NRE 501: Institutions and Resources: Theory and Methods Research Seminar
International Forestry Resources and Institutions
University of Michigan- FALL 2012
Meeting Times: Friday 12:00-3:00

Instructor:
Arun Agrawal, 4032 Dana, Phone: 734 647 5948: Email: arunagra@umich.edu
Office Hours: Wednesday 11:00-1:00 and by appointment

Guests and Visitors:
Catherine Tucker, Indiana University, Bloomington (IFRI background and research)
Pete Newton (lectures, field work/practical sessions)
Wen Liang (Database instruction)
Julie England (Database instruction)

Weekly Schedule: THIS IS A 10 -WEEK COURSE

Please note that lecture sessions will typically be on Fridays from 1200-3:00 pm and fieldwork will be on three Saturdays from 9:30 am- 3:30 pm at the Arboretum. We will arrange for lunch during the Saturday field work sessions

Course Expectations

The course will focus on 3 learning areas: instruction for two will occur inside the classroom and for one, it will be based on field activities

1. Concepts and theories related to natural resource governance;
2. Approaches and methods related to natural resource governance;
3. Social and ecological data collection methods in relation to the analysis of coupled natural and human systems;

Completion of this course will enable students to engage in particular with the research carried out by the International Forestry Resources and Institutions research program, and also to adapt the theories, methods, and approaches relevant to other research efforts that seriously engage with the social, institutional, and ecological drivers of resource governance outcomes.

Learning Area 1 (concepts and theories) goals:
a) Introduce students to classical and other more recent writings on natural resource governance with a particular focus on forests, introduce work on collective action and to different approaches to understanding research on renewable natural resource governance. (weeks 1-3); Identify and discuss the theoretical bases and concepts of collective action theory,

political ecology, common property theory, coupled natural and human systems, feminist environmentalism, sustainability science, and natural resource policy analysis;
b) Provide an introduction to the major approaches to research design and key elements of proposal development. Identify the common pitfalls in designing surveys, and how to avoid them (week 4-5)
c) Examine the relevance of specific causal factors as illustrated in existing research on natural resource governance, especially those related to institutions, property rights, enforcement, social capital, group size and heterogeneity (week 6-7);
c) Investigate the relationships between theoretical foundations and practical applications as illustrated through market based interventions and payments for environmental services, changes in environmental attitudes, and tradeoffs and synergies among different outcomes of resource systems (weeks 8-10).

2. Learning Area 2 (analytical approaches and methods) goals:
a) Learn about research design and hypothesis testing (week 5);
b) Introduction to survey methods for data collection (week 6);

3. Learning area 3 (social and ecological data collection) goals:
a) Learn methods for measuring forest conditions and collecting data on forest conditions (weeks 6-7).
b) Learn methods for collecting relevant social data on factors that influence natural resource conditions (week 8)

Introduction

This research seminar is designed for University of Michigan graduate students in diverse disciplines who are interested in multi-method research techniques for understanding local level resource governance (with a focus on forests), and for international researchers interested in learning data collection and analytical methods that can be applied to understand natural resource management. The topics to be covered during the semester will include background readings related to our efforts to assess institutional arrangements, resource conditions, the activities of social groups, and their impact on resource conditions over time. We will use the concrete example of the International Forestry Resources and Institutions (IFRI) research program throughout the course.

All class members will work closely together so that both learn how to apply theory, do fieldwork, record fieldwork data, and analyze data. Students will be responsible for writing the final report for the 2012 training site and will participate in the discussion of their plans and contribute ideas to the development of future research programs in several countries.

In addition to the stated classroom time for all participants, we have a number of field trips and guided meetings, most of them on Saturdays, for social and ecological data collection, data analysis, and writing.

Logistics

The course schedule is intense and complex. Because we have so much to cover in such a short period of time, please arrive to class and other course activities a few minutes <u>before</u> they start, especially fieldwork events. (If the weather is poor, we advise you to arrive even earlier.) As with all fieldwork, we will encounter unforeseen challenges. <u>Cooperation and patience are fundamental.</u>

Course Requirements and Grading

1. <u>Participation, Field Notes (20%):</u>
   Participate in fieldwork and class discussions. Complete assignments given in class. Write field notes following field visits and household interviews. Post field notes to the online course site by 10:00 a.m. the following Monday

2. <u>Article Presentation (25%):</u>
   Present an assigned article orally to the class (15 minute maximum). The presentation should identify the author's central question, research design, methods, data, and findings. The presentation must identify at least one way the study could be improved and evaluate its relevance for the ongoing case study.

