

SDG2 Feeding the World Sustainably and Responsibly in the 21st Century



Micro-Module 4: Feeding the World Sustainably and Responsibly in the 21st Century

Exploration and Experimentation

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Micro-module Summary: Feeding the World Sustainably and Responsibly in the 21st Century

The last century has seen the emergence of a global society dominated in many ways by multinational corporations and supply chains (or value chains) that stretch from one side of the planet to the next. Services and products produced by companies and industry delivered on scale across the globe have enabled billions of people to move beyond poverty, to feed their families, and gain access to affordable and nutritious food every day. Incredible progress has been achieved for humanity in this era, but a huge price has been paid by mother nature, the animal kingdom, workers, and farming communities all over our planet.

Over these 7 lessons, students will learn about the value chains behind the everyday goods and foods we consume, gain deep understanding of the link between agriculture and food production, business, human development, and climate change. Students will apply learnings from the lessons through group projects and presentations to address people and planet related challenges existing in real and broken food value chains today.

In this module, the learners will:

- Learn about human progress, population growth and agriculture through the ages
- Understand how our global food systems work
- Learn about the externalities and costs of producing and consuming food
- Learn about value chains, shareholders, profits and stakeholders
- Gain an understanding into the journey of the products in our cupboards

Materials

- Lesson plans
- Worksheets



MM4: Feeding the World Sustainably and Responsibly in the 21st Century



Feeding the World Sustainably and Responsibly in the 21st Century

Lesson 1: 2000 Years of Human Agriculture, Population and Progress

Through this lesson we'll learn about the growth in global populations through the ages exploring how population rates have rocketed up in the past century, understanding how and why population is expected to plateau at 10-11 billion by the end of 2100, and explore the links between population growth, agriculture, and food.

Resources: Worksheet: Population Curve Exercise, Worksheet: Nitrogen as Fertiliser, Worksheet: World of Data Links and Questions

Lesson 2: The Food We Eat: Where Does Our Food Come From?

In this lesson, we'll dive into our cupboards, larders, shopping trolleys and bellies to learn what we eat and why, where we buy these foods, where and how they're made, and where they come from. Learners will learn about the main foods we all eat and the distances travelled by many to reach our plates.

Resources: Worksheet: The Top Foods We Eat, Worksheet: The Food Pyramid, Worksheet: Breakfast

Lesson 3: Food, Agriculture and Climate Change

In this lesson, we'll learn about the connection between industrial agriculture, our global food systems and climate change. Over half of land on our planet is devoted to raising livestock and crops, but food and agriculture is responsible for quarter of all man made greenhouse gas emissions. We will explore our food systems to understand the various and complex ways in which agriculture impacts the natural world, including through land and water use and the production of greenhouse gases from farming. In this lesson we'll attempt to explore whether a more sustainable and climate friendly way is possible and see if our food systems can be reinvented!

Resources: The Four Impacts of Agriculture Worksheet, Top Foods and their Environmental Impact Worksheet

Lesson 4: From Farm to Fork: The Steps of Food Value Change

Each day our plates are filled with foods that come to us from farmers and producers from every country and continent in the world. The supply chains and value chains behind our food stretch across the globe. In this lesson we'll explore the paths our food travels, learn more about farming, harvesting, production, packaging, and the transport of our food and try to understand the true cost of our food. Is there a bigger cost that mother nature or the planet's farmers and workers have to bear on our behalf?

Resources: Worksheet: Value Chain Definitions, Worksheet: Bananas and the Steps of a Value Chain, Worksheet: Value Chains in the Media

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Feeding the World Sustainably and Responsibly in the 21st Century

Lesson 5: Case Studies - Coffee, Tea and Cocoa

Coffee, Tea, and Chocolate (Cocoa) are some of the world's most popular drinks and treats. These are massive global industries worth billions, yet our current model of business sees little of the income or profits make their way back to the workers and farmers who put in the hard work to bring these goods to us. In this lesson we'll look at business as usual in the tea, coffee and cocoa industries and question whether things can be better. We'll meet some impact driven companies working to end poverty, child labour and exploitation in the tea, coffee and cocoa sectors and learn about the challenges these companies face to ensure business is a force for good and try to see if their radical approach can become the new norm.

Resources: Worksheet: Ethical Trade Definitions, Worksheet: FairChain and Moyee Coffee, Worksheet: Tony Chocolonely's Chocolate, Worksheet: FrankAboutTea

Lesson 6: Supermarkets, Farmers and our Broken Value Chains

Today we buy most of our food from a handful of supermarkets. These multinational companies are tremendously successful and profitable at delivering all kinds of food to us when and where we want it. They dominate the planet's food supply systems. But behind these supermarkets there is a global army of smallholder farmers, literally million of farmers and their families, in every corner of the globe, who work so hard often while facing the impacts of climate change head on, to put food on our tables, yet many farmers earn so little that they cannot afford to feed their own families. In this lesson we'll try to understand why the global food system is so broken that farmers can starve and struggle while supermarkets profit and explore whether a better way is possible for the future.

Resources: Worksheet: The Power of Supermarkets, Worksheet; Living Income for Farmers, Worksheet: How to Solve Farmer Poverty?

Lesson 7: Value Chain Exercise

In this lesson, we'll take a deep dive into the value chains behind some of the everyday foods we all enjoy and plot the journey through the value chains these foods make, identifying the human and environmental problems that exist within these food systems, and attempting to discover what innovations and solutions can help change the systems behind our foods to do right by customers, farmers, workers, company owners, and our planet.

Resources: Worksheet: Value Chain Six Stages, People and Planet

Using the Resources: If you wish to use these resources we offer an induction and online support. To register for this option, please contact Rebecca White; e:rebecca@futurefocus21c.com

Module development and expertise: Killian Stokes, Moyee Coffee Co-Founder and Proudly Made in Africa CEO

SDG2 Future of Food

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Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 1: 2000 Years of Human Agriculture, Population and Progress

Subjects: Agricultural Science, CPSE, Geography, Home Economics, SPHE

Lesson Title and Summary: 2000 Years of Human Agriculture, Population and Progress

Through this lesson, we'll learn about the growth in global populations through the ages exploring how population rates have rocketed up in the past century. Understanding how and why population is expected to plateau at 10-11 billion by the end of 2100 and explore the links between population growth, agriculture, and food.

Vocabulary: Agriculture, Population Growth, Nitrogen, Ammonia, Fertiliser, Yield

In this lesson, the learner will:

- Learn about global population growth, agriculture, food, and progress
- Identify information (e.g. statistics) related to population, food production
- Apply learning on how to conduct online research and collate findings
- Understand and accurately use online resources
- Engage in speaking and communication activities applying critical thinking, discussion strategies, and presentation skills

Materials

- Worksheet 1: Population Curve Exercise
- Worksheet 2: Nitrogen as a Fertiliser
- Worksheet 3: World of Data Links + Questions
- Pens and paper
- Online resources (computer / iPhone; website links)
- Blackboard / Whiteboard and chalk / white board markers

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



15 LIFE ON LAND



MM4: Feeding the World Sustainably and Responsibly

Lesson 1: 2000 Years of Human Agriculture, Population and Progress



ACTIVITY INSTRUCTIONS

Activity 1: Class Poll (15 minutes)

1. Write the words Human Population and three numbers showing different possibilities for global population including the current figure 8.1 billion.
2. Ask the class to vote on the three numbers indicating which number they think is the correct global population.
3. Reveal that 8.1 billion is the correct figure and discuss.
4. Divide learners into groups of 2.
5. Give learners Worksheet 1: Population Curve Exercise and ask learners to plot population growth over time using the internet for research, if need be. Discuss as a class.

Activity 2: (15 minutes)

1. Staying in groups of 2, give learners Worksheet 2: Nitrogen.
2. Play the video The chemical reaction that feeds the world - Daniel D. Dulek (5:18min) from 0:00min - 1:58min and have learners complete the first part of the Nitrogen worksheet.
3. Discuss their answers as a group.
4. Play the video from 4:05 – 4:55 mins and have learners complete the second part of the Nitrogen worksheet.
5. Discuss their answers as a group.
6. Discuss as a class.

Activity 3: Analysis of Growth of Crop Yields (20 mins)

1. Staying in groups of 2, give learners Worksheet 3: Analysis of Growth of Crop Yields and ask them to work through the interactive maps and charts (see links below) on the two linked pages and answer the questions in the worksheet.
 - a. <https://ourworldindata.org/fertilizers>
 - b. <https://ourworldindata.org/crop-yields>

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

MM4: Feeding the World Sustainably and Responsibly

Lesson 1: 2000 Years of Human Agriculture, Population and Progress



EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, run Activity 3 as a flipped classroom and have the learners discuss their summary findings in the next lesson.

Extension: For a longer lesson, watch the video in the media box and extend activity 1 by encouraging students to visit the population matters website and compare their chart with the population explorer tool at: <https://explore.populationmatters.org/>

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Websites:

- <https://ourworldindata.org/fertilizers>
- <https://ourworldindata.org/crop-yields>
- <https://ourworldindata.org/yields-habitat-loss>

Video:

TED-Ed: The chemical reaction that feeds the world [5:19min]: https://www.youtube.com/watch?v=o1_D4FscMnU

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Visit a local supermarket or specialty food store and identify 3 foods in the aisles that are made with corn, 3 that are made with wheat, 3 that are made with rice, and 3 that are made with cereals.

