Activity report 2014

PhD PROGRAM IN

GLOBAL CHANGE AND CLIMATE ECONOMICS

Academic Capacity Building

The 2014 cohort.
The above picture shows the 2014 PhD candidates at the Department of Economics. Among these three belongs to the Sida funden PhD program, Eyoual Demeke, Tewodros Tesemma and Samson Mukanjari.

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Sida
SWEDISH INTERNATIONAL DEVELOPMENT

Table of Contents

EXECUTIVE SUMMARY

The PhD program Global Change and Climate Economics (formerly environmental and climate economics) started in a modest way already in 1991. Since then Sida has supported 30 PhD's from start to completion of a successful defense and more than 270 students have participated in one or many of our specialization courses. The program constantly evolves and improves based on the experiences of its students, faculty and administrative staff.

During 2014, a total of 13 Sida-funded PhD students were enrolled in the program, one of which was financed by the bilateral program with Tanzania. The synergies with the EfD centers are also very strong, since 10 of them come from "EfD-countries". As can be seen in the report, the students are progressing well. Actually, an exceptional ten peer reviewed papers were published by the PhD students during the year!

The spring of 2014 was also a very intensive semester since the program gave not less than four specialization courses, viz. (i) The Climate Challenge: Science, economics, and global energy perspectives (with Chalmers), (ii) Modeling natural resources in the context of climate change (with the Beijer Institute), (iii) The design of environmental policy instruments (including negotiations); (iv) Development economics. Seventeen students from different developing countries participated in two or more courses. In the courses there was a mix of PhD candidates from Sweden and neighboring countries but also Sida-funded participants directly from our countries of cooperation. Read more about the courses, the participants and course evaluations in this report.

But maybe the most important activity during the year was the external evaluation that was conducted of the program. EnvEcon made a thorough review of the program and gave a number of recommendations. The overall conclusion was for Sida to keep investing in the program along with the EfD – "they are doing essential work, are well managed, and are very good value for money".

PhD PROGRAM IN GLOBAL CHANGE AND CLIMATE ECONOMICS

Background

The Sida financed PhD program has been running full scale since 1997 with recruitment of, on average, 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.

So far 30 PhD's have graduated from 15 developing countries. 80 % returning. Others working with/for their own countries elsewhere. Currently 15 PhD students are in different stages of their training.

The program has received international reputation for its high quality and steady output of well-trained environmental economists from developing countries who have the skills to:
- Analyze and understand many of the driving forces behind environmental degradation and negative poverty-environment links.
- Reveal the economics costs of this degradation and the benefits of sound environmental management.
- Design efficient instruments to deal with these environmental problems.

Besides training in economics and environmental economics, the program emphasizes links with other sciences such as natural sciences and other social sciences. It also includes specific development of policy interaction skills through a module that runs throughout the program. The program is, since 2012, more concentrated towards climate economics and from 2014 global change is being emphasized.

Objective

The objective of the PhD program is to build capacity in developing countries to teach, to carry out policy relevant research, and to give policy advice in environmental- and climate 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, therefore, important for them to possess the local capacity to analyze and give policy advice on these issues. Our aim is to train future academic leaders who analyze and evaluate and environmental problems and policies, conduct high-quality research, educate the next generation of academics and civil servants and give advice to policy makers and produce background reports for policies.

Outline of the Program

The PhD program is designed to provide the students with a strong education in economics in general and in environmental- and climate economics in particular with global change as the main focus.. 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, climate and natural resource economics. The courses offered the second year are an important part of the program. We offer four specialization courses, which are presented below. 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 are provided by the program. Back from field work, students continue working in close collaboration with faculty members, receiving support in data analysis, academic writing and publication.

The EEU is able to offer this exceptionally strong program in environmental- and climate economics with the focus on global change and a sequence of courses largely due to our strong faculty.

There are seven full professors, three associate professors, and four post-docs that are directly involved in teaching and supervision. All researchers publish in highly 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.

Seven full professors. (Sterner, Carlsson, Johansson-Stenman, Martinsson, Söderbom, Stenneck, Nordblom).
Three associate professors (Köhlin, Eggert, Coria).
Four post-doc (Lampi, Patel, Alem, Kyrioakopoulou.
All of them involved in teaching and supervision.

The PhD program is particularly integrated with the EfD, Environment for Development which is a capacity building program in environmental economics, focusing 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.

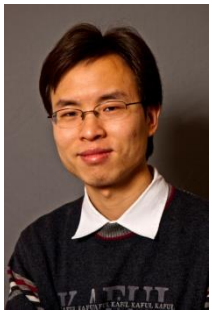
Students enrolled in the PhD program 2014

This report pertains the calendar year of 2014. During this year we had 14 PhD students enrolled in our program at various levels.

Name	Country	Home Affiliation	Enroll-ment	Status
Hang Yin	China	Peking University	2010	Thesis writing and field work
Monical Marcela Jaime Torres	Colombia	Universidad de Concepción, Chile	2010	Thesis writing
Sied Hassen	Ethiopia	Mekelle University	2010	Thesis writing
Xiao-Bing Zhang	China	Chinese Academy of Sciences	2010	Thesis writing
Josephine Gakii Gatua	Kenya	University of Nairobi	2012	Thesis writing and field work
Tensay Hadush Meles	Ethiopia	Mekelle University	2012	Thesis writing and field work
Yuanyuan Yi	China	Peking University	2012	Thesis writing and field work
Yashodha	India	University of Agricultural Science, Bangalore	2012	Thesis writing and field work
Laura Villalobos-Fiatt	Costa Rica	CATIE	2012	Thesis writing and field work
Eyoual Demeke	Ethiopia	Addis Abeba University	2014	Course work
Tewodros Tesemma	Ethiopia	EDRI	2014	Course work
Samson Mukanjari	Zimbabwe	UCT	2014	Course work

In accordance with Sida's wish to have more collaboration with universities in our countries of cooperation we have, entered into an agreement with University of Cape Town to fund four PhD students with the specific condition to partake in the 4-5 specialization courses in environmental,- climate- and global change economics.

Presentation of PhD candidates 2014



Xiao-Bing Zhang, China
Enrolled 2010

Paper 1: Strategic carbon taxation and energy pricing: The role of innovation
This paper investigates the strategic interactions between carbon taxation by a resource-consumers' coalition and (wellhead) energy pricing by a producers' cartel under possible innovation in a cheap carbon-free technology through a dynamic game. The timing of innovation is uncertain, but can be affected by the amount spent on R&D. The results show that the expectation of possible innovation decreases both the initial carbon tax and producer price, resulting in higher initial resource extraction or carbon emissions. Though this 'green paradox' effect triggered by possible innovation will appear in the cooperative case (no strategic interactions) as well, the presence of strategic interactions between resource producers and consumers can somewhat restrain such an effect. The optimal R&D to stimulate innovation is an increasing function of the initial CO2 concentration for both the resource consumers and a global planner. However, the resource consumers can over-invest in R&D (compared with the global efficient investment).

Paper 2: The Harrington Paradox Squared (with Jessica Coria)
Harrington (1988) shows that state-dependent enforcement based on past compliance records provides an explanation to the seemingly contradictory observation that firms' compliance with environmental regulations is high despite the fact that inspections occur infrequently and fines are rare and small. This result has been labeled in the literature as the "Harrington paradox". In this paper we propose an improved transition structure for the audit framework where targeting is based not only on firms' past compliance record but also on adoption of environmentally superior technologies. We show that this transition structure would not only foster the adoption of new technology but also increase deterrence by changing the composition of firms in the industry toward an increased fraction of cleaner firms that pollute and violate less.

Paper 3: The benefits of international cooperation under climate uncertainty: A dynamic game analysis (with Magnus Hennlock)
This paper investigates the benefits of international cooperation under uncertainty about global warming through a stochastic dynamic game. We analyze the benefits of cooperation both for the case with symmetric and asymmetric players. It is shown that the players' combined expected payoffs decreases as climate uncertainty becomes larger, no matter they cooperate or not. However, the benefits from cooperation increase with a climate uncertainty. This is to say, it is more important to cooperate when facing a larger uncertainty. At the same time, more transfers will be needed to ensure stable cooperation among asymmetric players.

Paper 4: Optimal import tariffs and strategic oil stockpiling: The case of China (*Energy Economics* 45: 463–474)
As two of the most important instruments for dealing with the issues of energy supply security, strategic petroleum reserves (SPRs) and oil import tariffs have been proven effective in developed countries. While China is currently building up its strategic oil reserves to ensure energy security, it is of great importance to investigate China's optimal oil stockpiling policies while taking into account the possibility of imposing an import tariff or quota, which can also be used for alleviating the energy insecurity of an oil-importing country. Employing a dynamic programming framework, this paper examines the optimal SPR policies and oil import tariffs or quotas for China and the interactions between the two instruments under different scenarios for the world oil market. The results show that the combination of optimal tariffs and SPR policies can substantially reduce the expected oil insecurity cost for China; the effect is larger when the probability is higher that a disruption will continue over time.

Paper 5: Household fuel choice in urban China: A random effect generalized probit analysis (with Sied Hassen, R&R in *Environment and Development Economics*)
Using seven rounds of household survey data that span more than a decade, this paper analyzes the determinants of household fuel choice in urban China. Unlike the existing studies, we use an empirical strategy that takes into account the potential heterogeneous effects of socio-economic factors in households' preference ordering. Robustness of this empirical strategy is checked against alternative methods. The results show that household fuel choice in urban China is related to fuel prices, household's economic status and size, and household head's gender, education and occupation. Our results suggest that policies and interventions that raise household income, reduce prices of clean fuel sources, and empower women in the household are of great significance in encouraging the adoption of clean energy sources.

Sied Hassen Mohamed, Ethiopia
Enrolled 2010

Paper 1: The Adoption and dis-adoption of Electric Cookstove: Panel Data Evidence from Ethiopia (joint work with Yonas Alem and Gunnar Köhlin)(published in Resource and Energy Economics, November, 2014)

Previous studies on improved cookstove adoption in developing countries use cross-sectional data, which makes it difficult to control for unobserved heterogeneity and investigate what happens to adoption over time. We use robust non-linear panel data and hazard models on three rounds of panel data from urban Ethiopia to investigate the determinants and dynamics of electric cookstove adoption. We find the price of electricity and firewood, and access to credit as major determinants of adoption and transition. Our findings have important implications for policies aiming at promotion of energy transition and reduction of the pressure on forest resources in developing countries.

Traditional three stone stove

An installed improved stove and an intra-household Barganing power project, obtained from the Environmental Economics unit, Gothenburg

Husband and wife looks happy with the improved stove

Paper2: Household fuel choice in urban China: Evidence from Panel Data *(Joint work with* Xiao-Bing Zhang*)(Revised and Resubmitted to Environment and Development Economic)*
Using seven rounds of household survey data that span more than a decade; this paper analyzes the determinants of household fuel choice in urban China. Unlike the existing studies, we use an empirical strategy that takes into account the potential heterogeneous effects of socio-economic factors in households' preference ordering. Robustness of this empirical strategy is checked against alternative methods. The results show that household fuel choice in urban China is related to fuel prices, household's economic status and size, and household head's gender, education and occupation. Our results suggest that policies and interventions that raise household income, reduce prices of clean fuel sources, and empower women in the household are of great significance in encouraging the adoption of clean energy sources.

