctioning did not affect the



violation behavior among managers, while students violate relatively less when facing a higher sanctioning probability for a given joint probability.

Chapter 4 investigates whether disclosure crowds out pro-social behavior using a public goods experiment. In a between-subject design, we investigate different degrees of disclosure. We find a small positive but insignificant effect of disclosure treatments on contributions to the public good. Thus, our empirical findings are consistent with crowding-out theory.

In contrast to previous studies on cross-group comparisons of conditional cooperation, in *Chapter 5* we keep cross- and within-country characteristics constant. The results reveal significantly different cooperation behavior between social groups in the same location.



Jorge Alexander Bonilla
Londono - Colombia
Enrolled 2008

Jorge enrolled in autumn 2008 and finished the compulsory specializing courses in 2010. The courses in 2010 included climate and ecosystems change (which was jointly organized by the Beijer Institute and the University of Gothenburg), environmental policy instruments, and academic writing. He also attended the Spatial Econometrics Advanced Institute

2010 in Rome June 21st-July 17th.

Jorge also started the field work in 2010. His areas of interest are air pollution and environmental policy instruments with empirical approach applying econometrics. He is starting the writing process of his thesis focusing on data related to pollution and on policies to control emissions from mobile sources in Colombia and point sources in Sweden. The analysis aims to assess effectiveness of the environmental policies, or identify trade-offs and trends after the regulation.

Haileselassie Medhin - Ethiopia
Enrolled 2008



Paper 1: Attitudes toward Uncertainty among the Poor: Evidence from Rural Ethiopia (with Alpaslan Akay, Peter Martinsson and Stefan T Trautmann). We looked at risk and ambiguity attitudes

among Ethiopian peasants and compared their attitudes to a standard Western university student sample elicited by the same decision task. Strong risk aversion and ambiguity aversion were found among the Ethiopian peasants. Ambiguity aversion was similar for peasants and students, but peasants were more risk averse. Testing for the effect of socio-economic variables on uncertainty attitudes showed that poor health increased both risk and ambiguity aversion.

Paper 2: Does Positional Concern Matter in Poor Societies? Evidence from a Survey Experiment in Rural Ethiopia (with Alpaslan Akay and Peter Martinsson). We investigated attitudes toward positionality among rural farmers in Northern Ethiopia, using a tailored survey experiment. On average, we found positional concerns neither in income per se nor in income from aid projects among the farmers. These results support the claim that positional concerns are positively correlated with absolute level of income of a country.

Paper 3: Land Reform in Africa: No-Intervention Agreements (work in progress with Martin Dufwenberg, Peter Martinsson and Gunnar Köhlin). This paper investigates the role of a local institution, i.e. the mediator, in the attainment of voluntary agreements in land conflicts using a framed field experiment in the highlands of Ethiopia. A game theoretical model to describe this situation is constructed including a discussion related to social preferences, which the experimental design is subsequently based on. Our results indicate that conflict is the dominant outcome when there is no mediator. When there is a mediator option, almost one-third of farmers choose this costly option. Among those not choosing mediator when available, a higher proportion choose equal split.

Paper 4: Inequality Aversion, Efficiency, and Maximin Preferences in Simple Distribution Experiments among the Poor in Ethiopia (work in progress with Peter Martinsson).

The paper attempts to contribute to the ongoing debate on people's preferences towards equity versus efficiency in situations where only one can be realized at the expense of the other. We examine preferences for efficiency and inequality among rural Ethiopians. Our results indicate that inequality aversion dominates efficiency concerns.

**Hailemariam
Teklewold -
Ethiopia
Enrolled 2008**



Paper 1: Risk preferences as determinants of soil conservation decision in Ethiopia. (Joint work with Gunnar Köhlin; accepted for publication in *Journal of Soil and Water Conservation*)

Soil degradation is one of the most serious environmental problems in the highlands of Ethiopia. The prevalence of traditional agricultural land use and the absence of appropriate resource management often result in the degradation of natural soil fertility. This has important implications for soil productivity, household food security, and poverty. Given the extreme vulnerability of farmers in this area, we hypothesized that farmers' risk preferences might affect the sustainability of resource use. This study presents experimental results on the willingness of farmers to take risks, and relates the subjective risk preferences to actual soil conservation decisions. The study looks at a random sample of 143 households with 597 farming plots. We find that a high degree of risk aversion significantly decreases the probability of adopting soil conservation. This implies that reducing farmers' risk exposure could promote soil conservation practices and thus more sustainable natural resource management. This might be achieved by improving tenure security, promoting access to extension services and education, and developing income-generating off-farm activities.

Paper 2: Jointness in agricultural production and crop-livestock technology adoption in Ethiopia (Ongoing).

Despite that farm yard manure (FYM) is considered as the most promising soil fertilizer in many developing countries, the process of soil fertility restoration with FYM is constrained by a multitude of factors, including adoption of crop-livestock technology, that could relax this

constraint. This article employs an endogenous switching regression model to estimate the direct impact of livestock technology and the indirect effect of crop technology on FYM production, and to identify factors constraining livestock technology adoption. We use cross-sectional data from a survey of randomly selected 419 farmers in the central highlands of Ethiopia. The preliminary results show that the adoption decision is influenced by distance to extension service, access to complementary inputs and farmers risk preference. Adoption of crossbreeding technology exerts a positive and significant impact on organic fertilizer production. The positive indirect effect of crop technology is significantly higher for the livestock technology adopter. The result is robust for alternative methods. While the paper focuses on adoption of agricultural innovations and FYM production aiming to improve soil fertility, findings are relevant to suggest policy recommendations towards strengthening crop-livestock synergies through joint provision of technologies.

Paper 3: Farming or burning? Shadow prices and farmer's impatience on the allocation of multi-purpose resources in the mixed farming system of Ethiopia. (Ongoing)

In a crop-livestock mixed farming system where farm yard manure (FYM) is considered an important multi-purpose resource such as source of soil organic matter, additional source of income and household source of energy, soil fertility depletion could take place within the perspective of the household allocation pattern of FYM. This paper estimates structural FYM-allocation model in the presence of corner solutions with the objective of examining the role of various returns to FYM and a farmer's impatience on the propensity to allocate FYM for alternative purposes. We illustrate the model using data on a random sample of 493 farm households in the central highlands of Ethiopia. The preliminary result indicates that the higher the revenue from selling FYM, the higher the incentive for farmers to divert the resources from farming to marketing for burning outside the farm households. A farmer's decision to divert FYM from farming to marketing due to heterogeneity in time preference is also an alternative account to explicate the correlations between farmers' impatience and resource allocations. The implication is that the high discount rates and the rise in prices stipulate current consumption and its consequence on the long term effects of the sustainable management of soil resources. The results are of paramount importance for the design of sustainable land management policy where soil fertility depletion is salient for low agricultural productivity.



Simon Wagura Ndiritu - Kenya
Enrolled 2008

Paper 1: Ndiritu Simon Wagura and Wilfred Nyangena, 2010, 'Environmental goods collection and children's schooling: evidence from Kenya' EFD Discussion Paper 10-18, Environment for Development Initiative and Resources for the Future, Washington DC, August 2010. Forthcoming Regional Environmental Change journal

This paper presents an empirical study of school attendance and collection of environmental resources using cross-sectional data from the Kiambu District of Kenya.

Because the decisions to collect environmental resources and to attend school are jointly determined, we used a bivariate probit method to model the decisions. In addition, we corrected for the possible endogeneity of resource collection work in the school attendance equation by using instrumental variable probit estimation. One of the key findings is that being involved in resource collection reduces the likelihood of a child attending school. The result supports the hypothesis of a negative relationship between children working to collect resources and the likelihood that they will attend school. The results further show that a child's mother's involvement in resource collection increases school attendance. In addition, there is no school attendance discrimination against girls, but they are overburdened by resource collection work. The study recommends immediate policy interventions focusing on the provision of public amenities, such as water and fuelwood.

Paper 2: Does Perception of Risk Influence Choice of Water Source and Water Treatment? Evidence from Kenyan towns (joint work with Celine Nauges and Joseph Onjala)

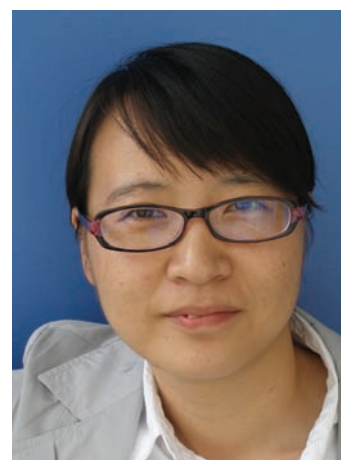
The purpose of this study is to examine the effect of perceived risk on households' choice of water source for drinking and on the decision of households to treat water before drinking it, using household survey data from four Kenyan towns. This study emphasizes the role of households' social and economic characteristics and risk perception on households' decision to treat/filter water as well as on the choice of main drinking water source. Since the two decisions may be jointly made by the household, a seemingly unrelated bivariate probit model is estimated. We find strong evidence that perceived risk drives households' decision to treat/filter water before drinking it.