Record the details of the various products including price, weight and country of origin.

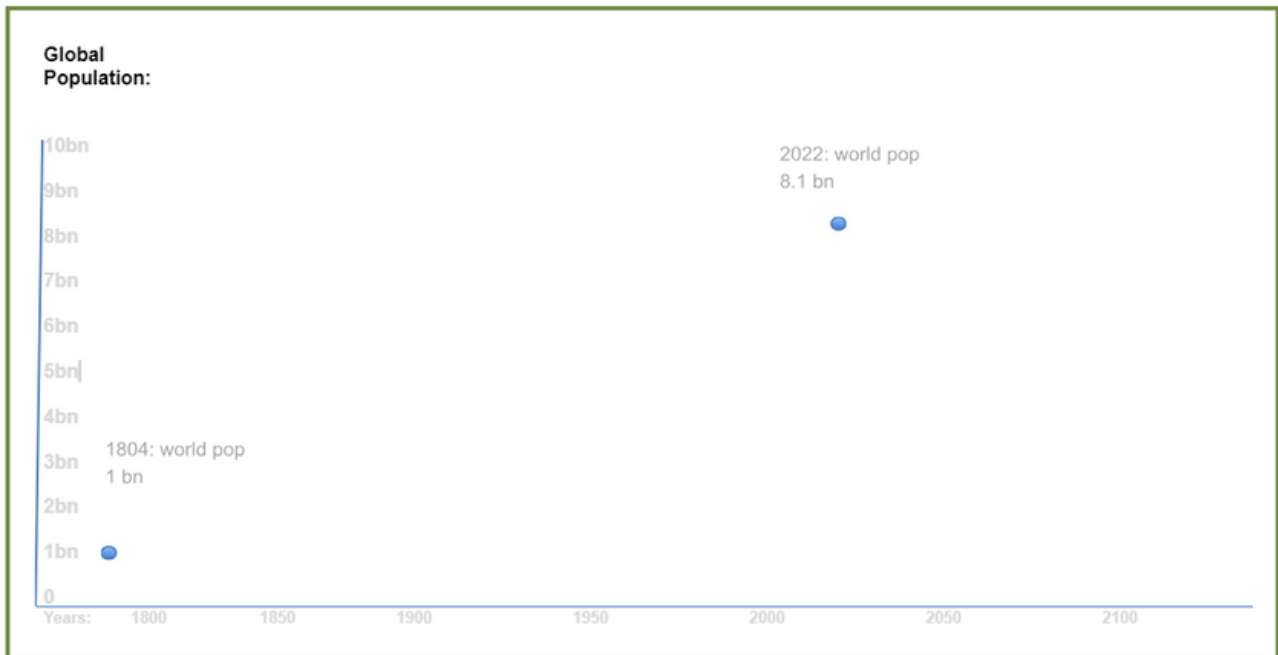
LESSON 1 WORKSHEET

2 ZERO HUNGER



POPULATION CURVE EXERCISE

Working in pairs, and using the internet to search if required, plot out the timeline for when global population reached 2, 3, 4, 5, 6 and 7 billion and when it is expected to reach 9 and 10 billion.



LESSON 1 WORKSHEET

2 ZERO HUNGER



NITROGEN AS A FERTILIZER

Part 1

The Haber Process is (circle one):

- a. Turning Air into fertiliser
- b. Turning water into fertiliser
- c. Turning fertiliser into air
- d. Turning water into air

True or False: A nitrogen gas molecule plus three hydrogen gas molecules gets you two ammonia gas molecules t_____ / f_____

Without the Haber process how many people could farmers feed? _____

Where do plants normally get their nitrogen? _____

What percentage of the air is nitrogen? _____

In what year did Fritz Haber make his discovery? _____

Part 2

How much ammonia is produced in the world each year? _____

How many elephants would it take to match the weight of that ammonia _____

What % of the ammonia produced is used for fertiliser in agriculture _____

What percentage of fertiliser is not absorbed by these plants _____

Where does this nitrogen go and what does it lead to?

LESSON 1 WORKSHEET

2 ZERO HUNGER



ANALYSIS OF GROWTH OF CROP YIELDS

Working in pairs, visit the two world of data websites, explore the data and answer the questions below:

First Website: <https://ourworldindata.org/fertilizers>

Question 1: Looking at fertilizer use and using the map view, try to capture the names of the countries that have applied less than 12.5 kg of nitrogen fertiliser per hectare:

Question 2: What do you notice about these countries?

Second Website: <https://ourworldindata.org/crop-yields>

Question 3: Looking at four key crops: corn (maize), rice, cereal & wheat, what are the two smallest yield segments per hectare per crop?

Wheat: _____ & _____
Corn (Maize): _____ & _____
Rice: _____ & _____
Cereal: _____ & _____

Question 4: Name 5 countries from these two lowest performing segments for each of the four crops:

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Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 2: The Food We Eat: Where Does Our Food Come From?

Subjects: Agricultural Science, CPSE, Geography, Home Economics, SPHE

Lesson Title and Summary: The Food We Eat: Where Does Our Food Come From?

In this lesson, we'll dive into our cupboards, larders, shopping trolleys and bellies to learn what we eat and why, where we buy these foods, where and how they're made and where they come from. Learners will learn about the main foods we all eat and the distances travelled by many to reach our plates.

Vocabulary: Food Miles, Food Pyramid, Calculate, Food Choices

In this lesson, the learner will:

- Identify information and vocabulary related to food
- Explore the concept of food miles and food choices
- Apply learning on how to conduct online research
- Consolidate and articulate research findings
- Engage in pair and group work

Materials

- Worksheet 1: The Top Foods We Eat
- Worksheet 2: Food Pyramid
- Worksheet 3: Breakfast
- Teacher's Notes
- Pens and paper
- Online resources (computer / iPhone; website links)
- Whiteboard
- Whiteboard markers



MM4: Feeding the World Sustainably and Responsibly

L2: The Food We Eat: Where Does Our Food Come From?



ACTIVITY INSTRUCTIONS

Activity 1: The Top Foods We Eat (10 mins)

1. Divide the class up into small groups of 2-5 students.
2. Encourage teams to allocate one writer and multiple internet researchers.
3. Distribute Worksheet 1: The Top Foods We Eat, facedown to teams. Turning over the sheets give the teams 5 minutes on a stopwatch to complete the task.

Activity 2: Food Pyramid (10mins)

1. Divide learners into groups of 2.
2. Draw a pyramid on the board and distribute the worksheet: Food Pyramid
3. Ask the groups to fill in the blank pyramid with the six food groups.
4. Discuss as a class and fill in the pyramid on the board.
5. Ask learners to come up with 3-5 food items which fall into each of the six food groups.
6. Have groups share with the class.

Activity 3: Deconstruct Breakfast (30mins)

1. Using the groups from activity 2, have learners brainstorm a list of food and drink that you would find in a typical Irish breakfast using the worksheet: My Breakfast Part 1. Have learners use the blank pyramid to sort the food and drink items into the appropriate food group.

NB: If you have a diverse group of learners, assign each group a nationality (this could be done randomly through drawing nationalities out of a hat), so that they are brainstorming a typical breakfast for the nationality (e.g. Polish, Irish, Ukrainian, Lithuanian, Nigerian, etc.).

Have groups complete part 2 and 3 of the worksheet as if they were buying their food items in the home country of that nationality. This is a good chance for learners to learn about other cultures' typical foods.

2. Share as a class.
3. Have learners answer the questions on the worksheet: My Breakfast Part 2.
4. Discuss as a class.
5. Have learners answer the questions on the worksheet: My Breakfast Part 3.
6. Discuss as a class.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

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L2: The Food We Eat: Where Does Our Food Come From?

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EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, skip activity 1 and only do activities 2 and 3.

Extension: For a longer lesson, after activity 3, assign each group a category: the most food miles, the least food miles. Half of the groups should be assigned the most food miles, and half of the groups should be assigned the least food miles. Ask learners to create a breakfast menu in their groups for their assigned category (e.g. design a breakfast menu which uses the least amount of food miles OR design a breakfast menu which uses the most amount of food miles). If time allows, have learners draw and present their menus to the class.

Option B: Have groups pick one photo from Peter Menzel's gallery (<https://www.menzelphoto.com/portfolio/G0000s3jj73.5TSs>) of food around the world and calculate the food miles of the food they see in the photo using the worksheet: My Breakfast.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Food Miles: www.foodmiles.com

Distances From: <https://www.distancesfrom.com/>

What the world eats: <https://www.nationalgeographic.com/what-the-world-eats/>

25 Most produced foods: <https://beef2live.com/story-top-25-produced-foods-world-124-107239>

Biggest producing countries of key foods: <https://ourworldindata.org/grapher/maize-production?tab=map>

Peter Menzel: Hungry Planet & What I Eat Galleries
<https://www.menzelphoto.com/portfolio/G0000s3jj73.5TSs>

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

- Visit a local farmers market and have learners find 5 food items. They should record what that item is, the origin of the item (where did it come from?), the price, the food miles, and how popular the item is.
- Visit a local supermarket and have learners find 5 of their favourite food items. They should record the brand name, the country of origin, the price, the food miles, and how popular the item is (learners may have to ask a manager or store personnel for this information). Compare this with their findings at the local farmers market.

