



S F S THE SCHOOL
FOR FIELD STUDIES

Political Ecology and Developing Landscapes

SFS 3840

Syllabus

The School for Field Studies (SFS)
Center for Amazon Studies (CAS)
Loreto, Peru

This syllabus may develop or change over time based on local conditions, learning opportunities, and faculty expertise.
Course content may vary from semester to semester.



COURSE CONTENT SUBJECT TO CHANGE

Please note that this is a copy of a recent syllabus. A final syllabus will be provided to students on the first day of academic programming.

SFS programs are different from other travel or study abroad programs. Each iteration of a program is unique and often cannot be implemented exactly as planned for a variety of reasons. There are factors which, although monitored closely, are beyond our control. For example:

- Changes in access to or expiration or change in terms of permits to the highly regulated and sensitive environments in which we work;
- Changes in social/political conditions or tenuous weather situations/natural disasters may require changes to sites or plans, often with little notice;
- Some aspects of programs depend on the current faculty team as well as the goodwill and generosity of individuals, communities, and institutions which lend support.

Please be advised that these or other variables may require changes before or during the program. Part of the SFS experience is adapting to changing conditions and overcoming the obstacles that may be present. In other words, the elephants are not always where we want them to be, so be flexible!

Course Overview

In broad terms, political ecology is the study of the multiscale interaction between humans and the natural environment. It examines how local events resonate at the regional and global level, and vice versa. Accordingly, the different ways humans see, use, and dwell in any particular environment are mediated by political, economic and social factors that come from global, regional and local forces.

Political Ecology (PE) draws on various disciplines to frame studies on resource management challenges with the environment, climate change, land-use and development, and conservation. In this course, we will deal with development theories, anthropological/ethnographic works, and employ tools developed by human geographers and environmental economists. We will hear and analyze voices of concern from indigenous peoples and other local community stakeholders with visits in the Loreto region of the Amazon and the Peruvian highlands.

This PE course will articulate with the other courses during the semester, providing learning outcomes from a social science perspective on distributive ecological conflicts with a particular focus on the economic analysis of ecosystem services from both the Amazon and the Andes.

The field of study of Ecological Distribution Conflicts (EDC) was developed by anthropologists, geographers and sociologists in the 1980s. We will explore the theoretical part of EDC with selected readings from book chapters such as the Environmentalism of the Poor by Joan Martinez-Allier and Diagnosing Wild Species Harvest (DWISH) by Risto Kalliola et al. This latter work will be used in the developing research abilities of students, applying modern methodologies of DWISH in the analysis of environmental conflicts. We will also examine the criticisms that the fields of political ecology and environmental economics have made on mainstream economics and natural resource economics to address environmental problems in a Peruvian context and we will develop tools for the economic valuation of ecosystem services.

Learning Objectives

Students will critically examine ecological distribution conflicts and resource management challenges from a multidisciplinary social science perspective.

Students that participate actively and finish the course will be able to:

1. Build an introductory framework to identify and to analyze ecological distribution conflicts with concepts and methodologies from the Political Ecology fields.
2. Identify the most important challenges surrounding ecological distribution conflicts in the Peruvian context and clearly identify the different problems and stakeholders involved by applying modern methodologies such as DWISH (Diagnostic of Wild Species Harvest).
3. Develop a critical analysis of the participation of society in maintaining or reducing the ecological problems, with the knowledge of tools and “solutions” provided from Political Ecology, Ecological Economics, Environmental Economics, Circular Economy, and Blue Economy.
4. Identify the dimensions, context and limits of applying qualitative and quantitative methods of Political Ecology in the solution of distributive ecological problems.

Assessment

The evaluation breakdown for the course is as follows:

Assessment Item	Value (%)
Participation	10
Quizzes	15
Field Exercise 1	15
Field Exercise 2	20
Mid-term Exam	20
Final Exam	20
TOTAL	100

Participation and topic discussions (10%)

Everybody should be prepared for each academic session. This implies reading the materials for each session with enough detail to be able to ask relevant questions, and participating in analytical discussions about the key issues. Active participation during classes, discussions, assignments and hikes is expected. Students will be encouraged to develop their leadership skills by giving their opinions in class within a positive constructive environment, receiving peer feedback and inviting them to ask and write their questions in class and during office hours. Every student will be expected to present a five minute summary of a past lecture to the class at the start of the next class at least once in the semester.

Quizzes (15%)

Three short quizzes will be used to evaluate the advancement of lectures.

