

## **Grading exam questions for SGO2302: Environment and Society**

Students were asked to answer one of three “situational” exam questions. The questions challenge students to think about social science perspectives on environmental issues, and it provides them with an opportunity to synthesize, integrate, and communicate the course material in a manner that demonstrates what they have learned during the semester.

The course this year focused heavily on climate change, but the topics and themes were relevant to all issues, including biodiversity loss. There is no “one correct answer” to these questions – we are rather looking to see how they approach the question and how much information and learning they can pull together from the course. They were encouraged to bring in readings from the course curriculum, which included the Climate and Society textbook manuscript. Though there was no specific number of references to include, the A and B answers will generally integrate a wider variety of readings. Though many could answer the questions adequately with only the main text book, we are looking for more depth and a greater capacity to think laterally, thus would like to see them bring together more “threads” from the readings.

## **1. Climate Solutions? It's Matter of Perspectives**

The first question focuses on the role of perspectives in advocating particular responses to climate change. Students are presented with two very different responses, each championed by different groups: Geoengineering and the green new deal.

Students were asked to help newspaper readers to understand what might be behind these two very different responses to climate change. Essays should highlight the role of discourses in shaping climate change responses; they might also discuss how particular narratives reinforce the perspectives. They should also reflect on what an integrative discourse can contribute to the discussion of climate change solutions. Here they might consider how these different approaches are related to beliefs, values, and worldviews, and how they relate to different understandings of human-environment relationships..

A distinction should be between a biophysical discourse and a critical discourse, or between a discourse that promotes technical solutions versus social change. They are not expected to go into detail on geoengineering and the Green New Deal, as these were given only as examples. (Some students might have included additional references to these topics, but this was not an expectation.)

Students may make the point that climate change is more than a CO<sub>2</sub> problem and discuss the equity dimensions of climate change, as well as the implications for human security. They could point to the dangers of geoengineering, as explain why vested interests are likely to be in favor of such solutions. They should discuss how the Green New Deal takes a very different approach, seeing climate change as a social issue that can be addressed through transformative changes that focus on equity and social well-being.

Reflecting on the integrative discourse, students might consider the role of values and worldviews in shaping how problems are defined and addressed. They might consider how an awareness and concern with “planetary boundaries” can lead to a sincere attempt to control the environment (and how some will seize on this as an opportunity to make even more money, without addressing the root causes of climate change). Seeing climate change as linked to multiple stressors such as globalization can widen the solution space and make addressing issues of jobs, and livelihoods equally important. The integrative discourse should emphasize the importance of recognizing both the biophysical and social dimensions together, and open up a wider range of solutions, while at the same time recognizing that not all solutions will benefit all, and that some could actually add to global risks.

## **2: To invest or not to invest, what is your reason?**

This question covers the idea of “doing the right thing for the wrong reason” and whether solutions such as a divestment from fossil fuels must necessarily be tied to environmental motivations, rather than economic motivations. The question is whether everyone needs to share the same motivation in order to respond effectively to climate change.

In the question, students have been asked by the board of the Government Pension Fund Global to help them understand why the NGOs are critical of their divestment decision. They are asked to consider both the positive impacts of such a divestment decision and the reasons for the critiques. Their answers should include an analysis of what is driving carbon emissions, and why renewable energy production has been limited relative to fossil fuels. They should explain whether—and if so, to what extent—divestment and investment decisions based on price projections of oil and gas on the global market is a viable way to limit greenhouse gas emissions. Finally, they are asked to present and justify an alternative strategy and rationale to the board that could accelerate investments in renewable energies while also decreasing the exploitation of fossil fuels.

Answers to this question might focus on the potentials and limits of market-based solutions, which respond to prices and can lead to rapid policy changes. They are encouraged to think about how economic returns on investments can either amplify or reduce investments in alternative energies, and whether economic profits are enough justification for disinvestment policies..

The NGO critique of the Pension Fund’s strategy might be explained as a critique of this market-based strategy. They may note that decisions to continually invest in and subsidize the production and use of fossil fuels is more than an economic issue – it also has ethical and equity implications, given what is at stake for human security and biodiversity. Yet they might also acknowledge the powerful signals that such a decision sends, and how it can work towards achieving mitigation goals.

Students may bring in discourses and values, arguing that the bankers and the NGOs are hold different worldviews, especially views of nature. The investment decisions are unlikely to take into account a view of nature based on “aliveness” and connections, and instead are likely to be based on short-term interests and a view of nature as “resources to be used.”

Regarding the alternative strategy that they present, there is no “correct” answer to this and we are interested in their creativity and reasoning. Some possibilities include recognizing that Norway could take an ethical stand and choose not to invest in fossil fuels and instead to invest in new economic areas, such as subsidizing renewable energy initiatives or companies promoting infrastructure for a green economy, alternative agriculture, etc. They might bring in the point made in a lecture by Rollie Stanich about research on the use of hydrocarbons as batteries to store renewable energy, recognizing that it makes good economic sense not to burn fossil fuels, as their future value is likely to be much greater than we realize right now. Their justification should reflect a capacity to see that there are other possibilities to “investment decisions as usual,” but also that divestment for whatever reason may send a powerful signal about the future of fossil fuels.