LESSON 2 WORKSHEET

2 ZERO HUNGER



THE TOP FOODS WE EAT

75% of our calories come from just 12 crops and 5 animals. Can you name them?
You have five minutes to fill in the blanks.

Crop 1: _____

Animal 1: _____

Crop 2: _____

Animal 2: _____

Crop 3: _____

Animal 3: _____

Crop 4: _____

Animal 4: _____

Crop 5: _____

Animal 5: _____

Crop 6: _____

Crop 7: _____

Crop 8: _____

Crop 9: _____

Crop 10: _____

Crop 11: _____

Crop 12: _____

LESSON 2 TEACHER'S NOTES

2 ZERO HUNGER



THE TOP FOODS WE EAT

Answers:

Crops:

Wheat, Sugar, Rice, Corn/Maize, Soy, Potatoes, Palm Oil, Cassava, Sorghum, Millet, Groundnut, Sweet Potatoe

Animals:

Cows, Buffalo, Chickens, Pigs, Goats

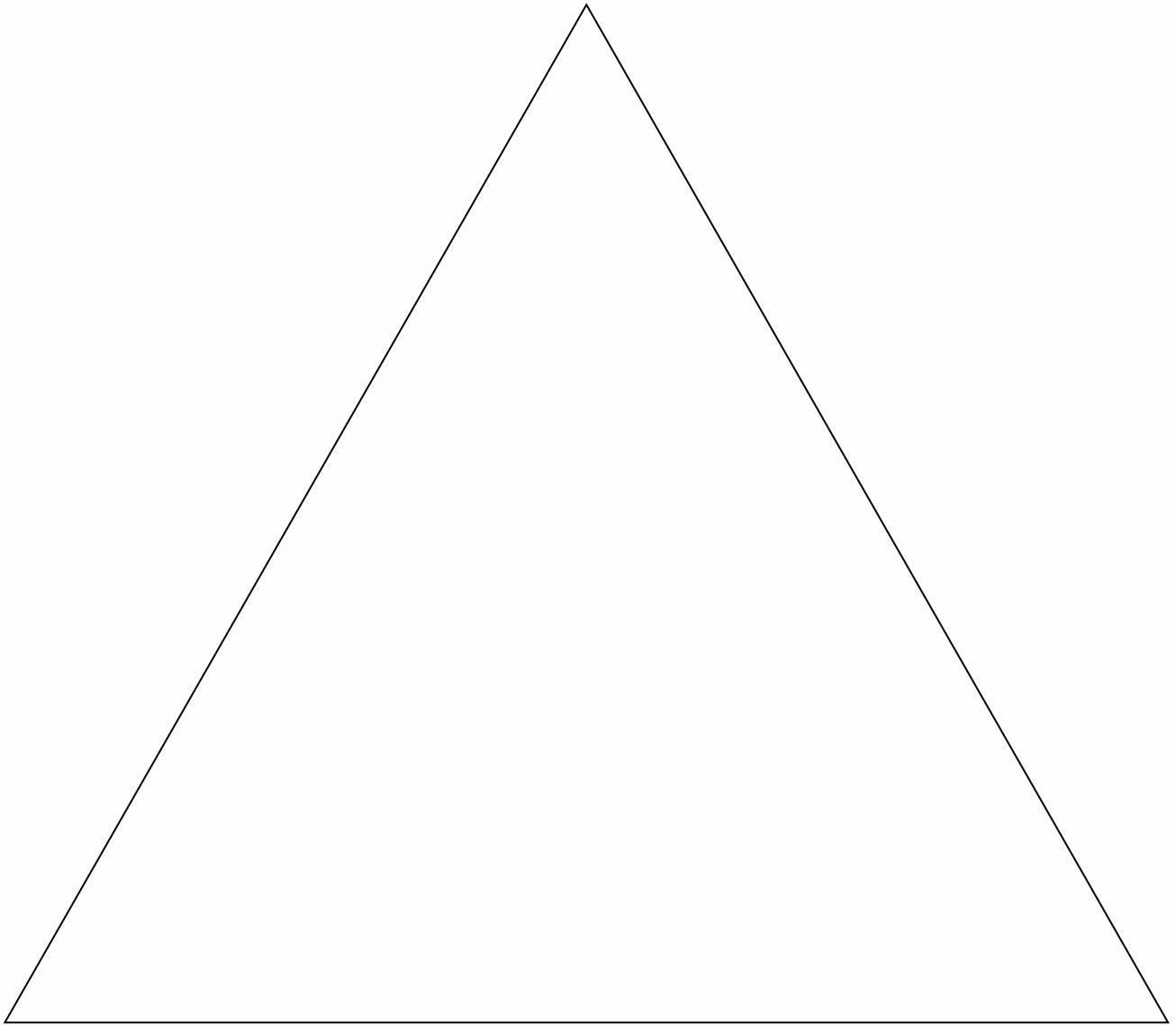
LESSON 2 WORKSHEET

2 ZERO HUNGER



FOOD PYRAMID

Nutritionists typically say there are six different food groups. Can you name each food group and place them in the food pyramid below?



As a group, can you think of five different food items for each food group? Draw or write them in the food pyramid above.

LESSON 2 WORKSHEET

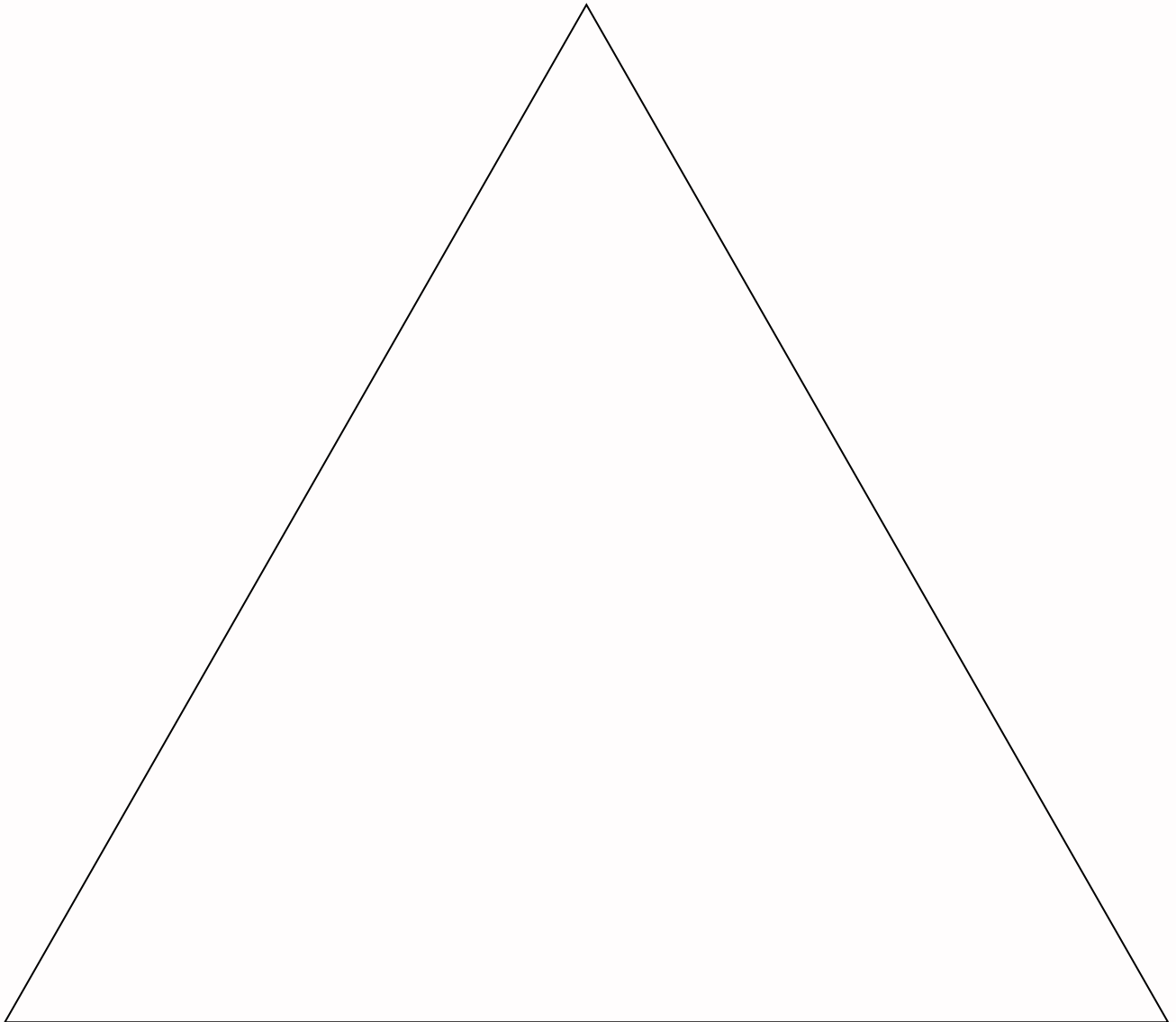
2 ZERO HUNGER



BREAKFAST

Part 1

Using the food pyramid below, brainstorm a typical breakfast in your assigned country and sort each item into an appropriate food group.



