

**Global Sustainable Development**  
INTR 205.1, University of Rochester

Fall 2024  
Thursdays 2:00-4:40 pm  
Bausch & Lomb Room 270

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Office Hours:  
Thursdays 1:00-2:00 pm, Harkness 307

or immediately following class or by appointment  
(Feel free to contact me to make an appointment!)

Course Description

With world population of nearly 8 billion and global GDP of \$85 trillion, human impacts on the environment have already reached dangerous levels. By 2050, world population could reach 9 billion and global GDP \$200 trillion. Despite unprecedented growth in countries such as China and India, some 650 million people still live in extreme poverty—concentrated especially in South and Central Asia and Africa. The impacts of climate change are being felt on all continents, requiring rapid decarbonization of economies if we are to avert the worst effects of climate change. The central challenge for humanity in the 21<sup>st</sup> century is the triple endeavor of addressing climate change, ending extreme poverty, and improving social inclusion—all of which are crucial for achieving sustainability of our planet and its many life forms, including humans.

Any effort to address these three complex, interlinked challenges must be interdisciplinary. Policies at the local, national, and global levels must draw on the best of our knowledge and innovation across sectors such as energy, biodiversity and conservation, health, sustainable business practices, food and nutritional security, social service delivery, and good governance. This course will offer introductory discussion and policy, economic and science-oriented readings on each of these sectors. We will also address interventions and policies in these sectors, which must be sensitive to gender and sexual identity and orientation, address racial inequalities and discrimination, and be in keeping with international standards of human rights. The course will explore responses by governments, the private sector, and civil society. In September 2015, the world adopted the Sustainable Development Goals (SDGs) for 2030 at the UN General Assembly while the historic Paris Climate accord was also reached three months later under the UN Framework Convention for Climate Change. The world has progressed on many of these goals but still has far to go to achieve sustainable development.

The 13 weeks of the course include a significant practical element – students will work in small groups with a partner organization (a business or non-profit), focused on an aspect of sustainable development, to complete a project that is of importance to the organization. Projects will be identified in advance by the professor through collaborative arrangements with the organizations.

Course requirements include weekly readings, a weekly writing assignment or presentation, class discussion, two mid-term exams, and the final group project.

**CREDIT HOURS:** 4 credit hours. This course follows the College credit hour policy for 4-credit courses. This course meets once weekly for 140 minutes per week (including a short break). The course also includes independent out of class assignments and group work for at least 1 hour per week, including using assigned readings and other class materials (as noted in the syllabus assignments) as well as occasional in person or online small group meetings with the professor. These activities include preparation to lead or participate in group case discussion, work on group projects, presentations, and assignments. Students are expected to spend at least 8 hours per week on assigned reading and assignments. Length of reading assignments will vary given the complexity of the material assigned.

**ACADEMIC SUPPORT SERVICES:** Students are encouraged to utilize academic support services: the Writing Speaking and Argument Program, <https://writing.rochester.edu>; Center for Excellence in Teaching and Learning (CETL), [www.rochester.edu/college/cetl/](http://www.rochester.edu/college/cetl/)

**ACADEMIC HONESTY:** All assignments and activities associated with this course must be performed in accordance with the University of Rochester's Academic Honesty Policy. More information is available at: <https://www.rochester.edu/college/honesty/policy/index.html>

**DISABILITY RESOURCES:** The University of Rochester respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of disability, please contact the Office of Disability Resources. The access coordinators in the Office of Disability Resources can meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations. You can reach the Office of Disability Resources at: <https://www.rochester.edu/college/disability/> or (585) 276-5075; Taylor Hall.

### Learning Objectives

The course learning objectives focus on substantive knowledge, critical thinking, practical project work, and project management and completion skills.

By the end of the semester, students should:

- Be familiar with thematic and conceptual debates on sustainable development
- Understand basic issues, trends, and concepts in the field of sustainable development including economic measures of well-being and alternative economic models of development as well as causes of and solutions to climate change
- Be familiar with current and emerging global issues related to the Sustainable Development Goals in fields such as energy and climate, agriculture, global health and education

- ◆ Gain an understanding of some of the strategies and examples of ways in which governments, the private sector, non-profit organizations, multi-lateral institutions and citizens can contribute to a sustainable society and economy
- Gain a greater awareness of how and why sustainable development is important and how we as a society and global community can work to attain it
- Learn and practice professional skills of time management, project management and completion, professional communication by email, phone and Zoom/video conference with an employer/partner, and other skills related to project execution
- Engage in self-reflection regarding the course, your experiences, and what you have learned through working with your partner organization/company

Aug 29            Introductory Session: Sustainable Development Goals (SDGs)  
(Week 1)

### Readings

[\*Transforming Our World: The 2030 Agenda for Sustainable Development\*](#), Finalized text for adoption by the UN General Assembly in September 2015. Read pages 5-9; 5 pages.

[“Sustainable Development Goals Report 2024,”](#) United Nations, 2024, Pages 8-45 only. 37 pages

### Reading Questions

As you read, be sure you can answer the following questions. This will require careful reading.

