

Community Climate Action Programme



Cork
Environmental
Forum



Comhairle Cathrach Chorcaí
Cork City Council




Food and Agriculture



Food Learning Outcomes

Participants will be able to;

- Explain the ecological impacts of the food system
- Compare the Land and Carbon footprints of foods
- Reduce food waste in the home and community
- Describe the components and benefits of the EAT Lancet Sustainable and healthy food plate
- Explore the need to adopt the sustainable food plate to deliver ecosystem restoration.
- Tell the story of a Community Public Health Food System Intervention in Finland



What are the thoughts that
come into your mind when you
think of food, farming and/or
farmers?

Please type in the chat - 5 min



Food Session Outline

Food and the SDGs

Environmental Impacts of Food System
(ecosystems, biodiversity, climate, nutrient
pollution, air, etc)

Food Waste - What is Virtual Food Waste?

Sustainable Healthy Food Plate

Subsidise Healthy Food & Ecosystem Services

The Blue Zones Community Case Study



END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

THE GLOBAL PANDEMIC IS EXACERBATING WORLD HUNGER

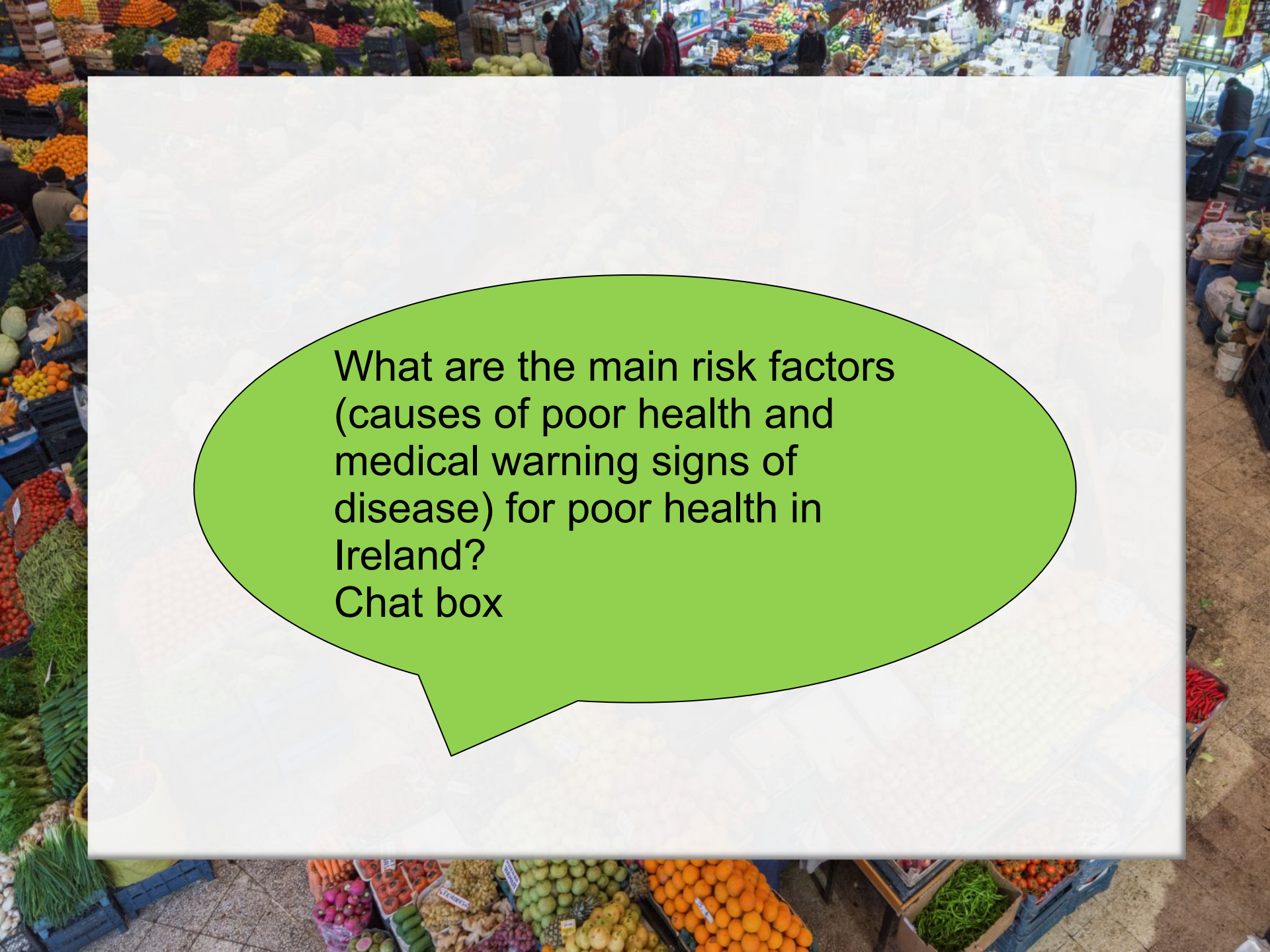
WORLDWIDE, AN ADDITIONAL
70-161 MILLION PEOPLE
ARE LIKELY TO HAVE
EXPERIENCED HUNGER
AS A RESULT OF THE
PANDEMIC IN 2020



NUMBER OF UNDERNOURISHED PEOPLE IN THE WORLD



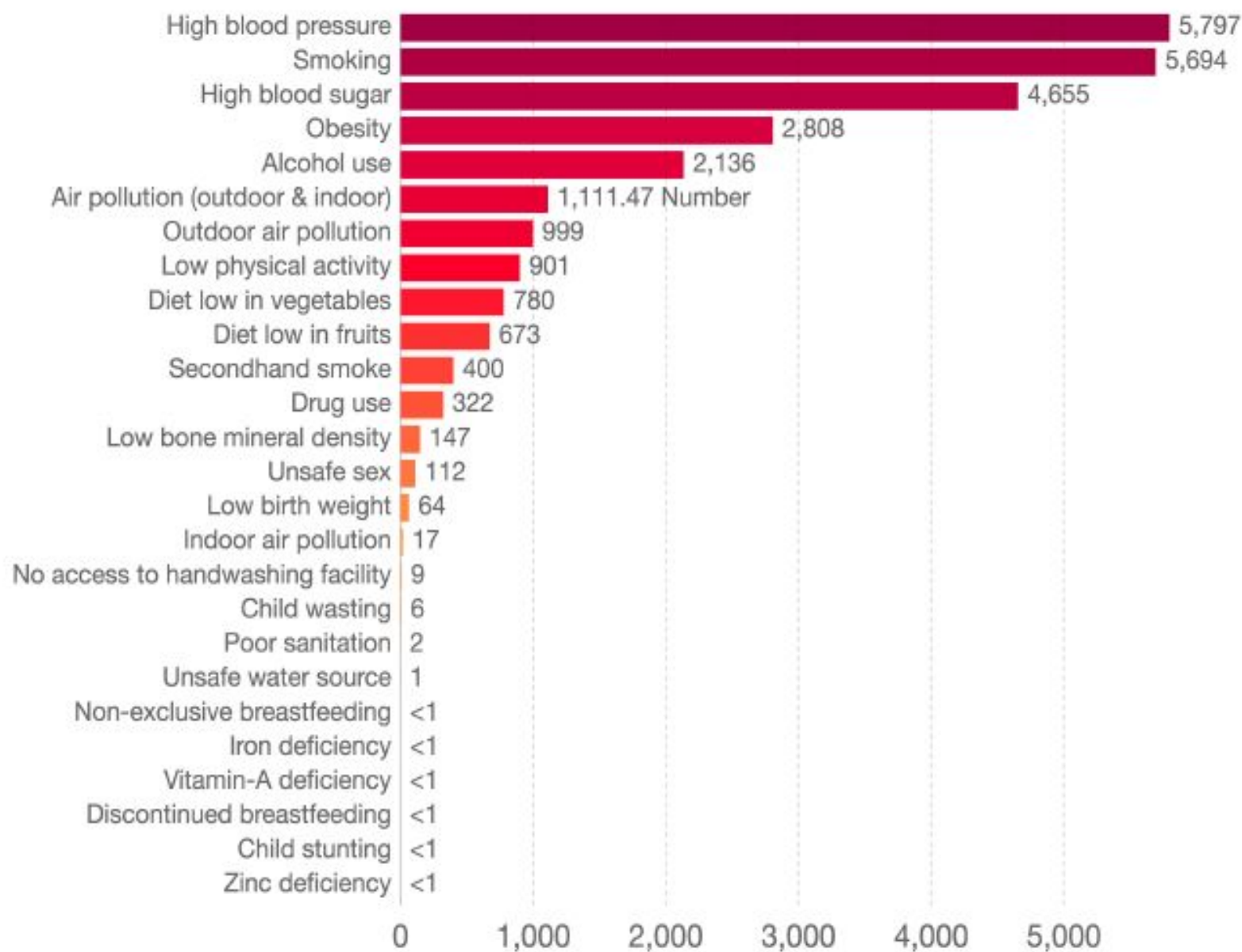
2.37 BILLION PEOPLE ARE WITHOUT FOOD
OR UNABLE TO EAT A **HEALTHY BALANCED DIET**
ON A REGULAR BASIS [2020]

The background of the slide is a photograph of a busy outdoor market. In the foreground, there are several crates filled with fresh produce, including bright orange carrots, green leafy vegetables, and various types of onions. In the background, more market stalls are visible, with people walking through the aisles. The overall scene is colorful and lively, representing a typical outdoor market environment.

What are the main risk factors
(causes of poor health and
medical warning signs of
disease) for poor health in
Ireland?
Chat box

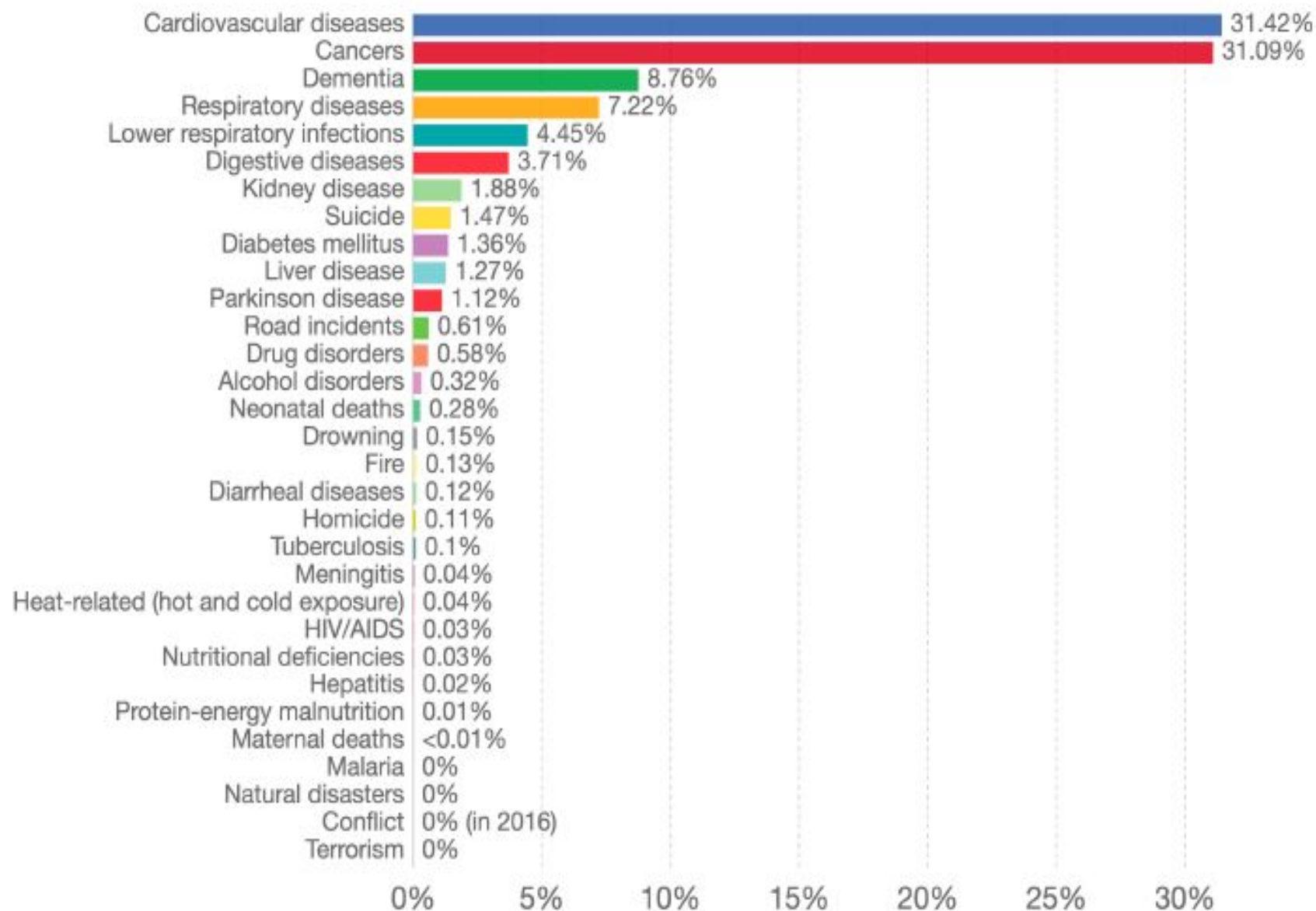
Number of deaths by risk factor, Ireland, 2017

