

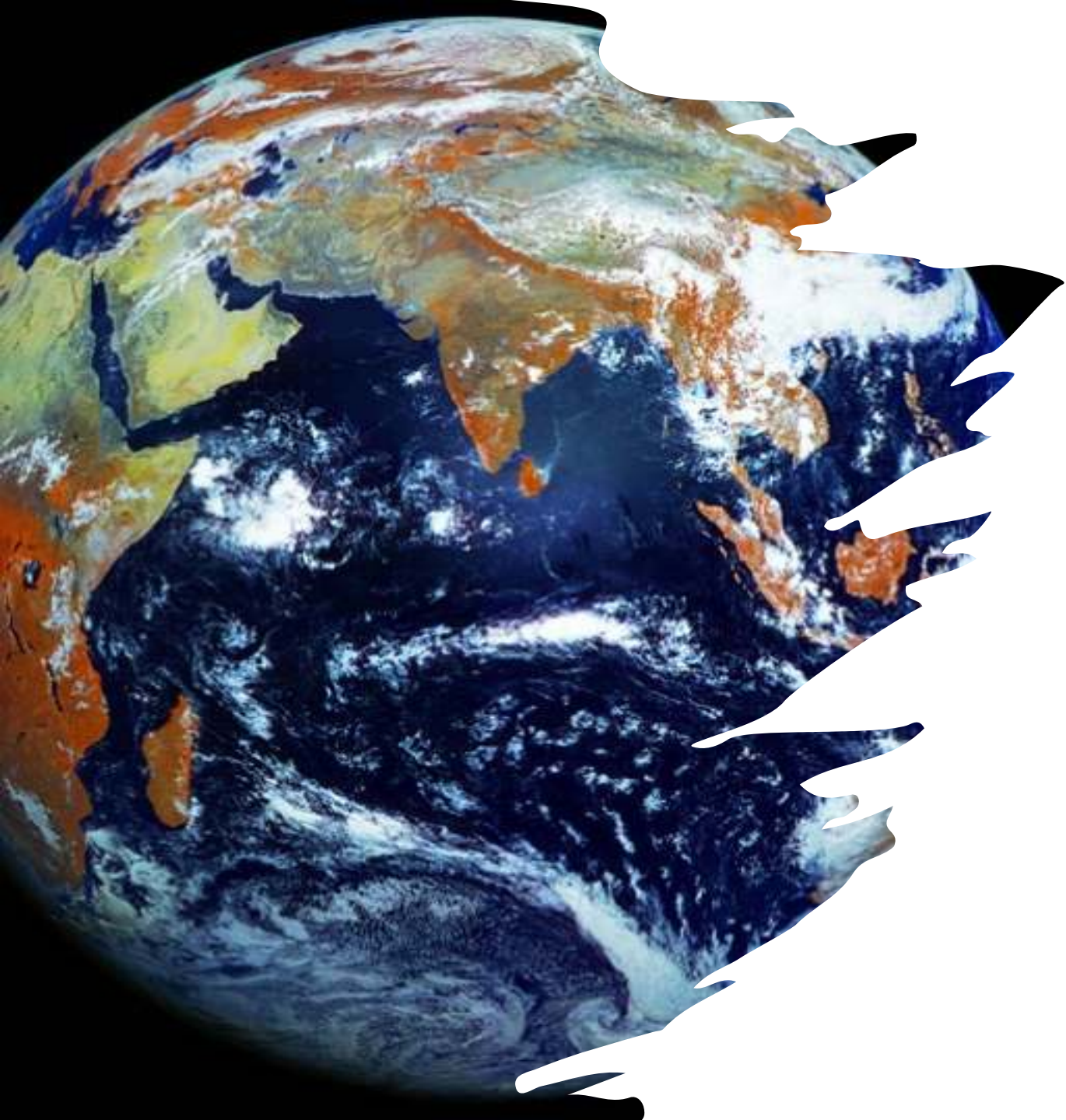
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# MOTHER EARTH

Dr Wong Teck Wee

# Breath holding Exercise

00 : 00 : 00





# Mother Earth is sick and “angry”?

---



- Principle of balance – homeostasis, ying yang
- Removing life force – **air, water, soil, sun, health**
- Top of food chain- apex predator will survive ?



## Earth



Landslide

## Air



Typhoon

## Natural disaster or man-made?



The imbalance of the 4 elements of nature:  
**Earth, Air, Fire & Water**

## Fire

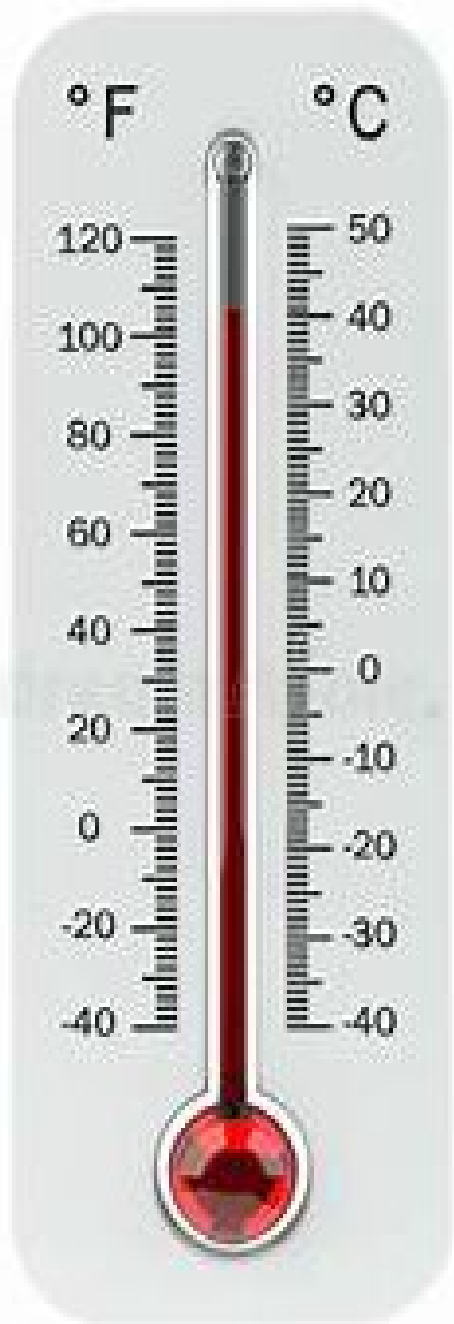


Fire

## Water

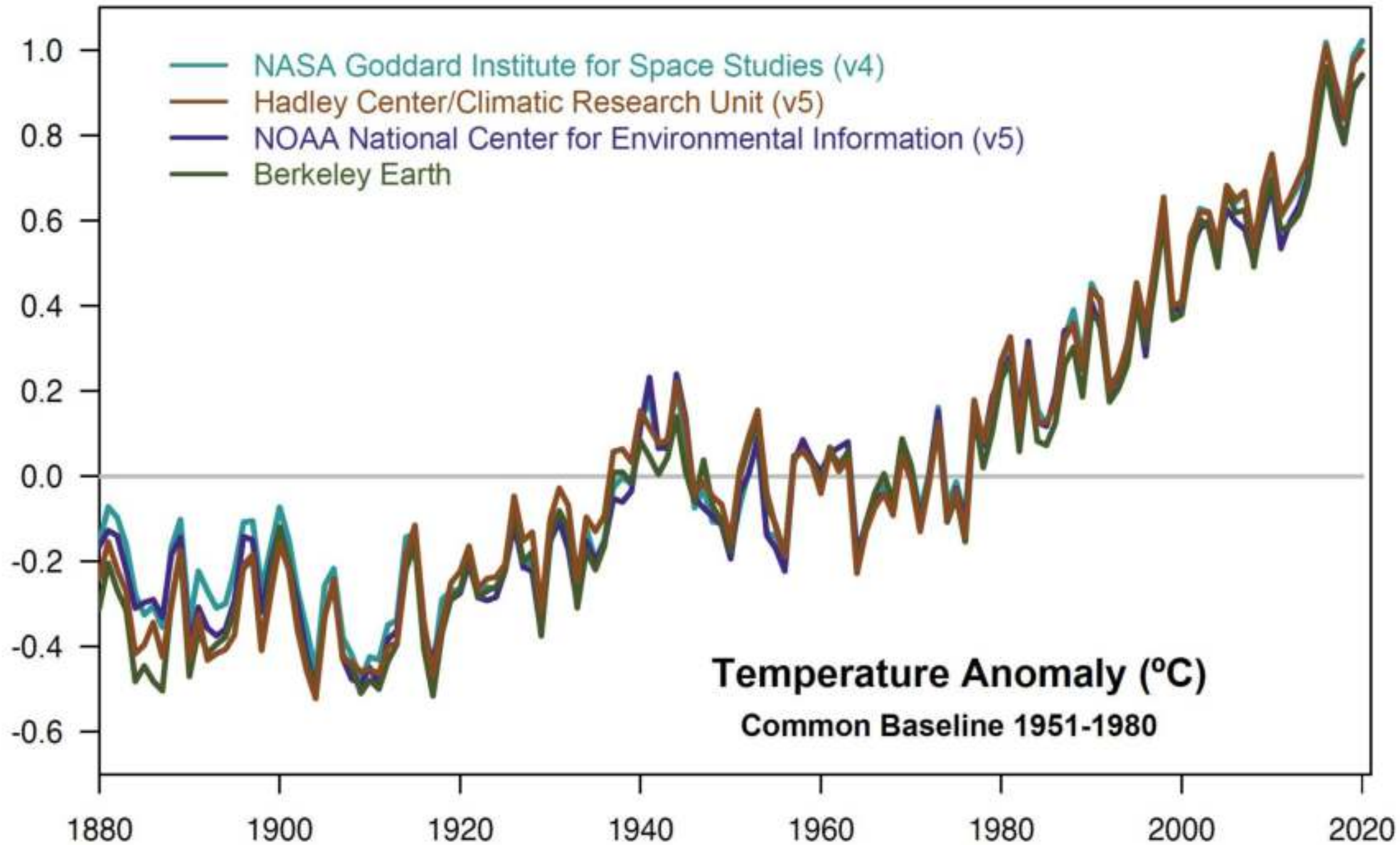


Flood



Temperature Increase	Impact
5°C - 6°C	<b>MOST</b> living creatures extinct. <b>Point of NO RETURN</b>
4°C	Drought affecting over 40% of inhabited land. Sea level rise of 3-6 feet.
3°C	80% of icebergs melt, leading to massive climate refugees.
2°C	Over 1 million species in ecosystems face extinction.
1°C	Extreme climate events and global food shortages.