1. What are the Sustainable Development Goals (SDGs) and how were they created (by whom, when, why, where, and through what process)?
2. The *Transforming Our World* document is official UN text resulting from very lengthy negotiations with all members of the UN General Assembly – 193 nations – as well as the broadest UN consultative process in history. The text was then adopted by all the nations of the General Assembly, representing nearly every nation in the world. How is this document different than a research report or academic article? Where do you see evidence in the document of the framers’ intentions to address/balance the needs and priorities of the world’s wealthiest and poorest nations? Please think of direct examples from the text. What are two of the principles and aspirations it refers to, before laying out the SDGs?
3. The SDGs are interdependent and indivisible. Explain how one of the SDGs impacts other SDGs and vice versa. For example, how will meeting one SDG of your choice help us to attain some of the other SDGs? Use your knowledge, imagination, common sense, and if necessary, research.

4. How have the war in Ukraine, climate change, and lingering impacts of the COVID pandemic affected progress toward the SDGs? Be specific, with examples from several SDGs according to the SDG Report 2022. Where are areas of progress? Where can we find room for optimism?

### **Week 1 Assignment – due on our 1st day of Class**

1. Be ready to discuss on the first day: Choose 1 SDG of interest to you. Why is it important? What are some of the targets for reaching that SDG (give 2 examples of targets that fall under each goal, for ex SDG target 2.2) and what is an example of an indicator under each target? Go to [SDG Tracker](#) to research this. Examine at least one country (through the SDG Tracker and/or your own research). How has this country done on making progress toward your chosen SDG?
2. To discuss in class in small groups: Turning to the topic of tracking progress and enforcing the SDGs, choose one country and look at one of the [Voluntary National Reviews](#) reports submitted to the UN by that country (scroll down on the website to see the individual country reports). Find one that is in a language you speak. What is one SDG/area where that country has made progress, and what is the progress cited? What is one area where that country has faced challenges? Discuss the reasons why and their impact.

### **Week 1 Learning Objectives**

1. Know the definition of sustainable development and its three pillars.
2. Understand what the Sustainable Development Goals (SDGs) are and how they were created (by whom, when, why, where, and through what process).
3. Understand how the SDGs evolved from the Millennium Development Goals (MDGs), and how they aim to address some of the shortcomings of the MDGs.
4. Be familiar with how the SDGs are measured, in particular through the targets and indicators under each SDG.
5. Be more deeply familiar with at least two of the SDGs---why they are important, the targets for reaching those SDGs and how they relate to the other SDGs (for example, will meeting those SDGs help us to attain any of the other SDGs)?
6. Understand how the SDGs are operationalized. How do countries take these goals on and try to achieve them? Through what processes in general?
7. Is achievement of the SDGs a legally binding obligation for countries? How is the commitment to countries meeting the SDGs enforced?

8. How have the wars in Ukraine and Gaza, the coronavirus pandemic and climate change impacted our progress toward meeting the SDGs globally? What are some of the challenges it has posed in specific areas/SDGs? To the global economy and to individual wellbeing as a whole?

## **PART I: The ECONOMICS OF SUSTAINABLE DEVELOPMENT**

Sept 5  
(Week 2)      **Economic Development: Determinants and Measures**

"[Growth: Building Jobs and Prosperity in Developing Countries](#)," DFID Read pp 1-22. **22 pages**

"[Ending World Poverty](#)" Interview with Ana Revenga, Senior Director of the Poverty and Equity Global Practice at the World Bank, June 2016 (originally published in *The Christian Century*). **4 pages**

Victoria KwaKwa and Aloysius Uche Ordu, *Foresight Africa*, [Chapter 1, "Economic Recovery and Growth: Tackling Multiple Headwinds](#)," Brookings Institution, 2023. Read from page 10 until but not including "Nigeria in 2023: Bridging the productivity gap" – which is on p. 25. **15 pages**

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### *Collaborative Projects – Week 2*

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- *We will discuss the collaborative projects and how we will go about working on them in this course.*
  - *We will introduce the organizations/companies with which you will be working this semester.*
  - *We will briefly define the potential projects to be completed with each partner organization/company.*
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## **Week 2 Learning Objectives and Discussion Questions**

We will discuss the questions below in class:

1. Understand thinking in the field of economics, as described by Barro, regarding the main determinants of economic growth. What contributes to growth? What detracts from it? (This will be covered in the lecture, not the readings.)

2. Be familiar with some of the critiques of Barro's model in terms of whether economic growth contributes to poverty reduction. (Lecture)
3. Under what circumstances can economic growth contribute to poverty reduction? What types of policies might be needed to ensure that economic growth reduces poverty (is pro-poor) (DFID article)?
4. Understand if economic growth necessarily leads to reductions in inequality in a society/economy (Lecture).
5. How can extreme poverty be reduced, especially in the least developed countries according to Ana Revenga of the World Bank?
6. What role do rich countries have to play in this?
7. What are some of the challenges and determinants of economic growth in Africa? What does the continent need to do to increase growth and reduce poverty?
8. Understand the definition of economic growth and inequality (Gini Coefficient - Lecture)

**Assignment for Week 2 (due during Class Week 2):** Try the OECD Compare Your Income survey by going to [www.compareyourincome.org](http://www.compareyourincome.org).