LESSON 2 WORKSHEET



BREAKFAST

Part 2

Why do you think the breakfast foods in part 1 are so popular in your assigned country?

Where do you think the breakfast foods in part 1 are made / produced?

How do you think these foods are made / produced?

Do you think we could grow or produce the breakfast foods in part 1 at your home in your assigned country?

LESSON 2 WORKSHEET

2 ZERO HUNGER



BREAKFAST

What is food-miles? Write a definition with your group.

What do you think the relationship between food miles and our carbon footprint is?

What stages of travel and transportation do you think food goes through to reach Ireland?

Do you think your breakfast in part 1 has to travel far to reach your plate? If so, how far?

Where would you buy the breakfast foods in part 1? Are there any alternative places where you could buy these foods?

LESSON 2 WORKSHEET



BREAKFAST

How sustainable do you think your breakfast in part 1 is?

Part 3

We are going to calculate the food miles of our breakfasts from part 1!

First, identify the country of origin of each breakfast food item from part 1:

Now, use www.foodmiles.com & <https://www.distancesfrom.com/> to look up the food miles of each item.

Then, add all of the food miles together.

Does your breakfast have a high amount of food miles or a low amount of food miles?

LESSON 2 WORKSHEET

2 ZERO HUNGER



BREAKFAST

Which of the food items had the highest and lowest food miles? Why do you think this is the case?

Did any of the food items' food miles surprise you? If so, which ones and why?

How could we make our breakfast from part 1 more sustainable? Is there any item that has a high amount of food miles we can do without or replace? If so, what and what could we replace it with?

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Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 3: Food, Agriculture and Climate Change

Subjects: Agricultural Science, CPSE, Geography, Home Economics, SPHE

Lesson Title and Summary: Food, Agriculture and Climate Change

In this lesson, we'll learn about the connection between industrial agriculture, our global food systems and climate change. Over half of land on our planet is devoted to raising livestock, crops, and food. This is responsible for quarter of all man made greenhouse gas emissions. We will explore our food systems to understand the various and complex ways in which agriculture impacts the natural world, including through land and water use and the production of greenhouse gases from farming. In this lesson, we'll attempt to explore whether a more sustainable and climate friendly way is possible and see if our food systems can be reinvented!

Vocabulary: Land Use, Water Use, Eutrophication, Greenhouse Gas Emissions, Crops, Livestock

In this lesson, the learner will:

- Identify information and vocabulary related to food, agriculture & climate change
- Explore the link between agriculture and climate change
- Examine how food systems and farming can become more sustainable
- Carry out online research
- Engage in pair and group work

Materials

- Worksheet 1: The Four Impacts of Agriculture
- Worksheet 2: Top Foods and their Environmental Impact
- Pens, paper and blue tack
- Online resources (computer / iPhone; website links)
- Blackboard/Whiteboard and chalk/white board markers



MM4: Feeding the World Sustainably and Responsibly

L3: Food, Agriculture and Climate Change



ACTIVITY INSTRUCTIONS

Activity 1: The Negative Impact of Nitrogen Fertiliser (15 mins)

1. Divide the class up into small groups of 2-5 students
2. Encourage teams to find 3 photos online showing the negative impacts of the use of nitrogen fertiliser / nitrogen runoff in agriculture. (Note: useful search terms include nitrogen runoff, nitrogen and algae bloom, nitrogen pollution).
3. Briefly discuss as a class what teams are finding.

Activity 2: Environmental Impacts of Agriculture (15 mins)

1. Keep the class in the small groups of 2-5 students
2. Distribute Worksheet: The Four Impacts of Agriculture. Ask the class to split the topics amongst themselves and research what each topic means and write up a quick definition for each in their own words.

Activity 3: Food and its Impact on the Environment (20 mins)

1. Keep the class divided up into the same small groups of 2-5 students.
2. Assign each group with a food from the Worksheet: Top Foods and their Environmental Impact and ask them to complete the worksheets using the world in data environmental impacts page (<https://ourworldindata.org/environmental-impacts-of-food>). Ensure their allocated food is showing and that they know how to toggle through carbon footprint, water use, and land use. Encourage the learners to fill in the diagrams and hang them on the wall.
3. Once all teams are done, direct the learners to sequence the diagrams according to carbon footprint and, if time is permitting, to re-sequence them according to land use, and finally water use.
4. Discuss as a class what foods we should eat more or less of? Direct the class to divide the foods on the wall into these two groups.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

MM4: Feeding the World Sustainably and Responsibly

L3: Food, Agriculture and Climate Change



EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, remove Activity 1

Extension: For a longer lesson, as a class watch the UN EP video Why Do We Need To Change Our Food Systems. While watching the video ask the learners to take notes about what they are hearing and seeing. Here are some prompts to guide them:

- Take note of how many people on the planet suffer from malnutrition?
- How does the lack of diversity of food and the quality of food impact our health and the planet?
- in what different ways are our natural resources under pressure?
- How is food waste connected to climate change?
- What are the 4 key stages of the food system?
- What are the two main goals we need to achieve?
- Who are the different stakeholders in our food systems?

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- The 12 crops and 5 animals that feed us <https://np.thepondfoundation.org/the-12-crops-and-5-animals-that-feed-us/>
- What the world eats: <https://www.nationalgeographic.com/what-the-world-eats/>
- 25 Most produced foods: <https://beef2live.com/story-top-25-produced-foods-world-124-107239>
- Biggest producing countries of key foods: <https://ourworldindata.org/grapher/maize-production?tab=map>
- Food Spending Around the World: <https://www.vox.com/2014/7/6/5874499/map-heres-how-much-every-country-spends-on-food>
- Photos of plates of food based on income & poverty levels: <https://www.gapminder.org/dollar-street?topic=plates-of-food&media=all>
- Yields and Habitat Loss <https://ourworldindata.org/yields-habitat-loss>
- UN EP Video (3:46mins): <https://www.youtube.com/watch?v=VcL3BQeteCc>
- “Why beef is the worst food for the climate” (4:37mins) <https://www.youtube.com/watch?v=3lrJYTsKdUM&t=114s>

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Media Communications 2: Research Poster Working in pairs, learners are each given one country and asked to prepare a poster on how food and agriculture has affected the environment, wild habitats, water systems and biodiversity of that country over time.

LESSON 3 WORKSHEET



THE FOUR IMPACTS OF AGRICULTURE

As a group, write your own definition for each of the following words:

Land Use:

Water Use:

Carbon Footprint:

Eutrophication:

LESSON 3 WORKSHEET

2 ZERO HUNGER



TOP FOODS AND THEIR ENVIRONMENTAL IMPACT

You will be assigned 1-2 foods from the list below, and a worksheet for each food.

Visit the website:

<https://ourworldindata.org/environmental-impacts-of-food> and interact with the data explorer diagram ensuring your allocated food is showing.

Foods:

1. Beef (Herd)
2. Lamb
3. Pigs
4. Chickens & Poultry
5. Eggs
6. Rice
7. Wheat
8. Sugar Cane
9. Potatoes
10. Maize / Corn
11. Cassava
12. Soy / Soy Milk
13. Bananas
14. Coffee
15. Tomatoes
16. Prawns
17. Nuts
18. Groundnuts
19. Milk
20. Dark Chocolate

LESSON 3 WORKSHEET

2 ZERO HUNGER



TOP FOODS AND THEIR ENVIRONMENTAL IMPACT

Food (write in the name of the food you are researching): _____

Color in the columns below to the right level of each impact for your food.

Carbon
Footprint p/kg:

Water
Use p/kg:

Land
Use p/kg:

Eutrophy
p/kg:

100 Kgs CO₂

6,000 Litres

400 sq metres

400 grams

0 Kgs CO₂

0 Litres

0 Sq Metres

0 Grams

LESSON 3 WORKSHEET

2 ZERO HUNGER



TOP FOODS AND THEIR ENVIRONMENTAL IMPACT

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Eutrophy
p/kg:

100 Kgs CO₂

6,000 Litres

400 sq metres

400 grams

0 Kgs CO₂

0 Litres

0 Sq Metres

0 Grams

MM4:Feeding the World Sustainably and Responsibly



Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 4: From Farm to Fork: The Steps of Food Value Chains

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Lesson Title and Summary: From Farm to Fork: The Steps of Food Value Chains

Each day our plates are filled with foods that come to us from farmers and producers from every country and continent in the world. The supply chains and value chains behind our food stretch across the globe. In this lesson we'll explore the paths our food travels, learn more about farming, harvesting, production, packaging, and the transport of our food and try to understand the true cost of our food. On top of what we pay at the till, is there a further cost that mother nature or the planet's farmers and workers have to bear on our behalf?

