



Lloyd's Register Foundation
Institute for the Public
Understanding of Risk



CARBON CRUNCH: REDUCING OUR EMISSIONS ONE PLATE AT A TIME

**FIND OUT HOW OUR FOOD CHOICES
AFFECT CARBON FOOTPRINT**

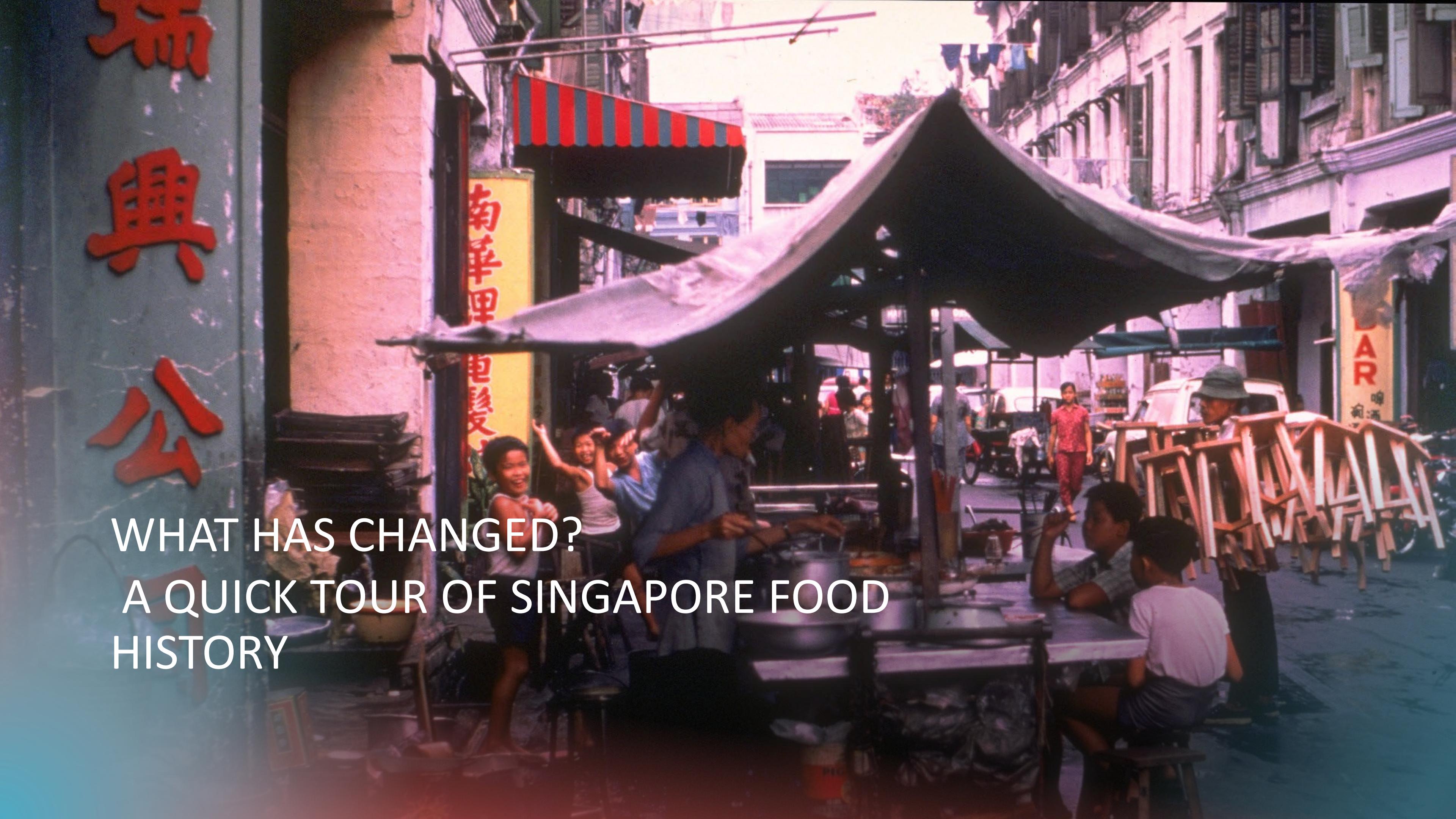
Join us in this interactive session as we look at how our choices, combined with broader systemic issues, have made food more carbon intensive, and what actions we can adopt to make more sustainable decisions.