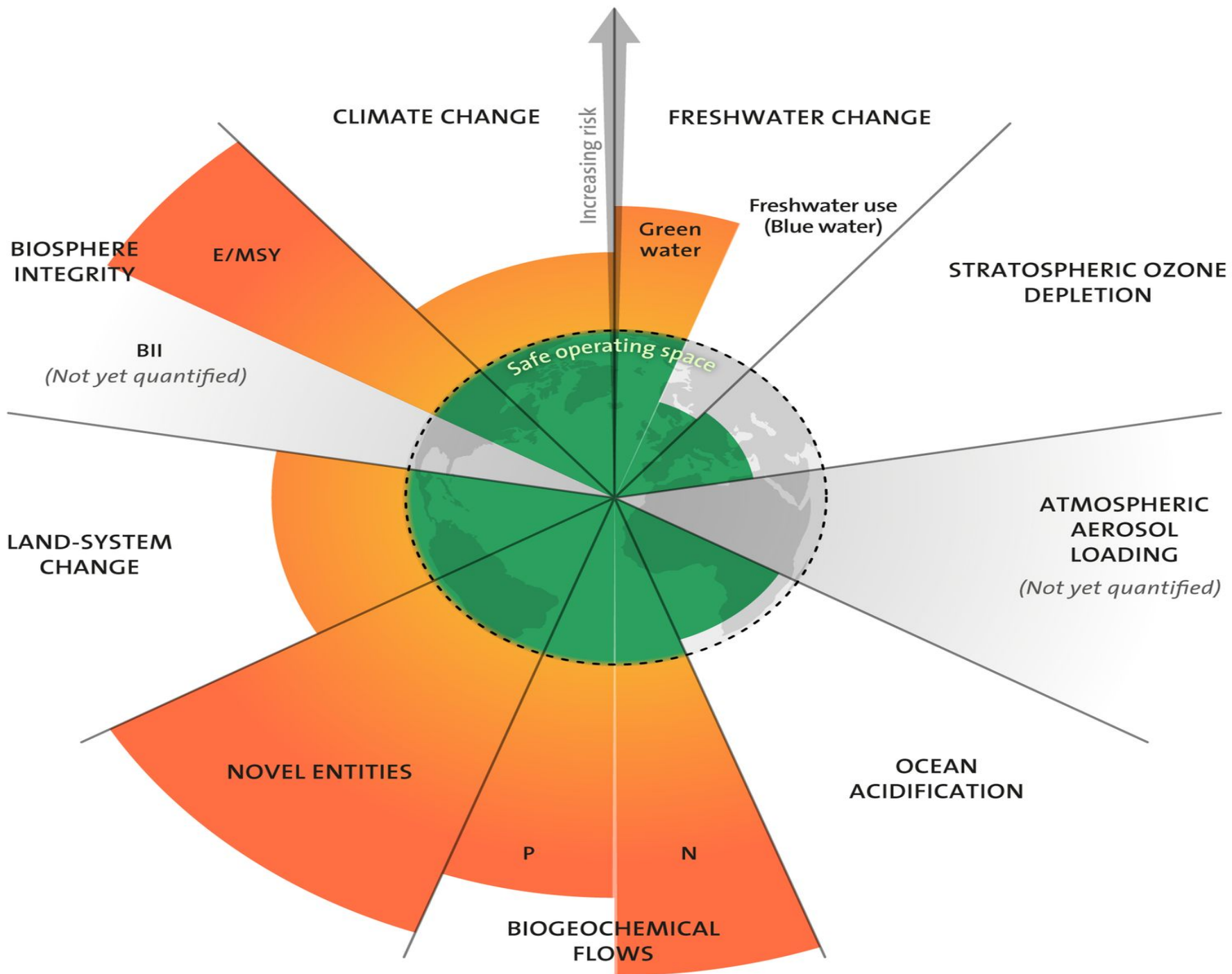
Total annual number of deaths by risk factor, measured across all age groups and both sexes.



Share of deaths by cause, Ireland, 2017

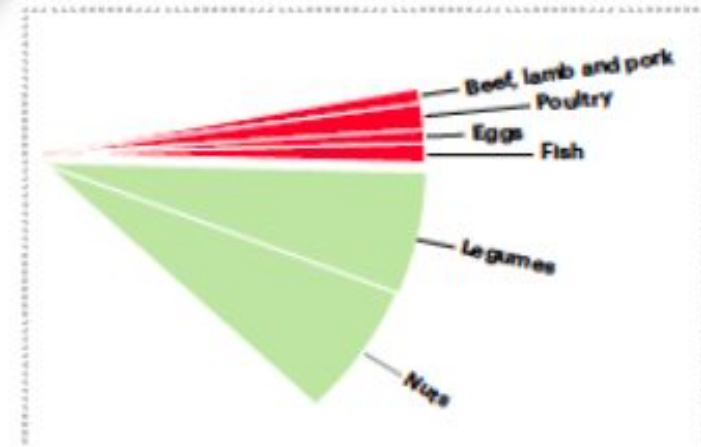
Data refers to the specific cause of death, which is distinguished from risk factors for death, such as air pollution, diet and other lifestyle factors. This is shown by cause of death as the percentage of total deaths.







A healthy diet
that stays
within
planetary
boundaries



EAT Lancet Report 2019

Blue Zones Power 9 Lifestyle Habits of the World's Healthiest, Longest-Lived People

- 1. Move Naturally
- 2. Purpose
- 3. Down Shift
- 4. 80% Rule
- 5. Plant Slant
- 6. Rewind at 5 pm
- 7. Faith based community
- 8. Loved Ones First
- 9. Right Tribe



The background of the slide is a photograph of a bustling outdoor market. In the foreground, there are several crates filled with fresh produce, including bright orange carrots, green leafy vegetables, and various fruits like apples and oranges. In the background, more market stalls are visible, with people walking through the aisles. The overall scene is colorful and lively, representing a healthy food environment.

Measures of Success Achieved in North Karelia

- Decline in smoking from 50% of the population to 20%
- Consumption of high fat milk from 70% to 10%.
- 60% of households now cook with vegetable oil instead of butter.
- Less than 5% of households use butter on bread.
- Salt intake dropped by 20%.
- Vegetable consumption increased 300%.
- Average cholesterol level dropped 20%
- **Deaths from heart disease dropped by 85% after 30yrs.**




Co-Benefits of a Healthy Food System

Economic savings from a plant based diet
US\$20-\$30 trillion from the reduced risk of
dying (8.1 million lives saved per year)

US\$700-1,000 billion per year globally in
healthcare, unpaid informal care and lost work

US\$570 billion in avoided climate damages

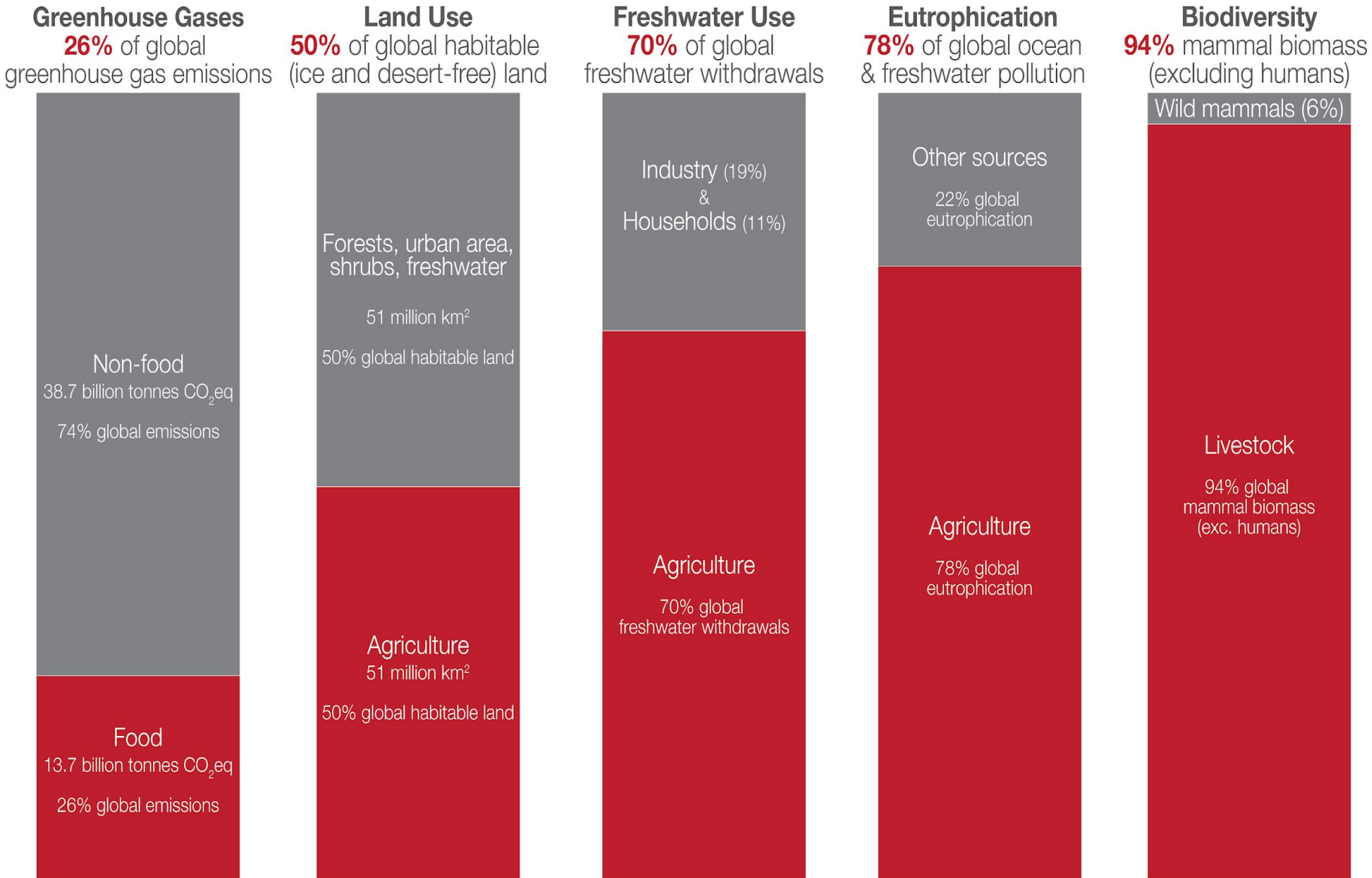
EAT Lancet Report, 2019

The background of the slide is a photograph of a busy outdoor market. In the foreground, there are several crates filled with fresh produce, including bright orange carrots, green leafy vegetables, and red tomatoes. In the background, more market stalls are visible, with people walking through the aisles. The overall scene is colorful and lively.

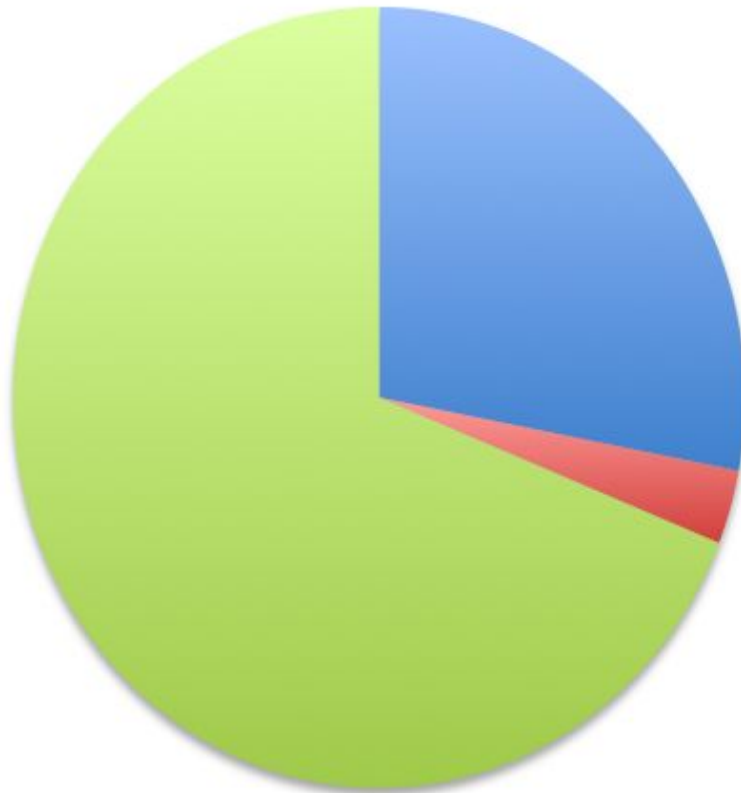
What are the main
environmental problems caused
by food production?
In Ireland or anywhere

Groups 7 min

What are the environmental impacts of food and agriculture?



Agricultural Land Use

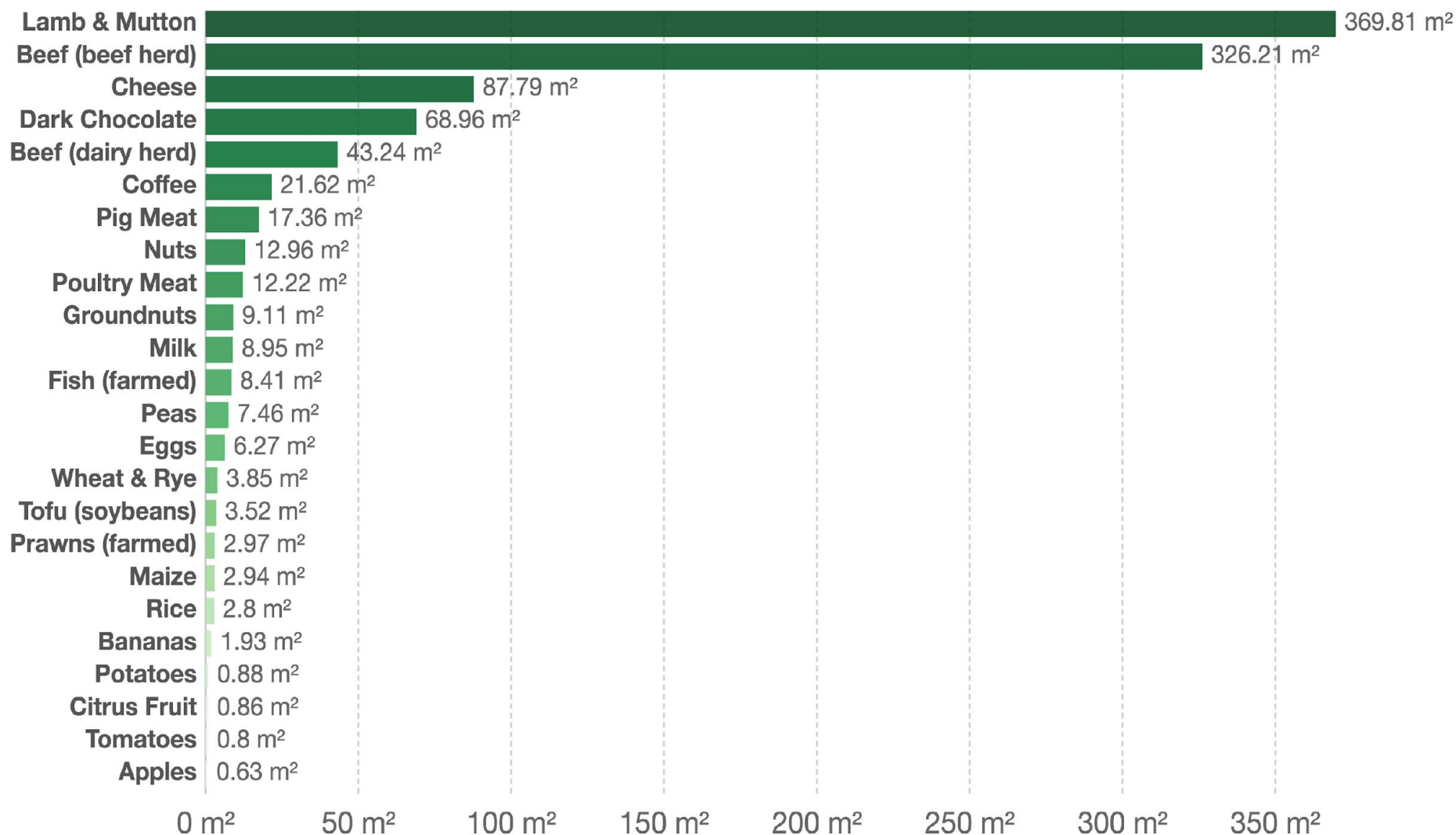


- Arable land – 28% all grains and legumes – 40% of which goes to animals
- Permanent Crops – 3.1% coffee, sugar cane, olives, nuts, cocoa, citrus, fruit trees, etc
- Grazing – 68.9%

Animal Ag 82% of Farm land for 18% of calories

Land use per kilogram of food product

Land use is measured in meters squared (m^2) per kilogram of a given food product.