Vocabulary: Value Chains, Farming, Harvesting, Food Production, Packaging, External Costs of Production

In this lesson, the learner will:

- Identify and describe the various stages of a value chain
- Appreciate the role various stakeholders play within a value chain
- Exercise critical thinking & decision making
- Evaluate the environmental, social and economic impacts in value chains
- Engage in pair and group work

Materials

- Worksheet 1: Value Chain Definitions
- Worksheet 2: Bananas and the Steps of a Value Chain
- Worksheet 3: Value Chains in the Media
- Pens, paper and blue tack
- Internet access
- Blackboard/Whiteboard and chalk/white board markers



MM4: Feeding the World Sustainably and Responsibly

L4: From Farm to Fork: The Steps of Food Value Chains



ACTIVITY INSTRUCTIONS

Activity 1: Value Chain Definitions (15 mins)

1. Divide the class up into small groups/teams of 4-5 learners
2. Distribute Worksheet 1: Value Chain Definitions
3. Ask the groups to research and define each of the three concepts.
4. Discuss the definitions and attempt to explain the difference between an external cost and a hidden cost.

Activity 2: Bananas and the Steps of the Value Chain Defined (15 mins)

1. Distribute Worksheet 2: Bananas and the Steps of a Value Chain
2. As a class, watch the video “How Do Bananas Grow and End Up in the Store?” [3:08 mins]
3. While watching the video, ask the learners to make notes using the worksheet about what they are hearing and seeing and the possible stages of the value chain.
4. Discuss as a class what possible steps might exist for other foods, for example - grapes, apples, milk, a hamburger?

Activity 3: Value Chains in the Media (20 mins)

1. Continue working in groups and distribute Worksheet 3: Value Chains in the Media to the class
2. Allocate each team with a different newspaper article to review.
3. Assist the learners to work through the questions and requirements of the worksheet.
4. Class discussion on their findings

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

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L4: From Farm to Fork: The Steps of Food Value Chains



EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, run Activity 1 as a flipped classroom and have the learners briefly discuss their definitions at the beginning of the lesson.

Extension: For a longer lesson, extend Activity 2 by extending the discussion in step 5 by defining more value chains for other everyday foods learners have eaten in the past week. Have learners choose two articles to read in Activity 3.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- How do Bananas Grow and End Up in the Store? (3:08mins) <https://www.youtube.com/watch?v=SgFKfVfghpg>
- Supermarkets wasting 200,000 tonnes of food that could go to needy, says charities: <https://www.theguardian.com/business/2022/feb/22/supermarkets-wasting-200000-tonnes-of-food-that-could-go-to-needy-say-charities>
- Warning that coffee could disappear from shelves by 2050 due to climate change: <https://www.irishexaminer.com/news/arid-41081876.html>
- Sustainability of global coffee production 'at risk' - report: https://www.rte.ie/news/2019/0117/1023727-coffee_at_risk/
- Container ship begins exit from Suez Canal 106 days after getting stuck: <https://www.rte.ie/news/world/2021/0707/1233615-suez-canal/>
- In the year to end child labour, COVID wreaks havoc: The pandemic has fuelled trafficking of children to work in mines and cocoa plantations: <https://www.irishtimes.com/news/world/in-the-year-to-end-child-labour-covid-wreaks-havoc-1.4762320>
- Mars, Nestle, and Hershey to face child slavery lawsuit in US: <https://www.theguardian.com/global-development/2021/feb/12/mars-nestle-and-hershey-to-face-landmark-child-slavery-lawsuit-in-us>

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Visit two shops in your area - one supermarket and one small local food shop (butcher, bakery, specialty food store/ fruit shop).

Find out how many deliveries a week the store receives and from how many different suppliers. How many products does each delivery company provide to the store or shop. Find out where these trucks come from and attempt to calculate their Irish transport miles per week for each store.

LESSON 4 WORKSHEET

2 ZERO HUNGER



VALUE CHAIN DEFINITIONS

As a group, write your own definition or description for each of the following words:

What is a Value Chain?

What is an External Cost?

What is a Hidden Cost?

What is the difference between an external cost and a hidden cost?

LESSON 4 WORKSHEET



BANANAS AND THE STAGES OF VALUE CHAINS

Take notes during the video and attempt to identify the activities for each of the following stages of the value chain. Identify who carries out this work and where this activity takes place.

Stage 1: Farming: What is involved? Who does it?

Stage 2: Harvesting: What is involved? Who does it?

Stage 3: Shipping: What is involved? Who does it?

LESSON 4 WORKSHEET

2 ZERO HUNGER



BANANAS AND THE STAGES OF VALUE CHAINS

Take notes during the video and attempt to identify the activities for each of the following stages of the value chain. Identify who carries out this work and where this activity takes place.

Stage 4: Production: What is involved? Who does it?

Stage 5: Packaging: What is involved? Who does it?

Stage 6: Selling & Consuming (and waste disposal):

LESSON 4 WORKSHEET

2 ZERO HUNGER



VALUE CHAINS IN THE MEDIA

You will be allocated a media article. Read the article and answer the following questions:

Which stage of the food value chain does the article relate to?

What impact is this issue having?

Is there an impact for the consumer? for farmers? for workers? for the food company/brand?

Who is paying the cost or price of this problem?

Who, if anyone, is solving the issue?

LESSON 4 WORKSHEET

2 ZERO HUNGER



VALUE CHAINS IN THE MEDIA

Article 1:

Supermarkets wasting 200,000 tonnes of food that could go to needy, says charities:

<https://www.theguardian.com/business/2022/feb/22/supermarkets-wasting-200000-tonnes-of-food-that-could-go-to-needy-say-charities>

Article 2:

Warning that coffee could disappear from shelves by 2050 due to climate change:

<https://www.irishexaminer.com/news/arid-41081876.html>

or

Sustainability of global coffee production 'at risk' - report:

https://www.rte.ie/news/2019/0117/1023727-coffee_at_risk/

Article 3:

Container ship begins exit from Suez Canal 106 days after getting stuck:

<https://www.rte.ie/news/world/2021/0707/1233615-suez-canal/>

Article 4:

In the year to end child labour, COVID wreaks havoc: The pandemic has fuelled trafficking of children to work in mines and cocoa plantations:

<https://www.irishtimes.com/news/world/in-the-year-to-end-child-labour-covid-wreaks-havoc-1.4762320>

or

Mars, Nestle, and Hershey to face child slavery lawsuit in US:

<https://www.theguardian.com/global-development/2021/feb/12/mars-nestle-and-hershey-to-face-landmark-child-slavery-lawsuit-in-us>

MM4: Feeding the World Sustainably and Responsibly



Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 5: Cases Studies - Coffee, Tea and Cocoa

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Lesson Title and Summary: Cases Studies - Coffee, Tea and Cocoa

Coffee, Tea and Chocolate (Cocoa) are some of the world's most popular drinks and treats. These are massive global industries worth billions, yet our current model of business sees little of the income or profits make their way back to the workers and farmers who put in the hard work to bring these goods to us. In this lesson we'll look at business as usual in the tea, coffee and cocoa industries and question whether things can be better. In this lesson we'll meet some impact driven companies working to end poverty, child labour and exploitation in the tea, coffee and cocoa sectors and learn about the challenges these companies face to ensure business is a force for good and try to see if their radical approach can become the new norm.

Vocabulary: Value Chains, Coffee, Cocoa, Tea, Business Model, Profit, Impact Driven, B Corp Movement, Fair Trade, FairChain, Rainforest Alliance

In this lesson, the learner will:

- Be introduced to a number of ethical trade initiatives
- Explore case studies from the value chains for Coffee, Tea and Chocolate
- Learn to gather and analyse information from a case study
- Apply learnings and conduct supportive online research
- Consolidate and articulate research findings
- Engage in pair and group work

Materials

- Worksheet 1: Ethical Trade Definitions
- Case Study 1: FairChain & Moyee Coffee
- Case Study 2: Tony Chocolonely's Chocolate
- Case Study 3: FrankAboutTea
- Pens, paper
- Internet access



MM4: Feeding the World Sustainably and Responsibly

L5: Cases Studies - Coffee, Tea and Cocoa



ACTIVITY INSTRUCTIONS

Activity 1: Ethical Trade Definitions (20 mins)

1. Divide the class up into small groups of 2-5 students
2. Distribute Worksheet 1: Ethical Trade Definitions
3. Encourage teams to research the four topics in the worksheet and to write a definition for each in their own words.
4. Share as a class.

Activity 2: Case Studies (30 mins)

1. Continuing to work in small groups of 2-5 students
2. Distribute the 3 case studies amongst the students and encourage them to research their allocated companies and answer the accompanying questions.
3. Encourage teams to research the four topics in the worksheet and to write a definition for each in their own words.
4. Assist the learners where possible with their research and help them to write, edit, and refine their answers to the questions.
5. If time allows, have learners share their case studies with the class.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

MM4: Feeding the World Sustainably and Responsibly

L5: Cases Studies - Coffee, Tea and Cocoa

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



15 LIFE ON LAND



EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, have learners complete activity 1 at home and briefly discuss in class.