**TUESDAY
17TH SEPTEMBER
9.30AM - 11.30AM**

SCHOOL OF DESIGN AND ENVIRONMENT
LEVEL 4 BARREL ROOM 04-10
4 ARCHITECTURE DRIVE SINGAPORE, 117566

Programme

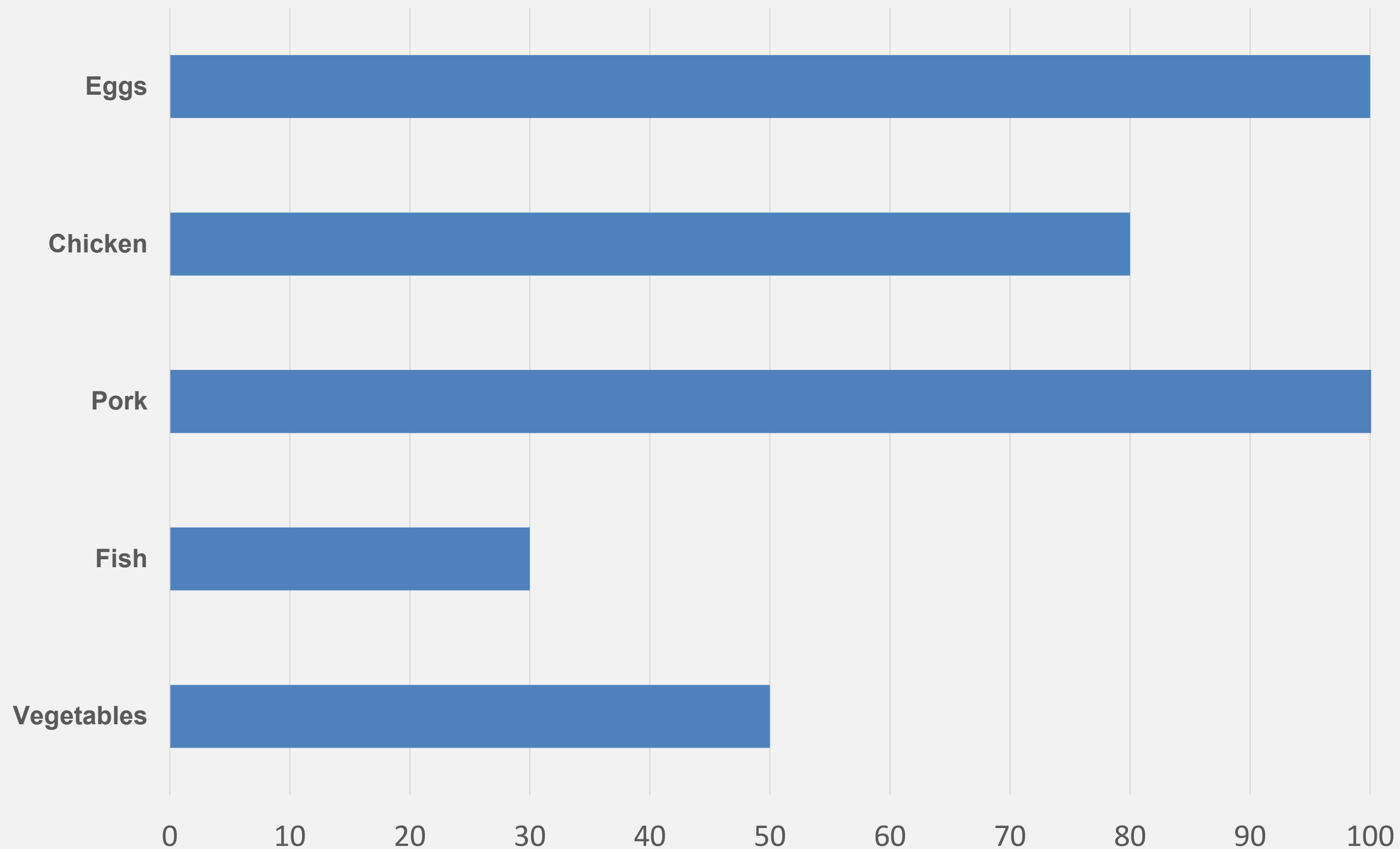
9.30 - 9.35	Introduction	Dr Olivia Jensen, Deputy Director, LRF Institute for the Public Understanding of Risk (IPUR)
9.35 - 10.10	The Carbon Emissions Content of Your Food Choices: Did an NUS Classroom Intervention Make a Difference?	Associate Prof Alberto Salvo, Department of Economics, Faculty of Arts and Social Sciences, NUS
10.10 - 10.40	Activity 1: 50 Years On, What Has Changed? Historical Comparison of Singapore's Popular Dishes	Dr Olivia Jensen, Deputy Director, IPUR
10.40 - 11.25	Activity 2: What is the Carbon Intensity Behind Popular Food Items?	Jared Ng, Communications Manager, IPUR
11.25 - 11.30	Closing	Dr Olivia Jensen, Deputy Director, IPUR



WHAT HAS CHANGED?
A QUICK TOUR OF SINGAPORE FOOD
HISTORY

Singapore relied on home - grown food sources in the 1970s

Home grown sources of food (1974 - 1977)



- In 1977, intensive farming ensured self - sufficiency in fresh pigs and poultry, which formed a major component of local diets.
- The production of pork, chicken, and eggs had reached 104%, 80% and 100% respectively.
- 50% of Singapore's vegetables and 30% of fish was sourced locally.