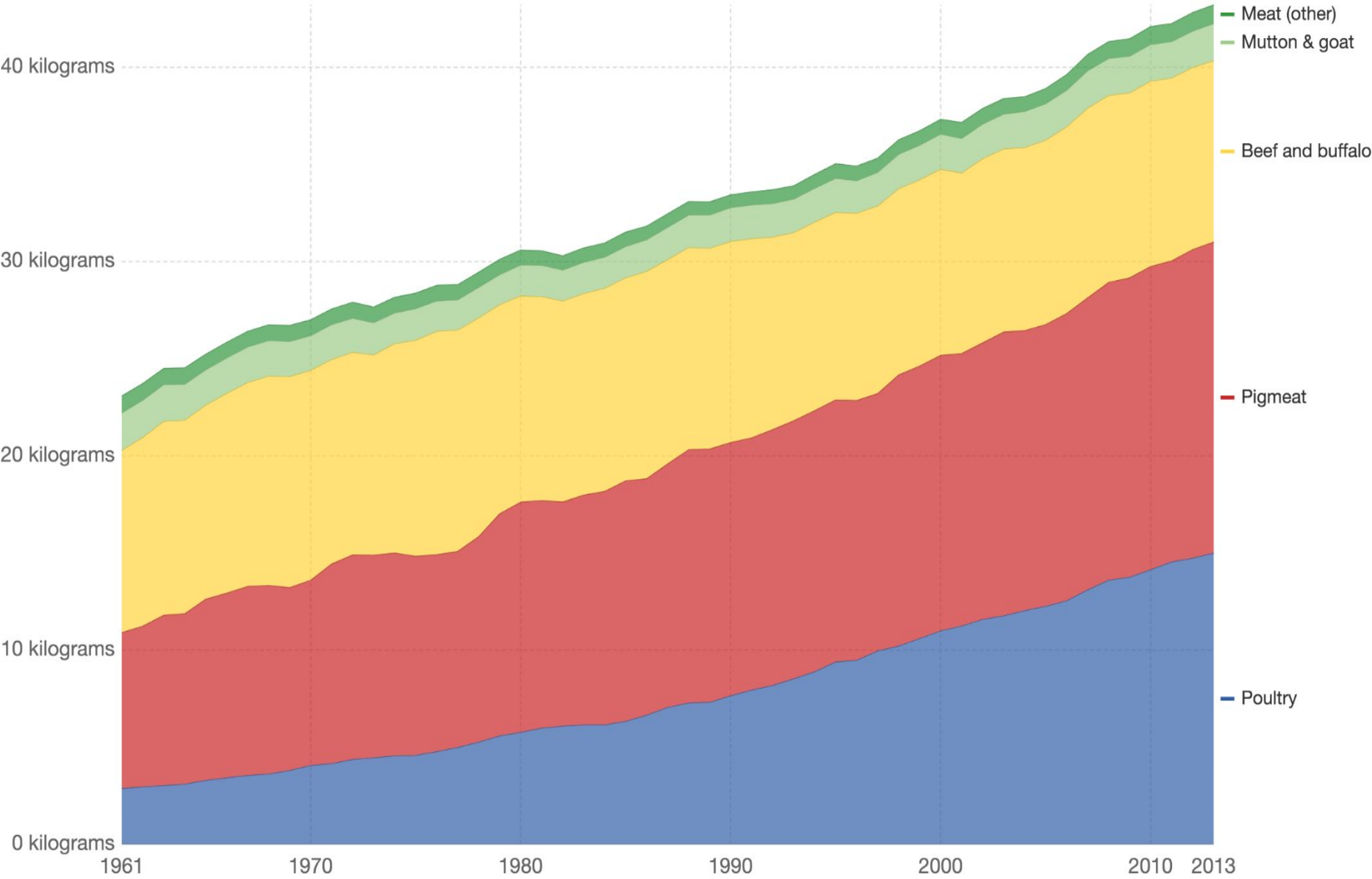
Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers.

Note: Data represents the global average land use of food products based on a large meta-analysis of food production covering 38,700 commercially viable farms in 119 countries.

OurWorldInData.org/environmental-impacts-of-food • CC BY

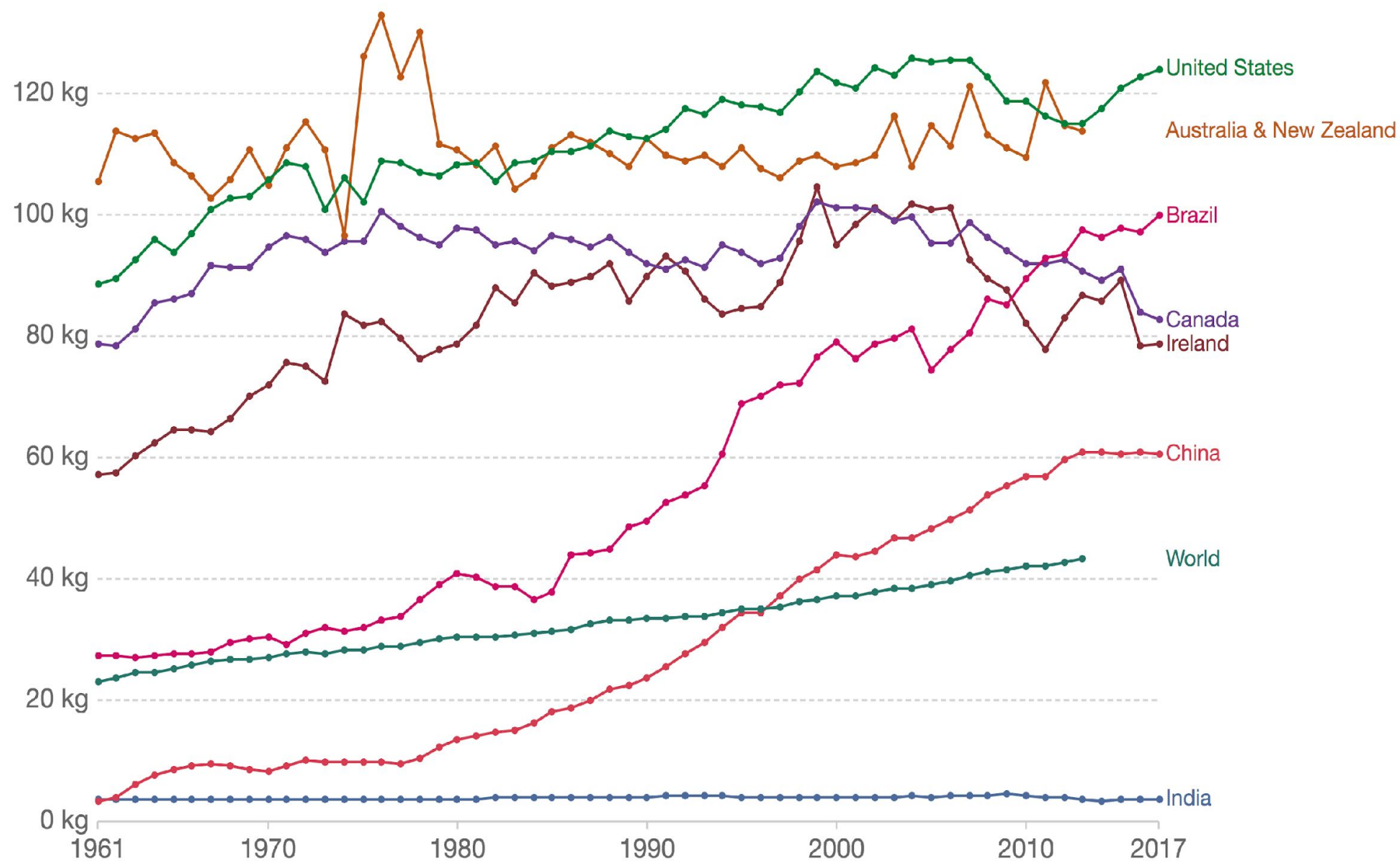
Per capita meat consumption by type, kilograms per year, World

Average per capita meat consumption broken down by specific meat types, measured in kilograms per person per year. Data is based on per capita food supply at the consumer level, but does not account for food waste at the consumer level.



Meat supply per person, 1961 to 2017

Average total meat supply per person measured in kilograms per year.

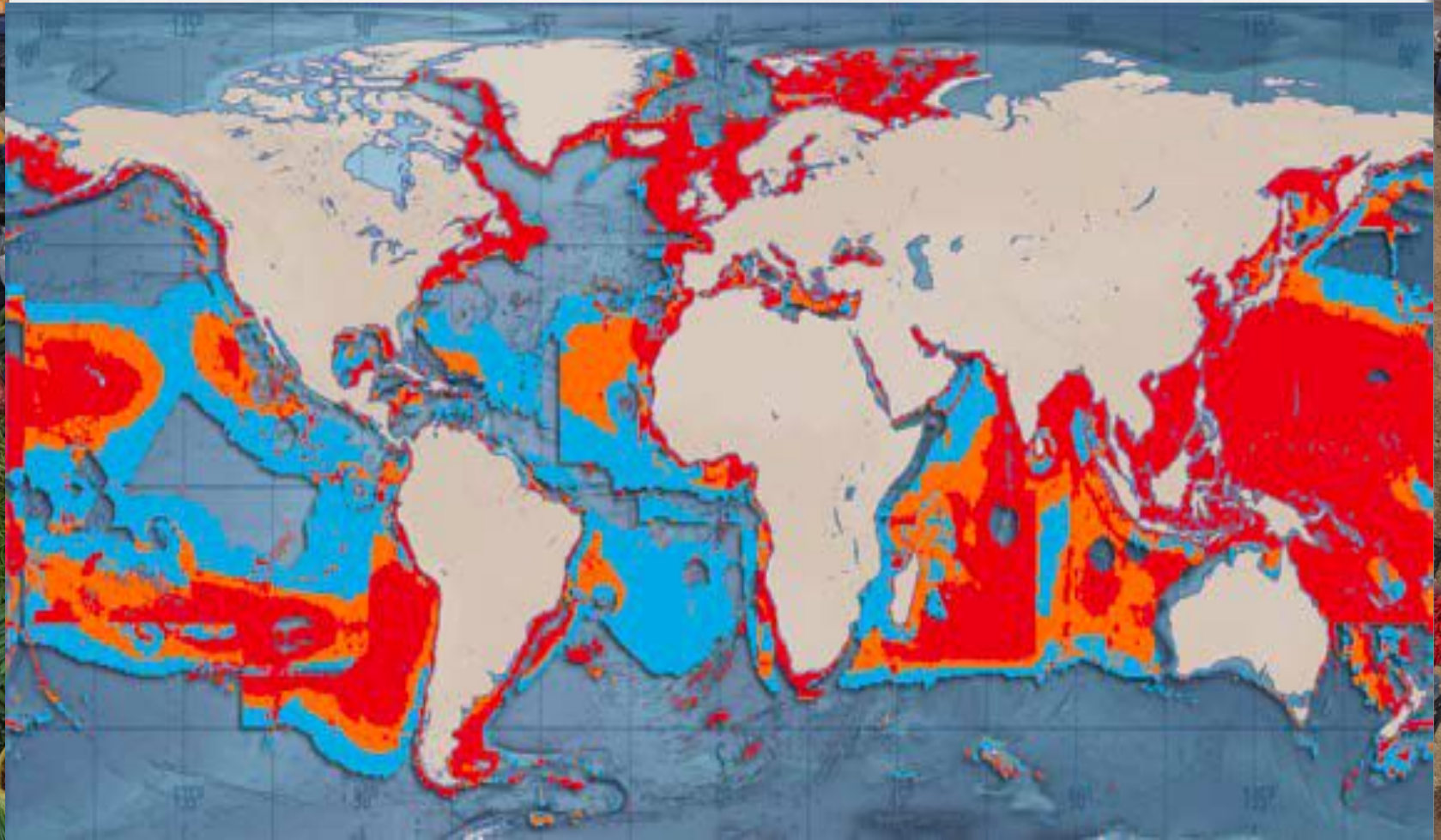


Source: UN Food and Agriculture Organization (FAO)

OurWorldInData.org/meat-production • CC BY

Note: Data excludes fish and other seafood sources. figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual.

Intensity of ocean fishing, 2006






In 2016 **91 Mtonnes** of wild caught species and **80 Mtonnes** of farmed fish.

20m tonnes of wild caught fish like mackerel, sardines and anchovies were converted to pellets and fed to carnivorous farmed fish species.