Paper 3: Bargaining power and Demand for Energy Efficient Technologies: Experimental evidence from rural Ethiopia
We conducted a real stove purchase experiment in six villages of southern Tigrai, Ethiopia to study the role of gender difference in preference, wives(husbands) autonomy(autocracy) in explaining the observed surprisingly low household level demand of improved stoves in Ethiopia. Using Becker-DeGroot-Marschak (BDM) experiment method we find that wives generally have higher demand for the improved stove than husbands. However, we also find that non-autocrat husbands have as high demand as autonomous wives. For a patriarchal society such as rural households in Ethiopia the result explains coincidence of low observed household demand for improved stoves and husbands very low preferences for the stove. These findings imply that rural improved stove programs may not be successful if we ignore these power imbalances and the low preferences of husbands. Including attributes in the improved stove that can be valued by men can be taken as a breakthrough for dissemination of improved stove. Moreover, transforming patriarch view of husband's into egalitarian type can be the long run solution and education can be the tool in this transformation.

Paper 4: Dis-adoption, substitutability and complementarity of agricultural technologies: A Random Effects Multivariate Probit Analysis
This paper investigates the driving forces of dis-adoption of green revolution technologies (improved seed and inorganic fertilizer) and their complementarity and substitutability with other sustainable land management practices (such as soil and water conservation practices and farmyard manure) in rural Ethiopia. Random effects multivariate probit regression results applied on rich plot-level data suggest that black/brown soil type, lower slope, shorter distance to homestead and extension centres, and access to water are negatively correlated with disadoption of green revolution agricultural technologies. We also find that farmers who do not adopt chemical fertilizer seem to perceive that manure and soil and water conservation are substitutes for chemical fertilizer. However, once farmers have started to apply chemical fertilizer on plots that use soil and water conservation practices and/or farmyard manure, they are less likely to disadopt inorganic fertilizer, implying that farmers might have learnt the complementarity of these inputs. These results imply that mixing green revolution technologies with other sustainable land management practices can reduce the likelihood of dis-adoption of green revolution inputs. We also find that that improved seed varieties and inorganic fertilizer are complementary in both adoption and disadoption decisions, suggesting that the dis-adoption of one of the technologies leads to dis-adoption of the other. Our findings highlight the importance of educating farmers not only to adopt a package of green revolution technologies but also to combine green revolution techniques with other sustainable land management practices (such as soil and water conservation practices and farmyard manure).

Marcela Jaime – Colombia
Enrolled 2010

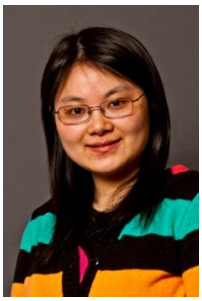
During the academic year 2013/2014, Marcela worked in her thesis writing. Her research topics comprise two main areas: environmental and behavioural economics, and policy design. During the spring 2014, Marcela was a post-graduate visiting researcher at the Department of Economics, University of Nottingham. She was hosted by Abigail Barr, who was her supervisor during her research stay.

Marcela will defend her thesis in June 2015, and after that she will go back to Chile, where she works as assistant professor at the University of Concepción.

Paper 1: Interactions between the CAP pillars and their effects on the uptake of organic farming in Sweden: Lessons from the 2003 CAP reform (*with Jessica Coria*)
In this paper we analyse the effects of the interactions of the two pillars of the Common Agricultural Policy (CAP) on farmers' participation in organic farming in Sweden. Special attention is given to the effects of the 2003 CAP reform, which substantially altered both the relative importance and stringency of the Pillars by decoupling direct payments from production. The empirical strategy consists of the estimation of dynamic non-linear probit models that take into account the initial conditions problem and the extent of state dependence. The results indicate the existence of trade-offs between the pillars and that the introduction of decoupling generated positive but minor effects on the uptake of organic farming. Furthermore, the effects of CAP support differ between certified and non-certified organic production: both pillars have significant effect in the non-certified organic farmers while decisions by certified organic farmers are exclusively driven by Pillar Two.

Paper 2: Social norms and information diffusion in water-saving programs: Evidence from a randomised field experiment in Colombia
This paper investigates the effects of an information campaign aimed at encouraging residential water-savings in Colombia. The experiment was organised as a randomised control trial, consisting of monthly delivery of consumption reports including normative messages during one year. Specifically, we examine whether the effects of the campaign were indirectly transmitted through social networks. Results indicate that social information and appeal to norm-based behaviour has decreased water use by 4.2% during the first five months following the intervention. We also find significant but short-term evidence of information diffusion from targeted to untargeted households. However, this effect cannot be explained by social networks when social connectedness is proxied by geographic proximity.

<u>Paper 3</u>: Does the water spill over? A study of spill-over effects of a social information campaign
(*with Fredrik Carlsson*)
We investigate if an information campaign aimed at reducing water use causes a spillover effect on the use of electricity. In a treatment group we conduct a social information campaign on their use of water and, on average, water use decrease by 6% compared with that in the control group. When it comes to a spillover effect on electricity use, we can only identify an effect on households that had an efficient use of water before the campaign. The effect is sizeable; this group has around 9% lower use of electricity compared with the control group eleven months into the information campaign. Thus, there is partially a spillover effect of the campaign. Interestingly, there are no observable differences between efficient and inefficient users of water with respect to stated reasons for saving water, nor regarding the perceptions of water scarcity before the start of the campaign. Thus this cannot be the explanation for the difference in spillover effect of the campaign.



Hang Yin – China
Enrolled 2010

Paper 1. Reducing the gap between stated and real behavior in transportation studies: The use of an oath script (with Fredrik Carlsson and Elina Lampi)
There are many recent studies provided the evidence that the responses to a real situation maybe different with to a hypothetical question in the stated preference study. To investigate the existence of hypothetical bias, we included an oath script question in our choice experiment. The questionnaires with an oath script were randomly provided to approximately 50% of respondents. By comparing the two groups of respondents, with and without oath script, we can see if there is any difference in their choice in each set, their thinking time to every question, their stated preference, and ultimately we can contribute new evidence to the study of hypothetical bias. Multinomial Logit model firstly suggested there is no overall difference in behavior between the versions with and without an oath. But, there could still be difference between two versions for particular subgroups of the respondents. Thus, Latent Class Model was also used. Gender, age, education, income level, and attitude towards existed transport policies were used as criterion to detect latent classes. The result from LCM confirmed that oath script has no significant impact on the estimates.

Paper 2. The value of time for public and private transport.
Value of travel time saving (VTTS) is commonly used in analyzing commuters' behavior change, and it is basic information of a transport policy before it is introduced. In this paper, we use data from choice experiment to investigate commuters' preference and to calculate the VTTS of morning and evening commuting trips for car owners and public transport users. Personal and household income, comfort of public transportation, and risk of severe congestion are considered besides current commuting time and cost. We find that the value of travel time saving of commuting trips is about 40 yuan per hour, which is higher than the average payment for one hour in Beijing. And the travel time spent in the morning is the key attribute of commuting decision since it is valued much higher than in the evening.

Paper 3. Effects of congestion charge policy on car owners' mode choice in Beijing.
This paper aims to investigate the car owners' behavior change in mode choice under the hypothetical policy background of congestion charge. To capture the preference of different commuting modes, a D-optimal efficient design of 12 choice sets with 2 alternatives (driving a car and taking public transport) and 4 attributes was shown to the car owners. Price of congestion charge is included in car-driving alternatives as an extra monetary attribute besides the fuel cost. The marginal effect of congestion charge is our concern and it is key information for policy making.

Laura Villalobos- Costa Rica
Enrolled 2012

Paper 1. Impact evaluation of Forest Certification in Sweden. Working Paper (joint work with Anna Nordén and Jessica Coria). Voluntary forest certification is an increasingly popular tool to provide information about the quality of the forest management practices. As a response to demand, certified forest owners commit to adopt more sustainable practices into the forest management activities. Rigorous impact evaluation of the forest certification schemes is very limited. This paper contributes to the discussion by estimating the effects of certification for non-industrial private forest owners at a national level for a temperate and boreal zone. Furthermore, we analyze the effect of the two most important certification schemes, the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). We rely on official data collected by the Swedish Forest Agency, combined with collected information on the certification status, and standard impact evaluation methods to identify the causal effect of certification on the outcomes.

Paper 2. Effects of weather on human capital (single author paper). There is scientific evidence that extreme weather events have an effect on productivity. The objective of this paper is to look closer at the effects of weather on educational outcomes: absenteeism (daily attendance) as an early sign of dropout and performance. We want to explore the mechanisms that can explain the effects of weather on educational outcomes. For example, households could incur in additional costs of attendance under bad weather conditions when infrastructure like roads and schools is in bad

conditions. Also, because of biophysical reasons: human body responds to extreme temperatures (heat stress) & extreme rainfall. There could be also economic mechanisms related to the allocation of time for work at the farm/house (children as risk coping mechanism): shocks affect income, which in turn affect the reservation cost and wage, which then determine schooling and working decisions. Finally, during the rainy season vector transmitted diseases and common flu incidence typically increase, affecting the health status of students. In addition, we want to disentangle accumulated shocks (year) from instantaneous (daily) effects.

Paper 3. Field experiment on the effectiveness of public policies to prevent dengue fever in Costa Rica (joint work with Francisco Alpízar and Peter Martinsson). Dengue fever is a vector borne illness transmitted by the Aedes Aegyptii mosquitoes that reproduce mostly in clean stagnant water. Preventive actions of vector borne diseases include eradication of the places where mosquitoes breed, the use of bed nets, fumigation, and drugs. For this preventive action to be effective, the society needs cooperation. Even if a household cleans its own house, family members are not out of risk, since the mosquito moves around easily. By cooperating there is a private gain of reducing the own probability of infection, but it also generates a positive externality for the society. To incentivize preventive actions, public health authorities typically rely on information campaigns intended to create a social norm of compliance with the contribution to the public good. However, because preventive actions are usually a private and hidden decision, the effectiveness of the effort exerted by the authorities ultimately depends on private cooperation. The objective of this research project is to study what public policy or combination of them is more effective at reducing incidence. Candidates include the business as usual combination of information campaigns, and fumigation, but also of interest are less explored policies such as public recognition of good behavior through an award, the imposition of fines for non-compliers, and vaccination campaigns. The latter two policies are not yet in place but are present in the general discussion as potential measures.