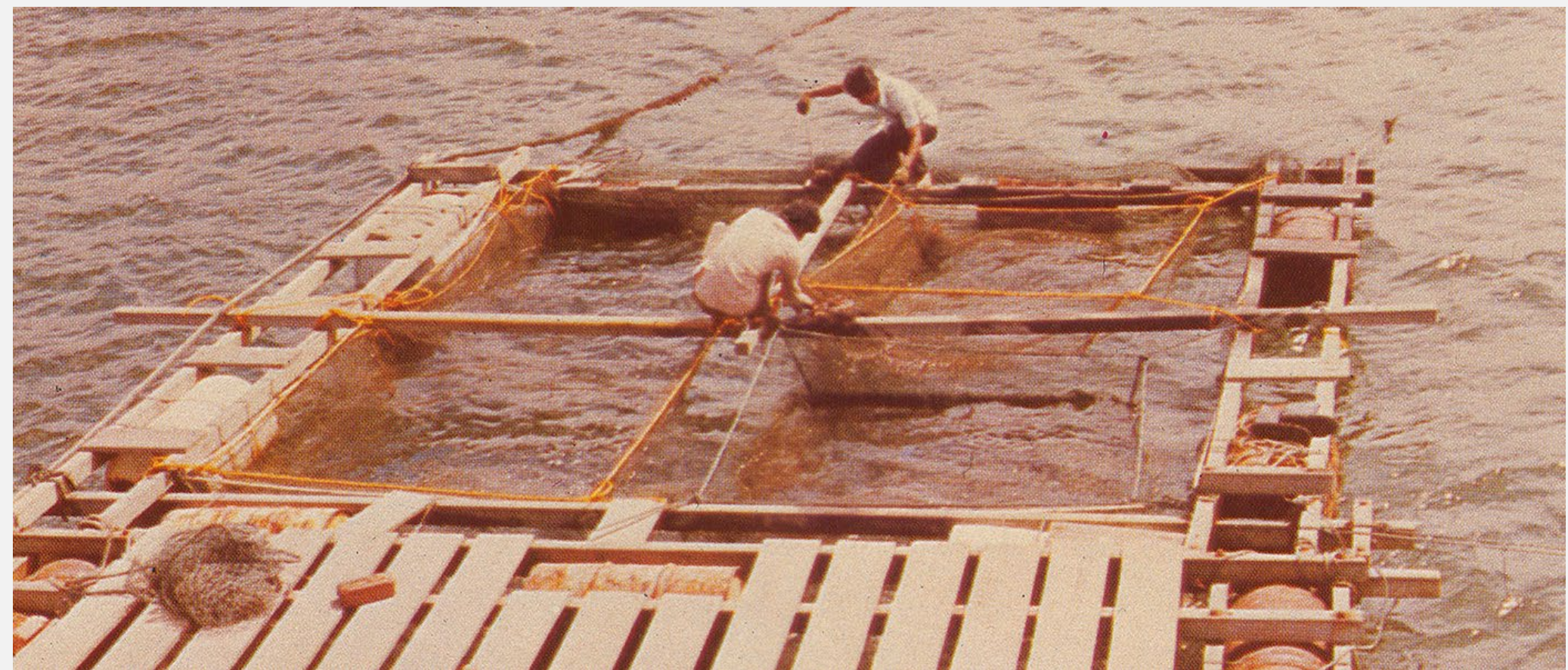
A pig farm in the 1970s.



Egg farming in the 1970s.



Vegetable farm in the 1970s.



Fish farming in the 1970s. Credits: SFA

Imports in the 1930s...



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All Dressed up for the Occasion!

THIS year you can buy the famous "Pineapple" Ham in a bright, new holiday wrap. See it below. What a wonderful Christmas present! The gift problem solved in practical fashion! "Pineapple" Hams boast a flavour and tenderness that has been famous for half a century. Give this novel gift—truly a gift of "good taste," in full colour.

Inside the wrap of every "Pineapple" Ham packed in this appealing manner is a beautiful recipe book. Order early from your grocer or smallgoodsman.

Wholesale from
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(Division of United Provisions Ltd.),
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Give a "PINEAPPLE" HAM this Xmas in the Handsome New Wrapper

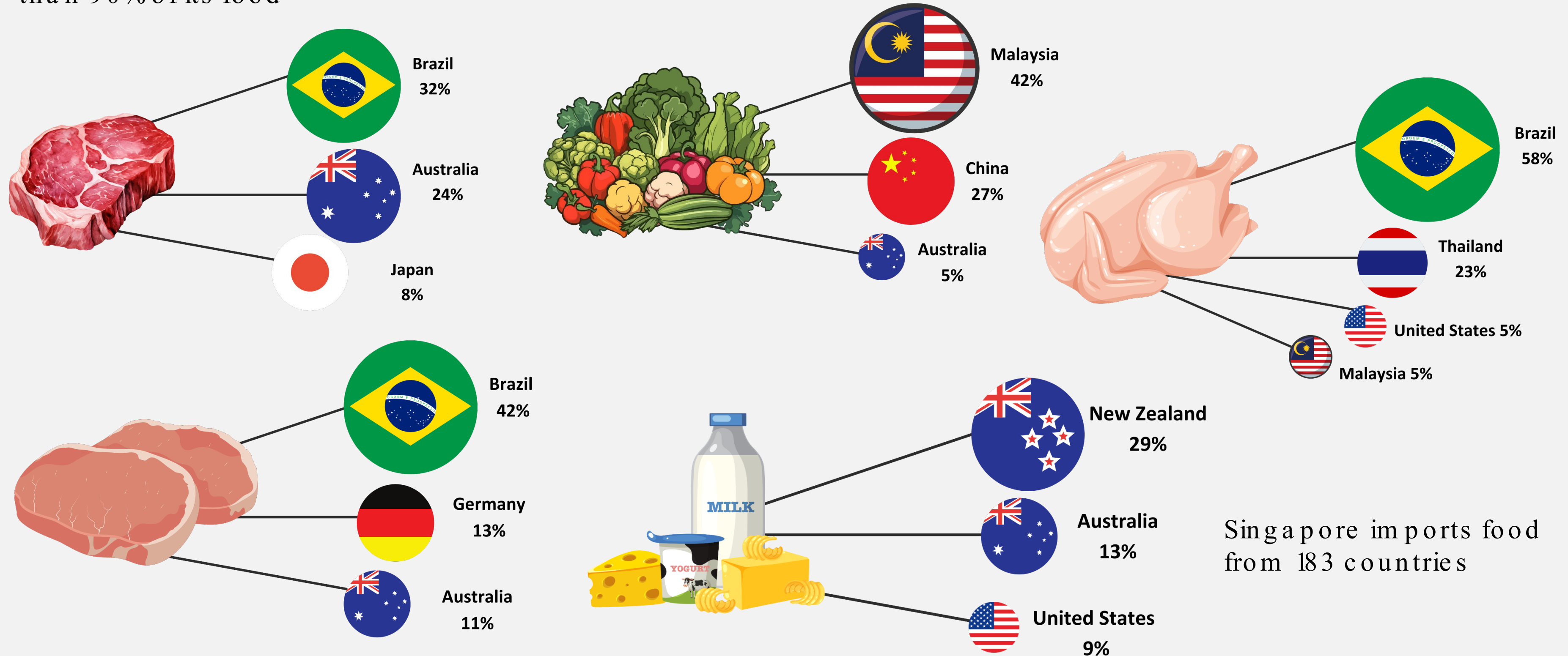


This Book FREE with every Ham

Printed and published for Brisbane Courier Pty., Ltd., by William James Buzacott, of 657 Sandgate Road, Clayfield, Brisbane, at the offices of "The Queenslander," corner William and Margaret Streets, Brisbane.

