



**S F S** THE SCHOOL  
FOR FIELD STUDIES

# Environmental Justice from the Ground Up

## SFS 3232

### Syllabus

The School for Field Studies (SFS)  
Center for Sustainable Development Studies (CSDS)  
Atenas, Costa Rica

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, the elephants are not always where we want them to be, so flexibility is key.



## Course Overview

The concept of **environmental justice (EJ)** refers to equal sustainable access to natural resources that are vital for human groups to achieve a meaningful, fulfilling, and happy life, such as access to clean water, to nutritious and pesticide-free food, clean air, and to the benefits of sustainable use of biodiversity. The concept of environmental justice (EJ) combines notions of environmental sustainability and everyday environments with demands for social justice (Agyeman 2013, Walker G. 2012). EJ focuses on the unequitable distribution of environmental risks and governmental protection among people of different economic and ethnic backgrounds (Schlosberg 2009). This concept has a long history in conservation and sustainable development. The modern view derived from the US civil rights movement and advocates' calls for racial equality with environmental action. Socioeconomically disadvantaged groups across the world have harnessed social justice action to fight against unequitable environmental outcomes, although its origin is much older and can be traced back to historical conflicts for limited natural resources.

Current environmental movements have stressed the consequences of unequal access to natural resources imposed by corporations and rich countries that do not consider the negative and disproportionate consequences of uncontrolled economic development, and which concentrate environmental harms on economically weaker human groups. These groups include the poor, indigenous communities, women, and residents of the Global South who have less access to resources, are vulnerable to different forms of oppression (i.e., racism), and lack government representation. At the local level, much of the environmental costs fall on poor

communities suffering from polluted environments. At the global level, developing countries bear the consequences of global warming, despite of not being responsible for the enormous environmental cost of greenhouse gas emissions, or just being minor consumers of fossil fuels. These countries have also suffered the extraction of raw materials as well as the appropriation of agricultural and genetic resources without being compensated.

A healthy ecosystem secures healthy conditions for human populations. The terms "global health" and "climate justice" have been integrated into the realm of EJ as consequence of the challenges imposed by the progression of global warming and other impacts of climate change. These challenges have been heightened by the emergence of new diseases and pandemics such as covid-19. EJ also integrates the concept of "ecological justice" to acknowledge the right of living systems to exist with minimal human intervention. Environmental and ecological justice in the broad sense impose limits on excessive economic growth, the loss of ecosystems, and agricultural, livestock, massive tourism, and urban expansion. EJ emphasizes the imperative need to implement sustainable development policies and intra- and intergenerational equity at the global level, which must respect the rights of future generations to a healthy environment.

The history of the development of environmental movement in Costa Rica is full of examples of social and political struggles molding policies for biodiversity protection. Currently, Costa Rica has reached important landmarks setting aside 26% of its continental area -Avalos 2019- (and 11% of its national waters, Alvarado et al. 2016) and is moving towards banning oil exploration permanently. This small country of only 51,100 km<sup>2</sup> protects 5% of Earth's biodiversity and has one of the highest concentration of species per unit of area (Kappelle 2016). A coalition of community organizations, scientists and government offices combined to increase forest cover from the low of 21% caused by cattle ranching and the expansion of agroindustry in the 1980s to today's 60% forest cover (Furumo & Lambin 2021). The establishment of the system of National Parks (now, SINAC) in the early 1970s changed the economic model of the country from an agricultural to a service-based economy, where tourism is one of the main income generators (Stan & Sanchez-Azofeifa 2019). The income generated by tourism supported a significant conservation effort along with the development of a strong legal framework (i.e., the 1949 constitution was amended in 1994 to incorporate the right to a healthy environment and the responsibility of the State to guarantee that right), as well as setting ambitious goals (such as achieving carbon neutrality in 2031, Mora 2017).

Despite significant progress, Costa Rica still faces great environmental challenges. Key resources, like water and food, are often directed to tourists instead of local populations. The expansion of monocrop agricultural production, which depends on the intensive use of pesticides and fertilizers, is polluting water sources and destroying the natural forests. Rural communities in rural and coastal areas have seen their way of life threatened by gentrification. Ecosystem services are jeopardized by development strategies placing profit ahead of human and environmental health. The challenges are many, and in this course, we will analyze three

case studies illustrating environmental threats and the social movements working to alleviate them and create more just societies:

**Case study 1:** Food justice and seed sovereignty.

**Case study 2:** Water justice and social movements.

**Case study 3:** Use of bioindicators and measurement of ecosystem services to assess ecological justice.

Specific components of this four-week summer program will include:

- Learn about local communities' efforts to preserve local food production and save seeds by visiting agroecological farms.
- Learn about water management in Costa Rica and social movements in defense of water by visiting a local water management committee (aka ASADAS).
- Visit Monteverde to learn about transitions from pastures to forests to reserves, including different types of users and perspectives regarding EJ and ecological justice (i.e., balancing the vision and needs of tourists, local communities, conservationists, farmers, and cattle ranching producers). Examine how the Monteverde community has worked to increase economic resiliency by reclaiming food production and distribution strategies since Covid-19.
- Visit Monteverde and Alto del Roble, to compare two cases of how different rural community have managed tourism initiatives, local actors, and environmental threats to protect key biodiversity resources.

