



World Climate Exercise:

A Computer-Simulation-Based Role-Playing Exercise

Facilitator Guide

Climate Interactive

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Purposes

The purposes of this interactive role-playing game are:

To provide an experience of creating an international solution to stabilizing carbon dioxide levels.

Improve participant mental models about the carbon dioxide and climate system. In particular, its “bathtub dynamics.”

Deliver three insights.

- *Stabilization of global temperature rise at or near 2 degrees requires **early action** and **global cuts** of more than 50%.*
- ***Global participation is required** to keep temperature rise below 2 degrees. All regions have a contribution to make to this crisis, either in emissions reductions, forest stewardship or both.*
- *Rapid emissions **reductions in the developing world** are a high leverage intervention. They are a place where cooperation from developed countries could have a significant impact on stabilization of the atmospheric CO₂ levels near a 400 ppm or 2 degree target.*

Time Required

We recommend 3-4 hours for the entire session. A minimum of 2 hours for the policy exercise works and at least an hour for the debrief works best. For class settings that may be limited to an hour or less we recommend stretching the exercise over several days (although it is possible to run an abbreviated session in an hour-long period).

Setup

The room should be set up with:

- A computer with access to the climate simulator C-Learn or C-ROADS¹, a LCD projector, and a screen in the center of the front area

¹ These simulators and resources for using them can be accessed through Climate Interactive’s website <http://climateinteractive.org/simulations>

- A white board with a large table (see below) where participants will write their commitments (6 ft wide)
- A flip chart with several pre-drawn diagrams
- A meter stick or blue tarp near the area where the least developed countries will sit, which will signify the sea level rise. Near the meter stick, store a piece of paper with waves drawn on it and paper clips to attach it to the stick.
- Somewhere out of sight such as outside the room or in the back, store your more formal clothes or accessories for acting as the UN Secretary General, *e.g.*, a man could store a tie and coat or a woman a jacket and scarf.

There are two ways to run World Climate. One with 6-regional blocs, which enables greater participation from all individuals and uses C-ROADS World Climate interface. The second version is with 3-regional blocs and uses the C-Learn model.

For either setup, in one half of the room for 20% of the participants, set up comfortable chairs or couches around tables (20% is the percentage of the global population in developed countries). Ideally, set up the tables with a tablecloth, flowers, pens, notepads, and possibly snacks. These details are to symbolize the relative wealth of the team who will sit here—the Developed World (or the US, EU, and other developed countries groups).²

² The exercise can also be done with up to 6 different negotiating groups when using C-ROADS. See “variations for larger groups”.

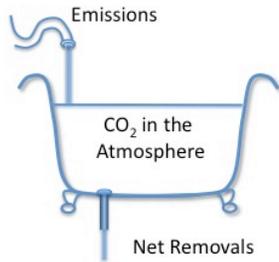
In the other half of the room, set up simple chairs for 46% of the participants, the Developing A Nations (*i.e.*, China and India). No table, no pens and notepads.

In front of the Developed group, place a scattering of pillows and one or two chairs (often this area is just left bare). This is for the Developing “B” Nations (or “other developing nations” in the 6-region version), 34% of the participants.

Items to bring

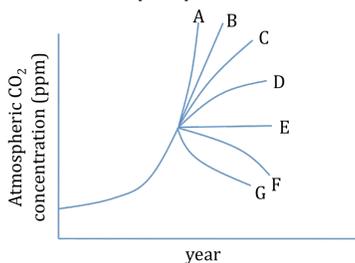
1. Copies of briefing materials³
2. Copies of proposal record sheets²
3. Ocean level indicator waves or pale blue sheet and meter stick
4. Formal clothes for roles
5. Placards for delegation names and nametags/credentials for delegates
6. Flowers, water pitcher, glasses, note pads, pencils, fruits or snacks of some type, and table cloth
7. Flip chart with pre-drawn pages: (add little diagrams of these)
 - a. Bathtub diagram to illustrate relationship between emissions, removals and the atmospheric CO₂ concentration.