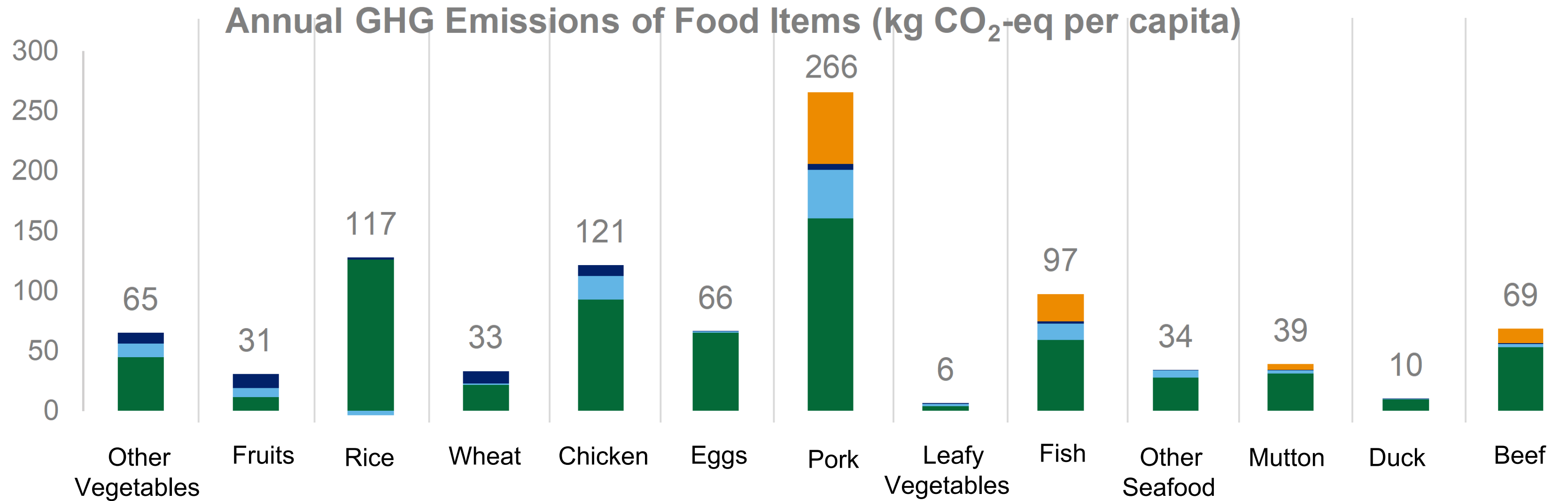
Fast forward to the 2020s ...

