CIEE Online

Course name: Sustainable Development for the Tropics
Course number: DEVE 3001 CIEE / ENVI 3002 CIEE
Programs offering course: Online Summer
Language of instruction: English
U.S. Semester Credits: 3
Contact Hours: 45
Term: Summer 2020

Course Description

This course critically assesses the “triple bottom line”, i.e., the balance of the environment, economy, and society, in theory and practice, through its exploration of contemporary development issues in the context of tropical nations. The focus is on commercial development that involves a strong interface between the environment, society, and economic activities. The principal economic activities center on food systems, energy production, and tourism.

Tropical, developing nations offer rich opportunities for students of sustainability to explore the intersection between the environment, society, and the economy. While many such countries depend heavily on extractive practices, such as for fossil fuels, others depend more on productive activities, such as agriculture. Fewer turn to services industries, including tourism, although this has proven very fruitful in some locations. All of these economic activities have implications for the triple bottom line that reach well beyond the geopolitical borders of tropical nations. To find and understand sustainable pathways to the future for tropical nations is important for all people around the world.

Learning Objectives

By completing this course, students will:

- Investigate, assess, and debate the advantages and disadvantages of energy production and distribution systems in terms of social, economic, and environmental impacts, and potential for achieving sustainable development
- Investigate, assess, and debate the advantages and disadvantages of agricultural production systems in terms of social, economic, and environmental impacts, and potential for achieving sustainable development
- Investigate, assess, and debate the advantages and disadvantages of tourism industries in terms of social, economic, and environmental impacts, and potential for achieving sustainable development
- Deconstruct the driving forces behind the expansion of energy production, agriculture, and tourism and generate ideas proposals for steering growth in sustainable directions
- Integrate knowledge of national and international incentives programs (such as Integrated Conservation and Development Programs, Clean Development Mechanism, Certification for Sustainable Tourism, etc.) with an understanding of the challenges for economic development to propose improved mechanisms for sustainable development
Course Prerequisites

Two (2) semesters of university-level courses in the natural sciences, environmental studies, sustainability, or agriculture

Method of Instruction

This course is taught through the use of lectures, videos and documentaries, critical reading exercises, and discussions.

Assessment and Final Grade

And now this: Covid-19 (A commentary) 10%
Clean Development Mechanism: Expository Essay 10%
Persuasive Writing Exercise: An Opinion 10%
Weekly quizzes (4) 40%
Responsible Consumerism in a Post-covid 19 World (Video) 10%
Participation 20%

Course Requirements

And Now This: Covid-19
Students consider how covid-19 impacts sustainability. Using peer-reviewed literature of their own choice that demonstrates changes in the environment, societal responses to the pandemic, or the economic fallout of covid-19, students examine how covid-19 changes our concepts, approaches, and understanding of sustainability. They write a 750-word (mock) commentary for a peer-reviewed journal on sustainable development.

Clean Development Mechanism: Expository Essay
In this assignment, students assess the assessments. Specifically, students review examples of renewable energy projects that have been approved for the Clean Development Mechanism of the Kyoto Protocol located in the United Nations Framework Convention on Climate Change website. With reference to the published Validation Reports, the student critically assess the “Local Stakeholder” and “Environmental Impacts” portions. They compare - across energy types (wind, hydro, geo, and solar) - the quality of the impact statements. Students articulate their conclusions in a 750-word expository essay.

Persuasive Writing Exercise: An Opinion
Student investigate one type of tourism (ecotourism, adventure, “sun and sand”, “all inclusive”, or others) in a tropical nation of their choice and critically assess the economic, social, and environmental impacts. They they write a 1,000-word persuasive argument that argues for or against tourism expansion in the country of interest.

Weekly Quizzes
Students take weekly quizzes to demonstrate comprehension and to critique readings.
Responsible Consumerism (Video)
Students make a video presentation crafted for an audience of US consumers of products and services of tropical nations. The products or services are selected from the tourism or agriculture sector and should represent a significant contribution to the nation’s economy. Students use peer-reviewed literature or other vetted information to assess whether the product or service should be recommended for certification as “sustainable” for consumption under post-covid 19 criteria (TBD). The results of the investigation are summarized, and conclusions are drawn, in a 3-minute video presented for class commentary. Students share and respond to each other’s videos.

