

# **Supplemental Workbook** of the 2021 Core Assembly

Practitioner's Version

# Purpose of this document

- This Supplemental Workbook is part of a series of resources that were used by people taking part in the Global Assembly to inform their deliberation on the climate and ecological crisis and enhance comprehension of the [Information Booklet](#) and facilitate deliberation on future pathways.
- This Practitioner's Version presents the exercises with instructions for how they were implemented in the Core Assembly sessions (completed on Miro during 3 hour Zoom deliberations). See the Facilitation Guide ([PDF](#), [Google Docs](#)) for further detail on how Exercises were used to support learning & deliberation during Core Assembly sessions.
- We encourage users to adapt the Workbook to fit the needs of their processes, and experiment with how it can be used in other contexts, such as offline deliberations.
- The Participant's Version ([PDF](#), [Google Sheets](#)) contains English versions of all exercises (without instructions). English versions in .rtb (Miro) format can be found [here](#).

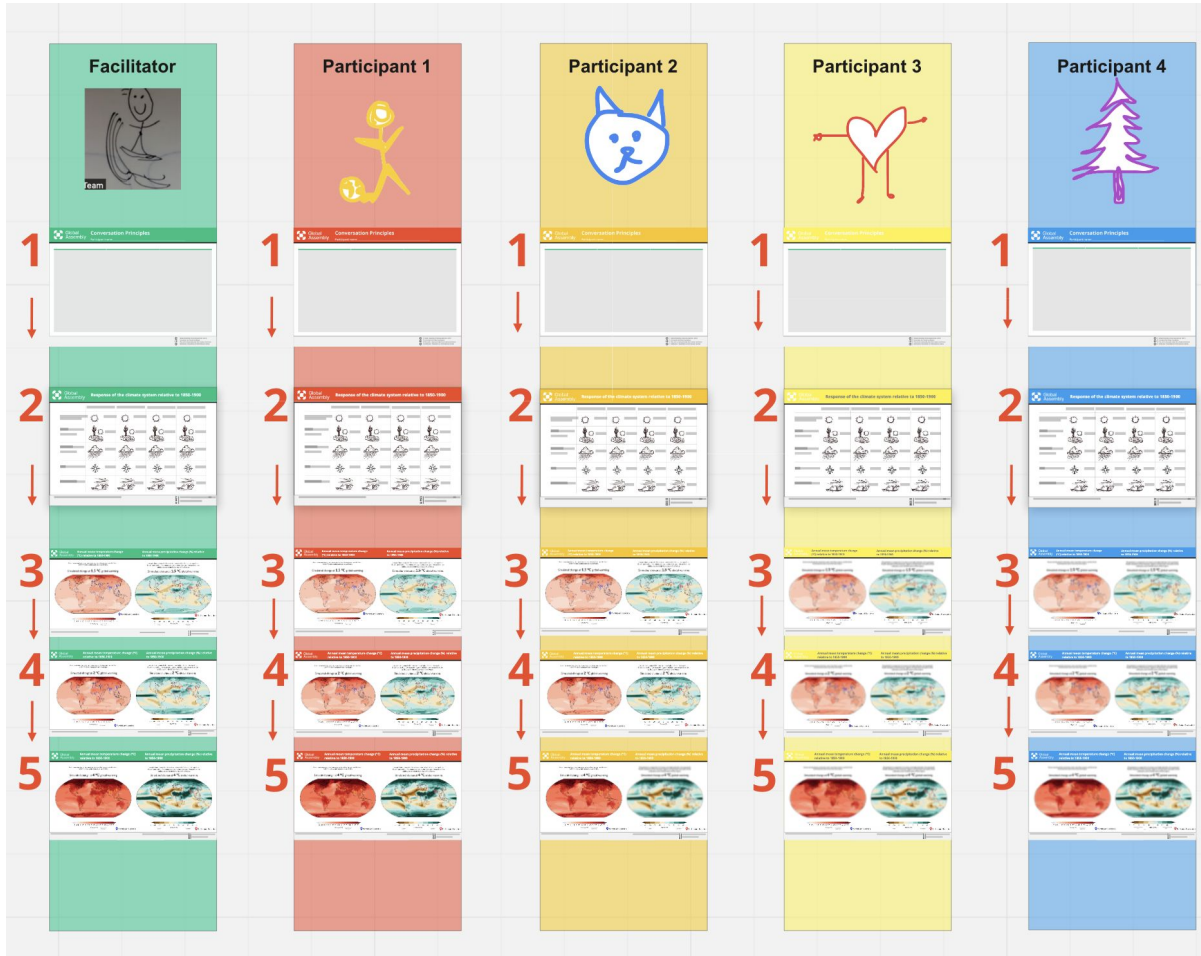
# Viewing exercises on Miro

**Option 1:** Copy and paste content from the following public Miro boards into your account

- 1-3: [https://miro.com/app/board/o9J\\_ljHuV-w=?share\\_link\\_id=712157638569](https://miro.com/app/board/o9J_ljHuV-w=?share_link_id=712157638569)
- 4-5: <https://miro.com/app/board/uXjVPfnthT8=/>

**Option 2:** Upload these rtb. [files](#) into your paid team account

# Core Assembly Miro Set-up

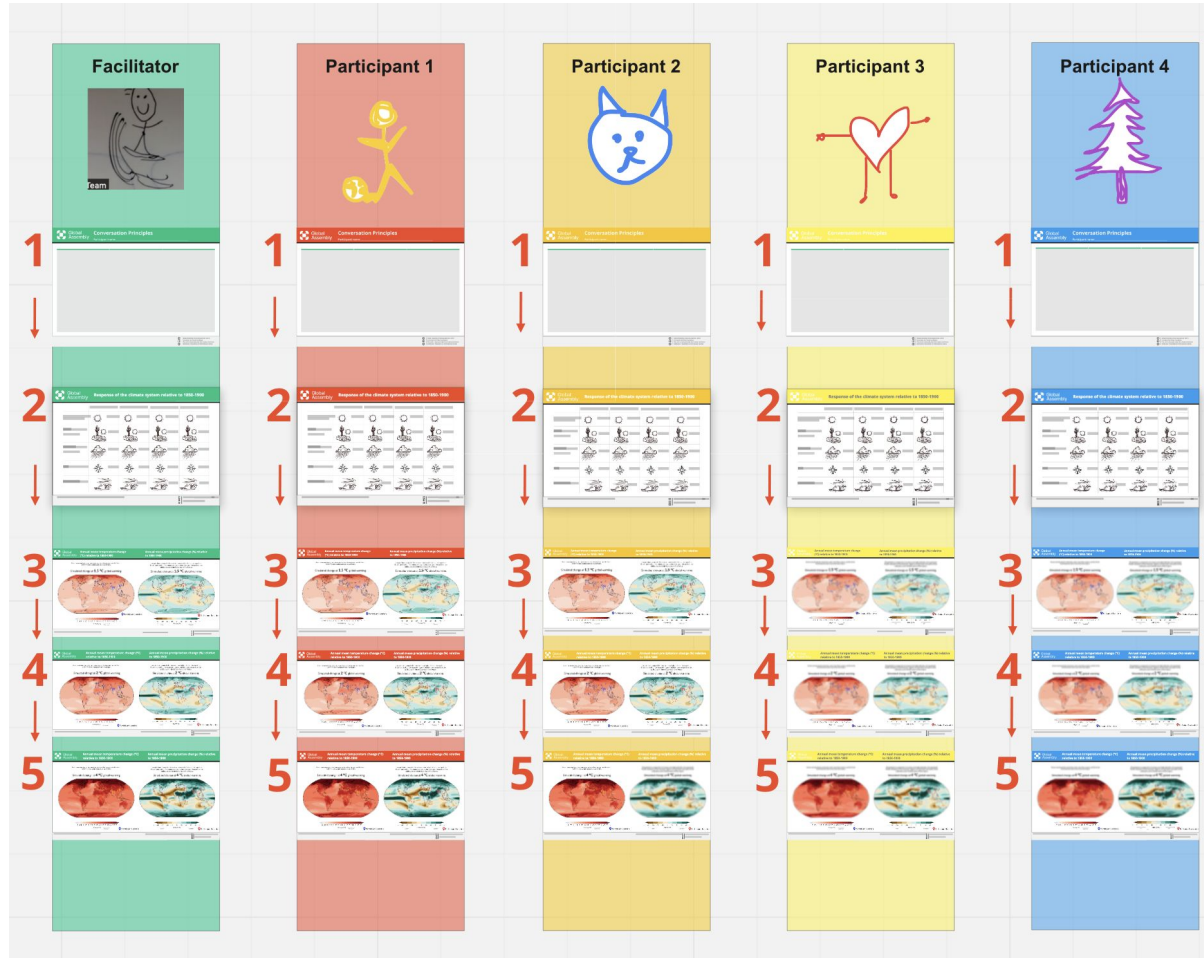


To enable participants to make changes (ie. add stickies, move icons) and view information (ie. graphs), the Core Assembly used the following Miro format to set up exercises for each session.

Differently colored columns were created and labelled for each participant in the Breakout Room and the Facilitator. The Supplemental Exercise templates were vertically ordered in the order they were used in the session, and horizontally duplicated into each column.

Participants zoomed full-screen into their own column to view, or make changes to, only their own exercise templates.

# Translation on Miro



Creating a column for each participant also enabled us to have multiple translations in one Miro Board. Before each session, the Community Hosts of non-English speaking participants superimposed translations of text on exercise templates with stickies.

Global Assembly 기후 시스템의 반응 1850-1900					
	+1.1°C 현재	+1.5°C	+2°C	+4°C	
온도 십년간 최고 온도날	+1.2°C (+1.0 - 1.4 °C)	+1.9°C (+1.5 - 1.9 °C)	+2.6°C (+2.0 - 2.8 °C)	+5.1°C (+4.6 - 5.0 °C)	
가뭄 십년간 한 번 발생했던 가뭄이 이제는 X배 더 발생합니다	X1.7 (0.7 - 4.1)	X2.0 (1.0 - 5.1)	X2.4 (1.3 - 5.8)	X4.1 (1.7 - 7.2)	
강수량 십년간 가장 강수량이 많았던 날이 이제는 X배 더 많이 발생합니다	X1.3 (1.2 - 3.1)	X1.5 (1.5-1.6)	X1.7 (1.6 - 2.0)	X2.7 (2.3 - 3.6)	
눈 적설량 변화 (%)	-1% (-2 - 0)	-5% (-5 - -1)	-9% (-12 - -4)	-25% (-31 - -18)	
태풍 강태풍 비율 (%)		+10%	+13%	+30%	

Data Source: IPCC AR6 Final Report Pg. TS-54

Global Assembly. Response of the climate system (2021)  
Innovation for Policy Foundation.  
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# Session 1.1B

October 7, 2021

## 1.1i: 7 Generation Anchoring Exercise (Individual)

## Instructions

# 1.1i : 7 Generation Anchoring Exercise (Individual)

Step 1: Participants draw themselves on a piece of paper and organizers support them to upload a photo (or screenshot) of the drawing on the timeline at the current year

Step 2: Participants indicate their ancestors on the timeline by moving the icons under appropriate birth years (or year estimates)

Step 3: Participants journal or reflect individually about their great grandparents' lives, considering the following prompt questions

- Do you have a story about their life?
- Can you describe what a day in their life would have looked like?

*Participants share with the group*

Step 4: Participants journal about their lives, and how it has changed since their great grandparents were alive. *Participants share with the group.*

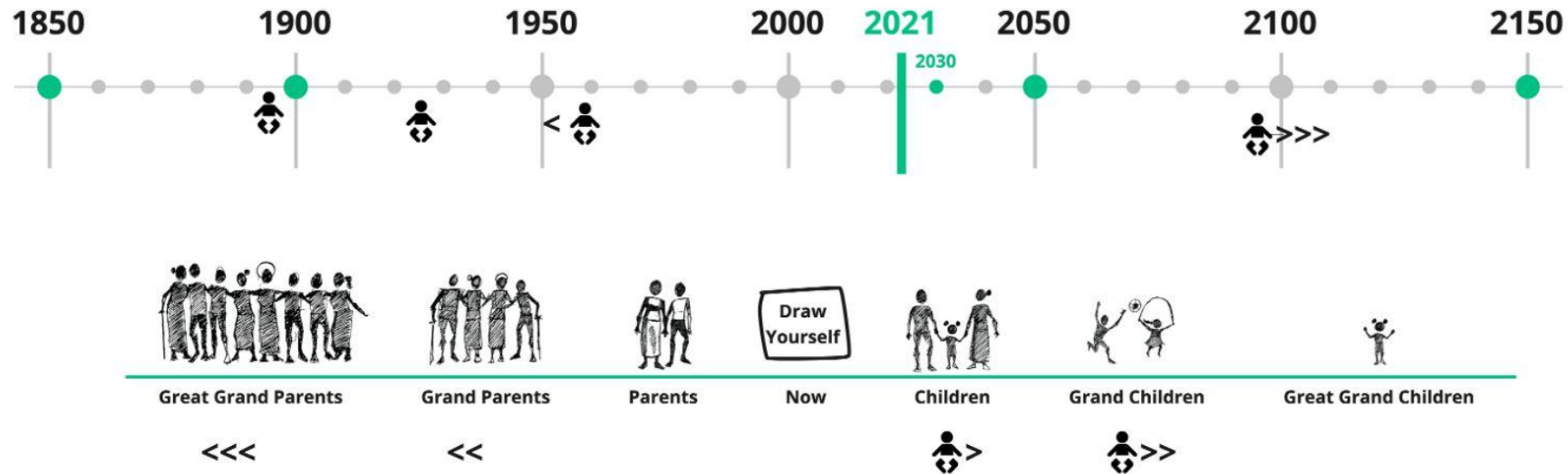
Step 5: Participants journal about their dreams for their great grandchildren. *Participants share with the group.*



Global  
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Participant name: \_\_\_\_\_