**Assignment for Week 3 (due Week 3):**

We will break into four groups of students, and each group will prepare a 15 minute presentation on one of the four topics for this week, all of which address alternative ways to measure progress and social and environmental well-being: 1) Measuring economic performance and well-being (Stiglitz Report); 2) Valuing natural capital; (Quesada) 3) Measuring World Happiness; and 4) the Benefit Corporation. I will have a sign up sheet on Blackboard where you will sign up for one of the 4 groups.

Your presentation should cover the main points and arguments of the reading, while also providing real world examples (from outside the reading) of how the concepts are put into practice. So for example for Group 1, you might look at a country or multilateral organization that has adopted or advocated for some of the alternative measures of economic performance and social progress that the Commission proposes. For Group 2, you could look at examples of how a specific country, region or town values and makes payments for ecosystem services – how does this work and to whom are payments made?

Please be sure that your presentation is one, smooth, integrated presentation, not four separate presentations by each person cobbled together.

Sept 12      **New Measures of Wellbeing and Development & New Business Models**  
 (Week 3)      *BY ZOOM – This week our lecture and discussion will be held by Zoom. (See Link in Blackboard).*

### **Week 3 Assignment** – Google Sheets Sign Up [Here](#)

We will break into four groups of students, and each group will prepare a 10-15 minute presentation on one of the four topics for this week, all of which address alternative ways to measure progress and social and environmental well-being: 1) Measuring economic performance and well-being (Stiglitz Report); 2) Valuing natural capital; (Quesada) 3) Measuring World Happiness; and 4) the Benefit Corporation. There is a sign-up sheet on Blackboard and at the link above where you can sign up for one of the 4 groups.

Your presentation should cover the main points and arguments of the reading, while also providing real world examples (from outside the reading) of how the concepts are put into practice. So for example for Group 1, you might look at a country or multilateral organization that has adopted or advocated for some of the alternative measures of economic performance and social progress that the Commission proposes.

- 1) [“Report by the Commission on the Measurement of Economic Performance and Social Progress,”](#) Joseph E. Stiglitz, Amartya Sen, Jean-Paul Fitoussi, Executive Summary, pages 1-12, 2009. **12 Pages**
- 2) Alvaro Umaña Quesada, “Valuing Nature: the Case of Tropical Forests and Costa Rica,” Valuing nature series, Stanford Natural Capital Project , 2024. Article by former Minister of Environment, Costa Rica. Posted on Blackboard.

This article gives an example of how governments have brought nature into decision-making, providing an overview of how Costa Rica created a pioneering system for giving value to standing forests, drawing on his first-hand experience as Minister for Environment and Energy in the late 1980s, charged with designing and implementing this policy. The policy was centred on fiscal incentives for reforestation, financed by an international debt-for-nature swap mechanism.

- 3) [World Happiness Report Chapter 2](#) John Helliwell, Haifang Huang et al, Chapter 2, Read pp.11-53 **42 pages including graphs and pictures**
- 4) [“The Need and Rationale for the Benefit Corporation”](#) White paper, William H. Clark, Jr., Drinker Biddle and Reath, LLP: Larry Vranka, Canonchet Group LLC, pp. 1-8, 2013. **8 Pages**

Christine Mathias, [“What is a Benefit Corporation?”](#) NOLO, **3 pages.**

[Watch B-Lab Video](#) 2 min 38 sec

### **Week 3 Learning Objectives and Discussion Questions**

1. What are some of the drawbacks to using GDP and the growth rate of GDP (economic growth) as the main measures of a country's economic health and people's wellbeing?
2. Understand the rationale (and benefits) for developing alternative measures of economic progress.
3. What does the Stiglitz Commission on Measurement of Economic Performance argue for, in terms of alternatives for measuring current well-being?
4. How does the Stiglitz Commission propose that we measure sustainability? Be specific.
5. What measures help us to best assess our progress toward sustainable development? Be aware of the extent to which countries have shifted toward using these new measures.
6. Be familiar with the rationale for using happiness as a measure of well-being and understand how happiness is measured within a country and compared across countries in the World Happiness Report.
7. What six factors are most associated with the level of a country's happiness rating, according to the *World Happiness Report*? Does measuring happiness help us to measure progress toward sustainable development? Why or why not?
8. How does happiness differ by **age** overall? In your region of the world?
9. Understand the definition of a Benefit Corporation and how they are different from a regular for-profit company (C-Corp). What are three business cases (rationales) for a company becoming a Benefit-Corp? What is one disadvantage?
10. Understand the **difference** between a Benefit Corporation and being a B-Corp. (The latter is a standard granted to a for-profit company by the organization B-Lab.)