**1.5°C is the tipping point**





# The Climate Clock /Climate Crisis Countdown Clock /Doomsday Clock

[Science — Climate Clock](#)

- This is a timeline that **no government is yet willing to commit** to, but we must do what science and justice demand, not what elected politicians might deem convenient.
- We mustn't **pretend we have more time** than we do.

Data for the deadline is sourced from the [Mercator Research Institute on Global Commons and Climate Change](#). The MCC's carbon clock assumes an average annual rate of 42.2 Gt of carbon emissions in order to calculate the time remaining on the clock. However, if rates of global emissions continue to rise, our carbon budget will run out even faster. If we cut the rate of global carbon emissions, time on the clock would hypothetically begin to increase.

DEADLINE TIME LEFT TO LIMIT GLOBAL WARMING TO 1.5°C

LIFELINE DIVESTED FROM FOSSIL FUELS

5 YRS 227 DAYS 23:59:09

\$0.00 TRILLION

On 7 thDec2023



CARBON NEUTRAL CEMENT BRAND | AMAZON RAINFOREST DESTRUCTION SLOWS SHARPLY YEAR TO DATE | IRELAND TO CREATE NEW CENTERS TO RESEAR #ActInTime

- The Clock's Deadline tells us that, at current rates of greenhouse gas emissions, we have less than **6 years (2030!!!!!!)** left in our global "carbon budget" that gives two-thirds chance of staying under the critical threshold of 1.5°C of global warming from preindustrial period.

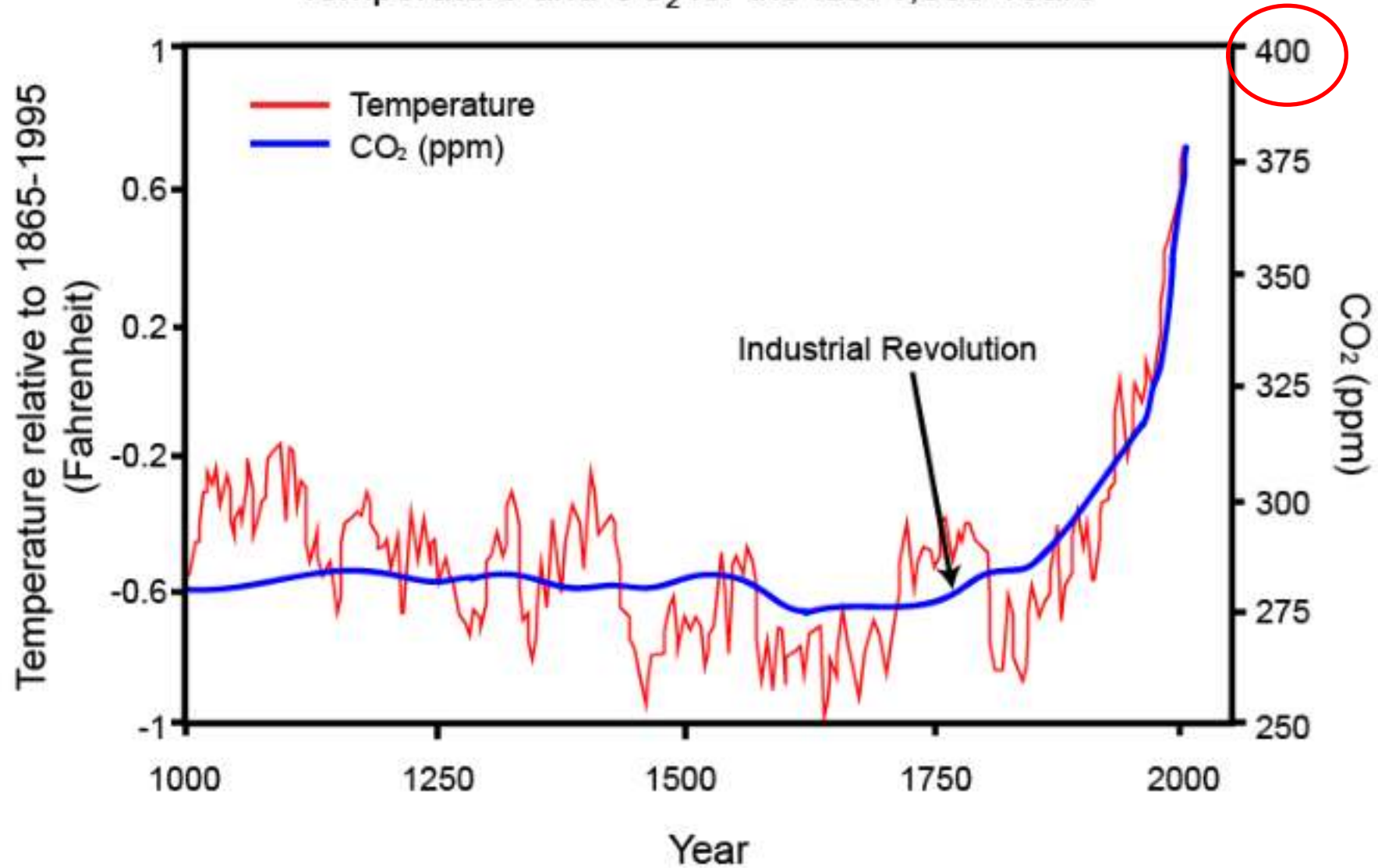
Metric	Description
Carbon Budget Countdown	remaining amount of CO2 emissions that can be released to limit global warming to a specific target. (e.g., 1.5 degrees Celsius above pre-industrial levels).
Renewable Energy Transition	Tracks the progress in shifting from fossil fuels to renewable energy sources like solar, wind, hydro, and geothermal energy.

# Aetiology of Environmental changes

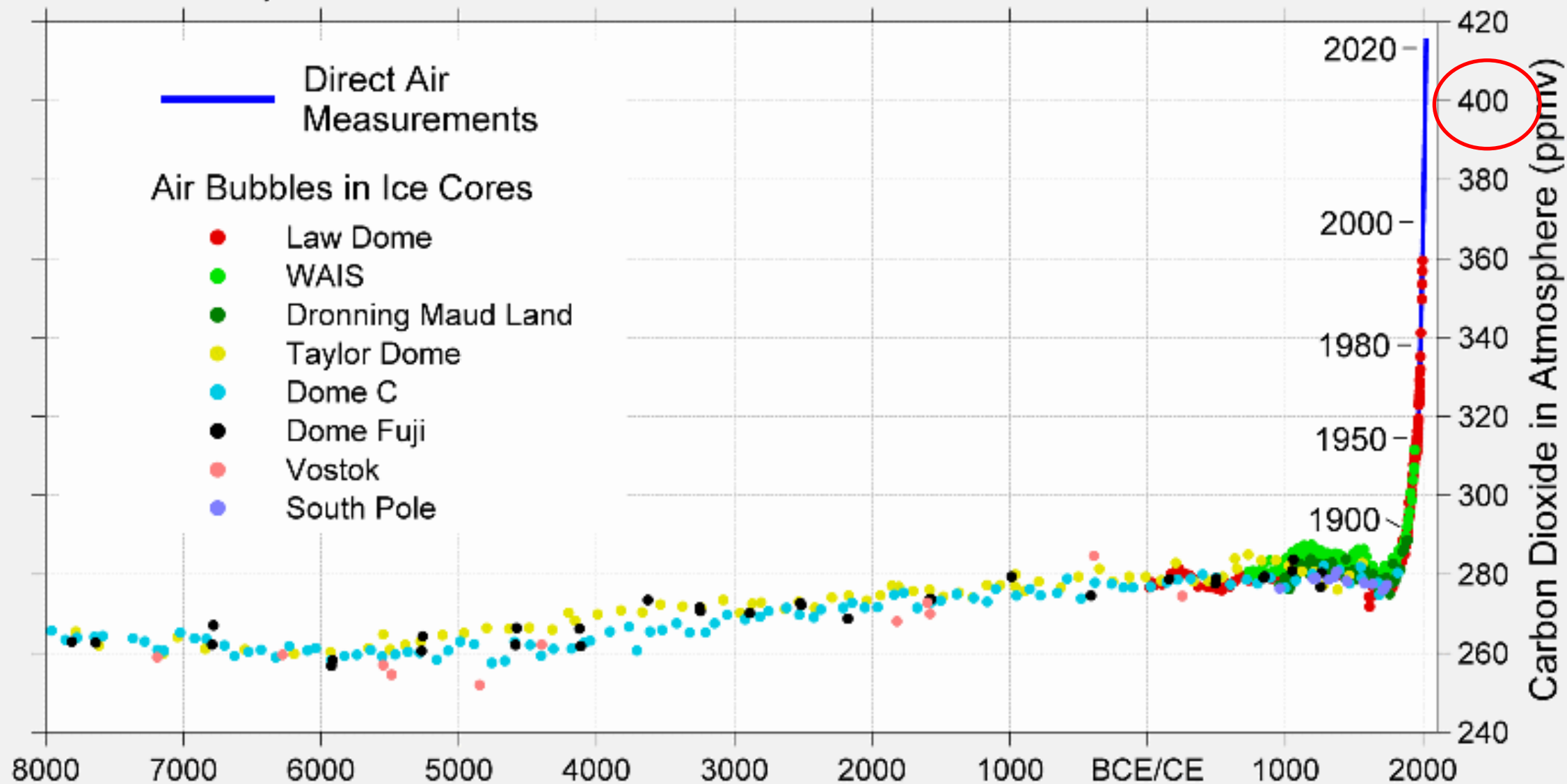
Rank	Causes of Environmental Deterioration	Impact
1	Greenhouse Gas Emissions (CO2, Methane)	30%
2	Deforestation and Habitat Loss	20%
3	Pollution (Air, Water, Soil)	15%
4	Overpopulation and Resource Consumption	12%
5	Industrialization and Urbanization	10%
6	Agriculture and Land Degradation	8%
7	Plastic Pollution	5%