Field Exercises (FEX) (35%)

We will work in the course with **two** Field Exercises (FEX). Students will be expected to present a 2 to 4 page report, where they show understanding of the concepts developed in the theoretical classes and group work.

With these FEXs students will gain experience for the Directed Research component at the end of the semester. The FEXs require field observation, data collection and reporting of results.

1. FEX 1: Diagnosis of Wild Species Harvest FEX 1 (15%)

One of the three streams of awareness and environmentalism activism is the “Cult of wilderness” based on conservation biology. This exercise will allow the students to apply the DIWSH methodology with a species used in local communities (such as: *paiche*, *aguaje*, *chambira*, native butterflies or *Irapay*) to build a diagnosis of a resource-use problem from which the communities can develop an action plan to address the problem (frustration or conflict).

Subject: Observational skills and problem identification with the DWISH methodology.

Context: In previous semesters, former students have observed ecological problems faced by the community of Sucusari. In this semester, we build upon those mapping of stakeholders built with previous classes and visit the community, after giving the students the intuition and characterization of the DWISH Methodology to build a diagnosis about Wild Species Harvest. It involves analyzing seven dimensions of a problem identified.

Objective: Our objective is to develop observation skills in the field and to learn the process of the scientific method.

Methods:

DWiSH has three steps: case definition, collecting information about the case, and exploratory diagnosis of seven thematic perspectives. The first step defines the resource that is harvested in the wild, then defines the geographical area of interest, and finally, defines the main players in the focus of analysis. The second step highlights the importance of metadata, and the third step aims to include a balanced assessment of the updated information of seven thematic perspectives. These are: 1) resource dynamics behind the provision from nature, 2) management of resource systems, 3) governance shaping incentive structures, 4) costs and benefits weighed by harvesters, 5) knowledge for action and interaction, 6) spatiality in nature and society, and 7) legacies from the past and for the future.

Assessment: Students will receive a map created with former students and community members. In Sucusari, they will listen to presentations by the “Apu” and other community members about the history of the community and their experience harvesting wild species from their territory, as well as a NGO representative that works with them. Working as a team to ask relevant questions, students will be able to present their part of the diagnosis and discuss in class how to put together the contributions of different groups for action planning.

2. FEX 2: Ecosystem services economic valuation FEX 2 (20%)

A second stream of awareness and environmental activism is the “Eco-efficiency gospel”, that is supported by environmental economics, where the internalization of externalities is a key solution to environmental problems and ecological distributive conflicts. The component of this research will be to identify which ecosystem services are included in the market price of natural resources from the first FEx and determine if the payment for those ecosystem services supports the change of behavior in favor of environment conservation and avoiding big ecological distribution problems.

Subject: Introduction to Economic valuation of ecosystem services

Methods: We will deconstruct the paper from Peters(Nature, 1989) and then ask the Students to replicate their assessment in the current context of one of the neighboring communities (Cahuide, La Habana) in coordination with community members . Students will receive a handout on the subject along with a list of potential topics for the project.

Assessment: Students will be assessed based on their ability to identify a sound problem, effort in data collection, and the written report.

Midterm Exam and Final Exam (40%)

Two written exams will be given based on material covered in lectures, readings, and field experiences. Each exam is worth 20% for a total final grade of 40%.

Grade corrections in any of the above items should be requested in writing at least 24 hours after assignments are returned. No corrections will be considered afterwards.

Grading Scheme

A	95.00 - 100.00%	B+	86.00 - 89.99%	C+	76.00 - 79.99%	D	60.00 - 69.99%
A-	90.00 - 94.99%	B	83.00 - 85.99%	C	73.00 - 75.99%	F	0.00 - 59.99%
		B-	80.00 - 82.99%	C-	70.00 - 72.99%		

General Reminders

Plagiarism – using the ideas or material of others without giving due credit – is cheating and will not be tolerated. A grade of zero will be assigned for anyone caught cheating or aiding another person to cheat either actively or passively.

Deadlines – Deadlines for written and oral assignments are instated to promote equity among students and to allow faculty ample time to review and return assignments before others are due. As such, deadlines are firm; extensions will only be considered under extreme circumstances. Late assignments will incur a penalty of 10% of your grade for each day you are late. After two days past the deadline assignments will not be accepted anymore. Assignments will be handed back to students after a one-week grading period.

Participation – Since we offer a program that is likely more intensive than you might be used to at your home institution, missing even one lecture can have a proportionally greater effect on your final grade simply because there is little room to make up for lost time. Participation in all components of the course is mandatory, it is important that you are prompt for all activities, bring the necessary equipment for field exercises and class activities, and simply get involved.