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### *Collaborative Projects – Week 3*

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- *Students will express their preferences for which organizations/companies they would like to work with.*
  - *We will assign students to small groups with a particular organization/company.*
  - *Students should identify one person in the group who will be the contact point for the group with your partner organization—this person will be in charge of communications by email/text/phone with the partner organization.*
  - *The student contact point should reach out to the partner organization to schedule a first meeting for the group with your partner organization.*
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## **PART II: SOCIAL INCLUSION**

This part of the course examines the second pillar of sustainable development, social inclusion. Social inclusion means including everyone in the benefits and work of sustainable development, and creating a more just and equitable world. In part, this can be achieved by ensuring that everyone has access to a quality education, health care, nutritional food, and dignified work. But how do we do that? What are some useful examples from around the world?

I will consider using some Harvard Business School cases – available for free under Harvard Business Publishing Education –Account in Notes

Sept 19  
(Week 4)      **Education – Primary and Secondary**

M. Baxter, K. Kerr, R. Marcus, and M. Novy-Marx, [\*Secondary Education in Africa: Preparing Youth for the Future of Work\*](#), “Chapter 1,” pp 29-56, Mastercard Foundation, Toronto, 2020. **27 pages.**

“[Technology in Education: On Whose Terms?](#)” Report Summary, Global Education Monitoring Report, UNESCO, 2023, pp 1-32. Be sure to read to end on countries’ progress on Sustainable Development Goal 4 for education; **32 pages.**

Amanda Taiub. Emily Schmall and Shalini Venugopal Bhagat, “[India’s Daughters Chapter 1: To Take Control She Had To Run](#),” New York Times Special Report, December 10, 2023.

[Case study: Sistema de Aprendizaje Tutorial \(SAT\)](#) – Cristina Kwauk and Jenny Perlman Robinson, Brookings Institution, Center for Universal Education, 2016, **11 pages.**

An innovative, alternative secondary level educational system completed to date by over 350,000 students throughout the Americas—mostly in areas where traditional secondary schools are not available. Pioneered in Colombia, this model has been implemented in over a dozen countries and has been shown to boost learning and life outcomes for students not able to access traditional schools.

#### **Discussion Questions:**

1. Primary school enrolment has increased vastly in developing nations since 2000, reaching over 90% on average. Given this success, why is secondary education especially important in Africa right now?
2. How is the nature of work changing, and how can secondary education help youth access jobs or better livelihoods? What skills are needed?
3. What are some of the barriers girls face compared to boys in terms of enrolment and learning in primary and secondary education in developing countries? Are there places where boys are falling behind girls?
4. What are the social and economic “returns” to increasing education, especially girls’ education?
5. What are some ways to improve access to and quality of education?
6. How has technology changed education especially in developing countries if at all?
  - o What is the evidence on the impact of technology in schools on learning outcomes (does it actually improve learning in a measurable way)?
  - o What are some of the drawbacks and costs of using technology in the classroom?
7. What progress is being made on SDG 4 on education (Global Education Monitoring Report)?

8. What is different about the Sistema de Aprendizaje Program (SAT) compared to traditional schooling?
9. What are some of the key lessons learned from this SAT case study?

Sept 26      **Gender, LGBTQ+ and Sustainable Development**  
(Week 5)

[Global Gender Gap Report 2020](#), World Economic Forum, pp. 5-26. Key Findings and Chapter 1. **21 pages**

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#### *Collaborative Projects – Week 4*

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- *Your group should begin work on your project.*
  - *You may want to divide up tasks among members of your group and create a workplan.*
  - *Be sure you have the information and data you need from your partner organization to complete your work. If not, reach out for clarification and the resources/information you need.*
  - *We will conduct weekly check-ins with your group and the professor to chart progress, ensure you are on track, and getting the support you need to do your best work.*
  - *You are strongly encouraged to conduct weekly check-in calls with your partner organization—it works well to have a set time each week for this.*
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“[The Sustainable Development Goals and LGBT Inclusion](#),” Stonewall International, 2020. Read whole document (**10 pages**)

“[I am a Girl, So What about Boys](#),” Plan International, 2011, pp 8-28. 20 pages

David E. Bloom et al, “[Invest in Women and Prosper](#),” International Monetary Fund, 2017. **4 pages new 2024**

Watch in Class: Man Up Video.

#### **Optional**

Rosamund Hutt, “[This is the state of LGBTI rights around the world in 2018](#),” World Economic Forum, June 14, 2018. Blog - **4 pages**

**Week 5 Learning Objectives and Discussion Questions:**

1. How is the Global Gender Gap measured? Along which four dimensions?
2. On which of the four dimensions does the world have the least gender inequality? In which dimension the most?
3. Considering the world's progress toward achieving the SDGs, what are some of the areas in which LGBTQ+ people are being left behind? Do the SDGs explicitly address LGBTQ+ rights?
4. What impact does discrimination and the violation of human rights against LGBTQ+ people and gender inequality have on our ability to achieve sustainable development in various areas, such as economic well-being, health, the environment, etc.?
5. What are traditional gender norms for men? How can these be harmful to boys and men, but also to everyone? What does Plan recommend for engaging men and boys in efforts to improve gender equality?

