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 3: Why should nothing go to waste?
Educator guide and speaker notes

Funded by
the European Union

Food waste · for children aged 8–12 · guide: Sipho (South Africa), with all five Food Explorers in the finale

First draft, 29 October 2026 · CHOICE project (Horizon Europe, GA 101081617), Task 7.3

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1. The course at a glance

Item	Course 3
Big question	Why should nothing go to waste?
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 (Lessons 2 and 3 at least 3 days apart for the rotting balloon), followed by a two-week class challenge of about 10 minutes a day.
Guide	Sipho (Pretoria, South Africa). Lucía, Valentina, Leon and Eleni join him in the finale on slide 20.
Linked CHOICE pilot	South Africa: youth networks running challenges to eat healthier and waste less food.
Three key messages	Know why food is wasted. Know why it matters. Act to stop it.
What you need (core)	Projector and the deck; class-made date cards and signs (activity 3A) and leftover cards (3C), made in an earlier lesson or as homework; a poster for the class ideas; paper leaves for the pledge wall; 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	Plastic bottles, overripe fruit, sugar, dry yeast and latex-free balloons, plus 2 pears and 2–3 apples (3B); kitchen scales, gloves and an A3 chart (3D); the course video. Paper and name slips for the Food Explorer certificates (activity X2).
How the slides work	20 picture-led slides, with one think-pair-share question in 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 especially the guidance on sensitive topics: some children may not always have enough food at home.
- Make sure the date cards and signs (3A) and the leftover cards (3C) are ready, or plan extra minutes for making them.
- Remind children to bring their Course 2 mission card for the mission check.
- Write the mission text on the board (“Made by class” activity X3), and prepare a poster for the class ideas and paper leaves for the pledge wall.
- Extended version: agree with the canteen or the class how leftovers will be collected and weighed during the two-week challenge.

- Have the children’s Explorer Passports ready; they fill in the Course 3 page at the recap. Extended version: prepare paper and name slips for the Food Explorer certificates (activity X2).

2. Learning objectives

By the end of the course, children can:

- explain what food waste is and that about one third of the world’s food is lost or wasted;
- name four reasons why food is wasted: buying too much, forgetting food, confusing date labels and serving too much;
- explain the difference between “best before” (quality) and “use by” (safety);
- explain three reasons why food waste is a problem: wasted resources, greenhouse gases and fairness;
- suggest practical ways to waste less food: small portions, good storage, using leftovers and sharing;
- take part in a class food-waste challenge (mission).

In the extended version, children also:

- observe and record a simple experiment over several days;
- measure, record and compare the class’s food waste over two weeks.

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. The two-week class challenge on the mission card starts after the lesson.

Minutes	Slides	What happens	Materials
0–4	1–2	Welcome; meet Sipho; mission check from Course 2.	Course 2 mission cards
4–9	3–5	Section 1, What is food waste?; think-pair-share on slide 5.	Board
9–13	6–8	Section 2, Why food gets wasted: buying too much, the forgotten fridge, confusing dates.	–
13–20	Stop and do A	**Best before or use by?** (Core): sort the date cards into Eat it, Check it and Stop.	Class-made date cards and signs
20–23	9–10	Too much on the plate; think-pair-share: which reason happens most at our school?	Poster for class ideas
23–29	11–14	Section 3, Why waste is a problem: the three layers of the onion; think-pair-share.	–
29–31	15	Section 4, Act and share: three food-saving habits.	–
31–38	Stop and do C	**Leftover chef** (Core): invent a new dish from three leftovers.	Class-made leftover cards, A4 sheets
38–42	16–18	Share it; Sipho's challenge; think-pair-share: what will our class do?	Pledge wall
42–45	19–20	Recap; finale with all five Food Explorers; mission "Class waste challenge"; children fold their mission card and copy the title; they finish it at home. Children fill in their passport page (1 min). Food Explorer certificates (activity X2) can follow in the next lesson.	Quarter A4 sheets, Explorer Passports

If you run short of time: keep the mission check to two children, use only cards 1–6 in activity A, and let children write their pledge leaves at the start of the next lesson.

4. Extended version (3 × 45 minutes)

The extended version adds the video, the rotting balloon experiment and the class waste challenge. Plan Lessons 2 and 3 at least 3 days apart, so the balloon has time to fill. The class challenge then runs for two weeks, about 10 minutes a day.