Singapore imports more than 90% of its food

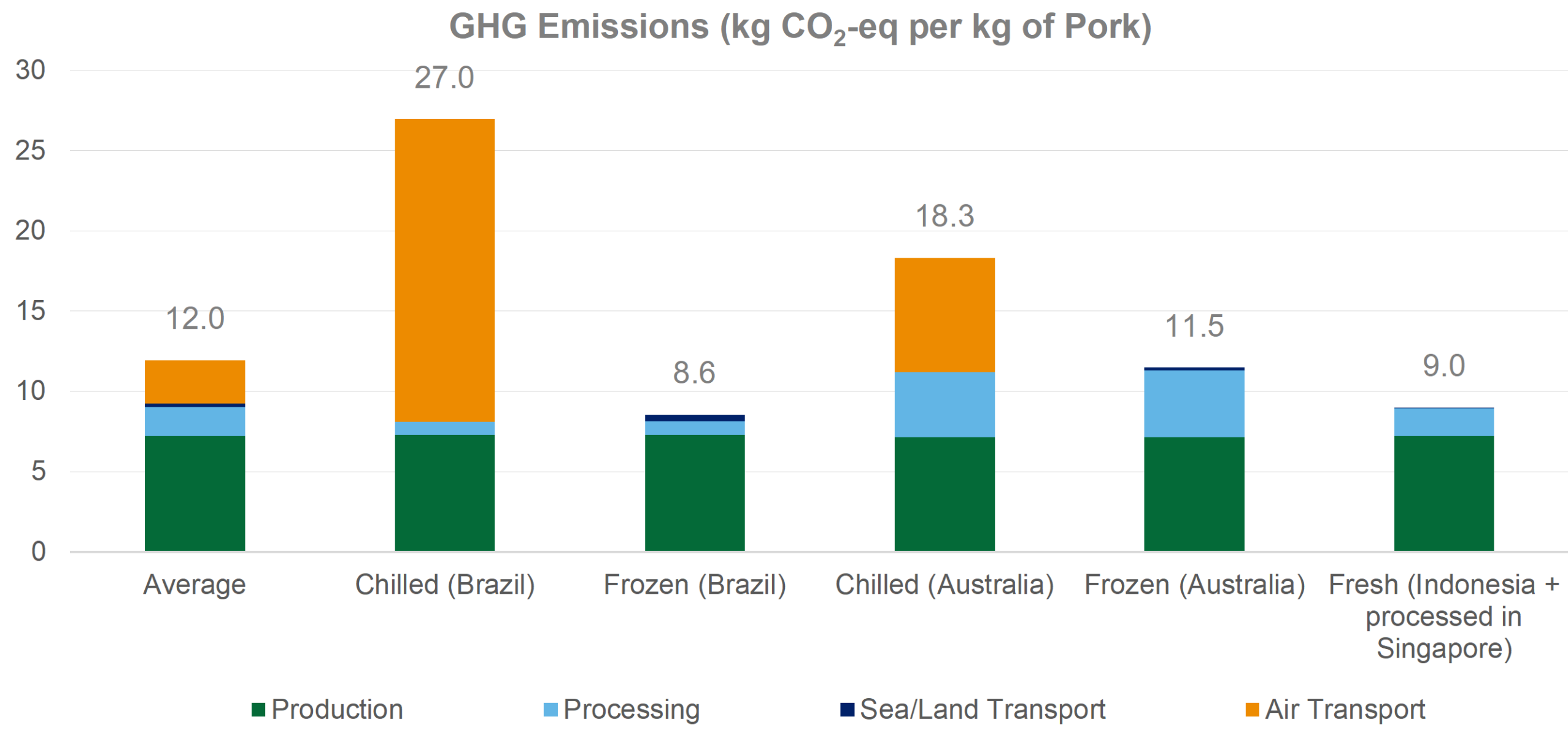


Singapore imports food from 183 countries

Where food comes from and how it is transported also contribute to emissions



Air transport has a massive impact

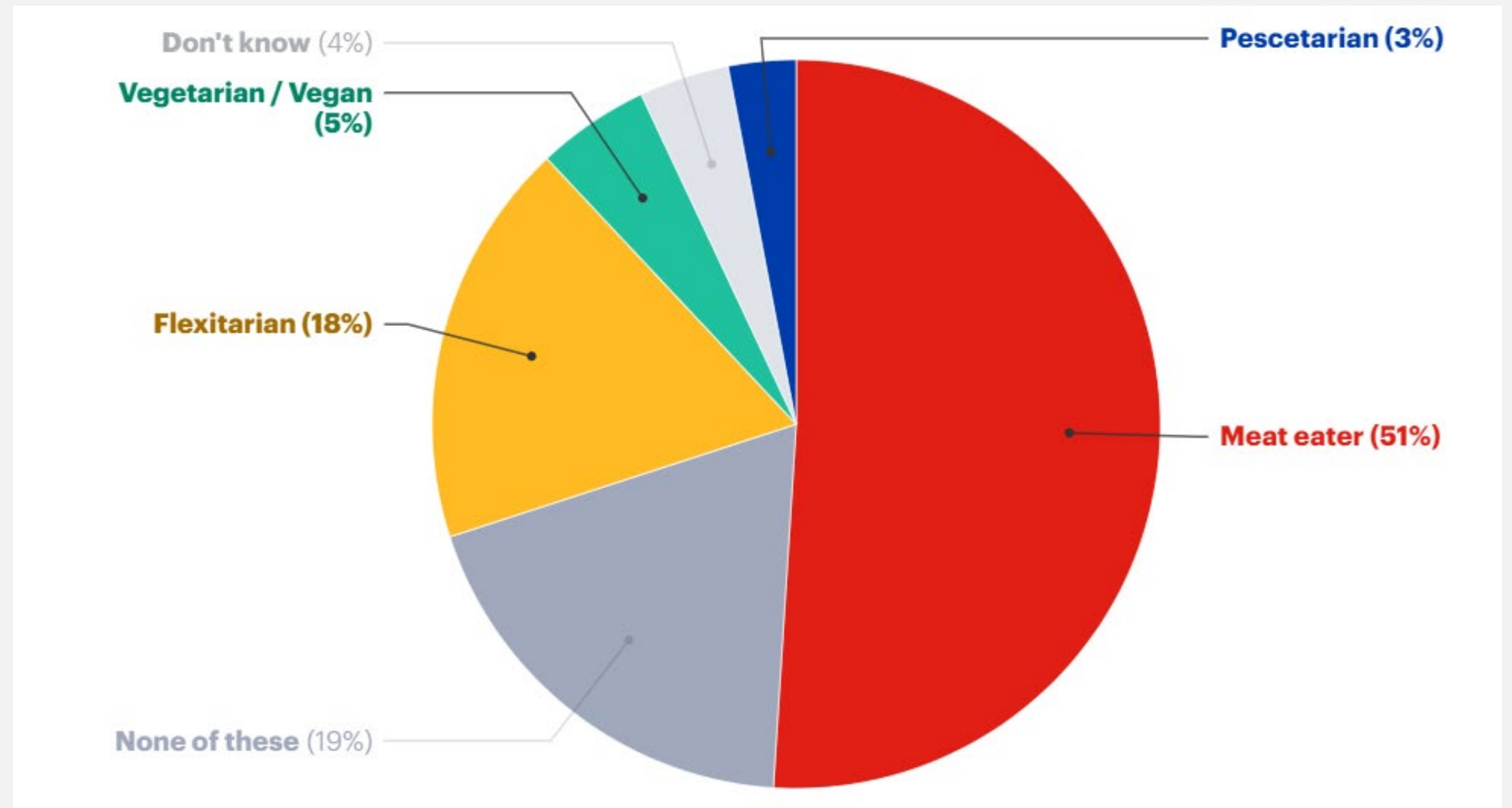


What has
happened to
diets?



