



THE SCHOOL
FOR FIELD STUDIES

Ecosystems and Livelihoods

SFS 3810

Syllabus

4 credits

The School for Field Studies (SFS)
Center for Environmental Research in Conservation and Development Studies
Siem Reap, Cambodia

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.

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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 they may present. In other words, this is a field program, and the field can change.

Course Overview

The mighty Mekong (derived from Mae Kongkea, meaning ‘big water’), one of Southeast Asia’s most productive and influential rivers, originates high in the Tibetan plateau and weaves south through China, Burma, Thailand, Laos, and Cambodia, finally reaching its terminus in the delta of Vietnam. The Mekong drains an area larger than 310,000 square miles and sheds 110 cubic miles of water into the South China Sea every year.

By world standards, the Mekong catchment and the Tonle Sap Lake are immense, producing over 2.5 million tons of wild fish per year, or roughly two percent of the entire world’s catch. The Mekong River is second only to the Amazon River in biodiversity, hosting hundreds of fish species as well as a plethora of bird, reptilian, and mammal species. As the lower Mekong Basin becomes increasingly populated by humans, the river's resources are constantly being stretched – very soon sustainability may no longer be viable, and the health and livelihoods of millions of people may be in jeopardy. As the extraction of natural resources by national and international actors intensifies in the region, the Mekong ecosystems must adapt to new conditions forced upon them by the growing human footprint.

This course focuses on the human landscape that envelops the natural ecosystems of the lower Mekong Basin. We examine the high levels of dependence upon natural resources by local populations and critical threats to various ecosystems. Students explore various rural livelihood strategies and discover a spectrum of adaptations to changing environmental conditions. This course also analyzes attempts by international and national actors to find a sustainable balance between human needs and preserving biodiversity, particularly in the fields of ecotourism and community-based natural resource management.

A variety of ecosystems will be visited in order to provide regional themes of learning in this course:

- The Tonle Sap Lake and various terrestrial sites in the Angkor Basin around Siem Reap, Cambodia, a moderately sized urban area in close proximity to the Angkor temple complex.
- The lowland evergreen forests on the sandstone massif of Phnom Kulen National Park.
- The braided Mekong River in Kratie province.
- The deciduous dipterocarp forests of northern Cambodia.
- The semi-evergreen rainforest complex of eastern Cambodia.

Learning Objectives

Students will draw on observations, classes, and field study to recognize major ecosystems of the lower Mekong basin and detail the relationship of human communities with the natural environment. By the end of the course, students should be able to articulate answers to questions related to the following broad themes:

- The diverse ecosystems of Cambodia
- The critical challenges to regional ecosystems, such as natural resource conflicts, degradation and overuse (e.g. fisheries, forests).

- The spectrum of rural livelihoods in Cambodia, the primary drivers of change in livelihood strategies, and ongoing adaptations to changing environmental conditions.
- The opportunities and challenges posed by community-based natural resource management and ecotourism initiatives.

Assessment

The evaluation breakdown for the course is as follows:

Assessment Item	Value (%)
1. Bee SWOT analysis	15
2. Stakeholder scenario exercise	10
3. Ecotourism analysis FEX	20
4. Comparative livelihoods FEX	20
5. Final exam	30
6. Class and field participation	5
TOTAL	100

Bee SWOT Analysis (15%)

As part of developing a global action plan for protecting insect pollinators in developing countries, you will be tasked with creating a SWOT analysis for implementing IPM (Integrated Pest Management) in order to reduce reliance on the use of neonicotinoids. For this assessment, you will complete the two SWOT templates and a one-page summary concluding with whether you believe this is a useful strategy to be implemented in developing countries.

Stakeholder Scenario Activity (10%)

This assessment requires no prior preparation. Students will be given a fictitious land use scenario and assigned the role of a stakeholder. Students will then come up with a position on the land use scenario from the perspective of their assigned stakeholder and debate with other stakeholders.

Ecotourism analysis FEX (20%)

This assignment will have both field and written components. Before class field trips to two ecotourism sites (Phnom Kulen and BeTreed), you will review Cambodian ecotourism case studies and identify the primary challenges and opportunities these programs face. You will use this data to prepare questions and points to observe while visiting the ecotourism sites.

Comparative livelihoods FEX (20%)

On several of our field trips, you will have the opportunity to question various community members about their livelihood strategies and levels of dependence upon natural resources. Before the first of these visits, we will discuss various themes to investigate while in the field. Some of the data may be gleaned through observation, but much of it will require interviewing community members. You will be assigned groups and will design and conduct various livelihood interviews, working with our Khmer translators. Regardless of which student group takes the lead, all students are responsible for recording interview data in field notebooks. You will use the data from two of these field interviews to write a comparative livelihood case study.

During the field trips, you will be both a tourist and an analyst—there will be an opportunity to interview assorted community members involved with the projects. Your field notes will be the basis of the data you will use in your analysis.