Great Grand Parents

Now

Great Grand Children

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# Session 1.2B

October 9, 2021

**1.2i:** 7 Generation Anchoring Exercise (Group)

**1.2ii:** Global Surface Temperature (1850-2020)

**1.2iii:** A story of interconnectedness

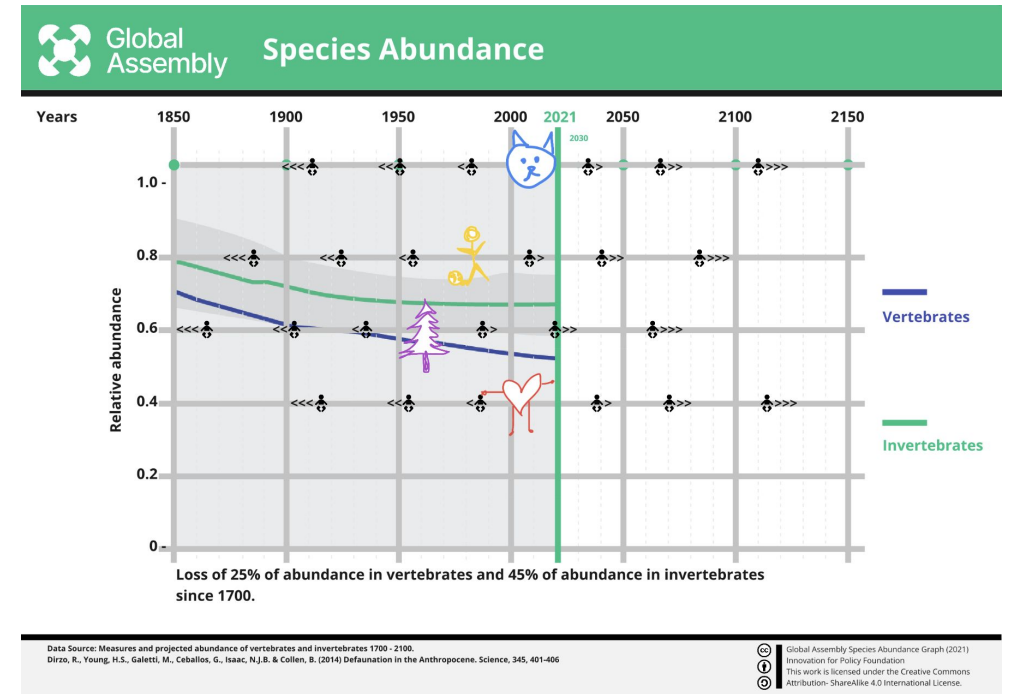
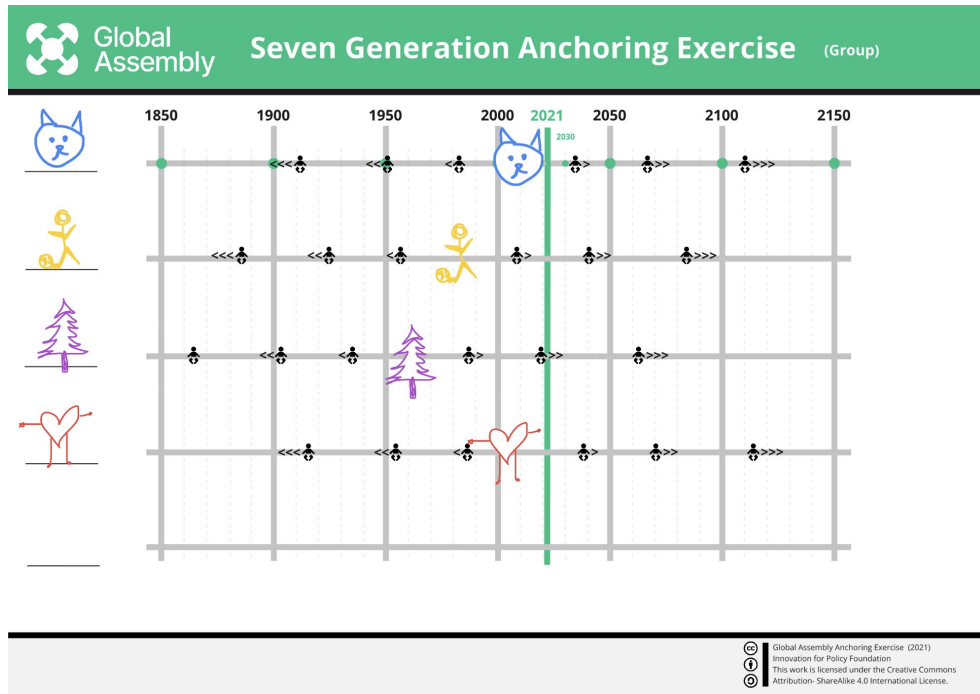
**1.2iv:** Species Abundance

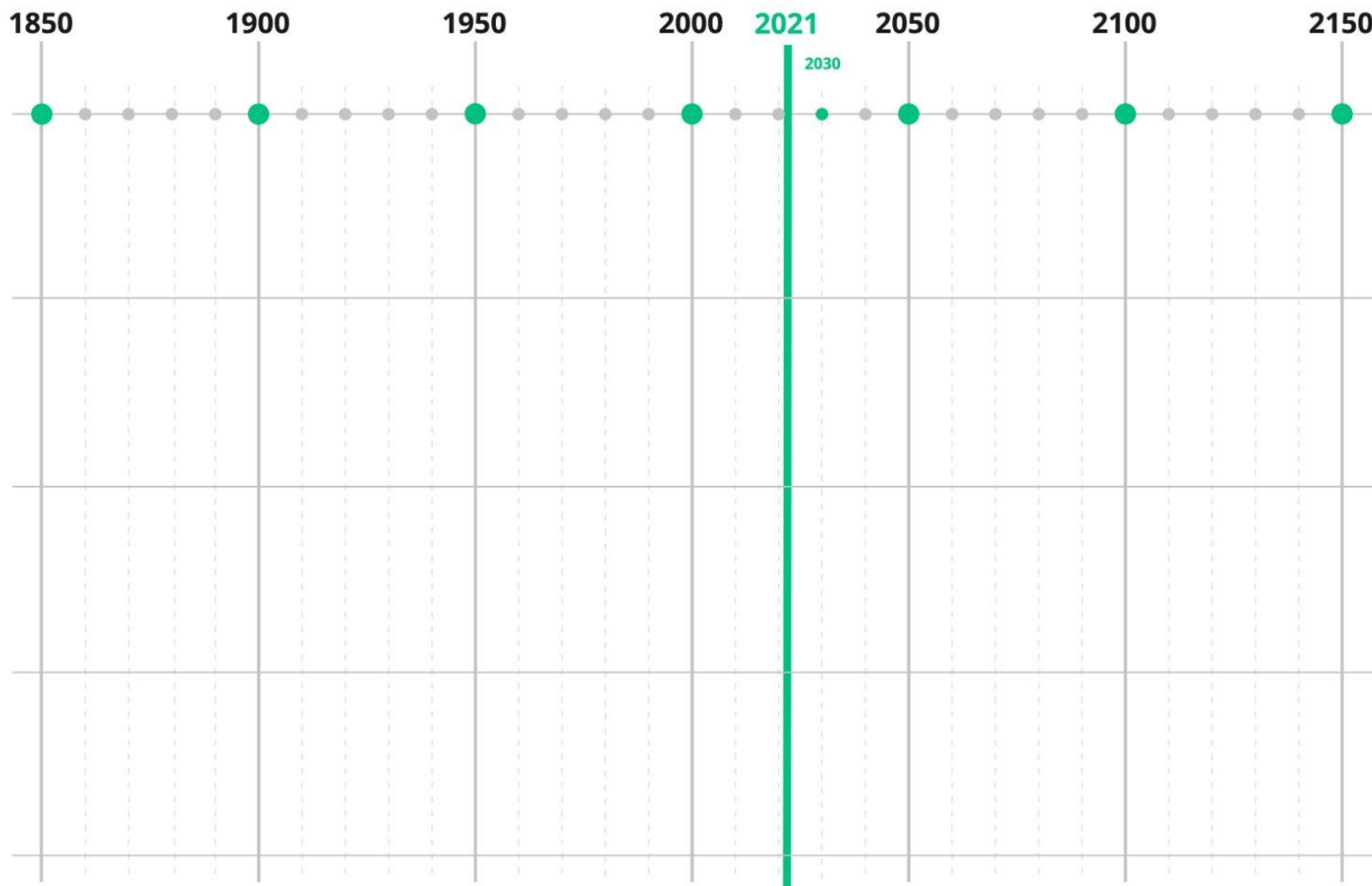
## Instructions

# 1.2i: 7 Generation Anchoring Exercise (Group)

Preparation: Between sessions 1.1B and 1.2P, the Intergenerational Timelines (see Exercise 1.1i) of each Assembly Members in a Breakout are compiled into the 1.2i template.

How to use: The timeline is superimposed on time-series graphs (such as 1.2ii) to support understanding.





## Instructions

Intergenerational anchoring recommended (see 1.2i)

# 1.2ii : Change in Global Surface Temperature (1850-2020)

Step 1: Participants view “Change in Global Surface Temperature (1850-2020)” graph on the Miro Board with the “7 Generation Anchoring Exercise (Group)” superimposed on top (see Exercise 1.2i).

Step 2: Facilitator reads out “Recent History” passage:

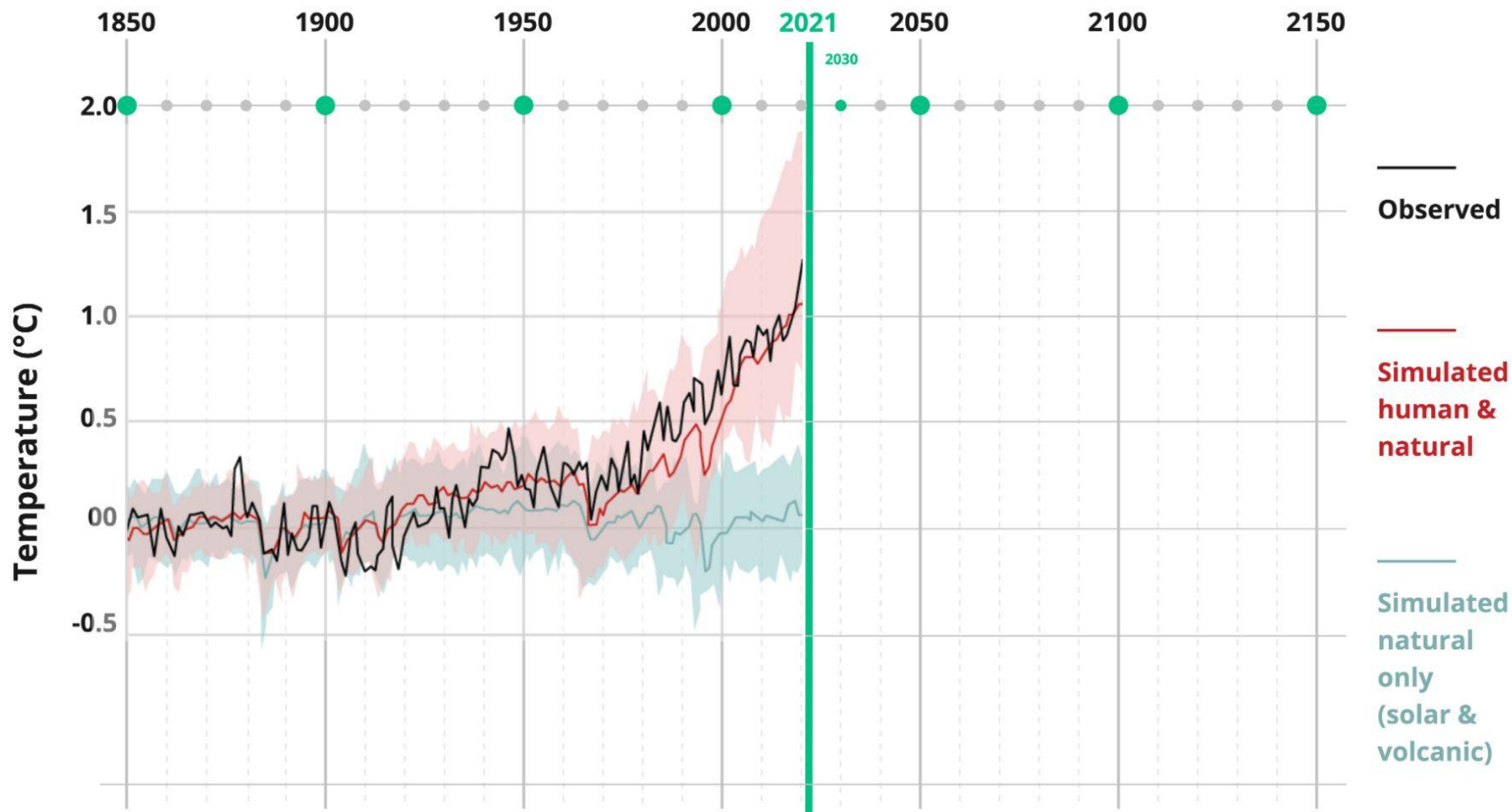
*“Historically, changes in greenhouse gases and temperature were driven by non-human natural activities, such as the reflection of sunlight and volcanic eruptions (the green line below). Today, they are primarily driven by human activity (see the red line below). Since people in rich countries started to burn fossil fuels around 200 years ago, leading to huge quantities of greenhouse gases being put into the atmosphere, global surface temperatures have risen by 1.2°C (34.2°F) (see chart below). Although it doesn’t sound like a lot, the last 20 years have been the warmest period in more than 100,000 years. Can you see how the temperature is changing from your great grandparents to your life today?”*

Step 3: Participants journal reflections on how temperatures and life may have changed since their great grandparents were born. How have the weather and the seasons changed in the place where they live over this time?

Step 4: Round of open sharing on reflections



# Change in Global Surface Temperature (1850-2020)



## Instructions

# 1.2iii : A story of interconnectedness

Step 1: Participants view “A story of interconnectedness” on Miro Board

Step 2: Facilitator reads out the following passage:

*“Certain butterflies always lay their eggs on a particular bush above the nest of a particular species of ant. The ants collect the eggs and take them down into the nest. When the larvae hatch the ants carry them up to eat the leaves of the bush at night and then carry them back down again. When the larvae grow too big to be carried out the ants venture out to collect the leaves for the larvae. The larvae grow a jelly on their sides when they eat those particular leaves, and this is the food that the queen ant eats. The larvae then spin cocoons in the nest for the final stage of the process, after which they fly out of the nest as butterflies and begin the cycle all over again.”*

Step 3: Participants journal or reflect individually on the prompt:

- In the short story above, can you imagine what would happen if either the bush, the ant, or the butterfly were to be threatened? Can you think of any examples of the connections between plants and/or animals in the place where you live? Have you observed some species relying upon each other (this could include humans)?