Popularity of various diets in Singapore (2023)

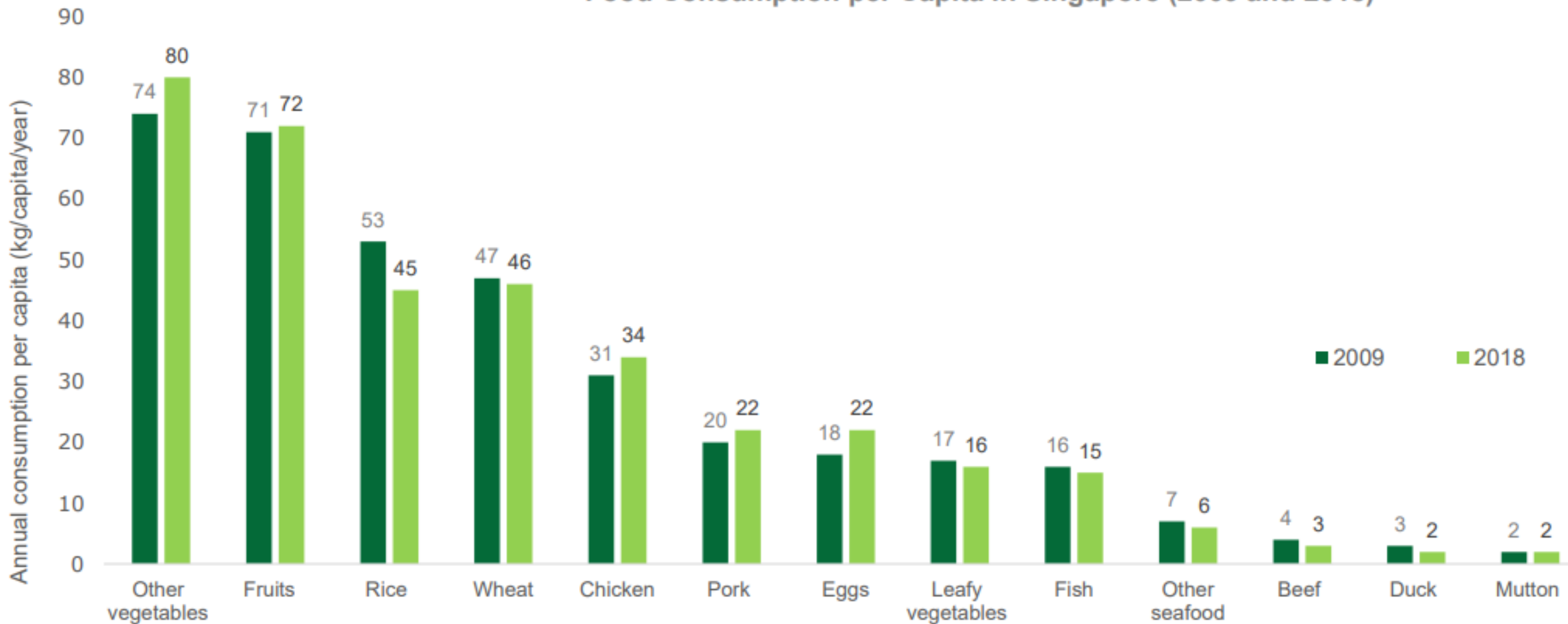
- In the 1970s, Singaporeans primarily consumed home - cooked meals and local foods. Rice was a staple, accompanied by dishes like noodles, vegetables, fish, pork, and chicken.
- Today, Singaporeans enjoy a highly globalised diet, influenced by diverse culinary cultures. While traditional dishes are still a core part of the diet, there's a greater emphasis on international cuisine, including Western, Korean, Japanese, and fusion dishes.



YouGov Surveys: October 2023

Increasing Levels of Food Consumption in Singapore

Food Consumption per Capita in Singapore (2009 and 2018) ⁶



Breakdown of key food items

Other vegetables:

Tomato, cabbage, carrot, beansprout, onion, potato

Fruits:

Banana, watermelon, papaya, pineapple, orange

Leafy vegetables:

Spinach, lettuce, Chinese cabbage

Fish:

Catfish, salmon, mackerel (includes aquaculture and capture fishing)

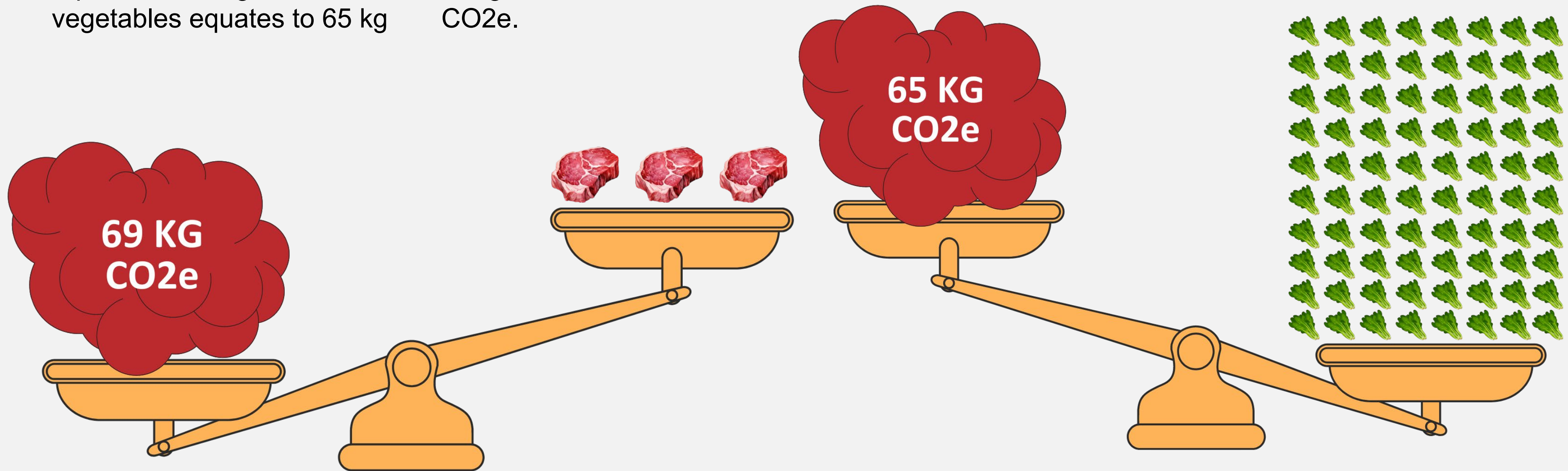
Other seafood:

Shrimp, crab, squid

Note: Food items in key food items groups are based on top consumed items by weight.

