



THE SCHOOL  
FOR FIELD STUDIES

# Eastern Himalayan Forests and Rural Livelihoods

## SFS 3580

### Syllabus, Summer I

The School for Field Studies (SFS)  
Centre for Himalayan Environment and Development Studies

Ugyen Wangchuck Institute for Conservation and Environmental Research  
(UWICER, Bumthang) and Bhutan Ecological Society

Paro, Bhutan

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 Overview

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The eastern Himalayan region is characterized by extensive and numerous mountains and valleys, hosting the world's highest peaks and a diversity of vegetation and wildlife. Identified as one of the world's ten biodiversity hot spots, the Kingdom of Bhutan is home to an estimated 770 species of birds and other diverse fauna, including the takin, snow leopard, golden langur, blue sheep, and tiger. Varied ecosystems are also found in the country, ranging from subtropical broadleaf forests in the south, to subalpine conifer forests, alpine shrub, and high-mountain meadows. The highest elevations comprise rock and ice. Located in the subtropics, Bhutan's climate is dominated by summer monsoons which bring the majority of precipitation for the year. The country also has more than 70% forest cover and about 50% of Bhutan is under formal conservation protection.

Bhutan is internationally famous for its development concept of Gross National Happiness (GNH). GNH is the guiding principle of development in Bhutan and is understood to have four pillars: good governance, cultural protection and preservation, sustainable development, and environmental conservation. Across the country, people have developed and maintained rich cultural traditions and social and political institutions that reflect the Buddhist principle of 'The Middle Path', integrating people and nature as well as traditional knowledge and modern science. Sustainable management of natural resources, including soil, water, biodiversity, and minerals, is critical for Bhutan, as these resources are fundamental to the national identity as well as the economy.

In early 2008, Bhutan's government became a constitutional monarchy opening the door for devolution of authority to regional governments and communities. Since the majority of the population resides in rural areas, sustainable management of natural resources is critical for achieving the dual goals of poverty alleviation and biodiversity conservation. Defining baselines for biodiversity and ecosystem function is critical and, coupled with training in field research methodologies and communication in science, scientists and environmental authorities are increasingly effective at achieving development and conservation goals.

The SFS-Bhutan program is an interdisciplinary, field-based course where students study a country and region characterized by dramatic mountain landscapes and rich flora and fauna. Traveling through Bhutan, our SFS group will learn about culture and history, religious traditions, environmental issues, and conservation policies. Students will stay in Bhutanese villages and trek across Himalayan landscapes to experience and understand local environments and rural livelihoods. Academically, students will also develop skills in assessing environmental problems, defining research questions, conducting field research, and communicating results. Moreover, SFS students will come to appreciate the complexity of identifying and addressing conservation and development issues in a rapidly changing region.

SFS partners with the Ugyen Wangchuck Institute for Conservation and Environment Research (UWICER), an international research and training facility in Bumthang, Bhutan and the Bhutan Ecological Society (BES), a Civil Society Organization promoting environmental sustainability in Bhutan. SFS students and faculty will collaborate with UWICER and BES to advance its research agenda in several priority areas, including forest management, community resource assessment, and development policy.

## Learning Objectives

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There are multiple topical themes in this course: culture and religion of Bhutan; conservation and development policy; forest and resource management; local knowledge systems; and changing rural livelihoods. These will be addressed through classroom lectures and discussions, field lectures, and field research, including Field Exercises (FEX) and a Directed Research (DR) project. Classroom and field lecture topics will include essential background information, and field exercises will be used to reinforce key concepts and provide students with field-based experiences. Extended field trips will enable students to examine ecological and cultural elements across the landscape and cultivate a deeper understanding of the social, religious, political and environmental characteristics of Bhutan.

Following this course, students should:

- 1)** Be familiar with the unique cultural, political, economic, and environmental aspects of Bhutan.
- 2)** Understand the basic concepts of rural development, community resource management, forest-based livelihoods and environmental sustainability as well as the practical application of those concepts. They will become aware of the important (and often underestimated) societal factors that affect development and conservation.
- 3)** Be able to recognize several vegetation types according to elevation, and to identify threats to ecosystems and conservation strategies to maintain them.
- 4)** Have implemented a field research project, conducted field data collection, managed and interpreted data sets, and communicated research results to diverse audiences and constituents in Bhutan.

## Assessment

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Several field exercises and a directed research project, which entails field-based data collection and analysis, will provide students with experience in scientific research. Some assignments encourage students to work together, to share ideas and knowledge. This allows students to take advantage of the range of backgrounds within the group. Unless the assignment indicates that only one copy of the answers is required from the group, students are expected to complete their own assignments. The final course grade will be based on the following assessment items.