These themes will be analyzed during lectures, discussions, and fieldtrips. For the final component of the course, students will actively synthesize concepts and methodologies learned in class and field activities in an integrated final essay summarizing a specific aspect of the EJ issues examined here. Throughout the program, there will be room for discussion with fellow students and faculty, to provide a comprehensive introduction to EJ issues and conflicts and how to propose solutions.

## Learning Objectives

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The learning objectives of this summer program are:

- 1) Compare areas with different levels of community organization, development, and key biodiversity resources to identify threats, opportunities, and EJ cases.
- 2) Analyze the connections between biodiversity conservation and water management, in the development of regenerative agroecological systems.
- 3) Analyze the role of community and NGO efforts to develop sustainable and equitable watershed protection.

- 4) Analyze the role of the government and private institutions (Costa Rican Institute of Tourism and the National System of Protected Areas, the top-down approach) to promote sustainable and environmentally and socially just tourism options.
- 5) Compare Alto del Roble with Monteverde to discuss different approaches to rural community economic development, the role of local actors, and environmental threats on key biodiversity bioindicators (frogs).

## Assessment

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The assessment of student contributions in the SFS-CSDS summer program has the following components:

Assessment Item	Value (%)
- FEX 1	20
- FEX 2	20
- FEX 3	20
-Integrated essay	25
-Participation	15
TOTAL	100%

### Field Exercise 1 (FEX1) – Food Justice and Seed Sovereignty (Prof. Mary Little)

Preservation of functioning ecosystems depends on the reorientation of food systems to ensure that food chains, from production to consumption. This involves respect for the limited carrying capacity of the planet while guaranteeing access to adequate and nutritious food for everyone. Current conventional food production systems based on mechanization and agrochemicals are neither environmentally nor socially sustainable. Opposition to the exploitation of the environment and laborers, mostly people of color, place food security squarely within the fight for environmental justice. Costa Rica is experiencing challenges to local food sovereignty. Over 90% of the seeds used in Costa Rica are not certified by any producer, such as large agroindustry corporations. Seeds are instead bought, sold, and traded by farmers, seed cooperatives and small-scale producers. However, legislation has been proposed to require registration and, in effect, the privatization of seeds. This proposed restriction in the trade or sale of unregistered seeds threatens farmers' rights to save and trade their seeds. A network of farmers is creating a local food justice effort to resist this legislation and protect biodiversity and seed sovereignty. This FEX aims to work with local organizations such as the Rural Women's Network of Costa Rica to understand the law and their work to preserve access to local seeds that have evolved with the local environment and people. Our exercise will include documenting their actions to raise awareness about this issue and protect native seed biodiversity. We will examine social awareness of the importance of eating locally, knowledge about the proposed law and the seed sovereignty movements through observations,

interviews, and survey methods. This data will be presented to our partner organizations to inform their futures work for food justice.

**Field Exercise 2 (FEX2): Community movements in defense of water in Atenas (Prof. Milena Cambronero)**

Despite Costa Rica being considered a country rich in water resources, rainfall patterns and water availability are unevenly distributed throughout its territory. Dry tropical ecosystems, such as the Central Pacific region, are characterized by the presence of a strong dry season. In this area, agriculture, deforestation, gentrification, water pollution, lack of infrastructure and poor urban development planification have led to water scarcity in numerous rural communities. That is the case of Atenas, a county of about 25 000 inhabitants located in the Alajuela province. In 2014, 60% of the population of Atenas had access to potable water only for a few hours a day. To solve this problem, governmental institutions proposed a project to take water from a neighbor community in the county of Grecia. This resulted in protests and dispute over the control of water resources. The conflict stopped temporarily in 2019 when the construction of the pipelines was finalized and both communities established a 20-year agreement to share the water. In this field exercise we will conduct surveys and interviews to understand social participation in decision making regarding water management in Atenas, to analyze how these communities may solve future issues in a context of climatic uncertainty and political indifference.