3. <u>Midterm Examination (30%):</u>
   Complete a take-home midterm that covers all the material assigned in class.

4. <u>Survey design and implementation (25%):</u>
   Be responsible for designing a short survey in teams of two individuals. Administer it to five respondents. Report on your work.

Syllabus at a glance		
Class time	Lesson Objectives	Activities
Regular Class Sessions		
Week 1 Sept. 7, 12:00-3:00	Introduction, basic review of renewable resources	Readings, lecture
Week 2 Sept. 14, 12:00-3:00	Foundations of resource governance: Coll. action theory	Lecture, Readings, class discussion
Week 3 Sept. 21 – 12:00-3:00	Resource governance Approaches	Lecture, presentations, discussion
Week 4 Sept. 28 – 12.00-3.00	Research design and proposal development for resource governance	Guest Lecture (Pete Newton), presentations, discussion
Week 5 Oct. 5, 12.00-3.00	Basics of survey questionnaire development	Lecture, examples
Week 6 Oct. 12, 12:00-3:00	Explaining natural resource outcomes-1	Lecture, presentations, discussion
Week 7 Oct, 19, 12:00-3:00	Explaining natural resource outcomes-2	Lecture, presentations, discussion
Week 8 Oct. 26, 12:00-3:00	Theory and practice–PES, REDD	Guest Lecture (Pete Newton), presentations, discussion
Week 9 Nov. 2, 12:00-3:00	Theory and practice – Changing attitudes and subjectivities	Lecture, readings, discussion
Week 10 Nov. 9, 12.00-3.00	Theory and Practice – Multiple outcomes	Lectures, readings, discussion
Field Sessions		
Week 6 Oct. 13, 9:30-3:30	Forest visit, site overview	Field visit, basic mensuration techniques
Week 7 Oct. 20, 9.30-5.30	Forest fieldwork, ecological data, forest plots	Basic mensuration, forest plots, field measurements
Week 8 Oct, 27, 9.30-5.30	Field work, survey questionnaire, social data	Basic mensuration, field measurement, survey data
Computer and Database Sessions		
Session 1, Oct 11th 7-9:30pm	Data entry and management-1	Guest lecture (Wen Liang, Julie England)
Week 2, Oct 12th, 3:30-5:30	Data entry and management-2	Guest lecture (Wen Liang, Julie England)

Week 1, Session 1 (Sept. 7): Introduction
IFRI Class Introduction

Class Themes
Introduction to course, instructors and class participants; course goals and responsibilities; syllabus, initial lecture

Assignment
Participants will be assigned IFRI forms for discussion in future class periods.

Readings
Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press. Chapters 1-3. (102 pp).

Wollenberg, E., L. Merino, A. Agrawal, E. Ostrom (2007). "Fourteen years of monitoring community-managed forests: learning from IFRI's experience." International Forestry Review **9**(2): 670-684.

Recommended
Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-Being: Synthesis. Island Press: Washington, DC. Online: http://www.maweb.org/en/products.aspx

Relevant Websites
FAO: http://www.fao.org/forestry/index.jsp
Forest Trends: http://www.forest-trends.org/
IUCN: http://iucn.org/themes/forests/index.html

Week 2 – (Sept. 14): Foundations of resource governance: Collective action theory

Class themes
Theoretical foundations of collective action
Common property and institutional analysis
Framework for forest management research and IFRI conceptual model
Introduction to different property rights regimes (e.g. private, common property, state etc.)
Local management institutions
Monitoring and rule enforcement

Class assignment
Discuss the relationship between common property management and the problem of collective action

Readings
--Ostrom, Elinor. 1999. "Institutional Rational Choice: An Assessment of the IAD Framework". In Paul Sabatier, ed. *Theories of the Policy Process*. Boulder, CO: Westview Press.
--Arun Agrawal, Ashwini Chhatre, and Rebecca Hardin. 2008. Changing Governance of the World's Forests. *Science*.
--Ashwini Chhatre and Arun Agrawal. 2008. Forest Commons and Local Enforcement. PNAS.
--Agrawal, 2001 A. Agrawal, Common property institutions and sustainable governance of resources, World Development 29 (2001) (10), pp. 1649–1672.
--Berkes, F., D. Feeny, B. J. McCay, and J. M. Acheson. The benefits of the commons. *Nature* 340: 91-93.

