Mainstreaming Integrated Assessment Models by embedding behavioural change and actor heterogeneity, and increasing their outreach to citizens, communities and industrial actor

CHOICE Food Explorers
Course 1: Where does our food come from?
Educator guide and speaker notes

Funded by
the European Union

Climate and food · for children aged 8–12 · guides: Lucía (Spain) and Valentina (Colombia)

First draft, 26 October 2026 · CHOICE project (Horizon Europe, GA 101081617), Task 7.3

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1. The course at a glance

Item	Course 1
Big question	Where does our food come from?
Age and group	Children aged 8–12; a class of about 24, often working in 6 groups of 4.
Duration	Core lesson: 45 minutes. Extended version: 3 lessons of 45 minutes, spread over about one week (for the seed test).
Guides	Lucía (Andalusia, Spain) and Valentina (Cauca, Colombia).
Linked CHOICE pilots	Spain: olive and livestock farmers in Andalusia. Colombia: women coffee growers in Cauca.
Three key messages	Food comes from nature. Food travels to us. Food and climate are connected.
What you need (core)	Projector and the deck; class-made sandwich journey cards (activity 1B, made in an earlier lesson or as homework); rope, chalk or tape for the blanket game; a quarter A4 sheet per child for the mission card (“Made by class” activity X3). Each child’s Explorer Passport (“Made by class” activity X1).
Extra for the extended version	Seed test kit (activity 1A), two plastic jars and two thermometers (1C2), a world map, string and blank cards (1D), the course video.
How the slides work	20 picture-led slides, with one think-pair-share question at the end of each section. Orange “Stop and do” slides are activities; in the core lesson, skip the ones marked Extended.

Before the lesson

- Read the speaker notes and decide whether you will read them aloud or tell the story in your own words.
- Make sure the sandwich journey cards are ready (or plan 5 extra minutes), and plan space for the blanket game.
- Write the mission text on the board (“Made by class” activity X3).
- Extended version: buy cress seeds and potting soil, and check the thermometers.
- Explorer Passports (“Made by class” activity X1): children make them in Lesson 1 of the extended version or as homework before the course. Keep them in a class box between the courses.

2. Learning objectives

By the end of the course, children can:

- explain that all food comes from nature and that plants need soil, water and sunlight;
- describe the journey of a food from the field to the plate and say what the food system is;
- explain in simple words how some gases act like a blanket that warms the Earth, and name ways in which producing food adds these gases;
- give examples of how farmers in Spain and Colombia protect soil and water and adapt to a warmer climate;
- find out where foods come from by reading labels (mission).

In the extended version, children also:

- make a prediction, carry out a simple experiment and record what they observe;
- use a world map to show where everyday foods are grown.

3. Core lesson plan (45 minutes)

The core lesson uses all 20 slides and the two Core activities. The video is not part of the 45 minutes: show it at the start of the next lesson or share it with families.

Minutes	Slides	What happens	Materials
0–3	1–2	Welcome; meet Lucía and Valentina; find Spain and Colombia on the map.	Deck
3–9	3–6	Section 1, Food and nature; think-pair-share on slide 6.	Board
9–14	7–10	Section 2, The food system: the four journeys of a sandwich.	–
14–21	Stop and do B	**Journey of a sandwich** (Core): groups put the journey cards in order.	Class-made cards in envelopes
21–23	11	Think-pair-share: who helped make your lunch?	–
23–25	12	Section 3, Food and climate: the Earth's blanket.	–
25–30	Stop and do C	**The blanket game** (Core): heat, gas and the Earth.	Rope or chalk circle, space
30–35	13–15	Where food adds gases; harder times for farmers; think-pair-share.	–
35–41	16–18	Section 4, Smart farmers: Lucía's olive hills, Valentina's coffee mountains; think-pair-share.	–
41–45	19–20	Recap of the three key messages; mission "Label detective"; children fold their mission card and copy the title; they finish it at home. Children fill in their passport page (1 min).	Quarter A4 sheets, Explorer Passports

If you run short of time: shorten the think-pair-share on slides 11 and 15 to "turn and tell your partner" (30 seconds each), or let children play only one round of the blanket game.