Extension: For a longer lesson, allow more time for the case studies, getting each group to present to the class. Learners could also take on more than one case study.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

FrankAboutTea: <https://frankabouttea.com/en>

Tony's Chocolonely: <https://tonyschocolonely.com/uk/en>

Tony's Chocolonely annual fair report 2021-2022: <https://tonyschocolonely.com/us/en/annual-fair-reports/annual-fair-report-2021-2022>

Moyee Coffee: <https://moyeecoffee.ie/> and <https://www.moyeecoffee.com/>

Moyee Coffee impact report: <https://www.moyeecoffee.com/wp-content/uploads/2023/01/Moyee-Coffee-Impact-Report.pdf>

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Visit your local supermarket, Convenience store (cornerhop, Spar, 7-11), speciality food store and health food store.

Excluding tea, coffee and cocoa, try to find 3 fair trade products and 3 B corp products. Can you identify why these products are B Corp or FairTrade? Find three similar products that are not ethical. Can you describe the difference between the two products.

LESSON 5 WORKSHEET



ETHICAL TRADE DEFINITIONS

As a group, write your own definition or description for each of the following words:

What is Fairtrade?

What is Rainforest Alliance?

What is the B Corp Movement?

What is FairChain?

LESSON 5 WORKSHEET

2 ZERO HUNGER



CASE STUDY 1: MOYEE COFFEE

Visit the [moyeecoffee.ie](https://www.moyeecoffee.ie) and [moyeecoffee.com](https://www.moyeecoffee.com) websites to learn about the radical approach of this impact driven “fairchain” coffee company. Refer to their impact report: <https://www.moyeecoffee.com/wp-content/uploads/2023/01/Moyee-Coffee-Impact-Report.pdf>
Answer the following questions:

When was the company founded? _____

Where is the company based? _____

What is the mission or purpose of the company?

How big is the company? _____

Describe how the company operates through out the six stages of the value chain?

What is the main impact focus of the company?

LESSON 5 WORKSHEET

2 ZERO HUNGER



CASE STUDY 1: MOYEE COFFEE

How does the company differ from other coffee companies?

In your view can the company's approach be mainstreamed and adopted as the global norm in the coffee industry?

What challenges might be faced by the global coffee industry to adopt Moyee's approach?

LESSON 5 WORKSHEET



CASE STUDY 2: TONY'S CHOCOLONELY

Visit the tonyschocolonely.com/uk/en/ website to learn more about this company's efforts to create the world's first slave free bar of chocolate. Refer to their impact report: <https://tonyschocolonely.com/us/en/annual-fair-reports/annual-fair-report-2021-2022> Answer the following questions:

When was the company founded? _____

Where is the company based? _____

What is the mission or purpose of the company?

How big is the company? _____

Describe how the company operates through out the six stages of the value chain?

What is the main impact focus of the company?

LESSON 5 WORKSHEET

2 ZERO HUNGER



CASE STUDY 2: TONY'S CHOCOLONELY

How does the company differ from other chocolate companies?

In your view can the company's approach be mainstreamed and adopted as the global norm in the chocolate industry?

What challenges might be faced by the global chocolate industry to adopt Tony's Chocolonely's approach?

LESSON 5 WORKSHEET



CASE STUDY 3: FRANKBOUTTEA

Visit the frankabouttea.com website to learn more about this company's efforts to redesign the value chain for tea. Answer the following questions:

When was the company founded? _____

Where is the company based? _____

What is the mission or purpose of the company?

How big is the company? _____

Describe how the company operates through out the six stages of the value chain?

What is the main impact focus of the company?

LESSON 5 WORKSHEET

2 ZERO HUNGER



CASE STUDY 3: FRANKABOUTTEA

How does the company differ from other tea companies?

In your view can the company's approach be mainstreamed and adopted as the global norm in the tea industry?

What challenges might be faced by the global tea industry to adopt FrankAboutTea's approach?

MM4: Feeding the World Sustainably and Responsibly



Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 6: Supermarkets, Farmers and our Broken Value Chains

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Lesson Title and Summary: Supermarkets, Farmers and our Broken Value Chains

Today we buy most of our food from a handful of supermarkets. These multinational companies are tremendously successful and profitable at delivering all kinds of food to us, when and where we want it. They dominate the planet's food supply systems. But behind these supermarkets, there is a global army of smallholder farmers, literally million of farmers and their families, in every corner of the globe. They work so hard often while facing the impacts of climate change head on, to put food and on our tables. Yet, many farmers earn so little that they cannot afford to feed their own families. In this lesson we'll try to understand why the global food system is so broken that farmers can starve and struggle while supermarkets profit and explore whether a better way is possible for the future.

Vocabulary: Value Chains, Farming, Production, Transport, Social Cost, Ecological Cost

In this lesson, the learner will:

- Understand how powerful and important supermarkets are in the food sector
- Explore concept of living income for food workers and farmers
- Apply learning on how to conduct online research
- Consolidate and articulate research findings
- Engage in pair and group work

Materials

- Worksheet 1: The Power of Supermarkets
- Worksheet 2: Living Income for Farmers
- Worksheet 3: How to Solve Farmer Poverty?
- Pens, paper
- Internet access



MM4: Feeding the World Sustainably and Responsibly

L6: Supermarkets, Farmers and our Broken Value Chains



ACTIVITY INSTRUCTIONS

Activity 1: The Power of Supermarkets (20 minutes)

1. Write the question “ What did you eat in the last week?”. Ask the class to name foods they ate in the last week that you cannot buy in a supermarket. (note: to prompt the discussion, if need be highlight (i) speciality food stores (ii) ethnic stores, (iii) butchers, (iv) bakers and (v) fishmongers. If take-away foods are mentioned, ask if these ingredients are available in supermarkets).
2. Divide the class into groups of 4-5 learners.
3. Distribute the Worksheet 1: The Power of Supermarkets. Have the groups carry out research on supermarkets in Ireland and Europe and completing pie charts as instructed.
4. As a class, discuss the pros and cons of supermarkets having so much power in where we get our food.

Activity 2: Farmer Pay & A Living Income (15 minutes)

1. Staying in the same groups.
2. Distribute the Worksheet 2: A Living Income for Farmers. Have the teams use the internet to answer the questions.
3. As a class, discuss the group’s findings.
4. Start a class discussion with a few probing questions:
 - a. Were you surprised how much farmers get paid from the supermarket price?
 - b. Were you able to find information online showing how much farmers earn for other products?
 - c. Do you think there is enough information and consumer awareness on how much farmers earn?

Activity 3: Solutions (15 minutes)

1. Distribute Worksheet 3: “How to Solve Farmer Poverty?” to the teams. Ask the learners, as groups, to research and identify 3 actions each of the four groups can take to improve life for farmers.
2. Discuss as a class.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

MM4: Feeding the World Sustainably and Responsibly

L6: Supermarkets, Farmers and our Broken Value Chains



EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, carry out Activity 1 just for Ireland.

Extension: For a longer lesson, extend Activity 1 by preparing pie charts of supermarkets for ALL countries in the EU.

Option B: Extend Activity 2 by instructing the teams to visit dollar street website and find pictures of small holder farmers and learning about the the items they possess that might constitute a living income (look at the food, education materials, basic household materials, shelter, bedding, sanitation facilities, etc. at their disposal). As a class, discuss the difference in what these families have and what people in Ireland might have.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- Ripe for Change Oxfam Report: <https://policy-practice.oxfam.org/resources/ripe-for-change-ending-human-suffering-in-supermarket-supply-chains-620418/>
- Supermarkets in Ireland: <https://www.checkout.ie/tag/kantar>
- Supermarkets in Ireland: https://www.theconsumergoodsforum.com/wp-content/uploads/2022/07/Global-Summit-2022_Irish-Retail-Scene.pdf
- Smallholder Farmers: <https://www.fao.org/news/story/en/item/1395127/icode/#:~:text=The%20updated%20estimates%20are%20that,world's%20food%20in%20value%20terms.>
- World Living in Poverty: <https://ourworldindata.org/grapher/world-population-in-extreme-poverty-absolute>
- Our World in Data: Poverty: <https://ourworldindata.org/poverty>
- Dollar Street Gapminder: <https://www.gapminder.org/dollar-street>

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Try to identify five foods in your home that are not available at your main supermarket.

Visit a butcher, bread shop, ethnic food store, or health food store in your area and identify 3-5 items per shop that might not be available in a regular supermarket.

Interview a farmer and ask them about the prices they receive from supermarkets and how they think farmer income can be improved on our planet.

LESSON 6 WORKSHEET

2 ZERO HUNGER



THE POWER OF SUPERMARKETS

Supermarkets in Ireland:

<https://www.checkout.ie/tag/kantar> https://www.theconsumergoodsforum.com/wp-content/uploads/2022/07/Global-Summit-2022_Irish-Retail-Scene.pdf

Try to name the top five supermarkets in Ireland?

1. _____
2. _____
3. _____
4. _____
5. _____

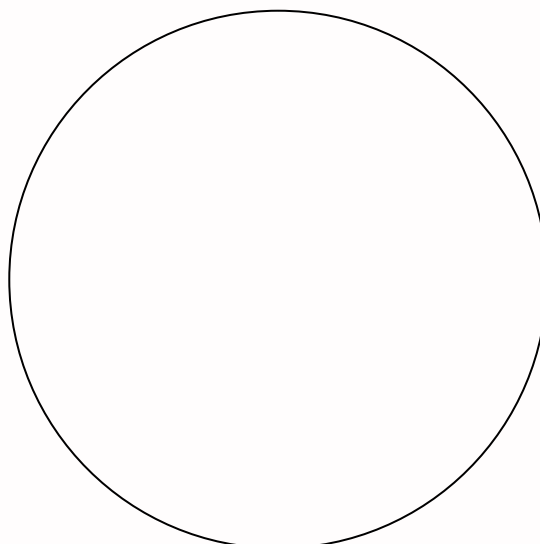
How many stores does each supermarket have across the country?