# 1000 years of CO<sub>2</sub>

Temperature and CO<sub>2</sub> for the last 1,000 Years

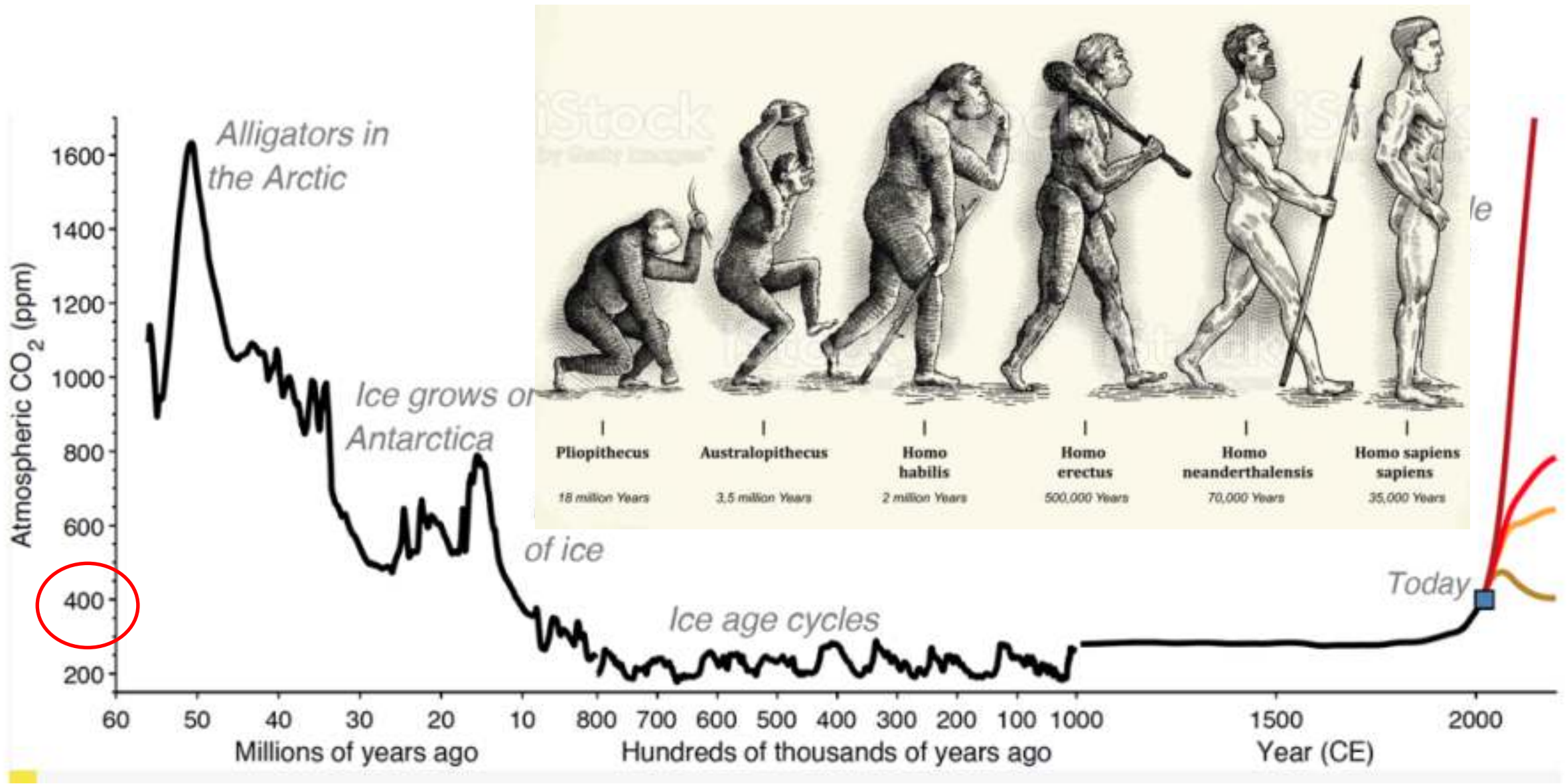


# 10,000 Years of Carbon Dioxide



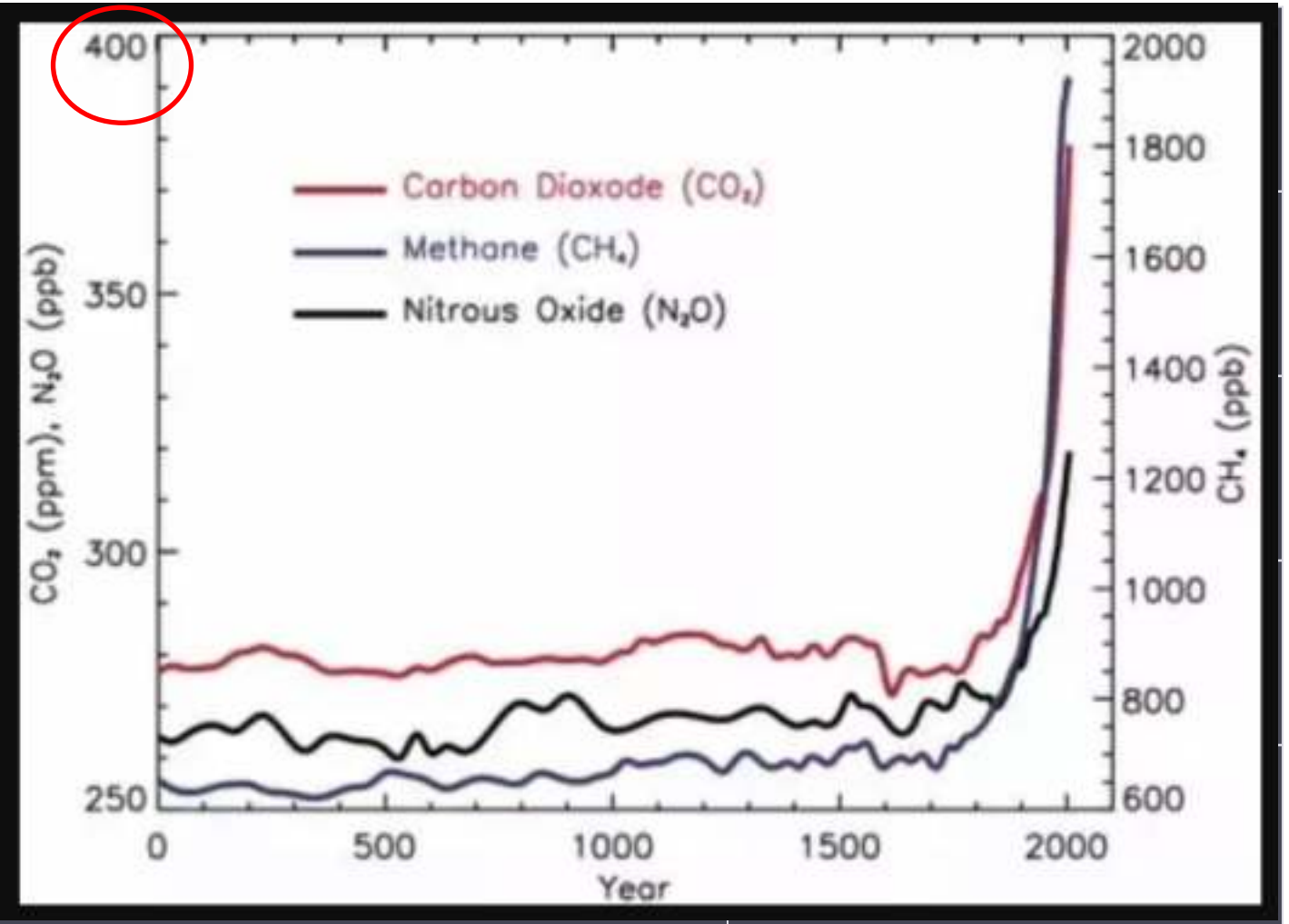
EARTH's Age 4.5 Billion yo

60 million years of CO2



# KILLER GASES

Greenhouse Gas	Main Source
Carbon Dioxide	Burning Fossil Fuels, Land Use Change
Methane	Livestock, Natural Gas Production
Nitrous Oxide	Agriculture (Fertilizers, Manure)
Fluorinated Gases	Industrial Processes, Refrigeration



# New Zealand's Greenhouse Gas Emissions

2008 total emissions = 74.7 megatonnes of carbon dioxide equivalent

48%

Carbon Dioxide (CO<sub>2</sub>)

HFCs, PCFs & SF<sub>6</sub>

1%

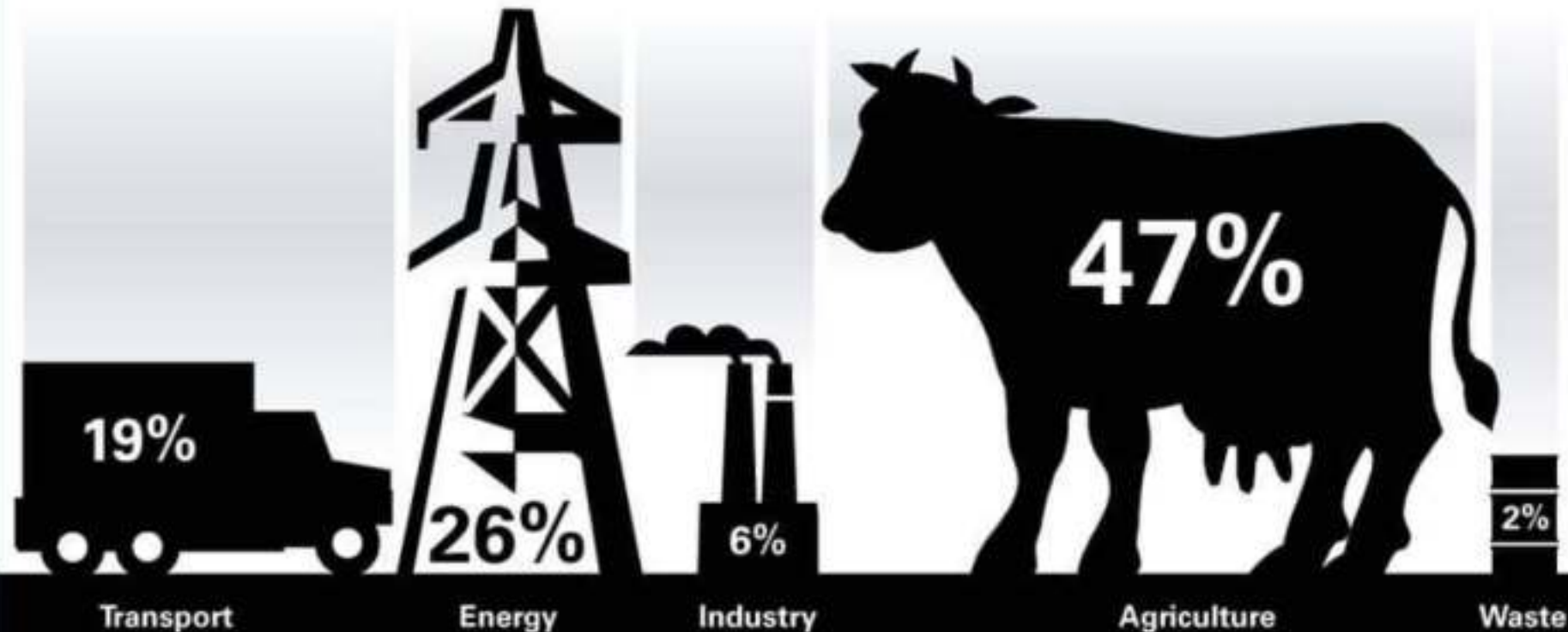
35%

Methane (CH<sub>4</sub>)