4. Extended version (3 × 45 minutes)

The extended version adds the video, the two experiments and the world map. Plan Lesson 1 and Lesson 3 about one week apart, so the seeds have time to grow; Lesson 2 can be any day in between.

Lesson 1 – Food and nature

Minutes	Slides	What happens	Materials
0–4	Video	Show the Course 1 video as an opener. Ask: what did you notice?	Video
4–7	1–2	Welcome; meet the guides.	Deck
7–11	3–4	Everything comes from nature; what plants need.	–
11–28	Stop and do A	**Three-jar seed test** (Extended): make labels and observation tables, sow the seeds, predict.	Cups, cress, soil, cotton wool
28–34	5–6	Healthy nature, food for all; think-pair-share.	Board
34–42	7–10	Start Section 2: one sandwich, four journeys; the food system.	–
42–45	–	Make the sandwich journey cards (activity 1B, part 1) or give them as homework. Homework: make the Explorer Passport (“Made by class” activity X1).	A4 paper, pencils

Lesson 2 – The food system and the climate

Minutes	Slides	What happens	Materials
0–3	–	Quick look at the seed cups: what has changed?	Seed cups
3–10	Stop and do B	**Journey of a sandwich**: put the journeys in order; Level 2 counts the steps that use energy.	Class-made cards
10–12	11	Think-pair-share: who helped make your lunch?	–
12–15	12	The Earth’s blanket.	–
15–18	Stop and do C2	**Two-jar warming test**: set up the jars; two helpers read the thermometers every 5 minutes from now on.	Jars, thermometers, cling film
18–25	Stop and do C	**The blanket game**: two rounds.	Rope or chalk circle
25–35	13–15	Where food adds gases; harder times for farmers; think-pair-share (helpers keep reading the jars).	–
35–42	Stop and do C2	Read the final temperatures and compare the two jars. Level 2: draw a line chart.	Record tables
42–45	–	Exit question: what is the “blanket”, and how does food add to it?	–

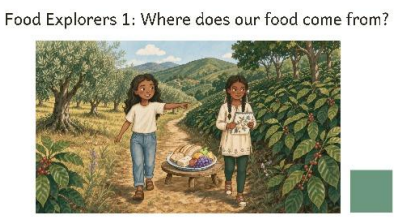
Lesson 3 – Smart farmers and the mission

Minutes	Slides	What happens	Materials
0–6	Stop and do A	Seed test results: draw the cups on day 7 and compare with the predictions.	Seed cups, tables
6–11	16–17	Lucía's olive hills; Valentina's coffee mountains.	Deck
11–30	Stop and do D	**Breakfast world map**: make food cards, pin them on the map, connect them to our town.	World map, string, cards
30–33	18	Think-pair-share: if you were a farmer…	–
33–36	19	Recap: read the three key messages together. Fill in the passport page and sign or "stamp" it.	Explorer Passports
36–40	20	Mission "Label detective"; children make their mission card (activity X3).	Quarter A4 sheets
40–45	Video	Watch the video again as a recap: what do you understand now that you did not before?	Video

5. Speaker notes for every slide

Each slide has the slide picture on the left and the notes on the right. **SAY** is a script you can read aloud or retell in your own words. **ASK** gives questions for the class, **DO** tells you what to do, and **NOTE** is background for you, not for reading aloud. Times are for the core lesson. Orange rows are “Stop and do” activities; full instructions are in the “Made by class” instructions.

Opening



Text on slide:

Food Explorers 1: Where does our food come from?

Slide 1 · Title

⏱ Core: 1 min

SAY Welcome, Food Explorers! Today we start a journey in three parts. In this first course we find out where our food comes from, before it lands on our plate. In the next course we learn how to choose food well, and in the last one how to make sure no food is wasted. Two friends from far away will be our guides today. Let’s meet them.

Text on slide:

Hola! I’m Lucía from Spain. And I’m Valentina from Colombia!