1. _____
2. _____
3. _____
4. _____
5. _____

What share of the grocery market does each supermarket possess?

1. _____
2. _____
3. _____
4. _____
5. _____

Using the circle below create a pie chart of the Irish retail food market:



LESSON 6 WORKSHEET

2 ZERO HUNGER



THE POWER OF SUPERMARKETS

Repeat the exercise for two other EU countries of your choice.

Country name: _____

Try to name the top five supermarkets in this country?

1. _____
2. _____
3. _____
4. _____
5. _____

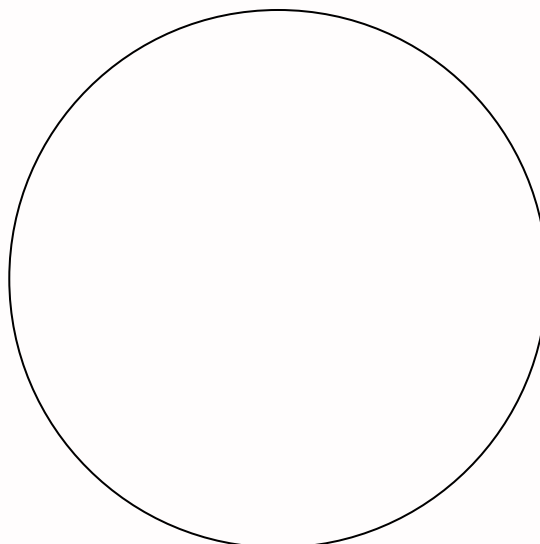
How many stores does each supermarket have across the country?

1. _____
2. _____
3. _____
4. _____
5. _____

What share of the grocery market does each supermarket possess?

1. _____
2. _____
3. _____
4. _____
5. _____

Using the circle below create a pie chart of the country's retail food market:



LESSON 6 WORKSHEET

2 ZERO HUNGER



THE POWER OF SUPERMARKETS

Repeat the exercise for two other EU countries of your choice.

Country name: _____

Try to name the top five supermarkets in this country?

1. _____
2. _____
3. _____
4. _____
5. _____

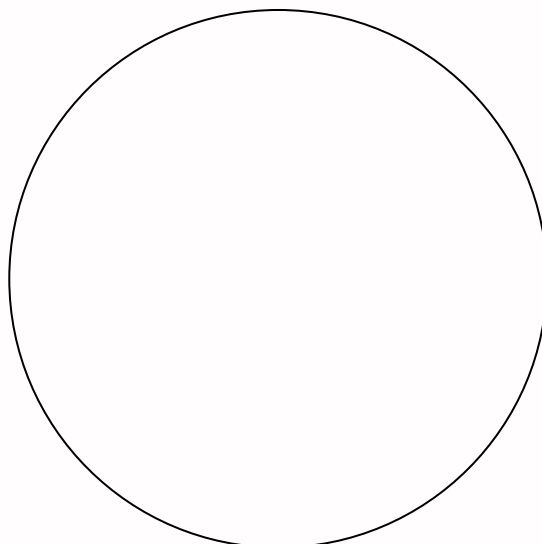
How many stores does each supermarket have across the country?

1. _____
2. _____
3. _____
4. _____
5. _____

What share of the grocery market does each supermarket possess?

1. _____
2. _____
3. _____
4. _____
5. _____

Using the circle below create a pie chart of the country's retail food market:



LESSON 6 WORKSHEET



LIVING INCOME FOR FARMERS

As a group, take five minutes to explore the following four diagrams:

Charts taken from the Oxfam report Ripe for Change:

<https://policy-practice.oxfam.org/resources/ripe-for-change-ending-human-suffering-in-supermarket-supply-chains-620418/>

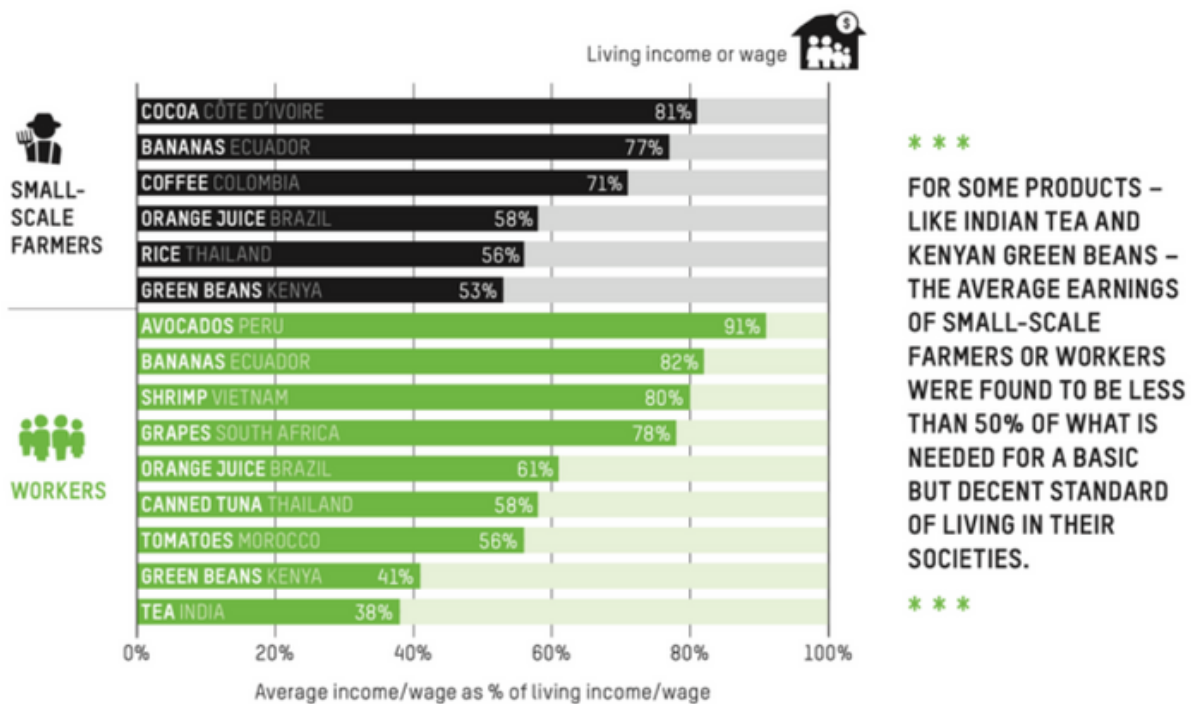
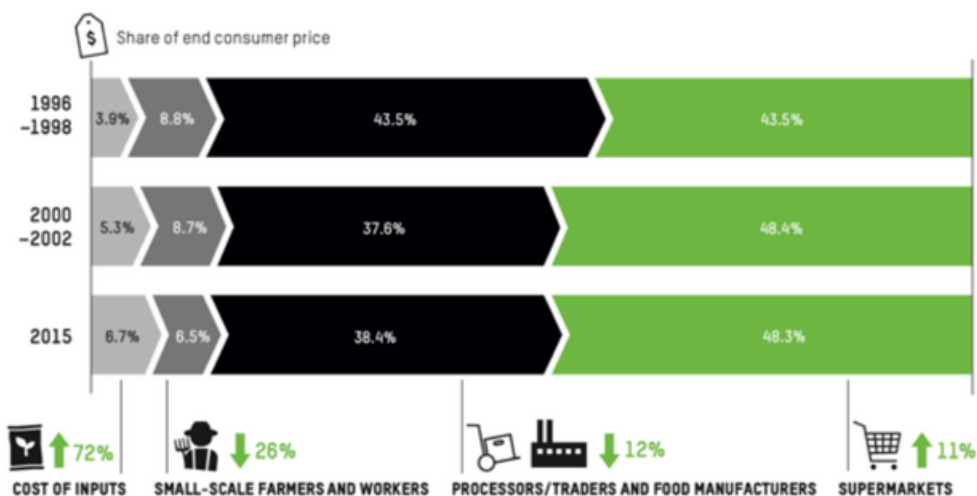


FIGURE 9: FOR CERTAIN PRODUCTS, THE INEQUALITY BETWEEN SUPERMARKETS AND THE PEOPLE PRODUCING THE FOOD THEY SELL IS PARTICULARLY STARK



Weighted average of basket of the following products: avocados (Peru), bananas (Ecuador), canned tuna (Thailand), cocoa (Côte d'Ivoire), coffee (Colombia), grapes (South Africa), green beans (Kenya), orange juice (Brazil), rice (Thailand), shrimp (Vietnam), tea (India), tomatoes (Morocco)

Source: C. Alliot et al. (Forthcoming). Distribution of Value and Power in Food Value Chains. Oxfam-commissioned research undertaken by BASIC.

