



FOOD & FARMING
DISCOVERY TRUST

CONSCIOUS CONSUMERS



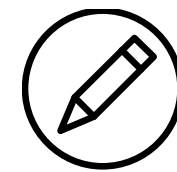
Food Miles



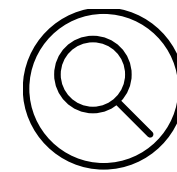
Introduction

Use this presentation to work your way through the topic workbook and activities.

Different activities will have different needs, you'll find icons according to the action you need to take:



Where there is an activity for you to do



Some activities that you need to complete will require another resource



When you need to check the workbook

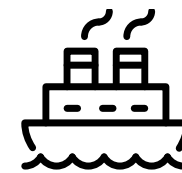
In this session you will:



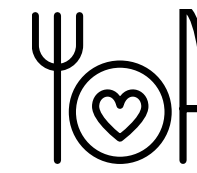
Learn more
about food miles.



Consider choices
consumers can make
to reduce food miles.



Understand how
food is
transported.



Explore some case
studies of food miles
for different meals.

What are Food Miles?

Food miles is the term used to describe the distance food is transported from the place it is produced to the end consumer (us).

The effect of food miles is measured by the amount of CO₂ emissions produced; this is usually measured per tonne of food per kilometre.



Prof. Andrew Fearne

Professor of Value Chain Management at University of East Anglia

→ Introduction to Food Miles

<https://www.youtube.com/watch?v=uVwDmBKHL6E>



Activity One: What are our food miles?

To explore our own food miles we are going to look at the origin of the top 5 ingredients of three popular dishes and work out the food miles for each dish.

The dishes we will be looking at are:



**Roast
Dinner**

- Beef
- Potato
- Carrot
- Onion
- Broccoli



**English
Breakfast**

- Eggs (free range)
- Tomato
- Baked beans
- Bacon
- Button
Mushrooms



**Chicken
Burrito**

- Chicken (free range)
- Rice
- Avocado
- Lime
- Peppers

Estimated Food Miles

Use activity sheet one to complete this exercise

1.
Choose a dish and its ingredients

Roast Dinner
↓

2.
Where do you think the ingredient is produced?
- Take a guess.



3.
How far has it travelled?
Figure out the distance from the origin.



Ingredient	Origin	Miles
Beef		
Potato		
Carrot		
Onion		
Broccoli		
		Total

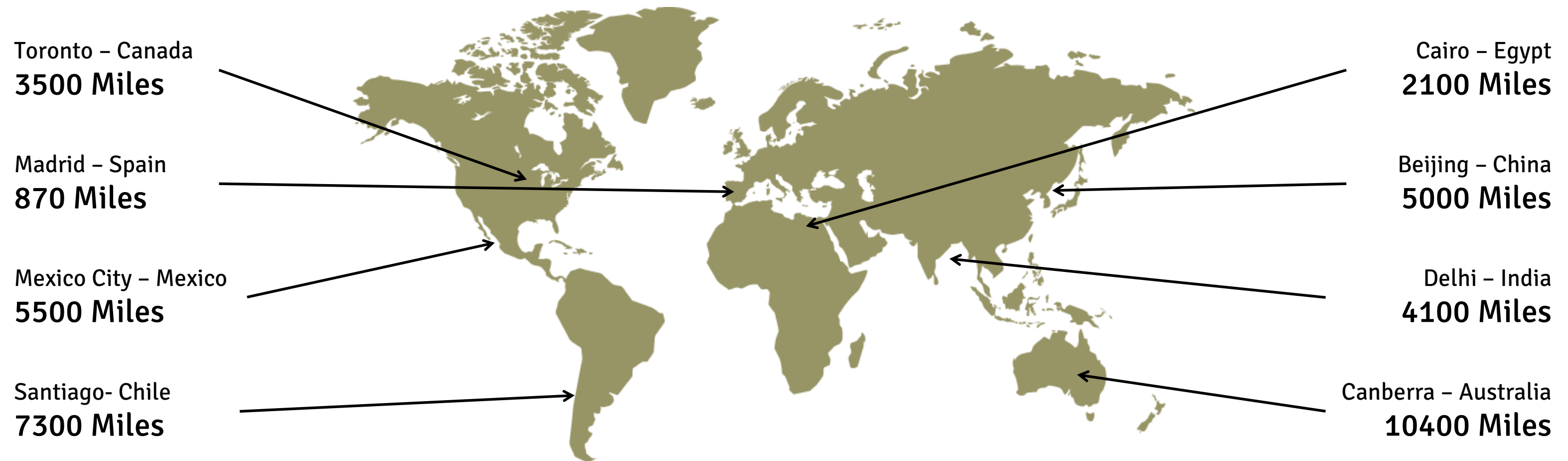
4.
What's the total number of miles your ingredients have travelled?