**Field Exercise 3 (FEX3): The Tragedy of the Commons : comparing conservation threats of montane forests ecosystems (Prof. Víctor Acosta).** Even though Costa Rica has strong legislation on the conservation and use of natural resources, harmful practices, and lack of resources to control and protect key species and natural areas are threatening its unique biodiversity and ecosystem services. The lack of effective dialogue between public and private entities, local communities, land-use policy makers, regulatory plans, and tourism development, create a snowball effect matching the definition of the Tragedy of the Commons. In this FEX, we will evaluate two sites with different levels of development and community and tourist organizations: Monteverde (Puntarenas) and Alto del Roble (Heredia). We will examine the impact on key species and montane forest ecosystems affected by socio-environmental conflicts and the lack of policies or actions. At the end of the FEX, students will be able to contrast both conservation scenarios after visiting the localities, interviewing local actors, and monitoring key species to identify EJ conflicts, as well as to formulate potential solutions.

**Integrated essay:** Students will synthesize the experiences of the summer session in a short, integrated essay, focusing on key topics discussed examined the session including the final discussion.

**Participation:** students will be graded based on their contribution to the program during discussions, field labs and field experiments. Active participation is fundamental for the successful completion of the summer session.

Grade corrections in any of the above items should be requested in writing at least 24 hours after assignments are returned. No corrections will be considered afterwards.

## Grading Scheme

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A	95.00 - 100%	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	<60.00%
		B-	80.00 - 82.99%	C-	70.00 - 72.99%		



Students doing surveys as part of their research on rural tourism, a potential solution to secure that local communities will benefit from biodiversity protection.

### General Reminders

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**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, either actively or passively (e.g., allowing someone to look at your exam).

**The readings assigned** for each lecture and exercises are listed in the syllabus, or will be assigned prior to, or after, the lecture. The material will be provided in the form of an anthology to save printing paper and reduce waste. You are expected to read these materials before class and use them as background information for discussion. If you stay for summer 2,

readings will be more specific to the subject of the research component implemented at the end of that session.

**Deadlines for assignments** are established to promote equity among students, to allow faculty enough time to review and return comments and grades 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.

When appropriate, the files and additional materials should be placed in the assigned folder of the students drive in the CSDS server. Please check ahead of time with the professor in charge regarding the assignments' deadlines. Late assignments will incur a penalty of 10% of your grade for each day you are late. After two days past the deadline assignments will not be accepted anymore. Assignments will be handed back to students after a one-week grading period.

All grade revisions should be in writing explaining the issues at hand within the 24 hours after receiving the grade in any activity, be this an exam or field related work.

**Participation** – Since we offer a program that is likely more intensive than 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 course is mandatory, it is important that you are prompt for all activities, bring the necessary equipment for field exercises and class activities, and simply get involved.

## Lectures, Activities, Readings, Exams

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**Activities:** **L**= lecture, **FL**= field lecture, **GL**= guest lecture, **Lab**= classroom lab, **B**= briefing, **D** = discussion, **P** = students' presentation, **VA** = Víctor Acosta, **ML** = Mary Little, **MC** = Milena Cambroner, **CD** = Gerardo Avalos.

Code	Lecture Title	Readings	Type	Contact hours	Staff
01	<b>General Orientation and Introduction to the Program</b>		L	1	CD
02	<b>Introduction to Environmental Justice in Costa Rica.</b> Justice framework to access natural resources in the context of equitable development. - Costa Rican history and national development, policy & environmental justice.	Carruthers, D. V. (2008). Environmental justice in Latin America: Problems, promise, and practice. MIT Press.	L	2	ALL
03	<b>Indigenous communities in Environmental Justice Action.</b> Explore the relationship between nature devaluation using examples of indigenous and women led EJ resistance movements.	Todd, H. (2014). Conflict Assessment of the El Diquís Hydroelectric Project: When Renewable Energy Poses Environmental Threats & Human Rights Violations. Peace and Conflict Review, 8(1), 43–58		2	MC
04	<b>Food Justice</b> - How dominant food systems disadvantage certain groups - Impacts of food insecurity - Connection between food systems, seed saving and EJ.	Sylvester, O., & Little, M. (2021). “I came all this way to receive training, am I really going to be taught by a woman?” Factors that support and hinder women’s participation in agroecology in Costa Rica. Agroecology and Sustainable Food Systems, 45(7), 957-980.	L	2	ML
05	<b>Field trip – Finca Orgánica San Luis</b>		FT and FEX 1	4	ML