LESSON 6 WORKSHEET



LIVING INCOME FOR FARMERS

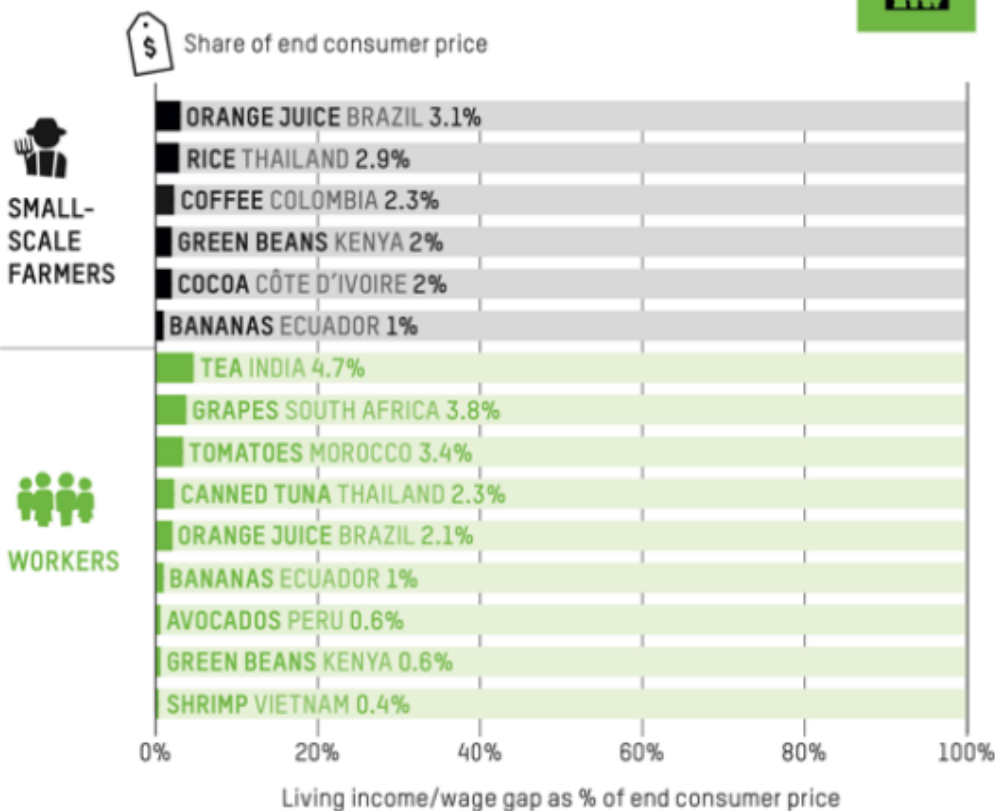
As a group, take five minutes to explore the following four diagrams:

Charts taken from the Oxfam report Ripe for Change:

<https://policy-practice.oxfam.org/resources/ripe-for-change-ending-human-suffering-in-supermarket-supply-chains-620418/>

FIGURE 10: FOR MANY PRODUCTS, THE INVESTMENT NEEDED TO CLOSE THE GAP BETWEEN PREVAILING AND LIVING INCOMES OR WAGES IS MARGINAL COMPARED TO THE END CONSUMER PRICE

Cost of closing living wage/income gap



Note: Data as of 2015. Some commodities appear twice, as they are both produced by small-scale farmers and by waged workers on large-scale plantations, in processing facilities or on fishing vessels.

Source: C. Alliot et al. [Forthcoming]. Distribution of Value and Power in Food Value Chains. Oxfam-commissioned research undertaken by BASIC.

LESSON 6 WORKSHEET

2 ZERO HUNGER



LIVING INCOME FOR FARMERS

As a group, take five minutes to explore the following four diagrams:

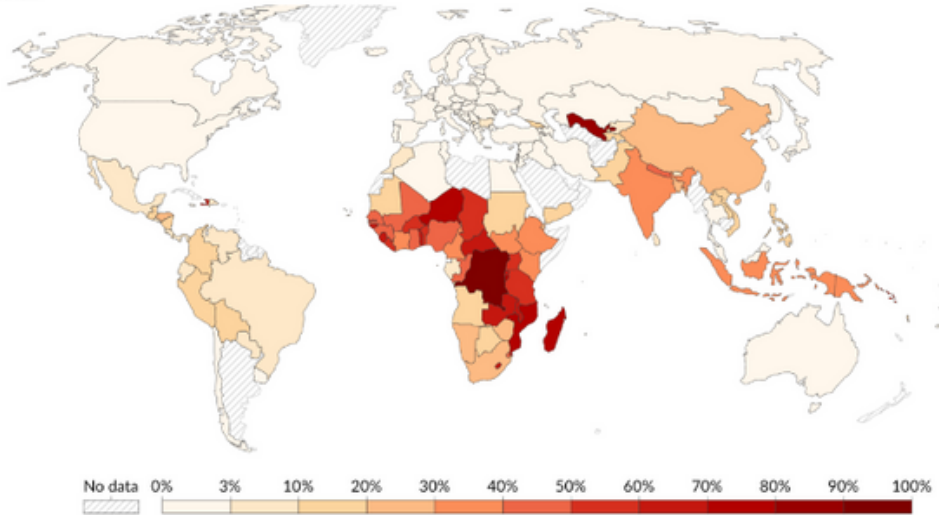
Sourced from World in data website: <https://ourworldindata.org/poverty>

Share of population living in extreme poverty, 2006

Extreme poverty is defined as living below the International Poverty Line of \$2.15 per day. This data is adjusted for inflation and for differences in the cost of living between countries.

Our World in Data

World



Source: World Bank Poverty and Inequality Platform (2022)

Note: This data is expressed in international-\$ at 2017 prices. Depending on the country and year, it relates to income measured after taxes and benefits, or consumption, per capita.

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▶ 1967

2021

Discuss your thoughts and impressions on the four charts above and the information they convey. Record your comments and observations below:

Search the internet to understand what a living income for farmers means. What various components might this include? In your own words, provide a definition for a living income in the box below.

LESSON 6 WORKSHEET



HOW TO SOLVE FARMER POVERTY?

As a team discuss, research, and identify 3 ways these 4 different groups can help improve wages and prosperity for farmers:

Consumers

Governments

Farmers

Supermarkets, Brands and Companies

MM4: Feeding the World Sustainably and Responsibly



Micro-Module 4: Feeding the World Sustainably and Responsibly

Experimentation and Exploration

Lesson 7: Value Chain Exercise

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Lesson Title and Summary: Value Chain Exercise

In this lesson we'll take a deep dive into the value chains behind some of the everyday foods we all enjoy. We'll plot the journey through the value chains these foods make, identifying the human and environmental problems that exist within these food systems. We'll attempt to discover what innovations and solutions can help change the systems behind our foods to do right by customers, farmers, workers, company owners and our planet.

Vocabulary: Value Chains, Farming, Harvesting, Transport, Food Production, Packaging, Consumption, Food Waste, Social Cost, Ecological Cost, True Cost

In this lesson, the learner will:

- Define and describe the concept of a value chain
- Identify and explain the various stages of a food's value chain
- Recognize the social and ecological challenges associated with each stage of the value chain
- Analyse the interconnectedness between different stages of the value chain and its impact on society and the environment
- Gain empathy for the challenges faced by farmers and producers
- Build up presentation and communication skills
- Work in groups and learn to collaborate on research and analysis

Materials

- Worksheet 1: Value Chain Six Stages, People + Planet
- Worksheet: Additional Resources
- Pens, paper
- Internet access



MM4: Feeding the World Sustainably and Responsibly

L7: Value Chain Exercise



ACTIVITY INSTRUCTIONS

Activity 1: Value Chain Exercise (50 mins)

1. Divide the class up into small groups/teams of 4-5 learners
2. Distribute Worksheet 1: Value Chain Six Stages, People + Planet and allocate each group with a different food.
3. Use the Worksheet: Additional Resources to support researching their allocated food
4. As per the worksheet, teams should be instructed to define the six stages of their food's value chain and to describe the process for each stage in the chain (actors and activities involved in the stage, inputs, outcomes)
5. Groups to be instructed to identify the social and environmental problems that are created at each stage, whether for the local or global community and whether for the local environment or global climate.
6. Groups to be instructed to identify 2 solutions that could be applied to remedy social and environmental problems at each stage.
7. Class Discussion: Teams should be asked to discuss who they think should pay for the solutions and why (the customer? farmers? corporates? government?)

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

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EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, in activity 1, reduce the time by removing step 6 in the value chain.

Extension: For a longer lesson, extend activity 1 by expanding step 6 in the value chain and splitting it into three components – sales, consumption, and waste/afterlife. Encourage students to research the social and environmental challenges of each of these three steps and to explore solutions and workarounds.

Option B: Allow more time for research. You could also allow additional lessons for learners to develop their research into a podcast, film, Pecha Kucha presentation, or poster presentation (See Media Communications Module).

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

See additional resources worksheet

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Visit your local supermarket and interview 6 supermarket customers outside the store (mix of staff and customers). Question them to see what, if any, issues they imagine may exist at each of the six stages of food value chains.

See also Media Communications 4: Creating a Podcast. Learners can use the resources to develop their interview questions and then create a short podcast on their findings either independently or as a group