5.
Repeat for all three dishes

How Many Food Miles?

Try this resource:
→ foodmiles.com/results.cfm

Example distances between some major cities and Norwich





Hands on!

Use Activity sheet one in your workbook to complete the activity.

Actual Meal Food Miles

Now let's look at what the actual food miles of our dishes are.

The origin of each ingredient is reported according to a leading supermarket during the winter of 2019.

Roast Dinner



Ingredient	Origin	Miles
Beef	Ireland	320
Potato	Cornwall	300
Carrot	France	260
Onion	Netherlands	150
Broccoli	Spain	879
Total		1,900

Low food miles due to the ingredients being produced in the UK and Europe.

English Breakfast



Ingredient	Origin	Miles
Eggs	Gloucestershire	160
Tomato	Morocco	1500
Baked Beans	Idaho, USA	4750
Bacon	Denmark	400
Mushrooms	Netherlands	150
Total		6,960

Baked beans are a **large contributor** of food miles in this meal as the haricot beans used to make the baked beans are grown in North America, in this case Idaho.

Chicken Burrito



Ingredient	Origin	Miles
Chicken	Hertfordshire	80
Rice	India	4100
Avocado	Chile	7300
Lime	Mexico	5500
Peppers	Israel	2200
Total		18,180

Lime and avocados are exotic ingredients that can not be grown in the UK so have to be imported. This has led to the **high food miles** of this meal.



Estimate vs Actual Food Miles

What is the difference between your estimated food miles and the actual food miles?

Did you find anything surprising?

The total actual food miles for all three meals: **28,040**



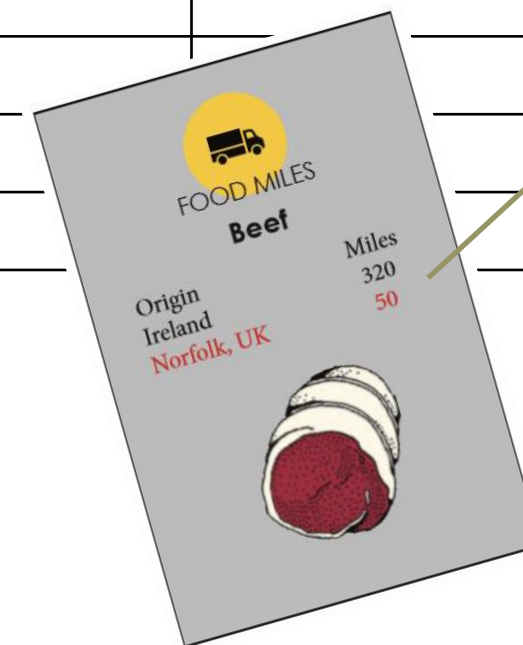
Activity two: Cutting Down on Food Miles – Buying Locally

There are many benefits to buying locally, it helps your local economy, the produce is often fresher, less packaging is involved and it can cut down your food miles!

Going back to the dishes we bought earlier, can we buy these ingredients more locally to cut our food miles?