### **3. Imagine an Equitable Future**

This question asks students to consider international responses to disasters, based on an excerpt from ReliefWeb describing future climate related disaster in Southern Africa. The text highlights the need for investments and innovations, recognizing that addressing current issues like health is important for addressing long-term risks. Students are asked to be more imaginative and think about different types of cultural responses.

Students are asked to write an essay to the board of directors of the NGO that draws attention to the limits of the biophysical discourse, while also highlighting key insights from an integrative discourse on climate change. In your essay, be sure to describe the role of culture and imagination in opening up alternative pathways for addressing climate change impacts, vulnerability, and adaptation. In your essay, emphasize the potentials (and barriers) for transforming international responses to climate-related disasters.

The answers should point to the problems associated with investing and innovating without addressing the underlying causes of risk and vulnerability, including the drivers of climate change and the economic structures that perpetuate human insecurity. The biophysical discourse and its interpretation of resilience can perpetuate development as usual, in the name of climate change. Investments and innovations often benefit large firms and may dispossess people of their lands and livelihoods. (The critical discourse draws attention to these structural and systemic aspects of development aid and disaster risk reduction policies).

Culture and imagination are suggested as part of a more integrative discourse on climate change. This may involve engaging people and their capacities to imagine a different type of development, where local solutions are highlighted and where people participate actively in alternative pathways of development. Here they might bring in points from Amitav Gosh's "The Great Derangement" which looks at the poverty of our thinking about both climate change and development, as well as our general complicity in perpetuating the same narratives about poor people and their vulnerability, failing to make the types of changes that are radically imaginative.

The potential to transform international responses call for shifts in the personal, political, and practical spheres – this includes the beliefs, values, worldviews, and paradigms of NGOs and governments officials (including "donor" and "victim" identities), the international financial system, health systems, agricultural systems, vested economic interests, disaster response systems, infrastructure systems, etc.). It also includes practical transformations that enhance human security, whether through early warning systems, better schools and hospitals, access to water and nutritional food, etc.

Readings included in the course curriculum:

Ghosh, A. 2016. *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press. (162 pages) Available online

Leichenko, R. M. and O'Brien, K. 2018. *Climate Change and Society*. Manuscript to be published by Polity Press (manuscript will be distributed in January).

Available as e-book

▫Berkes, F. 2008. Context of Traditional Ecological Knowledge. Chapter 1 (Pages 1-20) in: Berkes, F. 2008, 4th edition. *Sacred Ecology*. Abingdon: Routledge. (20 pages) E-book

▫Brown, K. 2013. Social Ecological Resilience and Human Security. Chapter 9 (Pages 107-116) in Sygna, Linda, Karen O'Brien and Johanna Wolf (eds.), *A Changing Environment for Human Security: Transformative Approaches to Research, Policy, and Action*. London, UK: Routledge-Earthscan. (10 pages) E-book

▫Dryzek, J. 2013. Making Sense of Earth's Politics: A Discourse Approach. Chapter 1 (Pages 3-23) in Dryzek, John. 2013. *The Politics of the Earth: Environmental Discourses* Oxford: Oxford University Press. (21 pages)

▫Dryzek, J. 2013. Industrial society and beyond: Ecological modernization. Chapter 8 (Pages 165-183) in Dryzek, John. 2013. *The Politics of the Earth: Environmental Discourses* Oxford: Oxford University Press. (19 pages)

▫Ehrhardt-Martinez, K. and Schor, J.B. et al. 2015. Consumption and Climate Change. Chapter 4 (Pages (93-106) in Dunlap, R. and Brulle, R. (eds.) *Climate and Society*, London. Routledge. (14 pages) E-book

▫Head, L. 2016. Grief will be our companion. Chapter 2 (pages (21-37) in Head, Lesley. 2016. *Hope and Grief in the Anthropocene: Re-Conceptualising Human-nature Relations*. New York, NY: Routledge. (17 pages) E-book

▫Heyd, T. and Brooks, N. 2009. Exploring cultural dimensions of adaptation. Chapter 17 (Pages 269-282) in: Adger, N. W., Lorenzoni, I. and O'Brien, K. (eds.) *Adapting to Climate Change-Thresholds, Values, Governance*. Cambridge University press, UK (14 pages) E-book

▫Liverman, D. 2015. Reading climate change and climate governance as political ecologies. Chapter 23 (pages 303-319) In: Perreault, Tom, Gavin Bridge, and James McCarthy, (eds.) 2015. *The Routledge Handbook of Political Ecology*. London ; New York, NY: Routledge. (17 pages) E-book

▫Milkoreit, M. 2016. The Promise of Climate Fiction – Imagination, Storytelling and the Politics of the Future. Chapter 10 (Pages (171-191) ) in: Wapner, P. and E. Hilal (eds.) 2016, *Reimagining Climate Change*. Routledge Publishing (21 pages) E-book

