Ecosystems and Livelihoods
SFS 3810

Syllabus

The School for Field Studies (SFS)
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.
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

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 Mekong River in Kratie province.
- The deciduous dipterocarp forests of northern Cambodia.
- The semi-evergreen rainforest complex of eastern Cambodia.
- The coastal plain and mangrove forests of southern Cambodia where freshwater tributaries from the Cardamom Mountains empty into the Gulf of Thailand.

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 and the Mekong Delta of Vietnam.
- 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

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Value (%)</th>
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<tbody>
<tr>
<td>1. Comparative livelihoods FEX</td>
<td>25</td>
</tr>
<tr>
<td>2. Mid-term exam 1</td>
<td>25</td>
</tr>
<tr>
<td>3. Nature field journal</td>
<td>15</td>
</tr>
<tr>
<td>4. Ecotourism analysis Atlas-TI FEX</td>
<td>10</td>
</tr>
<tr>
<td>5. Final exam</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
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</tbody>
</table>

Assessment Descriptions

Field Notebook: You will develop a comprehensive program 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.

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--this includes an in-text citation in brackets but no entry in your bibliography:

Field notes: (Field interview with boat association representative, 2 February 2016)
Field observation: (Field observation in Jrei village, 7 March 2016)
Livelihood Investigation FEXs: On a number 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. You will also learn to do analysis using qualitative data analysis software.

Ecotourism field exercise and qualitative data analysis FEX: This assignment will have both field and written components. Before class field trips to two ecotourism sites, 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.

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.

You will learn to the use the qualitative data analysis software program Atlas-TI, and you will thematically code the interview data. The coded data will then be used to make comparative conclusions. You will have the skills to design and code your own qualitative research after this exercise.

Nature journal: We take many field trips to various ecosystems. You will learn to draw diagnostic sketches of birds, butterflies, and medicinal plants. You will document your wildlife sightings and plant observations in a field journal and attempt to identify species using field guides. The journal will be collected and graded.

Exams: Each exam must be completed in around 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**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum Score</th>
<th>Maximum Score</th>
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<tbody>
<tr>
<td>A</td>
<td>95.00%</td>
<td>100.00%</td>
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<tr>
<td>A-</td>
<td>90.00%</td>
<td>94.99%</td>
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<tr>
<td>B+</td>
<td>86.00%</td>
<td>89.99%</td>
</tr>
<tr>
<td>B</td>
<td>83.00%</td>
<td>85.99%</td>
</tr>
<tr>
<td>B-</td>
<td>80.00%</td>
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<tr>
<td>C+</td>
<td>76.00%</td>
<td>79.99%</td>
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<tr>
<td>C</td>
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<tr>
<td>C-</td>
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<td>72.99%</td>
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<tr>
<td>D</td>
<td>60.00%</td>
<td>69.00%</td>
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<tr>
<td>F</td>
<td>59.99%</td>
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</table>

**General Reminders**

**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. It is encouraged that “optional readings” be reviewed by students. 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 handed back to students 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 Directed Research, and simply get involved.
### Course Content