Use the ingredient cards to see if you can source the same ingredients, more locally.

Ingredient	Origin	Miles
Beef	Norfolk	50
Potato		
Carrot		
Onion		
Broccoli		
Total		



***Note:**
50 miles is allocated to produce from Norfolk to cover the miles taken to transport the ingredient from the producer to the supermarket



You can now complete activity 2 using the ingredient cards

The results of buying locally

Roast Dinner

Ingredient	Origin	Miles
Beef	Norfolk	50
Potato	Norfolk	50
Carrot	Norfolk	50
Onion	Norfolk	50
Broccoli	Norfolk	50
Total		250

English Breakfast

Ingredient	Origin	Miles
Eggs (free range)	Norfolk	50
Tomato	Spain	870
Baked Beans	Michigan, USA	3700
Bacon	Norfolk	50
Button Mushrooms	Netherlands	150
Total		4,820

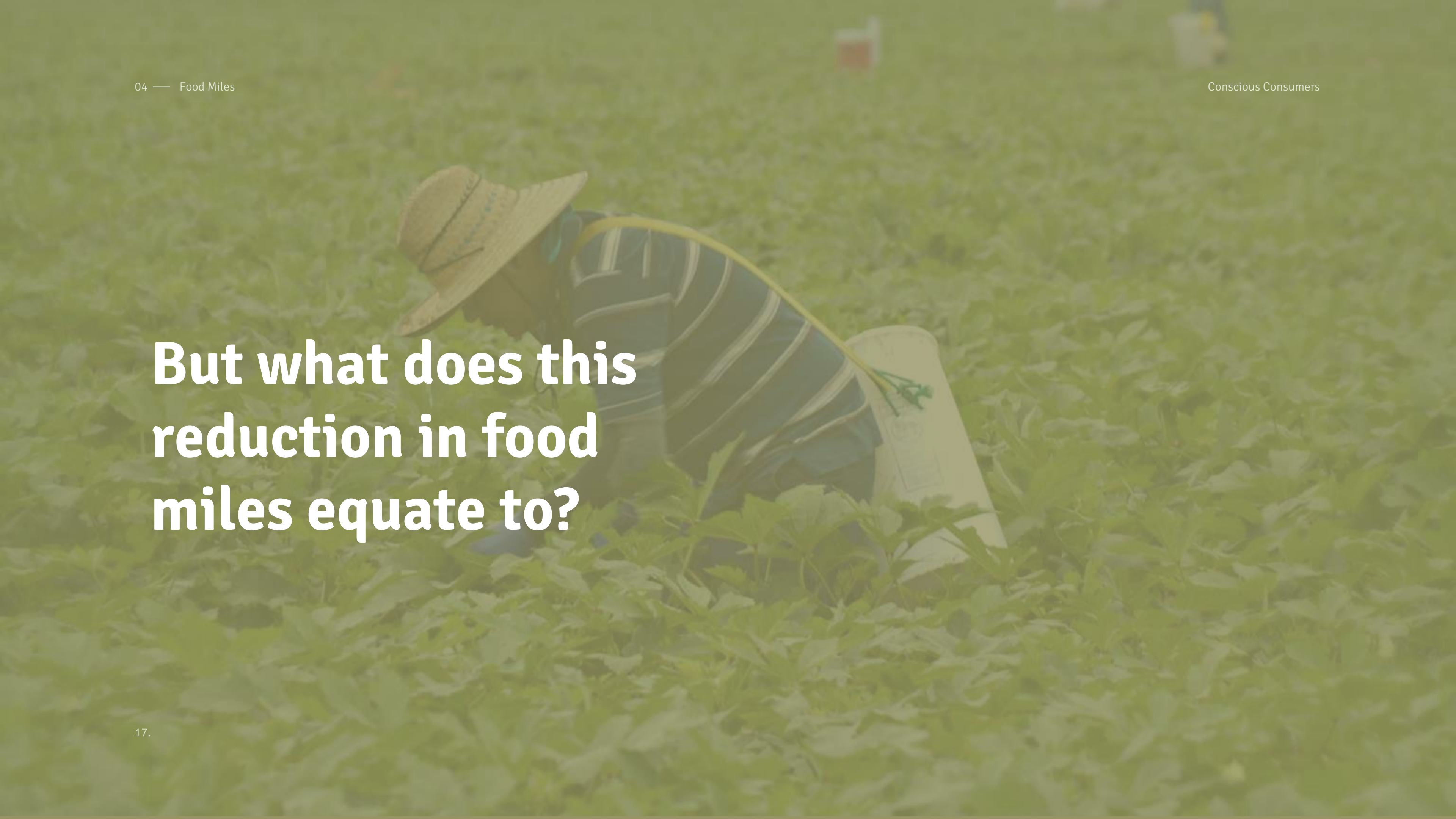
Chicken Burrito

Ingredient	Origin	Miles
Chicken (free range)	Hertfordshire	80
Rice	India	4100
Avocado	Dominican Republic	4420
Lime	Spain	150
Peppers	Netherlands	150
Total		9,620

Combined food miles:
(from activity 1) **28,040**

Combined food miles:
(from activity 2) **14,690**

Total miles saved: **13,350**



**But what does this
reduction in food
miles equate to?**

How is our food transported? *



Road Transport

60%



Air Transport

20%



Sea Transport

10%



Rail Transport

10%

*Of all food globally

CO₂ Emissions



Sea Transport

10%

Least CO₂ emitting form of food transport. 30 gr. per tonne of food per kilometre



Road Transport

60%

More emissions are created by the drive to the supermarket to buy air freighted food than created by the air freighting



Rail Transport

10%



Air Transport

20%

Most CO₂ emitting form of food transport 1500 gr. per tonne of food per kilometre

www.alimentarium.org/en






Activity 3: Let's calculate