☐Sharma, M. 2017. The Radical Systems and Cultural Transformer: Everyone's Contribution. Chapter 9 (Pages 209-231) in *Radical Transformational Leadership: Strategic Action for Change Agents*. North Atlantic Books. (23 pages) E-book

☐Stirling, A. 2015. Emancipating transformations: from controlling 'the transition' to culturing plural radical progress. Chapter 4 in: I. Scoones et al. 2015. *The Politics of Green Transformations*. (Pages 54-67) London: Routledge/Earthscan. (14 pages) E-book

☐Wilhite, H. 2016. A theory of Habits. Chapter 2 in: Wilhite, Harold. 2016. *The Political Economy of Low Carbon Transformation: Breaking the Habits of Capitalism*. (21-39) London : New York: Routledge, Taylor & Francis Group. (19 pages) E-book

#### In compendium

\*Singh, V. 2016. Entanglement. In: J.J. Adams (eds.) *Loosed Upon the World: The Saga Anthology of Climate Fiction*. (269-322). London: Saga (54 pages)

#### Available online

@Barnett, J. and Adger, W.N. 2007. Climate Change, Human Security and Violent Conflict. *Political Geography*, 26, 6. 639–655. Available online (17 pages)

@Castán Broto, V. and Bulkeley, H. 2013. A Survey of Urban Climate Change Experiments in 100 Cities. *Global Environmental Change* 23, 1. 92–102. Available online (11 pages)

@Dietz, T., Rosa, A. and York, R. 2007. Driving the human ecological footprint. *Frontiers in Ecology and Environment* 5, 1: 13-18. Available online (6 pages)

@Gibbs, W. Wayt. 2017 "How Much Energy Will the World Need?" Available online (4 pages)

@Hochachka, G. 2009. An Integral Framework for Community Development. Chapter 2 in: Hochachka, Gail. 2009. *Developing Sustainability, Developing the Self*. (38-70) Victoria, British Columbia: University of Victoria. Available online (33 pages)

@Ingram, M., Ingram, H. and Lejano, R. 2015. Environmental Action in the Anthropocene: The Power of Narrative Networks. *Journal of Environmental Policy & Planning*, November. 1–16. Available online (16 pages)

@Jenkins, K., McCauley, D., Heffron, R., Stephan, H., Rehner, R., 2016. Energy justice: A conceptual review. *Energy Research & Social Science*. 11: 174–182. Available online (9 pages)

@Leichenko, R. and Silva, J.A. 2014. Climate Change and Poverty: Vulnerability, Impacts, and Alleviation Strategies. *Wiley Interdisciplinary Reviews: Climate Change*. 5, 4: 539–56. Available online. (18 pages)

@Maxwell, S. Fuller, R., Brooks, T. and Watson, J. 2016. Biodiversity: The ravages of guns, nets and bulldozers. *Nature* 536, 7615: 143-145 Available online (3 pages)

@McGlade, C. and Ekins, P. 2015. The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C. *Nature* 517, 7533: 187–90. Available online. (3 pages)

@O'Brien, K. and Leichenko, R. M. 2000. Double Exposure: Assessing the Impacts of Climate Change within the Context of Economic Globalization. *Global Environmental Change* 10, 3: 221–32. Available online (12 pages)

@ Reckien, D., Creutzig, F., Fernandez, B., Lwasa, S., Tovar-Restrepo, M., McEvoy, D. and Satterthwaite, D.. 2017. Climate Change, Equity and the Sustainable Development Goals: An Urban Perspective. *Environment and Urbanization* 29, 1: 159–82 Available online (24 pages)

@Roberts, J. T. and Parks, B. C. 2010. A “shared vision”? Why inequality should worry us. In: O'Brien, Karen, Asunción Lera St Clair, and Berit Kristoffersen, (eds.) 2010. *Climate Change, Ethics and Human Security*. (65-82) New York: Cambridge University Press. Available online (18 pages)

@Steffen, W.S., Rockström, J. and Costanza, R. 2011. How Defining Planetary Boundaries Can Transform Our Approach to Growth Solutions. *Solutions: For a sustainable and desirable future*. 2, 3: 1-8 Available online (8 pages)

@Tibbs, H. 2011. Changing Cultural Values and the Transition to Sustainability. *Journal of Futures Studies*, 15, 3: 13 – 32. Available online (20 pages)

@Vijay, V., Pimm, S. L., Jenkins, C. N. and Smith. S. J. 2016. The Impacts of Oil Palm on Recent Deforestation and Biodiversity Loss. *PLOS ONE*. 11, 7: 1-19 Available online (19 pages)

@ Weber, A. and Hildegard, K. 2015. Towards Cultures of Aliveness: Politics and Poetics in a Postdualistic Age, an Anthropocene Manifesto. *The Solutions Journal* 6, 5. 58-65. Available online (8 pages)

@Zoomers, A. 2010. Globalisation and the foreignisation of space: seven processes driving the current global land grab. *Journal of Peasant Studies*. 37, 2: 429-447. (19 pages) Available online