Lectures, Exercises, and Exams

Type: D: Discussion, **FL:** Field Lecture, **GL:** Guest Lecture, **L:** Lecture, **O:** Orientation, **E:** Evaluation

No.	Title and outline	Required Readings	Type	Hours
POLITICAL ECOLOGY FIELD AND THE AMAZONIA CONTEXT				
PE1 W1	<p>Course overview</p> <p>Presentation of the Syllabus, Expectations about the course and planned class dynamics.</p> <p>Introduction to Political Ecology and the three currents of environmental activism.</p> <p>Introduction to the Amazonia. Directions for the first visit to Iquitos</p>	<p>Martinez-Allier, J (The Environmentalism of the Poor, 2009, Ch.1 and 4)</p> <p>Kalliola, Salo and Anders (Diagnosing Wild Species, 2014: Chapters 1 and 2.</p> <p>Optional:</p> <p>Hayek, F 1988, The fatal conceit. The errors of</p>	L,0	1.5

No.	Title and outline	Required Readings	Type	Hours
		socialism. Volume I. The Collected works of Friedrich Hayek, Routledge, London, UK. Chapter 1		
PE2 W1	History of Ecological conflicts in Amazonia (1) First visit to Iquitos: Belen Market, Barco Museum and Casa Morey - 2 hours Students will observe and reflect about Prices, economic incentives, markets and trade traditions in the Amazon. There will be a pre and post-visit discussions about what they find.	Kalliola, Salo and Anders (Diagnosing Wild Species, 2014): Chapter 3. Optional: Chirif A and Cornejo M, 2009, Imaginario e Imágenes de la época del caucho: Los sucesos del Putumayo, CAAAP, Lima.	FL	2.0
PE3 W2	Roads and infrastructure in the Amazon: Discussion about the expected costs and benefits of the Iquitos-Nauta Road and the ecological conflicts with the Amazon Waterway project, planned to increase river transportation capacity in the region. Quiz 1: PE 1, PE 2 and readings (15 min)	Kalliola, Salo and Anders (Diagnosing Wild Species, 2014): Chapters 5 and 7.	L, D	2.0
PE4 W2	Roads and infrastructure in the Amazon. Visit to Radio Ucamara. Discussion about the Hidrovía Amazónica, Students will hear different perspectives (State, scientific and indigenous) about the ecological conflicts happening with the development of an “Amazon Waterway”	Kalliola, Salo and Anders (Diagnosing Wild Species, 2014): Chapter 12. Optional: Pau, S (Mas antes, así era, 2019, Introduction and Chapter 1)	D, FL	2.5
PE2 W1	The invisible history of the Amazon Region: Ecological Conflicts history (Lecture by Dr. Richard Bodmer) – 1hour		GL	1.0
“THE CULT OF WILDERNESS”				
PE5 W2	Qualitative methods: Preparation for diagnosis of Wild Species Harvest Students will learn the DWiSH Methodology, before travel to Sucusari. They will be oriented about livelihoods they will observe and how to fill a Field diary.	Kalliola, Salo (2014); Chapters 13 to 19.	L, O	2.5

No.	Title and outline	Required Readings	Type	Hours
PE6 W3	<p>On the Political Ecology of non- timber forest products harvest in the Amazon: Visit to Tamshiyacu Tahuayo Regional Conservation Area.</p> <p>Students will learn about the dimensions of the space and time with respects to nature in the specific case of the conservation area. They will learn about non-timber forest harvest and reflect about how the law and its enforcement prevent or support the forest degradation or deforestation in the area.</p>	<p>Non-Timber Forest Products in the Global Context, 2011, Series: Tropical Forestry, Volume 7 (Shackleton, Sheona, Shackleton, Charlie et al. (Chapters 1 and 2)</p> <p>Optional: Dammert, J, “Hacia una Ecologia Politica de la Palma Aceitera en el Peru”, 2015, OXFAM</p>	FL	3.0
PE7 W4	<p>On the Political Ecology of timber forest harvest in the Amazon:</p> <p>The students will understand about the income generation activities of communities and assess how timber forest harvest contributes to reducing forest degradation or deforestation from the PE perspective.</p>	World Bank, 2006, Peru Country Environmental Assessment, Chapter 8.	L, D	3,0
PE8 W4	<p>Visit to Sucusari Participatory DwisH, FEX 1:</p> <p>Students will work in groups analyze ecological distribution problems that face the population of Sucusari based on information gathered from local community members during meetings and discussions.</p>	Kalliola Salo (2014): Chapter 20	FL	4.0
PE9 W5	FEX 1: Presentation of the results by the students		E	2.0
PE10 W5	Mid-term Exam		E	1.0
POLITICAL ECOLOGY IN THE ANDEAN CONTEXT				
PE11 W6	<p>History of Ecological Conflicts in the Andes: Visit to Cusco</p> <p>History of the Andean Peasant. Past and current problems of “Campesino” Communities.</p>	Martinez-Allier, J (The Environmentalism of the Poor, 2009, Ch.2)	L	2.0
PE12 W6	On the political ecology of coca in Peru	Martinez-Allier, J (The	FL	1.5