³ Found at <http://climateinteractive.org/simulations/world-climate/instructor-resources>



$$\text{Emissions} = 2 \times \text{Net Removals}$$

- b. Graph of business as usual (BAU) to 2100 from one country grouping. Use to illustrate *Start year, Target Year, Reference Year, and % Change*.
- c. Graph of BAU to date for atmospheric CO₂ concentration and 7 or 8 possible trajectories that might result from the collective proposals.



Steps

1. Informal welcome

For this section, dress more casually than you will be as Secretary General later.

Ideally you will welcome the group in a separate room from the main room, so when they enter the room, they will start playing their roles. If this is not possible, ask participants to sit in the chairs but not move them. People who do not have a chair can stand or sit on the floor.

Invite the group to “play the game.” That is, ask them to play their roles fully to the best of their understanding.

Tell the group that the simulation will contain elements that are both realistic and unrealistic.

Realistic elements: there will be binding deadlines, the global biogeochemical system will behave roughly as it does (e.g., CO₂ won’t just leak into space), and there are differences between the regions of the world.

Unrealistic elements: The game is highly, highly simplified and is much more dissimilar to an actual UN negotiation than it is similar to one.

As such, tell the group they can use this “virtual world” to experiment with international agreements and deals that would be impossible to explore in real negotiations. Often, depending on the group, at this time we ask the group to favor global considerations over national ones (e.g., if typically national negotiators will favor national over global by 80/20, ask them to play the game 20/80 to see what they can do).

2. Assign People to Teams

You’ll be assigning people to teams. You’ll want to make sure the strongest advocates for (or actual representatives of) the faster-developing but relatively undeveloped countries of the world (e.g., China and India) play the role of the Developed world and sit at the table with the smallest circle of chairs. And, likewise, the people most embedded in the wealthier countries of the world should play the Developing B Nations and sit on the floor.

If you know the participants, or your host can help you, just ask the appropriate individuals to sit in the correct spots. Otherwise, help fit participants into groups (those who identify with Developed Countries go to Developing

B, those who identify with Developing B go to Developing A, and those who identify with Developing A go to Developed). To accommodate larger groups (>30) we have also added the roles of fossil fuel lobbyists and environmental activists, which you may want to include (briefing materials for these roles are available online).

Ask participants to sit in their areas and introduce themselves and read over their group's briefing materials for several minutes. While they chat, add your more formal dress features.

3. Introduction to the Negotiation

As you reconvene the group, change your demeanor from whatever it was before to serious, results-oriented, and "no-nonsense." Do not smile. Stand at the front of the room.

As briefly as possible, introduce yourself as Ban Ki Moon, or the current Secretary General of the UN, and set the context. Assert that climate change is a big problem and that the nations of the world must create a plan to address it. If necessary, include a short lecture on climate science to make the case. We have provided briefing slides to aid you in facilitating. Express your disappointment that over 16 global meetings since 1992, they have not achieved an agreement that would address climate change.

Clearly name the goal of the negotiation:

Your goal is, by the end of the session, to achieve an international agreement that will keep global temperature rise at or below 2 degrees.

Tell each group what part of the world they represent. Note: they may object, saying that they "chose" a different group. Reassure them that they are in the correct place.

Give the basic statistics for the country groupings: population, GDP per capita, total emissions, per capita emissions, etc.

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Typically, we will first show the population and GDP data while referring to the data overview table, then show the stacked graphs of historical emissions, and then explain the statistics about cumulative emissions and future emissions.

Summarize at some point by saying:

In summary, most of the money and the emissions to date have come from the Developed world (point there), most of the future emissions will most likely come from the Developing A Nations, and the effects of climate change will be felt most strongly in the Developing B Nations.

During this time, most likely someone will make a joke about sitting on the floor or something. Sternly rebuke them by saying, "please refrain from any side talk that does not contribute to achieving the goal of a breakthrough agreement by X:00." Do not smile.

During this time, most likely someone will ask a question about the simulation or the setup of the game e.g., "why is the Middle East in this group?" or "I want to have more information about costs." Answer questions as briefly as possible. To requests or expressions of concern, say, "The Secretary General recognizes that the delegate from the Developed World wishes she had more information about costs," and quickly move on. You are not here to accommodate. You are here to move towards an agreement given your rules.

