

**Instructor:** Dr. Elías Cisneros; **Email:** TBA; **Office:** TBA; **Office hours:** TBA;

### **Introduction**

What are the drivers of deforestation?

What are the direct and indirect consequences of forest loss?

How to efficiently reduce deforestation?

This seminar introduces to the theoretical concepts of land-use change and deforestation and catches up on the up-to date empirical research that investigates the economic and political causes of deforestation. In addition, this course will review the applied econometric literature that evaluates the effectiveness of forest conservation strategies. New empirical methods are introduced that have recently gained prominence in the empirical evaluation literature of location based (spatial) policies.

### **Course objectives:**

- Introduce to the literature on deforestation and forest conservation
- Advance the analytical skills to evaluate empirical research papers
- Learn how to judge the effectiveness and potential efficiency of forest conservation policies and programs
- Introduce basic concepts of scientific writing
- Train students in scientific writing
- Train presentation skills

### **Topics:**

(1) Theoretical concepts; (2) Overview on policy instruments; (3) Overview on evaluation strategies; (4) Political causes; (5) Consequences; (6) Incentive policies; (7) Disincentive policies

### **Pre-requisites**

The seminar targets advanced students of economics. Successful completion of an Intermediate Econometrics course is required.

### **Methods of instruction**

This course is a writing course. Each student is required to choose a paper from the list below, which will constitute the primary literature of the seminar paper and has to be presented in the block meeting. Students are required to search for additional literature and discuss the findings of the primary literature within the context of further papers.

### **Requirements and grading:**

There will be twelve problem sets and two exams. Grades will be calculated based upon the following weights: Class participation (30%), research paper (40%), presentation (30%).

## Organization

### Schedule:

	<b>Event</b>	<b>Date</b>	<b>Time</b>
Meeting	Introduction	TBA	TBA
	Application via StudIP closes	TBA	TBA
	Self-selection into papers	TBA	TBA
	Registration on FlexNow opens	TBA	TBA
Meeting	Scientific writing	TBA	TBA
	Registration on FlexNow closes	TBA	TBA
	Submit progress report	TBA	TBA
	Submit progress report slides	TBA	TBA
Meeting	Progress report	TBA	TBA
	Send interesting tables	TBA	TBA
Meeting	Regression tables	TBA	TBA
	Paper submission deadline	TBA	TBA
	Send slides & video	TBA	TBA
Meeting	Block seminar	TBA	TBA
	1-on-1 evaluation meetings	TBA	TBA

### Course requirements:

- **Attendance to all meetings is obligatory**
- Submission of a progress report (and presentation at the progress report meeting)
- Submission of the final seminar paper (and recorded presentation + presentation during the block seminar )

### Progress report:

- 2-page-exposé, and list of references
- Exposé includes: research question, motivation, methodology and outline (structure of paper)
- Upload to Canvas

### Progress report presentations:

- Small groups of 2-3
- Each student has 5 minutes to present and another 5 minutes for discussion, prepare short presentation of 3 slides (1. research question, 2. structure, 3. references)
- Schedule:
 

Group A	TBA	TBA
Group B	TBA	TBA
Group C	TBA	TBA

**Seminar paper:** Submit according to the following rules:

1. Paper is written in english
2. Submit 1 electronic copy of about 15 pages + Appendix;  
Send a PDF file directly to TBA; valid only upon receiving a confirmation email
3. Motivate your topic at the beginning
4. Briefly summarize your primary literature and discuss at least one central result of the paper, also providing all relevant technical details
5. Make sure your interpretation of the empirical results is correct
6. Find additional literature, contrast it to your main paper, discuss their implications and draw your own conclusion
7. Include a list of references and an appendix with the main statistical tables

**Seminar paper presentation:**

- A) A 20-minutes presentation according to the following rules:
1. Present the research question of your seminar paper
  2. Tell us why it is relevant/interesting
  3. Do not go through theoretical models, if necessary, sketch the main argument shortly
  4. Explain the main empirical approach of your primary literature (also referring to an estimating equation)
  5. Select the main result (e.g. one table), show it and explain it in detail
  6. Summarize further results and main types of robustness checks only shortly
  7. Tell us at least one thing that you liked/disliked about the primary paper
  8. Use about 15 slides (do not overload them);
  9. Make sure that your presentation is not longer than 18 minutes (you will have 20 minutes for your presentation; after that you will be stopped)
  10. 30 min discussion per topic
  11. Upload your presentation to the Canvas 3 days before your presentation.
- C) Active participation in the seminar:
1. Based on the presentation, prepare (write down) 3 questions that you would like to ask the presenter
  2. After each presentation, randomly chosen students will be required to ask questions
  3. Participate in a discussion