06	<b>FEX 1 – Costa Rican Seed Sovereignty Movement</b> <ul style="list-style-type: none"> <li>- Guest lecture on “La Ley de Semillas (the seed law) by Rural Women’s Network.</li> <li>- Demonetarization of seed saving techniques, the cultural and ecological importance on the practice</li> <li>- Community survey on eating locally produced foods and local awareness the seed lay</li> </ul>	Peschard, K., & Randeria, S. (2020). ‘Keeping seeds in our hands’: the rise of seed activism. <i>The Journal of Peasant Studies</i> , 47(4), 613-647.	L	2	ML
07	<b>FEX 1 analysis.</b> Integrate surveys, interviews, field trip to Finca San Luis, and the guest lecture and to understand the importance of producing local seeds to maintain food justice and seed sovereignty.		LAB	4	ML
08	<b>Food justice and tourism in Costa Rica.</b> <ul style="list-style-type: none"> <li>- Types of tourism</li> <li>- Economic and conservation importance of tourism.</li> </ul> Tourism and EJ.	Higgins-Desbiolles, F. (2018). The potential for justice through tourism. <i>Via. Tourism Review</i> , (13).	L	2	VA and ML
09	<b>Water management and water rights development in Costa Rica</b> <p>National water laws and enforcement</p> <p>Water use and misuse in the agricultural sector</p> <p>Water management in the tourism sector</p>	Kuzdas, C., Wiek, A., Warner, B., Vignola, R., & Morataya, R. (2014). Sustainability appraisal of water governance regimes: the case of Guanacaste, Costa Rica. <i>Environmental management</i> , 54(2), 205-222.	L	2	MC

10	<b>Fundamentals of tropical ecology</b> <ul style="list-style-type: none"> <li>- Latitudinal trends of tropical biodiversity (temperature and rainfall patters influencing species diversity)</li> <li>- Biodiversity and ecosystem services. Biodiversity conservation and ecosystem resilience.</li> <li>- Foundations of ecological theory supporting EJ.</li> </ul>	Brown, J.H. 2014. Why are there so many species in the tropics? J. Biogeogr 41, 8-22.	L	2	VA
11	<b>Water and waste management in Costa Rica:</b> <ul style="list-style-type: none"> <li>– Two of the greatest challenges for NRM in CR: Waste and water management</li> <li>– Ecological and socioeconomic impacts</li> <li>– Integrated Water Resources Management</li> </ul>	Blomquist, W. A., Ballesteros, M., Bhat, A., & Kemper, K. (2005). Institutional and policy analysis of river basin management: The Tárcoles River basin, Costa Rica.	D	2	MC
12	<b>Environmental impacts of tourism</b> Water scarcity and treatment in tourism towns. Solid waste influx and management in tourism areas.	Video The Goose with the Golden Eggs: Tourism on Costa Rica’s Pacific Coast (34 min) <a href="https://www.youtube.com/watch?v=7ORXHULoJno">https://www.youtube.com/watch?v=7ORXHULoJno</a>	D	2	MC and VA
13	<b>Introduction to water management in Atenas</b> <ul style="list-style-type: none"> <li>- General context on the conflict for water in Atenas between 2010 and 2019</li> </ul>	Optional (Spanish): Valenciano, 2021	L	1	MC
14	<b>Visit to ASADA</b> <ul style="list-style-type: none"> <li>– Community initiatives to manage local protected areas</li> <li>– Study case of an ASADA (Administrative Associations for Water Supply and Sewage Systems)</li> </ul>		FL	2	MC
15	<b>FEX 2. Community movements in defense of water</b>		FEX	3	MC

16	<b>FEX 2 analysis.</b> Analyze surveys and interviews to understand social participation in decision making regarding water management in Atenas		LAB	4	MC
17	<b>Ecological restoration of riparian ecosystems.</b> Riparian forest degradation (habitat loss and fragmentation, defaunation, invasive species). Riparian forest and biodiversity conservation. Restoring functional riparian ecosystems (Watershed restoration, habitat rehabilitation, functional groups)	Capon, S.J & N.E. Pettit. 2018.	L	2	VA
18	<b>Introduction to LIFE Monteverde coffee farm.</b> LIFE Monteverde tourism management related to coffee production.		FL	2	ALL
19	<b>Monteverde Cloud Forest Reserve orientation</b>		FL	3	VA, MC
20	<b>The Forests Transition Theory: improving ecosystem service functions?</b> The role of forest regeneration in climate change mitigation and biodiversity conservation. Functional ecosystem services and biodiversity conservation	Wilson et al. 2017.	D	2	VA
21	<b>FEX 3:</b> Rapid Ecological Assessment: comparing Monteverde and El Roble using amphibian bioindicators	El Roble field orientation	FEX	4	VA
22	<b>FEX 3 analysis</b>		LAB	4	VA
23	<b>Integrated discussion</b>		D	2	ALL
24	<b>Integrated essay</b>			4	ALL
	<b>Total contact hours:</b>			<b>60</b>	

## Possible field sites:

Monteverde, El Roble, Braulio Carrillo NP, Manú, Finca San Luis.

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