At the end of this question period, say, "do any other delegates require additional clarification?" Use this sort of official, parliamentary language.

4. Show them the "Business as Usual" future

Open the model and orient them to the inputs and outputs. Show them the graph for CO₂ concentrations and the line for the goal. Show

them their current rates of increase of emissions. Show them how, under a business as usual plan, they surpass the goal for CO₂ concentrations.

Show the temperature future and, if you want, connect it to information about impacts.

Show the sea level rise future and paper clip the “wave” to the meter stick next to the Developing B Nations group.

Remind the group of their purpose –

Your goal is, by the end of the session, to achieve an international agreement that will keep global temperature rise at or below 2 degrees.

5. Explain how they will make their decisions

On a flip chart, sketch the BAU curve for one of the regions. Explain the decisions they will make (start year, target year, reference year, and percent change) and sketch an example on the flip chart.

Explain that the Developing A Nations (China and India) and Developing B Nations (other developing countries) will make decisions about global deforestation since the bulk of forests are in those parts of the world, but the Developed Countries will not.

Explain also (with the supporting slide) that each country group will propose how the three country groupings should distribute among themselves the costs associated with adaptation and mitigation—and to negotiate to a common agreement if possible.

6. Setting first round emissions targets

Pass out copies of the proposal record sheet and give the parties a clear deadline for making a new decision, 20 minutes into the future. Write the time on the whiteboard and explain that, at that time, we will:

1. Confirm submitted new emissions commitment or confirm “business as usual”
2. Allow for a 3-minute presentation by each group about their emissions reduction commitment and why
3. Simulate climate results and learn if we are on track to meet the goal
4. If necessary, prepare for the next negotiation round

Note that you will not need to pressure the parties to hurry up and meet the deadline—if they do not change their commitment, you will use a business as usual commitment.

If you need to apply some pressure, do it via an ombudsman (an intermediary) whom you could appoint at the start.

7. Hearing Commitments and Simulation Results

Allow for missing the time deadline by a few minutes.

Invite a representative from each party to speak to the group about the party’s commitment and why they are making it. Allow for only minimal additional rhetoric about the difficulty of their situation. Do allow for explanations of what it would take for them to reduce more.

After all three have spoken, simulate the results in the model one by one. Do the first one very slowly so that all can see the changes show up in the model little by little.

Push them to arrive at a decision as quickly as possible, while letting them make the major arguments to support their position.

Write the commitments on the flip chart and run the model. Most likely, the first agreements will not meet the goal.

8. Subsequent rounds

Iterate until they meet the goal or start running out of time. In later rounds the facilitator can bring the group together to negotiate in plenary.

Eventually you will reveal what it takes to stabilize temperature rise to 2 degrees –an approximately 80% drop in emissions.

In discussion, the group may explore other approaches to stabilizing CO₂ concentrations and temperature rise. Use the simulator to see the contribution from reducing land use emissions and increasing sequestration through growing more trees.

9. Debrief

Change the setup of the room to a large bowed theatre, a circle, or similar setup to maximize participants' ability to see and hear each other. Mix up the groups. Change your clothing and demeanor to be more informal, thoughtful, and responsive.

Note that most of what they experienced was NOTHING LIKE the actual negotiations at the UNFCCC. But we want to learn as much as possible that is relevant to the ways we can contribute to breakthrough action.

1. Feeling and experience

- a. Ask people to turn to the person next to them and complete the sentence, "When I played my role in the policy exercise, I felt..." (encourage them to talk about actual feelings, not thoughts about climate change or analysis about the exercise. Mad, sad, glad, confused, etc.). Ask them to switch after a couple of minutes. This could be done in 3s or 4s if need be.
- b. Ask the group to return to the whole and then ask for a few people to share their experiences.

2. Assumptions

- a. Return them to pairs. Ask them to discuss the assumptions they found themselves making about their own group and the other groups.
- b. As a whole group, ask people to share these assumptions and write them on a board, organized by group.
- c. To summarize, ask, "To what extent are these assumptions helping or hindering our progress?"

3. Real world

- a. Show the table of current proposals on the table from countries and do a simulation run of their results.
- b. Show runs that are below at or below 2 degrees.
- c. Discuss what is going on in the climate negotiations currently.