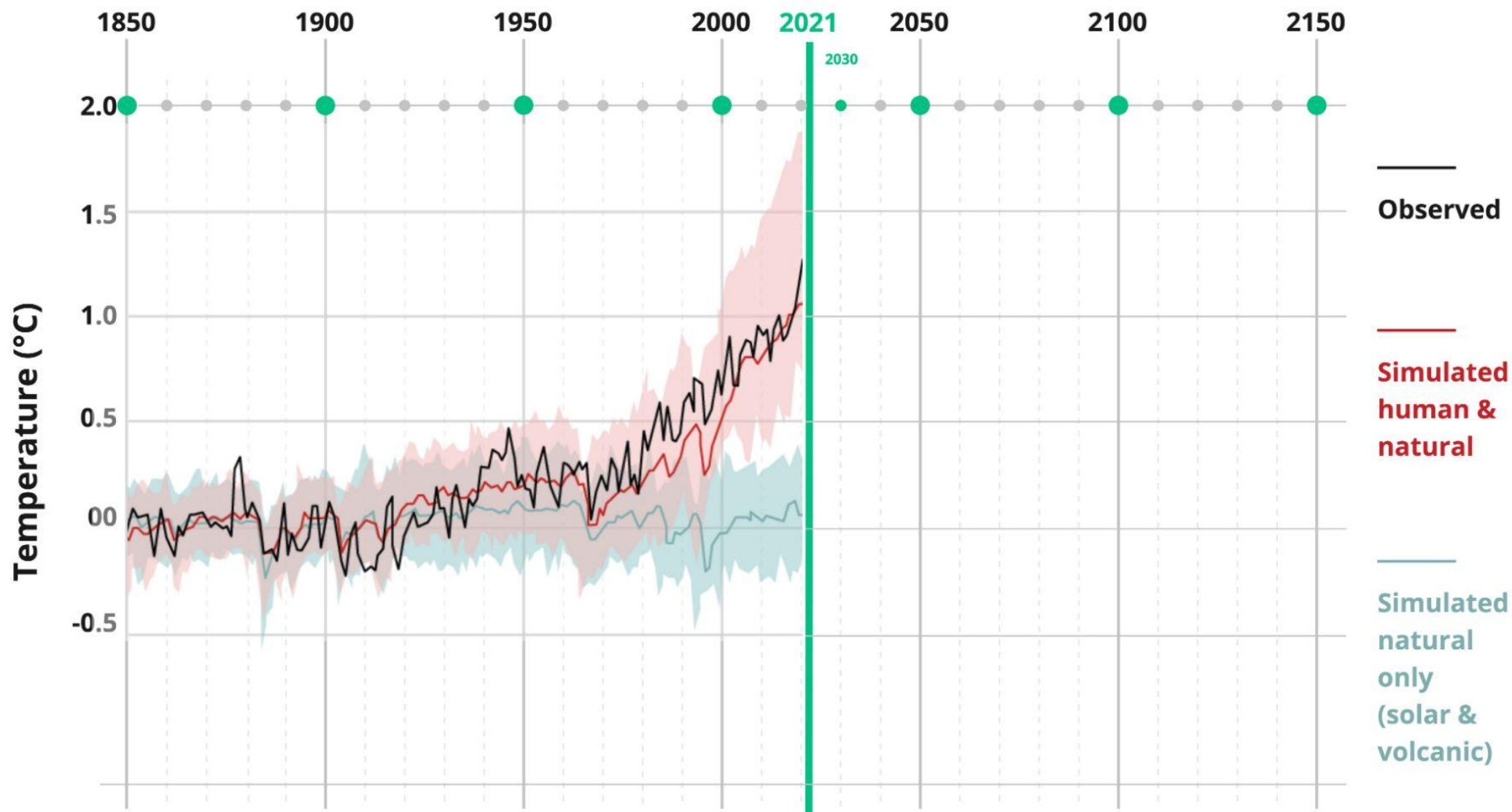


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# Change in Global Surface Temperature (1850-2020)





## Instructions

Intergenerational anchoring recommended (see 1.2i)

# 1.2iv : Species Abundance

Step 1: Participants view “Species Abundance” graph on the Miro Board with the “7 Generation Anchoring Exercise (Group)” superimposed on top (see Exercise 1.2i).

Step 2: Facilitator reads the following passage:

*“Vertebrates are animals that have a backbone inside their body, such as fish, birds and humans. Invertebrates are animals that don’t have a backbone, like worms or spiders. Consider the loss of abundance of vertebrates and invertebrates in the chart below. Can you see how the abundance of animals has decreased since your great grandparents’ lives? While not pictured on this graph, consider the fact that there was a loss of 25% of abundance in vertebrates and 45% of abundance in invertebrates since 1700.”*

Step 3: Participants journal or reflect individually on the prompt:

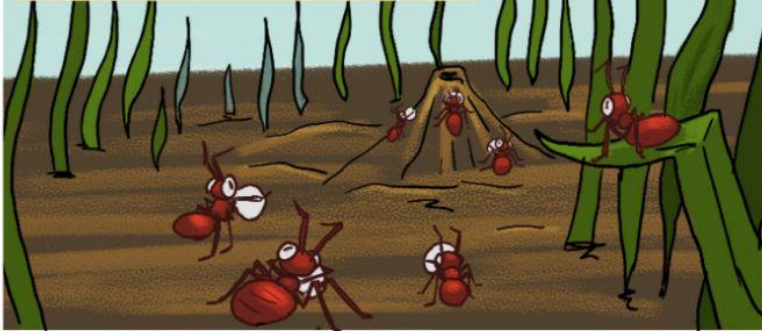
- Think back to the story about the ant and the butterfly (Exercise 1.2iii). How do you think the loss of abundance of one species might affect others?

Step 4: Round of open sharing on reflections

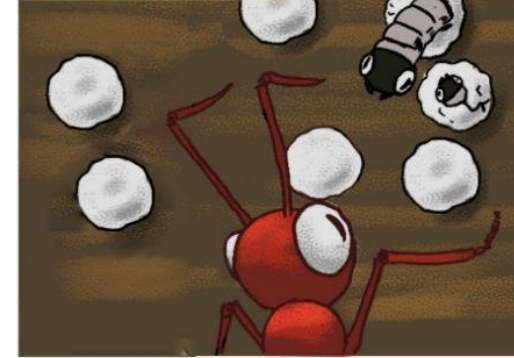
Certain butterflies always lay their eggs on a particular bush above the nest of a particular species of ant.



The ants collect the eggs and take them down into the nest.



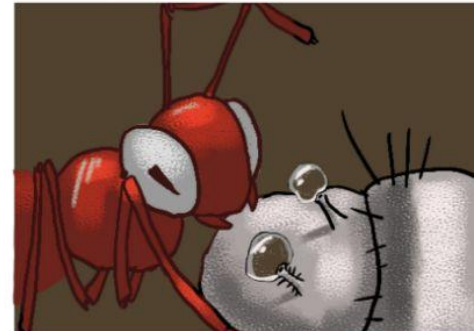
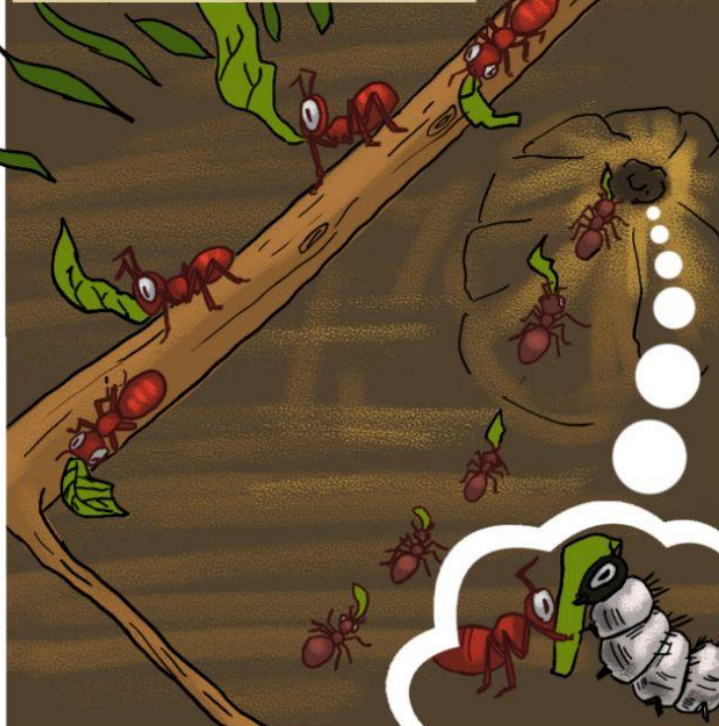
When the larvae hatch...



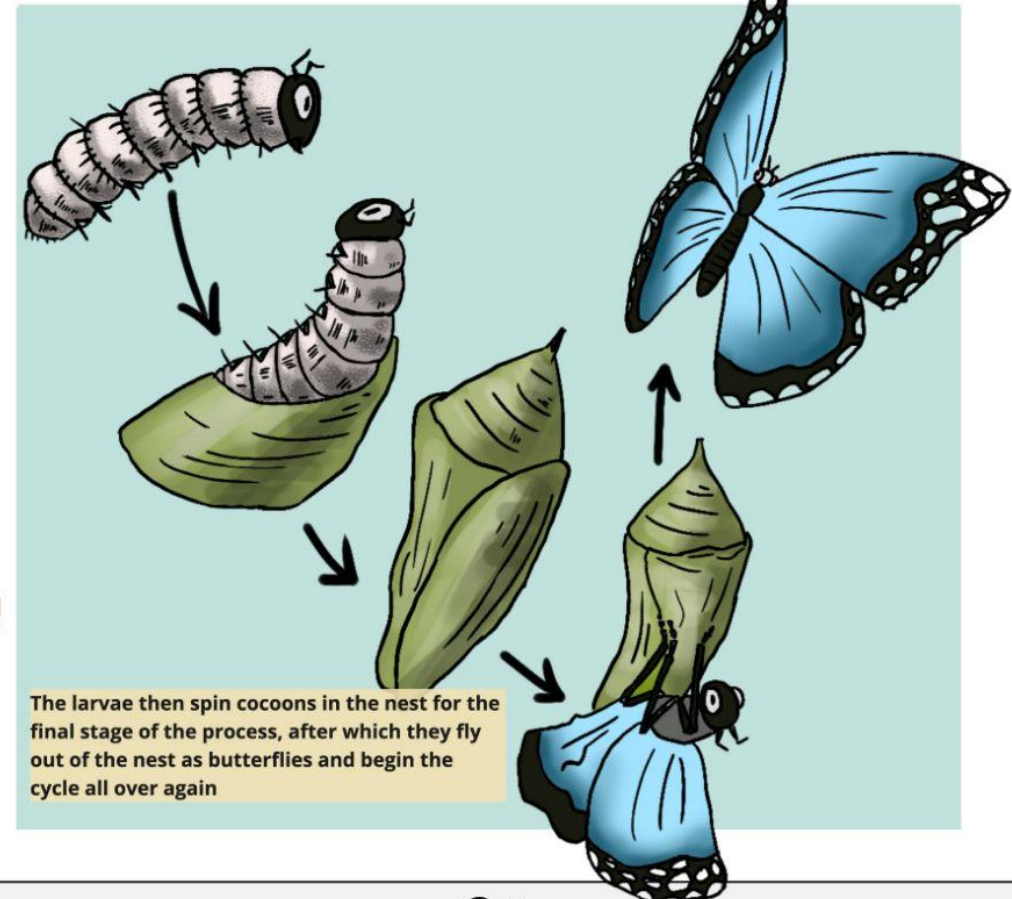
...the ants carry them up to eat the leaves of the bush at night and then carry them back down again.



When the larvae grow too big to be carried out the ants venture out to collect the leaves for the larvae



The larvae grows a jelly on their sides when they eat those particular leaves, and this is the food that the queen ant eats.



The larvae then spin cocoons in the nest for the final stage of the process, after which they fly out of the nest as butterflies and begin the cycle all over again

# Session 1.3B

October 12, 2021

**1.3i** Global temperature change in relation to atmospheric CO<sub>2</sub> concentration

**1.3ii** Global surface temperature change

**1.3iii** Plant biodiversity loss



## Instructions

Intergenerational anchoring recommended (see 1.2i)

### 1.3i : Global temperature change in relation to atmospheric CO<sub>2</sub> concentration

Step 1: Facilitator reads out the following passage:

*"Modern humans - Homo Sapiens, our species and our common ancestors - first emerged on the African continent around 300,000 years ago. At this time, there were lower, more stable global surface temperatures than there are today. In these conditions our ancestors flourished, and around 55,000 years ago (roughly 2,200 generations before us today\*) they began a great migration that led to humans spreading across the surface of the earth. Scientists can estimate historical conditions on the earth, long before humanity existed."*

\*Assuming an average generational gap of 25 years.