Lesson 1 – What food waste is and why it happens

Minutes	Slides	What happens	Materials
0–4	Video	Show the Course 3 video as an opener. Ask: what did you notice?	Video
4–8	1–2	Welcome; meet Sipho; mission check from Course 2.	Course 2 mission cards
8–14	3–5	Good food in the bin; one in three; think-pair-share.	Board
14–19	6–8	Buying too much; the forgotten fridge; confusing dates.	–
19–31	Stop and do A	**Best before or use by?**: make the date cards and signs, then sort them (Level 2: all 10 cards).	Blank cards, coloured paper
31–33	9	Too much on the plate.	–
33–45	10	Think-pair-share: which reason happens most at our school? Make a class poster of ideas to change it.	Poster

Lesson 2 – Why food waste is a problem

Minutes	Slides	What happens	Materials
0–3	–	Quick recap: four reasons why food is wasted.	Class poster
3–9	11–12	Layer 1: wasted resources; layer 2: gases.	Deck
9–21	Stop and do B	**Rotting balloon**: set up the bottles and the pear storage test; children predict and draw day 1.	Bottles, fruit, yeast, balloons, pears, apples
21–27	13–14	Layer 3: fairness; think-pair-share and a class vote on the three layers.	–
27–30	15	Three food-saving habits.	–
30–40	Stop and do C	**Leftover chef**: make the leftover cards, invent a dish and draw it on the recipe sheet.	Blank cards, A4 sheets
40–45	16	Share it. Collect the recipes into a class “Leftover Recipe Book”.	Recipe sheets

Lesson 3 – Act and share (at least 3 days later)

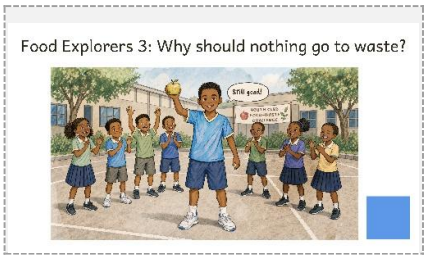
Minutes	Slides	What happens	Materials
0–6	Stop and do B	Results: draw the balloon on day 3 and compare the two pears. Why does storage matter?	Bottles, pears
6–9	17	Sipho’s challenge.	Deck
9–24	Stop and do D	**Class waste challenge**, part 1: draw the class chart, agree when and how to weigh, and form the daily teams.	A3 sheet, scales
24–32	18	Think-pair-share: what will our class do? Each child writes a promise on a paper leaf for the pledge wall.	Paper leaves
32–35	19	Recap: read the three key messages together. Fill in the passport page and sign or “stamp” it.	Explorer Passports
35–38	20	Finale with all five Food Explorers; children make their mission card (activity X3).	Quarter A4 sheets
38–45	Stop and do X2	Food Explorer certificates: each child makes a certificate for a classmate; the teacher signs them; short ceremony. Show the video again at home or in the next lesson.	A4 paper, name slips, pencils

Then, for two weeks: about 10 minutes a day for the class waste challenge (activity 3D). Week 1: weigh without changing anything. Week 2: use 2–3 ideas from the pledge wall and weigh again. Compare and celebrate at the end.

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 3: Why should nothing go to waste?

Slide 1 · Title

⏱ Core: 1 min

SAY Welcome to the last part of our journey, Food Explorers! First we discovered where food comes from. Then we learned how to choose it well. Today we find out why food should never end up in the bin, and what we can do about it. Our guide today comes from South Africa.

Text on slide:

Sawubona! I’m Sipho from South Africa. Let’s save food together!

Slide 2 · Meet Sipho + mission check

⏱ Core: 3 min

SAY Sipho lives in Pretoria, in South Africa. He is a member of his school’s youth club, where young people run challenges to eat healthier and waste less food. In South Africa, the CHOICE project works with more than 20 youth networks like Sipho’s.

DO Mission check: ask who did the Course 2 mission.

ASK What did you find hiding at the back of the fridge? Who made a planet-smart choice with their family?

Section 1 – What is food waste?