TIME ON TASK FOR VIDEO: 35 HOURS

Participation
Participation is defined as meaningful contribution in the digital classroom, using the resources and materials presented to students as part of the course. Meaningful contribution requires students to prepare in advance of each recorded session and regularly engage with the resources, discussions, reflective assignments, and all other online learning activities. Students are required to demonstrate engagement with course materials, for example, through insightful, constructive comments and by using subject-appropriate terminology in: online discussion boards, peer-to-peer feedback (after viewing the presentations of others), interaction with guest speakers, where available, and submissions related to other outside-of-class activities. Students should ensure that submitted commentary balances opinions, general impressions, and specific and thoughtful criticisms or contributions. Grades are based on the content, depth, and quality of the aforementioned types of meaningful contributions as measured per the Participation grading rubric in Canvas.

Students are also expected to use the Canvas inbox for communicating any clarifying questions they may want to ask about assessments or other course requirements.

Technology Requirements
Participation requires access to a computer with microphone (a headset and microphone are preferred over built-in sound devices) and webcam; a stable and strong internet connection; and a quiet and well-lit environment.

Attendance

Expectations: In an asynchronous online learning format, attendance takes the form of active student engagement:
• in instructional activities, course content, course tools
• with the course instructor, other students, and
• by timely completion of all assessments.
“Attendance” is more than just logging into the course on Canvas. Students must establish a record of participation in academically related activities in order to comply with this requirement.

Academically related activities include, but are not limited to:
• submitting an academic assignment;
• taking an exam or quiz;
• attending a study group that is assigned by the instructor;
• participating in an online discussion about academic matters, designed by the instructor; or
• initiating contact in Canvas with the instructor to ask a question about the academic subject studied in the course.

Academically related activities do NOT include activities where a student may be present, but not academically engaged, such as:

• logging into an online class without active participation
• contributing to or engaging in the CIEE Orientation or Community Course(s)

**First Week of Class:** Online courses officially commence on the first day of the term. Students must demonstrate engagement in class by no later than day 5 of the term, or risk being administratively dropped from the course with no opportunity to re-enroll. Students administratively dropped from the course for failure to engage will be considered withdrawn from the program and subject to CIEE financial withdrawal policies and fees.

**Duration of Course:** Continued, regular class engagement is required throughout the scheduled duration of the course, and disengagement will result in a lower participation grade for any affected CIEE course. Due to the intensive schedules for completing courses online, consistent failure to engage in the course on a weekly basis (defined as failing to engage for two or more weeks of online learning) will result in a formal written warning from the CIEE Center Director. CIEE instructors / staff will monitor student engagement on a weekly basis. The weekly schedule below outlines due dates for asynchronous learning activities for this course.

_N.B. Please note the class schedule is subject to change if opportunities arise to enhance the curriculum._

**Weekly Schedule**

**Week 1**

<table>
<thead>
<tr>
<th>Class: 1.1</th>
<th>Sustainable Development in and for the Tropics</th>
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Readings

_O’Neill et al. (2018)_

*United Nations Environment Programme: Rio Declaration on Environment and Development*
World Commission on Environment and Development (1987). Chapters 1-3

Watch
Tropical forest are critical to sustainable development goals.
Youth realizing sustainable development goals.
SDG: 17 goals to transform our world.
Gender equality: SDG 5
Champion of the Earth: Costa Rica 2019

Discussion board: prompt and responses

Time on Task: 5 hours

Class 1.2: Indices of development and well-being in tropical countries and beyond
National accounting, green national accounting, human development index, happiness index: global and regional trends and interpretations; the well-being of women in tropical, developing countries; what the exceptions teach us.

Readings
Herndon and Butler (2010)
The World Happiness Report 2019

Watch
Happiest countries in the world, explained
Why some countries are poor and others are rich.
How can countries measure the well-being of their citizens?
Costa Rica, in statistics
Costa Rica in the World Economic Forum, Davos 2019

Discussion board: prompt and responses

Due
Introductory video of students to peers and instructor

Time on task: 5 hours

Class 1.3 Sustainability in a post-covid 19 world
What does the new reality mean for our concepts of sustainability? Where is “society” in the triple-bottom line? How do you measure “sustainable” in a socially-distant, economically-depressed world? Is the sustainability movement hindered or enhanced by the fact that covid-19 poses imminent threat to human health and life itself? Does the sustainability lose urgency in this context?