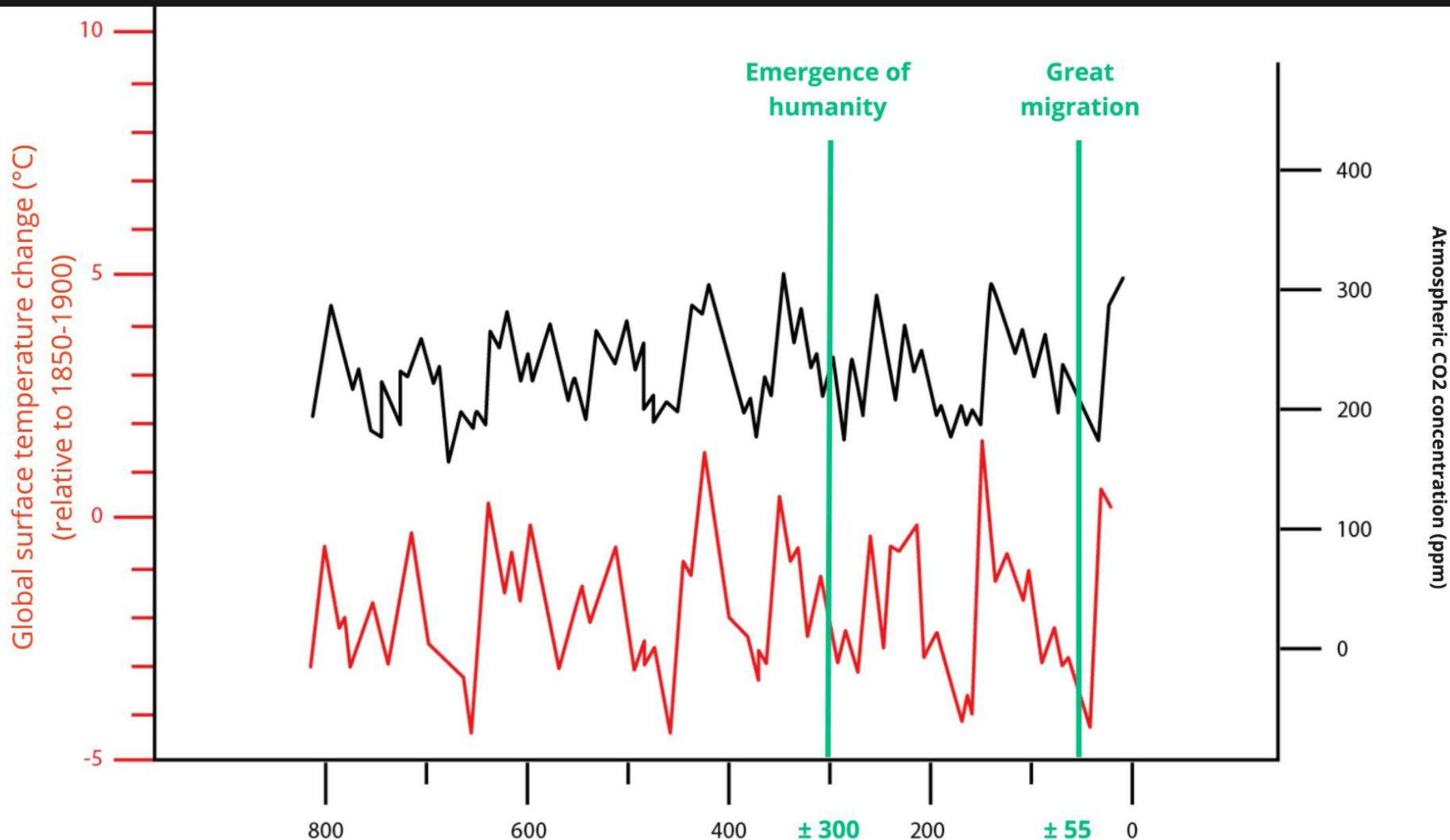
Step 2: Participants view "Global Surface Temperature & Atmospheric CO<sub>2</sub>" graph on Miro Board with the "7 Generation Anchoring Exercise (Group)" superimposed on top (see Exercise 1.2i).

Step 3: Facilitator reads out the following passage:

*"Do we all remember reading about global surface temperatures and greenhouse gasses, like carbon dioxide, on Saturday? Throughout history, there has been a strong relationship between the levels of greenhouse gasses, such as carbon dioxide, and temperatures on the earth. The red line in this graph is showing the changes in the temperature of the earth's surface and the black line is showing changes in the amount of carbon dioxide in the atmosphere. During times when greenhouse gasses have increased, temperatures have also increased. At other times when greenhouse gasses are reduced, temperatures are also lowered."*



# Global Temperature change in relation to atmospheric CO2 concentration



## Instructions

# 1.3ii: Global surface temperature change

Step 1: AMs view “Global Surface Temperature Change” graph on Miro Board

Step 2: Facilitator reads out the following passage:

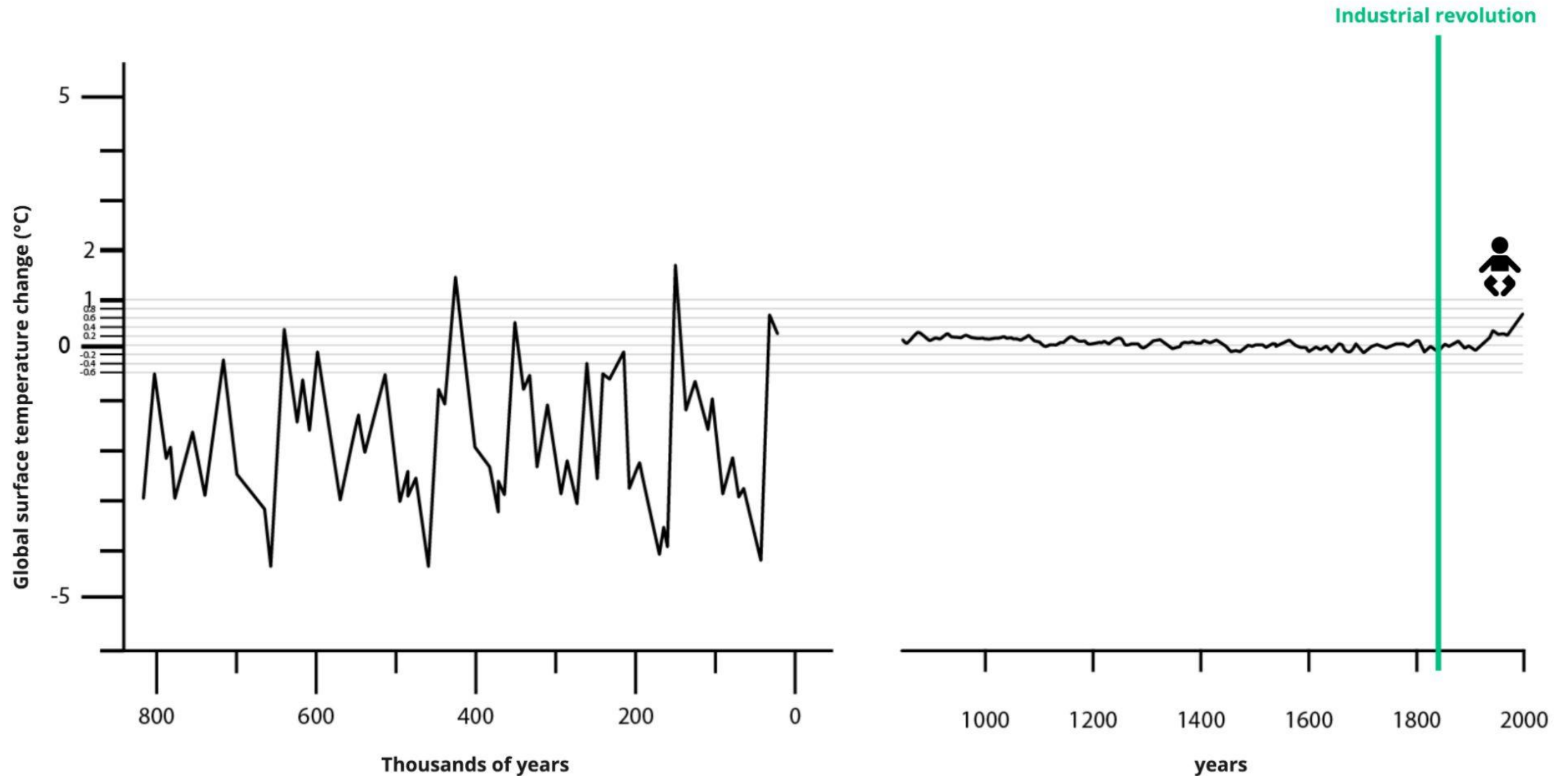
*“Now what we’re seeing on the left are changes in global temperatures over the past 800,000 years. On the right is the last 1000 years, which would fit into a tiny speck at the end of the graph on the left. After the long steady period which allowed our ancestors to thrive, we can see that temperatures have started to rise unusually quickly since the Industrial Revolution, as we just read about in the chapter of the Information Booklet. All of the generations in our families, starting from our great grandparents, are shown. One thing that can be observed from this is that the last time that global temperatures were this high over a multi-year period was more than 100,000 years ago. Another important observation for you to know is that carbon dioxide concentrations today are at their highest point in 2 million years, greater than at any point in our 300,000 years of human history.”*

Step 3: Round of open sharing on reflections



Global  
Assembly

# Global Surface Temperature Change





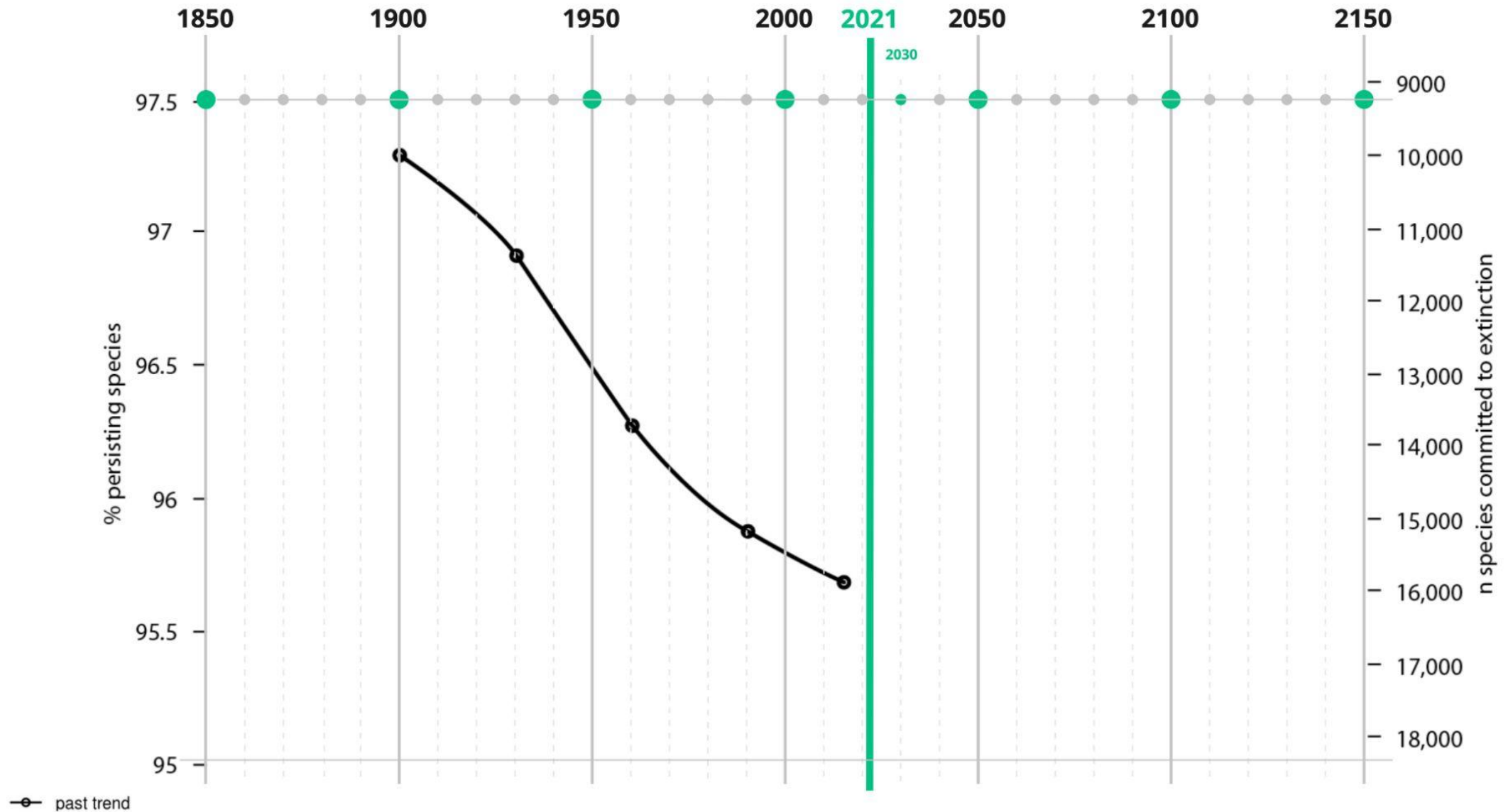
## 1.3iii: Plant Biodiversity Loss

Step 1: AMs view “Plant Biodiversity Loss” graph on Miro Board with the “7 Generation Anchoring Exercise (Group)” superimposed on top (see Exercise 1.2i).