Suggested readings
--North, DC. 1990. Institutions, Institutional Change and Economic Performance, Cambridge University Press, New York (1990).
--Ostrom, Elinor. 1998. The Institutional Analysis and Development Approach. In Designing Institutions for Environmental and Resource Management, eds. Edna Tusak Loehman and D. Marc Kilgour. Cheltenham, UK: Edward Elgar Publishing, pp. 68-90.
--Fehr and Gächter, 2000 E. Fehr and S. Gächter, Cooperation and punishment in public goods experiments, American Economic Review **90** (2000) (4), pp. 980–994.
--Lam, 1998 W.F. Lam, Governing irrigation systems in Nepal: Institutions, infrastructure, and collective action, ICS Press, Oakland, CA (1998).
--Ostrom, E. (2003). "How Types of Goods and Property Rights Jointly Affect Collective Action." Journal of Theoretical Politics **15**(3): 239-271.
--Libecap, G. D. (1995). The Conditions for Successful Collective Action. Local Commons and Global Interdependence. Heterogeneity and Cooperations in Two Domains. R. O. Keohane and E. O. Ostrom. London, Sage Publications**:** 161-190.

Week 3 (Sept. 21): Resource governance approaches: Common Property Theory, Coupled Natural and Human Systems / Social-Ecological Systems, Natural Resource Policy Analysis – Institutions and governance based approaches

Assignments
1. Students will collect and review one/or two case studies using political ecological, common property, or CNH framework for analysis
2. Identify what you see as the major differences between work on CPR theory, coupled natural and human systems, Natural resource policy analysis

Reading
--Schlager, E. and E. Ostrom (1992). "Property-rights regimes and natural resources: a conceptual analysis." Land Economics **68**(3): 249-262.
--McKean, M. A. (2000). Common Property: What Is It, What Is It Good for, and What Makes It Work? People and Forests: Communities, Institutions, and Governance. C. C. Gibson, M. A. McKean and E. Ostrom. Cambridge, MA, MIT Press**:** 27 - 55.

--Liu, J., T. Dietz, et al. (2007). "Complexity of coupled human and natural systems." <u>Science</u> **317**: 1513-1516.
--McPeak, J. G., D. R. Lee, et al. (2006). "Introduction: The dynamics of coupled human and natural systems." <u>Environment and Development Economics</u> **11**: 9-13.
--Schlager, Edella, and William Blomquist. 1996. "A Comparison of Three Emerging Theories of the Policy Process." *Political Research Quarterly* 49(3):631-50.

Recommended Readings
--Goldman, Mara. 2003. Partitioned nature, privileged knowledge: Community-based
      conservation in Tanzania. *Development and Change* 34(5): 833-62.
--Meinzen-Dick, Ruth and Margreet Zwarteveen. 1998. Gendered participation in water
      management: Issues and illustrations from water user's associations in South Asia.
      Agriculture and Human Values 15: 337-345.
--Ostrom, E. (2009). "A General Framework for Analyzing Sustainability of Social-Ecological
      Systems." <u>Science</u> **325**(5939): 419-422.
--Sundar, Nandini, "Unpacking the 'Joint' in Joint Forest Management," *Development and
      Chang*e, 31, no.1 (January 2000): 255-60.

Week 4 (Sept. 28): Research design and proposal development
Readings:
-Sutherland, William J. (2006) Planning a research programme Centre for Ecology, Evolution and Conservation, School of Biological Sciences, University of East Anglia, Norwich NR4 7TJ, UK

Week 5: (Oct. 5): Basics of survey data collection and questionnaire development
Readings:
-Castellanos , Edwin J., Catherine Tucker, Catherine., et al. (2012) Assessing the adaptation strategies of farmers facing multiple stressors: Lessons from the Coffee and Global Changes project in Mesoamerica
-Tucker, Catherine. (Forthcoming 2013) Institutional Evolution, Forest Conservation, And Rapid Change In Rural Honduras Forthcoming in *Human-Environment Interactions*, E.S. Brondizio and E. F. Moran, eds.Springer Science + Business Media Dordrecht 2013

<u>Week 6 (Oct. 12): Explaining Natural Resource Governance Outcomes: Institutions and Social Capital)</u>

<u>Class theme</u>
1. Presentation and discussion on social capital (social networks, habits of cooperation and bonds of reciprocity, trust etc.); Social capital and natural resource management (forest commons)
2. Research design and data collection
3. Applying research question development to selected site and data collection

Assignments:
1. Does social capital play an independent role in influencing resource management outcomes?