Impact of Our Food Choices

Annual consumption of beef per capita (3kg) equates to 69 kg CO₂e whereas 80kg of vegetables equates to 65 kg CO₂e.

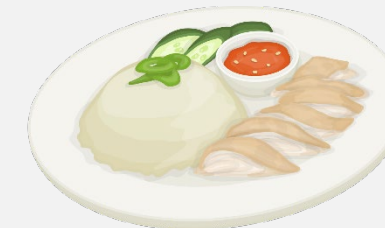


Then & now: Chicken Rice



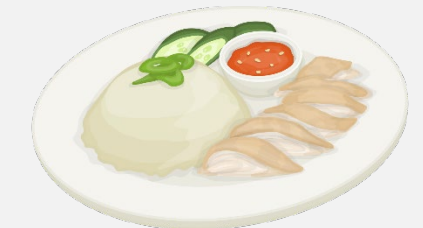
1970s

1.01 kg CO₂e
per serving



2020s

3.13 kg CO₂e
per serving



Then & now: Laksa



1970s

1.37 kg CO₂e
per serving



2020s

6.53 kg CO₂e
per serving



Then & now: Char Kway Teow



1970s

0.9 kg CO₂e
per serving



2020s

3.54 kg CO₂e
per serving

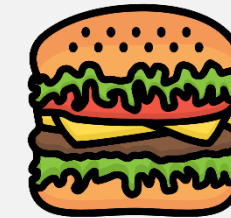


Then & now: Quarter Pounder



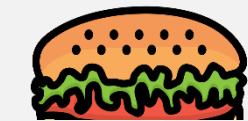
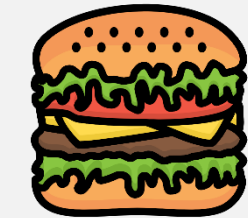
1970s