Yashodha – India
Enrolled – 2012

Paper1: Incentives effect on contractual efficiency of Groundwater markets in India (Single authored paper)

The paper focuses on different contractual system exists for sharing groundwater in India. Sharecropping and Fixed cropping contracts are commonly seen in these informal groundwater markets in India. The difference in the mode of payment for using groundwater differs in these contracts, where fixed share of total output produced is paid as price for water in the farmer case and fixed amount money per season is paid as a price of water irrespective of number of irrigation in the latter case. This mode of payment creates different incentives for both seller and buyer. We explore these incentives for both seller and buyers of water, and we explore their effects on input use rates and ultimately on productivity of crop. Nevertheless, the identified incentives might be influenced by the kinship ties at village level. Thus we also link the kinship tie between seller and buyer of water and to see its effect on the incentives in terms of provision of timely irrigation, optimum amount of labour and other material inputs in the production process. Thus this paper explores the difference in the input rates and productivity between these contracts for groundwater.

Paper 2: Trust, Kin/non-kin- A field evidence from India (Working with F. Carlsson and H.Eggert)

General trust level is important through its links to the economic prosperity in a country. World value survey around the world reveals that generalized trust is low in developing countries and thus the economic prosperity. However given the small community, should we expect generalized trust to be high, such that everyone trust everyone. Informal contracts are commonly exist in order reallocate the resource from resource rich to resource poor individuals in many developing countries. If we believe to have higher trust level in the closed society, we should expect the economic outcome in these informal contracts to be same for all the individuals who involved in it irrespective of their relationship ties. However, if the society give more value to kinship ties and if the social norm is to help their kin households and exchange goods and services within their blood ties, then it is obvious that the reciprocal altruism or kin altruism leads to higher trust in their kin than non-kins. Thus we investigate does there exists a differential trust with in the village. Experiment will be conducted in villages of South India. Subjects have to play both investment and dictator game with their kin and non-kin participates in the village. Thus our design could enable us to disentangle the trust component in to reciprocity and altruism towards kin and non-kin.

Preliminary visit to Kolar district, Karnataka (state), India. Picture consists of farmers who are involved in groundwater market.

Josephine Gakii Gatua – Kenya
Enrolled 2012

Beliefs and risk attitudes in the uptake and usage of bed nets

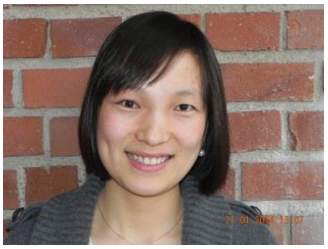
Individuals face substantial uncertainty about their own and other family members' health, the relationships between health inputs and health outcomes, the effectiveness of preventive strategies and the risk environment affecting the severity of the disease burden and the consequences of behavioral choices. By looking at a developing country context, this study seeks to examine the uptake and low usage rates of insecticide treated bed nets (ITNs) in malaria prone regions of Kenya. We combine data on subjective expectations on the risk of malaria infection under different scenarios and risk attitudes to make inference on preferences of uptake and usage of ITNs.

I plan to conduct a field survey in Kenya later in the year.

Tensay Hadush Meles – Ethiopia
Enrolled 2012

Paper 1: Institutions in managing Common Pool Resources (CPR): how costly peer punishments enhance cooperation among CPR users in the presence of power asymmetry & uncertainty and what the policy implications are. It particularly focuses on irrigation water users in which the down streams do not observe the quantity of water extracted by the up streams. The result is compared with the no uncertainty treatment without punishment opportunities. The experiment will be conducted in the field with people in rural Tigray- Ethiopia, who face irrigation water problem in their day to day life; and with students in Mekelle University- Ethiopia, who face the same decision tasks in an abstract framing.

Paper 2: Electricity conservation behavior: how electricity consumption responds to various incentives in the present of power interruption and what amount are consumers willing to pay to avoid power outages (to conduct choice experiment survey). The study is both field experiment and survey with electricity consumers in Addis Ababa - Ethiopia.



Yuanyuan Yi – China
Enrolled 2012

In 2014 Yuanyuan Yi finished all the compulsory courses required by the Department and the PhD program. Since the fall semester 2014, she has started her thesis project. Currently Yuanyuan is working on the following two chapters:

Paper 1: Tenure Security and Investment Effects of Land Reallocation Reforms: Evidence from the Tenure Reform in Collective Forest Areas in China (supervisors: Gunnar Köhlin, Fredrik Carlsson, and Jintao Xu)
This paper intends to assess how tenure reform in China's collective forest sector affects Chinese farmer households' perception of tenure security and propensity to invest in their forestland. A large database consisting of information from 3,180 households in eight provinces from south to north is used to explore factors correlated with more strongly perceived tenure security and determinants of forest-related investment. The study will add to the limited research testing whether there is endogenous causality between investment and tenure security in forestland, and finds that investment was not undertaken to enhance tenure security. In addition, the data allow for differentiation between perceived tenure security and contracted use and transferability rights.

Paper 2: Collective Forest Tenure Reform in China: Implications for Allocative Efficiency (supervisors: Gunnar Köhlin, Fredrik Carlsson, and Jintao Xu)
This paper uses the unique panel data from 3,180 households in Eight provinces in China over two rounds survey of information from 2005 and 2010 to examine the effect of China's collective forest tenure reform on allocative efficiency among farmer households. While the existing literature mainly focuses on arable land, this study contributes to the literature with a new piece of empirical evidence from forest land. Forest land distinguishes from arable land in the following: forest land is less labor intensive, requires longer term for returns realization, and as common pool resources demands stronger effort in building local forestland tenure institutions to cope with insecurity concerns. The forest land reallocation effect of the reform is expected to improve allocative efficiency through improved access to credit, mobilized labor allocation decisions, reduced transaction costs, and increased participation in forestland rental markets. And its effect on improvement of equity is believed to be achieved by transferring forest land from bigger households to smaller households, as well as alleviated poverty status represented by more equalized household's forestland-labor ratio, in terms of reduced distance of ratios between the household's and the village's average, as well as that of marginal forestland production value.

Apart from the above two chapters, Yuanyuan is also working on a discussion paper from earlier work.

Paper 3: **Worker Household Living Standards and Income Inequality in State Forest Areas of the Northeast China (with Jintao Xu)**
This study examines forces driving towards both income equality (i.e., workers get to utilize their comparative advantages) and inequality (i.e., those relatively disadvantaged workers and families can fall into further poverty), with informal innovations and market development in Northeast China's state forest areas. The severity of the latter trend merits serious scrutiny and could form the basis for determining future central government financial support to the region. We firstly aggregated consumer durables and housing values into the normal sources of income, on the basis of Milton Friedman (1957)'s Permanent Income Hypothesis, so as to provide a closer measurement for workers' real income level of livelihoods. The major methodology applied are the Lerman and Yizhaki (1985) decomposition method in order to extract information on a variety of major income categories/sources, and a regression-based approach in order to capture patterns of inequality. Samples are divided into two groups--mountain top- and mountain base-dwelling households. Our findings give visualized ideas on how percentage change in source of income influences the distribution of income, which are important policy issues and concerns.

New PhD candidate recruitment 2014

In September 2014 three new PhD students enrolled in the program. Two from Ethiopia and one from Zimbabwe, but affiliated to University of Cape Town.

Samson Mukanjari
Zimbabwe
University of Cape Town

Eyoual Demeke
Ethiopia
University of Addis Abeba

Tewodros Tesemma
Ethiopia
EDRI; Ethiopian Development Research Institute

We received 200 applications, 26 women and 174 men, i.e. 13% female applicants only. Among the 200 applicants about 50% were from Ethiopia. But of these, only 8 were women! After several rounds of selection a shortlist of candidates was made. This list contained 11 candidates, 4 female and the rest male candidates. We interviewed each of them via Skype and ended up with four candidates, 1 female and three men. When we offered these candidates to join us, the female decided not to accept the offer, due to personal issues. We were, hence, left with the three PhD candidates, Samson Mukanjari, Eyoual Demeke and Tewodros Tesemma who have been busy doing their course work since September. In the autumn semester they took the following courses; Mathematics, Econometrics, Micro I. They will be doing course work the whole of spring and autumn semester 2015 and also spring semester 2016.

Synergies with Sida's bilateral capacity building programs

The PhD program gives a very unique platform for PhD students from developing countries to thrive in. Over and above the PhD students under the EEU Climate Economics and Global Change program, we have therefore enabled a couple of PhD students financed by Sida's bilateral research cooperation to participate in our academic environment. During 2014 we were involved in such bilateral collaborations with Tanzania.

Tanzania, University of Dar es Salaam, UDSM, Department of Economics
In 2009 Sida and Tanzania entered into an agreement on research cooperation. One of the sub-projects entailed training of PhD candidates in environmental economics. During the enrollment of 2010 the first PhD student, Remidius Ruhinduka, started together with our four PhD students enrolled under the EEU Environmental- and Climate Economics. In 2012 Another PhD students was enrolled from UDSM, Martin Chegere.

Peer Reviewed Publications and Working Papers 2014

Xiao-Bing Zhang

- **Zhang X.B.**, 2014, Optimal strategic oil stockpiling and import tariffs: The case of China. Energy Economics, 45: 463-474.
- **Zhang X.B.**, 2014. Strategic carbon taxation and energy pricing: The role of Innovation. Working papers in Economics No. 589, University of Gothenburg.
- **Zhang X.B., Hassen S.**, 2014. Household fuel choice in urban China: A random effect generalized probit analysis. Working papers in Economics No. 595, University of Gothenburg.
- Coria J., **Zhang X.B.**, 2015. The Harrington Paradox Squared. Working papers in Economics No. 608, University of Gothenburg.

Sied Hassen

- Adoption and Dis-adoption of Electric Cookstove: Panel Data Evidence from Ethiopia(2014), Resource and Energy Economics 38: 110-124[with Yonas Alem and Gunnar köhlin)
- Household fuel choice in urban China: A random effect generalized probit analysis'(2014) University of Gothenburg Working Paper(revise and resubmit to EDE Journal)[with Xiao Bing Zang)

Laura Villalobos-Fiatt

- Norden, A., Coria, J., Villalobos, L (2014) Impact evaluation of Forest Certification in Sweden. Working Paper.
- Blackman, A.,Villalobos, L (2014) Choice of industrial certification labels in Mexico. Working paper
- Robalino, J., Sandoval, C., Villalobos, L., Alpízar, F. (2014) Local Effects of Payments for Environmental Services on Poverty. RFF Discussion Paper EfD 14-12 | May 2014.
- Robalino, J., and Laura Villalobos Protected areas and economic welfare: an impact evaluation of national parks on local workers' wages in Costa Rica. Forthcoming in *Environment and Development Economics*

Workshops/Conferences, 2014

Marcela Jaime

- Participated and presented a paper at the Eighth Environment for Development Annual Meeting. Dar es Salaam (Tanzania), October 23rd-26th, 2014.
- Participated and presented a paper at the Fifth World Congress of Environmental and Natural Resource Economists. Istanbul (Turkey), June 28th-July 2nd, 2014.
- Participated and presented a paper at the Postgraduate Research Student Presentations, Department of Economics, University of Nottingham (UK), May 8th, 2014.
- Presented a paper at the DERG seminar series, Department of Economics, University of Copenhagen (Denmark), January 2014.
- Presented a paper at the Environmental Economics seminar, Department of Economics, University of Concepción (Chile), January 2014.