Step 2: Facilitator reads out the following passage:

*“Do you remember learning about the ecological crisis on Saturday? We learned that one million of the world’s estimated eight million species of plants and animals are threatened with extinction. This graph is showing us the loss, or extinction, of vascular plant species from 1900 to today. Vascular plants are a type of plants that comprise 90% of all vegetation on earth, including all plants that have seeds. In 1900, around 97.3% of plant species still existed. Around 10,000 species of plants were extinct. Today, around 95.7% of plant species exist. This means that around 6,000 plant species that existed in 1900 no longer exist today. In total, around 16,000 species of plants that existed on earth can no longer be found today.”*

# Plant Biodiversity Loss



Data Source: Di Marco, M., Harwood, T.D., Hoskins, A.J., Ware, C., Hill, S.L.L., Ferrier, S. (2019), Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling, *Global Change Biology* 25(8), p. 2771. Description: Rate of Vascular Plant Species Decline 1900 - 2050

Supplemental Workbook

Exercise 1.3iii



Global Assembly Anchoring Exercise (2021)  
Innovation for Policy Foundation  
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# Session 1.4B

October 13, 2021

**1.4i:** Responses of the climate system relative to 1850-1900

**1.4ii:** Annual mean temperature & precipitation change relative to 1850-1900 at 1.5°C, 2°C and 4°C global warming

















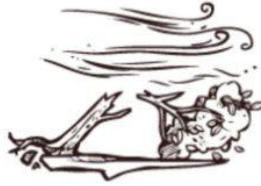



## Instructions

### 1.4i: Responses of the climate system relative to 1850-1900

Step 1: Participants view “Responses of the climate system relative to 1850-1900” on Miro Board

Step 2: Facilitator reads out the following passage:

*“This slide is showing us how the estimated changes in temperature, drought, precipitation, snow and tropical cyclones will change as temperatures of the earth rises to certain degrees. In the first row, we can see that as the temperature of the earth’s surface rises, the hottest day in 10 years will become hotter and hotter. In the second row, we can see that a drought that used to occur once in a decade now happens two times more frequently. If the temperature of the earth’s surface rose to 4 degrees, droughts would happen around 5 times more frequently. Can you observe similar changes in precipitation, snow and tropical cyclones? Notice how the different changes of the temperature of the earth’s surface, which can seem small, can cause very different changes in things we feel in our daily lives, like the rain and how hot it is. During this session, we will review Chapter 5 of the information materials to look at more of the concrete impacts of these changes in the temperature of the earth’s surface.”*

	+1.1°C Today	+1.5°C	+2°C	+4°C
<b>Temperature</b> Hottest day in a decade (°C)	 <b>+1.2°C</b> (+1.0 - 1.4 °C)	 <b>+1.9°C</b> (+1.5 - 1.9 °C)	 <b>+2.6°C</b> (+2.0 - 2.8 °C)	 <b>+5.1°C</b> (+4.6 - 5.0 °C)
<b>Drought</b> A drought that used to occur once in a decade now happens <b>x</b> times more	 <b>X2.8</b>	 <b>X4.1</b>	 <b>X5.6</b>	 <b>X9.4</b>
<b>Precipitation</b> What used to be the wettest day in a decade now happens <b>x</b> times more	 <b>X1.3</b>	 <b>X1.5</b>	 <b>X1.7</b>	 <b>X2.7</b>
<b>Snow</b> Snow cover extent change (%)	 <b>-1%</b>	 <b>-5%</b>	 <b>-9%</b>	 <b>-25%</b>
<b>Tropical cyclones</b> Proportion of intense tropical cyclones (%)		 <b>+10</b>	 <b>+13</b>	 <b>+30</b>



## Instructions

### 1.4ii: Annual mean temperature change relative to 1850-1900 at 1.5°C, 2°C and 4°C global warming

Step 1: Participants view “Annual mean temperature change” and “Annual mean precipitation change” relative to 1850-1900: Simulated change at 1.5C global warming” while Facilitator reads the following passage:

*“This map is showing how different land and ocean areas will experience degrees of warming differently, at 1.5 degrees of global warming. Notice that rising global temperatures do not mean that all areas experience the same level of warming. Different parts of the world will warm more or less than others. In general, land areas warm more than our oceans. The Arctic and Antarctica, shown at the top of this map, is estimated to warm more than the Tropics. The blue pins on this map show the 100 locations around the world where our Global Assembly Members come from. We can see that each of us will experience different levels of warming in the places where we live, at 1.5 degrees of global warming. The map below is showing how precipitation, like rain or snow, is estimated to increase or decrease at 1.5 degrees of global warming. Similar to temperature, different parts of the world experience different levels of changes in precipitation. Precipitation is estimated to increase over areas of the world near the top of the map, around the equator of the Pacific and regions known to experience monsoons, such as around the Indian ocean and around the Northern part of Africa. In other places, notice that precipitation is decreasing. As we read, these changes in precipitation can lead to droughts or floods. As we continue to look at these maps, try to find where the places where you and your 4 peer Assembly Members live are on the map, and think about how they are being affected. Can everyone see the place where they live, and maybe some of the places where others in our group are from?” Throughout this session, we have been learning about how the impacts of climate change will change depending on how many degrees the temperature of the earth rises by. We have just looked at how 2 impacts of climate change - how hot it is and the amount of precipitation - will be felt differently depending on where you are in the world. Now, we are going to combine these two pieces - changing impacts as a result of degree rises and geography - together”*

(Continued on next page)

## Instructions (Continued)

*Throughout this session, we have been learning about how the impacts of climate change will change depending on how many degrees the temperature of the earth rises by. We have just looked at how 2 impacts of climate change - how hot it is and the amount of precipitation - will be felt differently depending on where you are in the world. Now, we are going to combine these two pieces - changing impacts as a result of degree rises and geography - together"*

**Step 3:** Participants view "Annual mean temperature change" and "Annual mean precipitation change" relative to 1850-1900: Simulated change at 2C global warming"

**Step 4:** Facilitator reads out the following passage:

*"These maps are showing how different land and ocean areas will experience degrees of warming, and changes in precipitation differently, at 2 degrees of global warming. Notice how in general, nearly all areas will experience warmer temperatures than at 1.5 degrees of global warming, including the areas that experience relatively less warming. Next, let's notice the ways in which areas like the Arctic and Antarctica, that would have experienced the most warming at 1.5 degrees, are getting warmer in this scenario"*

**Step 5:** Participants view "Annual mean temperature change" and "Annual mean precipitation change" relative to 1850-1900: Simulated change at 4C global warming"

**Step 6:** Facilitator reads out the following passage:

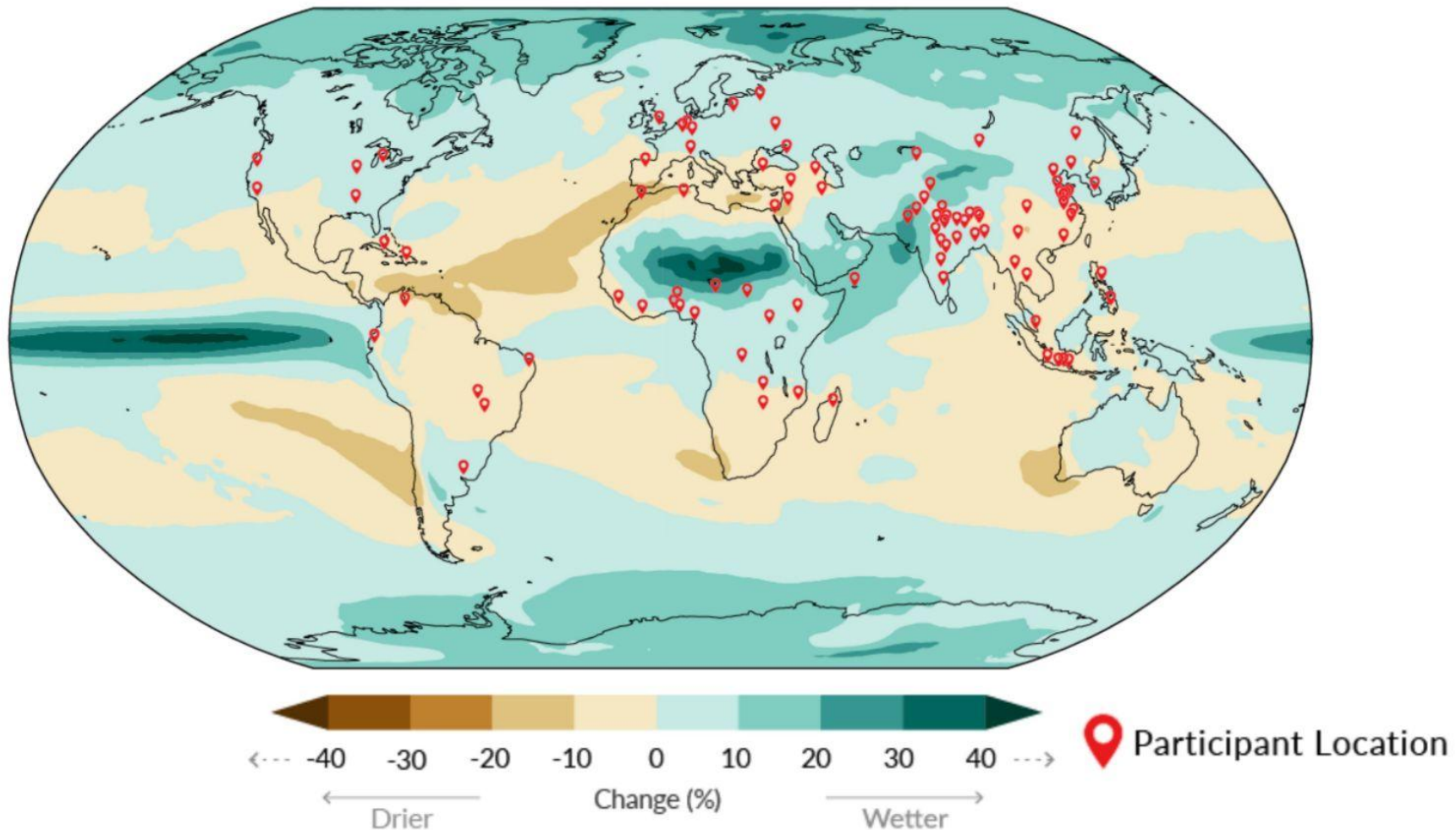
*"Finally, this map is showing how different land and ocean areas will experience degrees of warming, and changes in precipitation differently, at 4 degrees of global warming. If we reach 4 degrees of global warming, many of the places that were estimated to experience relatively less warming at 1.5 degrees, are experiencing the same, if not more, warming than the Arctic and Antarctica at 1.5 degrees. If we reach 4 degrees of global warming, many of the places that were estimated to experience relatively less severe droughts and floods at 1.5 degrees, are experiencing droughts and floods as severely as the most affected areas at 1.5 degrees."*



# Annual mean precipitation change (%) relative to 1850-1900

Precipitation is projected to increase over high latitudes, the equatorial Pacific and parts of the monsoon regions, but decrease over parts of the subtropics and in limited areas of the tropics.

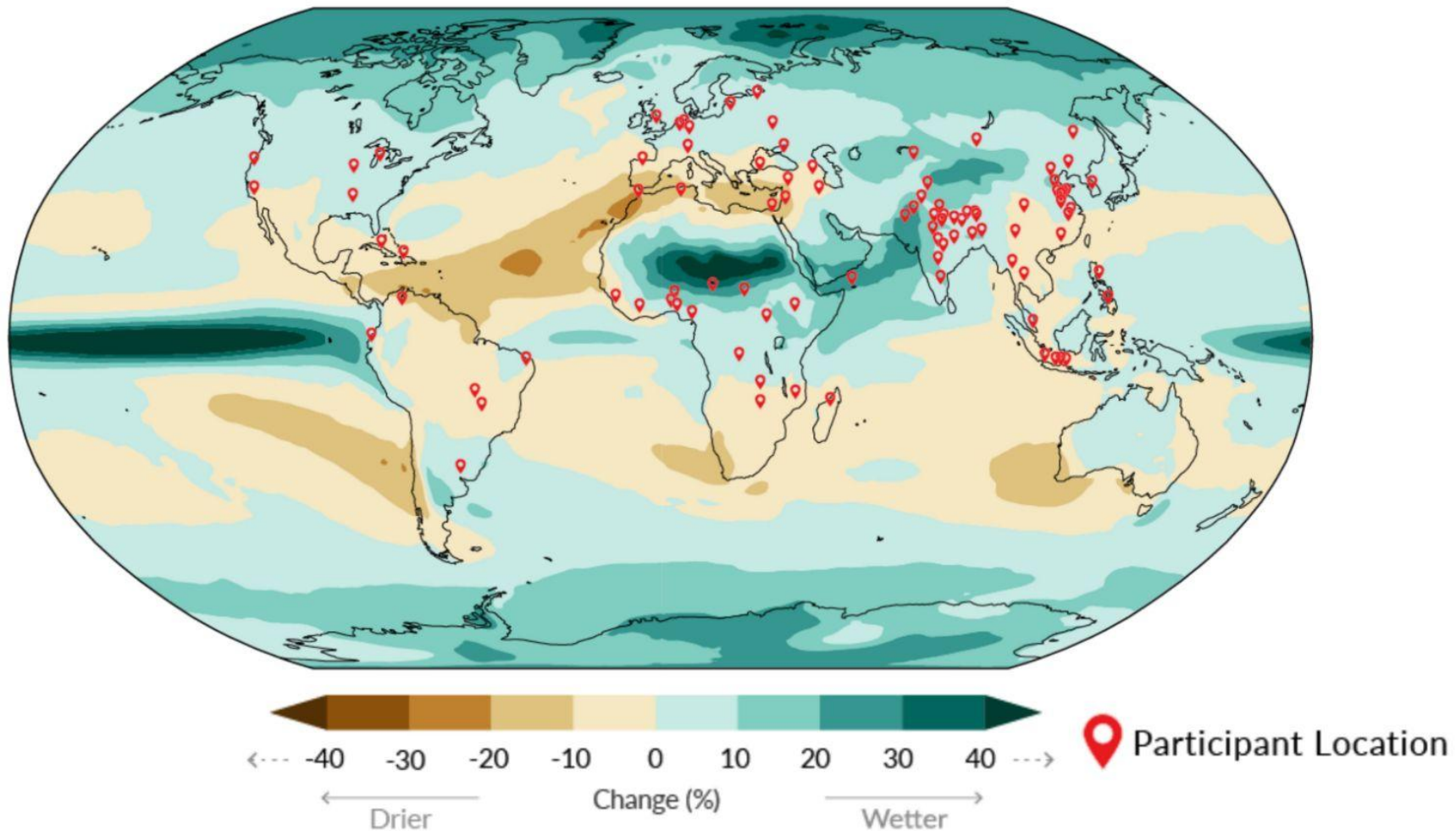
Simulated change at **1.5 °C** global warming



# Annual mean precipitation change (%) relative to 1850-1900

Precipitation is projected to increase over high latitudes, the equatorial Pacific and parts of the monsoon regions, but decrease over parts of the subtropics and in limited areas of the tropics.