Income turns out to be a strong predictor both of access to improved water sources and of in-home water treatment behavior.

Xiaojun Yang - China
Enrolled 2008

During the 2009/2010 academic year, Xiaojun Yang finished the following course requirements: environmental valuation, development economics, applied econometrics, climate and ecosystems change (which was organized by the Beijer Institute), environmental policy instruments and academic writing.

In September 2010, Xiaojun began identifying her research ideas. Now she is in the thesis writing stage. As expected, she will conduct her field work in 2011. Her research interests are: program evaluation evaluating the SLCP program in China; household decision making and time preference inconsistency related to a proposal discussing households' preference to saving for childrens' education by means of an experimental method; and a micro-mechanism design for rural development related to an idea discussing different mechanisms facilitating local cooperation in terms of different community sizes.



PhD students who enrolled 2010:

Four PhD students were enrolled in September 2010: Sied Hassen, Marcela Jaime, Hang Yin, and Xiao/Bing Zhang. They have so far taken their compulsory first semester mathematic and microeconomics courses.



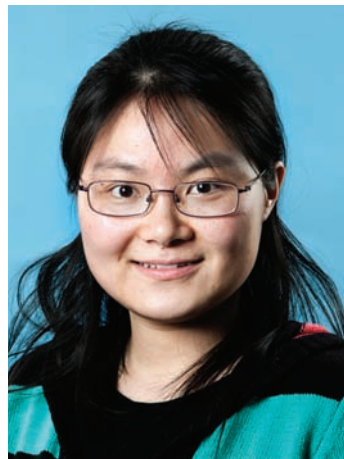
Sied Hassen - Ethiopia
Enrolled 2010



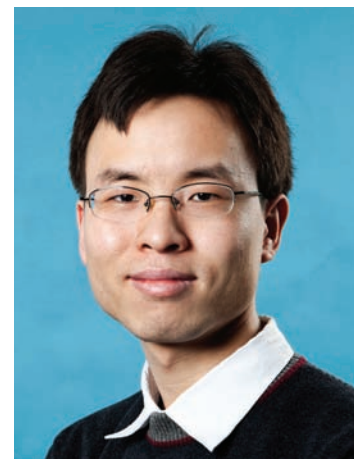
Elizabeth Földi, academic administrator, together with some of the environmental economics PhD students: Kofi Vondolia, Sied Hassen, Hailemariam Teklewold, Jorge Bonilla, Marcela Jaime, Hang Yin, Xiao-Bing Zhang, Remidius Ruhinduka (Bilateral research cooperation with University of Dar es Salaam financed by Sida) and Haileselassie Medhin.



Marcela Jaime - Colombia
Enrolled 2010



Hang Yin - China
Enrolled 2010



Xiao-Bing Zhang - China
Enrolled 2010

Press Releases on PhD Theses

In order to influence policy and present research to a wider audience we train our PhD students in policy advice (please read more below). We also engage with the media, and produce and disseminate press releases for all Sida-financed dissertations in environmental economics at the department (please read more in the section *Joint program activities*). During 2010 two PhD students graduated, and one graduated in early 2011. Below are the press releases on their theses.

Vietnamese villagers show that social influences affect willingness to cooperate

Press release from Environmental Economics Unit, University of Gothenburg, 18 March 2011

Vietnamese farmers were invited to voluntarily contribute to the construction of a bridge that everybody would be able to use regardless of contribution. Although traditional economic theory suggests that this type of fundraising should be unsuccessful, the villagers in Giong Trom actually ended up with a brand new bridge. In his experiment, economist Nam Pham Khanh shows that people are generally willing to cooperate and that social influences strongly affect how much individuals choose to contribute to a shared resource.

According to standard economic theory, people tend to 'free-ride' on the efforts of others, simply because they see a personal benefit in doing so. This means that people are generally not willing to contribute to public goods, such as a bridge across the Mekong River in the village of Giong Trom in Vietnam.

However, researchers have in recent years been able to show that people often do have a willingness to cooperate to overcome social dilemmas. For example, Elinor Ostrom, political scientist and recipient of the 2009 Nobel Prize in Economics, has shown that people who share the responsibility to manage natural resources tend to find ways to do so in a long-term sustainable manner.

In his doctoral thesis, economist Nam Pham Khanh

has studied human cooperation and how different types of social influences affect people's behaviour and willingness to contribute to a shared resource.

Two hundred poor rice farmers in the village of Giong Trom were invited to contribute to the construction of a public bridge that would be free for everybody to use. Each family was given 400 000 dong (SEK 140) as a gift from the research project. They were told that in order for the bridge to be built, the villagers would have to contribute a total of 40 million dong, or 200 000 dong per family on average. Any additional costs would be paid by the research project.

The families were free to either keep the entire gift or contribute any part of it to the construction of the bridge. All contributions were made anonymously, so nobody in the village or the research project had any way of knowing how much any family had chosen to contribute. In case more money than needed would be collected, the extra amount would be returned to the villagers in proportion to their contributions.

The families were divided into five groups; different groups received different information. For example, the families in one group were told that after having interviewed other families in the village, the researchers had learned that one of the most common contributions was quite low – only 100 000 dong. The families in another group got to choose among a number of alternative donations listed on a board by moving a marker from zero to the desired contribution. In both of these groups, the average contribution was 20 percent lower than in the reference group, which did not receive any information at all.

Thus, the research results show that the size of a person's contribution to a public good is affected both by information about the contributions of others and by provision of a default alternative.

'The results are potentially useful in developing countries, where the provision of public goods relies not only on governments but also on people's voluntary contributions. We show that the design of information given to individuals influences the ability to provide public goods, which is critical to economic and social development,' says Nam Pham Khanh.

The study was supported by Sida's Environmental Economics Capacity Building Program.

Time and venue for the public defence of the thesis: Friday 18 March at 10 am, room E 43, University of Gothenburg, School of Business, Economics and Law, Vasag. 1, Gothenburg, Sweden.

Thesis title: Prosocial Behavior, Social Interaction and



A doctoral thesis provided substantial academic contributions in addition to an actual bridge.

The field experiment was undertaken in Giong Trom village in the Mekong River Delta in Vietnam in 2009. The government only provides larger public goods such as roads between villages. The small-scale infrastructure within a village, such as the degraded wooden bridge in the upper left picture, is considered to be the responsibility of the village. Thesis papers 1 and 2 devised a threshold public good game in which villagers received an endowment from the NGO and had the option of keeping money for themselves or contributing some or everything to the funding of the bridge. Standard economic theory predicts no bridge; people tend to free-ride on the efforts of others, and therefore no one is willing to pay for the public good. In reality, though, the bridge was built as shown in the lower pictures. Villagers were able to cooperate to overcome the social dilemmas.

Development: Experimental evidence from Vietnam.

The thesis can be downloaded at: <http://www.hgu.gu.se/Files/nationalekonomi/Sem/Nam%20avh.pdf>

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In order to evaluate the effect of a plastic bag regulation a survey was conducted (in October 2008) when consumers exited an open market in Beijing after shopping. The enumerator (left) not only asked consumers about relevant plastic bag usage behaviors, but also recorded their actual bag use behavior during the shopping trip, i.e., counted their number of new and old bags, weighed their bags, etc.

Charging for plastic bags cut bag consumption by half in China

Press release from Environmental Economics Unit, University of Gothenburg, 22 November 2010

Use of plastic bags is a growing global environmental problem. As a result, the bags are becoming subject to various regulations in an increasing number of countries, with mixed results. An environmental-economic evaluation of the Chinese ordinance against free plastic bags from June 2008 shows that people in China – the number one consumers of plastic bags in the world – reduced their consumption of plastic bags by half when stores were forced to charge consumers for the bags.

'Our results show that this is an effective policy instrument that can be used to benefit the environment. But we also found that there is further room for improvement. What's most important is to make sure that the ordinance is complied with,' says Haoran He, who studied the effect of the Chinese ordinance as part of his doctoral thesis in environmental and behavioural economics.

In his thesis, Haoran He refers to several other countries that have implemented similar regulations aimed to reduce the consumption of plastic bags, for example Ireland and South Africa. Yet, he stresses that his study concerns only the effects observed in China.

'A general reflection based on studies in several countries is that if a country wants to reduce the consumption of plastic bags in the long term, it seems like repeated public information campaigns on environmental problems linked to plastic bags are very important,' says He.

The Chinese ordinance allows store owners to price their own plastic bags and then keep the profit. However, the price may not be lower than the acquisition value, which is the equivalent of .10-.60 SEK/bag depending on size and quality.

As competition is fierce in China, many stores choose not to comply with the new ordinance. Haoran He says that four months after the implementation of the ordinance, 60 percent of all plastic bags were still given away at no charge.