16%

Nitrous Oxide (NO<sub>2</sub>)

SOURCE: WWW.SCIENCE MEDIA CENTRE  
DATA: MINISTRY FOR THE ENVIRONMENT

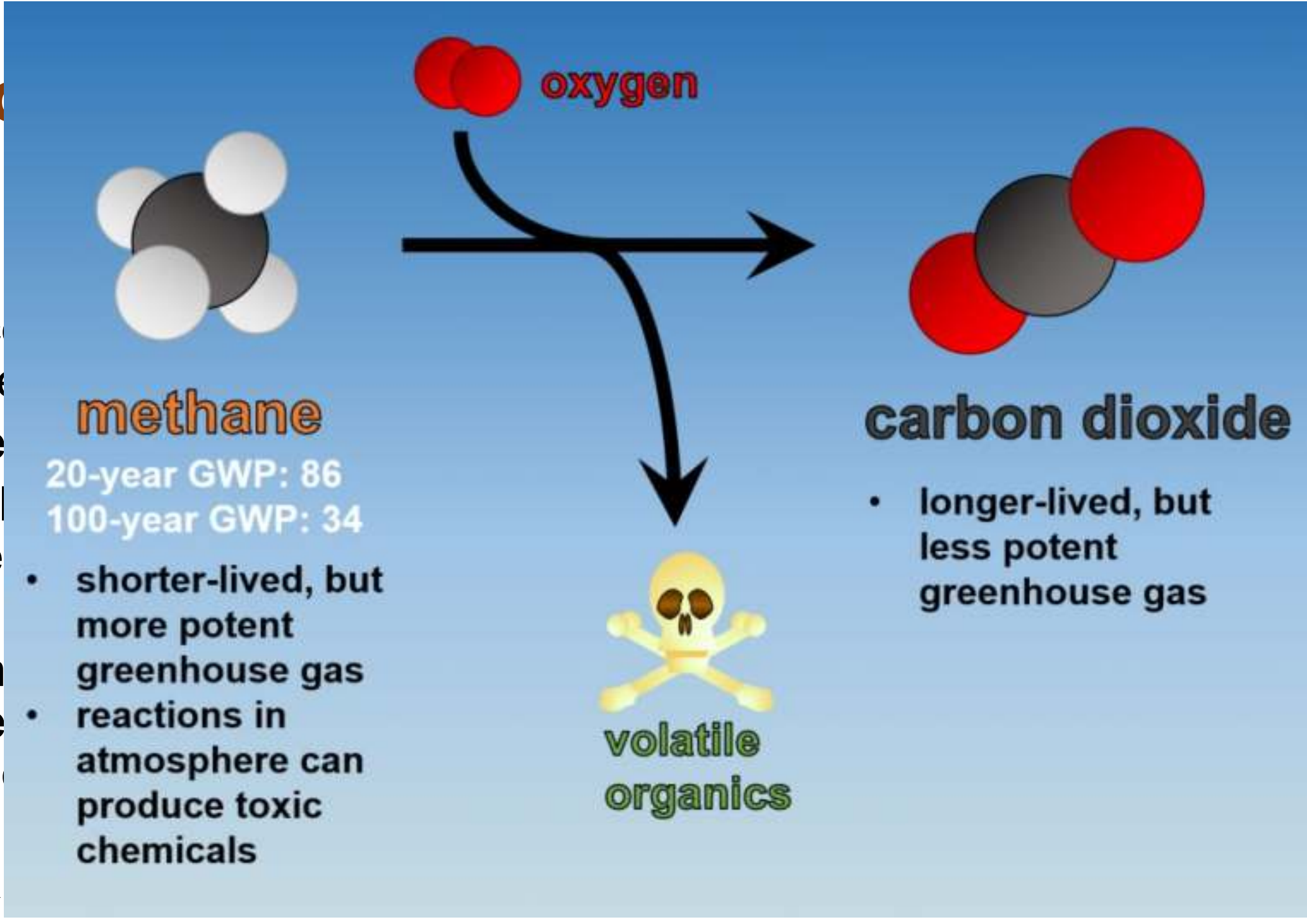




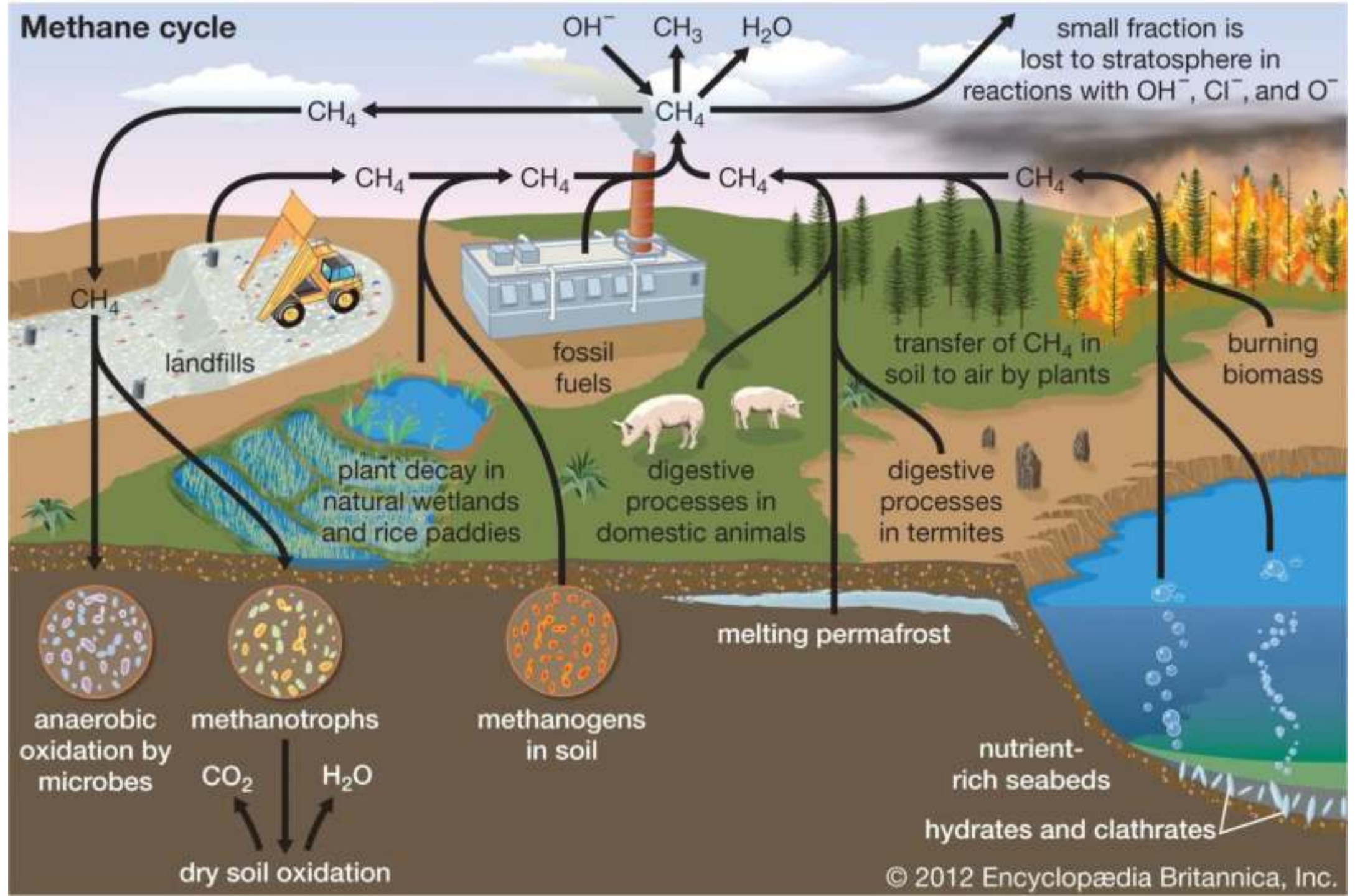
# GWP of Global

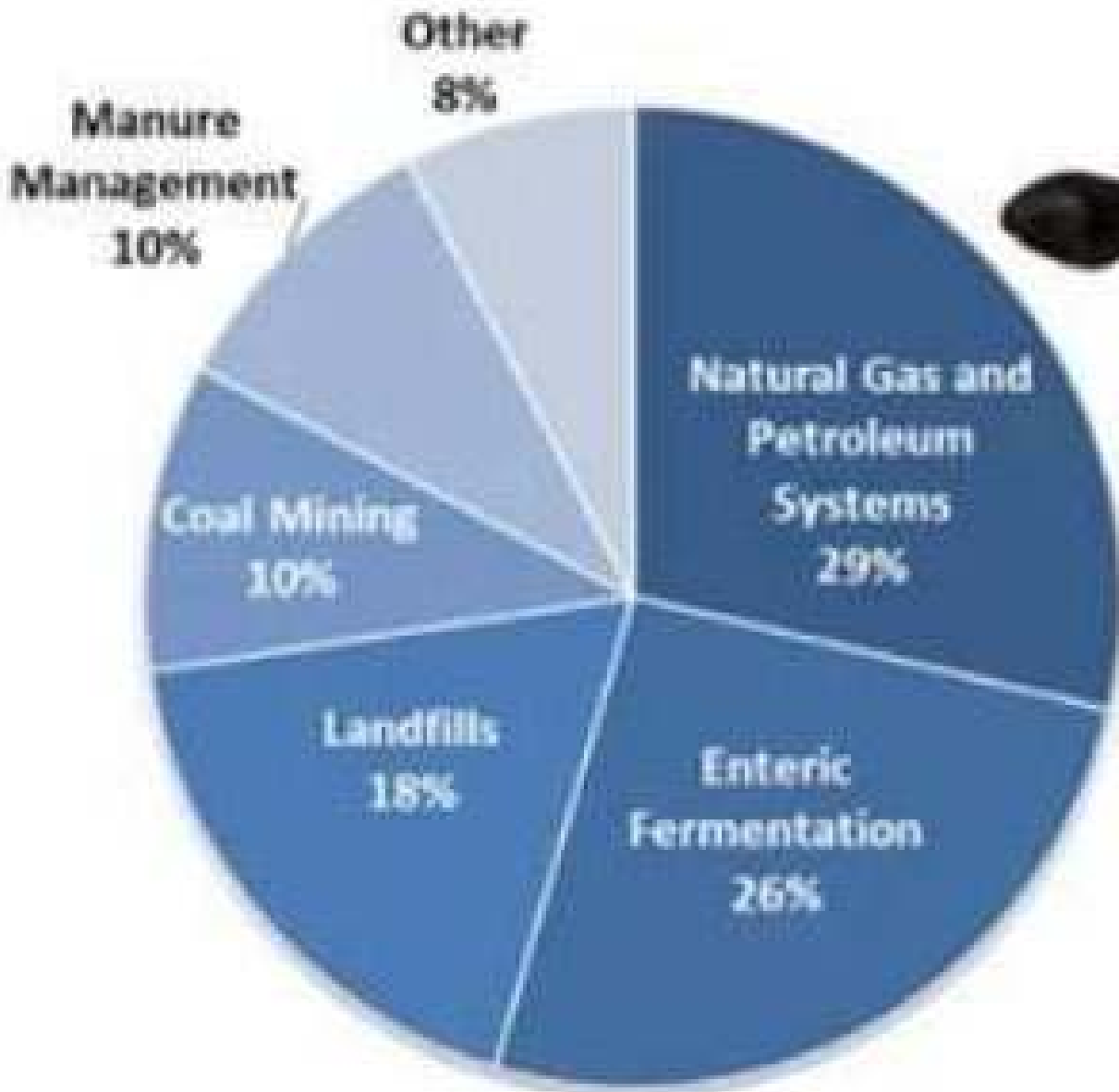
- GWP= e of time c reference
- Methane
- The GW time due between
- Accordin for longe in the sh