Text on slide:

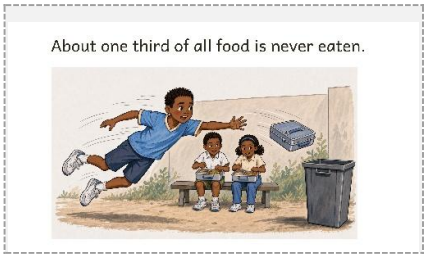
Food waste is good food that ends up in the bin.

Slide 3 · Good food in the bin

⏱ Core: 1½ min

SAY Think about the last time a meal was not finished, or some fruit went soft or bread went stale and was thrown away. That is food waste: food that could have been eaten ends up in the bin instead. It happens everywhere: in homes, schools, restaurants, supermarkets and even on farms, where good fruit and vegetables are sometimes thrown away just because they look a bit odd.

NOTE *UNEP reports that about 60% of food waste happens in households.*



Text on slide:

About one third of all food is never eaten.

Slide 4 · One in three

⏱ Core: 1½ min

SAY Every year, roughly one third of all the food produced in the world is lost or wasted. That is like filling three lunchboxes every day and throwing one straight into the bin without opening it. Behind every piece of wasted food is the water used to grow it, the energy used to transport it, and the hard work of farmers and food workers. The good news: food waste is one of the problems we can do something about, starting today.

NOTE *"One third" is the FAO estimate that includes losses on farms and in transport. The UNEP Food Waste Index 2024 counts 1.05 billion tonnes wasted in shops, restaurants and homes in 2022, almost one fifth of the food available to consumers.*

Text on slide:

Where have you seen good food being thrown away?

Slide 5 · Think, pair, share

⏱ Core: 2 min · Think-pair-share

DO Think, pair, share. Collect answers on the board; you will come back to them in section 4.

NOTE *Steer children towards shared places such as school, parties, restaurants and shops, rather than their own homes.*

Section 2 – Why food gets wasted

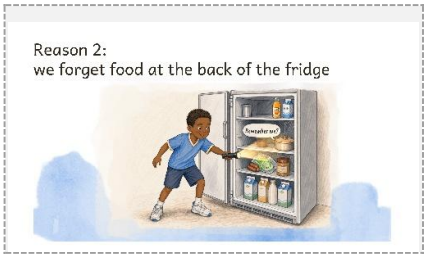
Text on slide:

Reason 1: we buy more food than we need.

Slide 6 · Buying too much

⏱ Core: 1 min

SAY Why does so much food get wasted? For many reasons, and most of them are things we can change. One of the biggest is buying too much. Have you ever been really hungry in a supermarket and wanted to buy everything? Families sometimes buy more than they can eat before it goes bad. A simple trick: write a shopping list, and check the fridge before you go.



Text on slide:

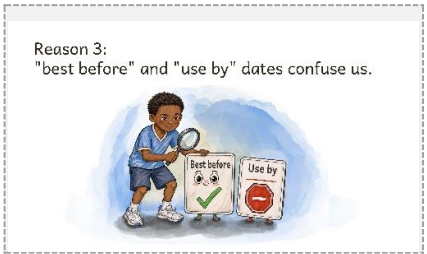
Reason 2: we forget food at the back of the fridge.

Slide 7 · The forgotten fridge

⏱ Core: 1 min

SAY Forgotten food is another big reason. That leftover soup pushed to the back of the shelf, that bag of salad hidden behind the juice carton: out of sight, out of mind. And then one day it is too late! One idea: an “eat me first” shelf or box at the front of the fridge.

ASK Who found something like this on their fridge detective mission?



Text on slide:

Reason 3: “best before” and “use by” dates confuse us.

Slide 8 · Confusing dates

⏱ Core: 2 min

SAY Many people see a “best before” date and throw the food away at once, even when it is still fine. “Best before” is about quality: after that date, biscuits, pasta or cereal may not be at their best, but they are usually still safe. Look, smell and taste a little. “Use by” is about safety. It is used on foods like fresh meat, fish or some dairy products, and they should not be eaten after that date, even if they look and smell fine.

NOTE *Do not suggest checking “use by” foods by smell. EU food law (Regulation 1169/2011) treats “use by” as a safety date.*

Steps on slide:

1. Read the date card. 2. Choose: eat, check or stop. 3. Explain why!

Stop and do A · Best before or use by?