No.	Title and outline	Required Readings	Type	Hours
	During our visit to Wayqecha, we will discuss about the distributive ecological conflicts of coca in Peru. Classifying the traditional and illegal use.	Environmentalism of the Poor, 2009, Ch.3)		
PE13 W6	<p>On the political ecology of sustainable tourism in Cusco</p> <p>Presentation of cases of rural and sustainable tourism in Peru, role of Protected Areas and relation with Ecological Conflicts in the Amazon (2 hours)</p> <p>Visit to Cuy Farm: The students will visit a guinea pig farm and learn how this activity generates income for the communities visited. They will reflect on the sustainability of this to the future and to avoid ecological conflicts. (1 hour)</p> <p>Visit to Paucartambo Museum (1 hour)</p>	Martinez-Allier, J (The Environmentalism of the Poor, 2009, Ch.6,7)	FL	4.0
PE14 W6	<p>On the political ecology of small agriculture in Cusco</p> <p>Cusco Trip: Visit to Potato Park</p> <p>The students will see and reflect about the history of the potato harvest and the income generation dynamics, its stakeholders and future perspectives.</p>	Martinez-Allier, J (The Environmentalism of the Poor, 2009, Ch. 9 an 11)	L, FL	3.0
W7	Semester break			
“THE GOSPEL OF ECO-EFFICIENCY”				
PE15 W8	<p>Economic valuation of nature: An Introduction</p> <p>Students will have an overview of the use and non-use values categories. Deconstruction of Peters (1989) paper.</p> <p>Students will learn about the economic modelling of perceptions of nature, Methods of economic valuation and mechanisms for the Internalization of Externalities.</p>	<p>Peters (Nature, 1989)</p> <p>Optional:</p> <p>Non-Timber Forest Products in the Global Context, 2011, Series: Tropical Forestry, Volume 7 (Shackleton, Sheona, Shackleton, Charlie et al. (Chapter 3)</p> <p>Bateman, I et al. (2002)</p>	L, D	3.0
PE16			L,E	0.5

No.	Title and outline	Required Readings	Type	Hours
W8	Quiz 2: In your own words: About PE 15 and its readings			
PE17 W8	FEX 2: Application of Economic valuation in surrounding communities, comparing with the results obtained in Peters paper.		FL	2.0
PE18 W8	Development aspects and theories: The students will be introduced to the perspectives from Ecological Economics, Environmental Economics, Blue and Green Economics and Circular Economics, complementing their exercise in economic valuation analysis.	Pauli, Gunther (Plan A, 2018 and the Blue Economy,2010) Martinez-Alier (Ecological Economics, 2009, Intro. and Chapter 2)	D,L	2.0
“THE ENVIRONMENTAL JUSTICE MOVEMENT”				
PE19 W8	Indigenous peoples, livelihood strategies and social organization. The students will understand how indigenous organization in Peru works, the laws that currently pertain to indigenous groups and how Indigenous economics can develop in this context.	Indigenous People Law in Peru	D,L	2.0
PE20 W9	Global Environmental Governance: How global environmental governance is seen and built in the context of peruvian legislation against biodiversity loss, forest deforestation, degradation and climate change?	The Paris Agreement Forestry and Wildlife Laws in Peru	D,L	1.0
PE21 W9	Quiz 3: In your own words PE18-PE20 and its readings		E	0.5
PE22 W9	On the political ecology of the tourism in the Amazon Visit to Morhosapi butterfly garden (1.5 hours) and Quistococha (1 hours). Students will see how important tourism locations in Loreto provide an important source of income to the communities and reflect about the political ecology of tourism in the region and its ability to continue to	Handout prepared by PE lecturer with a summary of the places visited and exploratory questions.	FL	2,5