甲烷更



# Methane cycle

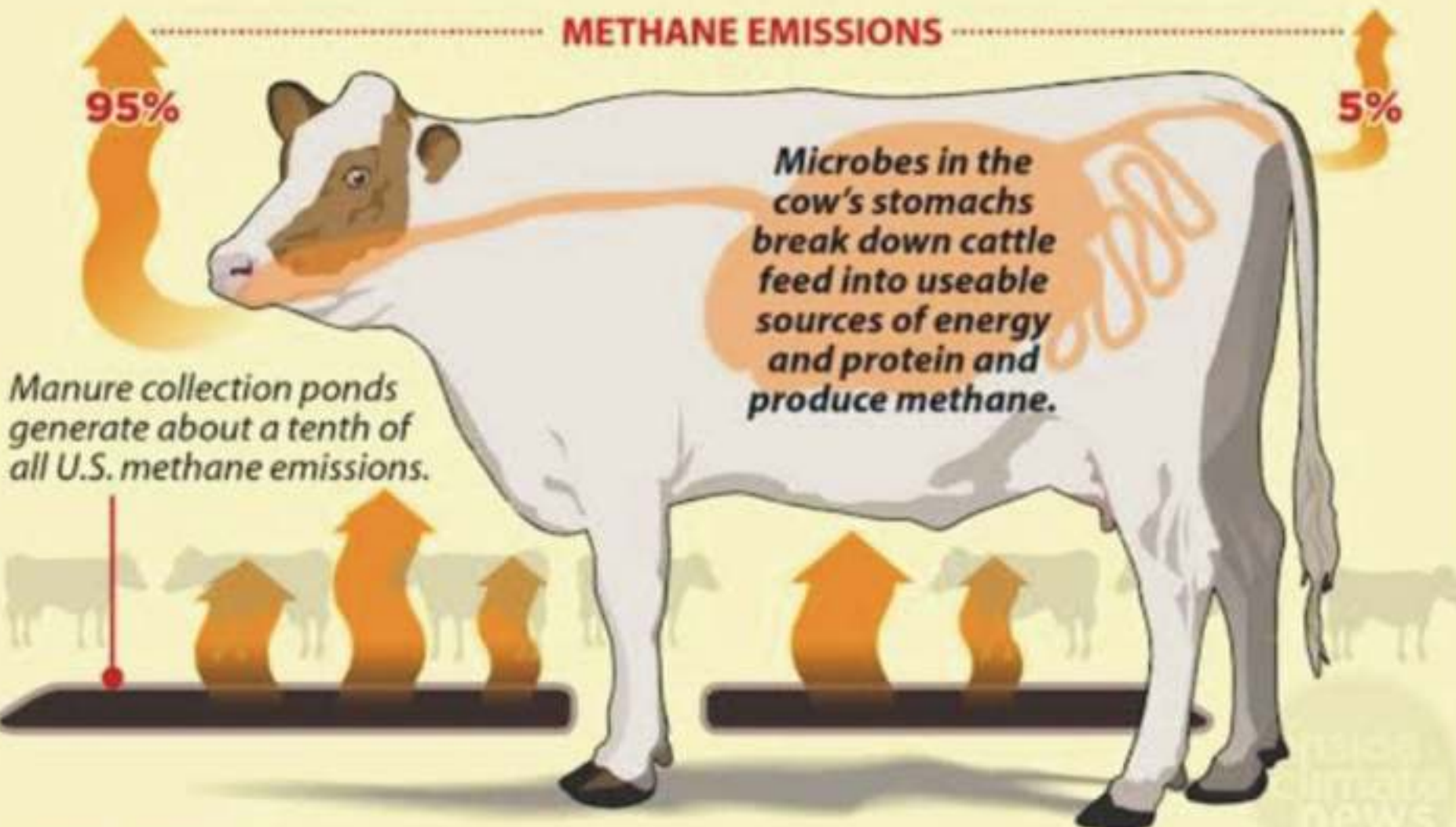




**U.S. METHANE EMISSIONS BY SOURCE**

# Livestock-Based Methane Emissions

About a quarter of U.S. methane emissions come straight out of livestock, most of it from belching.



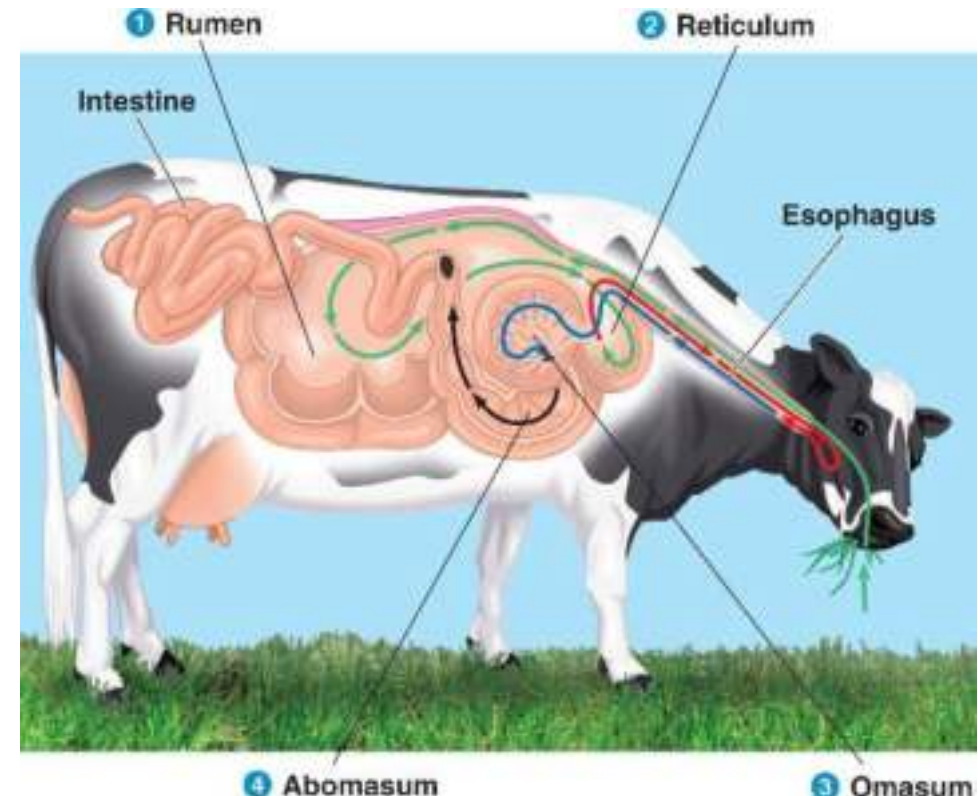
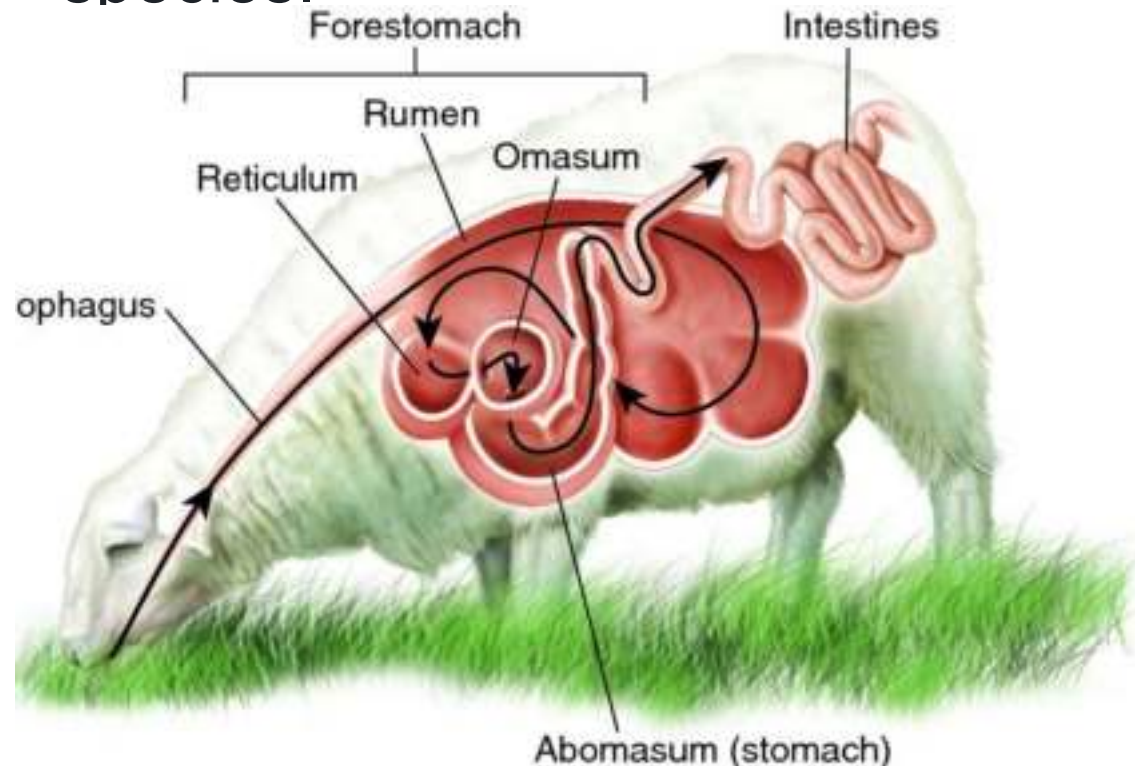
## METHANE EMISSIONS PER GRAM OF PROTEIN

Global estimates in grams, CO<sub>2</sub>-equivalent

Buffalo	404g
Beef	295g
Milk from cows	87g
Pork	55g
Chicken	35g

# 4 Stomachs - Domesticated ruminants

- Ruminants are grazing herbivorous able to acquire nutrients from plant-based food by fermenting it in a specialized stomach prior to digestion, principally through microbial actions- bacteria, fungi, protozoa.
- Foregut fermentation, typically requires the fermented ingesta (known as cud) to be regurgitated and chewed again to further break down plant matter and stimulate digestion.
- The roughly 200 species of ruminants include both domestic and wild species.