Final Exam (35%)

The final exam must be completed in 2 hours. They will be writing intensive. All exams are closed-book and conducted under normal exam conditions. You will be given time to study for these exams, including a review class period. You will be examined on what you have been taught in class and what you have been asked to read, so make sure you attend all lectures/field sessions and understand works from the required reading section.

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

Field Notebook – You will develop a comprehensive field notebook that documents and captures your on-the-ground learning experiences. This notebook should accompany you at all times in the field. Field notes and data from field exercises for our various courses can all be recorded in this notebook, in separate sections. We recommend you use a separate notebook for class lectures. During fieldwork, you might also take photographs or document your observations a GPS device. Make sure to link these data with your fieldnote and store everything in a single folder on your computer.

For papers, you are requested to use the APA citation system and a formal writing style. When referencing field notes and field observations use the following format:

Field notes: (Field interview with boat association representative, 2 October 2022)

Field observation: (Field observation in Jrei village, 7 November 2022)

Readings – You are expected to have read all the required articles and book chapters prior to each class. Information from required readings will be part of the course assessments. All readings are available as PDFs or from internet hyperlinks. The reading list might be updated or changed during the course of the semester and some readings that are initially listed as optional may be changed to required.

Plagiarism – Using the ideas and material of others without giving due credit is cheating and will not be tolerated. A grade of zero will be assigned if anyone is caught cheating or aiding another person to cheat actively or passively (e.g., allowing someone to look at your exam). All assignments unless specifically stated should be individual pieces of work.

Deadlines – Deadlines for written and oral assignments are instated for several reasons: They are a part of working life to which students need to become accustomed and promote equity among students. Deadlines allow faculty ample time to review and return assignments before others are due. Late assignments will incur a 10% penalty for each day that they are late. No assignment will be accepted after three days. Assignments will be returned after a one-week grading period.

Participation – Since we offer a program that is likely more intensive than what 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 program is mandatory because your actions can significantly affect the experience you and your classmates have while at SFS. Therefore, it is important that you are prompt for all land and water-based activities, bring the necessary equipment for field exercises and simply get involved.

Course Content

Type: **D:** Discussion, **FC:** Field Components, **GL:** Guest Lecture, **L:** Lecture, **O:** Orientation, **T:** Tutorial, **W:** Workshop

No	Title and outline	Type	Time (hrs)	Required Readings
EL1	Course Introduction	L	1.5	
Cambodia's forests: past, present & future				
EL2	Cambodian forest ecosystem types	L	1.5	
EL3	Traditional perceptions of forest	L	1.5	Work, C. (2017)
EL4	Deforestation in Cambodia (part 1)	L	1.5	Diepart and Schoenberger (2017)
EL5	Visit Kbal Spean's sacred carvings	FC	2.0	
EL6	Bees and agriculture	GL	1.5	
EL7	Briefing for Bee SWOT assignment	O	1.0	
EL8	Deforestation in Cambodia (part 2)	L	1.5	Gaughan et al. (2008)
Ecotourism in Cambodia: the search for sustainable livelihood alternatives				
EL9	Ecotourism & community-based ecotourism. Challenges for CBET.	L	1.5	Tegelberg (2010)
EL10	GIS tools in qualitative research	T	1.5	
EL11	Briefing for Ecotourism and Livelihoods FEX	O	1.0	
EL12	Visit Phnom Kulen	FC	3.0	
EL13	Visit Betreed	FC	2.0	Clements et al. (2014)
Ecosystem services				
EL14	Valuing nature and the use of ecosystem service mapping in spatial planning	L	1.5	Clements et al. (2010)
Community-based Natural Resources Management				
EL15	Concept and challenges of CBNRM in Cambodia	L	1.5	Dressler et al. (2010)
The Mekong River				
EL16	Mekong river hydrology & fish ecology	L	1.5	Winemiller et al. (2016)

No	Title and outline	Type	Time (hrs)	Required Readings
EL17	Visit Koh Pdao	FC	1.5	
Ethnic minorities livelihoods				
EL18	Cham community livelihoods	GL	1.5	
EL19	Interviews in Cham communities	FC	2.0	
EL20	Land conflicts affecting indigenous peoples	L	1.5	Leemann (2019) Mahanty and Milne (2016)
EL21	Livelihoods of indigenous peoples	FC	1.5	Padwe (2017)
EL22	Stakeholder scenario exercise	W	4	
Tonle Sap Lake: ecosystems and livelihoods on the Great Lake				
EL23	Part 1: Vegetation habitats of a flood pulse ecosystem	L	1.5	Arias et al. (2014)
EL24	Part 2: Livelihoods and governance challenges on the Tonle Sap	L	1.5	Jones and Sok (2015)
EL25	Visit Jrei village	FC	1.5	
EL26	Osiose on floating village livelihoods	GL	1.5	Weeratunge et al. (2010)
EL27	Interview with family at the floating village of Prek Toal	F	2.0	
Agrarian Dynamics				
EL28	Comparative agriculture: agroecology and farming practices in lowland and upland regions	L	1.5	Kong et al. (2021)
EL29	Guest lecture on the Mekong Delta landscape and livelihoods	GL	2.5	Kakonen (2008)
EL30	Visit restoration site	FC	2	
EL31	Agricultural commercialization	L	1.5	Baird & Fox (2015)
EL32	Labor Mobility and migration	L	1.5	Bylander (2013)
EL33	Final exam review		1.5	
EL34	Final exam		2.0	
	Total contact hours		58	