Assessment Item	Value (%)
Active participation and field notebook	10
Field Exercise 1 – Reading the Landscape	10
Field Exercise 2 – Resource based livelihoods	10
Field Exercise 3 – Physical Science methods	NA
Field Exercise 4 – Social science methods	10
Plant Identification Quiz	10
Final Exam	15
Draft Research Proposal (DR team)	8
Final Research Proposal (DR team)	8
Final Research Paper (DR team)	11
Research Presentation classroom symposium (DR team)	8
<b>TOTAL</b>	<b>100</b>

**Active participation:** During this program we will travel through many eco-regions and rural communities. We expect that you will be an *active observer*, constantly observing the landscape, livelihoods, and culture and *participating in discussions* regarding these observations. Active participation includes constructive engagement with the full range of course activities, respectful awareness of our cultural context, and responsible behavior as a group member who is involved in others' learning.

**Field notebook and assignments:** You will develop a comprehensive *program field notebook* that documents and captures your on-the-ground learning experiences and serves as your primary record of content and reflections during the course. **This notebook should accompany you at all times: in the classroom, guest lectures, and the field.** All class notes, field notes, data from field exercises, reflective comments and questions on course material, notes from discussions, and short written assignments should be contained in this notebook, and you will be graded on the thoroughness of this work as part of active participation assessment. You must develop a Table of Contents with numbered pages so you can easily locate material for the exam and to reference in your research. You may want to develop sections for observations during travel, translations or words in Dzongkha, notes to remember for your directed research, cultural notes, and reflective writing on how this experience is reshaping your understanding of people and the environment. Keep this separate from personal journaling you may do. Additional course handouts should be kept in the folder provided.

When using citable material from your field notebook in written reports, use the following format to acknowledge the source: (*Tenzin Student, Field notes, Jakar, 12 June 2013*). Whenever possible, use the name of the person providing the information; if not possible, cite descriptively, for example: "Firewood gatherer in Paro forest."

## Field Exercises

**FEX 1. Reading landscapes:** Guided by faculty, students will learn how to observe different elements of the landscape. They will observe and document multiple landscapes during their stays in Thimphu valley. Anticipating the broader theme of the course, they will individually record ecological and cultural aspects of unique environments.

**FEX 2. Resource-based livelihoods:** We will geolocate ourselves, explore the local area, note development indicators and examine changes in the landscape and livelihood strategies based on proximity to town. In small groups, students will survey routes and create a rough map of land use and livelihood strategies and note the ways that these change in relation to proximity to Paro. Students will learn basic mapping skills and alternative ways to approach mapping as a geographical tool. What are some of the roles played by mapping in conservation and development initiatives?

*Reading: \*Paro Dzongkhag Profile (RGOB, 2014)*

**FEX 3. Physical science research methods (Forest Inventory):** Students will also put into practice the principles and methods of quantitative scientific research, another essential skill for the directed research. Student groups will design and implement a hypothesis related to forests, natural resources, and/or wild fauna. Students will develop research hypotheses in small groups, create data sheets, collect data from the field, statistically summarize and analyze the data.

**FEX 4. Social science research methods:** Students will learn and practice qualitative methodologies in order to collect information from local community members, an essential skill for the directed research project. Student groups will design and implement an interview or questionnaire related to livelihoods and forests. Students will also develop survey questions in small groups, administer the survey, apply basic methods to summarize the qualitative (and quantitative) data collected and use these methods in data collection during DR.

**Final Exam:** Students will write one synthesizing exam that integrates the main course themes.

**Plant Identification Quiz:** Students will learn to identify the most common and relevant woody and herbaceous plant species in the area.

**Directed Research:** Student teams will design and conduct a field research project led by the instructors. The team will write and revise a proposal, conduct research, and produce a paper based on their findings. This paper should follow the general framework of a scientific report and will give students experience in concise organization and presentation of data. Each group will conduct two oral presentations of their research: in class and to an audience of stakeholders and government officials in Paro.

Student teams will work with a faculty mentor throughout the program to refine research questions, design the study, carry out the fieldwork, analyze the data, and write and prepare report and oral presentations. Specific guidelines will be provided when the projects are introduced.

## 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

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**Plagiarism**, using the ideas and material of others without giving due credit, and cheating will not be tolerated. A grade of zero on the assignment will be given for plagiarism or cheating or aiding another person to cheat either actively or passively. Plagiarism cases may be reported to the student's home institution and may be grounds for further academic disciplinary action.

**Deadlines** for assignments are established to promote equity among students, to allow faculty enough time to review and return comments and grade before other assignments are due; and to avoid clashes with other activities and courses. Therefore, deadlines are firm and extensions will only be considered under extreme circumstances. Unapproved late assignments incur 10% penalty per day and assignments will not be accepted after three days.