'One alternative would be for the government to price the shopping bags, convert the fee to a tax and then use the revenues to finance various environmental measures,' says He.

His study is based on consumer surveys conducted both before and after the regulation went into force. A total of 3,000 consumers in Beijing and Guiyang responded to questions about their consumption habits and use and re-use of plastic shopping bags.

Prior to the ordinance, the subjects used an average of 21 new plastic bags per week. They rarely used the same bag twice. Following the implementation of the ordinance, the consumption of bags was reduced by 49 percent and almost half of them were re-used.

Economists rarely encounter a good chance to compare how much consumers claim to be willing to pay in a certain situation with how they actually end up behaving in the same situation. Haoran He therefore seized the opportunity to address the question: How reliable is it to base predictions of reactions to environmental regulations on surveys and interviews? His results suggest a relatively strong link between what the consumers said they would do and what they actually did, so the method seems to be effective at least in the context of everyday consumption items.

Ireland is a country that has been remarkably successful at reducing people's consumption of plastic bags. In 2002 the country implemented a plastic bag tax in combination with long-term informational campaigns. When the Irish consumers were forced to pay 1.50 SEK per bag, they reduced their consumption by an astonishing 90 percent. Since they eventually got used to the price and the consumption consequently went up again, the government increased the price to 2.20 SEK/bag after five years. This clever move made the consumption fall back to a very low level again. People in Ireland now use about 20 bags per year as compared to 330 bags per year when they were given away for free.

The thesis was made possible by Sida's environmental economics capacity-building program.

Time and venue for Haoran He's public defence of his doctoral thesis: Monday 22 November at 10 am, Room C 33, University of Gothenburg, School of Business, Economics and Law, Vasag 1.

Title of the thesis: Environmental and Behavioral Economics - Applications to China.

The thesis can be downloaded at: <http://www.hgu.se/Files/nationalekonomi/Sem/101122%20Haoran%20avh.pdf>

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The magazine Sida Omvärlden reported on this thesis in December 2010. A pdf of the article can be downloaded at http://www.efdinitiative.org/files/files-in-media-news-press-releases/Pris_Plastpasen_He.pdf

Do contributions to public goods increase if publicly disclosed?

Press release from Environmental Economics Unit, University of Gothenburg, 3 June 2010

Public disclosure of companies' pollution habits has been an effective method of reducing pollution in many countries. Similarly, research has shown that people's and firms' propensity to contribute to a public good increases if their contributions are made public. Economist Clara Villegas Palacio has studied the effects of different extents of public disclosure. Her findings reveal that the expected positive effect of disclosure can sometimes be crowded out by other factors at play.

A clean environment is usually considered a public good. As the importance of environmental protection has gained support in recent years, several policy instruments aimed to control environmental pollution have been developed and tested in practice. These include environmental taxation, tradable emission rights and public disclosure of companies' pollution habits.

In several cases, the design of such policies gives them a social dilemma character where regulated agents have a clear incentive not to cooperate by not complying with the regulation. If nobody complies, however, then everybody is worse off than if they had cooperated by complying.

Sociologists and economists have studied how the likelihood of people playing by the rules is affected by different factors, including threats of sanctions, personal morals and other people's opinions.

Villegas Palacio's doctoral thesis explores how compliance with environmental regulations is determined by formal enforcement and technology availability and how cooperation in social dilemma situations is determined by interventions such as disclosure and social background of groups.

One chapter of her thesis, written together with Peter Martinsson, reveals the results of experiments conducted on Colombian university students. The chapter presents evidence indicating that the incentives provided by different disclosure treatments increase unconditional contributions to the public good compared to the no-disclosure treatment, although the effect is not statistically significant at conventional levels.

The expected positive effect (crowding-in) of disclosure on unconditional contributions may be offset by two other effects: (i) a crowding-out effect of image motivations given by the desire to appear intrinsically motivated rather than motivated by appearances; (ii) a crowding-out effect of intrinsic motivations (consistent with the motivation crowding theory of Frey and Jegen, 2001).

The thesis project received support from Sida's environmental economics capacity-building program.

Title of the thesis: 'Formal and Informal Regulations: Enforcement and Compliance'

Time and venue for the public defence: Thursday 3 June at 10 am, Lecture Hall E-44, School of Business, Economics and Law, University of Gothenburg, Vasag. 1, Gothenburg

You may download the thesis here: <http://www.hgu.se/Files/nationalekonomi/Sem/100603%20Villegas.pdf>

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Training in Policy Advice

The Sida-financed PhD program aims at training the PhD candidates for three roles: research, teaching and policy advice. Upon completion of the program the PhD candidates will be in a position to provide input to policymaking either through research or in different advisory roles. With the purpose of preparing the PhD candidates for tackling this role, a specific training component on this theme is included within the PhD program.

The first full course was given over a four year period starting in October 2006 and ending in May 2010. All five students following the course completed the course evaluation. The mean value of the 20 quantitative questions is 3.75, indicating a relatively high degree of satisfaction with the course. The spread is however large, where one student questioned the relevance of the course whereas the remaining four were positive or very positive. The students were unanimous in wanting to have a more concentrated course instead of having it spread out during the whole PhD program.

The purpose of this training is to enhance the capabilities of the PhD candidates to provide policy advice to authorities/governments. After completed training the PhD candidates should have:

- Improved understanding of Research-Policy linkages
- Enhanced understanding of the policy environment and entry points for policy advice in the respective countries of the PhD candidates as well as internationally.
- A good knowledge about commonly used approaches to integrating environment in decision making
- Improved skills in communicating the results of their research to policy makers and to provide policy advice to authorities/governments.

Methodology

The methodology comprised a mix of presentations, literature seminars and assignments where PhD candidates link the issues presented in the course to their PhD thesis work and to realities in their respective countries and research institutions. They are trained in writing effective policy briefs. Experience sharing and discussions among the participants are important elements of the course. The training program consists of about 20 days, of which 10 consist of lectures and seminars and the rest of individual assignments, distributed over a 5-year period.

Participation in the training programme is compulsory for the Sida-financed PhD candidates. For further information contact: Daniel Slunge, Daniel.slunge@economics.gu.se, Olof Drakenberg, Olof.Drakenberg@economics.gu.se, Anders Ekblom, Anders.Ekblom@economics.gu.se

Peer Reviewed Publications 2010

An important objective of a PhD program is to enable researchers to publish in international peer reviewed journals. In economics it normally takes many years to have an article published. We therefore encourage the students to the process early, which has been successful, as can be seen below.

Alem, Y., Bezabih, M., Kassie, M., Zikhali, P. (2010). Does fertilizer use respond to rainfall variability? Panel data evidence from Ethiopia. *Agricultural Economics*, 41: 165-175.

Akpalu, W., H. Eggert and **G. K. Vondolia**, (2009). Enforcement of exogenous environmental regulations, social disapproval and bribery, *Journal of Socio-Economics* 38 (2009): 940 – 945.

He, Haoran, Chen A, (2010), The effects of a Chinese plastic bag regulation and international experience comparisons, *China Population, Resources and Environment (Zhong Guo Ren Kou, Zi Yuan Yu Huan Jing in Chinese)* Vol. 20 (11): 71-78

Akay, A., P. Martinsson, **H. Medhin** and S. Trautmann (2010) 'Attitudes Toward Uncertainty Among the Poor: Evidence from Rural Ethiopia', RFF Discussion Paper EFD 10-04. Re-submitted to *World Development* (Under review).

Teklewold, H. and Köhlin G. (2011). Risk preferences as determinants of soil conservation decisions in Ethiopia. (Forthcoming in *Journal of Soil and Water Conservation*)

Villegas-Palacio, C. and J. Coria. Taxes, Permits, and the Adoption of Abatement Technology under Imperfect Compliance. On the interaction between imperfect compliance and technology adoption: taxes versus tradable emissions permits, *Journal of Regulatory Economics* 38(3), 274-291, 2010.

Working Papers 2010

The publication of working papers is an important intermediate step towards peer reviewed publications. Through copy editing and comments on the working papers, the success rate in final publishing is improved.

Alem, Y., and Söderbom M., 2010. Household-level consumption in urban Ethiopia: The impact of food price inflation and

idiosyncratic shocks. CSAE-Oxford Working paper No.2010-24. (revise and resubmit).

He, Haoran, Carlsson F. and Martinsson P., 2010, Easy Come, Easy Go - The Role of Windfall Money in Lab and Field Experiments.

He, Haoran, 2010, The Effects of an Environmental Policy on Consumers – Lessons from the Chinese Plastic Bag Regulation.

He, Haoran, 2010, Can Stated Preference Methods Accurately Predict Responses to Environmental Policies? The Case of a Plastic Bag Regulation in China.

He, Haoran, Carlsson F., Martinsson P., Qin P. and Sutter M., 2010, Household Decision-making in Rural China: Using Experiments to Estimate the Influence of Spouses.