Slide 2 · Meet the guides

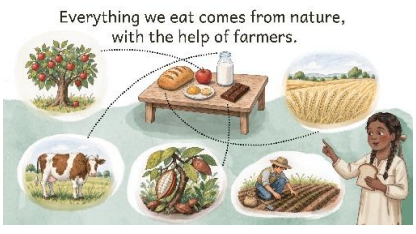
⏱ Core: 2 min

SAY Lucía lives in Andalusia, a sunny region in the south of Spain with hills covered in olive trees. Her uncle is an olive farmer. Valentina lives in Cauca, in the mountains of Colombia in South America. Her grandmother grows coffee together with a group of women farmers. Both families work with scientists from a European project called CHOICE, which is looking for greener, smarter ways to grow food.

DO Show Spain and Colombia on the map on the slide (or on the class map).

ASK Which country is closer to us? Has anyone here ever visited a farm?

Section 1 – Food and nature



Text on slide:

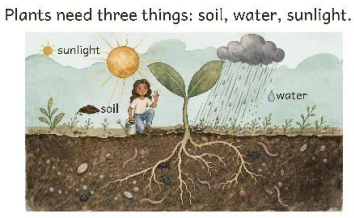
Everything we eat comes from nature, with the help of farmers.

Slide 3 · Everything comes from nature

⏱ Core: 1½ min

SAY Everything we eat comes from nature. Everything! Your bread started as wheat growing in a field. Your apple grew on a tree. Your milk came from a cow grazing in a meadow. Even a chocolate bar started as a cocoa bean on a tropical plant. Farmers are nature’s helpers: they plant seeds, care for crops and raise animals so that we have food to eat.

ASK What did you eat for breakfast? Can you guess where it started?



Text on slide:

Plants need three things: soil, water, sunlight.

Slide 4 · What plants need

⏱ Core: 1½ min

SAY Even the hardest-working farmer needs three things that only nature can give. First, soil: healthy soil is full of tiny living things and nutrients that feed plant roots, like an underground pantry. Second, water: just like us, plants get thirsty. Third, sunlight: plants use it like a battery charger to make the energy they need to grow. Take away any one of the three, and plants cannot grow.

NOTE *For older children: plants also take a gas called carbon dioxide from the air. Most of what a plant is made of comes from air and water, not from the soil.*

Steps on slide:

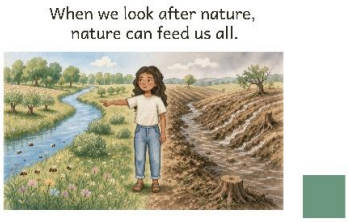
1. Plant seeds in 3 jars. 2. Take away soil, water or light. 3. Watch for one week!

Stop and do A · Three-jar seed test

⏱ Extended · 10 min, then 2 min a day for 1 week

DO Each group sows cress in four plastic cups: A everything, B no water, C no light (cupboard), D cotton wool instead of soil. Children predict which cup will grow best and draw the cups on day 1 and day 7.

NOTE *Cress may still sprout on wet cotton wool, because each seed carries a small food store. Compare how strong the plants are after a week. Full instructions: "Made by class" instructions, activity 1A.*



Text on slide:

When we look after nature, nature can feed us all.

Slide 5 · Healthy nature, food for all

⏱ Core: 1 min

SAY Our food depends on the health of nature. If we pollute rivers, damage soil or cut down forests, it becomes harder to grow enough food for everyone. In Lucía's region, heavy rain can wash good soil away from the olive hills. This is called erosion. Farmers there let grass and flowers grow between the olive trees to hold the soil and save water. Looking after nature means making sure that people everywhere, including you, always have enough to eat.

Text on slide:

Which food on your plate today came from a plant? From an animal?

Slide 6 · Think, pair, share

⏱ Core: 2 min · Think-pair-share

DO Think alone (30 seconds), talk with your partner (1 minute), then hear 2–3 pairs. Write the answers on the board in two columns: plants and animals.

SAY Even animal foods depend on plants, because cows and chickens eat grass and grain.

