Review questions

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What is the basic scientific claim about the causes and extent of climate change? What are the main environmental consequences that scientists fear will result from climate change

?

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What is the tragedy of the commons? Why is it rational for individuals to overuse public goods? How does this

phenomenon help to explain the difficulty of managing the sustainable use of commonly held public property?

Know some examples.

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What is an externality?

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What is the collective action problem? How might it be applied to the challenges of global warming? What are

some of the political solutions to the collective action problem in the case of carbon dioxide emissions?

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What are the three different distributional struggles related to the problem of climate change?

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What is the Paris climate accord? How might it operate to reduce carbon emissions and limit the increase of

average temperatures? How did it navigate the tension between developed and developing countries?

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According to Sivaram and Norris, how might public support of research and development in renewable energy help

limit average global temperature increases in the long term? What forms should this public support take?

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What are the main components of the Paris Climate Accord? How should it operate to limit the growth of carbon

dioxide emissions?

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Which group of countries will be the recipients of foreign aid under the Paris Climate Accord? How did this aid help facilitate the construction of this international agreement? And how might this aid help countries fulfill their

emission targets?

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What is a Nationally Determined Contribution?

Overview

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Brief intro to the science and implications of CO2 emissions

•

Political challenges of environmental degradation

–

Tragedy of the Commons

–

Collective Action Problem

–

3 layers of distributional conflict

•

Urpelainen reading

•

Paris Accord

Claim that warming of the atmosphere rests on...

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Carbon dioxide is a heat trapping gas

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Carbon dioxide levels have increased significantly since the Industrial Revolution began

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From 280 ppm in 1800 to 400 ppm in 2015

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Average global temperatures +5.5 degrees F. from 1800 to 2050 at current rate of CO2 emissions (Mann and Toles,

The Madhouse Effect

)

Tragedy of the Commons

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Emerges with public property or resources for which it is difficult (costly) to restrict their use (consumption)

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Divergence between private benefits and social costs: Individually rational for people states to consume, but diffused costs to society insufficient to prevent overuse

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Resource gets depleted

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Examples: oil fields, common grazing lands, overpopulation, fisheries, atmosphere

Illustrative example

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Factory upstream from city dumps pollutants into river, which is key water resource for city

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People getting sick but also depend on factory for job

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Who pays/adjusts behavior?

–

Factory adopts alternative energy source to cuts emissions, becomes less profitable, out of business

–

City pays factory to cut emissions, simultaneously subsidize production

Illustrative example (ctd)

•

Problem: how define property rights over the river (a publicly owned asset)

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Absence of property rights creates externalities (costs or benefits of some transaction by people not involved in transaction)

–

Private costs and social costs of using resource diverge

–

Factory pays nothing for pollution (zero private costs) while people in city pay health costs from unsafe drinking water (social cost)

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Factory is distributing its costs of production to everyone one

CO2 CUTS AS A COLLECTIVE ACTION PROBLEM

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Public good: nonexcludable and nonrivalrous

–

These attributes activate free rider problem

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Free riding as failing to limit own carbon dioxide emissions

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CO2 cuts as a public good: costly to exclude countries (and their citizens) from consuming once supplied

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Potential solutions

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Large actors provide public good on own

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International agreement to punish noncompliance

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Markets undersupply public goods, necessity of international agreement

The political/distributional challenges of a climate accord

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Distributional struggle within countries

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Coal versus solar; Oil versus general public

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Distributional struggle among countries

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Developed (US and Europe) versus Developing (BRIC: Brazil, China, India, Russia)

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Variation in carbon emissions across countries means different levels of preparedness for changes

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US: carbon consumption in electricity, transportation, industry

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Europe: less in transportation

•

Industry (and carbon emissions) shifting to developing world; caps would impede their growth

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Distributional conflict across generations

Urpelainen Reading

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Provides a positive perspective on the Paris climate agreement.

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Major takeaway – Necessary and positive first step but must do much more needs to be done to mitigate climate change.

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Positives of Paris deal – They made a deal that committed both developed and developing countries to control emissions.

–

Broad collective agreement: Previous agreement, the Kyoto Protocol, only had emission reductions for developed countries. Paris deal commits both developing and developed countries to emission reductions. Cannot mitigate climate change without developing countries involved in the effort.

–

New voluntary approach: Uses voluntary national targets rather than binding agreements with imposed targets to achieve lower emissions. More realistic.

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Addresses needs of developing countries: Has $100 billion in “climate finance” to help developing countries find ways to break out of poverty through development without contributing to climate change.

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Challenge is executing and deepening the Paris deal. Current targets will not get the job done.

Paris Climate Accord Overview

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Deal reached in December 2015

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Important role played by United States in final terms of the agreement

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Agreement on process by which states would submit voluntary reduced CO2emission targets to keep average global temperature increases <2.0°C.

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Important: not legally binding emission targets.

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Work through the politics of naming and shaming

Main Components of Paris Accord

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Goal to limit global temperature increases to < 2.0°C, with new goal to < 1.5°C

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2015: Average temps +1.0°C since 1880

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Binding process for monitoring and reporting pledges on emission targets and progress in upholding those pledges

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Need to make national plan public every five years, each plan needs to be as strong or stronger than the prior one

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Foreign aid from developed to developing countries

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Ease costs of alternative energies

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Compensate for costs of climate change

Nationally Determined Contributions

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Set nationally, voluntary; not negotiated internationally

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EU: Pledged to reduce emissions by 40% in 2030 from 1990 levels, set legally binding EU target in October 2014, already down 19%

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US: reduce emissions by 26-28% by 2025 (from 2005 levels), this is 16.3% reduction relative to 1990

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Relies on (Obama) EPA restrictions on coal fired power plants and support for renewables

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US progress depends largely on executive orders...implications for next four to eight years?

–

Trump reverses Obama EPA executive order in March 2017

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China: pledges peak emissions by 2030

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Cut CO2 emissions by 60-65% per unit of GDP by 2030 (relative to 2005), boost non fossil fuels to 20% of energy consumption

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Not strong enough yet: all current pledges would still leave 2030 emissions too high to stay under 2.0°C mark