2. Identify one or two research questions around which forest and social survey data can be analyzed, and the site report be written up for the fieldwork you are conducting

Readings
--Adger, N. (2003) Social Capital, Collective Action, and Adaptation to Climate Change. Economic Geography 79(4): 387–404.
--Pretty, J. (2003) Social Capital and the Collective Management of Resources. Science, Vol 302, 12 December 2003.
--Ostrom, E. (2000). Collective Action and the Evolution of Social Norms. Journal of Economic Perspective, 14/3: 137-158.
--Woolcock. Michael. 1998. Social capital and economic development: Toward a theoretical synthesis and policy framework. *Theory and Society* 27: 151-208.

Suggested readings:
--Coleman, J.S. (1987). Norms as Social Capital. In G. Radnitzky and P. Bernholz, (eds.) Economic Imperialism. The Economic approach applied outside the field of Economics. New York: Paragon House, 133-155.
--Putnam, R. D. (1993). Making Democracy Work: Civic Traditions in Modern Italy. USA: Princeton University Press.
--Sorensen, C. (2000). Social Capital and Rural Development: A discussion on Issues. Social Capital Initiative Working paper # 10. The World Bank, Social Development Department, Environmentally and Socially sustainable Development Network.
--Uphoff, Norman (1999). Understanding Social Capital: Learning from the Analysis and Experience of Participation.
--Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. *The American Journal of Sociology* 91(3): 481-510
--Granovetter, M. 1973. The strength of weak ties. *The American Journal of Sociology* 78(6): 1360-80.

Mid Term Examination – Students receive questions for the Examination in class (responses due on Friday next week by 5:00 P.M.)

Week 7 (Oct. 19): Explaining Natural Resource Governance Outcomes: Property Rights, Enforcement, Group Size and Heterogeneity
Themes
Role of group size, group heterogeneity, and enforcement in improving natural resource governance outcomes

Assignment:
Propose two hypotheses that can be tested using data on how property rights, group size, or other socio-economic variables will influence renewable resource outcomes; what data will be necessary to test these hypotheses?

Readings:

--Nagendra, H. (2007). "Drivers of reforestation in human-dominated forests." <u>Proceedings of the National Academy of Sciences</u> **104**(39): 15218-15223.
--Gibson, C. G., J. T. Williams, et al. (2005). "Local enforcement and better forests." <u>World Development</u> **33**(2): 273-284.
--Van Laerhoven, F. (2010). "Governing community forests and the challenge of solving two-level collective action dilemmas--A large-N perspective." <u>Global Environmental Change</u> **20**(3): 539-546.
--Varughese, G. and E. Ostrom (2001). "The Contested Role of Heterogeneity in Collective Action: Some Evidence from Community Forestry in Nepal." <u>World Development</u> **29**(5): 747-766.
--Hayes, T. (2006). "Parks, people and forest protection: An institutional assessment of the effectiveness of protected areas." <u>World Development</u> **34**(12): 2064-2075.

Week 8 (Oct. 26): Theory and Practice: Market based approaches and ecosystem Services

--Theoretical Foundations, Practical Applications--Ecosystem Services: Biodiversity conservation, local livelihoods (equity, sustainability), Carbon Sequestration

Readings:
--Smith, J. and S. J. Scherr (2003). "Capturing the value of forest carbon for local livelihoods." <u>World Development</u> **31**(12): 2143-2160.
--Nelson, E., S. Polasky, et al. (2008). "Efficiency of incentives to jointly increase carbon sequestration and species conservation on a landscape." <u>Proceedings of the National Academy of Sciences of the United States of America</u> **105**(28): 9471-9476.
--Phelps, J., E. L. Webb, et al. (2010). "Does REDD plus Threaten to Recentralize Forest Governance?" <u>Science</u> **328**(5976): 312-313.