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

DO Today’s date for the game is 15 March. Groups compare each class-made date card with today and place it under the green “Eat it”, yellow “Check it” or red “Stop” sign. Then read the answer key and talk about the tricky cards.

NOTE *Rule: before the date → Eat it; “best before” passed → Check it; “use by” passed → Stop. Level 1: cards 1–6; Level 2: all 10 cards, including storage clues. Cards only, no real food, and never ask children to smell or taste meat, fish or dairy. Full instructions: activity 3A.*

Text on slide:

Reason 4: we put more on our plates than we can eat.

Slide 9 · Too much on the plate

⏱ Core: 1 min

SAY Sometimes food is wasted because we serve too much and cannot finish it all, at school, at family dinners and at parties. Most of the reasons behind food waste are habits. And the great thing about habits is that, with a little practice, they can be changed.

Text on slide:

Which reason happens most at our school? How could we change it?

Slide 10 · Think, pair, share

⏱ Core: 2 min · Think-pair-share

DO Think, pair, share. Write the class's ideas on a poster; you will use them for the class challenge at the end of this course.

Section 3 – Why waste is a problem

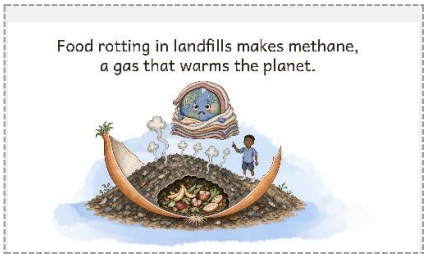
Text on slide:

Wasted food also wastes water, energy and hard work.

Slide 11 · Layer 1: wasted resources

⏱ Core: 1½ min

SAY Why is food waste such a big deal? Let's peel it layer by layer, like an onion. Layer one: wasted resources. A farmer planted a tomato, watered it for months, harvested it, packed it and sent it on a long journey to your kitchen. Remember the sandwich journey from Course 1? All that water, energy and hard work is wasted the moment the tomato goes in the bin.



Text on slide:

Food rotting in landfills makes methane, a gas that warms the planet.

Slide 12 · Layer 2: gases

⏱ Core: 1½ min

SAY Layer two: greenhouse gases. When food ends up in a landfill, a big rubbish dump, it does not just disappear. It slowly rots underground, without air, and releases methane, a powerful greenhouse gas. Remember the blanket around the Earth from our first course? Rotting food makes that blanket even thicker.

NOTE *UNEP estimates that food loss and waste cause 8–10% of global greenhouse gas emissions.*

Steps on slide:

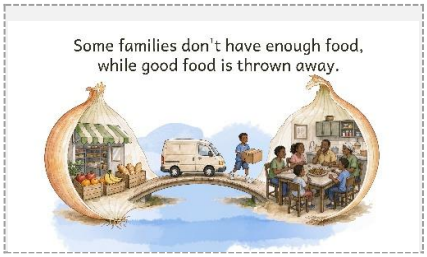
1. Mash old fruit into a bottle. 2. Add yeast, cover with a balloon. 3. Watch it grow!

Stop and do B · Rotting balloon (+ storage test)

⏱ Extended · 10 min to set up, then 3 days

DO Mash an overripe pear or apple into a plastic bottle, add a teaspoon of sugar, a teaspoon of dry yeast and a little warm water, and stretch a latex-free balloon over the neck. Check it every day for 3 days. Storage test: put one pear next to ripe apples and one alone, and compare after 3 days.

NOTE *Be honest: the gas in the balloon is mostly carbon dioxide made by the yeast. In landfills, where there is no air, rotting food makes methane instead. The pear next to the apples softens faster because apples give off ethylene, a natural ripening gas. Never open the bottles. Full instructions: activity 3B.*



Text on slide:

Some families don't have enough food, while good food is thrown away.

Slide 13 · Layer 3: fairness

⏱ Core: 1½ min

SAY Layer three: fairness. In South Africa, and in many parts of the world, many families do not always have enough healthy food. At the same time, large amounts of good food are thrown away. That gap is one of the big challenges of our time, and one we can all help to close. Every piece of food we do not waste makes a real difference.