# World Population versus Livestock

8.0 billion



1.5 billion

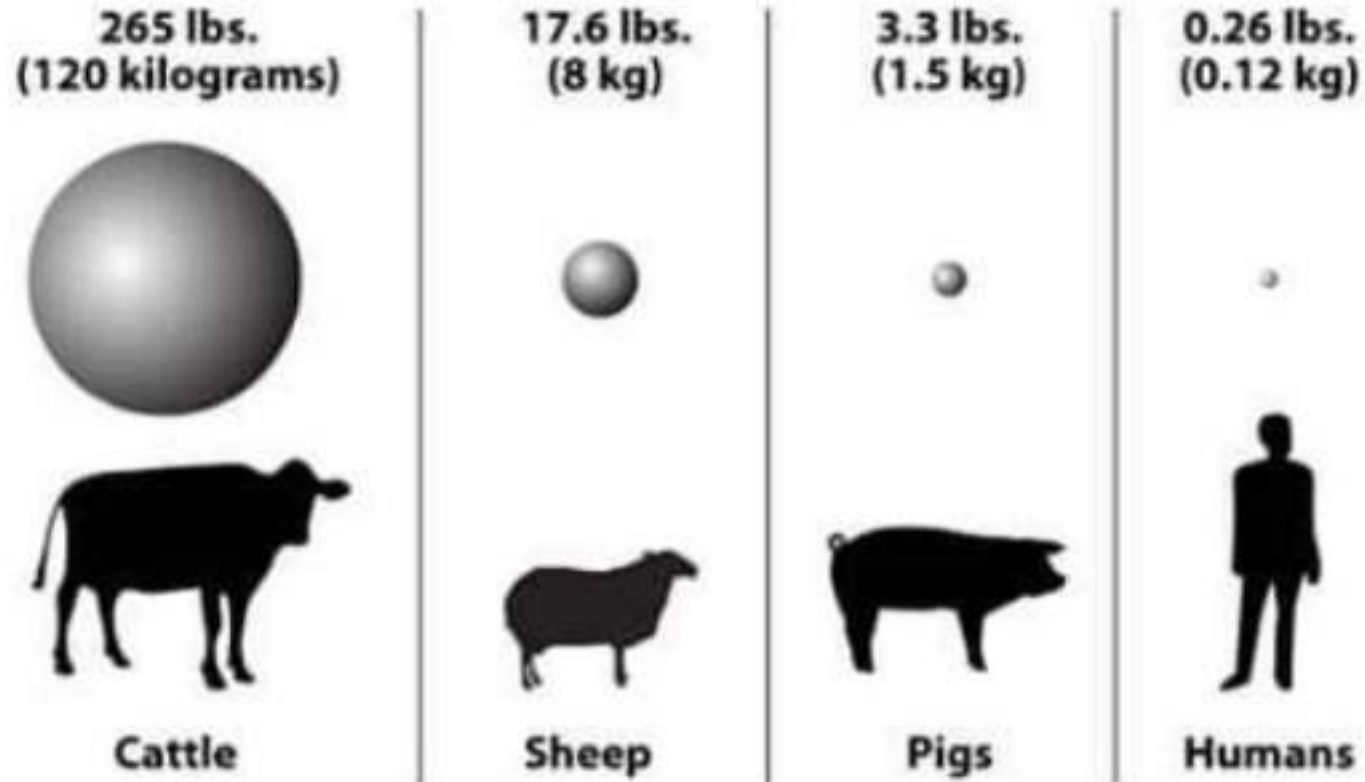


1.1 billion



33 billion

## METHANE EMITTED PER ANIMAL PER YEAR



SOURCES: NASA GODDARD INSTITUTE FOR SPACE SCIENCE; ENVIRONMENTAL PROTECTION AGENCY;  
U.S. DEPT. OF ENERGY TECHNOLOGY LABORATORY; SHUTTERSTOCK



KARL TATE / © LiveScience.com

**83-143 Mature trees were required to convert 1 cow's emission into oxygen**

# Malaysia Food Security Threats

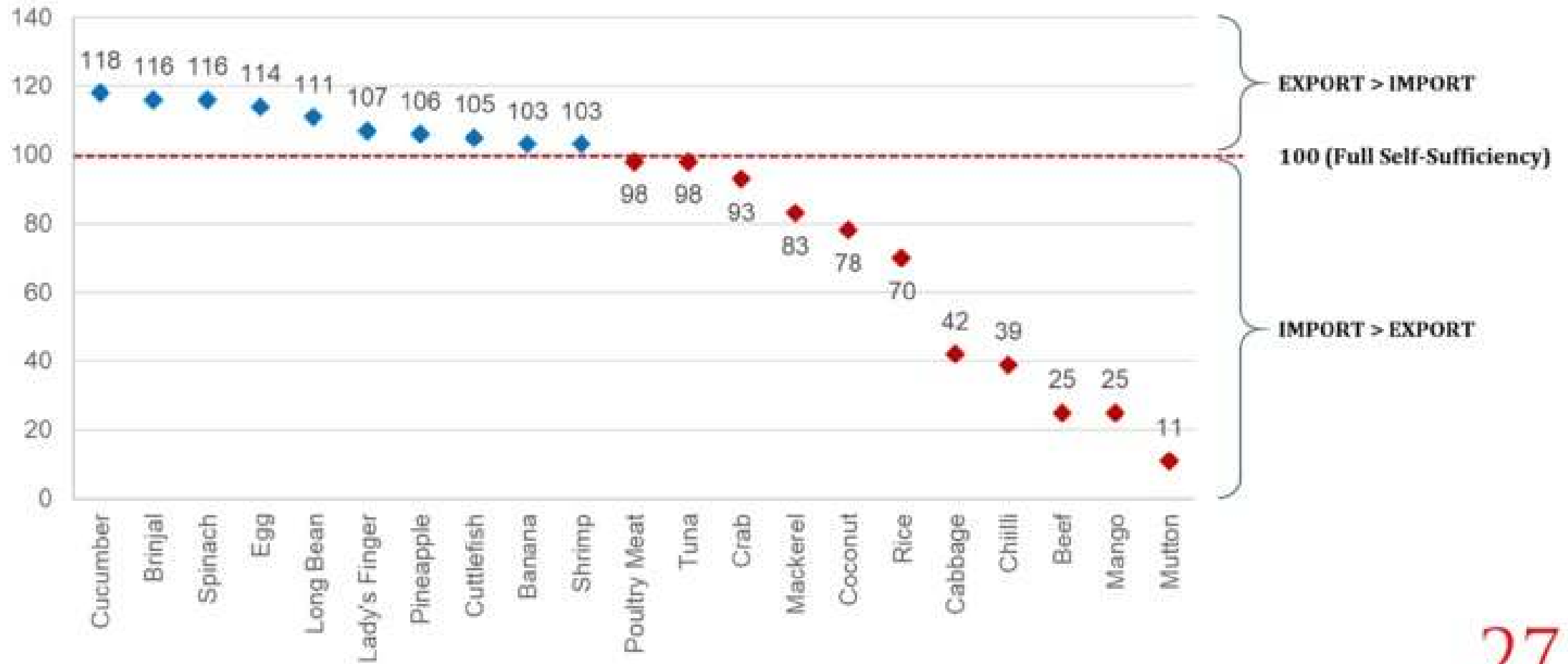
- Quarterly Bulletin from Bank Negara Malaysia, Malaysia's foods imports forming about 24% of our total food supply. As of August 2019, Malaysia's food imports have reached RM34.2 billion, increased dependency on food purchases.
- Statistics show that Malaysia has not attain self-sufficiency

Item Data of 2018	Import Percentage	Value (in RM billion)
Rice Consumption	30% - 40%	-
Beef Supply	More than 70%	-
Cereal	-	7.1
Coffee, Cocoa, Tea & Spices	-	7.0
Feedstock	-	5.9
Vegetables	-	4.6
Fish & Crustaceans	-	4.1
Fruits	-	3.9
Meat	-	3.9
Sugar	-	3.8
Dairy Products	-	3.8