He, Haoran, Carlsson F., Martinsson P., Windfall vs. Earned Money in the Laboratory: Do They Affect the Behavior of Men and Women Differently?

Medhin, H. & G. Köhlin (2009) Soil Conservation and Small-Scale Food Production in Highland Ethiopia: A Stochastic Metafrontier Approach, Working Papers in Economics 405, University of Gothenburg.

Akay, A., P. Martinsson and **H. Medhin** (2009) Does Positional Concern Matter in Poor Societies? - Evidence from a Survey Experiment in Rural Ethiopia, IZA Discussion Paper 4354.

Teklewold, H. and Köhlin G. (2011). Risk preferences as determinants of soil conservation decisions in Ethiopia. (Forthcoming in *Journal of Soil and Water Conservation*)

Martinsson, P. and **C. Villegas-Palacio** (2010 May) Does disclosure crowd out cooperation?, University of Gothenburg, Working Papers in Economics No. 446.

Martinsson, P., **C. Villegas-Palacio** and C. Wollbrant (2009 August) Conditional Cooperation and Social Group - Experimental Results from Colombia, University of Gothenburg Working Papers in Economics N. 372

Coria, J. and **C. Villegas-Palacio** (2010 June). Targeted Enforcement and Aggregate Emissions With Uniform Emission Taxes. University of Gothenburg Working Papers in Economics. No. 455

Workshops/Conferences

The PhD candidates are actively encouraged to take part in international academic meetings. This is also in many cases supported by the Sida grant.

Yonas Alem

- March 2010: Presented at the “Center for the Study of African Economies (CSAE) conference 2010” on Economic Development in Africa, University of Oxford.
- June 2010: Presented at the Nordic Development Economics Conference, Helsinki, Finland.
- July 2010: Visited Paris School of Economics as a researcher on migration and climate change.
- August 2010-November 2010. Worked at the United Nations University - World Institute for Development Economics Research (UNU-WIDER) as a PhD research intern, and presented a paper.
- November 2010. Attended the Fourth EFD Annual Meeting, Debre Zeit, Ethiopia.
- December 2010. Visited Center for the Studies of African Economics (CSAE), University of Oxford, and presented a paper.

Haoran He

- Paper presented at the 4th Annual Conference of Environment for Development (EFD), Addis Ababa, Ethiopia
- Paper presented at the 25th Annual Congress of European Economic Association, Glasgow, UK
- Paper presented at the Department of Economics, University of Gothenburg, Gothenburg, Sweden
- Paper presented at the Center for Chinese Agricultural Policy, CAS, Beijing, China
- Paper presented at the School of Economics, Renmin University of China, Beijing, China
- Paper presented at the College of Environmental Sciences and Engineering, Peking University, Beijing, China
- Paper presented at the School of Economics and Business Administration, Beijing Normal University, Beijing, China

Pham Khanh Nam

- Economy and Environment Program for Southeast Asia (EEPSEA) 33rd Biannual Workshop, Manila May 24-26, 2010.
- Economic Science Association (ESA) World Meeting, July 8-11, 2010 Copenhagen, Denmark
- Fourth World Congress of Environmental and Resource Economists, June 28 - July 2, 2010 Montreal, Canada.

Kofi Vondolia

- Participated and presented a paper at the Camp Resources XVII, Wrightsville Beach, North Carolina, June 24 – 25, 2010.
- Participated and presented a paper at the Fourth World Congress of Environmental and Resource Economists, Montreal, Canada, June 28 – July 2, 2010.

Clara Villegas

- Fourth World Congress of Environmental and Resource Economists, June 28 - July 2, 2010 Montreal, Canada.
- Participated and presented a paper at the Camp Resources XVII, Wrightsville Beach, North Carolina, June 24 – 25, 2010.

Hailemariam Teklewold

- Participated and presented a paper at the conference on Production and Carbon Dynamics in Sustainable Agriculture and Forest Systems in Africa–Science Needs and Deeds, 28-29 Sept 2010, Aula Magna, Stockholm University conference
- Participated and presented a paper at the Environment for Development (EFD) Fourth Annual Meeting, October 28-31, 2010, UNECA Africa Hall, Addis Ababa & Kuriftu Resort, Debrezeit, Ethiopia
- Participated and presented a paper at the workshop on “Land Productivity in a Changing Climate: lessons learned and future research needs, University of Gothenburg, Sweden, 2-3 December, 2010.

Jorge Bonilla

- Participated and presented a paper at the Environment for Development (EFD) Fourth Annual Meeting, October 28-31, 2010, UNECA Africa Hall, Addis Ababa & Kuriftu Resort, Debrezeit, Ethiopia

Simon Wagura

- Participated and presented a paper at the Environment for Development (EFD) Fourth Annual Meeting, October 28-31, 2010, UNECA Africa Hall, Addis Ababa & Kuriftu Resort, Debrezeit, Ethiopia
- Participated and presented a paper at the conference on Production and Carbon Dynamics in Sustainable Agriculture and Forest Systems in Africa–Science Needs and Deeds, 28-29 Sept 2010, Aula Magna, Stockholm University conference
- Participated and presented a paper at the workshop on “Land Productivity in a Changing Climate: lessons learned and future research needs, University of Gothenburg, Sweden, 2-3 December, 2010.

Xiaojun Yang

- Participated and presented a paper at the Environment for Development (EfD) Fourth Annual Meeting, October 28-31, 2010, UNECA Africa Hall, Addis Ababa & Kuriftu Resort, Debrezeit, Ethiopia

Haileselassie Medhin

- Participated and presented a paper at the Environment for Development (EfD) Fourth Annual Meeting, October 28-31, 2010, UNECA Africa Hall, Addis Ababa & Kuriftu Resort, Debrezeit, Ethiopia
- Participated and presented a paper at the conference on Production and Carbon Dynamics in Sustainable Agriculture and Forest Systems in Africa—Science Needs and Deeds, 28-29 Sept 2010, Aula Magna, Stockholm University conference

Specialization Courses in Environmental Economics

Background

As a part of the PhD program, we have designed a number of specialization courses in Environmental Economics. These are second year courses especially designed for our students. The courses are also open for teachers, researchers, and policy makers from relevant developing countries for an average of 8-10 additional participants. These additional students are fully financed by Sida through us. We give two courses in the fall and two courses in the spring, every second year. The participants have mostly been PhD students, university teachers from developing countries, with or without a PhD in economics, as well as some policy makers or other analysts. The gender balance has improved during the years and we recruit more and more female candidates to our courses.

Outline

Environmental Valuation. Environmental valuation deals with how to put a value on the environment. Valuation is an integral part of cost-benefit analyses of environmental problems. The focus of the course is on stated preference methods, in particular how to conduct studies in developing countries.

Natural Resource Economics. This course gives an overview of natural resource economics with particular emphasis on resources that are important in a developing country context. The course explains how natural resources should be used in an optimal allocation, and how they tend to be allocated in real economies. The focus is on renewable

resources such as fisheries, forests, and water.

Environmental Policy Instruments. This course gives an overview of applied environmental economics with particular emphasis on the design of policies in the area of environmental and natural resource management. The course gives an overview of why economic policies are needed in the area of pollution and resource management as well as a survey of the policy instruments that are available. Finally, it explains how policies should be selected and designed so as to meet not only the criteria of efficiency, but also of equity, political feasibility, and other criteria.

Climate Economics. Within the climate-economics curriculum there are three parts: The first of these is a natural science orientation into the physics, climatology and ecosystem response to climate change. The second is the economics of climate change as a dynamic intertemporal resource management dilemma and the third part concerns the design of policy instruments at the national and international level to deal with climate change.

Objectives

The overall objective of this activity is to strengthen the capacity in developing countries to do research, teach, and provide policy advice. To our knowledge, there is no other program that offers such a series of specialization courses in environmental economics at the PhD level as ours. This has made our program very popular and we receive many applications.

Our main target groups are PhD candidates in other programs in developing countries, such as AERC, and local PhD programs in developing countries throughout the world. Another important target group is researchers from the regional networks including CEEPA, LACEEP, EEPSEA and SANDEE.

Activities/Output

Due to budget constraints in 2010, we could not invite the usual amount of PhD students (8 for each course) from our networks (see above). Normally we would have run two courses in the spring semester. However, due to the fact that our own students had already taken the course Natural Resource Economics the last time it was given, it was decided not to run it this year. This meant that during 2010 we offered only one specialization course, namely Environmental Policy Instruments, 15th February – 26th March. The responsible professor was Thomas Sterner.

Apart from our own students, five students from outside EEU were accepted on different scholarships. Three of them received EAERE scholarships and two had their own financing.

Expert Advice to Sida

The overall objective of this program component is to provide support to Sida in the integration of strategic environmental concerns in Swedish development cooperation. In order to operationalize this objective, EEU's expert function for environmental economics pursues the following main **activities**: (i) integration of environment and climate change in Sweden's development cooperation strategies, (ii) methodological development and advice in Swedish development cooperation, (iii) capacity building, and (iv) methodological development in international processes.