NOTE *D6.1 reports that about 43% of South Africans lack access to good-quality food and 62% cannot afford a healthy diet. Use this as background only, not with the children.*

Text on slide:

Which layer of the onion surprised you most? Why?

Slide 14 · Think, pair, share

⏱ Core: 1½ min · Think-pair-share

DO Think, pair, share, then take a quick class vote on the three layers by show of hands.

NOTE *There is no right answer. The aim is for children to put the problem into their own words.*

Section 4 – Act and share

Text on slide:

Take small portions. Store food well. Turn leftovers into new meals.

Slide 15 · Three food-saving habits

⏱ Core: 2 min

SAY Now you become the hero of the story. Reducing food waste needs no superpowers, just a few clever habits. One: take only what you can eat; start with a smaller portion, and you can always go back for more. Two: store food well; bread stays fresh in a cool, dry place, and leftovers in the fridge should be covered and eaten within a day or two. Three: use your leftovers; last night's vegetables can become soup, yesterday's rice can become fried rice, and old bread can become toast.

ASK Before you throw something away, take a second look: is it really bad, or does it just look a little tired?

Steps on slide:

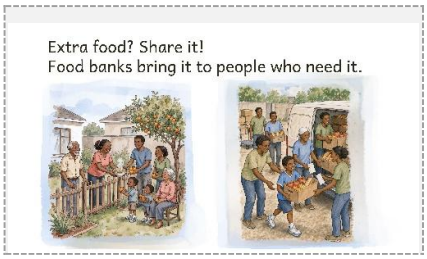
1. Draw 3 leftover cards. 2. Invent a new dish. 3. Give it a name!

Stop and do C · Leftover chef

⏱ Core · 7 min (+3 min if the cards are made in class)

DO Each group draws three class-made leftover cards (for example stale bread, cooked rice, a soft apple) and invents a dish that uses all three. They give it a fun name and draw it on the recipe sheet. Collect the sheets into a class "Leftover Recipe Book".

NOTE *Any idea is fine. Level 1: two cards; Level 2: three cards and three simple recipe steps. No real cooking in class. Full instructions: activity 3C.*



Text on slide:

Extra food? Share it! Food banks bring it to people who need it.

Slide 16 · Share it

⏱ Core: 1 min

SAY What if, instead of throwing extra food away, we gave it to someone who could use it? Sharing food is one of the oldest and kindest human traditions, and one of the smartest ways to fight food waste. Food banks and other organisations collect extra food from supermarkets, restaurants and farms and bring it to people who need it. They act like bridges. Food is too precious to waste and too powerful not to share.

Text on slide:

Sipho's youth club runs a food-waste challenge. Your class can too!

Slide 17 · Sipho's challenge

⏱ Core: 1½ min

SAY In South Africa, young people in Sipho's youth club, and in more than 20 youth networks working with CHOICE, run challenges to eat healthier and waste less food. They track what they throw away, compare with other groups and try to beat their own score. Their aim is to cut food waste by 15%. Now it's your turn: our class can run its own food-waste challenge!

NOTE *Some families in the pilot also use a CHOICE app called "Shrink Your Food Waste". The app is for adults; children should not register themselves.*

Steps on slide:

1. Weigh our leftovers. 2. Try our food-saving ideas. 3. Weigh again and compare!

Stop and do D · Class waste challenge

⏱ Extended · 10 min a day for 2 weeks

DO Week 1: every day, a small team weighs the class's lunch leftovers with an adult and draws the bar on the class chart, without changing anything. Week 2: the class uses 2–3 ideas from the pledge wall and weighs again. Compare the two weeks and celebrate.

NOTE *Record weights only, never names. Nobody is told to finish their plate: the aim is to take less, not to eat more than you want. Gloves and hand washing. Full instructions: activity 3D.*

Text on slide:

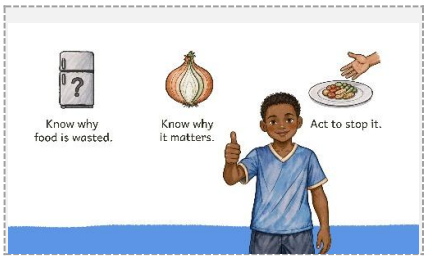
What will our class do to waste less food?