There are different estimates for bycatch – potentially up to 35% of global catches which are thrown overboard

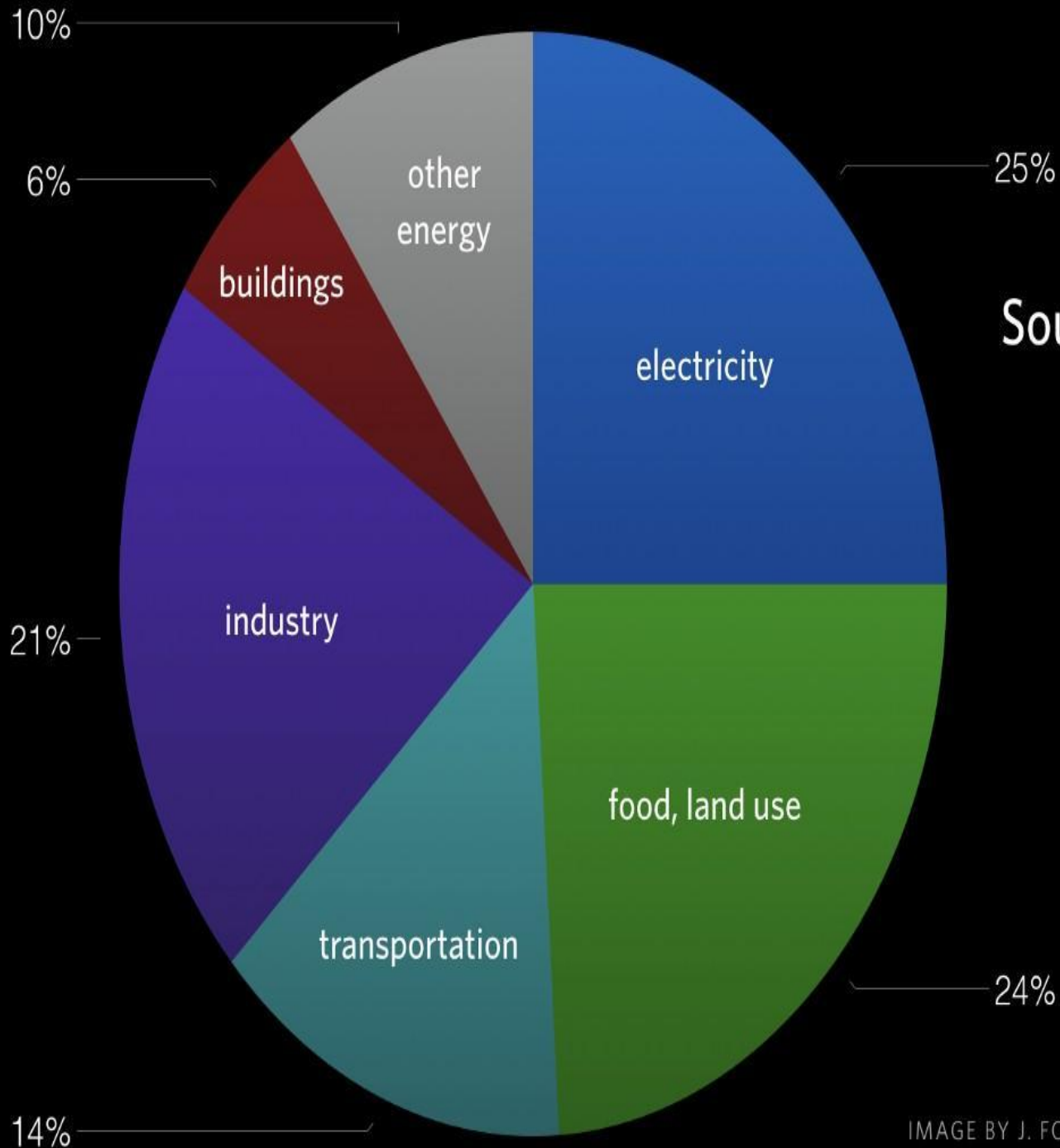
- FAO State of the World's Fisheries, July 2018



Illegal, unregulated and unreported fishing is estimated to take **11-26 million tonnes** of fish each year which is not counted in FAO estimates

- WWF Living Blue Planet Report 2015

Fishing subsidies are estimated at up to US\$35 billion per year, equivalent to around a fifth of the industry's overall revenue (Sumaila et al., 2013)

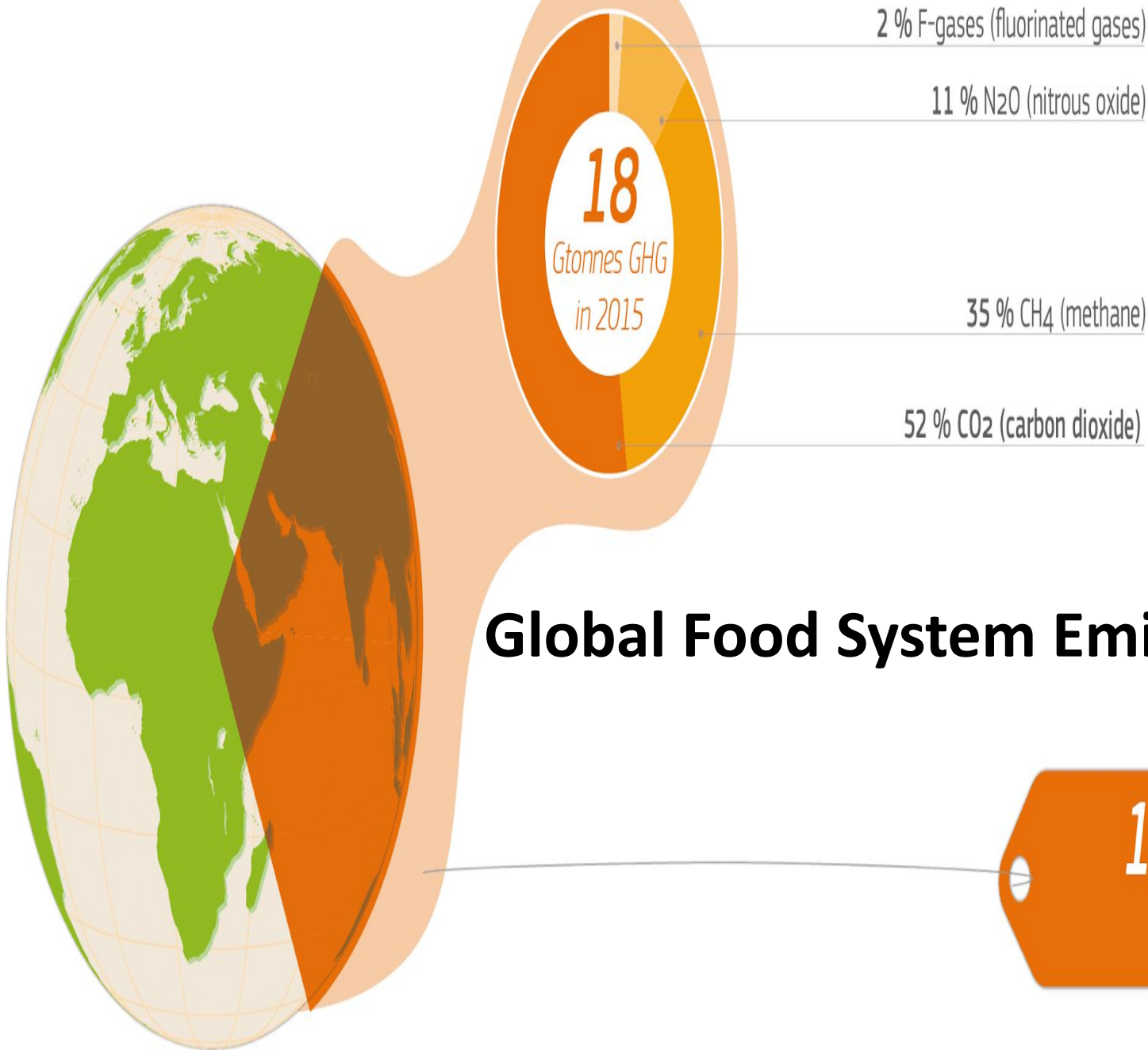


Sources of Greenhouse Gas Emissions

by major sector

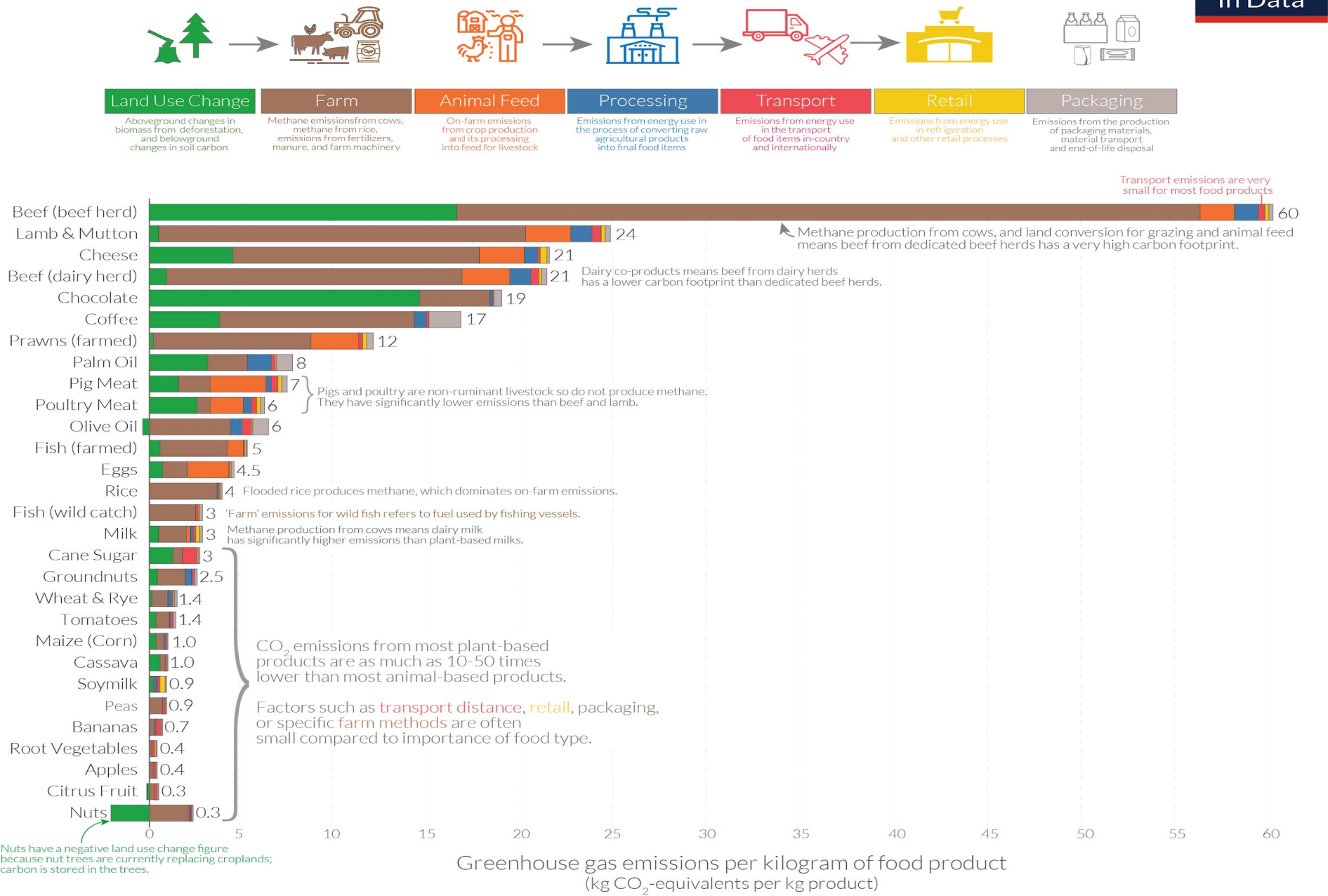
DATA FROM EPA

IMAGE BY J. FOLEY, PROJECT DRAWDOWN



Crippa et al, 2021

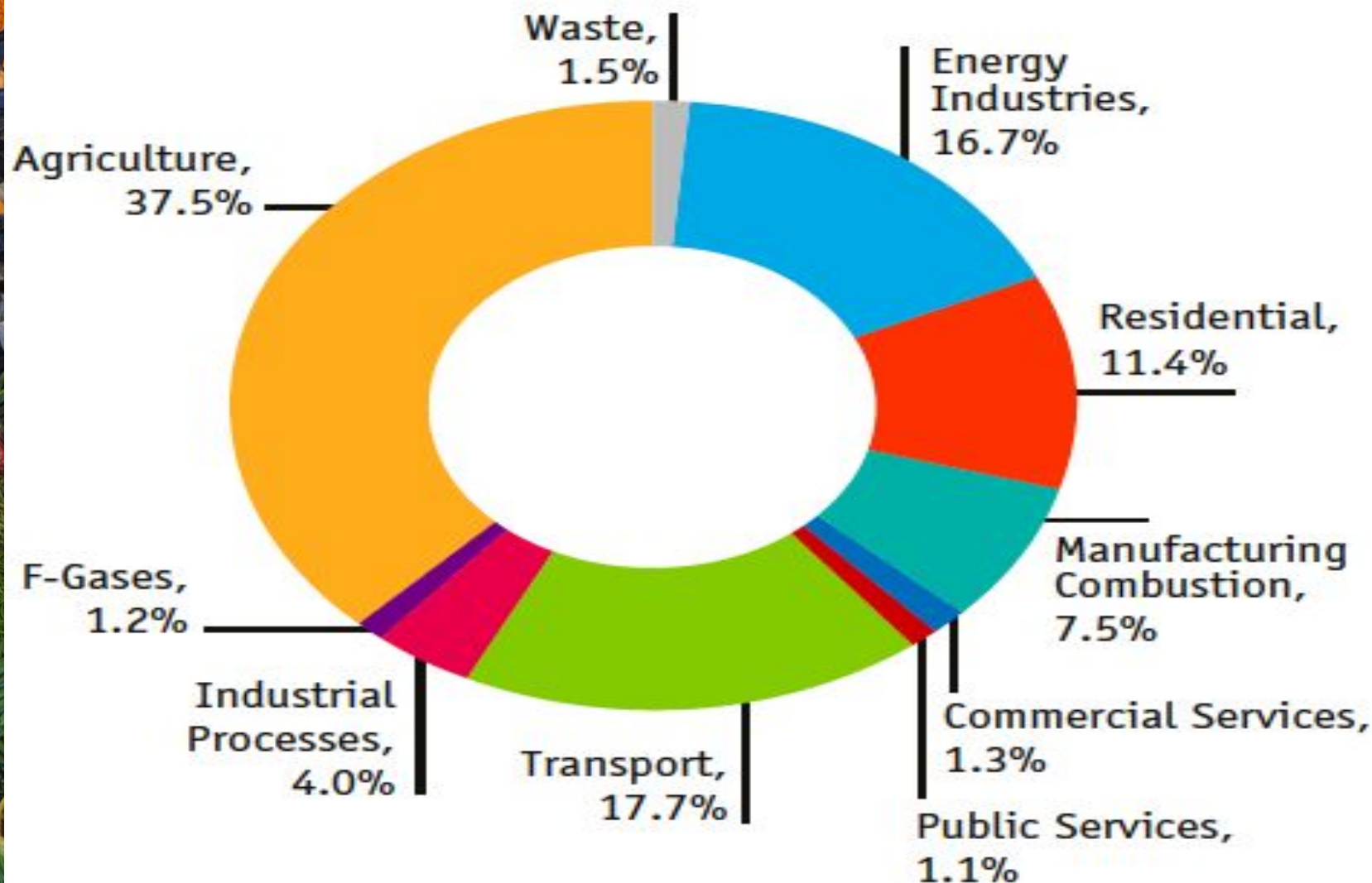
Food: greenhouse gas emissions across the supply chain