Hang Yin

- Participated the summer school of International Transportation Economics Association (ITEA) at Toulouse, France, June 2-3, 2014.-
- Participated the annual conference of International Transportation Economics Association (ITEA) at Toulouse, France, June 4-6, 2014.
- Participated and presented a paper at the 8th annual conference of Environment for Development (EfD) at Dar es Salaam, Tanzania, October 23-26, 2014.

Xiao-Bing Zhang

- Participated and presented a paper at the EfD's Eighth Annual Meeting, Dar es Salaam, Tanzania, October 23-26, 2014.
- Participated and presented a paper at the 5th World Congress of Environmental and Resource Economists, Istanbul, June 28 - July 2, 2014.

Sied Hassen

- Participated and presented a paper at the 8th Annual Meeting of the Environment for Development (EfD) Initiative, Dar es Salaam, Tanzania from October 23-26, 2014.

Yuanyuan Yi

- Worker Household Living Standards and Income Inequality in State Forest Areas of the Northeast China, presentation, at the 2014 World Bank Land and Poverty Conference, Washington, D.C., March 24-27, 2014.

Laura Villalobos-Fiatt

- Summer internship. Resources for the Future. Washington, D.C, United States (Working with Allen Blackman) July-Sept 2014
- 5th World Congress of Environmental and Resource Economists (WCERE) Istanbul, Turkey. June 2014
- BECC annual meeting in Halmstad, 24-25 November.

- The 8th Annual Meeting of the Environment for Development (EfD) Initiative. October 2014, Tanzania.

Josephine Gakii Gatua

- ClimBeco summer meeting 23-28 August 2014
- ClimBeco winter meeting 20-21 January 2015

Yashodha

- Participated in 21st Ulvön Conference on environmental economics 17-19 June 2014, in Ulvön, Sweden.

SPECIALIZATION COURSES IN CLIMATE AND ENVIRONMENTAL ECONOMICS

Background

As a part of the PhD program, we have designed a number of specialization courses in Climate- Environmental- and Global Changes 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 8-10 additional participants. These additional students are fully financed by Sida through us.

The courses are run every second year. The participants have, over the years, mostly been PhD students and 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. Lately, however, we have narrowed the base for recruitment down to students currently enrolled in a PhD program, due to the severe interest in our courses.

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. See enclosures of course evaluations. 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. Recently we have accepted PhD candidates from European universities as well as long as the students are from a suitable developing country.

Courses given spring of 2014

We gave four courses consecutively, during 2014, namely, (i) The Climate Challenge: Science, economics, and global energy perspectives (with Chalmers), (ii) Modeling natural resources in the context of climate change (with the Beijer Institute), (iii) The design of environmental policy instruments (including negotiations); (iv) Development economics.

Climate science and climate modelling

Course management & examinors
Daniel Johnasson, Physical Resource Theory, Chalmers (daniel.johansson@chalmers.se)
Martin Persson, Physical Resource Theory, Chalmers (martin.persson@chalmers.se)
Course aim and intended learning outcomes
The aim of the course for the students to acquire an understanding of (1) the processes that govern earth's climate and how these are being affected by human actions, (2) ethical and economical perspectives on the question of how much we should reduce emissions of greenhouse gases, and (3) the possibilities for mitigating climate change by transforming the global energy system. In addition to lectures, calculation exercises, lab assignments and group discussions on key topics is intended to provide the PhD students with a solid scientific foundation and an acquaintance with relevant tools that that can help them in their further forays into the economics of climate change.
The intended learning outcomes for each of the three parts of the course are:
C**ourse literature**
Global warming – understanding the forecast, David Archer, Wiley, 2011 (2nd ed.)
Solving the climate challenge, Christian Azar, 2012
Sustainable energy – without the hot air, David JC MacKay, available free online at:
http://www.withouthotair.com/

Modeling natural resources in the context of climate change

Overview: The objective of this course is to study the economic and environmental implications of natural resource management. The course presents theories of efficient utilization of natural resources and discusses issues related to current practices of use of resources. It also covers conceptual and methodological topics that will be applied to contemporary issues such as depletion of renewable resources, land scarcity, climate change and spatial issues.
Grading: The final grade will be based on a number of assignments that will be introduced during the lectures and on the final exam.
Course coordinators:
Thomas Sterner, Thomas.Sterner@economics.gu.se
Efthymia Kyriakopoulou, Efi.Kyriakopoulou@economics.gu.se
Please address any questions, worries and problems to Thomas & Efi.
Thomas Sterner, Thomas.Sterner@economics.gu.se
Efthymia Kyriakopoulou, Efi.Kyriakopoulou@economics.gu.se
Peter Berck, peter.berck@gmail.com
Håkan Eggert, Hakan.Eggert@economics.gu.se
Xiangping Liu, Xiangping.Liu@economics.gu.se
Elizabeth Robinson, e.j.robinson@reading.ac.uk

The design of environmental policy instruments

This PhD course is intended to give an overview of applied environmental economics with particular emphasis on the design of policies in the areas of air pollution, agriculture, land use, forestry, biodiversity conservation and climate change. It is an advanced graduate course for non-economists. The course will give an overview of what environmental regulations are needed as well as a survey of the policy instruments that are available. Finally it will explain 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. Considerable attention will be paid to integrating economic modeling with actual case studies and applications. The course will be based on Sterner and Coria (2011), plus a series of relevant journal articles.

Lecturers

Course Coordinator: Thomas Sterner (TS), Thomas.Sterner@economics.gu.se
Jessica Coria (JC), Jessica.Coria@economics.gu.se
Carolyn Fischer (CF, Resources for the Future), Fischer@rff.org.
Stefan Ambec (SA, Toulouse School of Economics), stefan.ambec@toulouse.inra.fr.
Svenn Jensen (SJ, University of California Berkeley), svenn@berkeley.edu.
Introduction to the Department and Library: Elizabeth Foldi (EF), elizabeth.foldi@economics.gu.se.
Teacher Assistant: Xiao-Bing Zhang (XZ), xiao-bing.zhang@economics.gu.se.

Development Economics

This is a second year 5-week (7.5hp) course on the PhD programme in Economics at the University of Gothenburg. The overall objective of the course is to introduce students to applied development economics. This is a large research area, and rather than trying to cover "everything" we will focus on five broad topics: human capital (8 lecture hours plus a lab); climate & development (4 lecture hours); the microeconomics of risk and shocks (10 lecture hours); technology adoption in agriculture (4 lecture hours plus a lab); and structural change & modernization (6 lecture hours). To get the course credits, you need to complete a referee report and a research proposal and present these at a student workshop, plus you need to pass a take-home exam. More information to come once the course is underway.

Teachers:
Yonas Alem
Yonas.Alem@economics.gu.se
Annika Lindskog
Annika.Lindskog@economics.gu.se
Måns Söderbom
Mans.Soderbom@economics.gu.se

Participants

Name		Country	Current residence	Courses accepted to			
				20 Jan-14 Feb	17 Feb-21 Mar	24 Mar-29 Apr	5 May-5 June
Weili Weng	F	China	Beijing, China	Climate			
Changyi LIU	M	China	Beijing, China	Climate			
Fentahun Baylie Sendkie	M	Ethiopia	Addis Abeba	Climate	NRE		
Ebo Botchway	M	Ghana	Senegal	Climate	NRE		
Manuel Enrique Estay Montecinos	M	Chile	Concepcion, Chile	Climate	NRE		
Huifang Liang	F	China	Beijing, China	Climate			Dev
Helena Cristina Cardenas Diaz	F	Ecuador	Quito, Ecuador	Climate			Dev
Yusuph John Kulindwa	M	Tanzania	Göteborg	Climate	NRE	Policy	Dev
Justice T Mensah	M	Ghana	SLU, Uppsala		NRE		
George Marbuah	M	Ghana	SLU, Uppsala		NRE		
Amare Teklay Hailu	M	Ethiopia	Ås, Norway		NRE	Policy	
Hambulo Ngoma	M	Zambia	Ås, Norway		NRE	Policy	
Shenxiao Ma	F	China	Beijing, China		NRE	Policy	
Muuz Hadush	M	Ethiopia	Ås, Norway		NRE	Policy	Dev
Yana Jin	F	China	Beijing, China			Policy	
Hui Wang	F	China	Beijing, China			Policy	Dev
Vo Duc Hoang Vu	M	Vietnam	Ho Chi Minh City				Dev
Laura Villalobos	F	Costa Rica	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Yuanyuan Yi	F	China	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Yashodha	F	India	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Josephine Gakii Gatua	F	Kenya	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Tensay Hadush Meles	M	Ethiopia	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Martin Chegere	M	Tanzania	Gothenburg, Sweden	Climate	NRE	Policy	Dev
Simon Felgendreher	M	Germany	Gothenburg, Sweden	Climate		Policy	Dev
Lisa Björk	F	Sweden	Gothenburg, Sweden		NRE	Policy	Dev
Andrea Martinangeli	M	Italy	Gothenburg, Sweden			Policy	
Verena Kurz	F	Germany	Gothenburg, Sweden			Policy	
Carolin Sjöholm	F	Sweden	Gothenburg, Sweden	Climate	NRE		
Alejandro Eguez	M	Ecuador	Gothenburg, Sweden	Climate		Policy	Dev
Zuzana Harmackova	F	Tjeckien	Gothenburg, Sweden		NRE		
Amie Svärd	F	Sweden	Gothenburg, Sweden	Climate			
Eva Kouraki	F	Greece	Gothenburg, Sweden	Climate			
Mikael Gustavsson	M	Sweden	Gothenburg, Sweden		NRE		

Appendix 1 Course evaluations

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

COURSE EVALUATION

The Climate Challenge:

Science, economics, and global energy perspectives

Spring 2014

1. **What is your overall opinion about the course?**
   (5 is "Very good, …., 1 is "Very poor")

   4.8

   Comments:

   - I really liked that it gave us an understanding of the formulations of how CC works.
   - The course content, structure and delivery were very nice. Maybe time was limited. I would wish to learn more about climate and energy models.
   - Adds value to the stock of knowledge.
   - The course was real good highlighting on the basic issue that was out of my knowledge.
   - Although I understand this is an introductory course, I expect it could introduce more advance knowledge about the IAMs, for example garms code, modeling etc.
   -

2. **What is your opinion about the general administration of the course?** (Schedule and reading materials were accessible in time, professors/administrators were available for questions, etc.)
   (5 is "Very good", …, 1 is "Very poor")

   4.8

Comments:

- Materials were accessible on time and there was time for discussion during classes.
- Perfect!
- Course materials were always sent on time which enabled us to read in advance.
- A little bit intensive, otherwise good.
- Was good however, sometimes the route of distribution was not consistence so I suggest to be organized and distribute using only one site, otherwise was good.
- Thank you for all these arrangements! I fell very well taken care of. The course is well organized. I benefitted a lot in this course.
- Thank you for all these arrangements! I fell very well taken care of. The course is well organized. I benefitted a lot in this course.
- Excellent!