## Course Content

**Type- L:** lecture and discussion, **GL:** guest lecture, **FL:** field lecture, **FEX:** field exercise, **D:** discussion, **DR:** directed research

**Instructors - PBC:** Purna B.Chhetri, **KW:** Kuenga Wangmo, **JRL:** Jesse R Lewis, **KT:** Kencho Tshering, **SP:** Sonam Phuntsho, **RS:** Rinchen Singye, **NN:** Nawang Norbu

Readings in **bold** are required; others are optional supplementary reading.

\*\*\*Note: Syllabus items and course content are subject to change\*\*\*

No	Type	Class title	Hrs	Instructor	Readings
1	L,D	Academic orientation including DR	1.5	NN and KT	Syllabus
2	L	Introduction to Bhutanese Culture	1:15	KT	
3	L,D	Introduction to Buddhism	1:15	NN	
4	L,D	Biogeography of Himalayas	1:15	JRL	Singh 1987 (pages 84-87) Pandey 2015
5	L,D	Bhutan – The Last Himalayan Biodiversity Refugia	1	NN	
6	L,D	Conservation and Buddhist Culture	1.15	KW	Kuyakanon 2014 Pommaret 2004
7	L	Introduction to Bhutanese Language	1:15	KT	
8	L,D	Natural Resources Management Systems in the Bhutan Himalayas	1.15	PBC	Siebert, 2014 Dorji,2006 Wangdi, 2018
9	L,D	Political History of Bhutan	1:15	Dr. Karma Phuntsho	Phuntsho 2013 Ardussi 2004
10	FEX	Natural and Cultural Landscapes I & II	6	PBC and KW	Allison 2015 Skog, 2016 Diaz,2015 Karmapa,2011
11	L,D	Local Land Use Practices in Bhutan	1.15	PBC	Pandey, 2015
12	L,D	Conservation and Development (Eco-tourism)	1.15	KW & LA	Peet & Hartwick 2009 (Ch1)
13	L & FL	Evolution and Adaptation of Animals and Plants in the Himalayas  (Flora & Fauna Identification FL)	3	JRL  PBC	Sharma, 2010

No	Type	Class title	Hrs	Instructor	Readings
14	FEX	Resource Based Livelihood and Development Indicators in Paro	6	PBC and KW	Plieninger 2015
15	L & FEX	Research Methods in Social Science	3	KW, PBC & LA	Bhattacharjee 2012 (pages 113-129) Gordon, 2007
16	L	Quantitative Data Management and Presentation	1:15	PBC and Jesse	Bhattacharjee 2012 (pages 113-129)
17	DR	Introduction to Directed Research (DR) Topics	1:15	All Faculty	
18	FL	Ecosystem Services of Himalayan Forests & Biodiversity	1:15	JRL	Costanza, 1997 Sharma, 2010 Schroeder, 2014
19	FEX	Forest Resource Assessment	6	PBC & JRL	
20	FEX	Forest Produce Trade at Local Markets	1:15	KW, PBC & JRL	
21	SLD	GNH and the Middle Path	1:15	KW	RGOB, 1998
22	FL	Mist-netting to Assess Avi-faunal Diversity	3	JRL & RS	
23	GL	Watershed Management in Bhutan	1:15	TBC Sonam Choden	Wangdi et al. 2014 Panday, 2015
24	L	Community Forests & Rural Incomes	1:15	SP	Moktan, 2010 Moktan, 2015 Phuntsho, 2011 Agrawal, 2008
25	L,D	People and Forests: Changing Socio-economic & Political Dimensions	1:15	KW	Rinzin, 2009 Wangchuck, 2015
26	FL	Discourse in Wildlife: Looking at Bhutanese Forests	3	Dr. Tshering Tempa	Tempa et al. 2013
27	GL	Role of Women in Rural Bhutan	1:15	Sampa Choden	
28	SLD	Can Forests be a Major Driver of Economic Growth for Bhutan?	1:15	PBC	Namgyel, 2017 Persha, 2010 Jadin, 2015 DoFPS, 2016
29	L	Impact of Human Wildlife Conflict on Rural Livelihoods	1:15	JRL	Wangchuk & Siebert 2013

No	Type	Class title	Hrs	Instructor	Readings
30	L,D	Multi-scalar Environmental Governance	1:15	NN	Blaikie & Muldavin, 2004
31	L	Exam Review-Q & A	1:15	All Faculty	
32		Plant ID quiz	1	PBC and JRL	
33		Final Exam	2		
34		Wrap-up: Making Sense of it All	1	All Faculty	
		<b>Classes Total</b>	58.5		
		<b>DIRECTED RESEARCH</b>			
	DR	Directed Research: Field Data Collection	30	DR team	DR topical readings provided
	DR	Directed Research: Analysis & Write-up	10	DR team	
	DR	DR Symposium	5.5	DR team	
		<b>DR Total</b>	<b>45.5</b>		
		<b>TOTAL CONTACT HOURS</b>	<b>104</b>		

## Readings

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