Simulated change at **2 °C** global warming



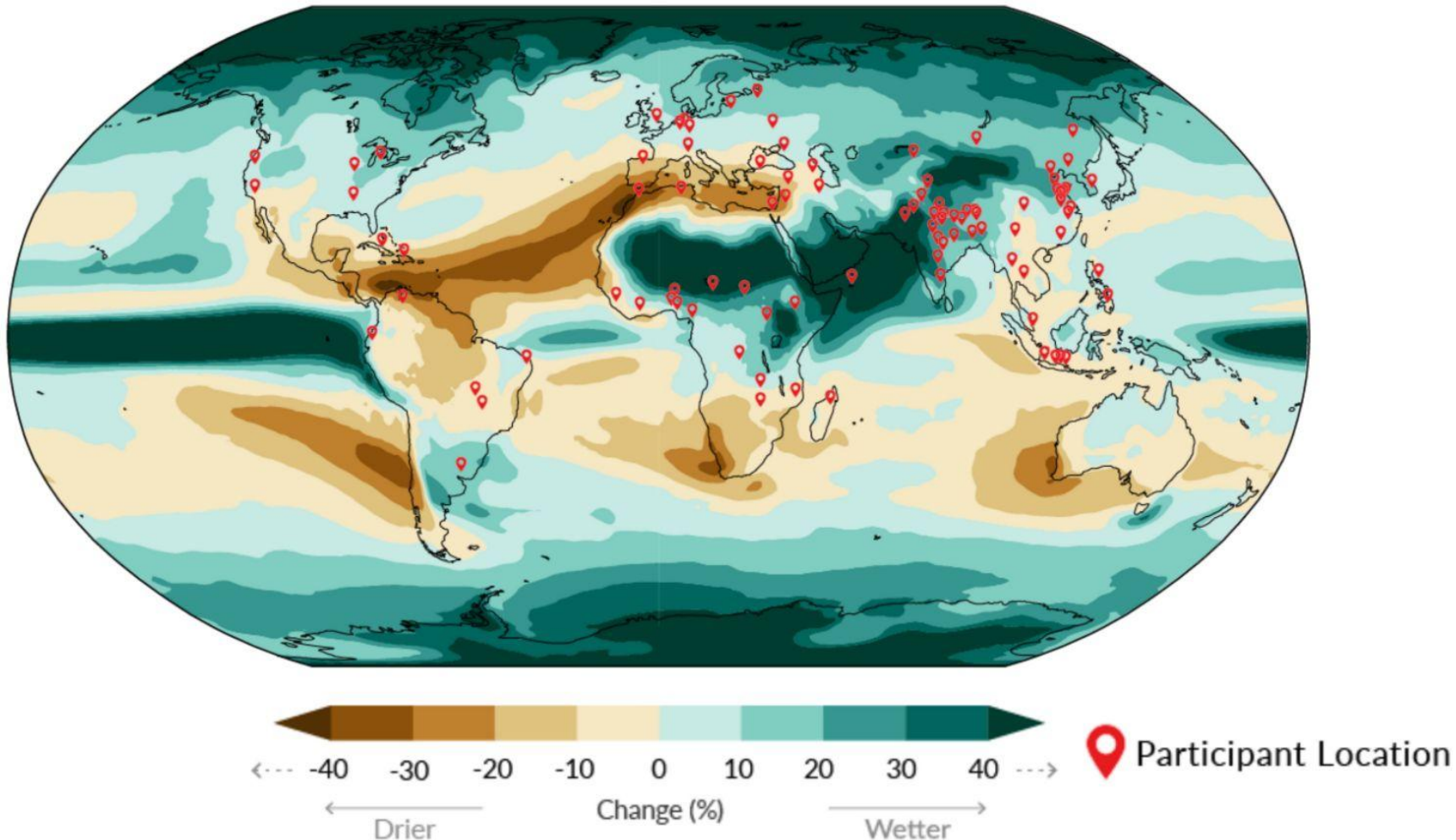




# Annual mean precipitation change (%) relative to 1850-1900

Precipitation is projected to increase over high latitudes, the equatorial Pacific and parts of the monsoon regions, but decrease over parts of the subtropics and in limited areas of the tropics.

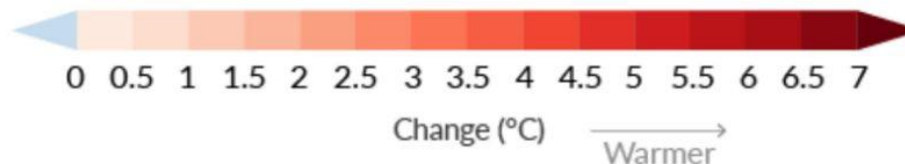
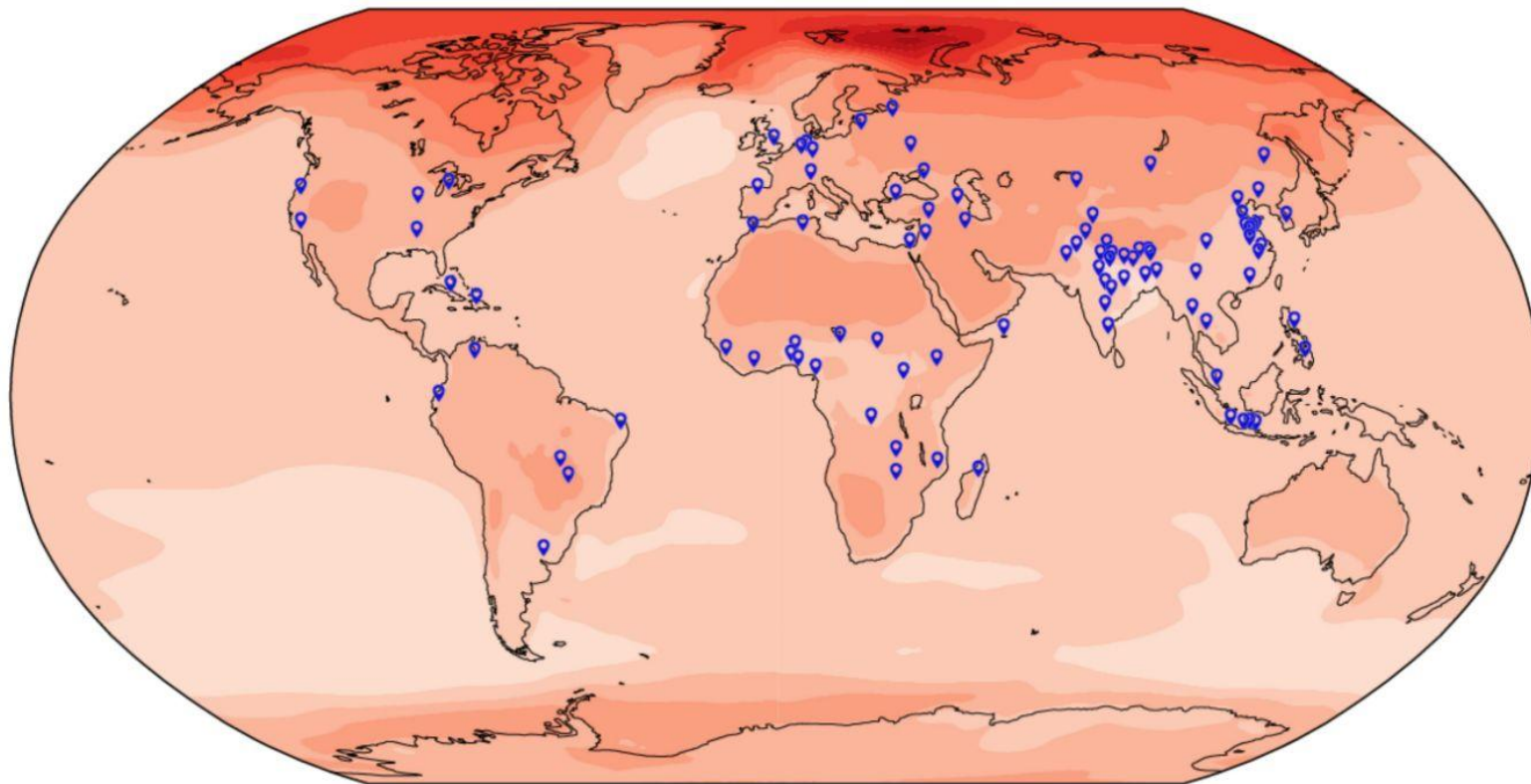
Simulated change at **4 °C** global warming



# Annual mean temperature change (°C) relative to 1850-1900

Across warming levels, land areas warm more than oceans, and the Arctic and Antarctica warm more than the tropics.

Simulated change at **1.5 °C** global warming



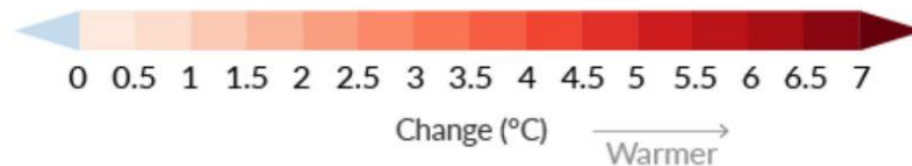
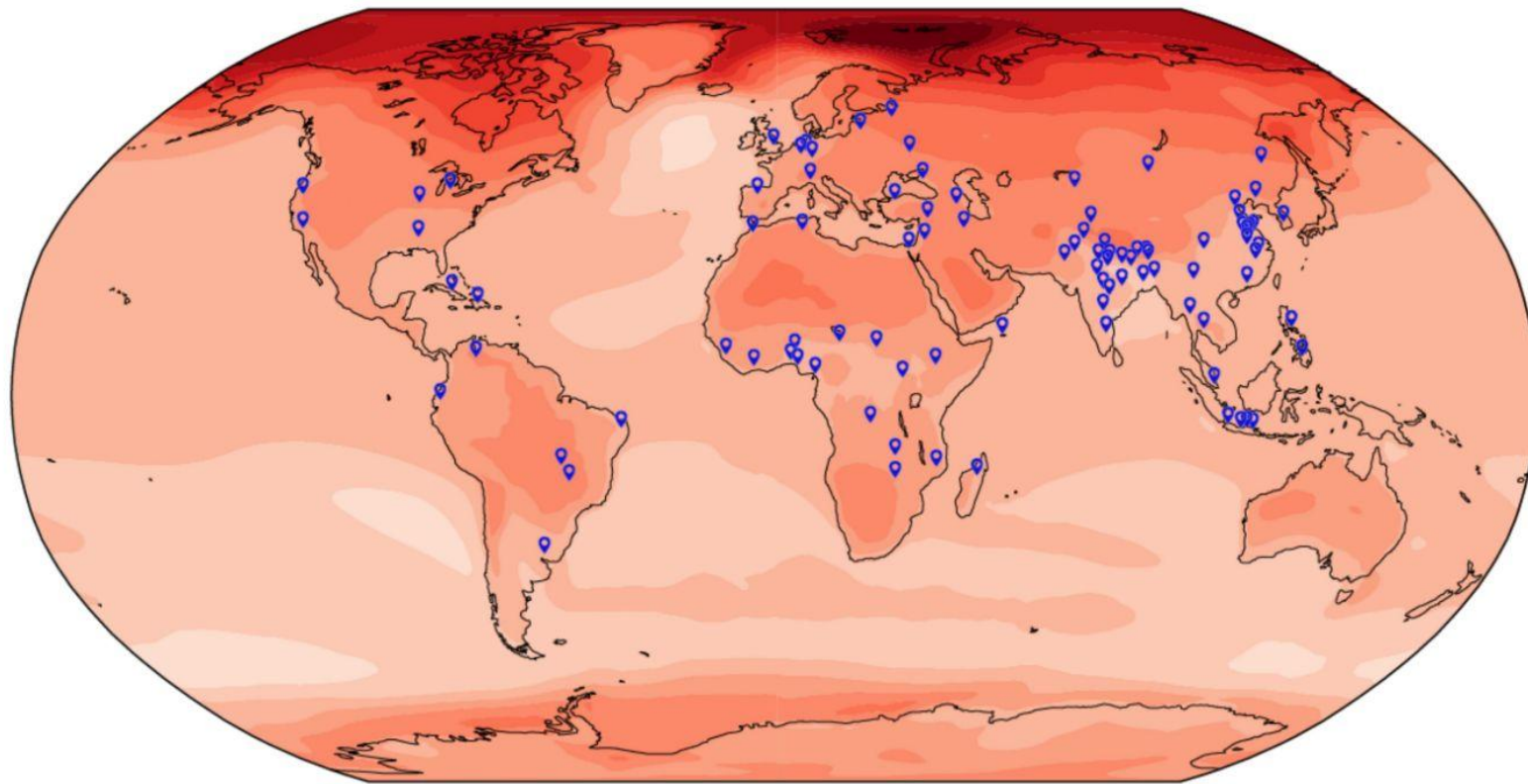
 Participant Location



# Annual mean temperature change (°C) relative to 1850-1900

Across warming levels, land areas warm more than oceans, and the Arctic and Antarctica warm more than the tropics.