Readings
Honey-Roses (2020)
Ochoa-Ochoa et al. (2015)

Discussion board: prompt and responses.

Class 1.4: Livelihoods in tropical nations
Common extractive, productive, and service industries in the tropics. Resource curse, the paradox of plenty, and poverty traps in tropical countries. How to avoid poverty traps? The role of women in households and livelihoods. Lessons that Costa Rica offers.

Readings
Frankel (2012)

Watch
Fool’s Gold (Gold mining in Costa Rica)
Ecuador: The rush for Gold in Yasuni National Park
Liberia’s oil and diamonds are both a blessing and a curse
A healthy economy should be designed to thrive, not grow

Discussion board: prompt and responses

Time on task: 5 hours

Class 1.5 Energy: Essential background for the case of Costa Rica.
Energy as an enabler for economic and social development. Energy consumption by sector; consumption trends for electricity and for transportation fuel; international trade in electricity; national and international distribution systems; small-scale distributed electricity generation

Watch
Documentary: Energy Hunger, Black-outs, and Providers (Parts 1)
Documentary: Energy Hunger, Black-outs, and Providers (Part 2)

Readings
Algunaibet et al. (2019)

Discussion board: prompt and responses

Weekly quiz

Time on task: 5 hours

Week 2
Class 2.1 Renewable Electricity Production in Costa Rica, Part 1: Hydropower and Geothermal.
Basic operations of hydro and geothermal power plants; cost to build and operate; levelized costs; land footprint of power plant and associated infrastructure; impacts on
the human community; impacts on the surrounding ecosystem; social, environmental
and economic impacts on regional and larger scales; the Clean Development Mechanism
of Kyoto

Watch
Damnation: The problem with hydropower.

Discussion board: prompts and responses

Time on task: 5 hours

Class 2.2
Renewable Electricity Production in Costa Rica, Part 2: Wind and Solar. Electricity
Production in CR. Basic operations of wind and solar power plants; cost to build and
operate; levelized costs; land footprint of power plant and associated infrastructure;
impacts on the human community; impacts on the surrounding ecosystem; social,
environmental and economic impacts on regional and larger scales; the Clean
Development Mechanism of Kyoto

Readings
Acosta and Chaves (2018) (Note: english version available as pdf)

Discussion board: prompts and responses

Time on task: 5 hours

Class 2.3.
Now consider this: energy, emissions and economy during covid-19
Oil prices during covid-19; Estimates of carbon and atmospheric pollutants before and
factors. How tropical countries benefit and lose. What are the lessons here?

Readings
McNeill (2020)

Discussion board: prompts and responses

Class 2.4:
Food Security.
Food production, famine, and food availability in the tropics; the Green Revolution;
concepts of food security, community food security, and food sovereignty compared;
rise of transnationals, corporate agriculture, agribusiness

Readings
Ericksen et al. (2011)

Discussion board: prompts and responses

Time on task: 5 hours
Class 2.5: Livestock production in the rural tropics: Monteverde, Costa Rica as a case study
History of dairy farming in Monteverde, Costa Rica, including the role of women; dairy cattle-pig connection; water and carbon footprints, waste water, and other environmental impacts of large and small dairy and pig production systems; economics of dairy and pig farming; livestock husbandry in CAFO’s contrasted with traditional farms

Readings
Stuckey et al. (2014) (pdf version)

Watch
“Right to Harm”

OR

“And on this Farm”

Discussion board: prompts and responses

Due
And Now This: Covid-19

Weekly quiz

Time on task: 5 hours

Week 3
History and trends in coffee and cacao production and consumption; fair trade coffee, direct trade coffee, value chains, and value-added products.

Readings
Bray & Neilson (2017)

Watch
FairTrade Coffee, explained.