In response to increasing environmental stresses and uncertainties, the political interest in, and demand for, addressing these challenges is increasing. This has had impacts on Swedish development cooperation, with needs to better understand the nature and risks of key environmental challenges and how they may be appropriately handled in aid strategies and operations. Consequently, there is an increasing need for environmental expertise and effective responses to alleviate these challenges, and a need to increase the understanding of environmental problems, and address driving forces, institutional issues and impacts which pertain to degradation of ecosystem services and environmental degradation. Indeed, there is also a need to identify cost-effective solutions to the key environmental problems.

Lessons learned:

Environmental degradation, natural resource depletion, climate change and particularly Green Economy have moved up quickly and forcefully on the political agenda. It has therefore been important that Sida, other aid agencies and partner countries have strived to improve their understanding of, and work on, the environment and climate change, and how they link with poverty and economic development, and to improve their systems for environmental management and integration. In view of the increasing environmental challenges and the strong Swedish political commitments to address these challenges in Swedish development cooperation, some lessons and issues (listed below) emerge from EEU's work before and during the reporting period. As hypothesized in EEU's planning, the following issues have been important in EEU's support to Sida, and – in our view – for Sida in its support to partner countries:

- 1. Greater emphasis on communication of analytical work in cooperation strategies:** In view of this, EEU has strived to enhance its methods for engaging with the

country/regional teams to improve communication of findings from key analytic work that adequately feed into cooperation strategies.

- 2. Increased focus on strategy implementation:** EEU has traditionally focused its support on strategy planning and formulation. However, in view of the emphasis on results and development impacts, EEU and Sida have markedly shifted their implementation focus on (country/regional cooperation) strategy implementation. In this work, EEU has strived to convey and achieve a deeper understanding of institutional constraints and opportunities for environmental integration in general and for improved management of environment and climate change issues in selected partner countries in particular. The collaboration with the World Bank on Institutions centered SEA (SEA in policy and sector reforms) has been very important for this work.

- 3. Need for a flexible work program:** EEU has worked to respond quickly, competently and adequately to Sida's requests, and strived to pursue a flexible approach to the means and tools available for support in the various situations of, and demands expressed by, Sida.

- 4. Enhanced coordination among external expert functions in its support to Sida:** EEU has strived to provide smooth and effective expert advice to Sida by enhancing its coordination across external expert functions (Helpdesks), in advice, trainings, support to development of positions, and in methodology development.

- 5. More and better use of indicators and evaluations:** EEU has strived to improve its use of indicators and evaluations for measuring results in its advisory services to Sida, in particular in the context of formulating and monitoring results matrices/results in country cooperation strategy processes. Specifically, EEU has improved its efforts to provide advice on environmental and climate change related indicators in cooperation strategies and country reports.

- 6. Better advice and integration of climate change adaptation in development cooperation:** Understanding the climate change impacts, assessing and implementing appropriate measures, and finding financial and governance structures that make efficient use of existing and future resources, are some examples of key challenges related to climate change - globally and for Sida. EEU has continued its efforts in this area, particularly in relation to communication of findings of country-analytic work on climate change and cost effective adaptation.

Based on these preliminaries, EEU's role has been to

contribute to the goals of Sweden's Policy for Global Development and to support Sida in this effort by providing timely and relevant expertise leading to the following four principal outcomes: 1) Environment and climate change is well integrated in Swedish cooperation strategies; 2) Sida has relevant systems and tools to adequately address key environmental and climate change issues in its operations (from strategies to follow up); 3) Sida staff has relevant capacity for integrating environment and climate change in their work as analyst, financier and dialogue partner; and 4) Active participation of EEU in international methodology development related to development cooperation, environment and climate change.

Below we describe the objectives, activities, outputs and some outcomes of EEU's advisory work to Sida during 2010.

Integration of Environment and Climate Change Issues in Swedish Development Cooperation Strategies

Objective

The objective of this activity is to provide relevant and timely contributions to Sida's integration of environment and climate change in Swedish cooperation strategies. By providing analytical input and advice to a number of Sida's integrated poverty and development analyses and other analytical documents or processes, EEU's expert function has supported environmental mainstreaming of Swedish cooperation strategies during the reporting period. The contributions have facilitated country or regional teams to understand, assess and integrate environment and climate change in the strategies. The work has mostly been done in a process manner, where particular analytical needs have been discussed and agreed on and analytical findings have been communicated in written format (typically through Environment and Climate Change Policy Briefs), as well as through personal meetings or discussions with Country Team members in the strategy process.

Activities

Key activities include formulation of Environment and Climate Change Policy Briefs in order to support environ-

ment and climate change analyses in cooperation strategy processes and to provide comments on draft cooperation strategies.

Generally EEU has supported country teams by identifying and summarizing new and relevant country-analytic work on environment and climate change, reviewed draft cooperation strategies and assisted with quality assurance in the strategy formulation process. Occasionally EEU has also participated as resource person in cooperation strategy formulation meetings of various types.

Output

As indicated above, EEU has produced a number of Environment and Climate Change Policy Briefs, aligned and harmonized environmental and climate change analyses in country and regional strategies, and communicated or provided relevant advice on environmental and climate change issues in cooperation strategies.

Africa:

At Sida's request the EEU has developed Environmental and Climate Change Policy Briefs or similar analytical documents, and provided written comments on the draft cooperation strategies for: **Botswana, Burkina Faso, Ethiopia, Mali, Mozambique, Rwanda, Tanzania, Sudan and Zambia.**

To exemplify some activities, EEU reviewed and provided input to the environment and climate change indicators in the draft results matrix for Botswana. In the case of Burkina Faso EEU commented on a cooperation strategy background document. EEU also participated as environment and climate change expert in the country meeting in Ouagadougou, and assisted in the preparation of the cooperation strategy. Similar support was given in the Mali cooperation strategy formulation process, with field visits and dialogue with the Swedish embassy. Opportunities for strengthening the synergies with the bilateral program and the UNEP-UNDP Poverty Environment Initiative, PEI (partly Sida funded), were identified during the preparations of the new proposal for a cooperation strategy and through contacts with PEI.

For Ethiopia, EEU provided comments on environmental and climate change issues proposed to be considered in the new Swedish strategy for support to Ethiopia. In the process of formulating the Policy Brief, EEU collaborated with colleagues in Ethiopia at the EfD centre at the Ethiopian Development Research Institute, Ethiopian Institute for Agricultural Research, and the School of Economics at Addis Ababa University. Regarding Mozambique, EEU provided the Swedish embassy with comments

on the potentials and risks associated with environmental fiscal reforms, related to fuel taxes and subsidies. Regarding Rwanda, EEU provided written input on the environment and climate change indicators in the draft results matrix for Rwanda. In Tanzania, EEU conducted a literature review on recent environment and climate change related studies and documents for Tanzania. EEU also provided input to, and reviewed, Sida's Poverty and Development Assessment (PDA) for Tanzania. Regarding Sudan, EEU initiated analytical work on environment and climate change in anticipation of the coming cooperation strategy process. Finally, regarding Zambia, EEU submitted an Environmental and Climate Change Policy Brief as an input to the Poverty Development Assessment (PDA) process for Zambia and presented major environmental challenges, constraints, and opportunities for development prior to Sida's PDA workshop for Zambia.

Asia and the Middle East:

EEU developed Environmental and Climate Change Policy Briefs and/or provided written comments on the draft cooperation strategies for: **Bangladesh, Cambodia, Laos, and the Middle East and North Africa (MENA)** region. To exemplify, in the case of MENA, EEU drafted an Environment and Climate Change Policy Brief as an analytic input to the process of developing a new regional cooperation strategy. EEU also developed a concept paper on water for the MENA region, with the purpose of providing input to Sida's support to development of the regional water program in the MENA region. In the case of Bangladesh, EEU commented on a mid-term review of support to urban environment and climate change. In Cambodia, EEU reviewed and commented on the European Commission's Mid-term Review and Multiannual Indicative Program. In Laos, EEU participated as resource person in the evaluation of the Swedish supported program "Strengthening Environmental Management II" with the purposes of methodology development and learning.

Latin America:

EEU provided analytical support to the development cooperation with: **Bolivia**. Specifically, EEU provided background information and advice on the Strategic Environmental Assessment (SEA) of Bolivia's forest sector reform.