In activities 1 and 2 we looked at a selection of meals and explored how we could reduce our food miles by buying more locally produced food. Now let's look at another example in more detail.

Around only 20% of all tomatoes consumed in the UK are grown here. The remaining percentage are imported from countries including South Africa and Morocco.

Calculating CO₂ emittance

(This is worked out in Kilometers instead of Miles)




Food Origin	Lancashire	Morocco	South Africa
We are moving 1 tonne of tomatoes by:			
Which has a CO ₂ footprint of:	120gm/tonne/km	30gm/tonne/km	1500gm/tonne/km
The distance being travelled is:	300km	2166km	9513km
Total CO ₂ emittance for this journey is:	?	?	?

Work out the total CO₂ emittance for each journey.



Calculating CO² emittance

(This is worked out in Kilometers instead of Miles)

Food Origin	Lancashire	Morocco	South Africa
We are moving 1 tonne of tomatoes by:			
Which has a CO ₂ footprint of:	120gm/tonne/km	30gm/tonne/km	1500gm/tonne/km
The distance being travelled is:	300km	2166km	9513km
Total CO ₂ emittance for this journey is:	36,000gm	64,980gm	14,269,500gm



Buying Locally

By buying the British grown tomatoes instead of the tomatoes imported from Morocco we could reduce our CO₂ emittance by 28,980 gm per tonne per km.

And by buying British grown tomatoes instead of tomatoes imported from South Africa, we could reduce our CO₂ emittance by 14,233,500 gm per tonne per km.

Minimum CO₂ saving

28,980gm

Per tonne.



Maximum CO₂ saving

14,233,500gm

Per tonne.

Buying Locally

That is the equivalent saving in weight of:



Minimum

14

Full 2L drinks bottles (2kg)



Maximum

7,116

Full 2L drinks bottles (2kg)

But is it a clear-cut story?

Other factors to consider

Out of Season Production vs Importing

Case Study: Tomatoes

Tomatoes grown in the UK only produce fruit between June and November without the use of artificial heat.