No.	Title and outline	Required Readings	Type	Hours
	provide direct and indirect use value ecosystem services.			
PE23 W9	<p>On the political ecology of paiche in the Amazon</p> <p>Visit to an entrepreneur who works with <i>paiche</i> (<i>Arapaima gigas</i>) fish farming and is the coordinator of the public program of paiche in the Iquitos-Nauta highway. The students will see and reflect about how this native species provides a stable source of income and the challenges faced by entrepreneurs in the region.</p>	IIAP, Paiche: The Giant of the Amazon.	FL	1,5
PE24 W9	<p>On political ecology trends in Loreto: The perspective of indigenous people</p> <p>Visit to ORPIO's office, where the students will see and reflect about how the main indigenous organization of Loreto identifies key environmental problems and builds strategies and actions with the Peruvian State and the NGOs.</p>	<p>Reed, R 1997. <i>Forest dwellers, forest protectors: indigenous models for international development</i>. Allyn and Bacon, Boston, USA.</p> <p>Optional: Valqui, M., Feather, C. and Espinoza, R 2014, <i>Haciendo visible lo invisible. Perspectivas indígenas sobre la deforestación en la Amazonia Peruana</i>, Forest Peoples Programme and AIDSESP (Asociación Interétnica de Desarrollo de la Selva Peruana). Lima, Perú.</p>	F,L	2.0
PE25 W10	<p>On political ecology trends in Loreto: The perspective of the NGOs</p> <p>Visit to Iquitos IBC's office, where the students will see and reflect how this NGO works in addressing key environmental problems in the region, using different tools, strategies and success indicators.</p>	Martinez-Allier, J (The Environmentalism of the Poor, 2009, Ch.12 and 13)	FL,	2.0

No.	Title and outline	Required Readings	Type	Hours
PE26 W10	On political ecology trends in Loreto: The perspective from the Literature and Arts. Film: Fitzcarraldo and/or the Embrace of the Serpent	Kalliola, Salo, Diagnosing Wild Species Harvest (Chapters 21-22) Optional reading: Pau, S (Mas antes, así era, 2019, Chapters 2 and 3)	D	2.0
PE27 W10	Wrap-up.		D	2.0
PE28 W10	Final Exam		E	2.0
		Total contact hours		60

Reading List

Amat y Leon, CA, 2006, *El Peru nuestro de cada dia: Nueve ensayos para discutir y decidir*. Universidad del Pacifico, Lima, Peru.

Andersona, B and M'Gonigle, M, 2012, "Does ecological economics have a future?: Contradiction and reinvention in the age of climate change", *Ecological Economics*, Volume 84, no. , Pages 37–48

Chirif A and Cornejo M, 2009, *Imaginario e Imágenes de la época del caucho: Los sucesos del Putumayo*, CAAAP, Lima.

Martinez-Alier, J 1987, *Ecological Economics: Energy, Environment and Society*, Blackwell Publishers, UK

Martinez-Alier, J 2002, *The Environmentalism of the Poor A Study of Ecological Conflicts and Valuation*. Edward Elgar, UK.

Millennium Ecosystem Assessment, 2005. *Living Beyond Our Means: Natural Assets and Human Well-Being*. Island Press, Washington, D.C.

Mourato, Susana and Smith, J, 2004, "[Can carbon trading reduce deforestation by slash-and-burn farmers? Evidence from the Peruvian Amazon](#)" In: Pearce, David and Pearce, Corin and Palmer, Charles, (eds.) *Valuing the Environment in Developing Countries*. Edward Elgar Publishing, Cheltenham, UK, 358-376.

Navrud, S and Strand, J, 2013, *Valuing Global Public Goods: A European Delphi Stated Preference Survey*

of *Population Willingness to Pay for Amazon Rainforest Preservation*. World Bank Working Paper, viewed 04 September 2015, <https://openknowledge.worldbank.org/handle/10986/16854>

Ostrom, E., Gardner, R. and Walker, J 1994, *Rules, games, and Common-pool resources*, University of Michigan Press, USA.

Ostrom, E, 2009, *Beyond Markets and States: Polycentric Governance of Complex Economic Systems*. Prize Lecture, Nobel Foundation, viewed 22 May 2014, <http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/ostrom-lecture.html>

Pagiola, S, Arcenas, A and Platais, G.2005 “Can Payments for Environmental Services Help Reduce Poverty? An Exploration of the Issues and the Evidence to Date from Latin America”, *World Development*, vol. 33, no. 2, pp., 237–253.

Pauli, G, 2010 *The blue economy*, Zeri Foundation, USA.