Europe:

EEU developed Environmental and Climate Change Policy Briefs and/or provided written comments on the draft cooperation strategies for: **Belarus, Bosnia and Herze-**

govina (BiH), Georgia, Moldova, Serbia, Turkey and Ukraine. In the case of Belarus, EEU submitted comments on the country analysis, and attended various working meetings with expert advice. In Bosnia and Herzegovina, EEU reviewed and submitted written comments on a study on the environmental sector, which served as an input to the process of developing a new cooperation strategy with BiH. In Georgia, EEU provided advice on environment and climate change indicators for the results matrix, and pursued dialogue with Sida on natural resource tenure and the reform process in Georgia. In Moldova, EEU provided comments on the formulation of objectives and indicators for the cooperation strategy. In Serbia and Turkey, EEU submitted information on environment and climate change as an input to the formulation of future support to Serbia and Turkey. In Ukraine, EEU provided support on identifying opportunities for support to the country team regarding cooperation between Ukraine's Ministry of Finance and Ministry of Environment.

Lessons learned

EEU's work to support integration of environment and climate change issues in the above Swedish development cooperation strategies has highlighted the need for follow up and to ensure proper implementation, and the need to harmonize and utilize other analyses and mainstreaming efforts across developing country agencies vis-à-vis the partner country.

Key factors in reaching successful outcomes for the analytical input have been context-specific analysis, inclusion of indicators that facilitate results-based management, findings that are discussed broadly with the country team (and consequently contribute to a learning process), drafts that are submitted for comments early on in the strategy formulation process, and a good constructive working relationship with the country/regional team. Other lessons and factors for successful environmental integration include the need to emphasise the important role of institutions, incentive structures and market failures in the country analytic work (i.e. a focus on describing underlying constraints and on suggesting solutions - not just listing environmental problems); the need to link environmental issues to poverty, growth, human rights and other key development issues; and the need to provide analytical input (policy briefs or other kinds of analyses) as a means to attain on-the-job training and capacity building on these thematic issues.

Methodology Development and Advice in Swedish Development Cooperation

The objective of this activity is to provide relevant and timely support to Sida's development of relevant policies, systems and tools to adequately address key environmental and climate change issues in Sida's operations (from strategies to follow up). Given this objective, EEU, on various requests and in various processes, contributed with advice during the reporting period - in some cases in cooperation with other external expert functions and actors.

Output

General output from the listed activities include support to Sida's development and communication of tools and methodologies for environmental policy integration, including environment and climate change analysis, integrated economic analysis, poverty and development analysis and SEA; input and expert advice to Swedish policy development processes; contribution to Sida's development of environment and climate change indicators at the country level; support to Sida for improved dialogue on sustainable environmental management and climate change; expert advice to Sida in monitoring implementation of country and regional strategies; advice in areas where EEU has specific competences e.g. environmental economics policy instruments, analytical guidance on environmental integration in PRS processes, and dialogue related to general budget support; and evaluation requests by Sida.

Activities:

Overview of Swedish support to environmental capacity development: At Sida's request, EEU has undertaken a study to present and analyze Sida support to environmental capacity development, resulting in the report "Swedish Bilateral Support to Environmental Capacity Development - Overview of Key Results and Lessons Learned".

Advice in the development of the Swedish development cooperation policies: EEU participated in Sida's external reference group to the formulation of the Policy for Environment and Climate Change in Development Cooperation 2010-2014 and produced a background document for the formulation of the Environment and Climate Change Policy. EEU also commented on a paper written by SWEDES as input to the development of a new policy

on health and education in development cooperation.

Advice on environmental and climate change indicators: At Sida's request EEU developed a guidance document for environmental and climate change indicators, to be used at the country level for strategy follow up. This work was extended to link up with work on developing indicators in the field of democracy and human rights.

Support in budget analysis: EEU provided support on developing Terms of Reference for a study of Budget Analysis for Environment, Gender and Democracy and Human Rights, and participated in an internal working group on budget analysis.

Advice in work pursued by international organizations (eg UNEP, the World Bank): At Sida's request EEU provided advice and comments on UNEP's guidance manual for valuation of ecosystems, and commented on the World Bank's interim progress report on the Strategic Framework for Development and Climate Change. In related work, EEU provided advice and comments on the World Bank Environment Department's concept note on wealth accounting.

Guidance for Environment and Climate Change Indicators: The work with the indicator guidance entered into its final stage during the period in a close dialogue with Sida. EEU assisted in the review and commented on a draft version of the guidance by different units and departments at Sida. EEU submitted a final draft, Guidance for Environment and Climate Change Indicators, to Sida for further action.

Other methodological development and advice in Swedish development cooperation: Other activities under this theme include support in developing Guidelines for Sida's work on Corporate Responsibility; reviews and comments on six climate change project proposals to be funded by the Nordic Development Fund; submission of background information to Sida on ToRs for Environment and Climate Change Policy Briefs; analytical input to Terms of Reference for analysis of the forest sector reform in Bolivia; seminar on Payment for Environmental Services with Sida's Regional Asia Team; support to SEA in decentralization reform in Cambodia, and in development of a concept note for conducting SEA in Vietnam.

Lessons Learned

Key lessons based on the above activities for enhanced methodology development include the need for (i) clear guidance on expected results in terms of environmental integration, (ii) close cooperation between Sida's policy pillar and operations, (iii) a focus on a select limited number of key processes to ensure results and adequate

implementation of environmental objectives and priorities at Sida, and (iv) a translation and integration of experiences from international networks and process into Sida's methodology development and operations. Issues for consideration in methodological development include adaptation of existing tools such as Environment and Climate Change Policy Briefs, SEAs and Environmental Assessments into Sida's work to integrate environment and climate change in its operations. Other general issues for consideration pertain to alignment with partner countries', and harmonization with other donors', tools, analytical approaches, indicators etc., and integration of disaster risk reduction in Sida's tools and systems for dealing with environment and climate change.

Capacity Building in Swedish Development Cooperation

Objective

The objective of this activity is to promote efficient contribution and support to Sida's capacity development for enhanced integration of environment and climate change in its work as analyst, financier and dialogue partner. At Sida's request, EEU has contributed with advice or expertise that arguably has strengthened the capacity of Sida staff, and to some extent partner country representatives, to address key environmental and climate change issues in their work.

Output

General output from the activities listed below include: i) training and e-learning materials, information shared in networks, and well-communicated advice and comments; ii) participation of EEU staff as experts and resource persons in trainings and coaching events, building capacity among Sida staff and among resource persons in partner countries; iii) participation of EEU in dialogue with selected country teams/policy teams, including capacity development within partner countries; iv) support to Sida in the production of training materials; v) sharing of best practice, research findings and international experiences pertaining to environmental economics and strategic environmental assessment via Sida's network on environment and climate change and other relevant fora; vi) on-demand capacity-building support in areas where EEU has specific competences.

Activities

Support to mainstreaming environment in development cooperation with Mozambique: EEU assisted the Swedish Embassy in Mozambique in coordinating a climate change week in Maputo, including: i) an open seminar on climate change adaptation with representatives from Mozambique's government, donors, civil society and private sector; ii) a climate change workshop for the Embassy development cooperation staff; and iii) individual coaching of Embassy staff. As a follow up to the coaching, EEU provided support related to natural resource management, decentralization and civil society, governance and indicators, general budget support, and transboundary water resources.

Advice on Climate financing – report and seminar: EEU produced the report "Old, new and future environment and climate change financing – the role of development cooperation". The report was commissioned by and presented at Sida at a seminar with representatives from Sida's management, including the GD, and from the Ministry of Foreign Affairs.

Capacity development for environmental management at Sida: EEU presented the report "Swedish Bilateral Support to Environmental Capacity Development - Overview of Key Results and Lessons Learned" at the Sida seminar "A broadened approach to environmental capacity development", which was attended by around 50 participants. EEU also facilitated group discussions and the concluding panel debate, wrote the proceedings from the seminar and assisted in the preparation of the seminar program and the group discussions.

Support in capacity development for environmental management: EEU assisted in conducting a seminar on environmental capacity development arranged by the Swedish Environmental Protection Agency (SEPA) by presenting and participating as resource persons in discussions. In a related event EEU facilitated and presented at a seminar on SEA at Sida. By doing this EEU gave feedback on key lessons from methodological development work conducted by OECD DAC and the World Bank on SEA in policy and sector reform, and lessons learned from the World Bank pilot program on institutions centered SEA.

Support to training for environmental management: EEU participated as resource persons in a course for NPOs on thematic priorities, including assistance to Sida in the preparation of the agenda and in facilitating the training. Moreover, EEU prepared training materials for Sida to use for various training purposes, including PowerPoint presentations, various group exercises and video clips that help convey the messages.

Strengthening environmental management in Lao PDR: EEU supported the evaluation of the SEM II project by studying the lessons learned from this environmental capacity development project. Interviews and workshops were conducted in Laos. A final evaluation report and a Policy Brief on the lessons learned from SEM II were submitted to Sida.