Section 2 – The food system

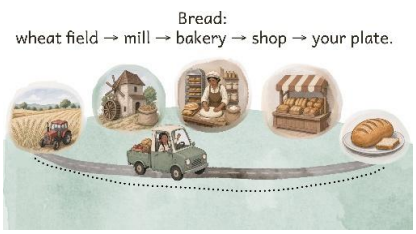
Text on slide:

One sandwich, four journeys!

Slide 7 · One sandwich, four journeys

⏱ Core: 1 min

SAY Imagine you sit down for lunch with a simple sandwich: bread, cheese, a slice of tomato and a leaf of lettuce. It looks ordinary, but it is the result of four different journeys. Let's follow them.



Text on slide:

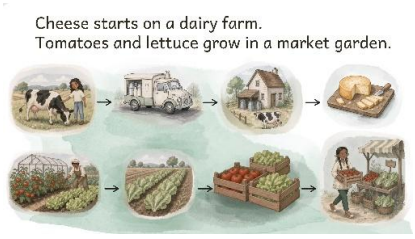
Bread: wheat field → mill → bakery → shop → your plate.

Slide 8 · The journey of bread

⏱ Core: 1½ min

SAY The bread started as wheat seeds planted in a big field. After months of growing, the wheat was harvested and taken to a mill to be ground into flour. At a bakery the flour was mixed, kneaded and baked into a loaf. Finally, a truck took the bread to a shop near you.

ASK How many stops did the bread make? At which stops was energy or fuel used?



Text on slide:

Cheese starts on a dairy farm. Tomatoes and lettuce grow in a market garden.

Slide 9 · Cheese, tomato and lettuce

⏱ Core: 1 min

SAY The cheese started on a dairy farm, where cows grazed on grass and gave milk. The milk went to a dairy and was turned into cheese. The tomato and lettuce came from a market gardener, a farmer who grows vegetables in greenhouses or fields. They were picked, packed and driven to a shop or market near you.

Text on slide:

Farms, trucks, factories and shops working together: this is the food system.

Slide 10 · The food system

⏱ Core: 1½ min

SAY All these ingredients were grown in different places, by different people, and they came together on your plate. This whole network of farms, transport, factories and shops is called the food system. It is like a giant invisible web connecting fields, animals, workers and kitchens all over the world. A sandwich is the work of dozens of people, starting long before you felt hungry.

Steps on slide:

1. Take your cards. 2. Put the journey in order. 3. Tell your partner why.

Stop and do B · Journey of a sandwich

⏱ Core · 7 min (+5 min if the cards are made in class)

DO Groups swap envelopes of class-made cards (bread, cheese or tomato and lettuce) and lay out the journey from field to “Your sandwich”. Read the right order from the answer key. Groups compare: which journey is the longest?

NOTE *Level 2: draw a lightning bolt on every step that uses fuel or electricity. To stay within 45 minutes, have the cards made in an earlier lesson or as homework. Full instructions: activity 1B.*

Text on slide:

Who helped make your lunch today? How many people can you count?

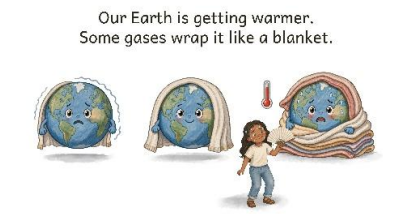
Slide 11 · Think, pair, share

⏱ Core: 2 min · Think-pair-share

DO Think alone, then count together with your partner. Share: which pair counted the most people?

SAY There is no exact answer. Many people, and a lot of nature, are behind every meal.

Section 3 – Food and climate



Text on slide:

Our Earth is getting warmer. Some gases wrap it like a blanket.

Slide 12 · The Earth’s blanket

⏱ Core: 2 min

SAY You have probably heard about climate change: our planet is slowly getting warmer. Some gases in the air, such as carbon dioxide and methane, work like a blanket around the Earth. They trap heat and keep the planet warm. A little of this is natural and necessary; without it the Earth would be freezing. But people have added too many of these gases, so the blanket is too thick and the planet too warm. Imagine piling too many blankets on your bed at night!