**Introductory reading (Not eligible for term papers!)**

- **Theoretical concepts:** Angelsen, A. (2007): Forest cover change in space and time: combining the von Thünen and forest transition theories. Policy Research Working Paper Series 4117, The World Bank, Washington, DC
- **Early research on causes:**  
Pfaff, A. S. (1999): What drives deforestation in the Brazilian Amazon? Evidence from satellite and socioeconomic data. *Journal of Environmental Economics and Management* 37 (1): 26–43
- **Overview on policy instruments:**  
Lambin, E. F., P. Meyfroidt, X. Rueda, A. Blackman, J. Börner, P. O. Cerutti, T. Dietsch, L. Jungmann, P. Lamarque, J. Lister, N. F. Walker, and S. Wunder (2014): Effectiveness and synergies of policy instruments for land use governance in tropical regions. *Global Environmental Change* 28 (0): 129–140

– **Overview on evaluation strategies:**

Ferraro, P. J. and M. M. Hanauer (2014): Advances in measuring the environmental and social impacts of environmental programs. *Annual Review of Environment and Resources* 39 (1): 495–517

– **Introduction to matching estimation:**

Ho, D. E., K. Imai, G. King, and E. A. Stuart (2007): Matching as nonparametric preprocessing for reducing model dependence in parametric causal inference. *Political Analysis* 15 (3): 199–236

– **Map on Global Forest Change:**

Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend (2013): High-resolution global maps of 21st-century forest cover change. *Science* 342 (6160): 850–853

## Topics and corresponding papers

### 1. Political causes

- Burgess, R., M. Hansen, B. A. Olken, P. Potapov, and S. Sieber (2012): The political economy of deforestation in the tropics. *The Quarterly Journal of Economics* 127 (4): 1707–1754.
- Alesina, A., C. Gennaioli, and S. Lovo (2019): Public goods and ethnic diversity: Evidence from deforestation in Indonesia. *Economica* 86 (341): 32–66.
- Pailler, S. (2018): Re-election incentives and deforestation cycles in the Brazilian Amazon. *Journal of Environmental Economics and Management* 88: 345–365.

### 2. Consequences

- Rasolofoson, R. A., M. M. Hanauer, A. Pappinen, B. Fisher, and T. H. Ricketts (2018): Impacts of forests on children’s diet in rural areas across 27 developing countries. *Science Advances* 4 (8): eaat2853.
- Macdonald, A. J. and E. A. Mordecai (2019): Amazon deforestation drives malaria transmission, and malaria burden reduces forest clearing. *Proceedings of the National Academy of Sciences* 116 (44): 22,212–22,218.

### 3. Incentive policies

- Alix-garcia, J. M., K. R. E. Sims, and P. Yañez-pagans (2015): Only one tree from each seed? Environmental effectiveness and poverty alleviation in Mexico’s payments for ecosystem services program. *American Economic Journal: Economic Policy* 7 (4): 1–40.
- Carlson, K. M., R. Heilmayr, H. K. Gibbs, P. Noojipady, D. N. Burns, D. C. Morton, N. F. Walker, G. D. Paoli, and C. Kremen (2017): Effect of oil palm sustainability certification on deforestation and fire in Indonesia. *Proceedings of the National Academy of Sciences* 115 (1): 121–126.
- Jayachandran, S., J. De Laat, E. F. Lambin, C. Y. Stanton, R. Audy, and N. E. Thomas (2017): Cash for carbon: A randomized trial of payments for ecosystem services to reduce deforestation. *Science* 357 (6348): 267–273.

### 4. Disincentive policies

- Börner, J., K. Kis-katos, J. Hargrave, and K. König (2015): Post-crackdown effectiveness of field-based forest law enforcement in the Brazilian Amazon. *PLoS ONE* 10 (4): 1–19.
- Arima, E. Y., P. Barreto, E. Araújo, and B. Soares-filho (2014): Public policies can reduce tropical deforestation: Lessons and challenges from Brazil. *Land Use Policy* 41 (0): 465–473.
- Canavire-Bacarreza, G. and M. M. Hanauer (2013): Estimating the impacts of Bolivia’s protected areas on poverty. *World Development* 41: 265–285.
- Nolte, C., A. Agrawal, K. M. Silvius, and B. S. Soares-filho (2013): Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. *Proceedings of the National Academy of Sciences* 110 (13): 4956–4961