Lessons learned

Key lessons for capacity development in Swedish development cooperation include: i) adequate translation of experiences from international processes are considered and fed into Sida's policy work and operations; ii) framing of the support in terms of "on-the-job trainings", targeting information and adapting messages and examples to the specific target group at the right time; iii) and identification of "non environment- or climate change-focused" opportunities for capacity development. Other lessons include: i) the need to adapt to very diversified demands for training and capacity development within Swedish development cooperation (addressing the risk that the increased demands for trainings and the information supply related to environment and climate change from operations and various policy teams cannot be matched); ii) the need for Sida to develop a strategy/action plan that addresses the demand by using various forms of training, coaching, and information, and the network for environment and climate change, Sida Inside etc. aspects/issues; iii) and the need to harmonize and align tools and practices and look for opportunities for joint capacity development with both donors and partners.

Methodological Development in International Processes

Motivated by the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action for increased alignment, harmonization, and international cooperation, the objective of this activity is to provide adequate support to Sida in its participation in, and contribution to, international methodology development related to environment and climate change in development cooperation.

Output

To operationalize and attain the objective, EEU has

supported Sida's participation in international networks and processes related to methodology development on environment and climate change. EEU has provided particular competence as experts in processes related to country analytic work, environmental economics and strategic environmental assessment. Other outputs have been the conveying of publications from international networks/organizations and the enhancement of capacity at Sida to improve donor harmonization regarding tools and methods for the integration of environment and climate change aspects. EEU has also shared and communicated experiences from international networks/processes with relevant Sida staff.

Activities

At Sida's request EEU has participated as expert or advisor in a number of activities related to methodological development in international processes. Key examples are listed below. The work has typically been carried out in international networks or processes, in close collaboration with Sida.

Expert advice in OECD DAC EPOC Task Team on climate change and development cooperation: The EE Expert function was asked to participate, together with Ulrika Åkesson (Sida), in the task team meeting 28-29 January. Joint preparations were undertaken before the meeting on 13 January (Ulrika Åkesson, Jens Berggren) and contacts were made with the SEA task team to ensure that linkages were made with these existing tools (Rob Verheem/Peter Croal). The EEU also contributed to the travel report on 3 February (Ulrika Åkesson).

Support to OECD DAC Task Team on Strategic Environmental Assessment (SEA): EEU has been an active partner and expert advisor in the OECD DAC Task Team on SEA, participating in meetings and as a key actor in follow up and methodology development.

Resource persons in international methodology development - The World Bank pilot program on SEA in policy and sector reforms: EEU staff have been active as resource persons in the World Bank's pilot program to develop SEA as a useful analytical and practical method in policy and sector reforms. This includes a number of substantial activities, e.g.:

- *SEA evaluation study in Kenya:* EEU undertook an evaluation of the Strategic Environmental Assessment (SEA) of Kenya's Forest Sector reform 2006. The SEA also fed into the planning of the World Bank's Natural Resource Management Support Program. Interviews with approximately 45 senior government planners, decision-makers and other key stakeholders were conducted in Kenya. The report,

which was submitted to the World Bank, was co-authored by Drs. Wilfred Nyangena and Paul Guthiga at the Kenya Institute for Public Policy Research and Analysis as part of EEU's institutional collaboration on environmental economics with this institute.

- *International dissemination seminar on policy SEA*: EEU planned and participated in the international seminar "SEA for Development Cooperation: Taking Stock and Looking Forward" in Geneva at the International Association of Impact Assessment's (IAIA) World Conference. The work of EEU, World Bank and others on policy SEA was well received among the 70 seminar participants, who represented a diverse set of countries and institutions.

- *International work meetings on developing policy SEA*: EEU participated in several work meetings to discuss the operational work of developing policy SEA as a new practical tool for environmental assessment at the strategic level in policy and sector reforms. The work resulted in the finalization of a synthesis report of the World Bank's Pilot Program on institutions-centred (policy) SEA.

- *Co-authoring, publication and launch of World Bank book on SEA in policy and sector reforms*: EEU was an active partner and co-author in the finalization and publication of the World Bank book on SEA in policy and sector reforms. The book is based on the extensive results of the pilot program. It was launched in Washington D.C. and is expected to have a significant impact on the World Bank's and other organizations'/governments' work on integrating environmental issues in policy and sector reforms. EEU has also been an active partner in formulating a policy brief summarizing the results, which can facilitate wide dissemination of results from the pilot program. Results and findings from this work have also been communicated to Sida through reports and seminars.

Analytical support to EU and European Commission: EEU has actively supported various activities pursued by the EU and the European Commission, e.g. the EU-wide strategy for environmental integration in development cooperation (preparing draft outline for the Strategy, commenting on drafts, participating in drafting meetings in The Hague etc.) and advice in formulating the EU Green Paper on the future of budget support (review and discussion the content, written comments to the green paper etc.).

OECD DAC EPOC Task Team on capacity development on environment: EEU has provided expert advice on publications addressing capacity development and national budget processes.

Expert in Poverty Environment Initiative (PEI) Technical Advisory Group: EEU has participated as technical expert in PEI TAG meetings, e.g. PEI's primer on environmental law.

Experts in OECD DAC EPOC Task Team on climate change adaptation in development cooperation: EEU has participated actively as technical expert at OECD DAC EPOC's Task team on Climate change adaptation in development cooperation. EEU has done this in close collaboration with Sida and reported back in the form of briefings, dialogues, and travel reports. Comments have also been given on working documents e.g. "Climate risk screening and assessment tools".

Expert advice in Poverty-Environment Partnership (PEP): On several occasions, EEU has participated as advisor and expert in the Poverty-Environment Partnership. Key contributions include: giving expert advice in PEP's interagency paper on Green Economy and acting as liaison with UNEP, UNDP and World Resources Institute (WRI); and participating in PEP meetings (e.g. Malawi), chairing sessions and supporting organizers in preparations for theme days (e.g. on Green Growth), and inviting local/regional resource persons (e.g. EFD Kenya) to present at the meetings and promote North-South networking on poverty-environment issues.

Lessons learned

Many international processes on environment and climate change are currently going on. It is therefore necessary to be selective and active in a limited set of key processes in order to achieve high impact and attain learning. Although participation can be consuming in terms of time and effort, it is necessary to develop methodologies jointly and to harmonize practice in order to achieve the objectives of the Paris Declaration. There is a lot to learn from the participation in these processes.

Absorption capacity among participating institutions (including Sida) is however critical, and needs development in order to gain the most out of these processes.

Other factors of importance for effective international methodology development include: (i) clear guidance on expected results from Sida; (ii) close cooperation with Sida and, where relevant, other external expert functions in coordinating input as well as follow-up on outcomes; (iii) information targeted and messages adapted (e.g. from case studies/useful practical examples) to specific target groups within Sida.

Developing Capacity and Competence of EEU Environmental Economics Expert Function

Objective

The objective of this activity is to ensure that EEU's expert function on environmental economics remains a credible and efficient institution. In order to meet environmental challenges in development in general and in development cooperation in particular, it is necessary to ensure that EEU's expert function on environmental economics is a credible and efficient institution, and that it offers quick access to expertise for advice in planning and strategic decision-making in Swedish development cooperation. During the reporting period EEU has pursued several activities which strive to attain the above objective.

Activities

EEU has continued its development of internal tools for quality assurance, strategic planning, reporting, and follow-up; EEU has practiced good management of its staff and practices, including performance appraisals and team work; EEU has developed its capacity through training and continued and improved access to national and international expertise. Active participation in methodological development in international processes has assisted in this respect.

Collaboration with Sida and external actors: EEU's expert function has maintained and further developed its first-hand access to international expertise and researchers on issues such as climate change adaptation, environmental economics valuation, environmental economic policy instruments, sustainable natural resource management, and the economics of forestry, agriculture, fisheries, pollution and resource use. EEU has worked in consultative ways with government agencies, ministries and civil society in Sweden as well as internationally to develop its capacity, e.g. work with international organizations such as the World Bank, EU, OECD DAC, UNEP, UNDP, bilateral development cooperation agencies and NGOs such as World Resources Institute and IUCN. EEU has also worked closely with collaborating research centers supported by Sida in the **Environment for Development (EfD) Initiative (www.environmentfordevelopment.org)**.

EEU has also worked closely with other Sida-supported external expert functions, primarily the EA Helpdesk, Swedbio and SEI. EEU has also during the reporting period developed its working relationships with Sida teams, in operations as well as policy teams, and the Swedish embassies/field offices in order to intensify the efforts to address key environmental issues.

Administration and management: Activities pertaining to administration and management during the period included quarterly reporting, budget follow-up (planning and reporting), and preparations and discussions with Sida regarding the extension of the existing agreement and its associated activity plan and budget (1 Jan - 31 May 2011). During the period EEU's expert function has spent time on planning and reporting including the finalisation and submission (31 March 2010) of the three-year activity report to Sida, which covered the advisory services provided to Sida during 2007-2009, adjustment of the advisory services to Sida's reorganization. Although time consuming, these processes also offered opportunities for learning and program development. Administration also included communication and documentation, management of staff, and participation in EEU's general planning and implementation of the Environmental Economics Program. EEU also moved to a different location during the period, which initiated efforts to improve the structure of the archive. EEU has also continuously updated and improved its webpage (www.handels.gu.se/eeadvice).