## Malaysia's Self-Sufficiency Ratio

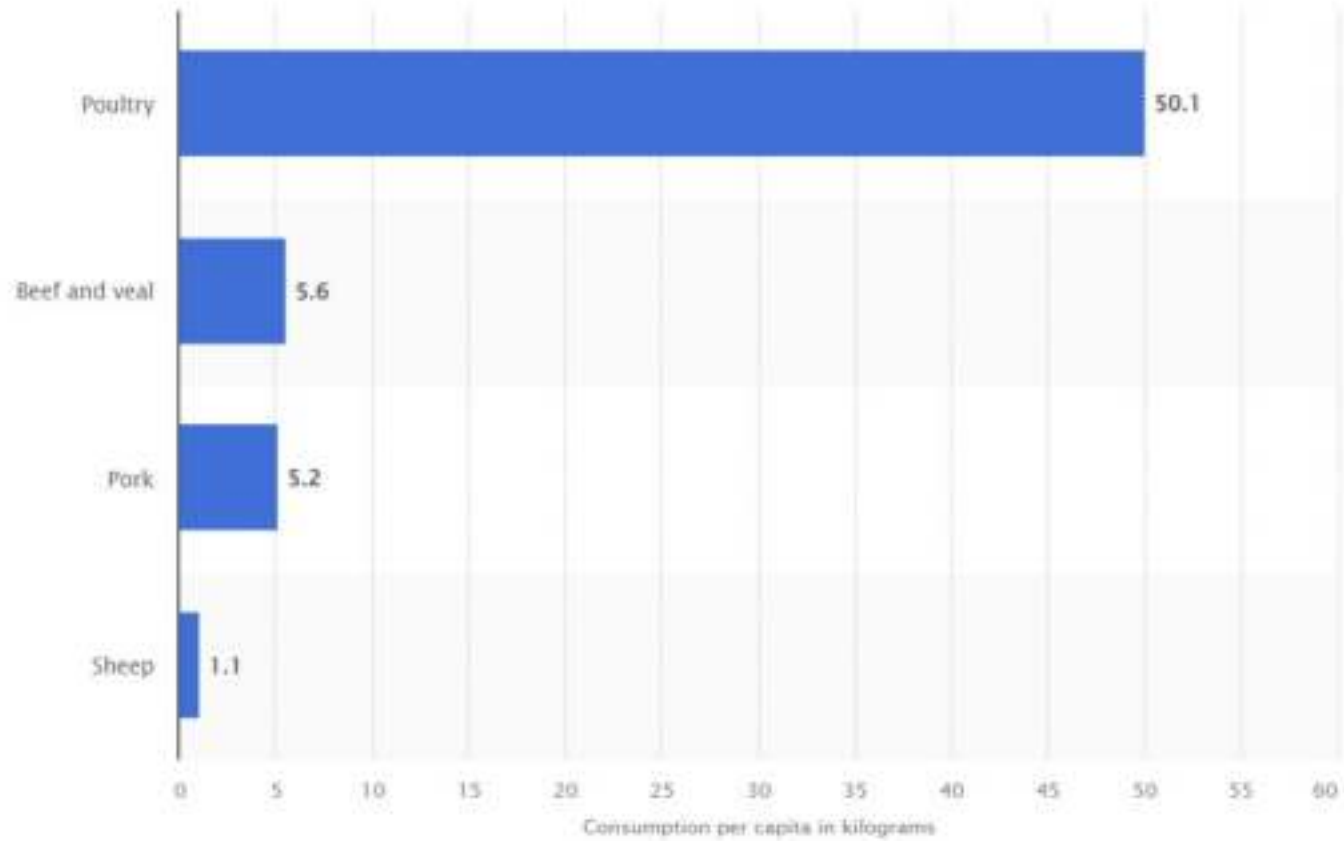
(%, 2017)



Sources: Bank Negara Malaysia, 27Group Analysis

## Meat consumption per capita in Malaysia in 2022, by type

*(in kilograms)*



# Food: greenhouse gas emissions across the supply chain



**Land Use Change**: Aboveground changes in biomass from deforestation, and belowground changes in soil carbon.

**Farm**: Methane emissions from cows, methane from rice, emissions from fertilizers, manure, and farm machinery.

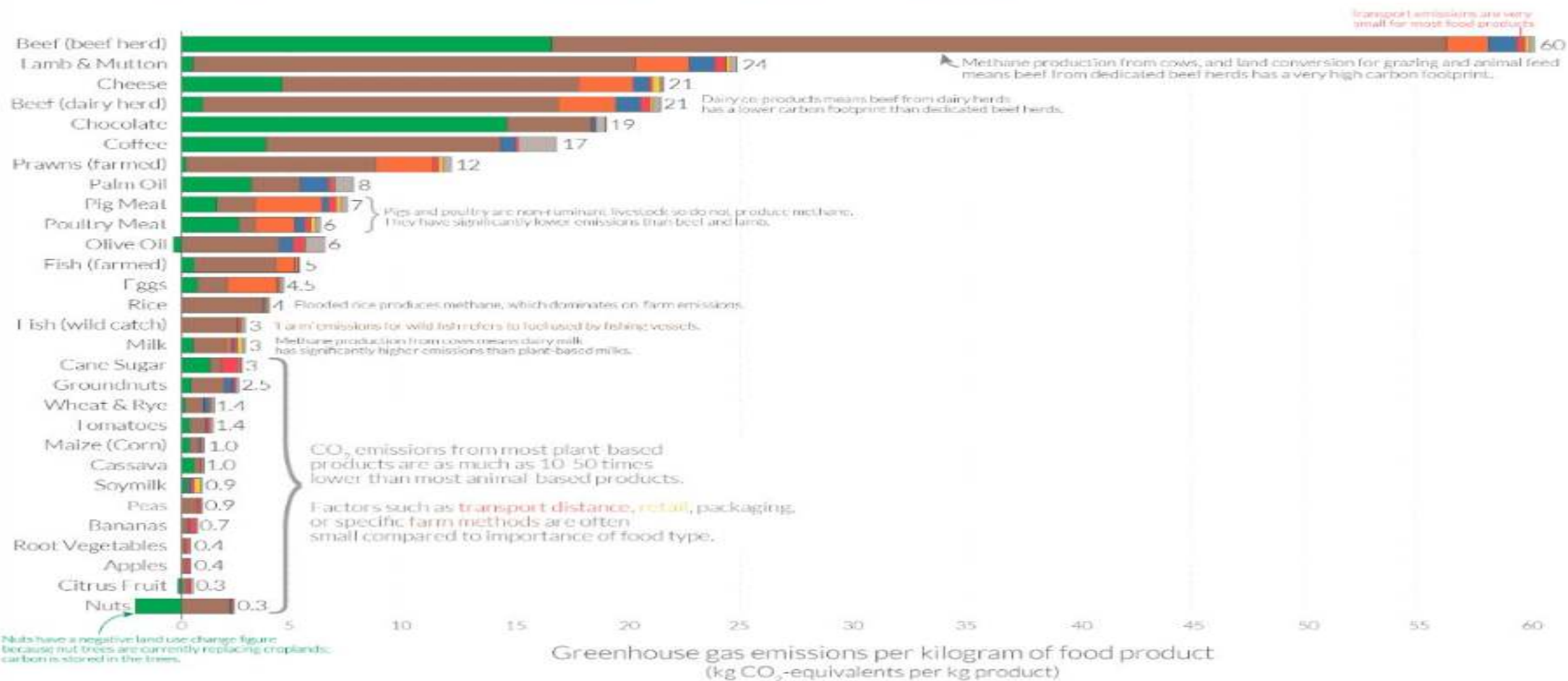
**Animal Feed**: On-farm emissions from crop production and its processing, and feed for livestock.

**Processing**: Emissions from energy used in the process of converting raw agricultural products into food items.

**Transport**: Emissions from energy use in the transport of food items in-country and internationally.

**Retail**: Emissions from energy use in retail operations, and other retail processes.

**Packaging**: Emissions from the production of packaging materials, material transport, and end-of-life disposal.







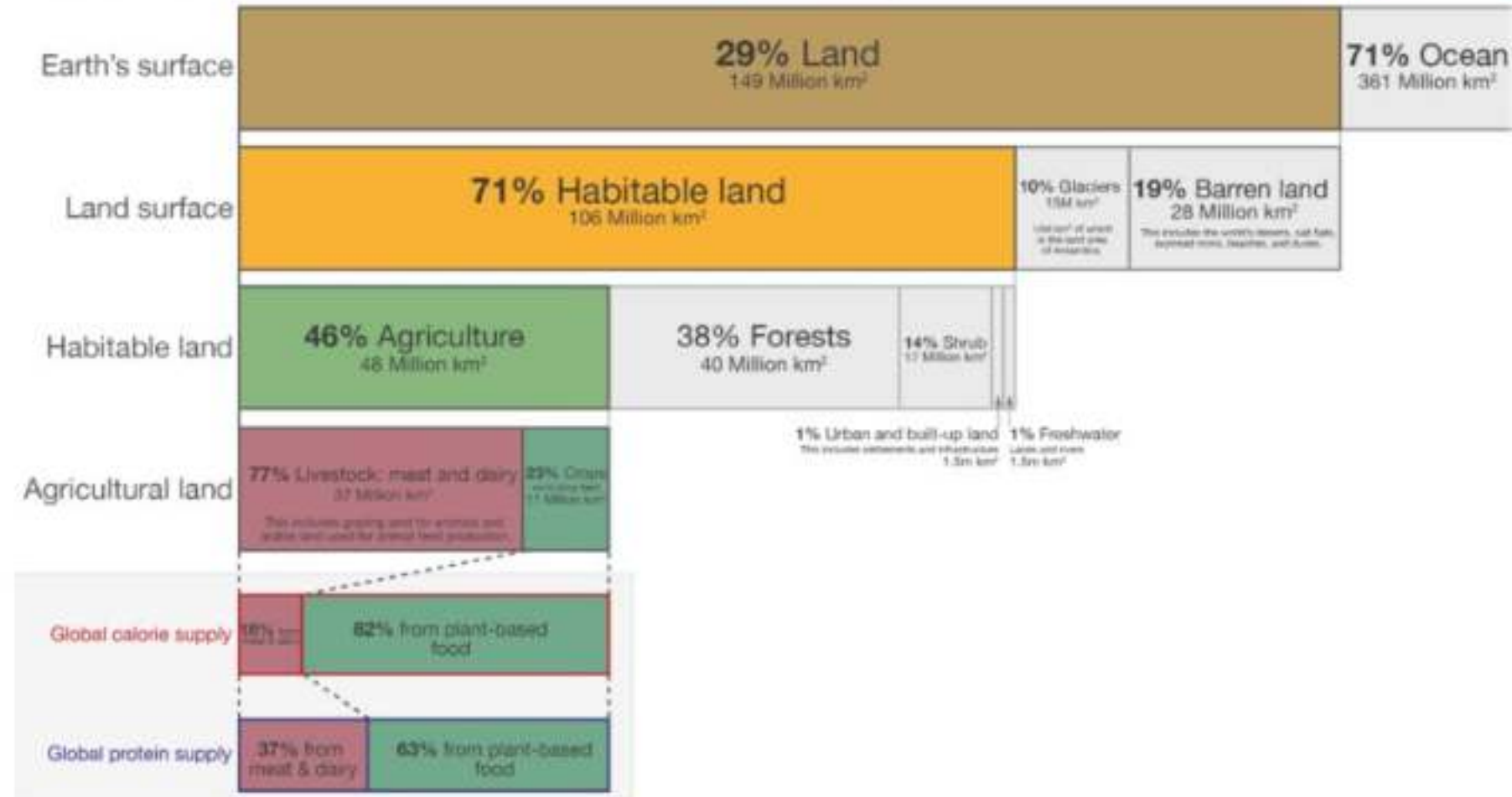
**For the past 10 years, every minute, a forest area equivalent to 11 football fields is lost to land clearing for animal farming, 40% of the grains produced in the world is used for animal feed.**