3. **What was the quality of the course literature? ?**
   (5 is ”Very good”, …, 1 is ”Very poor”)

David Archer’s ‘Global warming – understanding the forecast’

4.9

Comments:

- I supported my reading with the videos of Archer’s website and found them very useful to complement my understanding.
- Good to start with, but sometimes explanations simplify too much.
- It was a supplement in understanding the lectures.
- Very good book.
- Was a good starting point to those who did not have prior knowledge on global warming.
- Very useful materials.
- Simple and straightforward.

David MacKay’s ‘Sustainable energy – without the hot air’?

4.3

Comments:

- The author’s personal touch in the writing style made the reading smooth. Main energy uses and sources were clearly explained in the book.
- Not scientific enough.
- Most of the types were only in the UK.
- Very good book.
- Useful.
- The book is very well written. I would be better to have one other book that talks about the renewable energy in the world other than in UK only.
- Too simple, a little boring, without any information about the satu quo of energy of the global, only about UK.

Christian Azar's 'Solving the climate challenge'?

4.6

Comments:

- Useful to understand the challenges, even the governance-related issues around CC.
- Outdated /before Copenhagen accord failed), not very scientific.
- Very interesting material that opened up my mind so very useful for the learner.
- Simple and interesting.

Additional reading material (scientific papers) distributed during the course?

4.6

Comments:

- As a complimentary reading for the CC governance part. I would recommend to add Wijkman's "Bankruptcy Nature".
- Well understood a very relevant.
- Most of them are top journal papers in recent years.
- It is good to have more recently published papers.
- Very useful as you can see some arguments that was useful in comparison.
- Very good and useful.

4. What is your opinion about the performance of the lecturers/teaching assistant?
(5 is "Very good", …, 1 is "Very poor")

Martin Persson

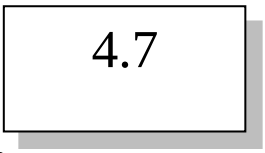
4.7

Comments:

- Really clear. Thanks to Martin I can now understand what's behind CC (How it works). This is useful since many times people take CC for granted but in order to design policies that can be effective, such understanding is mandatory.
- Really good lecturer!
- Very good presentations, delivery, instructing and discussions.
- Good follow-up on questions that were raised during lectures.
- Gave very good explanations and his lectures were understandable.

- Appreciated (very good).
- Excellent!
- Such a clear delivery.

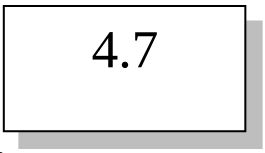
Daniel Johansson



Comments:

- Unfortunately Daniel was sick but when he lectured, I learned a lot.
- Explanations could be sometimes a bit clearer.
- Very good in moderating discussions.
- Very good presentations and had a good grasp of the issues surrounding the topics covered.
- Very good.
- May speak slightly slower.
- Good house of knowledge.

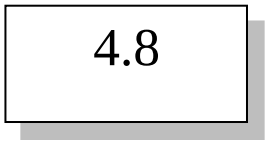
Niklas Jakobsson



Comments:

- Great support for the labs! Useful written feedbacks in the written reports.
- Very good in providing insights in labs.
- Excellent job. Very useful and helpful. Really helped us with the labs.
- Was helpful in the lab and greatly improved our understanding of how and why the models gave different results.
- Very good

David Bryngelsson



Comments:

- Really good communicator!
- Very good in lecturing.
- Very good

Emma Jonsson

4.7

Comments:

- Good intro of the big picture of how to fill the future energy demand with different sources.
- Good lecturing.
- Very good

Erik Sterner

4.7

Comments:

- It was difficult to understand how the models work. I would recommend to mix this lecture maybe as a lab.
- Good presentation.
- Very good

Jonas Nässén

4.6

Comments:

- Great exposure of energy efficiency and conversion losses. Raised med curiosity about the whole energy chain when assessing energy requirements.
- Good lecturing.
- The content of this part of the course I did not find that covered enough material.
- Very good

5. What is your opinion about the labs?

(5 is "Very good, …., 1 is "Very poor")

Lab I: Radiative model & carbon cycle

4.5

Comments:

- It was good but not that much technical to pull deep thinking.
- Excellent
- Was very good, useful, interesting.
- The lab questions are well structured and thought-provoking; however, the lab models seem to be a little simple.
- Good combination of different type of topics for basic learners.

Lab II: Reproducing historical temperature change & committed warming?

4.5

Comments:

- It was more a trial & error with the values but it gave us a sense of how the model works.
- Was good and involved thinking.
- Excellent.
- Very useful land interesting.

Lab III: Climate targets & burden sharing?

4.5

Comments:

- It was good and it involved much thinking to get insights.
- Excellent.
- Very interesting.
- Not sure if it's possible to do some labs on the real DICE model.
- In the absence of model details, or introduction by the lecturer, we can hardly understand how the model runs and how the results come from.

Lab IV: Cost-benefit analysis of climate change?

4.5

Comments:

- It highlighted the limitations (and aims) of assessing costs & benefits and the sensitivity of discount rate.
- It was very good.
- It a very simple model, but as good.
- This lab was very interesting, maybe the most interesting from an economist perspective. Perhaps a lab assignment/report on this lab would have been good.
- Useful.
- It seems more like a cost-effectiveness analysis, rather than a real CBA fashion. The lecture may introduce the difference of two different methods.

6. What is your opinion about the written exam ('hemtenta')?

4.6 (5 is "Very good, …., 1 is "Very poor")

Comments:

- Very useful to grasp all together. Good to have a final discussion at the end!
- It basically helped in summing up all the things we learnt.
- A very good task provided. The final discussion was also very nice.
- Very good and well-thought exercise that made us think about how (all) many of the factors/topics that we learned in class are related, and ab out the complexity and uncertainty of these topics.
- Help us to understand the knowledge of the textbooks.
- It helps to learn more, discuss with fellow students.
- Is very interesting part. This makes sense. The learning approach to sound better and gain more knowledge by doing.
- We are forced to search many materials and data for energy information, but it is worthwhile!
- Good to know and model ourselves that makes to think about real complexity of world climate mitigation.

-

7. How relevant do you consider this course to have been to your overall education/work?

(5 is ”Very relevant”, …, 1 is ”Not at all relevant”)

4.6

Comments:

- I feel my previous education has been complemented in a very positive way. In my future as a researcher, I would highly probably apply the principle learned on this course.
- Good to get same understanding knowledge. Sad not strongly related to my work.
- It has helped me in understanding the science behind CC.
- Not sure yet. But I am very interested in doing some research in related to climate change issues.
- It is very relevant, first because I work on the area of climate change, second, because I have increased my knowledge, not only pertaining to the academics part, but also general understanding of climate issues.
- It will be very useful for future applications. It has opened a new range of questions and research interests in my mind.
- Very relevant.
- Helps to further explore issues in environmental economics.
- It was very relevant.
- It offers a good starting point, even though it is not so thorough and specific, or advance enough. I will keep learning and working as IAMs in the future research work.

-

8. How difficult and demanding did you find this course?

(5 is ”Very difficult…”, …, 1 is ”Not at all difficult”)

4.4

Comments:

- Adequate level of difficulty up to the point that I was motivated enough to comply with the readings, labs etc….. but never felt overwhelmed.
- Sometimes a bit too basic (e.g. lecture about nuclear power and climate agreements).
- Although I didn’t have physics background, it was interesting and I learned a lot from this course.
- Average, it was well balanced.
- A little bit difficult.
- Sometimes difficult in a sense of mixing up knowledge from economic point of view linking with pure science.
- It is a little lower than my expectation. I’d like to learn more about the real IAMs model (DICE, PAGE etc), and learn GAMs code, how to modelling etc.

9. Was your theoretical and mathematical background sufficient for understanding this course?

(5 is ”Very sufficient”, …, 1 is ”Not at all sufficient”)

4.3

Comments:

- The math was good but the theory wasn't that good.
- To continue working on topics of energy. It was very relevant for me to understand some notions of climate change in order to continue my research on energy resources. Also it has brought new interests on research in particular related to land use changes.
- Not very sufficient. So I improved a lot from this course.
- Was sufficient to understand the course.
- Yes.

10. How will you use your knowledge from this course?

- I will incorporate these principle and knowledge in my future research projects. I am highly interested in the design of energy policy, where CC is definitely something to be considered.
- Better understanding of discussion in the medial CIPCC report-
- I will use the knowledge in this course in my research work.
- This course offers a great deal of knowledge and foundation for my future research interest in natural resource economics and policy relevant studies.
- I am expecting to write my thesis on climate change economics. The knowledge gained will motivate my studies very well. I will be able to back up my economics theory and natural science perspective.
- This course provides the general important knowledge on climate change and energy issues, very important in normal life by raising awareness on general policy decisions.
- I want to use in future investigations.
- Improve the material/chapter on energy efficiency. This is a key topic in the energy debate.
- Include an exercise on the specific topic of cost-benefit analysis.
- Include a lab in which we would learn a little bit more on the models. (How this models are created).
- Improved my understanding on important concepts about CC and how things are connected. Also about energy alternatives. Now I feel more prepared to follow the international discussions about CC.
- To analyze China's energy consumption, energy efficiency, and energy effects.
- It will also help me to engage in the research of climate change issues in China, especially in my professor's program.
- Having understood the complexity of climate change, I plan to work on an aspect that contributes to the mitigation of climate change in developing countries.
- I will apply to my research at different levels.
- I want to use this knowledge to evaluate the impact of climate change in future growth (sustainable development).
- Basically will help me to complement with my background to come up with paper writing addressing issues related with climate change and economics point of view.

- The introduction of science background on climate change and energy is very informative and systematic, which helped me to form a better understanding on this subject. An I will definitely use the models learned in my future research. Although the models used in this course are relatively simple, they helped to open the door of the way going to more complicated models.
- I will use these IAMs to explore the optional mitigation strategy for China.
- Greenhouse gas emissions and other effect on global warming really opened my mind to caring every day about what activity of mine results in increases emissions.
-

11. If you were the head of this course what are the three things you would change?

- I would add a special lecture on the different CC policies options from a developing country perspective. Analyze what has been done, best practices, imitations etc…..
- I would get deeper on the costs and risks of CC as an input for the CBA. In general incorporation of socio-economics aspects in the models.
- I would encourage the students to expose their results to the rest of the class and discuss (e.g final earth + labs). Prepare a short PPT of the hemtenta?
- Skip some easy context.
- Replace the Azar book and maybe try Mackay (if this is a good alternative).
- More links how the content is used by economists in current research.
- I would have also included adaptations to CC since most developing countries do not have the capacity to instigate CC.
- Include adaptation to CC.
- The economics aspect of the impacts too should be considered.
- One month of this course seems too short, I think.
- I would hope to learn about the more complicated IAM's or CGE models.
- Extend the time and discussion on energy issues on climate change.
- More discussion on IPCC reports and written work.
- A little more information about the models.
- The lectures about energy efficiency more specific.
- A lecture about the relationships between the economics models and climate change.
- I would encourage (assignments?) every student to read, look for, and learn more about his/her specific country/region: what do models predict? What policies are being discussed/implemented etc? How the energy matrix looks like? It would be interesting to compare among countries and to spot areas of potential contribution from us to our context.
- Some programing skills. Theory of different models. Development of climate models.
- Relate the course to economic research.
- Get more recently published papers.
- Fairly extend the classes over additional days instead of morning and afternoon.
- Time and frequency of class be at least in most case one per day. Otherwise not much changes on this aspect.
- Add more lab sessions.
- Probably I would add more time on the modelling session adding introductions on the development of models and scenarios, comparisons on main different models.
- Divide the energy part, making it a separate one, so both can have enough time to have a systematic understanding of climate modelling and energy parts.
- Have more guest presentation on certain topics, invite some professors come here to give presentation, such as Nordhaus, Stern?