ASK So how is food connected to this? Let’s find out after a game.

Steps on slide:

1. Be the Earth, the heat or the blanket. 2. Heat tries to escape. 3. Add more blanket!

Stop and do C · The blanket game

⏱ Core · 5 min

DO 3 children are the Earth, 5 are Heat, 1 is the Sun; the rest are Gas. Round 1: a few Gas children hold hands in a wide circle, and Heat walks out through the gaps. Round 2: add more Gas until the circle is almost closed, and Heat is trapped.

ASK What happened to the Earth when the blanket got thicker?

NOTE *Needs space: move desks or use the corridor. Walk, don’t run. Full instructions: activity 1C.*

Steps on slide:

1. Two jars, two thermometers. 2. Cover one jar. 3. Read both every 5 minutes.

Stop and do C2 · Two-jar warming test (teacher demo)

⏱ Extended · 15–20 min, runs alongside slides 13–15

DO Put a thermometer in two plastic jars, cover one with cling film and place both in the sun or under a lamp. Two helpers read both thermometers every 5 minutes while the lesson continues; everyone writes the numbers in a table.

NOTE *The covered jar usually ends a few degrees warmer. It is a simple model of trapped heat, not an exact copy of the atmosphere. Full instructions: activity 1C2.*

Text on slide:

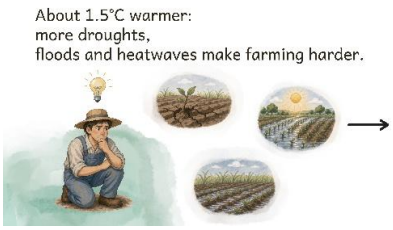
Tractors, trucks, cows and rotting food all add more gas.

Slide 13 · Where food adds gases

⏱ Core: 2 min

SAY Producing food releases some of these gases. Tractors and machines run on fuel and release carbon dioxide. Cows and sheep produce a gas called methane when they digest their food. It sounds funny, but there are billions of farm animals on Earth, so it adds up. Trucks, ships and planes burn fuel. And food that is thrown away rots and releases gases too.

SAY The good news: farmers and scientists are working on all of these, for example in Lucía's region, where CHOICE works with olive and livestock farmers.



Text on slide:

About 1.5°C warmer: more droughts, floods and heatwaves make farming harder.

Slide 14 · Harder times for farmers

⏱ Core: 1½ min

SAY The world is already about 1.5°C warmer than it was before factories and machines became common. That brings more heatwaves, floods and droughts, which make growing food harder. But farmers are not giving up. They are finding clever ways to protect their crops, and scientists help them. Let's visit two of them.

NOTE *The World Meteorological Organization (WMO) measured 2025 at 1.44°C above the 1850–1900 average, and 2023–2025 at 1.48°C on average. Check the latest figure before the lesson.*

Text on slide:

How could a hotter summer change the food in our shops?

Slide 15 · Think, pair, share

⏱ Core: 1½ min · Think-pair-share

DO Think, pair, share. Ideas to listen for: fewer or smaller fruits, higher prices, some foods coming from further away, farmers needing more water. Accept all reasonable ideas.

NOTE *Do not make it scary. End by saying that the next slides show what farmers are already doing about it.*

Section 4 – Smart farmers

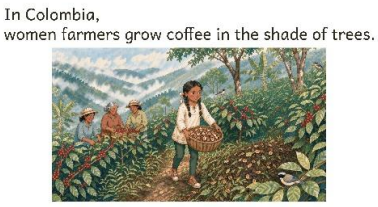
Text on slide:

In Spain, olive farmers protect the soil and save water.

Slide 16 · Lucía's olive hills

⏱ Core: 2 min

SAY First stop: Andalusia, in southern Spain. Imagine rows of silvery-green olive trees across sunny hills. Farmers harvest the olives every autumn and press them into olive oil. Some trees are hundreds of years old! These farms face big challenges: heavy rain washes soil away, water is scarce in hot summers, and farm animals release methane. In the CHOICE project, farmers and their cooperatives in Andalusia test better ways of farming olives and raising animals, to protect the soil, use less water and release less gas, while still earning a living.