4. Recap primary dynamic insights from the simulator:

- Stabilizing emissions near current levels fails to stabilize temperature rise any time soon, because emissions now exceed uptake of carbon (stabilization would continue that condition, so that the residual accumulates in the atmosphere).
- Achieving stabilization of atmospheric CO₂ at low levels (e.g. Hansen et al.'s 350 ppm) requires very aggressive cuts (for the same reason; if carbon cycle feedbacks from temperature kick in, negative emissions could be needed).
- Current policies are not on track to meaningful reductions.
- Nevertheless, there is a path (Hansen et al.'s "where should

humanity aim” [paper](#) lays out one option, and there are others such as WEO’s). Offer examples like: personal family reductions, growth in renewable energy, and business examples.⁴

- Starting soon is essential (the bathtub continues to fill while we delay - a costly [gamble](#)).⁵
- International negotiation dynamics are tricky due to a diversity of interests, coupled problem spaces, cultural dynamics, and difficulty of transfers.
- But everyone has to be on board or little happens (any one major [region](#) or sector, uncontrolled, can blow the deal by emitting above natural uptake).⁶
- Overall, we in the developed world get to create the conditions where the developing world joins in swift emissions reductions.

Note: If you want, make the connection to the classic system archetype or trap—the tragedy of the commons—you could share the article by Hardin. Point to the solution—mutual coercion mutually agreed upon—and thus the need for international cooperation.

⁴http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf

⁵<http://www.springerlink.com/content/n142u5k403237n63/>

⁶<http://blog.metasd.com/2008/08/climate-war-game-everyone-plays/>

Perhaps make the connection to other “commons” that require such mutual coercion—fisheries, rangeland, “airsheds”, parks, taxis.

5. Personal action

- a. Ask people to cluster in groups of 3-4. Ask them, “Think for a few minutes about what you could do over the next few weeks. What do you feel called to do?” You can use the quotation from the tennis star Arthur Ashe who once said, “Start where you are. Use what you have. Do what you can.”
- b. Bring the group back to together. Ask for people to share what they said or heard.

10. Closing

Close the session by offering your thanks to the participants and any sponsors, hosts, or facilitators. Afterwards we recommend participants to fill out a written evaluation to comment on their experience and offer feedback. Please send any evaluations to info@climateinteractive.org.

Sequence of play

1. Welcome and introductions
2. Participants assigned to roles, take seats and read briefing memos
3. Secretary General calls the Conference of the Parties to order and addresses the delegates
4. Negotiation Round 1
 - a. Negotiations among parties
 - b. Two-minute plenary address by representative of each delegation outlining their proposal

- c. Proposals entered into C-ROADS/C-Learn model
 - d. Results shown and discussed
- 5. Negotiation Round 2 (steps a-d)
- 6. Negotiation Round 3 (steps a-d)
- 7. Secretary general brings negotiation to close
- 8. Debriefing
 - a. Participant reactions, comments, feelings; shifts (if any) in negotiating positions across rounds noted and discussed.
 - b. Implementation: can emissions be cut? Costs and barriers to implementation of participant proposals
 - c. How can we catalyze change (participants' theories of change)
 - d. Wrap-up: Personal aspirations and commitments to action
- 9. Thank yous; participant evaluations and feedback

At the actual climate change negotiations there are many other parties besides the official negotiating teams that provide input and represent groups of interests. We have briefing materials available on our website for fossil fuel lobbyists, who support continued fossil fuel use, and environmental activists, who advocate bolder policies to slow climate change, if you would like to add these dynamics to your exercise. You might also add a role for someone to represent indigenous peoples, non-human species, or another group of your choice.

Briefing materials and other facilitator resources are available at <http://climateinteractive.org/simulations/world-climate/instructor-resources>

Variations for larger groups

To ensure that everyone is able to be an active participant in the World Climate Exercise we have added a couple of variations for larger groups that provide more roles.

- 6-region variation with C-ROADS

Using C-ROADS (instead of C-Learn) you can have six different negotiating teams. For this setup we have provided briefing materials online for China, EU, India, US, other developed nations, and other developing nations.
- Added lobbyist and activist roles



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