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.
Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*. Images sourced from the Noun Project.
OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

Ireland GHG emissions 2021 w/o LULUC

Year 2021



Ireland GHG emissions 2021 with LULUC

Year 2021

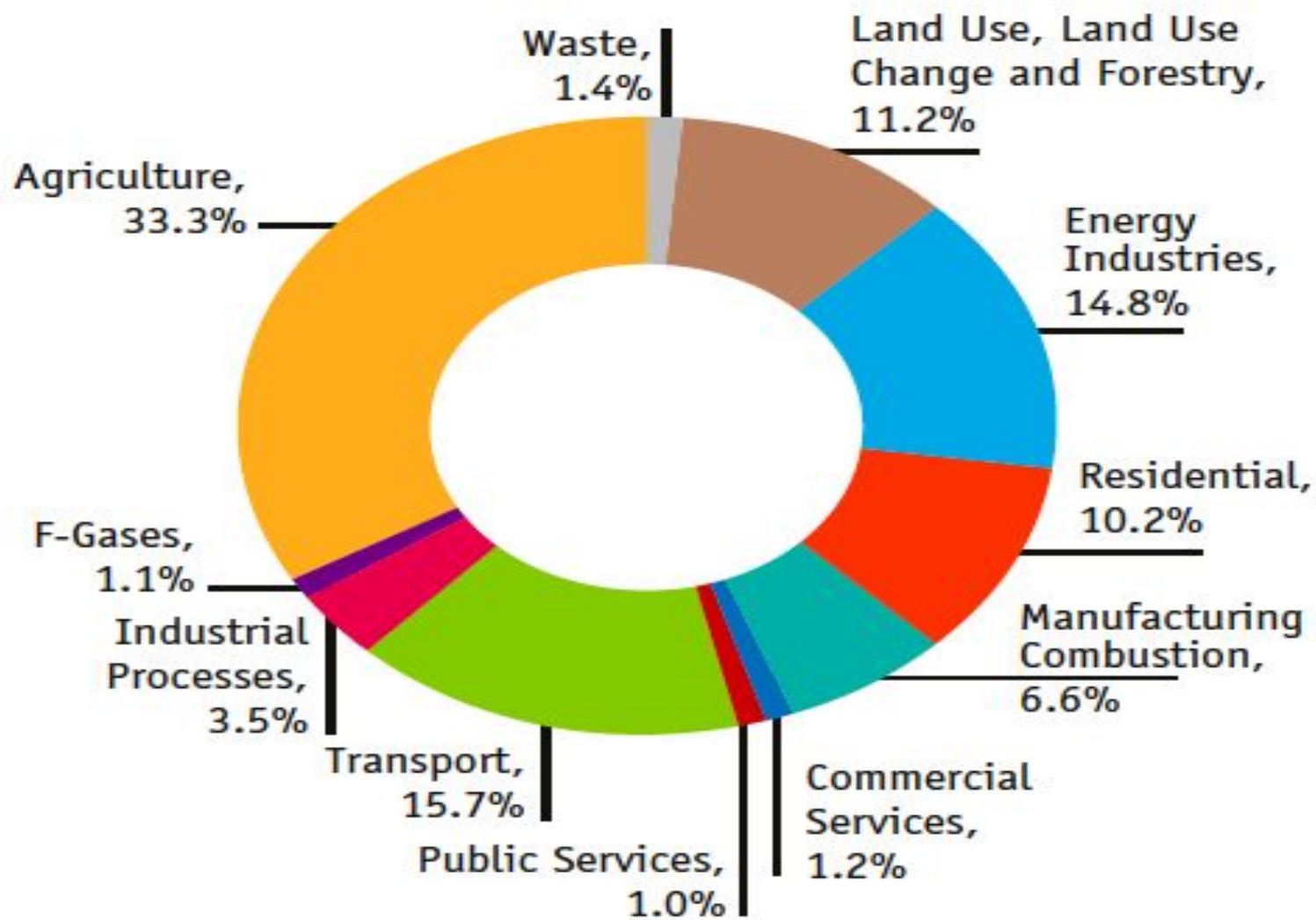
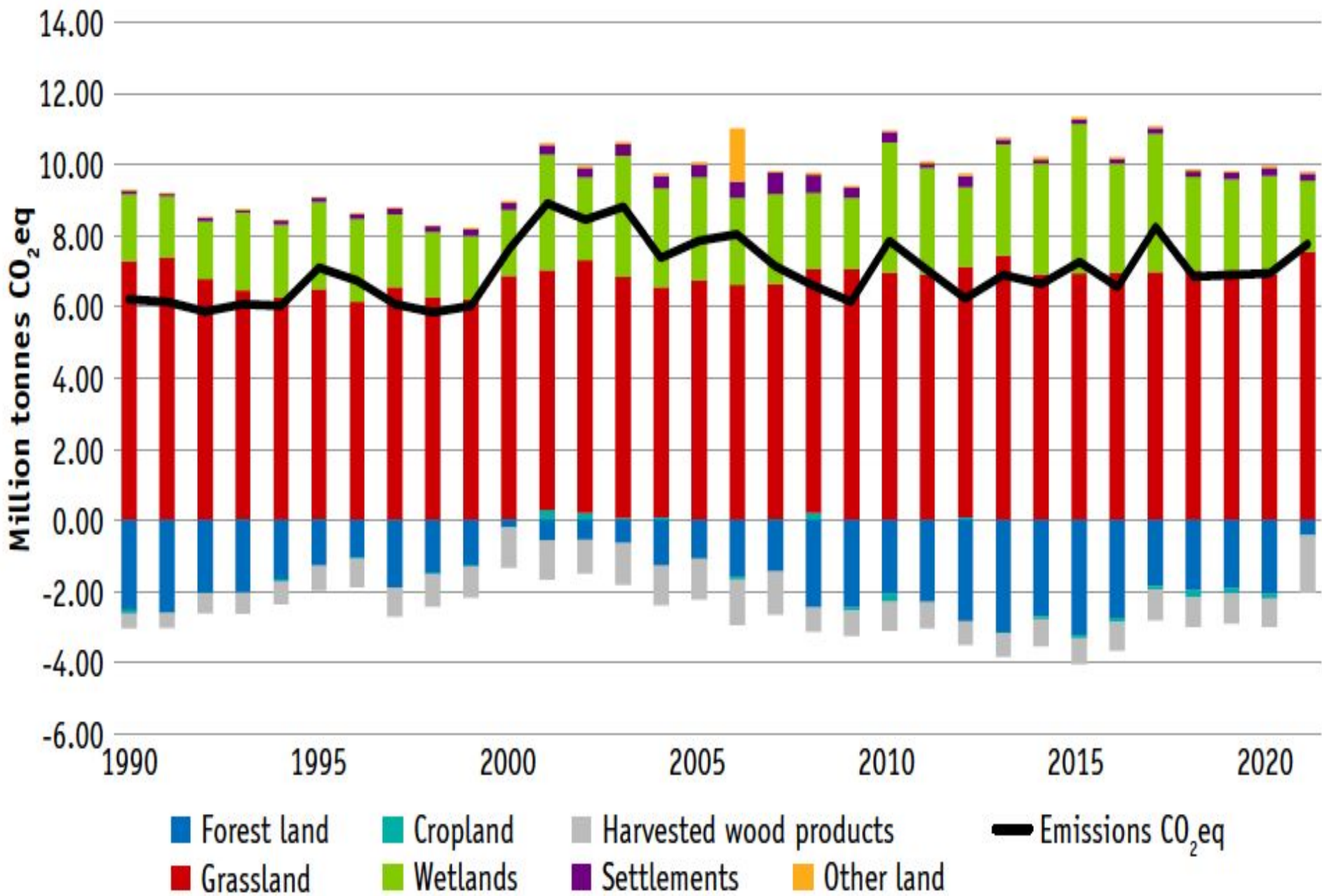
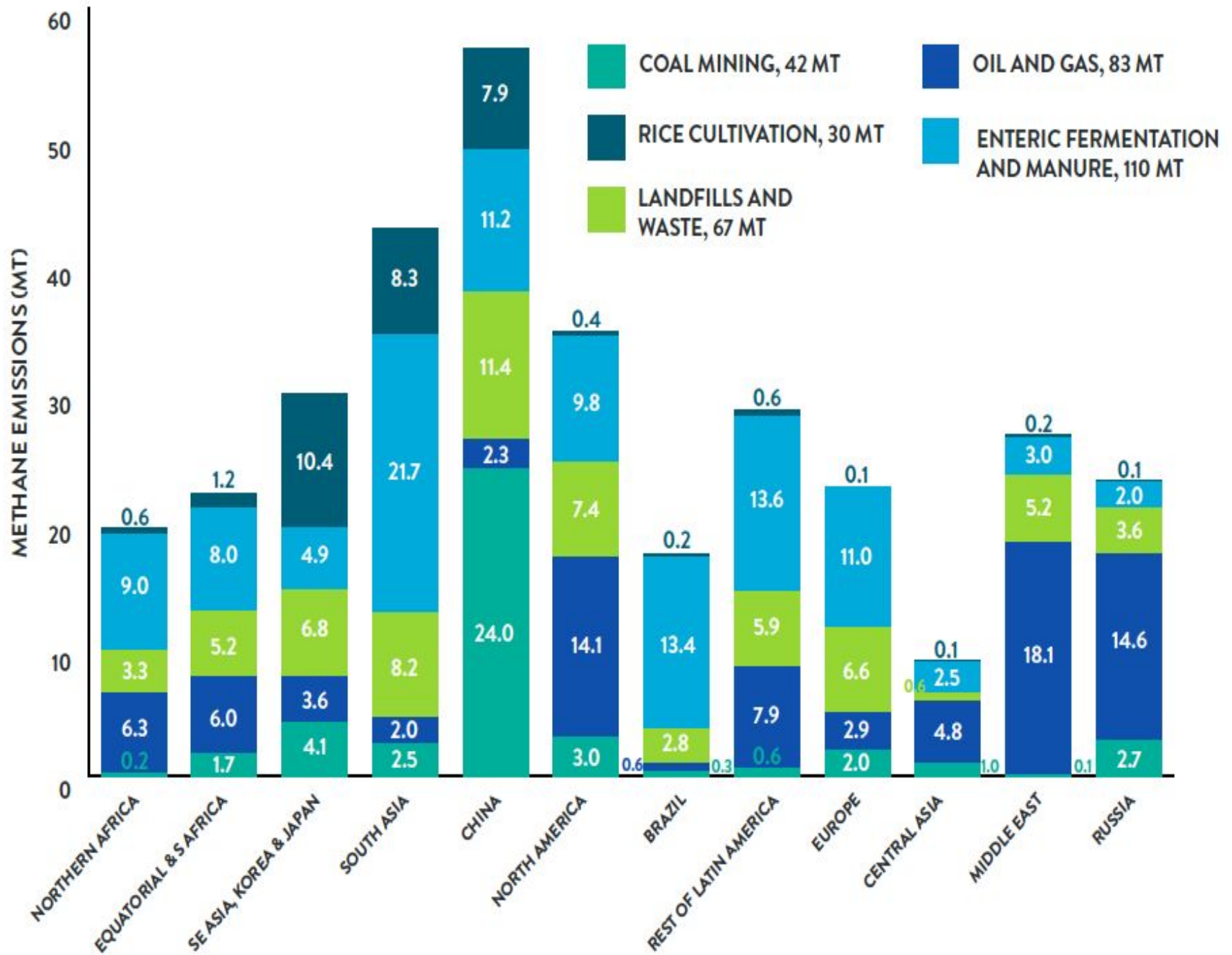