Simulated change at **2 °C** global warming

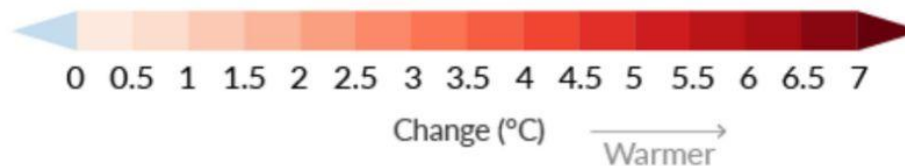
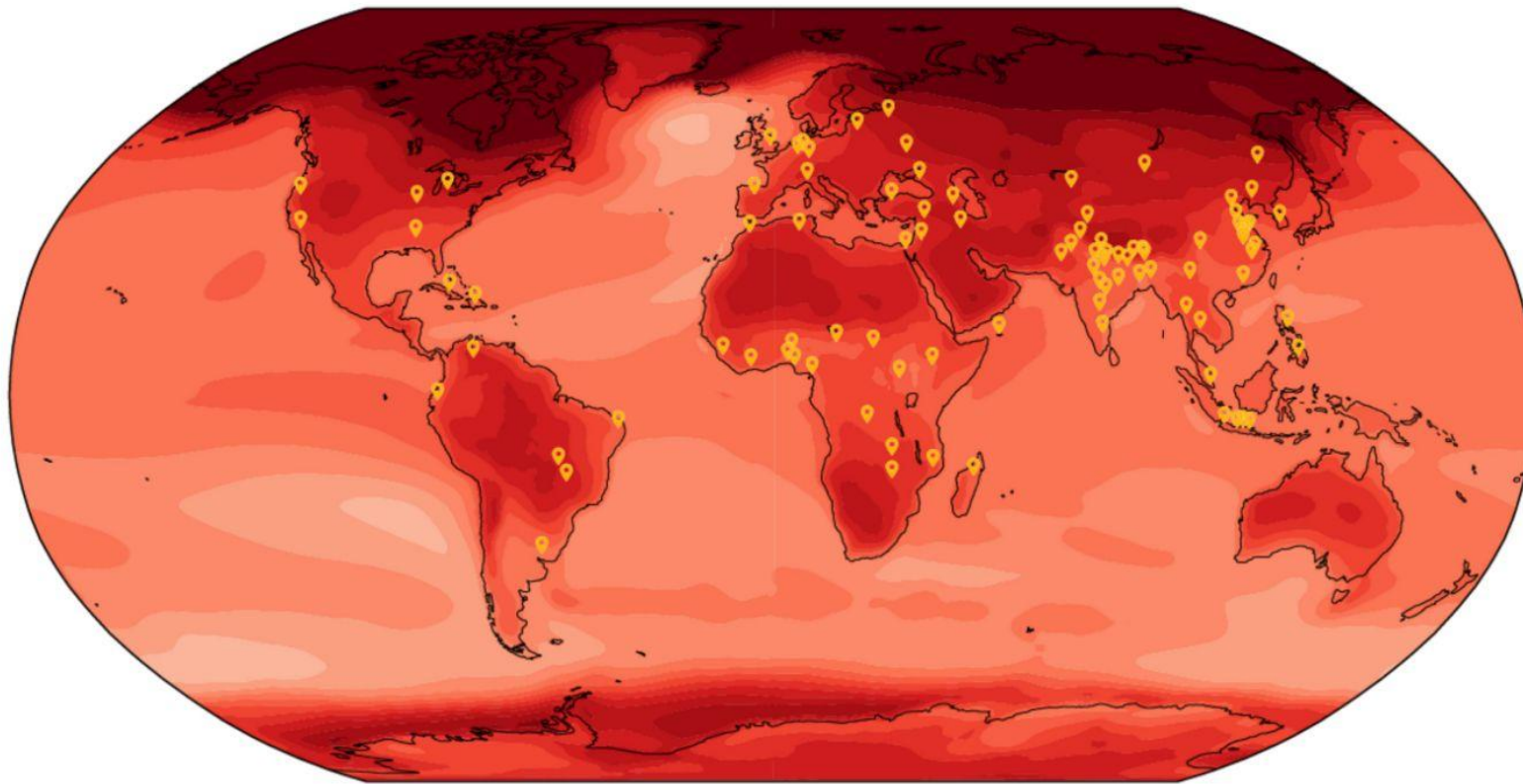


 Participant Location

# Annual mean temperature change (°C) relative to 1850-1900

Across warming levels, land areas warm more than oceans, and the Arctic and Antarctica warm more than the tropics.

Simulated change at **4 °C** global warming



 Participant Location

# Session 2.1B

October 14, 2021

**2.1i:** Global surface temperatures relative to 1850-1900

**2.1ii:** Vascular Plant Biodiversity

**2.1iii:** Shared socioeconomic and environmental pathways: Drivers & consequences of potential future pathways



## Instructions

Intergenerational anchoring recommended (see 1.2i)

### 2.1i: Shared Socioeconomic and Environmental Pathways: Global Surface Temperatures relative to 1850-1900

*\*This exercise conveys five future simulations of the information studied in 1.2ii: Global Surface Temperature (1850-2020)*

Step 1: Participants view “Global Surface Temperatures relative to 1850-1900” graph on the Miro Board with the “7 Generation Anchoring Exercise (Group)” superimposed on top (see *Exercise 1.2i*).

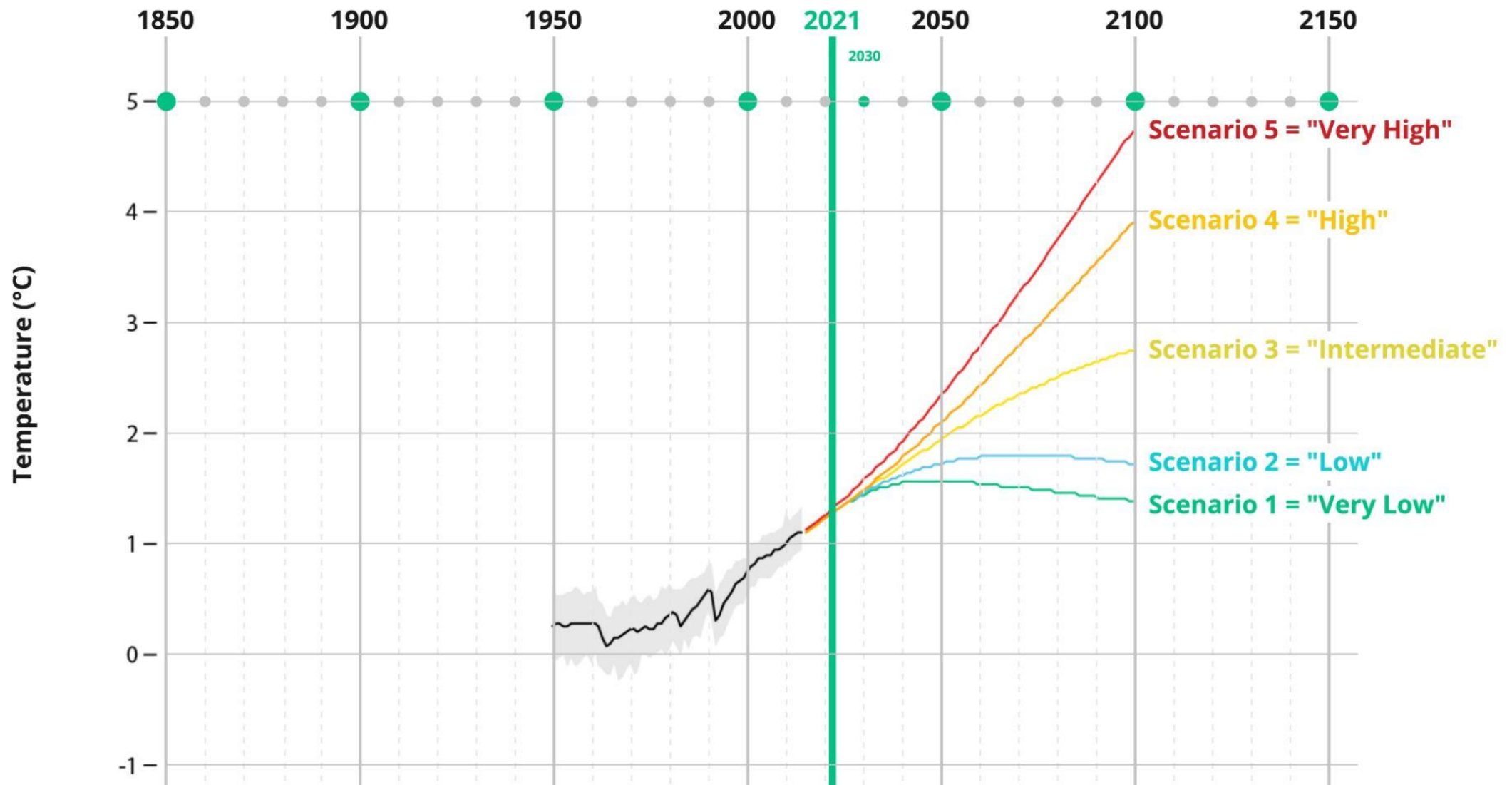
Step 2: Facilitator reads out “Recent History” passage:

*“This graph is showing us how the temperature of the earth will change in the next 100 years, for each of the scenarios we just read about. These scenarios were identified by the IPCC, or Intergovernmental Panel on Climate Change, an intergovernmental body of the United Nations that provides objective scientific information on human-induced climate change, its natural, political, and economic impacts and risks, and possible response options. Notice that the temperature of the earth will increase from today in all of the scenarios, from ‘Scenario 1 Very Low’ emissions to ‘Scenario 5 Very High’ emissions. In Scenario 1 and 2, the temperature is predicted to rise, then come back down around 2100, when many of our great grandchildren will be alive. In Scenarios 3, 4 and 5 temperatures are expected to continue rising by the time we reach 2100.”*



# Shared Socioeconomic and Environmental Pathways (a)

(global surface temperatures relative to 1850-1900)



## Instructions

Intergenerational anchoring recommended (see 1.2i)

### 2.1ii: Vascular Plant Biodiversity

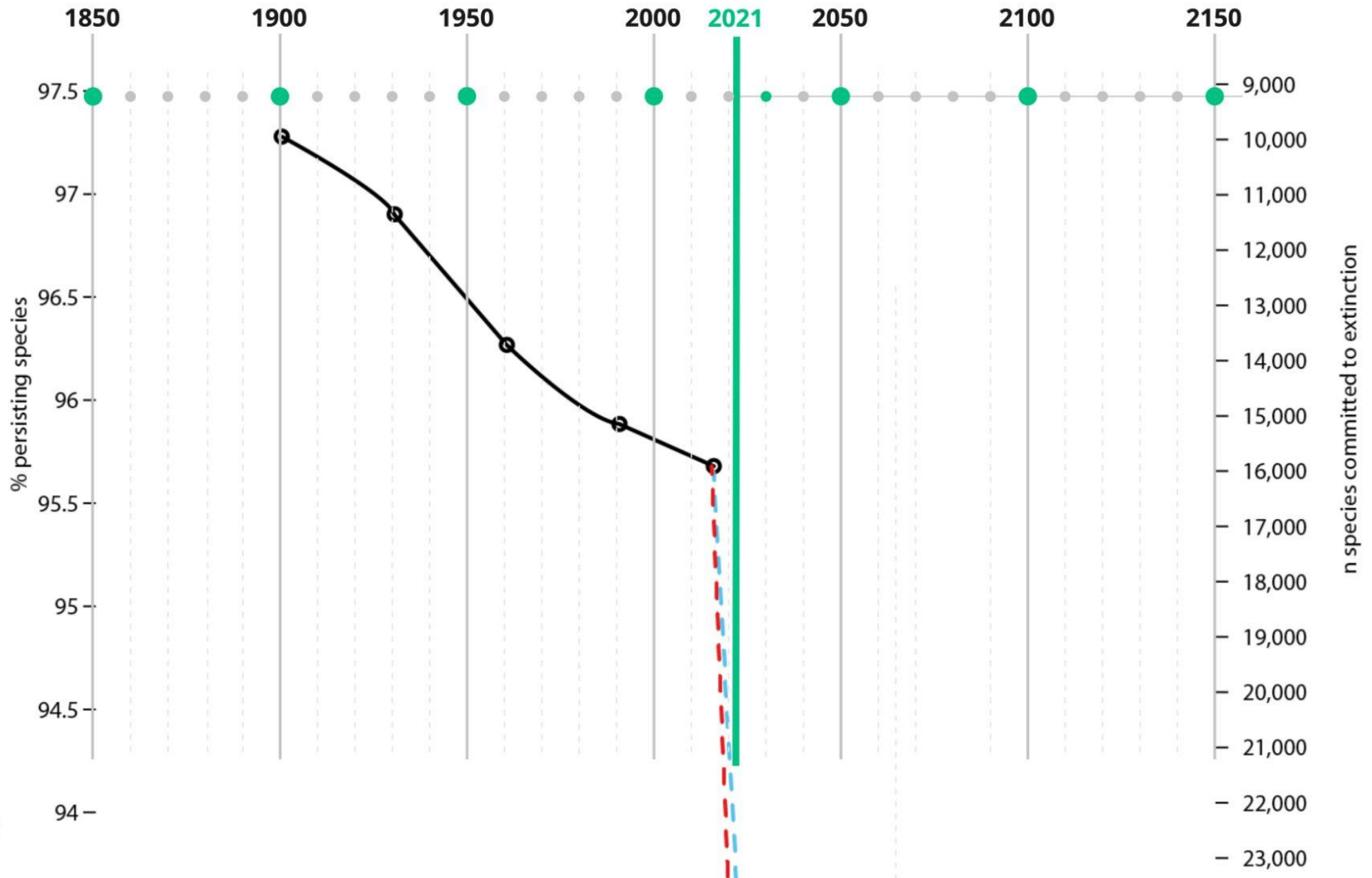
*\*This exercise conveys two future simulations to the same vascular plant biodiversity graph studied in 1.3iii: Plant Biodiversity Loss. The simulations are shown in the same scale as the previous scale.*

Step 1: Participants view “Vascular Plant Biodiversity (a)~(d)” on Miro Board

Step 2: Facilitator reads out the following passage:

*“We learned in 1.3B that between 1900 and today, around 6000 plant species went extinct. The blue dotted line predicts how many species of plants will go extinct by 2050 at Scenario 2, or ‘Low’ emissions scenario. Around 5,8000 plant species are predicted to be extinct by 2050 if the earth’s temperature warms between 1.3-2.4°C by 2100. The red dotted line predicts how many species of plants will go extinct by 2050 at Scenario 5, or “Very high” emissions scenario. Around 76000 plant species will be extinct by 2050 if the earth’s temperature warms between 3.3-5.7°C by the end of the century. Although the changes in the earth’s temperature between the ‘Low’ and ‘Very high’ scenario might seem small, it means a difference of 20,000 more species committed to extinction. Further, regardless of whether it is for the “Low” or the “Very High” scenario, the expected extinction of plant species is too severe in either case to fit into our original graph. We need to add on 3 more panels for us to see this on the graph.”*

# Vascular Plant Biodiversity (a)



Data Source: Di Marco, M., Harwood, T.D., Hoskins, A.J., Ware, C., Hill, S.L.L., Ferrier, S. (2019), Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling, *Global Change Biology* 25(8), p. 2773.