Discussion board: prompts and responses

Time on task: 5 hours

Class 3.2: Crops of Costa Rica: Bananas and Pineapple.
History and trends of banana and pineapple production in Latin America, with emphasis on Costa Rica; “banana republics”; environmental and social ills of banana and
pineapple production; persistent organic pollutants; “precarious labor”, undocumented laborers in Costa Rica

Readings
van Rijn et al. (2019)

Watch
Bananaland: Blood, Bullets & Poison

Discussion board: prompts and responses

Time on task: 5 hours

Class 3.3: Agriculture for the future, Part 1:
Principles of integrated pest management, sustainable agriculture, permaculture, agroforestry, organic agriculture, hydroponics, indigenous knowledge and practice; the role of women in agriculture

Readings
Parraguez-Vergara (2018)

Discussion board: prompts and responses

Weekly quiz

Time on task: 5 hours

Class 3.4 Agriculture for the future, Part 2:
Community-supported agriculture; local production, small-scale production economics, circular economies, obstacles and options for food sovereignty for Costa Rica’s future; how women influence local economies in tropical nations

Readings
Stahel (2016)
Vilariño et al. (2017)

Watch
Circular economies: definitions and examples
Cows, carbon and climate

Discussion board: prompts and responses

Time on task: 5 hours

Class 3.5 Conservation and agriculture: the land-sparing-land sharing debate
Land-sparing, land-sharing defined and examples; advantages and disadvantages of each; examples from tropical America.

Readings
Bloomquist (2018)
Kremen and Merenlender (2018)
Phalan et al. (2011)

Watch
Wildlife and food production

Discussion board: Prompts and responses

Weekly quiz (3)

Due: Clean Development Mechanism: Expository Essay

Time on task: 5 hours

Week 4

Class 4.1  Tourism: Pre-covid global and regional trends.
Tourism as an economic development strategy. Pre-covid 19 patterns and trends in the tourism industry worldwide and for Costa Rica. Integrated Conservation and Development Project in the tourism sector. Impacts of international travel on local and regional cultures, on the environment (greenhouse gas emissions, solid waste and wastewater), and on local economies.

Readings
Koens et al. (2009)

Watch
Gringo Trails

Discussion Board: prompts and responses

Time on task: 5 hours

Class 4.2  Alternative types of tourism.
Characteristics and trends across all sorts of tourism: ecotourism, adventure tourism, sun-and-sand tourism, medical tourism, sex tourism. How communities and individuals are impacted.

Readings
Class 4.3

Overtourism and tourism certification.
Overtourism, explained; third party versus first party certification; Costa Rica’s Certificate of Sustainable Tourism (protocol, monitoring, and impacts on tourism practices); green-washing; certification pitfalls, myths, and impacts of certification on consumer psychology. Can tourism certification prevent overtourism?

Readings
Honey (2008)
Honey (2011)

Watch
Crowded Out: An Overtourism Documentary

Discussion Board: prompts and responses

Time on task: 5 hours

Class 4.4

Post-covid tourism.
The post-covid collapse of the travel and hospitality industry and emerging trends in tourism; heightened expressions of xenophobia and anti-foreigner sentiments; the potential for domestic travel to fill the economic gap. Are there opportunities or advantages that tropical nations can leverage in tourism in a post-covid 19 world?

Readings

Discussion Board: prompts and responses

Due
Submission and commentary on: Responsible Consumerism Video

Class 4.5

Great problems; great solutions.
Review of the challenges that Costa Rica confronts in terms of protecting biological and cultural diversity in the face of developing – and crashing - economic activities; current policies, practices, and norms that show promise for sustainable economic
development; how individuals (Costa Rican and others) can make a difference and advance sustainability.

Weekly quiz

Due
Persuasive Writing: An Opinion

Time on task: 5 hours

**Course Materials**

**Readings**


Parraguez-Vergara, E., Contreras, B., Clavijo, N., Villegas, V., Paucar, N., & Ther, F. (2018). Does indigenous and campesino traditional agriculture have anything to contribute to food sovereignty in Latin America? Evidence from Chile, Peru, Ecuador, Colombia


**Media Resources**

Center for Responsible Tourism (Producers). (2010). *Cracking the Golden Egg* [Motion Picture]. United States: LocalFilms