Figure 20. Trend in LULUCF 1990-2021

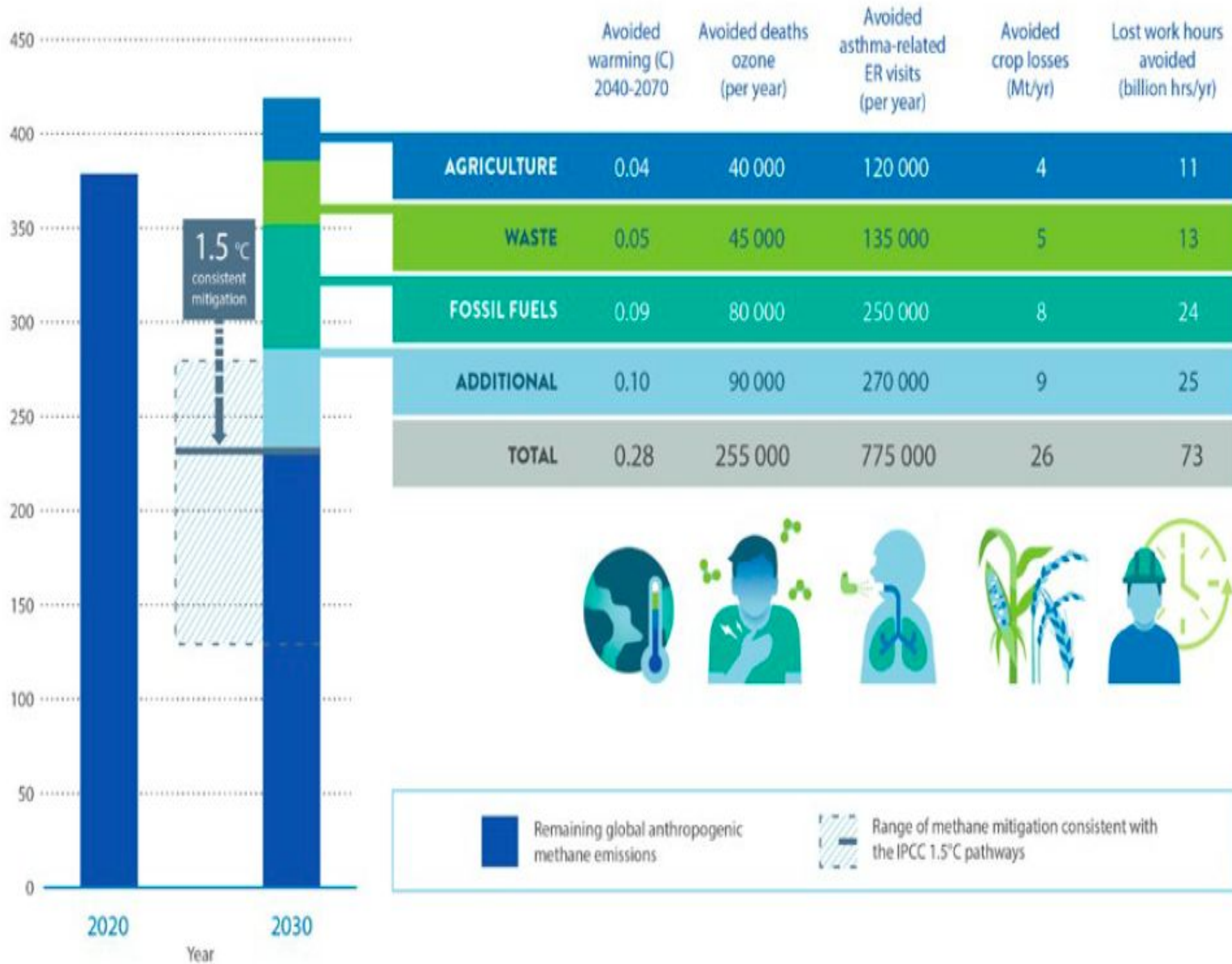




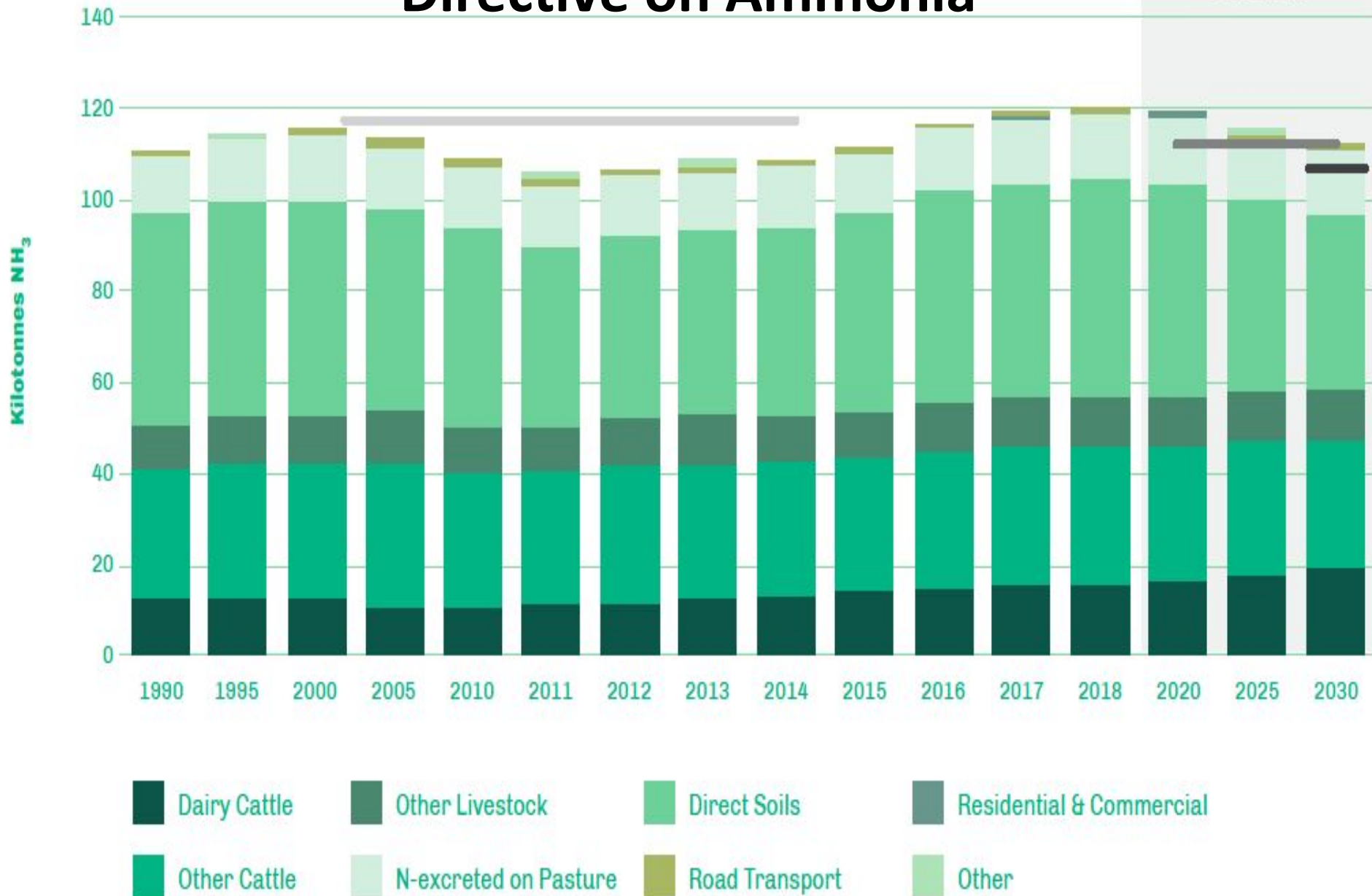
CROPS FOR ANIMAL FEED USE
80% OF ALL NITROGEN INPUTS
IN EUROPE.

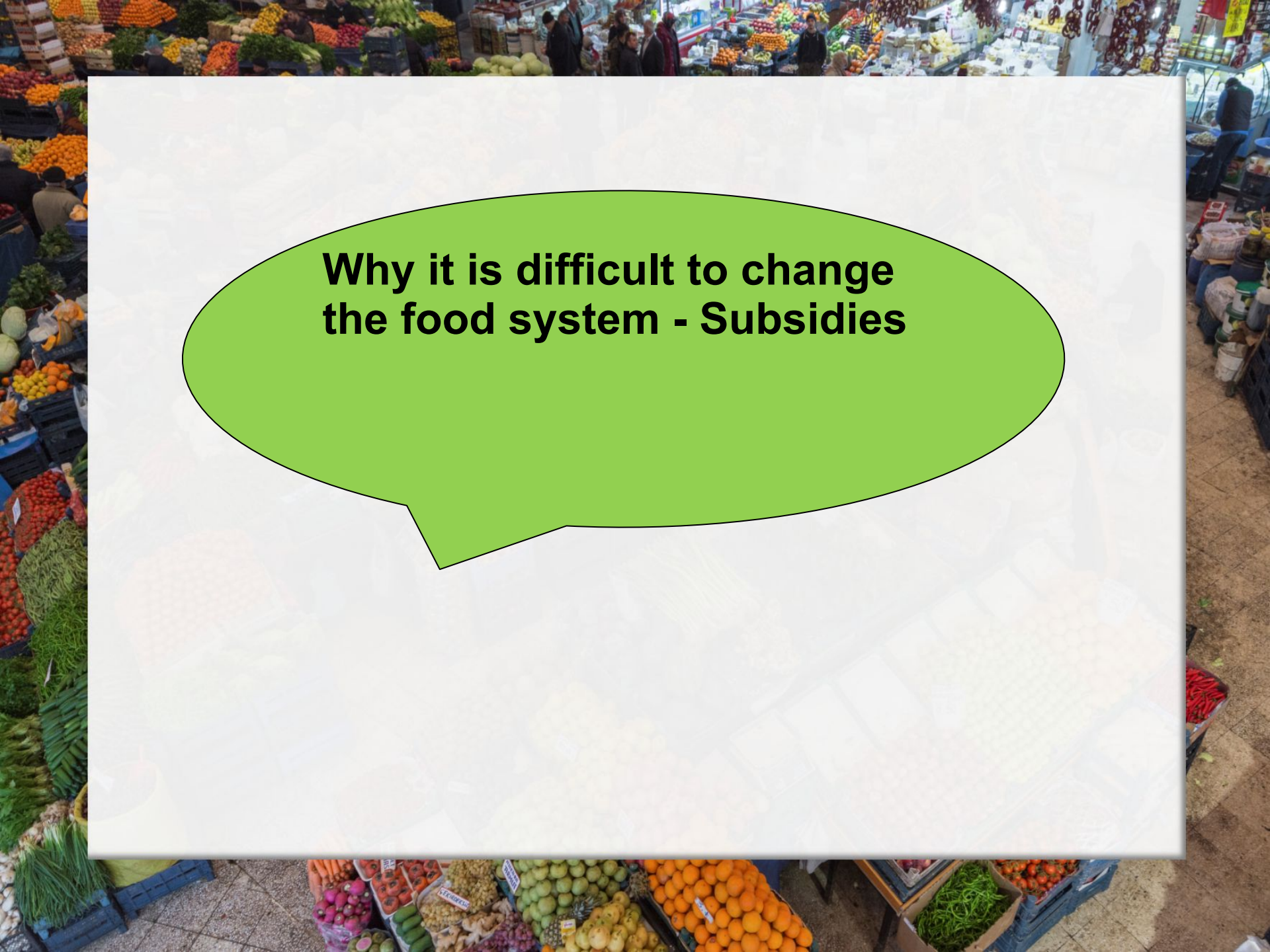


Anthropogenic methane emissions (Mt/yr)