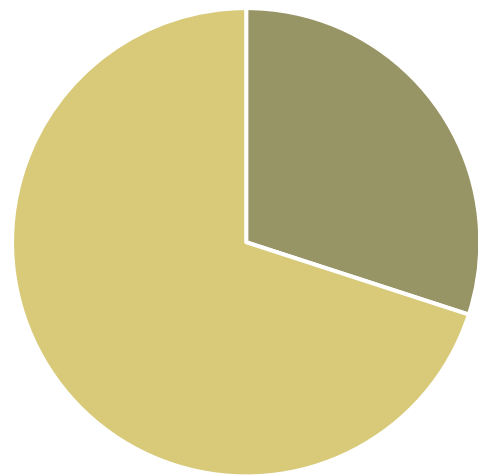
It is estimated that emissions due to growing tomatoes commercially out of season in the UK and Northern Europe more widely, is between 2,000,000 and 4,000,000 gm CO₂ per tonne.

This is due almost entirely to the need to heat the greenhouses.

Meanwhile tomatoes from Spain and Morocco are available all year round, and these are grown using the sun's heat, but are transported to the UK by road and/or boat.

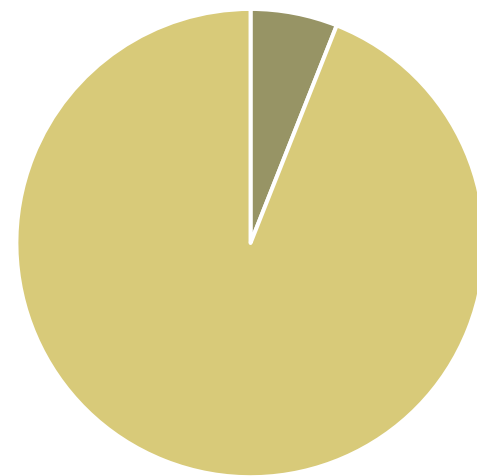
So if you look back to the calculations from activity 3, you can see that even though the emissions from transporting tomatoes from Morocco was higher than the ones from Lancashire, if tomatoes are out of season in the UK, carbon emissions are lower by buying produce from Morocco than growing in a heated greenhouse in the UK.

Food Miles in Context



■ Food Sector ■ Other

The food sector accounts for up to **30% of all global green house gas (GHG) emissions.**



■ Transport ■ Other

Transport accounts for **6% of all GHG emissions** produced within the food sector.