- Have one or two lecture, or presentation to explain the whole real DICE model, tell us how it is modelled, how it works etc.
- Bit more about how to quantify other emission from each sector e.g. agriculture, rice fields.
- Different strategies of mitigation at regional level.

12. Other comments, both positive and negative!

- **G**reat that EEU is collaborating with Chalmers.
- For my future research, I would really like to keep in touch with all the lecturers' team.
- In general a really good course and all lecturers were really engaged and helpful. Thanks!
- Physics in climate system and its combination to economics provide me to a great extent knowledge foundation to form research ideas intergratedly.
- The course context and reading materials are very helpful and updated & classic to fulfill my knowledge gap in this area.
- Unfortunately because of sickness, we had changed lecturers and sometimes they didn't have enough time to prepare for the lectures.
- The course was so well prepared and it did not impose much burden of work to a student.
- Lectures were so good in linking the natural science and economics.
- It is a very good course.
- Excellent pedagogical tools and methods. I particularly liked that lecture started with a motivation and goals :…!after this lecture you will be able to……" And that they ended up with a summary of key points. Books were excellent as well. Discussion session as well. Profs Attitude also was very useful to understand concepts from other discipline (not economics). Really good job. Also, evaluation system was very reasonable.
- This is a great course. I like it very much.
- The course was very well organized and the interaction with the instructors was excellent. The discussions on various climate issues were a good eye opener to improving our understanding of climate change.
- Positive: Many lecturers for a single course help to get different perspectives.
- Negative: It was very intensive and the time was short. I believe I could have benefited more even if I got more time.
- Can you evaluate this course use the electronic survey by "word", it is more low-carbon.
- Over all the course was very good and I think this kind of courses are meant for social scientists.
- This course has positive effect on my professional living style.

PRACTICAL ARRANGEMENTS (for outside guest-students only)

(5 is ”Very good”, …, 1 is ”Very poor”)

1. How was the pre-course information?

4.6

Comments:

- The communication was easy going and productive (successful).
- Was very good.
- Can send all the relevant reading materials earlier.

2. Travel arrangements

5.0

Comments:

- Good if the students are allowed to choose/have alternative routes.
- Special thanks to Elizabeth!!!!!

3. Money arrangements

4.5

Comments:

- The day of the reimbursement was much longer than expected.
- It was lately delivered (week later).
- Was very good.

4. Lodging in Göteborg

5.0

Comments:

- Everything was wonderful.
- Was amazing.

5. Communication service, i.e. E-mail, fax, computers, etc

5.0

Comments:

- It was perfect.
- Perfect.

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

COURSE EVALUATION

Natural Resource Economics

Spring 2014

1. **What is your overall opinion about the course?**
   (5 is "Very good, …., 1 is "Very poor")

4.5

Comments:

- The mix of theory, empirics and policy makes it unique.
- I really enjoyed it. I have got different exposures from different people.
- The addition of spatial modelling and the Beijer week gave a complete picture of tools and relevant interactions within natural resources.
- Need to improve total content, rather than spending time on same issues by different teachers.
- Very well organized. Good mixture between economics and other disciplines.
- It gives a lot of insights both about empirical and modeling exercises in natural resource economics.
- The course was good. The syllabus was very good plus the teaching.

2. **What is your opinion about the general administration of the course?** (Schedule and reading materials were accessible in time, professors/administrators were available for questions, etc.)
   (5 is "Very good", …, 1 is "Very poor")

4.4

Comments:

- Thomas, Efi, Elizabeth, Beijer and everyone contracted to this course make administration excellent!
- I would wish to have longer time for this course.
- It is really fair. In the mean time we have seen marine sea and visit Stockholm for 1 week. I found very well organized and coordinated.
- Excellent!
- Good flow of information.
- Very well administered.

3. **What was the quality of the course literature? ?**

   (5 is "Very good", …, 1 is "Very poor")

Conrad, J.M and C.W Clark (1987). Natural Resource Economics: Notes and problems, Fifth Edition.

4.4

C

- Easy to read and understand.
- Since we have almost good slides I didn't get in too much, but it is a good source.
- Excellent resource; requires a lot of time on it – that is good for PhDs.
- It's an old book.
- Too technical and neither maths nor economics. Leaves us in the middle.
- Very good material.

Sterner, T. and J. Coria (2012). Policy Instruments for Environmental and Natural Resource Management. Second Edition.

(5 is "Very good", …, 1 is "Very poor")

4.3

Comments:

- Excellent for policy evaluation and analysis in environmental and natural resource management.
- Not yet used, but I skimmed it in advance.
- Didn't use it much in this course.
- Not much for this course but good quality.

Additional reading material (scientific papers) distributed during the course?

4.5

Comments:

- They were all useful materials.
- They are well.
- Insightful, thought provoking and challenging.
- Perhaps slim down the reading-list so that people actually have time to read it.
- The papers understandable and useful.

4. **What is your opinion about the performance of the lecturers?**

(5 is "Very good", …, 1 is "Very poor")

Efthymia Kyriakopoulou

4.5

Comments:

- Excellent!
- Good lecturer!
- Keep it up.
- You could follow her lectures and notes.
- She is really committed and initiated very much.
- Very organized and explained material well.
- Very good and clear lecturing. Very nice with students and patience.
- Excellent lectures material (slides). Could improve time management during lectures, start, end, brakes. Very little added value from lectures.
- Mathematics on slides is a big no-no for me. It gives you no time to think and the relations that you need is often to slides anyway.
- Very good delivery and passionate about the subject.

Thomas Sterner

4.4

Comments:

- Excellent!
- Good lecturer could be more structured during class.
- He was the one who opens our understanding for natural resources.
- Excellent mix of practical and theory, motivating.
- More and clear theoretical background was needed in order to solve assignment.
- Very good in raising critical views and philosophical understanding.

Peter Berck

3.6

Comments:

- Excellent!
- Good lecturer. A bit too technical.
- Better to focus on the topic than making many stories, though good to have a few stories.
- The slides are not helpful and they are broken. You can’t understand them well.
- Very excellent professor but his notes would have been better organized + assignments.
- Not much clear with the slides and not point to point in subject matter. More concentrated o math than making us understanding intuition.
- Insufficient explanation for the tons of slides.

- Complex lectures, but delivered in a very funny way which makes you remember thepoints, if not the exact math behind it.
- Way he presented both lecture and material was not easy to follow. May be personal problem (mine) or I don't know if others felt same way.
- Good to listen when he teaches, especially examples.

Håkan Eggert

4.5

Comments:

- Excellent!
- Good.
- Precise and to the point.
- Very good and his slides are understandable.
- Good mix of practical and theory.
- Good literature overview in the field of fishery and was told like story in class, that make me to grab what all the thing done in fishery.
- Good walk through of the complex bits of the literature list.
- Good lecturing, discussion on papers and examples.

Xiangping Liu

3.6

Comments:

- Excellent!
- Hard to follow.
- The way she presents things are not good, although she is smart.
- Had a lot to cover in a very limited time. Rushed a lot and was difficult to follow.
- It was very nice.
- Her introduction of spatial econometrics was captivating, but it was only 1 lecture.
- Not at all clear, very fuzzy.
- Lecture: Got confused with own material. Good material, interesting topic. More time is needed for this topic.
- Time might have been partly source of the problem. Lecture was too much in a short time and we (I) failed to get the home take message.
- It was not easy to grasp immediately, maybe too short time for a complex subject.

Elizabeth Robinson

4.8

Comments:

- Excellent!
- Very good.
- Keep it up.
- She was very much organized and thought with a full of courage and moral.
- Excellent combination of practical modelling issues and general economic theories.
- I liked overall lecture, but I hope we spend lot of time on the same issues.
- Excellent teaching skills, material, topic. Very useful and interesting.
- Modelling made fun, and understandable. The "build-our-own" walk through on DES was really appreciated.
- Very good in delivering.

5. What is your opinion about the labs?

(5 is "Very good, …., 1 is "Very poor")

4.3

Comments:

- Very good but too few, NRE has too many facets that could be done in the lab.
- Good hands-on teaching.
- Very good and useful.

6. What is your opinion about the excursion to Tjärnö?

(5 is "Very good, …., 1 is "Very poor")

4.8

Comments:

- Great experience. Bringing theory into practice.
- New information was learnt.
- I liked it very much. This is fantastic!
- Excellent.

- Excursions are always good that make us to learn things by understanding this reality.
- Great experience, very well organized, interesting way to approach other disciplines.
- A very good experience to see the actual things.

7. What is your opinion about the Beijer week?

(5 is "Very good, …., 1 is "Very poor")

4.4

Comments:

- Another perspective from ecologists.
- Very good opportunity for my knowledge improvement on ecology and science-related fields.
- Could be more specific. Felt a bit messy, lots of topics, too quick etc. Interesting!
- Aha! I have a special memory of it.
- Too much material presented in those 2 sessions per day and some of the material – a little incoherent.
- Too much content and very superficial.
- High quality presentation about relevant topics and good opportunity for networking.
- Very good.
- Some materials were not relevant and more of stories not science.
- Was good to raise perspective as of other field and combining with economics.

8. What is your opinion about the exam?

(5 is "Very good, …., 1 is "Very poor")

4.3

Comments:

- Well structured.
- Too long!
- They are fit.
- Very good! (independent of my performance).
- Made our life easy.
- We used more time for study.
- Some values were not worth the effort though.
- Very good and standard.

9. How relevant do you consider this course to have been to your overall education/work?

(5 is ”Very relevant”, …, 1 is ”Not at all relevant”)

4.4

Comments:

- Good preparation for the policy course.
- Very interesting and very relevant. Content taught is very up-to-date!
- Not my area.
- It fills the gap I had before.
- Extremely relevant to both theory and practice of environment/natural resource economics.
- I got a broader perspective of the relevant topics and methods.
- Not right now, but I will try to move in a more economics direction later on.
- Very relevant.
- Relevant to both my education and future prospects.

10. How difficult and demanding did you find this course?

(5 is ”Very difficult…”, …, 1 is ”Not at all difficult”)

3.4

Comments:

- The challenge makes it exiting and brought out the best in me.
- Some parts not taught in a clear way.
- Lots of lectures, good. Many labs and exam and term paper. Very much. Too much?
- Since time is a bit. I have some difficulties in remembering the mathematical derivatives.
- Manageable, but challenging.
- Previous courses in the PhD program were useful.
- A little bit slower on the pure math lectures and it would have been much easier.
- It is challenging but not difficult.
- Given time limit and if the lecture by Peter could be harmonized with Håkan (some repetition)…
- Only one part of spatial econometrics was a bit difficult.