Supplemental Workbook

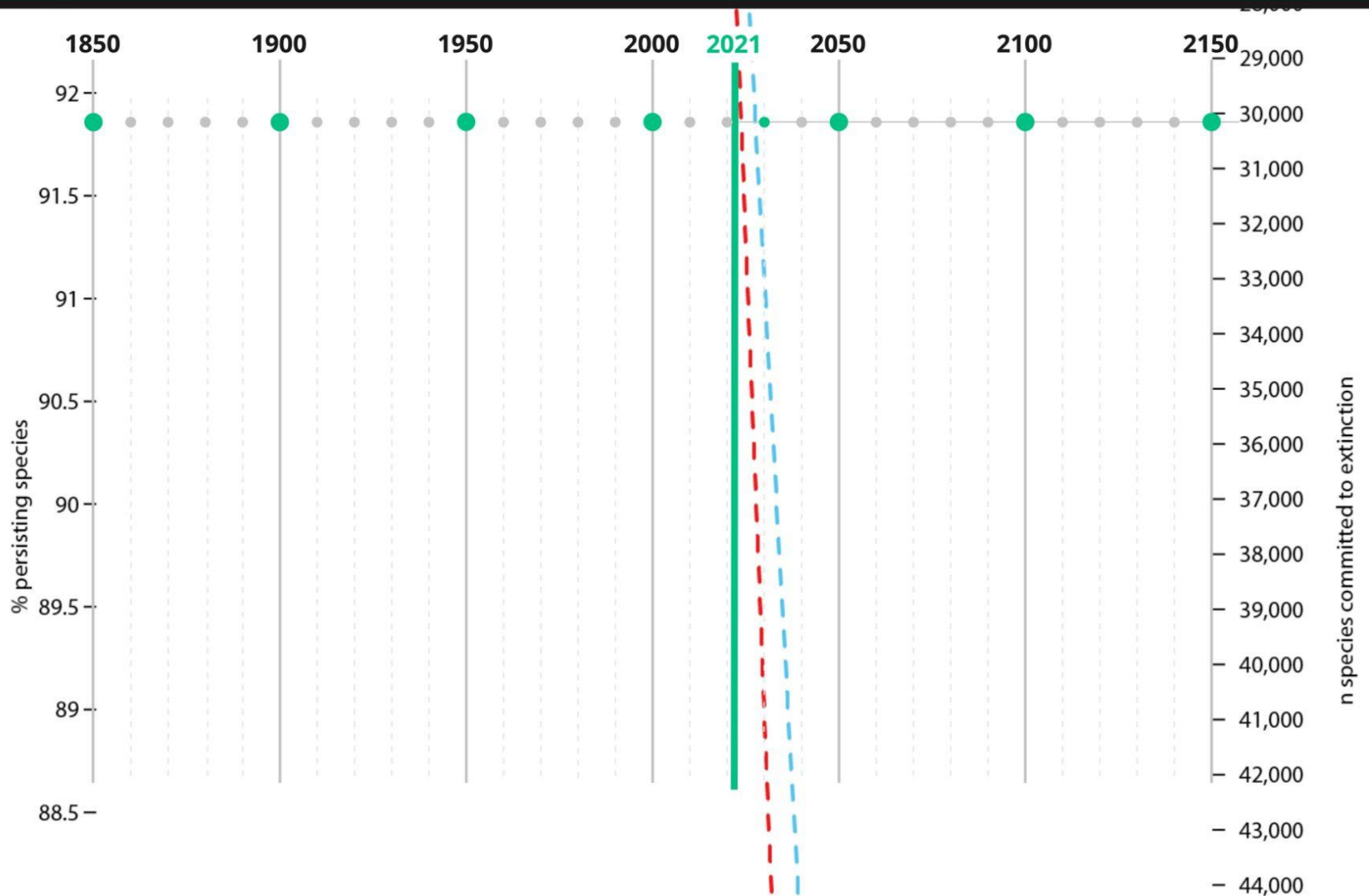
Exercise 2.1ii



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# Vascular Plant Biodiversity (b)



Data Source: Di Marco, M., Harwood, T.D., Hoskins, A.J., Ware, C., Hill, S.L.L., Ferrier, S. (2019), Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling, *Global Change Biology* 25(8), p. 2773.

Supplemental Workbook

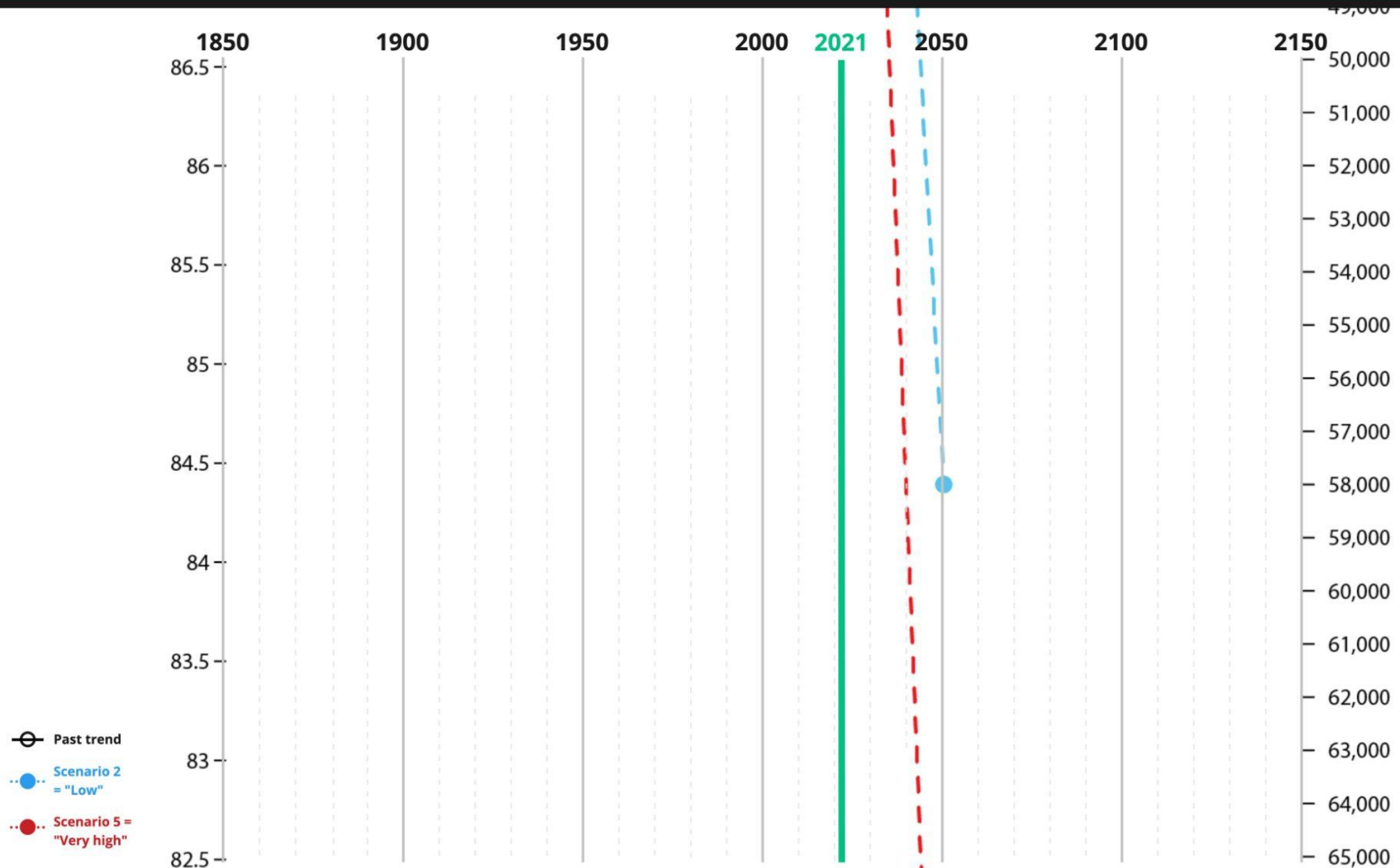
Exercise 2.1ii



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# Vascular Plant Biodiversity (c)



Data Source: Di Marco, M., Harwood, T.D., Hoskins, A.J., Ware, C., Hill, S.L.L., Ferrier, S. (2019), Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling, *Global Change Biology* 25(8), p. 2773.

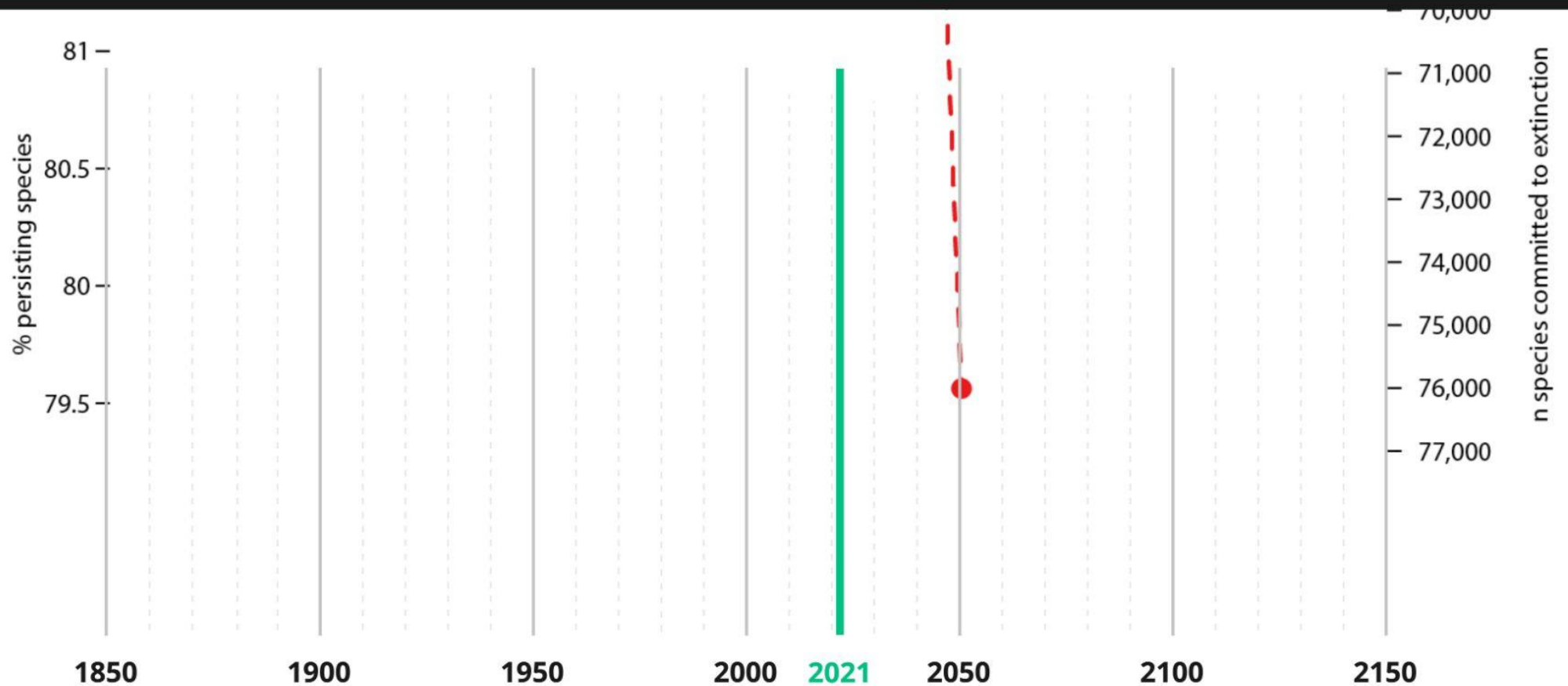
Supplemental Workbook

Exercise 2.1ii



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# Vascular Plant Biodiversity (d)



— Past trend

• Scenario 2  
= "Low"

• Scenario 5 =  
"Very high"

Data Source: Di Marco, M., Harwood, T.D., Hoskins, A.J., Ware, C., Hill, S.L.L., Ferrier, S. (2019), Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling, *Global Change Biology* 25(8), p. 2773.

Supplemental Workbook

Exercise 2.1ii



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## Instructions

### 2.1iii: Shared socioeconomic and environmental pathways: Drivers & consequences of potential future pathways

Step 1: Participants view “Shared socioeconomic and environmental pathways: Drivers of potential future pathways” table on Miro Board while the Facilitator reads out the passage below:

*“This table shows us the ‘set’ of social, political and economic actions needed to reach three of the IPCC scenarios we looked at in the beginning of the session. As a reminder, the IPCC is the intergovernmental body of the United Nations that provides objective scientific information on human-induced climate change, its natural, political, and economic impacts and risks, and possible response options. The three scenarios we will look at actions for are 1, 3 and 5 or the ‘very low’, ‘intermediate’ and ‘very high’ emission scenarios. Taken together, each group of social, political and economic actions needed to reach a scenario can be called one ‘Pathway’ for our future. Note that by the IPCC’s predictions, we will only reach the Paris Targets if we can commit to the “Very low” scenario, and therefore only if we can commit to all of the social, economic and political actions on the “Scenario 1” row in green at the bottom. Even if we commit to Scenario 1, we are not projected to keep global warming to 1.5 degree rise.”*

Step 2 (recommended): The Facilitator goes through each scenario, reading out loud the drivers collectively simulated to arrive at that scenario, to support understanding.

Step 3: Participants view “Shared socioeconomic and environmental pathways: Consequences of potential future pathways” table on Miro Board while the Facilitator reads out the passage below:

Step 4 (recommended): The Facilitator goes through each scenario, reading out loud the simulated consequences of that scenario, to support understanding



Scenario	Global Cooperation	Trade	Land use
<b>Scenario 5</b> (very high emissions)	International cooperation on climate action is delayed, though there is strong global coordination on economic development and living standards improve worldwide.	International trade expands, and trends towards globalization continue.	Tropical deforestation continues, although at slowly declining rates.
<b>Scenario 3</b> (intermediate emissions)	The world follows a path in which social, economic, and technological trends do not shift much from historical patterns. This scenario is broadly aligned with the current Nationally Determined Contributions (NDCs).	Continuation of existing trading patterns, subsidies and tariffs.	Tropical deforestation continues, although at slowly declining rates.
<b>Scenario 1</b> (very low emissions)	Strong global coordination and good governance, with investments in inclusive development, education, health and renewable energy. Global goals on human development and the environment (the Sustainable Development Goals) are achieved.	Abolishment of import tariffs and subsidies on agriculture. More reliance on regional markets, and less on global trade.	Strong regulation on land use, protecting biodiversity and forest cover.





Scenario	Energy use	Consumption	Diet
<b>Scenario 5</b> (very high emissions)	Government policies continue to be supportive of fossil fuel use, and our economies continue to be reliant on coal and oil.	High material consumption	Meat rich diets
<b>Scenario 3</b> (intermediate emissions)	Continued reliance on fossil fuels	Medium material consumption	Moderate meat consumption
<b>Scenario 1</b> (very low emissions)	There is a transition towards clean energy. Fossil fuel use is reduced through restrictive public policies.	Low material consumption	Shift towards lower meat consumption, plant-based diets and lower food waste.