Slide 18 · Think, pair, share

⏱ Core: 1½ min · Think-pair-share

DO Think, pair, share. Each pair agrees on one action for the class; write the best ideas on the pledge wall. At the end of the lesson, each child writes their own promise on a paper leaf.

Close and trilogy finale



Text on slide:

Know why food is wasted. Know why it matters. Act to stop it.

Slide 19 · What we learned

⏱ Core: 1 min

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

SAY Food is wasted because we buy too much, forget it, misread dates and serve too much. It matters because it wastes resources, warms the planet and is unfair. And we can act: small portions, good storage, clever leftovers and sharing.

DO Children fill in the Course 3 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:

Discover. Choose. Act. You are a Food Explorer!

Slide 20 · You are Food Explorers!

⏱ Core: 2 min

SAY Look who is here! All our guides together: Lucía and Valentina helped us discover where food comes from. Leon and Eleni showed us how to choose well. Sipho showed us how to act so that no food goes to waste. Discover, choose, act: you have done all three, so you are now real Food Explorers!

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 last mission, for the whole class: our two-week food-waste challenge. And keep sharing what you learned with your family and friends, because when many people do small things together, the change is big.

DO Extended version (or the next lesson): each child makes a Food Explorer certificate for a classmate, naming one “special talent”. Sign all certificates and hand them over in a short ceremony (“Made by class” activity X2).

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
Food loss and food waste (slides 3–5)	Food loss happens before food reaches the shops: on farms, in storage, transport and processing. Food waste happens in shops, restaurants, canteens and homes. The FAO estimated in 2011 that about one third of all food produced is lost or wasted. The UNEP Food Waste Index Report 2024 counts 1.05 billion tonnes of food wasted in 2022 in shops, food services and homes, almost one fifth of the food available to consumers. Households account for about 60% of it.
Date labels (slide 8)	In the EU (Regulation 1169/2011), “best before” is the date until which food keeps its full quality; it is usually still safe afterwards if stored correctly. “Use by” is used for highly perishable foods, which are considered unsafe after that date. Storage matters as much as the date: a “use by” food left out of the fridge can become unsafe before its date.
Food waste and climate (slides 11–12)	In landfills, food rots without air and produces methane, a greenhouse gas that traps far more heat than carbon dioxide while it stays in the air. UNEP estimates that food loss and waste cause about 8–10% of global greenhouse gas emissions. Composting with air produces mostly carbon dioxide and gives back nutrients to the soil, which is better than landfill, but avoiding the waste is best of all.
CHOICE pilot in South Africa (slides 2, 13, 17)	CHOICE works with more than 20 youth networks that run challenges to eat healthier and waste less food, aiming to cut food waste by 15%. Adults in the pilot can use the CHOICE app “Shrink Your Food Waste” to track their household food waste. D6.1 reports that about 43% of South Africans lack access to good-quality food and 62% cannot afford a healthy diet. This is background for the teacher, not for the children.
Sharing food (slide 16)	Food banks and food-sharing organisations collect surplus food from shops, restaurants and farms and pass it on to charities and families. In the EU, guidelines on food donation explain how this can be done safely.

Sensitive topics

Topic	How to handle it
Hunger and food insecurity	Some children in any class may not always have enough food at home. Talk about sharing and helping, never “you waste food while others starve”. Do not ask children what their family throws away, or how much food they have, in front of the class. Use shared places such as school, parties and shops as examples. If a child seems worried about food at home, follow your school’s usual support procedures.
“Clean your plate” pressure	The message is to take smaller portions, not to eat more than you want. Never pressure a child to finish their food, in class or during the challenge.
Food safety	Activity 3A uses cards only. Never ask children to smell or taste meat, fish or dairy to check them. In the rotting balloon, never open the bottles; use latex-free balloons and wash hands after handling fruit. During the challenge, children wear gloves and an adult handles the scales and throws the leftovers away.
Measuring waste without blame	Record weights only, never names. Do not blame individual children, families or the canteen staff; invite the canteen to take part as a partner.
Apps and personal data	The “Shrink Your Food Waste” app is for adults. Children should not download it or register themselves.

Sources: FAO (2011), Global food losses and food waste; UNEP, Food Waste Index Report 2024; Regulation (EU) No 1169/2011 on food information to consumers; CHOICE D6.1 Pilot description.

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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

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