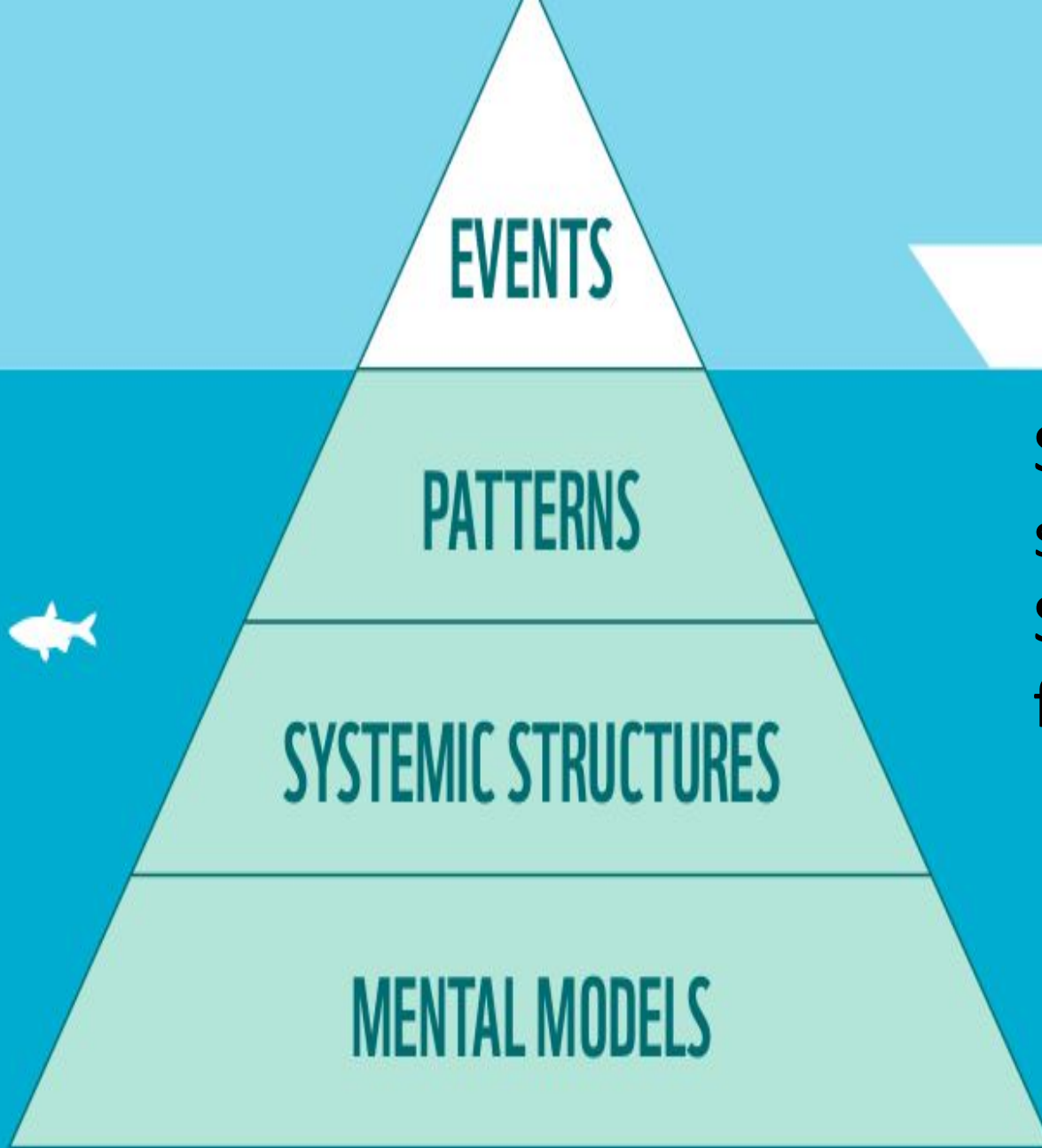


Ireland in breach of National Emissions Ceilings Directive on Ammonia





**Why it is difficult to change
the food system - Subsidies**



Systemic
structures like
Subsidies drive
food systems

NFS Farm Population 2020

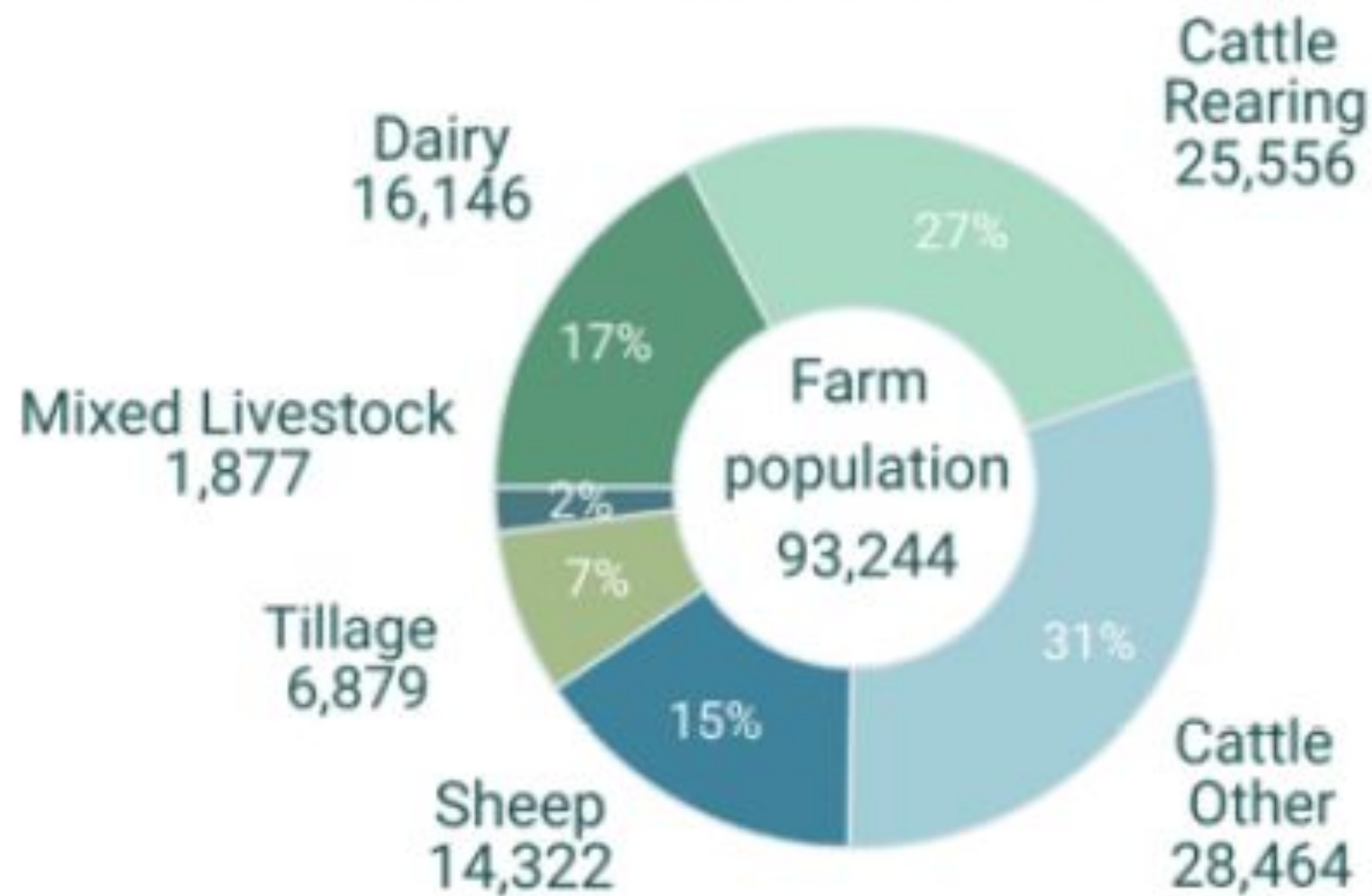
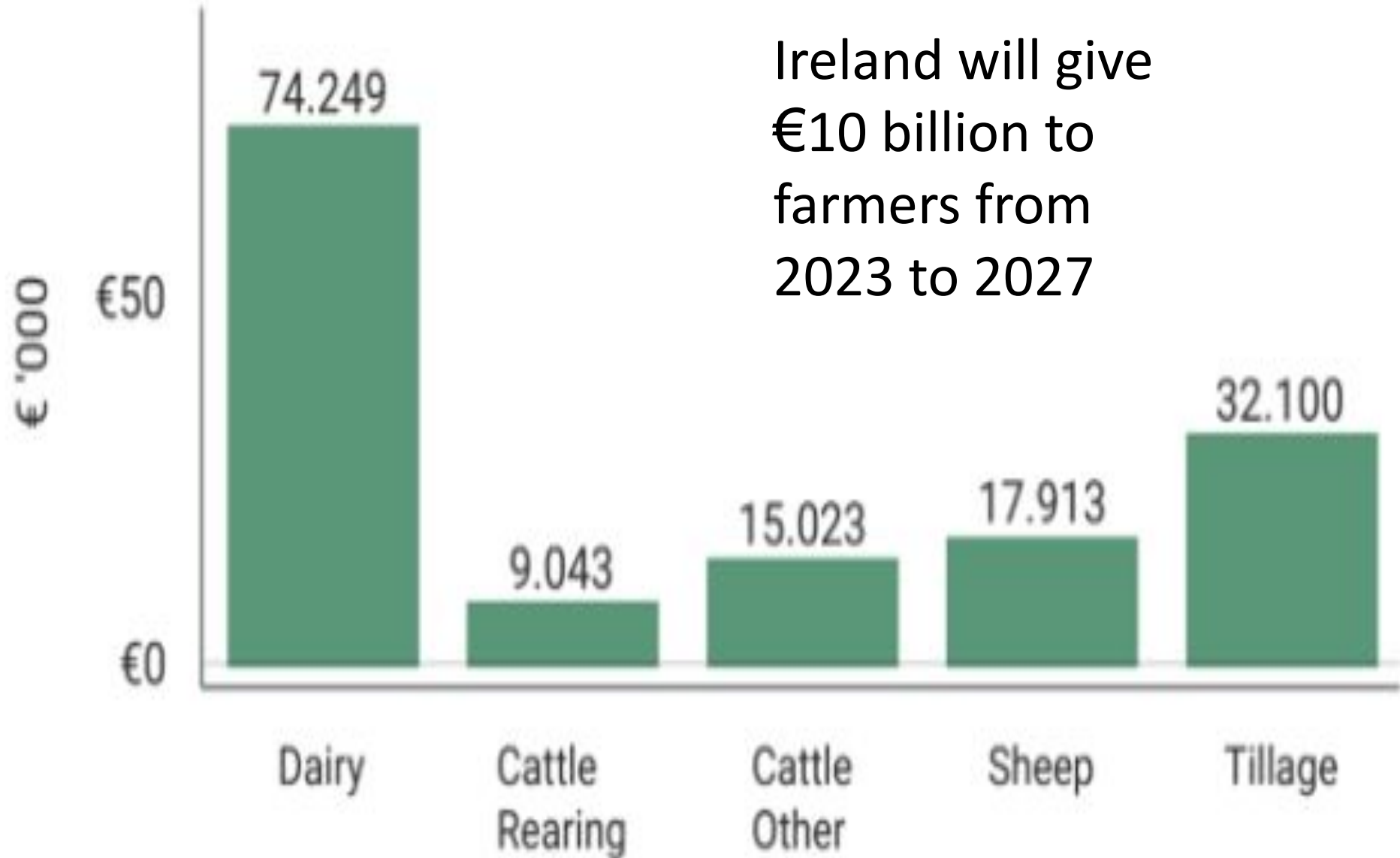


Table 2: Average value of direct payments (DPs) and contribution to FFI 2020

-	DPs	Contribution of DPs to FFI
	€	%
Dairy	20,534	28
Cattle Rearing	14,175	157
Cattle Other	17,012	113
Sheep	18,885	105
Tillage	25,420	79
All	17,842	70

Source: Teagasc National Farm Survey

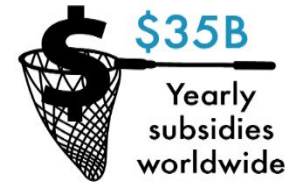
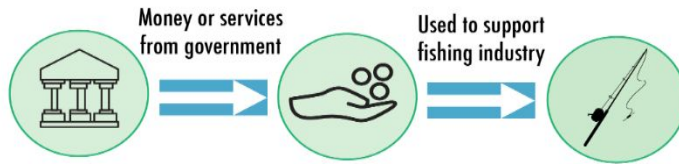
Average Family Farm Income (FFI) 2020



We're gonna need a bigger boat

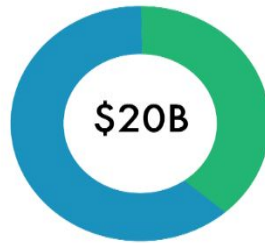
GLOBAL FISHERIES SUBSIDIES

WHAT ARE FISHERIES SUBSIDIES?

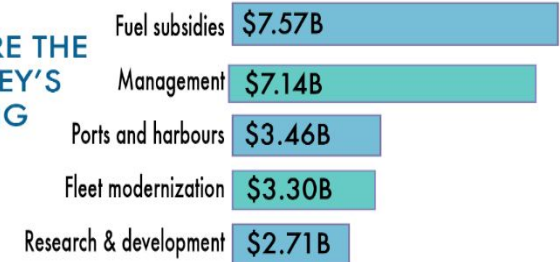


TYPES OF SUBSIDIES GIVEN EACH YEAR

Developed Countries
Developing Countries



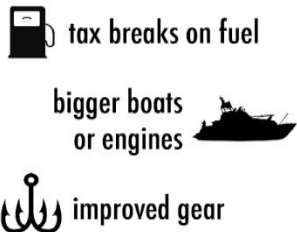
WHERE THE MONEY'S GOING



Capacity Enhancing Subsidies

Help fisheries fish more.

Such as:



Fish stocks

Beneficial Subsidies

Help create sustainability of the fish stocks

Such as:



Fish stocks

Ambiguous Subsidies

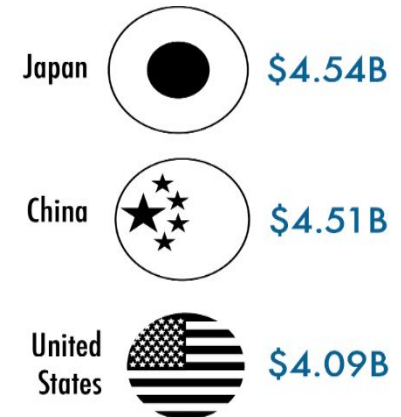
Help fisheries industry and stock sustainability

Such as:



Fish stocks

TOP 3 COUNTRIES



Farm to Fork Strategy (F2F) and Common Ag Policy?

- Farm-to-Fork Strategy is a key part of the EU Green Deal
- Aims to make EU food system **FAIR HEALTHY ECOLOGICAL**
- Surrent food policy is the Common Agricultural Policy (CAP) 1962
- Main objective of CAP was to **Maximise Production**
- Stable income for farmers, market rules and rural development
- **Disadvantages** favoured larger farmers, little or no economic value to the community, pesticides, land grabbing, deforestation and water pollution, surplus and waste
- The Farm-to-Fork Strategy is an attempt to **reform the EU food policy** in a more sustainable direction
- **Aims** to reduce waste, reduce environmental impacts, food security, reverse biodiversity loss, preserve food affordability
- **Disruptive and transformative change needed** from business-as-usual



Reforming the CAP

- **Policy reforms** from quantity to **quality** (through CAP Strategic Plans, EGD, Farm-to-Fork and consumer demands)
- Transform to **Nutrition driven and regenerative food system**
- **Complex interplay** between food system and other sector systems e.g. nature degradation, food security, cost/economy
- Diverse situations will need **diverse solutions** e.g. urban/rural, big-scale/small-scale farmers
- Secure land access, credit and insurance for **small scale producers**
- Incorporate **true cost pricing** (environment and social impacts as well as economic)
- Government and private sector support for **research**, education and training on Food Security and Nutrition (**FSN**)
- Start where you are – **support local** suppliers and producers