Text on slide:

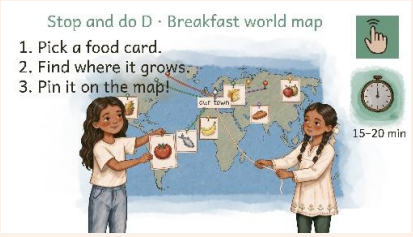
In Colombia, women farmers grow coffee in the shade of trees.

Slide 17 · Valentina's coffee mountains

⏱ Core: 2 min

SAY Next stop: Cauca, high in the mountains of Colombia. Here more than 450 women farmers grow coffee together, and Valentina's grandmother is one of them. The berries are picked one by one, by hand. With CHOICE, these women compare their usual ways of farming with greener ones. They grow coffee in the shade of tall trees, which protects the soil and gives a home to birds, and they turn coffee husks, the leftover skins of the berries, into natural fertiliser. They are not just victims of climate change: they are finding solutions.

NOTE *Children don't drink coffee, but the same region also grows bananas and cocoa, which ends up in chocolate.*



Steps on slide:

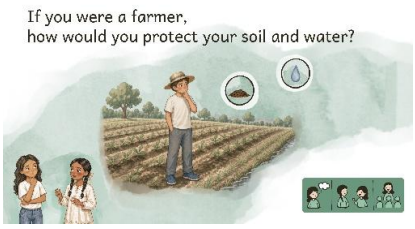
1. Pick a food card. 2. Find where it grows. 3. Pin it on the map!

Stop and do D · Breakfast world map

⏱ Extended · 18–20 min

DO Pairs make one food card each, pin it on the world map where the food often grows, and connect it with string to your town (marked with a star). Look together: which foods travelled furthest, and which grow in our own country?

NOTE *Level 2: measure the string with the map scale, then write a postcard to Lucía's uncle or Valentina's grandmother with one question about their farm. Full instructions: activity 1D.*



Text on slide:

If you were a farmer, how would you protect your soil and water?

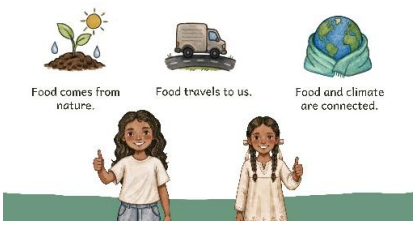
Slide 18 · Think, pair, share

⏱ Core: 2 min · Think-pair-share

DO Think, pair, share. Ideas to listen for: plant trees or grass, collect rainwater, water plants in the evening, use compost, don't leave soil bare.

SAY Great ideas! Real farmers in Spain and Colombia are trying some of the same things.

Close



Text on slide:

Food comes from nature. Food travels to us. Food and climate are connected.

Slide 19 · What we learned

⏱ Core: 2 min

DO Read the three messages aloud together, pointing at each icon.

SAY Food comes from nature, and nature needs our care. Food travels a long way to reach us, through the food system. Producing food can affect our climate, but farmers and scientists are finding smarter ways. The future is not set in stone: it depends on the choices we make, including choices made by children.

DO Children fill in the Course 1 page of their Explorer Passport: draw the three icons and write one thing they learned. Sign the page or add a sticker as the “stamp” (“Made by class” activity X1).

Text on slide:

Your mission: find 3 foods at home. Where do they come from?

Slide 20 · Your mission

⏱ Core: 2 min

DO Children fold a mission card and copy the mission from the board (“Made by class” activity X3); they finish it at home.

SAY Here is your mission as a Food Explorer: be curious! At home, look at the labels on three foods (a fruit, a packet of rice, a jar) and find out where they come from. Write or draw them on your card. Did they grow nearby, or did they travel thousands of kilometres? Bring your card to the next course, where two new friends from Austria and Greece will show us how to choose food well. And share what you learned today with your family!