1.6 kg CO₂e
per serving

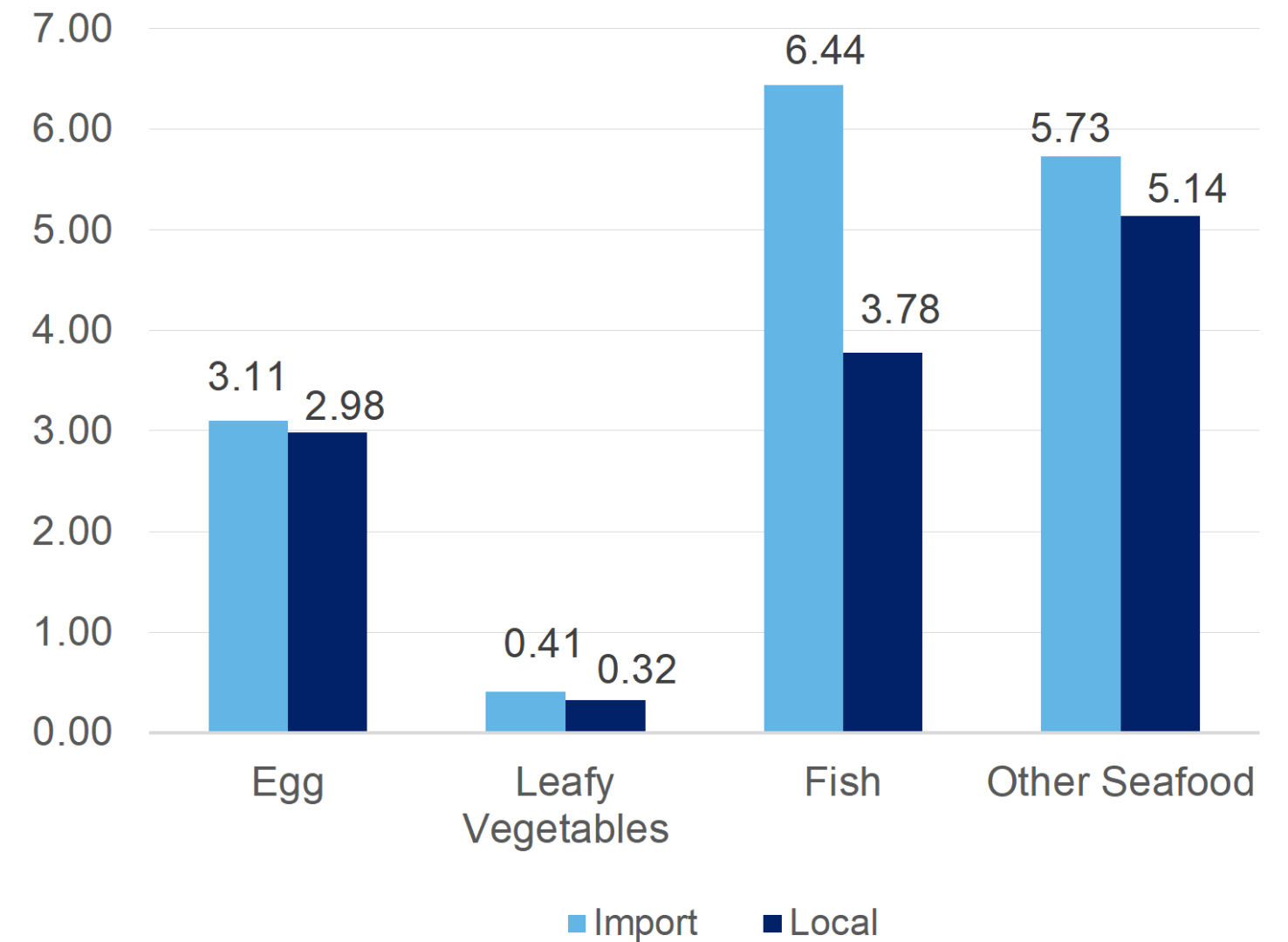
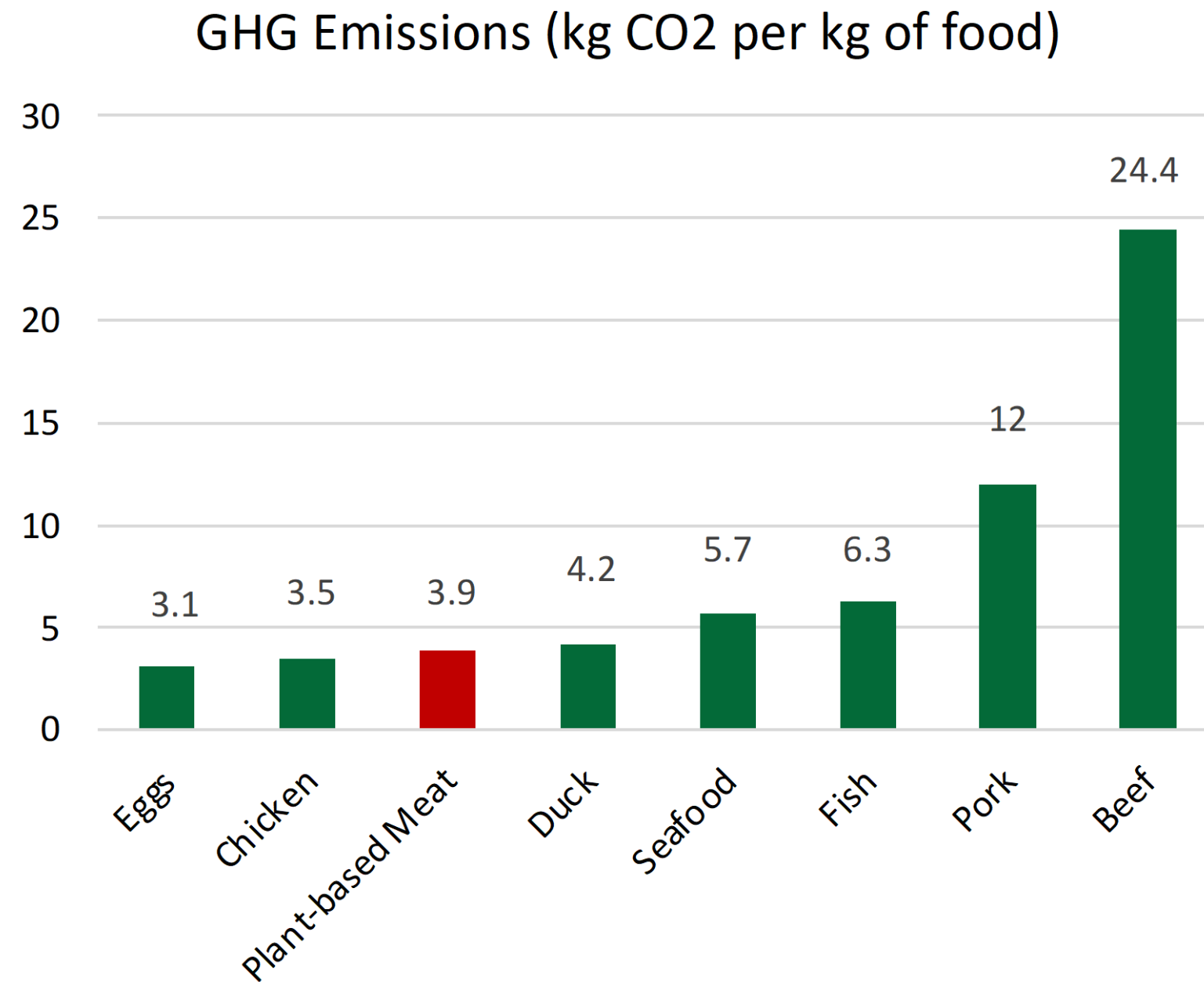


2020s

2.35 kg CO₂e
per serving



History shows that things can and do change.



Carbon Intensity of Food Items (kg CO2e per serving)

1	Beef (100g)	2.4 kg CO2e	9	Vegetables (100g)	0.1kg CO2e
2	Chicken	0.4 kg CO2e	10	Fruits (100g)	0.1kg CO2e
3	Pork (100g)	1.2 kg CO2e	11	Instant Noodles (150g)	0.5 kg CO2e
4	Fish (100g)	0.6 kg CO2e	12	Yoghurt (150g)	0.5 kg CO2e
5	Prawns (100g)	0.6 kg CO2e	13	Coffee	0.4 kg CO2e
6	Rice (100g)	0.3 kg CO2e	14	Soy Milk	0.3 kg CO2e
7	Eggs (100g)	0.3 kg CO2e	15	Cheese (50g)	1.4 kg CO2e
8	Tofu (100g)	0.1 kg CO2e	16	Chocolate (50g)	0.95 kg CO2e