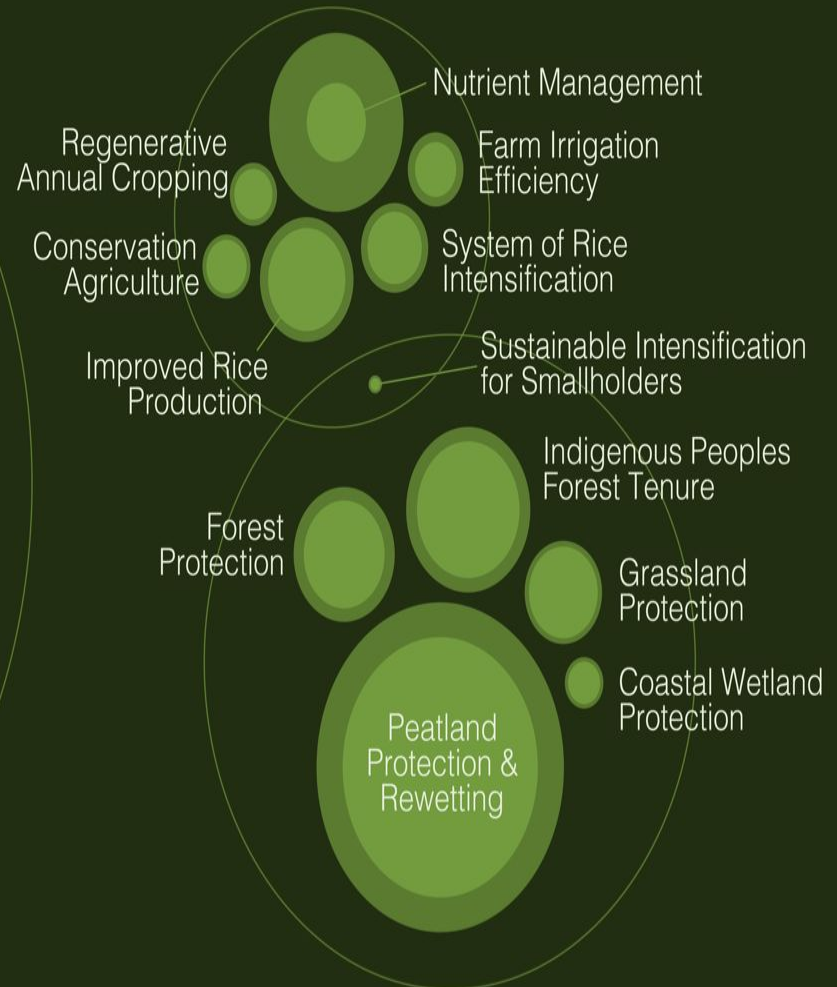
FOOD, AGRICULTURE, LAND USE SOLUTIONS

ADDRESS WASTE & DIETS

Reduced Food Waste

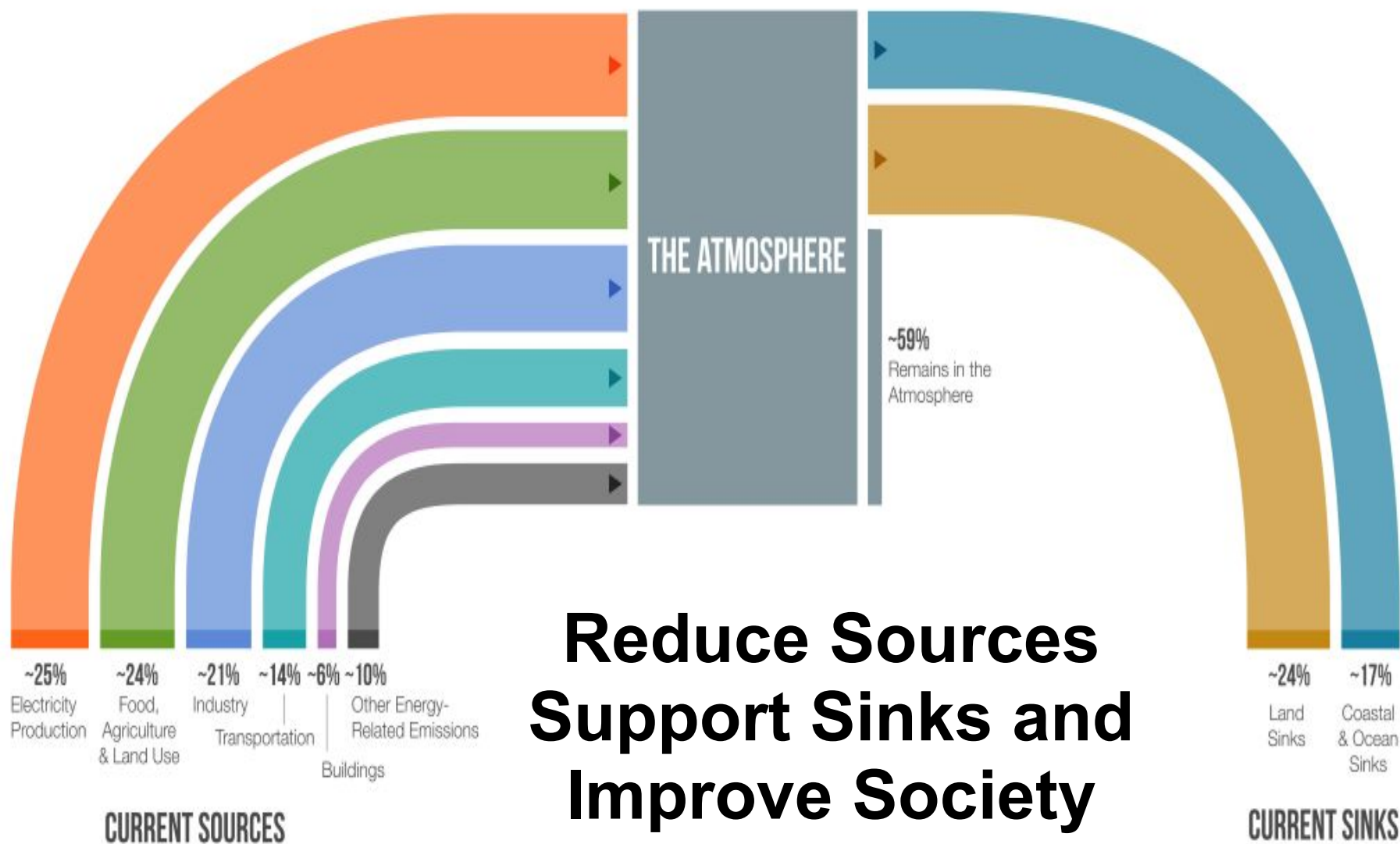
Plant-Rich Diets

SHIFT AGRICULTURE PRACTICES



PROTECT ECOSYSTEMS

EMISSIONS SOURCES & NATURAL SINKS





UN DECADE

ON

ECOSYSTEM RESTORATION

2021-2030



Agriculture in Ireland

Irish Ag accounts for **67%** (4.53 million ha) of the country's landmass (7 million ha).

Peatlands and wetlands cover **20%**,

Forest cover is **11%**

Built up areas **2%**

European average agricultural land cover 42%,

European average forest land cover is 35%.

The background of the slide is a photograph of a bustling outdoor market. In the foreground, there are several crates filled with fresh produce, including bright orange carrots, green leafy herbs, and various types of onions. In the background, more market stalls are visible, with people walking through the aisles. The overall scene is colorful and lively, representing a typical agricultural market.

Reducing Ag Land Use

Without meat and dairy consumption, global farmland use could be reduced by more than 75% – an area equivalent to the US, China, European Union and Australia combined – and still feed the world.

**Reducing food's environmental impacts through
producers and consumers**

J. Poore, T. Nemecek, June, 2018

A vibrant outdoor market stall with various fruits and vegetables. The stall is filled with colorful produce, including oranges, apples, and leafy greens, arranged in neat piles. Several people are visible in the background, browsing the goods. The scene is set in a sunny outdoor environment, likely a farmers' market or a public market square.

Hunger and Social Justice

Over 800 million people are chronically hungry

“The world’s croplands could feed 4 billion more people than they do now just by shifting from producing animal feed and biofuels to producing exclusively food for human consumption”.

Institute on the Environment at the
University of Minnesota 2013

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Introduction to the topic of Food Waste

FOOD WASTE




**HALVE OUR
FOOD WASTE
BY 2030**



**WASTE SEGREGATION
INFRASTRUCTURE
FOR APARTMENT
DWELLERS**

**SUSTAINABLE FOOD
WASTE MANAGEMENT
OPTIONS FOR ALL
HOMES AND BUSINESSES**





Manufacturing

497,500

Households

252,500

Restaurants and food services

203,300

Retail and distribution

100,400

**Food Waste
Sectors in
Ireland, EPA**

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Food Waste in Ireland

Ireland produces one million tonnes of food waste – €700/house/year

60% of household organic waste is put in the wrong bins

33% of the commercial residual bin consists of organic waste.

Over 30 per cent of businesses surveyed did not use a food waste bin (required since 2009)

In 2018, only 43 per cent of households had a brown bin (EPA, 2020a) (Mandatory in 2023).

Virtual Food Waste in Animal Ag

Feed Conversion Inefficiencies			
	Chicken	Pork	Beef
Feed conversion (feed/live weight)	2.5	5	10
Feed conversion (feed/edible weight)	4.5	9.4	25
Protein content (% of edible weight)	20	14	15
Protein conversion efficiency (5%)	20	10	4

Source: Vaclav Smil, 2008. *Eating meat: Evolution, Patterns and Consequences*

A vibrant outdoor market stall with various fruits and vegetables. The stall is filled with colorful produce, including oranges, apples, and leafy greens, arranged in neat rows. Several people are visible in the background, browsing the goods. The scene is set in a sunny outdoor environment, likely a farmers' market or a public square.

Meat production is incredibly inefficient.

On 1 Hectare in Ireland

Grain and vegetables will feed **39 to 46** people

Beans and peas will feed **twenty** people

Beef feeds just under one person.

- Vegan Sustainability 2016 – Central Statistics Office.

Exploring ways to Reduce Food Waste

Go on, take a challenge...





FoodCloud



Over **100 Million Meals** redistributed in Ireland &
Internationally since 2013. - By rescuing more than **42,000**
tonnes of food from going to waste, over **135,000 tonnes** of
CO2-equivalent has been avoided.

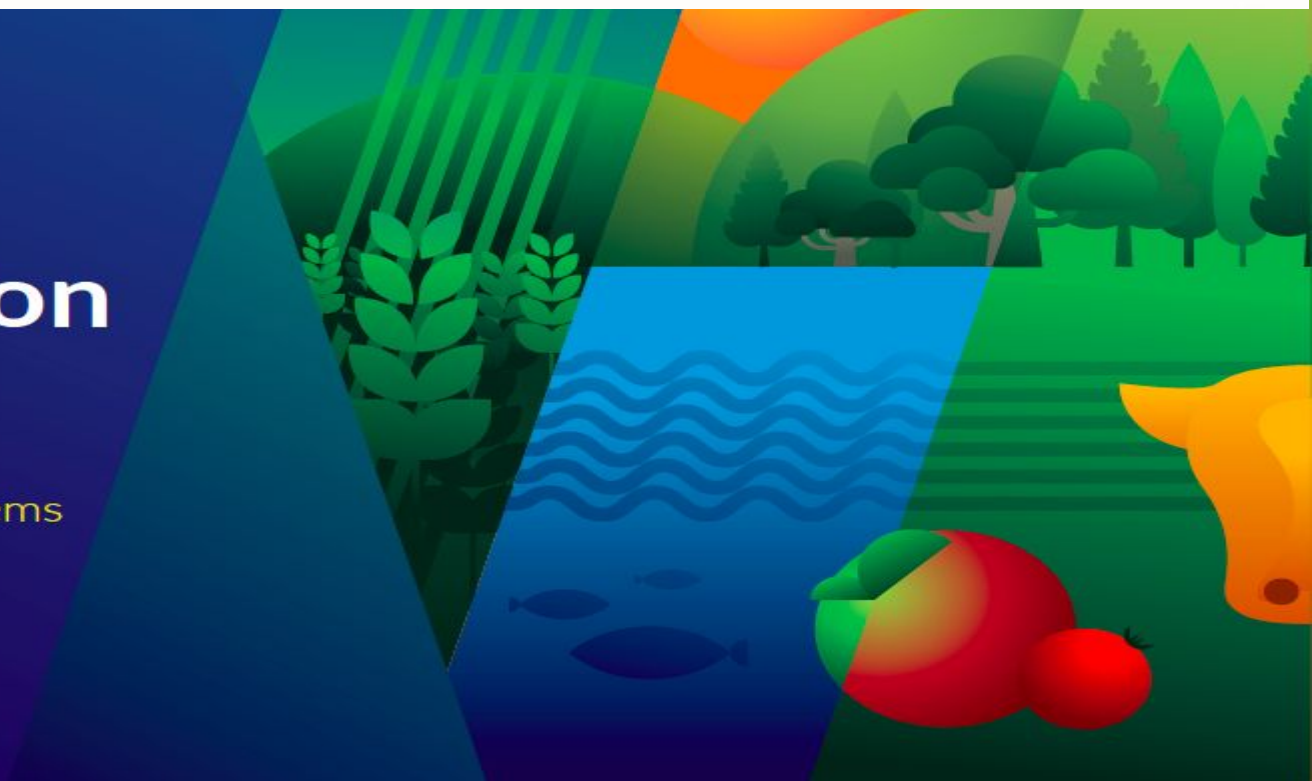
Ag Climatise

A Roadmap towards Climate Neutrality

**EXECUTIVE
SUMMARY**

Food Vision 2030

A World Leader in
Sustainable Food Systems





Food Vision goals by 2030

Biogenic methane: A reduction of 10% by 2030 (on 2018 level).

Nitrous Oxide: Reduce emissions from chemical fertilisers by over 50%

Water Quality: Reduce nutrient losses from agriculture to water by 50%

Biodiversity: 10% of farmed area prioritised for biodiversity

Air Quality: Reduce ammonia emissions to 5% below 2005 levels

Forestry: Increase afforestation to 8,000 ha/yr

Organic farming: 7.5% of ag land to be farmed organically by 2030

Seafood: Achieve 30% of marine protected areas by 2030

Food Waste: Halve the level of food waste per person by 2030

Note: *Ag Climatise has additional targets for chemical nitrogen use, abatement through LULUCF, peat soils, renewable energy, etc*








**What actions could you or
your community group take
around food?**

5 minutes - in the chat box

Individual actions reduce Emissions 25-30%

TOP 20 HIGH-IMPACT CLIMATE ACTIONS FOR HOUSEHOLDS AND INDIVIDUALS

OUR FOOD 	OUR WASTE 	OUR TRAVEL 	OUR ENERGY 
12.4%	1.3%	 2.8%	8.6%
			Distributed Solar Photovoltaics (64.9)
			Insulation (18.5)
		Public Transit (15.4)	LED Lighting (15.7)
		Carpooling (11.1)	Solar Hot Water (13.7)
Reduced Food Waste (103.1)	Recycling (11.3)	Electric Cars (9.8)	High-Performance Glass (11.3)
	Reduced Plastic (5.4)	Hybrid Cars (4.7)	High-Efficiency Heat Pumps (9.1)
	Composting (2.9)	Telepresence (4.4)	Smart Thermostats (7.3)
Plant-Rich Diets (102.2)	Recycled Paper (1.4)	Electric Bicycles (1.6)	Low-Flow Fixtures (1.5)

The data presented here represents Gt CO₂-eq | Graphic designed by Chad Frischmann

**PROJECT
DRAWDOWN.**

The background of the slide is a photograph of a bustling outdoor market. In the foreground, there are several crates filled with fresh produce, including bright orange carrots, green leafy herbs, and various types of mushrooms. In the background, more market stalls are visible, with people walking through the aisles. The overall scene is colorful and lively, emphasizing the freshness of the food.

Individual Food Actions

Cut down on meat, fish, dairy products, and eggs.

Try out one new vegetarian recipe

Join Meat free Mondays campaign or a vegan challenge

Cook with beans or lentils or veggie sausages or burgers

Try delicious dairy alternatives like soya or oat milk

Cook your own food from scratch

Eat foods that are in season

Cook and eat two meals a day with family

Learn how to store and preserve foods

Gather some wild foods

Read a book on nutrition



Individual Food Actions

Avoid air freighted foods

Avoid excess food packaging

Start a small herb or vegetable garden

Eat organic

Purchase fair trade food products

Buy Irish whenever possible

Calculate how much food you produce in a week

Reduce Food Waste

Compost your food waste

Always prepare a grocery shopping list

Study How to survive the super-market battleground



Community Food Actions

Set up or visit a local farmers market

Organise a potluck with friends or neighbours

Join a local GIY or allotment group

Encourage local community groups / schools to join the Meat free Mondays campaign or a vegan challenge

Organise regular plant based healthy cooking classes

Work with council to establish a commercial horticulture area in your community

Ensure all households have a brown bin or compost at home

Ensure all restaurants have a food waste system