Carbon Emissions



Transport

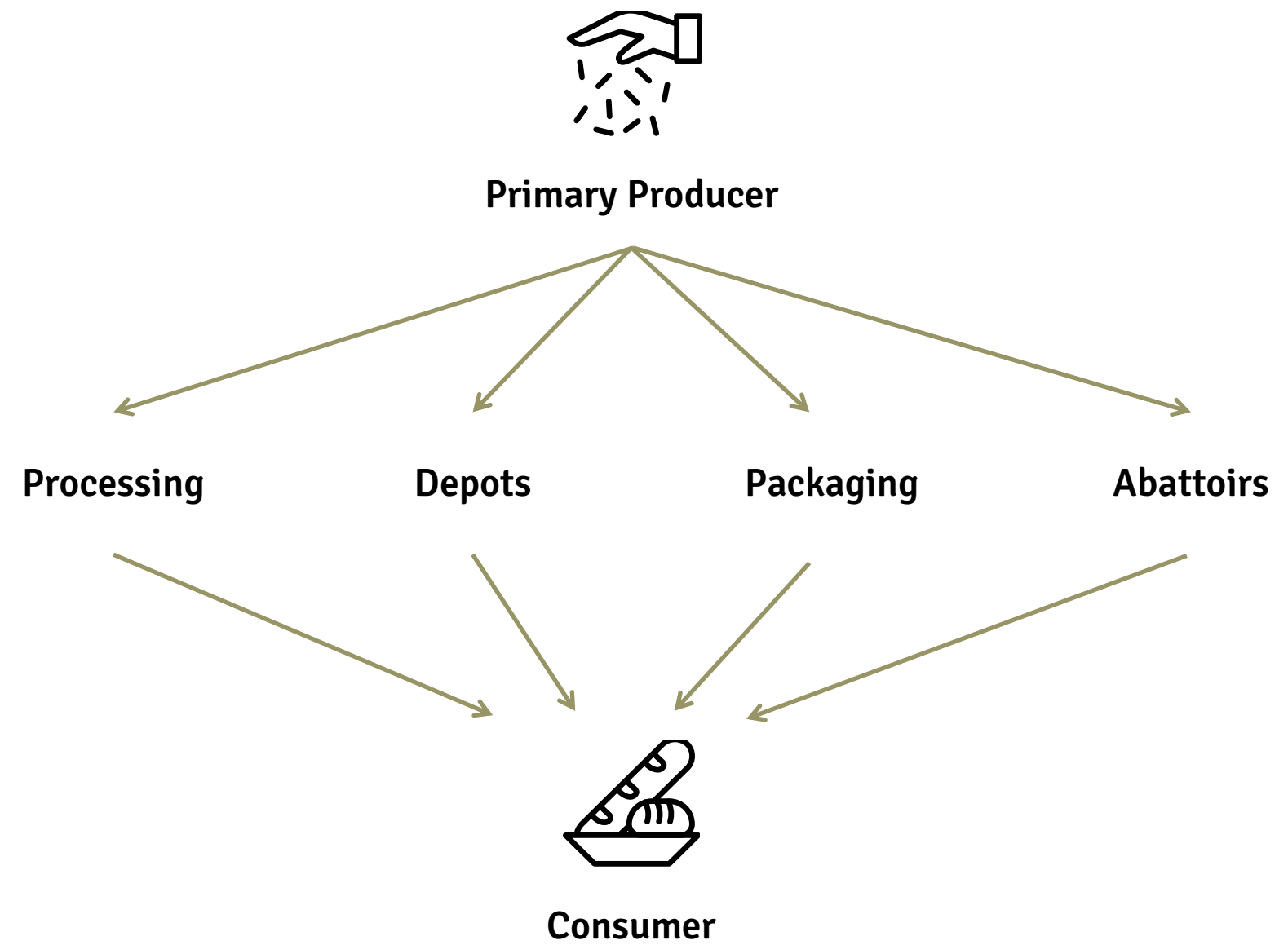
vs

Kitchen Appliances

Kitchen appliances produce **7 times** more carbon emissions than transport within the food sector.

What other Miles are Involved?

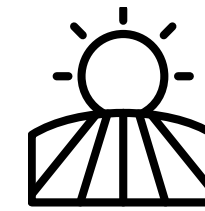
Can you think of any additional miles?



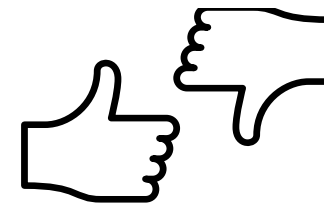
Other Factors Affecting What We Buy



Pricing



Seasonal Restrictions
and Availability



Ethics



Convenience
and choice

Science Communication Challenge

We hope you are feeling inspired to continue your journey through Conscious Consumerism.

See page 11 of the workbook for more details

If so have a go at one of the following two challenges:

Design communication materials

to dispel common myths and help people gain a better understanding of the topic. This could be in the form of a blog, a poster, leaflets or a podcast for example.

Develop a campaign

to collect real data and report your findings or to encourage people or companies to change behaviours. For example, you could collect data from your school canteen to measure the food miles of the ingredients used, or you could create recipe cards to feed your gut microbes.

Let us know what you produce - tag us on social media via @ffdt_uk use the hashtag: #ConsciousConsumerWorkshops

Thank you

You can find this and other materials [here](https://ffdt.co.uk/learn):

<https://ffdt.co.uk/learn>

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