Output

Output and in some cases outcomes that have arguably been achieved due to EEU's advisory work include: EEU's services have been well received by Sida; Staff at Sida have learned from EEU's advice and have been assisted in effective and useful ways, based on their needs and requests; The advice has consisted of tools in planning and decision making, and to some extent in implementation, reporting and monitoring of results; There is an enhanced capacity to analyse and communicate environment and climate change issues of strategic concern. Key factors for attaining these outputs and outcomes include: that EEU has remained and developed itself into a credible and efficient institution with adequate funding; an ability of EEU to attract and maintain competent staff; competence development and maintenance of good working relations with Sida and associated networks (e.g. the international contacts); and maintenance of the systems for planning, reporting and follow up to Sida, and knowledge management.

Joint Program Activities

Over the last 20 years, the environmental economics capacity building program has evolved. Already from the beginning three pillars were envisaged – capacity building, research and advice.

Throughout the years the program had benefitted greatly from the synergies between these components. Over time they have grown into a full-blown PhD specialization in environmental economics linked to the institutionalization of environmental economics research in the Environment for Development initiative, in turn linked to the expert advice given to Sida provided by the Sida Helpdesk on Environmental Economics. In the discussions with Sida regarding the continuation of the program beyond the 2007-09 agreement it was therefore natural to plan for an integrated Environmental Economics Program to span these three components for a five year implementation period.

In the summer of 2009 it became clear that repercussions from a reorganization would delay the necessary evaluation of the program to such an extent that it would be impossible to prepare for a new long-term agreement that would start already in January 2010. Instead a one year extension was decided on for 2010. This led to a discrepancy between the plans for a combined program and the extension of two separate agreements (one for the PhD program and Expert Function, reported on here, and one for the Environment for Development initiative). In order to maintain the synergies between the two agreements, joint program activities were maintained in both agreements.

In effect, 2010 became a transitional year, where a lot of effort was given to finding a new structure for the planned activities. Negotiations and program preparations at EEU were done jointly for the PhD program, the Expert function and EfD. Similarly, at Sida it was decided that these three components, at least at first, should be co-evaluated with the active involvement of staff from Global Programs, the Research Secretariat and the Environment and Climate Desk. In the end, this process led to competitive bidding for the environment and climate advice to Sida, while a new four-year agreement was decided upon for EfD and the PhD program.

During the year, the joint program activities have thus led to synergies in the communication with Sida, the reporting and the communication activities.

Communication

In the original work plan much of the communication activities were planned to be done jointly between the three components. Most of the communication work has, as planned, been devoted to EfD, while we have made important contributions also for the EE Helpdesk and the PhD program.

We have produced and distributed press releases on dissertations (presented in section *Academic capacity building; Press releases on PhD theses* in this report), and published them on our websites www.handels.gu.se/econ/EEU and www.efdinitiative.org, which also connects to our partner Resources for the Future in Washington D.C. Based on the EfD website we produce a monthly newsletter with the latest research publications, news and press releases that also includes activities from the other components. We work with the Swedish Research Council's media service, Expertanswer, to channel daily questions from journalists looking for the right expert to interview and to make a selection of press releases according to their interests. We also post our press releases on the Swedish Research Council's website Expertanswer, as well as on international news portals such as AlphaGalileo, EurekAlert and IDW. General information about our research, academic capacity building and advisory service for environmental economics is available on our websites and in printed matter.

During 2010 the EEU website was restructured in order to provide web visitors a better overview and to improve visibility of the work, research and advice conducted.

To improve researchers' communicative skills we train our Sida-supported PhD students in policy advice, policy brief writing and presentation techniques (presented in section *Academic capacity building; Training in policy advice* in this report).

Program management

Synergies in program management have been sought between the different components in the Environmental Economics Program. The day-to-day management of the PhD program has rested with the Director of Studies (Prof. Fredrik Carlsson) and the Academic Administrator (Elizabeth Földi), and the Environmental Economics Helpdesk has been headed by Dr. Anders Ekbohm. These programs have been supported by a Program Director (Dr. Gunnar Köhlin), a Program Officer (Karin Jonson), a Financial Controller (Gerd Georgsson), a Communications



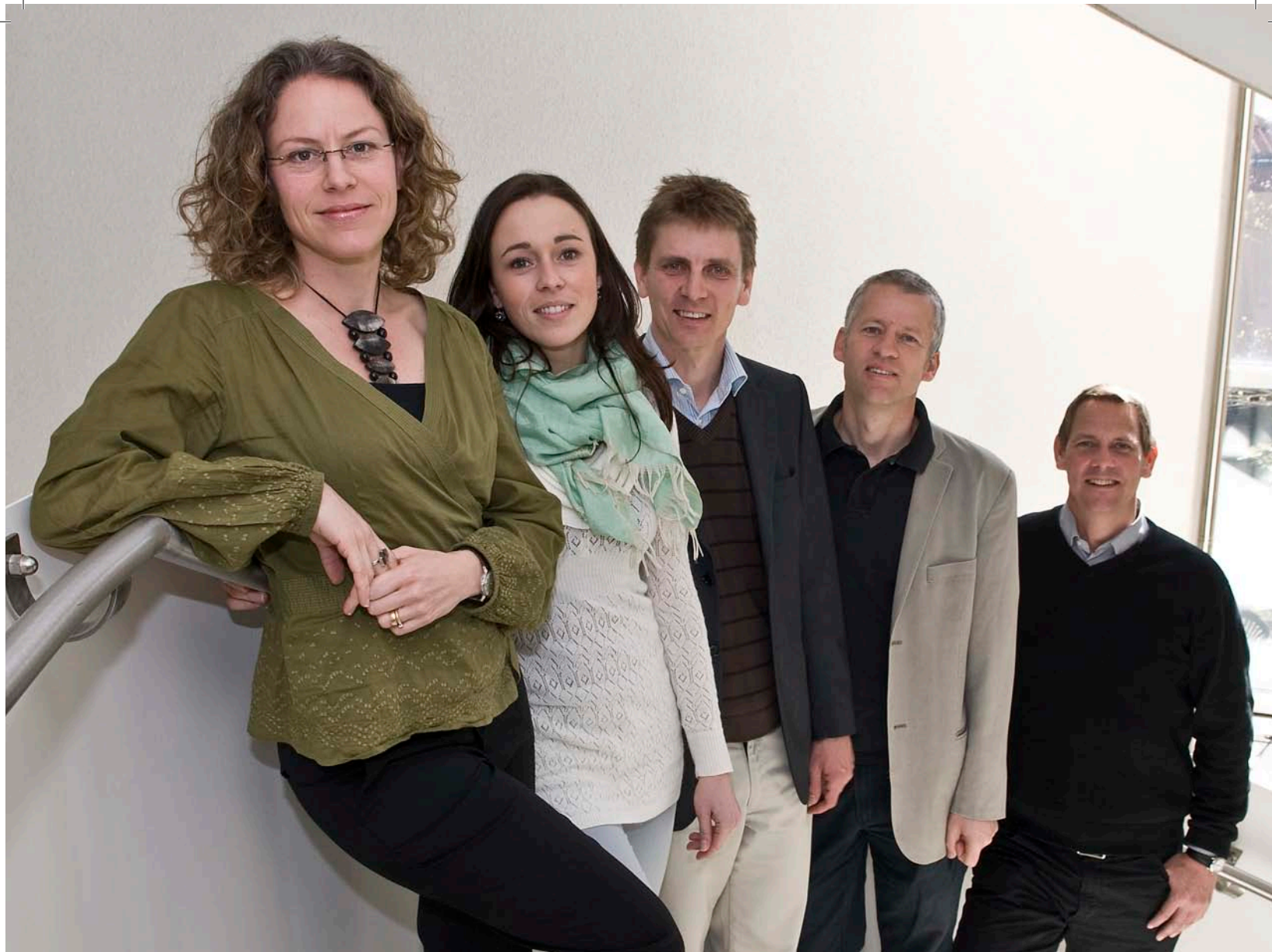
Professor Thomas Sterner, head of the Research Committee, and PhD candidate Kofi Vondolia.

Officer (Karin Backteman) and the head of the Research Committee (Prof. Thomas Sterner).

Given the turbulent situation regarding plans and agreements, there has been an unusually great need for program development and dialogue. The negotiations regarding the budget led to many iterations of budgets. However, the fact that we have been able to draw on a joint body for program management has made this work more efficient than it would otherwise have been. The same goes for the handling of third party contracts, external audits and administrative discussions with the University

of Gothenburg. All in all, the joint program management has turned out to be successful since it has paved the way for new agreements for all program components. The challenge during 2011 will be to address the continuation of the capacity building program, where Sida has requested the consideration of new modalities to be elaborated in a strategic plan.

The greatest gain of the joint program activities is of course the interaction in terms of content between the components – synergies that we will strive to maintain in the future despite the organizational split.



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