Reading List

1. Arias, M.E., Cochrane, T. & Elliott, V. (2014). Modelling future changes of habitat and fauna in the Tonle Sap wetland of the Mekong. *Environmental Conservation*, 41 (2), 165–175.
2. Baird I. & J. Fox (2015). How Land Concessions Affect Places Elsewhere: Telecoupling, Political Ecology, and Large-Scale Plantations in Southern Laos and Northeastern Cambodia. *Land*, 4, 436-453.
3. Bylander, M. (2013). Depending on the sky: environmental distress, migration and coping in rural Cambodia. *International Migration*, 1-13. International Organization of Migration.

4. Clements, T. John, A., Nielsen, K., An, D. Tan, S. & Milner-Gulland, E.J. (2010). Payments for biodiversity conservation in the context of weak institutions: Comparison of three programs from Cambodia. *Ecological Economics*. 69, 1283–1291.
5. Clements, T, Suon, S., Wilkie, D, & Milner-Gulland, E.J. (2014). Impact of protected areas on local livelihoods in Cambodia. *World Development* 64, 125–134.
6. Diepart, J.-C., & Schoenberger, L. (2017). Concessions in Cambodia: governing profits, extending state power and enclosing resources from the colonial era to the present. In K. Brickell & S. Springer (Eds.), *The Handbook of Contemporary Cambodia* (pp. 157–168). London and New York: Routledge.
7. Dressler, W., Busher, B. Schoon, Brockington, M., Hayes, T. Kull C., McCarthy, J. & Shrestha, K (2010). From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation* 37 (1), 5–15.
8. Gaughan, A. E., Binford, M.W., & J. Southworth. (2008). Tourism, forest conversion, and land transformations in the Angkor basin, Cambodia. *Applied Geography*, 29(2), 212-223.
9. Jones, R.W & Sok, S. (2015). Impacts and Implications of Deep Fisheries Reforms on the Governability of Small-Scale Fisheries in Tonle Sap Lake, Cambodia. In S. Jentoft & R. Chuenpagdee (Eds.), *Interactive Governance for Small-Scale Fisheries* (pp. 539-557), MARE Publication Series 13. Switzerland: Springer International Publishing.
10. Kakonen, M. (2008). Mekong Delta at the crossroads: More control or adaptation? *Ambio* 37(3), 205-212.
11. Kong, R., Castella, J.-C., Suos, V., Leng, V., Pat, S., Diepart, J.-C., Sen, R., & Tivet, F. (2021). Investigating farmers' decision-making in the adoption of conservation agriculture in the Northwestern uplands of Cambodia. *Land Use Policy*, 105 (105404).
12. Leemann, E. (2019). Who is the community? Governing territory through the making of 'indigenous communities' in Cambodia. *Geoforum*, 119(4), 238-250.
13. Mahanty, S. & Milne, S. (2016). Anatomy of a boom: Cassava as a 'gateway' crop in Cambodia's north eastern borderland. *Asia Pacific Viewpoint* 57(2), 180-193.
14. Padwe, J. (2017). Cambodia's Highlanders: Land, Livelihoods and the Politics of Indigeneity. In K. Brickell & S. Springer (Eds.), *The Handbook of Contemporary Cambodia* (pp. 134-145). London and New York: Routledge.
15. Tegelberg, M. (2010). Hidden sights: Tourism, representation and Lonely Planet Cambodia. *International Journal of Cultural Studies* 13, 491-509.
16. Weeratunge, N., K. Snyder & Choo Poh Sze (2010). Gleaner, fisher, trader, processor: understanding gendered employment in fisheries and aquaculture. *Fish and Fisheries* 11, 405–420.
17. Winemiller, et al. (2016). Balancing hydropower and diversity in the Amazon, Congo and Mekong. *Science*, 351 (6269), 128-129.
18. Work, C. (2017). The Persistent Presence of Cambodian Spirits: Contemporary Knowledge Production in Cambodia. In K. Brickell & S. Springer (Eds.), *The Handbook of Contemporary Cambodia* (pp. 389-398). London and New York: Routledge.