6. Background facts and sensitive topics

Short facts for the teacher, to answer questions and to go a little deeper with older children. They are not meant to be read aloud.

Background facts

Topic	What to know
Where food comes from (slides 3–5)	Plants make their own food from carbon dioxide in the air, water and sunlight (photosynthesis). Soil gives them water, nutrients and a place to anchor their roots. One handful of healthy soil contains more living things (bacteria, fungi, worms, insects) than there are people on Earth. Soil forms very slowly, so soil washed away by rain (erosion) is hard to replace. Grass, plants and fallen leaves on the ground protect it.
The food system (slides 7–11)	The food system is everything and everyone involved in getting food from the field to the plate and beyond: farming, fishing, processing, transport, shops, cooking, eating and what happens to leftovers. Even simple foods pass through many hands. Most steps use energy: fuel for tractors and trucks, electricity for mills, bakeries and fridges.
Greenhouse gases and climate (slides 12–15)	The main gases that act as a “blanket” are carbon dioxide (from burning fuel and from cutting down forests), methane (from cows and sheep digesting food, rice fields and rotting waste) and nitrous oxide (mainly from fertilisers). Methane does not stay in the air as long as carbon dioxide, but while it is there it traps far more heat. According to the UN Food and Agriculture Organization (FAO), food systems cause about one third of all greenhouse gases produced by people. The World Meteorological Organization reports that the Earth is already about 1.4–1.5°C warmer than before industrialisation. Warming brings more heatwaves, droughts and heavy rain, which make farming harder.
CHOICE pilot in Spain (slide 16)	Spain is the world’s largest producer of olive oil, and most of it comes from Andalusia. Olive groves on bare, sloping land lose soil in heavy rain. Cover crops (grass and wild plants between the rows) hold the soil, keep water in the ground and store carbon. In CHOICE, olive and livestock farmers and their cooperatives in Andalusia test practices that protect the soil, save water and reduce greenhouse gases.
CHOICE pilot in Colombia (slide 17)	Colombia is one of the world’s largest coffee producers. Most of its coffee is grown by small family farms in the mountains. Shade-grown coffee grows under taller trees, which protect the soil, keep it cool and moist, and give a home to birds and insects. Coffee husks and pulp, left over after the beans are taken out, can be composted into natural fertiliser instead of being thrown away. In CHOICE, a group of more than 450 women coffee growers in Cauca compare their usual farming methods with greener ones.

Sensitive topics

Topic	How to handle it
Climate worry	Some children feel anxious about climate change. Keep the tone calm and hopeful: name the problem, then always show what people are doing about it (slides 14–18 are built this way). If a child is worried, take the feeling seriously (“many people feel like that”) and point to things that help, including small actions they can take with their class and family. Avoid frightening images, “the world is ending” messages and blaming children for the problem.
Different diets and food budgets	Families eat differently for many reasons: culture, religion, health, allergies, taste and money. Never judge what a child eats at home. In questions about breakfast or lunch, let children choose what to share, or talk about “a child” or “a family” instead of their own family. Some children may not always have enough food at home. Do not ask the class to compare how much food they have, and avoid tasks that need expensive foods or packaging from home (the mission can use any food, including school lunch). When talking about cows and methane, explain the science without telling children that eating meat is bad. Course 2 deals with food choices in a positive way.
How farmers are shown	Show farmers as skilled people who solve problems, not as victims or as the cause of climate change. Avoid stereotypes about countries and people, for example that Spain is only sunshine and holidays, or that Colombian farmers are poor. The women coffee growers in Cauca are experts who run their farms together. Some children may come from farming families or from Spain, Colombia or other countries in the course. Invite them to share, but never put them on the spot.
Experiments and games	Use plastic cups and jars only, and alcohol or digital thermometers (never mercury). Wash hands after handling soil. In the blanket game, children walk rather than run. Children who cannot move freely can be the Sun, the timekeeper or the counter.

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Choice

Mainstreaming Integrated Assessment Models by embedding behavioural change and actor heterogeneity, and increasing their outreach to citizens, communities and industrial actors

CHOICE Consortium:

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