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### *Collaborative Projects – Week 5*

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- *Continue to work on your project.*
  - *Conduct weekly check-in with your organization and professor.*
  - *What if any issues need to be resolved?*
  - *Are you on track to meet deadlines?*
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### Oct 3 **Global Health** (Week 6)

“[State of World Population 2019](#),” UNFPA, Read Forward and Ch 1, pp 3-21,. **18 pages.**

“Adding it Up: Investing in Contraception and Maternal and Newborn Health,” [Guttmacher Institute](#), 2019, Executive Summary and part of Purpose/Overview, Pages 4-8, (**4 pages**).

Sushmita Pathak, “India’s Family Planning Still Relies Mainly on Female Sterilization” News Line Magazine, August 2023. **6 pages**

Roosa Tikkanen, et al, “[Maternal Mortality and Maternal Care in the US Compared to 10 Countries](#),” Commonwealth Fund Issue Briefs, November 18, 2020. **5 pages**

Paul Pronyk, Mortality Mortality, Global Health Lecture Series, Columbia University, [Video](#), Vimeo (**21 minutes**)

### **Self-Reflection on Projects (Reading)**

Patti Clayton and Sarah Ash (2009), “Schematic Overview of the DEAL Model for Critical Reflection.” **3 pages** Available on Blackboard.

#### **In class:**

- Visit [SDG Tracker for SDG 3: Health and Wellbeing](#), United Nations. Ritchie et al, “Measuring Progress Toward the Sustainable Development Goals,” SDG-Tracker.org website, 2018. Review all of the targets under SDG 3 and progress to date. **Graphics. Review and critically read charts.**
- Project Reflection -- After reading the DEAL Schematic Overview,

### **Week 6 Learning Objectives and Discussion Questions**

1. What was the importance of the International Conference on Population and Development in 1994? What was the shift in thinking at that time about how to address population growth? What are some other major milestones in global reproductive rights since that time?
2. Are women having their choices and needs met when it comes to access to safe contraception? If so, where and where not? What are the benefits to women themselves of meeting their needs for contraception? What are other benefits to society?
3. How is access to Sexual and Reproductive Health addressed (or not) in the SDGs? Is recognition of sexual and reproductive rights a part of the SDGs? Are there specific targets in the SDGs for access to contraception?
4. Why does investment in Sexual and Reproductive Health pay off in terms of other human development and SDG outcomes? What about for the environment and climate change?
5. Video: What are some of the direct (or “proximate”) causes of maternal mortality? What are some of the indirect causes/contributing factors? What are best practices to address the direct causes as well as some of the indirect contributing factors of maternal mortality?

Oct 10  
(Week 7)

### **Mid-term Exam 1**

Mid-term 1 covers material from Week 1 (SDGs) through Week 6 (Global Health). A good way to review for the exam is to go through the learning

objectives for each module and be sure you have achieved them, answer the reading discussion questions, review your notes, and refer back to the readings and lectures (slides posted on Blackboard). Several days prior to the exam, I will give you a review sheet of definitions, concepts and questions to consider for the midterm.

### **PART III: ENVIRONMENTAL SUSTAINABILITY**

Oct 17  
(Week 8)      **Conservation & Biodiversity**  
“[Ecosystems and Human Well Being, Synthesis](#): Summary for Decision Makers,” Millennium Ecosystem Assessment. Read Preface (p. iii) until p.19. **22 pages**

“[Greener, Healthier, More Sustainable: Why cities of the future need more biodiversity](#),” Article on increasing biodiversity in cities, Viktor Weber, World Economic Forum, January 6, 2020. 2 pages

Ally Mauch & Rebekah Brandes, “[Once Barren and Overrun with Rats, This Lush Island Is Now a Protected Area](#),” *Nice News*, December 4, 2023 and article (2 pages) and watch video (1 min 30 sec) at same link.

Miyawaki Forests, *New York Times* article, August 2023.

Claudia Rebaza, “[Ecuadorians vote to ban oil drilling in the Amazon in historic referendum](#),” CNN, August 21, 2023.

Catrin Einhorn, “[It Was War. Then a Rancher’s Truce with Some Pesky Beavers Paid Off](#),” *New York Times*, September 6, 2022. **3 pages**

Watch [video](#), How Wolves Change Rivers, **4 min 33 sec**

Watch [video](#) How Beavers Engineer the Land, **6 min 46 sec**, George Monbiot, Sustainable Human.

#### **Case Study: Posada Amazonas Eco-lodge and the Ese Eja indigenous community in Peru**

“[Commons Management and Ecotourism: Ethnographic Evidence from the Amazon](#),” Amanda Stronza, *International Journal of the Commons*, Vol. 4, no. 1, 2010, pp. 56-61. **5 pages**

“Communities and Conservation,” [Case study](#) of Posada Amazonas Ecolodge, Peru, Texas A & M University, 2011. **5 pages**

Read the case materials carefully; we will divide up into groups and act out roles to decide the future of the Amazonas Lodge during class.

In class:

- Act out the Amazonas Lodge case, with groups of students each representing a different set of stakeholders: indigenous people, company owners, and international foundations and NGOs

**Optional:**

Watch [video](#) by Greta Thunberg and George Monbiot, **3 min 40 sec**

Listen to [Podcast](#) on Beaver reintroduction in Scotland, Living on Earth, NPR, **6 min**

[Case of Hadza People in African Rift Valley](#), Tanzania, Nature Conservancy

**Discussion Questions**

- What are eco-system services? How is biodiversity defined?
- Why is biological diversity important for sustainable development?
- How could more biodiversity improve cities?
- What is the Convention on Biological Diversity? Has it been effective? How can one measure the impacts? (Lecture)
- How do wolves change rivers, specifically? How do beavers affect the landscapes they live in and how do they benefit ranchers? What happens to an ecosystem when these native species disappear from the landscape?

Cast study: Amazonas Lodge

- What was the model (negotiated agreement between the Ese Eja indigenous people of Amazonas and the outside company) used in the joint venture for operating the Amazonas Lodge?
- Who are different stakeholders in Amazonas Lodge and the surrounding ecosystem, and how do their interests and priorities differ?

Oct 24

**Indigenous Knowledge & Perspectives on Sustainability**

(Week 9)

Robin Wall Kimmerer, *Braiding Sweetgrass*, [Chapters 1, 11 and Honorable Harvest](#) (Read all 3 chapters/parts above- **29 pages total**) This is not technical or dense reading--it is beautiful and easy reading but requires thought--**please read all the pages.**

**Week 9 Learning Outcomes and Discussion Questions**

1. How does the creation story described by Kimmerer impact indigenous perspectives on nature and sustainability, from the perspective of the author and the indigenous perspectives she describes?

2. How would the definition of sustainability be different –based on your understanding of the readings --if crafted from an indigenous perspective? The traditional definition of sustainability adopted from the Commission is “development that addresses the needs of the present while not compromising the ability of future generations to meet their own needs.”
3. Describe Kimmerer’s concept of reciprocity. Give three examples of such reciprocity from her book. Does this concept resonate with you? Is it applicable in our modern world?
4. What is the purpose of the Thanksgiving Address? One Onandaga leader called it the most important way to prepare for and guide decisions and to understand how to live in the world. Why do you think?
5. What is the Honorable Harvest? How could this be practiced by you in the modern world? Does it resonate with you?
6. What could we learn from incorporating more indigenous knowledge into current development models or pursuing alternative models all together?

**In class:** Students indicate their preferences for one line item on climate change reduction that is part of the Inflation Reduction Act 2022 (US climate change legislation)—you will research this and present on it at our next class (Week 10)

Oct 31  
(Week 10)

### **Energy and Climate Change 1**

Reading Packet, “Paris Agreement and Carbon Markets,” **24 pages**. Posted on Blackboard.

“[What is REDD+](#)”, United Nations Climate Change, Online reading – read website following links (3pp) and watch video (4 min).

Daniel Wetzel, et al, “[Nations Are On Track to Reach Their NDC Targets. The Catch Is Their Targets Aren’t High Enough for Net Zero by 2050](#),” Energy Post, November 6, 2030, **4 pages**

Paul Hawken, Editor, *Project Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, “Forward and [Refrigeration](#)” reading (**3 pages**)

Paul Hawken Interview ([video](#)) – **8 min**

Read US Inflation Reduction Act, passed August 2022 - [NY Times article](#) **5 pages**

David Gelles, Brad Plumer, et al, “The Energy Transition,” New York Times special section, August 19, 2023. **7 pages**

Max Bearak, “Clean Energy on Rise Everywhere Except in Poor Nations,” *New York Times*, September 6, 2023. **2 pages**

**Week 10 Assignment:** Each student will present (5 min) in class on one element of the Inflation Reduction Act’s investments in climate change mitigation and the green economy. An online sign-up sheet will be distributed where you can pick your topic. Read the [NY Times article](#) on the Inflation Reduction Act above and conduct independent research on your chosen part of the legislation. You may also include info from the Energy Transition article or other sources. Your research should be targeted to provisions of and explaining about what is included in the Inflation Reduction Act legislation re your specific topic—NOT general research on your topic. So, if you chose subsidies for solar panels funded by the Act, you should specifically research what the Act provides for in terms of solar panels –not solar panels in general.

**In class:**

- Student Presentations on implementation of climate policies and tax credits from the US Inflation Reduction Act
- Simulation: [EN-ROADS climate model](#) developed by MIT scientists. This is a simulator that shows relative impacts of different solutions and policies to reduce greenhouse gas emissions and tackle climate change.

**Week 10 Learning Outcomes and Discussion Questions**

1. What is the Paris Agreement? How many nations signed on? What are NDCs and how are they enforced?
2. How far along is the US on an energy transition to non-fossil fuels (NYT article)? What factors are speeding this transition? What barriers stand in its way? Is progress occurring faster than you expected? Are there downsides to this transition in your view?
3. Why aren’t clean energy projects on the rise in many developing countries? What specifically is the barrier?
4. Why is destroying refrigerants (and changing the types we use) the number one way to reduce GHG and climate change according to *Drawdown*? Why are wind turbines considered the number two way to reduce GHG?
5. What most resonates with you about Paul Hawken’s video? If it does not resonate with you, explain why.

6. How does the Inflation Reduction Act passed by the US Congress in August 2022 address climate change? Do you think this is more effective than imposing fines on companies emitting greenhouse gases?
7. Be ready to present on the element of the Act that you chose to focus on.
8. In your view, how effective will the Act be at addressing climate change? What are some of the challenges to implementing it? What more needs to be done?

Note: One of the organizations we are working with this semester, Tradewater, has as its main mission tracking down and destroying powerful greenhouse gases produced by harmful refrigerants (CFCs and HCFCs) around the world, and selling the resulting carbon offset credits on carbon markets to fund even more collection. This stuff is really happening, and it works! Paul Hawken in *Drawdown* features destroying refrigerants as a top priority to address climate change.

## Week 11 **Climate Change & Environmental Justice – 2**

(Nov 7)

*How are efforts to protect the environment and address climate change affecting traditionally marginalized communities and other stakeholders such as farmers?*

Nicky Sheats, “[Achieving Emissions Reductions for Environmental Justice Communities through Climate Change Mitigation Policy](#),” The New School, Tishman Environment and Design Center. **19 pages**

“[Implementing Biden’s Justice40 Commitment To Combat Environmental Racism](#),” Center for American Progress, June 22, 2021 **7 pages**.

Brad Plumer and Nadia Popovich, “[How Decades of Racist Housing Policy Left Neighborhoods Sweltering](#),” *New York Times*, August 24, 2020. **7 pages**

READ ONE of the following TWO ARTICLES: (both are great!)

- Serena Solomon, “[How New Zealand’s Climate Fight is Threatening its Iconic Farmland](#),” *New York Times*, August 11, 2022. **6 pages**
- Claire Moses, “[Dairy Farms in the Netherlands Are Up in Arms Over Emissions Cuts](#),” *New York Times*, August 20, 2022. **5 pages**

### **Optional:**

Watch documentary film [The Sacrifice Zone](#) (32 min), Talking Eyes Media, 2020 for one percentage point of extra credit to be contributed to your final grade.

## Week 11 Learning Objectives and Discussion Questions:

1. Based on the articles by Nicky Sheats, how does reducing GHG through carbon trading affect low-income communities, given early evidence from California? Why?
2. What impact has redlining had on temperatures in historically marginalized Black neighborhoods, and how does this affect these communities? How does it impact climate change?
3. What are disproportional impacts and how are they measured?
4. Climate policy in wealthy countries is affecting some groups like farmers more than others – how has it affected farmers in New Zealand? In the Netherlands?

## Week 11 Assignment

- Go online and calculate your personal or family carbon footprint using [Tradewater's calculator](#). Click the green “Take Action” button on the main web page and follow the directions. You don't have to purchase carbon offsets (but you can if you want! I purchase them monthly to partially offset my emissions). Please share in class your experience, your total emissions, and the cost to offset them each month with high quality carbon credits such as those offered by Tradewater.

Nov 14  
(Week 12)

### **Agriculture, Nutrition, and Food Security**

WATCH 1 FILM BY Michelle Aguilar, Director. Both films are available through New Day as well as Kanopy.

WATCH - [El Cacao](#), 19 min OR [No Place to Grow](#).

#### Hunger and Malnutrition:

“[The first 1,000 days: No time for malnutrition](#),” Mercy Corps, Accessed 2019. **5 pages including pictures/graphics.**

“[Quick Facts: What you need to know about global hunger](#),” Mercy Corps, Accessed 2019. **6 pages including pictures.**

#### Regenerative Agriculture:

Kernza a new perennial grain – **3 minute** National Public Radio segment (listen):

<https://www.npr.org/2023/11/16/1213401031/kernza-a-climate-friendly-grain-gets-the-attention-of-brewers-distillers>

Somini Sengupta and Khadija Farah, “[Climate Hackers of Malawi](#),” Small farmers in Africa innovate in face of climate change, *New York Times*, April 27, 2023.

Jack Kittredge, “[Soil Carbon Restoration: Can Biology do the Job?](#)” Northeast Organic Farming Association, Massachusetts, 2015 (**14 pages**).

Moises Velasquez Manoff, “[Can an Island Feed Itself?](#)” *New York Times Magazine*, November 8, 2022.

**Optional:**

Homi Karas and Lorenz Noe, “[Are we reducing hunger in the world?](#)” Brookings Institution, April 2019.

[Article on carbon loss in soil](#)

**Discussion Questions and Learning Objectives:**

1. Why are the first 1,000 days of life a crucial time for a child’s development? If lacking in nutrition during this time, what are the results then and later in life?
2. What are the main causes of hunger worldwide? How can it be addressed according to Mercy Corps?
3. What is regenerative agriculture and what are the specific practices that foster soil’s ability to sequester and keep carbon within it?
4. How does soil absorb and retain carbon? Why is this important for climate change?
5. How is climate change affecting agriculture, as seen through the film, *El Cacao* or *No Place to Grow*?
6. What issues do the documentary films raise in terms of how to address food security while also mitigating climate change?

Nov 21            THANKSGIVING BREAK – No class

Nov 28  
(Week 13)        **Mid-term 2**  
Mid-term exam 2 covers material from Week 7 (Conservation & Biodiversity) through Week 12 (Agriculture, Nutrition & Food Security). A good way to review for the exam is to go through the learning objectives and discussion questions for each week and be sure you understand and can answer them, review your notes, and refer back to the readings and lectures (slides are posted on Blackboard). A

review sheet will be provided that identifies important topics and concepts to study.

Dec 5  
(Week 14)

### **Work on Collaborative Projects**

*There is no reading assigned for this week, but there is a short, written assignment: your second DEAL Model Reflection (see below).*

### **Week 14 Assignment – DEAL Project Reflection**

Review Patti Clayton and Sarah Ash (2009), “Schematic Overview of the DEAL Model for Critical Reflection.” **3 pages** Posted on Blackboard.

This week allows for time to reflect on what you have accomplished and learned so far through your collaborative project, and to continue your project work.

After rereading the DEAL Schematic Overview, complete the three steps of the DEAL Model: 1) Describe, 2) Examine, and 3) Articulate Learning, by writing out your answers to each. Under Examine, choose just one of the categories of learning: personal growth, community engagement, or academic enhancement. This category should be different from the one you picked for the 1<sup>st</sup> DEAL assignment. Your answers should be thoughtful and draw on specific examples from your work. Please write at least 4 to 6 well composed sentences for each of the three steps.

You may complete this assignment together in discussion with other members of your collaborative working group if it is helpful to reflect together, but please compose your answers individually based on your own unique perspective and experience.

Dec 12  
(Week 15)

### **Final Presentations of Student Projects and Class Celebration**

Each group will present their final project to the class and we will have time to discuss, ask questions, and show our appreciation for your accomplishments. Food and refreshments will be served. Let’s celebrate all that you have learned, and the impacts you have made!

## **Course Requirements**

### Assessments

2 Mid-term Exams

### Readings, Lectures, Presentations, and Participation

All students are expected to complete all of the readings every week and to be familiar with the arguments made, how these arguments are substantiated, and counter-arguments. Learning objectives and discussion questions are provided on the syllabus to help guide your reading. Be prepared to discuss these questions in class. Your ability to discuss the readings critically and thoughtfully will be part of your participation grade.

All students are expected to attend class each week and to participate actively; this is an important part of the course and of your grade. Even if you are uncomfortable speaking in class, I urge you to step out of your comfort zone as much as possible. I pledge to intentionally endeavor to create a supportive classroom environment in which everyone's comments and views are welcomed and valued. Developing confidence in public speaking is a highly useful skill and is important for the overall quality of our joint learning. I also encourage you to share any life experiences you have that may help us all reflect on and understand the topic at hand. We can all learn from each other's experiences and diversity of views.

All readings are available online and/or via electronic reserves on Blackboard. No books are needed for purchase.

Weekly Assignments – some weeks there are assignments in addition to the readings; see syllabus by week

### Collaborative Projects for Organizations

Each student will work with a small group of other students from the course to complete a project for an organization (business or non-profit) involved in some aspect of sustainable development. This will be a key part of the course and require significant outside work (at least 5 to 7 hours each week once the projects get going, more at the end of the semester). It will be a valuable opportunity to gain work experience in a professional context with an organization or company committed to sustainable development, and to meaningfully contribute to their efforts.

Your final group project is in place of a final exam and is graded collectively (meaning that you and your teammates are graded together). However, if I have evidence that you have not been a productive and strong contributing member of your group, your final grade may differ from others in your group. This is rarely the case—usually team members all pull together and group projects benefit from everyone's unique skills, passions, and efforts, creating something much bigger than the sum of their parts.

Each group will also make a final presentation (25-30 minutes) to the class about their organization, its relationship to sustainable development, and their final project. These presentations will be given during our last class session together as part of our final class celebration.

### **Grading**

Class Discussion & Participation	30%
Mid-term 1	20%
Mid-term 2	20%
Final Project	30%

I will drop participation for one week in calculating your participation grade, and will also provide the opportunity to earn up to 2 points of extra credit for the course.

### **EXTRA CREDIT**

[Watch Film](#), David Attenborough, *A Life on Our Planet*, Netflix, 1 hr 23 min

You can earn one point of extra credit that will be added to your final grade at the end of the course by watching the film and writing a one-page analysis of it. Due December 15.

Watch the documentary film [The Sacrifice Zone](#) (32 min), Talking Eyes Media, 2020 and write a one-page analysis of it for one percentage point of extra credit to be contributed to your final grade. Due December 15.

Extra Credit Written Assignment: Analysis of the Films Your 1-page, single spaced analysis should briefly summarize the film and present the arguments that the filmmaker is making regarding sustainable development. Do you agree with the argument and methods? Why or why not? What could have been improved/what was particularly effective?

How the extra credit works: if you have an 89 average, for example, you would bump up to a 90 average for the course if you adequately complete the assignment by watching one of the films and writing a summary. If you watch both films and complete both 1-page summaries and analyses of the films, you can earn a total of 2 percentage points of extra credit added to your final grade. Extra credit assignments are due December 15.

Note: If you are not able to access Netflix or the films, please let me know and I can suggest an alternate film or can help you access it.