Pauli, G., 2017, Plan A for the Argentinian Economy, Zeri Foundation, USA.

Pearce, DW 1993, *Economic values and the natural world*. The MIT Press, USA.

Pearce,D, Markandya, A.and Barbier, E 1989, *Blueprint for a Green Economy* Earthscan, UK.

Pearce, D., 2003, “Sustainable forestry in the tropics: pace or folly?” *Forest Ecology and Management*. Vol.172. Issues 2-3, pp.229-247.

Perrings, C, Mäler, K-G, Folke, C, Holling, CS and Jansson, B-O (eds.) 1995, *Biodiversity loss. Economic and Ecological issues*, Cambridge University Press, USA.

Perrings, C 1994, *Ecology, economy and environment*, Kluwer Academic, Dordrecht, Boston, USA.

Peters, CM, Gentry, AH and Mendelsohn, RO 1989, “Valuation of an Amazonian rainforest”, *Nature* vol. 339, pp.655-656.

Randall A, Kramer D and Mercer E, 1997, “Valuing a Global Environmental Good: U.S. Residents' Willingness to Pay to Protect Tropical Rain Forests”, *Land Economics*. University of Wisconsin Press Vol. 73, No. 2, pp. 196-210.

Reaka-Kudla, M, Wilson DE and Wilson EO (Eds.) 1997, *Biodiversity II*, Joseph Henry Press, Washington D.C.

Reed, R 1997. *Forest dwellers, forest protectors: indigenous models for international development*. Allyn and Bacon, Boston, USA.

Rolfe, J, Bennett, J. and Louviere, J, 2000, “Choice modelling and its potential application to tropical

rainforest preservation” *Ecological Economics* Vol. 35, pp. 289-302.

Sachs, J, 2006, *The end of poverty: economic possibilities for our time*, Penguin Books, Nueva York, USA.

Salo M, Siren A and Kalliola R 2014, *Diagnosing Wild Species Harvest: Resource Use and Conservation*. Academic Press, UK.

Scheufele, G. and Bennett, J, 2012, “Valuing ecosystem resilience”, *Journal of Environmental Economics and Policy*, vol.1, pp.18-31.

Sen, A and Nussbaum, M 1993, *The quality of life and The Capabilities approach*. The Oxford University Press, New York, USA.

SIAMAZONIA, 2013, *Zonificación Ecológica Económica. Sistema de información de la diversidad biológica y ambiental de la Amazonía Peruana*.

Tacconi, L 2012, “Redefining payments for environmental services”, *Ecological Economics*, vol. 73, no. 1, pp. 29–36.

Thorp, R. 1996, *Gestion Economica y Desarrollo en Peru y Colombia*. Edited by Universidad del Pacifico. Lima.

Tietenberg, T. 2006, *Environmental and natural resource economics*. 7th ed. A. Wesley, USA.

United Nations, 1992, *Convention on Biological Diversity*, viewed 22 May 2013, <<http://www.cbd.int/convention/t+xt/>>

UNDP, 2017, *Population Division – World Population Prospects 2017*, viewed 4 May 2017,

<<https://esa.un.org/unpd/Graphs/Probabilistic/POP/TOT>>

United Nations Environment Program and Amazon Cooperation Treaty Organization 2008, *Environment Outlook in the Amazonia - GEO Amazonia*, Universidad del Pacifico, Lima.

United Nations Environment Programme 1995, *Global Biodiversity Assessment*, Cambridge University Press, UK.

United Nations -IPCC 2014. 5th Assessment Report “Mitigation of Climate Change”, Working Group III. Chapter 11: Agriculture, Forestry and other Land Use, viewed 22 May 2015, <<https://www.ipcc.ch/report/ar5/>>

United States Agency for International Development 2005, *Fragile States Strategy*, USAID, Washington DC.

Valqui, M., Feather, C. and Espinoza, R 2014, *Haciendo visible lo invisible. Perspectivas indígenas sobre la deforestación en la Amazonia Peruana*, Forest Peoples Programme and AIDSESP (Asociación Interétnica de Desarrollo de la Selva Peruana). Lima, Perú.

Winfrey, R, Gross, B and Kremen, C. 2011 “Valuing pollination services to agriculture”. *Ecological Economics* vol. 71, pp. 80–88.

World Bank, 2006, *Peru Country Environmental Assessment*, Chapter 8.

Zilberman, D. 2008 “When could payments for environmental services benefit the poor?”, *Environment and Development Economics* 13(03):255-278 · June 2008