11. Was your theoretical and mathematical background sufficient for understanding this course?
(5 is ”Very sufficient”, …, 1 is ”Not at all sufficient”)

4.2

Comments:

- Got a top-up from this course.
- Mostly, Except P Berck’s lectures.
- Well, it can fit, but it depends on how long you are now from the previous course.
- Sufficient, needed to refresh some.
- Not really, but YouTube is my friend.
- I would need some refreshment on bringing together differential equations and Hamiltonian.

9. How will you use your knowledge from this course?

- Will build in my thesis work.
- Teaching
- This knowledge will help me in modelling natural resource problems and design appropriate policy instruments.
- For my thesis work definitely.
- I am exposed to different theory and models. I am already thinking much how to use in my thesis paper. This course opens me an opportunity to work with a theoretical model and with different background people.
- In teaching – knowledge sharing.
- In my research both for PhD and beyond.
- I have learnt so many theories and model that will help me to develop a very interesting research paper for my thesis and subsequent research.
- To read and understand related literature, and follow the academic research development.
- To analyze problems related to the economics of natural resources.
- For teaching.
- I will use to future investigations.
- Modeling (esp Elizabeth R lectures)
- Econometric analysis (spatial econometrics part).
- Teaching (after my PhD).
- For my thesis work.
- I have learnt to think more deeply when it comes to analyzing resources issues.
- I have learnt how to model.
- I have learnt how to combine ecology and economics.
- For my future work as an academic and lecturer. This course is very useful.

10. If you were the head of this course what are the three things you would change?

- The course is about ok for now.
- The timing if the Beijer trip was not as convenient as it was very close to the exam. Therefore student's movement (mentally) was low.
- Enlarge the course into two months at least! A bit more homework/exercises will be helpful on the technical part.
- More time for reading the course literature is good.
- Skip exam? Skip term paper? Not both. Less areas, better cover.
- The time horizon from 30-40. To add more simulation exercise. To give more a bi detailed slides.
- Add more labs on renewable resources.
- Focus the Beijer week a little more (reduce the material).
- Give spatial econometrics more time.
- Would not have included too much math like higher mathematical techniques.
- Include other resource management other than fishery; being that is the only management we learnt in this course.
- The Beijer week should be at the third week.
- More detailed feedback on assignments.
- Option to choose the topic for evaluation that better fits the interests of the student.
- More coordination between lectures as to avoid overlap in topics; same topics were given more than once unnecessary.
- One free day to read the papers.
- I would make sure to avoid overlap.
- I would give more emphasis to the theoretical foundations than some specific empirical papers that would be presented as part of course materials.
- Written exam may not be necessary; I would make writing term paper as a core requirement.
- Harmonizing the lectures in renewable resources with those in fisheries as some were repetition.
- More time for spatial economics.
- More time for Beijer part in ecology and economics.

11. Other comments, both positive and negative!

- The program is excellent; it should be extended to admit more people especially from developing countries.
- Glad to have been here and participated. Invaluable knowledge gained is appreciated.
- Overall it gave a very good knowledge on natural resources management. Very basic for any environmental economist.
- Increasing other type of resource management like water, groundwater etc, not only fishery.
- Excellent effort from organizers to put together a high quality course with perspectives from several researchers in different fields who lead the research frontier. Excellent balance between theory, practice and motivation through educational trips.
- Generally this course has made me think about more complex models which I would see in the literature and skip because of lack of background. I think Thomas should teach more in the course as he has good way of commenting points.
- The course was enjoyable. Thanks to all lecturers. You really did a good job.

PRACTICAL ARRANGEMENTS (for outside guest-students only)

1. How was the pre-course information?

5

Comments:

- Elizabeth and Efi were up to the task.
- We were informed when it is needed.
- Excellent!
- I have had the best arrangement and full information.

2. Travel arrangements

5

Comments:

- It was good and arranged in advance.
- Excellent!
- Thanks to the organizers.

3. Money arrangements

5

Comments:

- It is a fair payment.
- Excellent!

4. Lodging in Göteborg

5

Comments:

- Excellent!

5. Communication service, i.e. E-mail, fax, computers, etc

5

Comments:

- Excellent work of Elizabeth and Efi.
- Everything was smooth.
- Eliza is awesome!
- Elizabeth is very reliable.
- Very friendly. I had the best stay ever and I will always be an ambassador to GU.

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

COURSE EVALUATION

Policy Instruments

Spring 2014

1. **What is your overall opinion about the course?**

(5 is "Very good, …., 1 is "Very poor")

3.7

Comments:

- The course contents could have been streamlined to avoid unnecessary overlaps and made relevant to developing country context.
- The content was good. Lecturers were good with good exercises and case studies.
- The course was very useful to understand how each policy instrument works and its implications (who benefits, when to use them etc…..)
- Too much content squeezed in, better to select the content more carefully and increase the general level.
- I think the course is not organized in particular way. Even some lectures are very general. That should not be for graduate level. Teaching is very bad.
- I really enjoyed it.
- Is wonderful and very useful for us.

2. **What is your opinion about the general administration of the course?** (Schedule and reading materials were accessible in time, professors/administrators were available for questions, etc.)

(5 is "Very good", …, 1 is "Very poor")

3.9

Comments:

- It was helpful.
- Schedule was a little too tight, became too many overlaps in this course.
- Good administration, good preparation.
- The main textbook was very illustrative. However, regarding the lectures, it would be great to get at least "extract" of Carolyn's lectures.
- Fairly OK with availability of materials.
- Sufficient, no good or bad sides.
- It is possible; we would like to have Carolyn Fischer's slides in the near future.

3. **What was the quality of the course literature? ?**

(5 is ”Very good”, …, 1 is ”Very poor”)

Sterner, T. and J. Coria (2011): “Policy Instruments for Environmental and Natural Resource Management”. Second Edition. RFF Press.

4.0

Comments:

- It was very moderate.
- Too bulky, little need of quantitative models, too much text.
- The course book was nice and relevant.
- Great book. I will definitely use it for further reference.
- Good to get the general idea about each policy instrument with real examples. But some part it is boring.
- Quite OK, sometimes too many words but generally interesting and understandable.
- Very helpful. It is an excellent book. I hope there can be an opportunity to have Chinese version of 2nd edition of this book.

Additional reading material (scientific papers) distributed during the course?

3.8

Comments:

- They are helpful.
- They were very good and motivating.
- Additional materials were very nice and relevant.
- I cannot tell for all the papers, since I focused mainly on the book due to time constraints. However, the ones I read were a good complement.
- Needed to be also provided literature about policy implementations in developing countries because the course has a lot many developing country students.
- Didn’t have time.

4. **What is your opinion about the performance of the lecturers?**

(5 is ”Very good”, …, 1 is ”Very poor”)

Thomas Sterner

4.1

Comments:

- Off content stories in some instances.
- For motivating students in the various topics covered, but could present better and organize his PowerPoints.
- He was nice. Good teaching and relevant examples. Fantastic case study.
- Learned a lot from his lectures. A great mix between theories based on experience.
- Badly prepared and bad selection of content.
- Has a lot of knowledge, I agree and respect, but when come to teaching he does not teach in orderly pattern. His lectures are very messy and don't have clear cutpoints, very general. I think he needs to come down to students levels to teach.
- I enjoyed the discussion and general life experience talk a lot. I know some others disliked it, but it definitely adds to the course and should be kept.

Jessica Coria

3.9

Comments:

- Voice was not good for me personally; lecturers were relatively boring (maybe nature of the chapters she took or……..)
- She has the capacity to explain in a realistic way and she relates things to actualities.
- Didn't seem to welcome questions from students, explanations could be better and done in better ways.
- She was good and prepared.
- Clarified many things I didn't have so clear before.
- She is very good at technical issues, but she is very fast in class and many times difficult to understand what she speaks. She doesn't care whether student understood or not, she just goes on with it.
- Not sure if slideshows are good way to present theory and actions? Maybe should write on the board, but good at explanations. Might learn to accept when she is wrong though.

Carolyn Fischer

2.9

Comments:

- Lecture content not connected well, pool delivery and difficult to follow.
- It was loos. Her explanation was a bit weaker.
- I didn't have a chance to review her presentations.
- She was good but a lot of stuff to teach and too fast.
- At the beginning, very clear. Good at setting the context. But then, lectures became dense. I like she asked to interact with students.

- Too much content per lecture and therefore hard to follow.
- She did not care/bother to ask whether her lectures are reaching the students.
- OK

Stefan Ambec

4.3

Comments:

- Very well prepared and following the lecture was not difficult.
- Well organized and conscious about everything he talks about.
- He is well organized and knows what to tell. I am very happy with his lecture.
- Very organized and systematic presentation.
- Fantastic teaches well and explain concepts very well.
- Interesting topic but hard to follow. Unfortunately, I missed the first lecture.
- He really tried to make us understand and spent time with students.
- OK, nice with theory first and then exercises to concretize. The theory was a bit incomprehensible; it was the exercises you learnt from.

Svenn Jensen

3.7

Comments:

- Was not well prepared for the lecture.
- Well organized.
- Too much material in 3 hrs.
- Good teaching.
- Great overview of IAMs. However, too few lectures to grasp all the details.
- Good lecture, however, the content did not fit in the the course.
- Very messy sometimes.
- OK

Xiao-Bing Zhang

4.0

Comments:

- His English was broken to understand but technically good.
- Precise answers during tutorials.
- Was good and well prepared.
- Really good guide for the exercises.
- Well prepared and very helpful.
- Good explanations and solutions.
- Should talk a bit slower and not sound disappointed when someone don't understand, otherwise fairly pedagogical.

5. What is your opinion about the exam?

(5 is "Very good, …., 1 is "Very poor")

3.0

Comments:

- Time was short and also preparation time was not adequate.
- Content was not representative; values of each question not proportional to time it takes and relevance of points that should be mentioned.
- It was a bit difficult to understand technically and less relevant to the tutorial practice.
- I doubt the motive; too many related questions, seemed to meant to be impossible exam and questions could have covered the whole course better.
- The exam was good, a bit tricky though.
- I would have liked to be more prepared, but other than that, I think it captured the aspects of the policy instruments.
- Although the exam is very tricky, which needed lot of time to think, time constraint is a big problem.
- Not so difficult (and no need to be). But doesn't really reflect the course exercise/discussion issue.
- Very properly designed

6. **How relevant do you consider this course to have been to your overall education/work?**

(5 is ”Very relevant”, …, 1 is ”Not at all relevant”)

4.3

Comments:

- It was very relevant and helpful for young researchers to understand it.
- Very relevant for my current PhD research and future work.
- Very relevant. I have been introduced to useful concepts.
- In the future, it is highly probable that I recall this course to my research.
- Too much overlap to a master’s course in the field.
- Because this is where we deal with the problems of different policies and its implication back in our country.
- I work with policies, thorough not …… analysis, still quite relevant.