<table>
<thead>
<tr>
<th>Lecture Topics</th>
<th>Hours</th>
<th>Readings</th>
<th>Field Trips/Assignments</th>
</tr>
</thead>
</table>
| **Course introduction**  
  - Ecosystems, natural resources & rural livelihoods in transition | Lecture (1.5) | **Readings in bold font** are required, others are optional. |  |
| **Cambodia's forests: past, present & future**  
  - Cambodian forest ecosystem types  
    - Watershed: the sacred rivers of Phnom Kulen  
    - Traditional Khmer perceptions of forest  
    - A history of forest exploitation  
    - Illegal logging & threats to Kulen | Lecture & field components (6) |  
  - Le Billon  
  - Fletcher et al  
  - Gaughan et al  
  - Arensen  
  - News article (various)  
  - Wildlife Alliance | Visit to Phnom Kulen's sacred carvings  
  - Nature journal entry: butterflies |
| **Species identification skills**  
  - Basics of birding: observation & diagnostic skills  
  - Diagramming & identifying insects | Lecture & field components (2) |  
  - Law | Visit to Angkor Thom wall  
  - Nature journal entries: birds & insects |
| **Ecotourism in Cambodia: the search for sustainable livelihood alternatives**  
  - Ecotourism & community-based ecotourism | Lecture & field components (6) |  
  - Tegelberg  
  - Reimer & Walter  
  - Miura | Visit Popel trail on Phnom Kulen  
  - Ecotourism FEX interview  
  - Nature journal entry: medicinal plants |
| **Cambodia's dry ecoregion**  
  - Characteristic flora & fauna of the deciduous dipterocarp forest (DDF) ecosystem | Lecture & field components (3.5) |  
  - Clements et al | Visit the Phnom Tnout CPA ecotourism site  
  - Ecotourism FEX part 2  
  - Nature journal entry: birds |
<p>| <strong>The Mekong River</strong> | | | |</p>
<table>
<thead>
<tr>
<th>Topic</th>
<th>Type</th>
<th>Lectures</th>
<th>Short film</th>
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<tbody>
<tr>
<td>Mekong river hydrology &amp; fish ecology</td>
<td>Lecture</td>
<td>• Defenders of the earth&lt;br&gt;• Milne&lt;br&gt;• Ziv et al</td>
<td>Short film: Fight for Areng Valley by Kalyanee Mam</td>
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<tr>
<td>Dams &amp; environmental activism in Cambodia</td>
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<tr>
<td>Livelihoods in transition I: traditional medicine</td>
<td>(1.5)</td>
<td>• Ashwell &amp; Walston</td>
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<tr>
<td>Traditional medicine in Cambodia: use, collection &amp; trade</td>
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<tr>
<td>Highland Cambodia: forests &amp; indigenous livelihoods</td>
<td>Lecture &amp; workshop</td>
<td>• Fox et al&lt;br&gt;• Scott</td>
<td>Short film: The Other Cambodia</td>
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<td>Highland livelihoods: threatened ecosystems and livelihood challenges for the Bunong indigenous people</td>
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<td>Guest workshop by Bunong community development organization</td>
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<tr>
<td>Livelihoods field trip to a Bunong farm:</td>
<td>Lecture &amp; field components (2)</td>
<td>• Mahanty &amp; Milne&lt;br&gt;• Mertz et al&lt;br&gt;• Fox</td>
<td>Half day visit to Bunong farm</td>
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<tr>
<td>• Observation of highland farming techniques</td>
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<tr>
<td>The Cambodian coast</td>
<td>Lecture</td>
<td>• Rizvi &amp; Singer</td>
<td>Short film: Lost World by Kalyanee Mam</td>
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<tr>
<td>• Coastal mangrove ecosystems &amp; fishing livelihoods</td>
<td>(2)</td>
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<tr>
<td>• Community-based natural resource management (CBNRM): opportunities &amp; challenges</td>
<td>Lecture &amp; field components (4)</td>
<td>• CBNRM Learning Institute&lt;br&gt;• Bloomberg&lt;br&gt;Van Acker</td>
<td>Visit to Cham community mangrove conservation site&lt;br&gt;Livelihood interview with Cham fishers Comparative Livelihoods FEX Part I</td>
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<tr>
<td>• Guest speaker: Sim Himm, head of Trapeang Sangker community fishery</td>
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<tr>
<td>Midterm exam review</td>
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<tr>
<td>Tonle Sap Lake: ecosystems and livelihoods on the Great Lake</td>
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<tr>
<td>Topic</td>
<td>Type</td>
<td>Lectures</td>
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<td>Vegetation habitats of a flood pulse ecosystem</td>
<td>Lecture &amp; field components (6)</td>
<td>Weeratunge, Deap, Degan &amp; Zalimbe, Joffrey et al, Nuorteva et al, Sneddon &amp; Fox</td>
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<tr>
<td>Livelihoods on the lake</td>
<td>Field trip</td>
<td>Interview with family at the floating village of Prek Toal</td>
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<tr>
<td>Guest speaker: Osmose on alternative lake livelihoods</td>
<td>Field trip</td>
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**Vietnam's Mekong Delta: intensive landscape adaptation & its consequences**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Type</th>
<th>Lectures</th>
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<tbody>
<tr>
<td>Wetland birding observations</td>
<td>Field (1)</td>
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**Livelihoods in transition II: agricultural shifts**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Type</th>
<th>Lectures</th>
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</thead>
<tbody>
<tr>
<td>From subsistence to cash crops: rice, corn &amp; cassava in Cambodia</td>
<td>Lecture &amp; field components (3.5)</td>
<td>Hought et al, A River Changes Course</td>
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<tr>
<td>Migration &amp; wage labor</td>
<td>Lecture (1.5)</td>
<td>Bylander 2013 &amp; 2014, Kearney, Malkki</td>
</tr>
<tr>
<td>Qualitative research analysis tutorial</td>
<td>Lecture (2.5)</td>
<td>ATLAS.ti 7 Quick Tour, Atlas-Ti FEX (due Nov. 4)</td>
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<tr>
<td>Global agriculture &amp; local consequences</td>
<td>(1.5)</td>
<td>Baird &amp; Fox</td>
</tr>
<tr>
<td>Final exam review session</td>
<td>(1.5)</td>
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</tbody>
</table>

**Total course hours:** 61.5

**Required Readings**


Optional Readings


Killeen, T. (2012). The Cardamom conundrum: Reconciling development and conservation in the
Kingdom of Cambodia. NUS Press: Singapore.