Suggested Readings:
--Tallis, H., P. Kareiva, et al. (2008). "An ecosystem services framework to support both practical conservation and economic development." <u>Proceedings of the National Academy of Sciences of the United States of America</u> **105**(28): 9457-9464.
--Klooster, D. and O. Masera (2000). "Community forest management in Mexico: carbon mitigation and biodiversity conservation through rural development." <u>Global Environmental Change-Human and Policy Dimensions</u> **10**(4): 259-272.

Week 9 (Nov. 2): Theory and practice: Changing attitudes and subjectivities
How necessary are changes in people's attitudes for effective resource governance to occur?

Readings:
Bose, P., B. rts, H. Dijk. 2011. Forest governmentality: A genealogy of subject making of forest dependent scheduled tribles in India. *Land Use Policy* 29: 664-673.
Cepek, M. L. 2011. Foucault in the forest: Questioning environmentality in Amazonia. *American Ethnologist* 38(3): 501-15.

Rutherford, S. 2007. Green governmentality: insights and opportunities in the study of nature's rule. *Progress in Human Geography* 31(3): 291-307.

Week 10 (Nov. 9): Theory and practice: Multiple outcomes
Do resource systems always produce multiple outcomes? When are there tradeoffs vs synergies across these outcomes? How can we understand and manage tradeoffs?

Readings:
--Chhatre, A. and A. Agrawal (2009). "Trade-offs and synergies between carbon storage and livelihood benefits from forest commons." <u>Proceedings of the National Academy of Sciences of the United States of America</u> **106**(42): 17667-17670.
Persha, L., **A. Agrawal**, and A. Chhatre. 2011. Social and Ecological Synergy: Local Rulemaking, Forest Livelihoods and Biodiversity Conservation. *Science* **331**(6024): 1606-08.

FIELD SESSIONS
All field sessions will be on Saturdays and will last from 9:30-3:30. Field data collection will occur in the University of Michigan Arboretum.
Lunch will be provided ☺

<u>**Week 6**</u> (Oct.6, 9:30am - 3:30 pm): **Initial field Visit and familiarization with the site**
Special Note: Meet at SNRE – 440 Church Street at 9:15 a.m. Bring a field notebook and a pen or pencil.

Assignment
Write up one page of field notes and post to C-Tools by 10:00 a.m. on Monday.

Readings
--*IFRI Field Manual* Forms: Site Overview, Settlement, and User Group.
--Nelson, F., E. Collins, et al. (2008). "Preservation or degradation? Communal management and ecological change in a southeast Michigan forest." <u>Biodiversity and Conservation</u> **17**(11): 2757-72.

<u>**Week 7: (**</u>Oct. 13, 9:30am-3:30**)** *Forest Mensuration*
Special Notes: Field plot data collection work in the forest site.

Assignments
Graduate students are responsible for turning in legible, completed plot forms from their group's work in the forest.

<u>**Class Themes**</u>
How IFRI measures forests
Forest mensuration techniques (Visual demonstration for using different pieces of equipment)

Readings for class meeting
Barbour, M. G. et al. 1987. "Chapter 9 - Methods of Sampling the Plant Community." Terrestrial Plant Ecology. Menlo Park: Benjamin/Cummings.

Cox, G. 1990. "Chapter 11 - Population and Community Structure: Quadrate Sampling Techniques" and "Chapter 31 - Measurement of Species Diversity." Laboratory Manual of General Ecology.

Dickmann, D.I. and Leefers, L.A. 2003. <u>The Forests of Michigan</u>. The University of Michigan Press, Ann Arbor. [Ch.1, The Forests of Michigan Today (pp 1-30) and Ch. 2, The Ecology of Michigan's Forests (pp 31-51).]

Dowd, Kathleen. "Preparation for the Fieldwork in the Forest." Things to bring for IFRI fieldwork. Unpublished paper.

Week 8 (October 20, 9:30-3:30)**: Field work: Surveys**
Special notes: Interviews with site users about how they use the forest and the location

Assignment:
Write up one page of field notes and post to ctools by Monday of next week

Data Sessions: TBA