7. **How difficult and demanding did you find this course?**

(5 is ”Very difficult…”, …, 1 is ”Not at all difficult”)

3.5

Comments:

- Time constraint and the reading material was a lot.
- It demands a full attention and effort.
- Quite demanding, the book is bulky and the course content too much.
- It was not very difficult, but it was demanding in terms of materials to read.
- Because it is too much because we had exam, case study and paper writing. Too much is too bad and end of the day, the ability of learning go down and no deep knowledge.
- The difficulty level is just right for a second year PhD.

8. **Was your theoretical and mathematical background sufficient for understanding this course?**

(5 is ”Very sufficient”, …, 1 is ”Not at all sufficient”)

4.5

Comments:

- Yes it was.
- More than sufficient.
- Very sufficient background.

- I felt myself prepared with the theoretical background. However, I had to refresh the mathematical part, but at the end it was OK.
- No problems. Have strong math background but no economic background.

9. How will you use your knowledge from this course?

- Most of the contents were theoretical which work in ideal scenarios only. I want to focus on their applicability to developing country context in both teaching and research.
- It will be easy for me to transfer my knowledge which I got from work through my research work, teaching in my university, seminar and panel discussions and discussions with policy makers.
- To influence policy on design and to present policy instruments in my country in relation to environment and agriculture.
- To better develop conceptual and theoretical models to understand the impact of various policy options on the environment.
- For my thesis chapters, I will always consider the policy issues I have learnt.
- It is relevant for my future career as an academician, researcher and policy advisor.
- In my research, I want to analyze policy implications. The part of how benefits are distributed for each policy would be especially useful.
- I would like to focus my research to a specific field like energy, forests and the reviewed policy instruments and their principle are applicable to both cases.
- The political perspective when it comes to implementing policy instruments was near and right. Helped me in my research.
- We have a lot to learn from this course and understand how these policies have implementations in society and how to solve them.
- Mostly as general knowledge, won't work directly with it, but it's …… your need to know in my field.
- Teaching, research and interaction with policy makers.

10. If you were the head of this course what are the three things you would change?

- Exercises should have been in every topic and students would benefit from learning by exercising.
- Exam (value and design)
- Teachers (Jessica's part was too much and uniform in style).
- I would make credits to 10.
- I would use more lab works.
- Include papers.
- I could ask Jessica to be a lecturer and accommodate and handle questions from students professionally.
- Streamline the content to avoid overlaps and only keep relevant topics.
- Ensure the exam is standard and approved by all lecturers, I doubt this was the case.
- More time for working the term paper at least two more weeks after that exam.
- Harmonize the material teaching by Thomas, Jessica and Carolyn as they overlapped.
- More exercise classes.
- I would extend the case study discussion (2 sessions). For example; each member splits to different groups and bargain.
- If possible, I would invite a policy maker to hear from his/her perspective about the policy making process and how this knowledge could be strategically implemented.
- Fewer, but better lectures.

- Focus on one type of examination, term papers exam or case study.
- Increase the general level of the course (could be higher than a bachelor course….).
- Removed some assigned work and add more time to do work for students.
- Efficiency implications are not touched and I would like to add more part of them.
- Add how to implication and problem and policy instruments in developing countries.
- Screening candidates more carefully and avoid people who are not able to keep up with the pace. Language is also a problem for some students.
- More strict requirements of reading the book since it really help to understand and digest.
- Introduce more details about policy instrument in reality beside the theoretical background of them.
- Exam and paper NOT in the same week. Exam is really not necessary. More time should be allocated to paper; one quality control/feedback should be given half way and later on final version and seminar.
- More time for paper writing and supervision during process. Seminar style discussion abou some seminar papers.
- Better developed linkages between topics of different lecturers.

11. Other comments, both positive and negative!

- The name of the course creates special expectations. Its content is not as interesting both due to design and presentation.
- It was organized and well coordinated.
- It was nice to see energy efficient houses in Alingsås.
- The interactions with folks from all over were good. The exercise done with engineers from Chalmers was great.
- The course was good. Bravo to the coordinator and instructors. I so much liked Thomas' case study. It gives the real feel of policy analysis.
- I would recommend incorporating a session of experiences in developing countries. A workshop with the cases of the student's countries can be useful. For example, a policy instrument that is in discussion in country X can be presented and then critically assessed.
- Some lectures are very boring. They come to just talk, not any clear thing in the course.
- Needed to have more practical things to do it.
- Overall course is not thought out well.
- It's a very fund course. It's not perfect, but very enjoyable. No need for everything to be perfect either. Nice excursion.
- Seminar with presentation of students was good. Seminars with visitor professors shouldn't be mandatory.
- Think about what is important to examine and why!

PRACTICAL ARRANGEMENTS (for outside guest-students only)

(5 is ”Very good”, …, 1 is ”Very poor”)

1. How was the pre-course information?

5

Comments:

- Perfect.
- Excellent.

2. Travel arrangements

5

Comments:

- Perfect
- Excellent

3. Money arrangements

5

Comments:

- Perfect
- Excellent

4. Lodging in Göteborg

5

Comments:

- Perfect
- Excellent

5. Communication service, i.e. E-mail, fax, computers, etc

5

Comments:

- Perfect
- Excellent

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

COURSE EVALUATION

Development Economics

Spring 2014

Please fill in a number from 1 to 5 (5 is "Very good, …., 1 is "Very poor") in the box in addition to your comments

1. **What is your overall opinion about the course?**

4.8

Comments:

- Course very well structured and informative.
- Not much new learning. I don't feel I have good overview of the subject. Objectives not achieved.
- Nice.
- It was OK and was constructive.
- Very relevant teaches about tools and stimulates one to develop ideas.

2. **What is your opinion about the general administration of the course?** (Schedule and reading materials were accessible in time, professors/administrators were available for questions, etc.)

4.8

Comments:

- Notes were provided very timely and any changes were also communicated.
- Is OK, keep it up.
- It was well organized.

3. **What was the quality of the course literature? ?**

Development Microeconomics by Bardhan & Udry (1999).

4.7

Comments:

- Very good, easy to read and up-to-time literature as well as classic ones.
- Real. Provided me with very high understanding.
- They are all interesting.
- I did not read it much but for a few chapters I read, it was good.

Additional reading material (scientific papers) distributed during the course?

4.4

Comments:

- Did not have time to read those.
- Very good papers/material. Covers more wider fields in development economics.
- Quite fine.
- They are available on time and helpful.
- Relevant and good paper.

4. **What is your opinion about the performance of the lecturers?**

Yonas Alem

4.5

Comments:

- Little value to my learning/understanding/curiosity/development of research ideas. Confusing ideas.
- Good in explanations, maybe combining with intutions.
- Is very good lecturer.
- He is really really well organized and passed 4 lessons at the same time, concept, econometrics, critics and identifying a research gap.
- Good in teaching and making things understandable. A bit slow.

Måns Söderbom

4.8

Comments:

- Good/interesting lectures. Challenging and useful. Helped me.
- Very good explanations and intuition.
- Nice lecturer.
- He is good one and very concentrated.
- Very good in model and relevance of stuffs.

Annika Lindskog

4.0

Comments:

- Could have focused a little more on methodological information.
- No intuition was given. Only reading the material. Need to improve teaching skills.
- Very good too.
- She was weaker relative to both.
- Good in teaching, but dos not put much emphasis on model and methodology.

Kyle Meng

4.3

Comments:

- We don't have the slides of his lessons.
- Great, dynamic/exiting/challenging lectures, great review of research frontier, great motivation for research ideas. High quality of lectures. Outstanding.
- He gave the paper, literature, but when was asked, he probably didn't get through the paper.
- Good explanation.
- Very good.
- He was good.
- God in teaching and explain issues plus explaining models.

5. What is your opinion about the exam?

4.5

Comments:

- Yes I like home exam and it's very good for choosing 2 from 4 questions.
- Very much unnecessary. Its own responsibility to revise, and go deeper into topics of interest.
- I like home exam.
- I do not have previous experience with home exam, thus I cannot really judge.
- It is good way to have a home exam for such bulk course.
- Not yet done, but the assignment and referee report and proposal was a good practice.

6. **How relevant do you consider this course to have been to your overall education/work?**

4.6

Comments:

- I expected higher quality. Still, the help and opportunity of developing a research proposal was useful.
- Very helpful.
- It is highly relevant for students who come from LDC.

7. **How difficult and demanding did you find this course?**

3.1

Comments:

- Not difficult.
- It is very demanding.

8. **Was your theoretical and mathematical background sufficient for understanding this course?**

4.4

Comments:

- Is sufficient for understanding. Like course.
- Yes it was fit.

9. **How will you use your knowledge from this course?**

- I would apply it to my future research for my PhD.
- To develop further my research projects.
- To deepening my research.
- To research the problems in my country.
- I developed at least one idea for thesis chapters.
- Research.
- I will use it for future research as well as future teaching job.
- For my research.
- Research, teaching and consultancy.
- I will directly include it in my PhD thesis.
- I will comply strategy from my dissertation.
- For my thesis in terms of methodology and for future research.

72

10. If you were the head of this course what are the three things you would change?

- I would not bring it as the last course. It should be brought earlier to help us think while thinking of suitable research ideas.
- I would have organized the projects differently with due dates before the end of the course. For example, the research proposal, so the students have more feedback before the end of the course.
- Introduce a textbook about this course.
- No exam. More time. Maybe not after taking several courses in a row.
- The schedule. I mean time for take home exam should be informed in advance.
- Maybe more focus on proposal. Labs were pretty not organized and more focus to give learning estimations.
- I like. There is no much to change.
- Dispatch the different tasks, every week to have a little exam on what was done previously.
- Adding some development theories, CGE model, mathlab, exercises, and simulation exercises.
- More time for the course, more topics, 3 hrs lectures instead of 2.

Other comments, both positive and negative!

- Thanks for feedback on research proposal.
- The course, in general, is very good.
- Health applications part was bad.
- Proceed the way. The course is organized.
- I hope to come another time!

PRACTICAL ARRANGEMENTS ***(for outside guest-students only)***
(5 is "Very good", …, 1 is "Very poor")

1. How was the pre-course information?

4.9

Comments:
- It can be given a little bit earlier.
- Was nice.
- It is really nice.

2. Travel arrangements

5.0

Comments:
- Very good.
- It is always organized.

3. Money arrangements

5.0

Comments:
- Excellent.
- Very good.

4. Lodging in Göteborg

4.9

Comments:
- Expensive, however, the project takes the account.
- It was organized.

5. Communication service, i.e. E-mail, fax, computers, etc

4.7

Comments:
- I would have really appreciated to have the information on seminars and workshops to be able to attend.
- Very good.
- Very organized.

Sida – EEU

Environmental Economics Program

Academic Capacity Building

Activity Report 2013

This program has been financed by the Swedish International Development Cooperation Agency, Sida

UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Sida

SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY