

Global Sustainable Development
INTR 205.1, University of Rochester

Fall 2022
Wednesdays 2:00-4:40 pm
Harkness Room 112

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Office Hours:
Wednesdays 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 central challenge for humanity in the 21st century is the triple endeavor of ending extreme poverty, improving social inclusion, and addressing climate change—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. Interventions and policies in these sectors 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. They must involve governments, the private sector, and civil society. In September 2015, the world adopted the Sustainable Development Goals (SDGs) for 2015 to 2030 at the UN General Assembly while the historic Paris Climate accord was also reached under the UN Framework Convention for Climate Change.

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 short breaks). 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/

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
- 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
- ♦ Have a greater 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
- Have 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
- Engage in self-reflection regarding the course, your experiences and what you have learned through working with your partner organization/company

Aug 31
(Week 1) Introductory Session: Sustainable Development Goals (SDGs)

Note: The first class will be ASYNCHRONOUS. WE WILL NOT MEET IN PERSON FOR THE FIRST CLASS. The assignment for the first class is to do the readings below and watch a pre-recorded introductory lecture posted on Blackboard (Learning Module 1) about the Sustainable Development Goals. This is REQUIRED. At our 2nd class we will discuss Week 1's Readings and Assignment (see below) about the SDGs.

Readings

[*Transforming Our World: The 2030 Agenda for Sustainable Development*](#), Finalized text for adoption by the UN General Assembly in September 2015. Read pages 1-18; **18 pages**.

["Sustainable Development Goals Report 2022,"](#) United Nations, 2020, Pages 28-63 only. **35 pages**

Reading Questions

As you read, be sure you can answer the following questions. This will require careful reading. It will be helpful to review these questions before completing the readings.

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 has COVID 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 2nd day of Class, Wednesday, Sept 7

1. Be ready to discuss on our second day of class (Sept 7): 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 for each) 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 Internet research). How has this country done on making progress toward your chosen SDG?
2. To discuss in class in small groups (don't need to do this before class): 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). 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? Describe.

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? What is a Nationally Determined Commitment?
7. Is achievement of the SDGs a legally binding obligation for countries? How is the commitment to countries meeting the SDGs enforced?

8. How has the coronavirus pandemic 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 7
(Week 2) **Economic Development: Determinants and Measures**

Robert J. Barro, "[Determinants of Economic Growth: A Cross-Country Empirical Perspective](#)," NBER Working Paper 5698, 1996. **Pages 1-53 only**

"Growth: Building Jobs and Prosperity in Developing Countries," DFID
<https://www.oecd.org/derec/unitedkingdom/40700982.pdf>
Read pp 1-16.

"[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**

Collaborative Projects – Week 2

- *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

In addition to discussing the SDGs (last week's readings and recorded lecture) we will discuss the questions below in class:

1. How can extreme poverty be reduced, especially in the least developed countries according to Ana Revenga?
2. What role do rich countries have to play in this?
3. Understand the definition of economic growth and inequality (Gini Coefficient - lecture)

4. 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?
5. Be familiar with some of the critiques of Barro's model in terms of whether economic growth contributes to poverty reduction.
6. 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)?
7. Understand if economic growth necessarily leads to reductions in inequality in a society/economy (lecture).

Week 2 Assignment

- 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 for each) 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 Internet research). How has this country done on making progress toward your chosen SDG? You will share about the SDG you chose in class.
- Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings. Explore the concepts presented. Thoughtfully integrate concepts and your reflections from each of the readings into your response. Feel free also to draw upon your own personal life experience as you reflect on the readings, as we all can learn from each other in this regard. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate's YellowDig blogs. Yellow Dig can be found on Blackboard at the top of the Learning Modules section.

Sept 14
(Week 3) **New Business Models & New Measures of Wellbeing and Development**

[“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. 1-21 (Exec Summary, Parts I-III), 2013. **21 Pages**

[“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**

[World Happiness Report 2021](#), Eds. John Helliwell, Richard Layard, and Jeffrey Sachs, Overview, Read pp. 1-39 **39 pages including graphs and pictures**

Week 3 Learning Objectives and Discussion Questions

1. Understand the definition of a B-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 B-Corp? What is one disadvantage?
2. How can B-Corps contribute to sustainable development?
3. 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?
4. Understand the rationale (and benefits) for developing alternative measures of economic progress.
5. What does the Stiglitz Commission on Measurement of Economic Performance argue for, in terms of alternatives for measuring current well-being?
6. How does the Stiglitz Commission propose that we measure sustainability? Be specific.
7. 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.
8. 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.
9. What factors are most associated with the level of a country's happiness rating, according to authors of the *World Happiness Report*? Does measuring happiness help us to measure progress toward sustainable development? Why or why not?

Collaborative Projects – Week 3

- *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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Weekly Assignment 3

- Try the OECD Compare Your Income survey by going to www.compareyourincome.org.
- Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings and the Compare Your Income exercise. Did anything surprise you? If not, why? What did you find particularly interesting? Explore the concepts presented. Thoughtfully integrate concepts and reflections from each of the readings into your response. Feel free also to draw upon your own personal life experience as you reflect on the readings as we all can learn from each other in this regard. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate's YellowDig blogs.

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 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?

Sept 21
(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](#), “Executive Summary and Chapter 1,” pp 7-41, Mastercard Foundation, Toronto, 2020. **34 pages.**

M. Novy-Marx, “Secondary Education in Africa: A Gender Brief,” Mastercard Foundation, Toronto, 2020. Sections 3 and 4, pp 22-36 **14 pages.**

[Evaluation of the SAT Program](#) in Honduras **19 pages.**

[Case study: Sistema de Aprendizaje Tutorial \(SAT\)](#) – An innovative, alternative secondary level educational system completed to date by over 300,000 students throughout the Americas—mostly in areas where traditional secondary schools are not available. Pioneered in Columbia, 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.

Read blog from link above – **3 pages.**

Optional

“Designing Effective Cash Transfer Programs to Boost Schooling Among Young Women in Africa.” World Bank working paper 5090, October 2009.

[Skills Balancing Act in Sub-Saharan Africa](#), World Bank, 2020.

Discussion Questions:

- 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?
- How is the nature of work changing, and how can secondary education help youth access jobs or better livelihoods? What skills are needed?
- 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?
- What are the social and economic “returns” to increasing education, especially girls’ education?
- What are some ways to improve access to and quality of education for girls?

- What are specific steps that can be taken to ensure that teachers are prepared to teach well and promote quality learning in schools?

Weekly Assignment 4

Post on Yellow Dig – In a blog post of 250 or more words, reflect upon and comment on the readings. What did you find particularly interesting? Thoughtfully integrate concepts and reflections from each of the readings into your response. Feel free to draw on your own personal life experience as you reflect on the readings. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate’s blogs.

Collaborative Projects – Week 4

- *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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Sept 28
(Week 5)

Gender, LGBTQ+ and Sustainable Development

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

[“The Sustainable Development Goals and LGBT Inclusion,”](#) Stonewall International, 2020. Read whole document (**10 pages**)

Human Rights Watch, “Audacity in Diversity: LGBT Activism in the Middle East and North America,” [Report](#) April 16, 2018. Read pp.6-23. **17 pages**

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. Which countries have the greatest gender gaps? What countries have the smallest gaps? Why?
4. 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?
5. 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.?
6. In the Middle East, what are some of the forms of legal discrimination against LGBTQ+ people? Do you see signs of improvement and progress?

Collaborative Projects – Week 5

- *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 5 **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](#), 2017 (**4 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, complete the three steps of the DEAL Model: 1) Describe, 2) Examine, and 3) Articulate Learning, by writing out your answers. Under Examine, choose just one of the categories of learning; personal growth, community engagement, or academic enhancement. 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 write out your answers individually based on your own unique perspective and experience.

Note: if you prefer, you may complete the writing portion of the Project Reflection before class and turn it into the professor. In this case you could use the designated class time as a break or to study, etc.

Week 6 Learning Objectives and Discussion Questions

1. 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?
2. 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?
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?
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?

Week 6 Assignment

Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings. What did you find particularly interesting? Explore one or more of the concepts presented. Thoughtfully integrate concepts and reflections from each of the readings into your response. Feel free also to draw on your own personal life experience as you reflect on the readings. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate’s blogs.

Oct 12 (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 understand 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 19 (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.

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**

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

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?
- How do wolves change rivers, specifically? How do beavers affect the landscapes they live in? What happens to an ecosystem when these native species disappear from the landscape?
- What was the model (negotiated agreement between the indigenous people 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 26
(Week 9)

Energy and Climate Change 1

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

“[California Cap and Trade](#),” Center for Climate and Energy Solutions, May 4, 2021. **7 pages**

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

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

In class:

- Review [EN-ROADS climate model](#) developed with MIT scientists; Simulator that shows relative impacts of different solutions and policies to reduce climate change.

Week 9 Learning Outcomes and Discussion Questions

1. How does the California Cap and trade system work? What are some of the benefits of cap and trade compared to other ways to regulate greenhouse gases? What are some of the negatives?
2. What is the Paris Agreement? How many nations signed on? What are NDCs and how are they enforced?
3. 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?
4. What most resonates with you about Paul Hawken’s video? If it does not resonate with you, explain why.

Week 9 Assignment

Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings. What did you find particularly interesting? Explore one or more of the concepts presented. To the extent possible, try to integrate concepts and reflections from each of the readings into your response. Feel free also to draw on your own personal life experience as you reflect on the readings. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate’s blogs.

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

Note: One of the organizations we are working with this semester, Tradewater, has as its main mission tracking down and destroying 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!

Nov 2
(Week 10)

Climate Change & Environmental Justice - 2

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

Lara Cushing et al, "[Carbon trading, co-pollutants and environmental equity: Evidence from California's cap-and-trade program \(2011–2015\)](#)," *PLOS Medicine*, July 10, 2018. **12 pages, dense**

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**

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:

Hiroko Tabuchi, "[Oil and Gas May be a Far Bigger Emitter than We Know](#)," *New York Times*, February 19, 2020. Article about a study by U. of Rochester scientist.

Consider Environmental Defense Fund [Case studies on carbon markets](#): Brazil--

Frances Seymour and Jonah Busch, [Why Forests: Why Now](#), Center for Global Development, 2016. Executive Summary

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.

Case Study: IDEAAS – Solar electricity to the Brazilian Amazon

"IDEAAS and PSA: Replication in the Amazon," Stanford Business School Case Study, 2007, pages 1-25.

Week 10 Learning Objectives and Discussion Questions:

1. How does carbon trading work? What about carbon offsets?
2. What are greenhouse gas emission co-pollutants and why do they disproportionately affect poor and minority communities? What should be done about this?
3. Based on the articles by Lara Cushing and Nicky Sheats, how does reducing GHG through carbon trading affect low-income communities, given early evidence from California? Why?
4. What impact has redlining had on temperatures in historically black neighborhoods, and how does this affect these communities? How does it impact climate change?
5. What are disproportional impacts and how are they measured?

Week 10 Assignment

- Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings. What did you find particularly interesting? Explore one or more of the concepts presented. To the extent possible, try to integrate concepts and reflections from each of the readings into your response. Feel free also to draw on your own personal life experience as you reflect on the readings. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmate’s blogs.
- 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.
- In class: Students indicate their preferences for one line item on climate change that is part of the Inflation Reduction Act of Augusty 2022 (US climate change legislation)—you will research this and present on it briefly at our next class.

Nov 9
(Week 11)

Energy and Climate 3 – The United States

NY State Climate Action Plan Council Scoping Report 2022 [Slides on economy-wide solutions](#) and [Draft Scoping Plan](#)

Review US Inflation Reduction Act – Each student will present (5 min) on one element of the Act’s investments in climate change reduction and a green economy - see [NY Times article](#) and conduct independent research on your specific part of the legislation. It must be targeted to provisions of and explaining

about what is included in the Inflation Reduction Act legislation—NOT general research on the topic.

NY Times articles including Act and Executive Orders that follow

Learning Outcomes and Discussion Questions

1. How specifically does the NY State Climate Action Plan Council Scoping Report aim to affect climate change?
2. What are 3 recommendations of the Report?
3. What are some of the main provisions of the Inflation Reduction Act approved by the US Congress in August 2022, that address climate change?
4. Be ready to discuss the element of the Act that you chose to focus on.
5. 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?

In class: each student will present briefly (5 min) on the aspect of the Act that they focused on. You may send/share 2 slides in advance to Professor Novy-Marx for presenting in class.

Nov 16
(Week 12) **Agriculture, Nutrition, and Food Security**

WATCH FILM Michelle Aguilar, Director, created a comprehensive study guide for each film and is also available for a video Q & A in most cases. Both films are available through New Day as well as Kanopy - [El Cacao](#), [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:

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

Optional:

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

[Article on carbon loss in soil](#)

Weekly Assignment

Post on Yellow Dig – In a blog post of up to 250 words, reflect upon and comment on the readings. What did you find particularly interesting? Explore one or more of the concepts presented. Thoughtfully integrate concepts and reflections from each of the readings into your response. Feel free also to draw on your own personal life experience as you reflect on the readings. Posts are due by midnight on Monday before our Wednesday class. On the Tuesday prior to class, comment on at least two of your classmates' blogs.

Discussion Questions:

1. How is climate change affecting agriculture, as seen through the film, *Cacao: No Place to Grow*?
2. Why are the first 1000 days a crucial time for a child's development? If lacking in nutrition during this time, what are the results then and later in life?
3. What are the main causes of hunger worldwide? How can it be addressed according to Mercy Corps?
4. What is regenerative agriculture and what are the specific practices that foster soil's ability to sequester and keep carbon within it?
5. How does soil absorb and retain carbon? Why is this important for climate change?

Nov 23 THANKSGIVING BREAK – No class

Nov 30 **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).

Dec 7 **Work on Collaborative Projects**
(Week 13) *There is no reading assigned for this week, but there is a short, written assignment: your second DEAL Model Reflection (see below).*

Week 7 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 1st 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 write out your answers individually based on your own unique perspective and experience.

Dec 14
(Week 14)

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 through your projects.

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. Learning objectives and discussion questions are provided on the syllabus to help guide your reading. Be prepared to discuss these questions in class.

All students are expected to attend class each week and to participate actively. Class discussion is an important part of the course. 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 try to create a supportive classroom environment in which everyone's comments are welcomed and valued. Developing confidence in public speaking is a crucial skill and is important for the overall quality of our joint learning. I also encourage you to share any personal and life experiences you have that may help us all reflect on and understand the topic at hand.

All readings are available online and/or via electronic reserves on Blackboard.

Weekly Assignments

For 10 of the weeks, students will complete a blog post on Yellow Dig. You are required to post by midnight the Monday before our Wednesday class a thoughtful and reflective, well-written post of at least 250 words that comments on and integrates ALL of the readings. On Tuesday, each student is required to comment on at least two blog posts of fellow students. These posts are an important part of your class participation grade. Yellow Dig keeps track of points. On the app, you earn 80 points for each post, and 10 points for each comment on another post. If you complete the required posts/comments you will earn 100 points per week, for a total of 1,000 points for the semester (with 10 weeks of posts).

Class Presentations

In groups of 2-3 students, each student will make one class presentation during the semester of approximately 10-12 minutes, plus time for discussion and questions. (This class presentation is in addition to students' final group project presentations). Students will be pre-assigned to a specific week based on their preferences. The class presentation will be on the topic we cover that week. It should not discuss the readings, but rather build on and complement the readings by going deeper in a particular area, including by profiling a country, government, private company or non-profit organization working in that week's area of sustainable development. All topics must be approved by the professor before the date of the presentation (this is a simple approval of the general idea/example on which you plan to present).

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. 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.

Each group will also make a final presentation (12-15 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.

Grading

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

I will drop participation in one week's blog post 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 1 point of extra credit that will be added to your grade at the end of the course by watching the film and writing a one-page analysis of it. Due December 15, 2021.

Watch the 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 and write a one-page analysis of it. Due December 13, 2021.

Written Assignment: Analysis of the Film: 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 a 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 due December 15, 2022.

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

*Date TBD: **Guest Lecture by Dr. Jonah Erlebacher** (evening lecture, required), Materials Scientist, Johns Hopkins University, on new technology he is developing to extract hydrogen based energy from natural gas without releasing greenhouse gases. This is very exciting technology and Dr. Erlebacher has created a start-up company based on this proprietary technology that has received funding from the Dept of Energy and private investors, to build a pilot plant to demonstrate the technology at scale.*