*World-Friendly Agricultural Foundation*



**Humans Consume More  
Meat Now!**

# Global land use for food production



# Clean Water Consumption (Natural Resources) in producing our daily food

100 L Water – 1 kg Potato

4000 L Water – 1 kg Rice

13000 L Water – 1 kg Cow Meat



1 萬3 千公升的水製造1 公斤牛肉

**NONE OF MY  
BUSINESS**



**I respectfully  
DON'T CARE**





CONSEQUENCES	Description
Global Warming	Gradual increase in global temperatures due to the greenhouse effect, resulting in various climate-related changes.
Climate Change	Altered weather patterns, increased frequency of extreme weather events like <b>heatwaves, droughts, storms, and floods.</b>
Melting Ice and Glaciers	Rising temperatures causing the melting of polar ice caps and glaciers, leading to <b>sea level rise.</b>
Ocean Acidification	Increased CO2 absorption by oceans, resulting in acidification, harmful to marine life like <b>corals and shellfish.</b>
Biodiversity Loss	Disruption of ecosystems and threats to plant and animal species, leading to <b>extinction</b> or migration of species.
Health Impacts	Heat-related illnesses, changing disease patterns, and health risks due to altered climate conditions. <b>Infectious disease</b>
Agricultural Disruptions	Impact on crop yields, <b>food shortages,</b> and economic challenges for agriculture-dependent regions.
Water Scarcity	Changes in precipitation patterns and increased evaporation rates leading to <b>water scarcity</b> in some regions.
Economic Consequences	<b>Economic losses, damage to infrastructure, and increased costs of adaptation and disaster recovery.</b>
Social Disruptions	<b>Population displacement, resource conflicts, and social unrest arising from climate-induced changes.</b>

**16/12/2022**  
**Batang Kali**  
**Campsite**  
**Landslide**  
**Tragedy**





# Lost of Lives & Families...

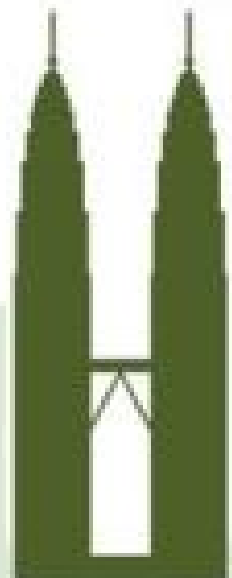


# Points to ponder

→ KL residents generate **3,500 tonnes** of rubbish per day



> This could fill Petronas Twin Towers in **40 days**



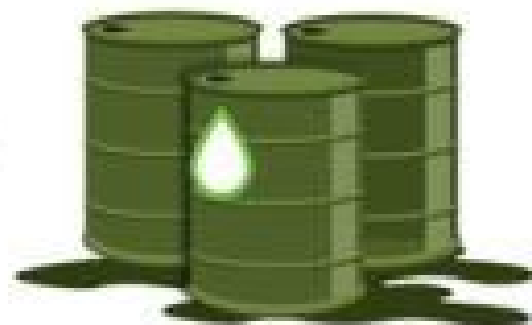
> It would take **30 days** to fill the 28ha site of TRX to the height of **2m**



→ KL residents illegally dumped **23,000 tonnes** of rubbish in the past five years



→ Alam Flora collects **130 tonnes** of fat, oil and grease from KL drains per day



→ It costs about RM **325mil** a year to collect and dispose waste



What is the %  
representation  
here?

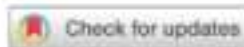




Start from you  
without 5Rs  
Sampah  
accidentally  
dropped from your  
hands



Research points to two main entry routes into the human body: We swallow them and we breathe them in. Evidence is growing that our food and water is contaminated with microplastics. 24 Mar 2023



# Microplastics in fish and fishmeal: an emerging environmental challenge?

Christina J. Thiele<sup>1</sup>, Malcolm D. Hudson<sup>1</sup>, Andrea E. Russell<sup>2</sup>, Marilyn Saluveer<sup>1,3</sup> & Giovanna Sidaoui-Haddad<sup>1</sup>

Microplastics are contaminants of emerging concern; they are ingested by marine biota. About a quarter of global marine fish landings is used to produce fishmeal for animal and aquaculture feed. To provide a knowledge foundation for this matrix we reviewed the existing literature for studies of microplastics in fishmeal-relevant species. 55% of studies were deemed unsuitable due to focus on large microplastics (> 1 mm), lack of, or limited contamination control and polymer testing techniques. Overall, fishmeal-relevant species exhibit 0.72 microplastics/individual, with studies generally only assessing digestive organs. We validated a density separation method for effectiveness of microplastic extraction from this medium and assessed two commercial products for microplastics. Recovery rates of a range of dosed microplastics from whitefish fishmeal samples were  $71.3 \pm 1.2\%$ . Commercial samples contained  $123.9 \pm 16.5$  microplastics per kg of fishmeal—mainly polyethylene—including  $52.0 \pm 14.0$  microfibrils—mainly rayon. Concentrations in processed fishmeal seem higher

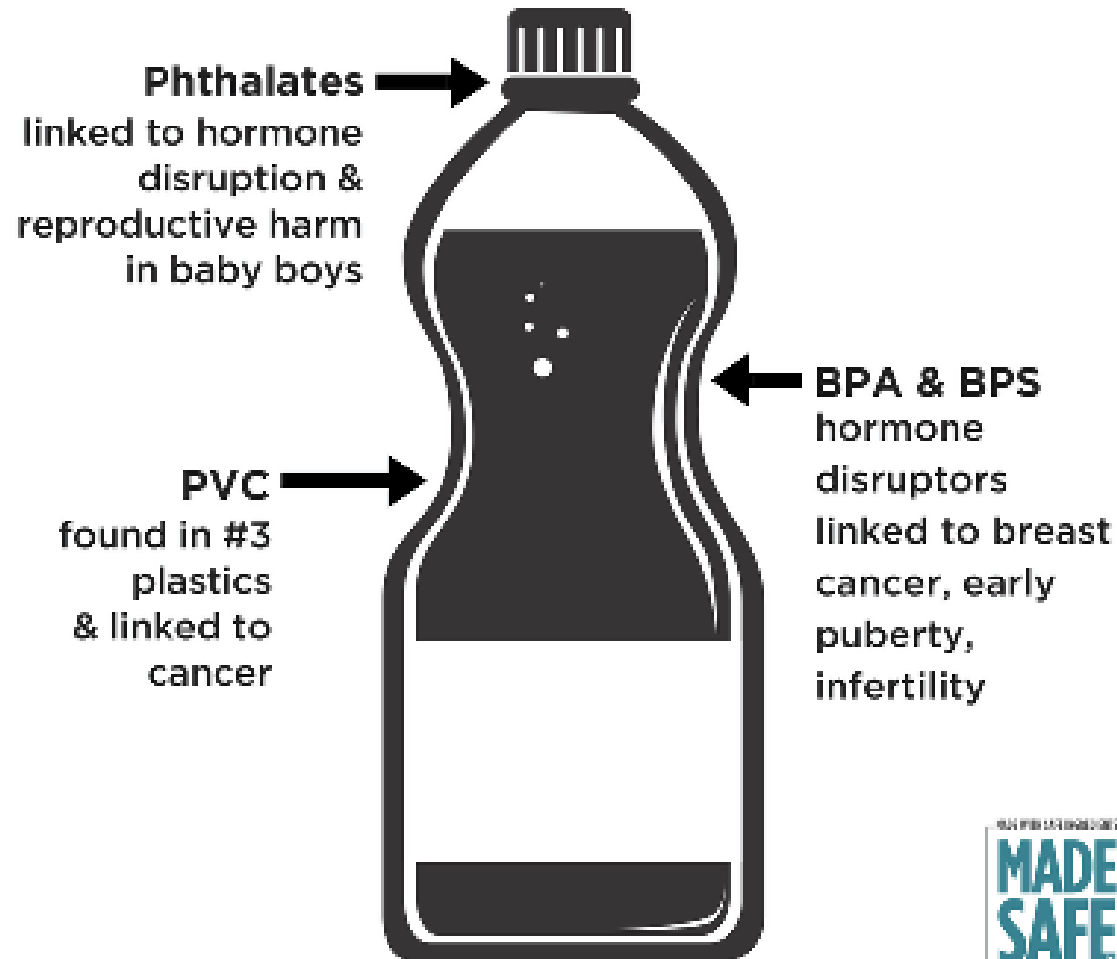




What the fish  
eat, you eat  
too!



# Toxic Chemicals in Plastics



Don't reuse  
your  
mineral  
bottles !

# How We Eat, Drink and Breathe Microplastics

Average number of microplastic particles found per gram/liter/m<sup>3</sup> of selected consumables



Estimated annual microplastic particles consumed per person\*  
Between **78,000** and **211,000**

\* Based on an American diet. Including via inhalation and water consumption (bottled or tap). Figures are "likely underestimates".

Source: 'Human Consumption of Microplastics', Cox et al. in Environmental Science & Technology (2019)



statista

# Where the Ocean's Microplastics Come From

Estimated share of total microplastics in the world's oceans, by source



Source: International Union for Conservation of Nature




statista

# Plastic Can Take 500 Years To Bio-Degrade In The Ocean

Estimated number of years for selected items to bio-degrade in a marine environment\*



## Plastic resin identification code Quick reference guide

COMMON PRODUCTS OF EACH CATEGORY				
EASIER TO RECYCLE		<b>Polyethylene Terephthalate</b>	water bottles fizzy drink bottles	
		<b>High-density Polyethylene</b>	milk bottles shampoo bottles laundry detergent containers	
DIFFICULT TO RECYCLE		<b>Polyvinyl Chloride</b>	vinyl tubing/pipe biscuit trays commercial cling wrap	
POSSIBLE TO RECYCLE		<b>Low-density Polyethylene</b>	soft plastic products bread bags squeeze bottles plastic film	
EASIER TO RECYCLE		<b>Polypropylene</b>	most temperature resistant containers takeaway containers ice-cream tubs	
DIFFICULT TO RECYCLE		<b>Polystyrene</b>	yoghurt pots (six-packs) solo cups and CD cases expanded polystyrene cups (eg. styrofoam)	
		<b>All other plastics</b>	toys compostible packaging (eg. Polylactic Acid) sippy cups CDs/DVDs and lenses	

Easier to recycle commonly collected by council recycling schemes | Possible to recycle (sometimes recycled) | Difficult to recycle (not often recycled)

**CURIOUS?**

**CONVINCED?**

**COMMITTED?**



Prior to that he has spoken about global warming in >1000 presentations since **1989**. It's been 17 years (**2006**) since former Vice President Al Gore raised the alarm about climate change with his documentary, "An Inconvenient Truth."

Since then, he's been shouting from the rooftops about the risks of global warming more or less nonstop.



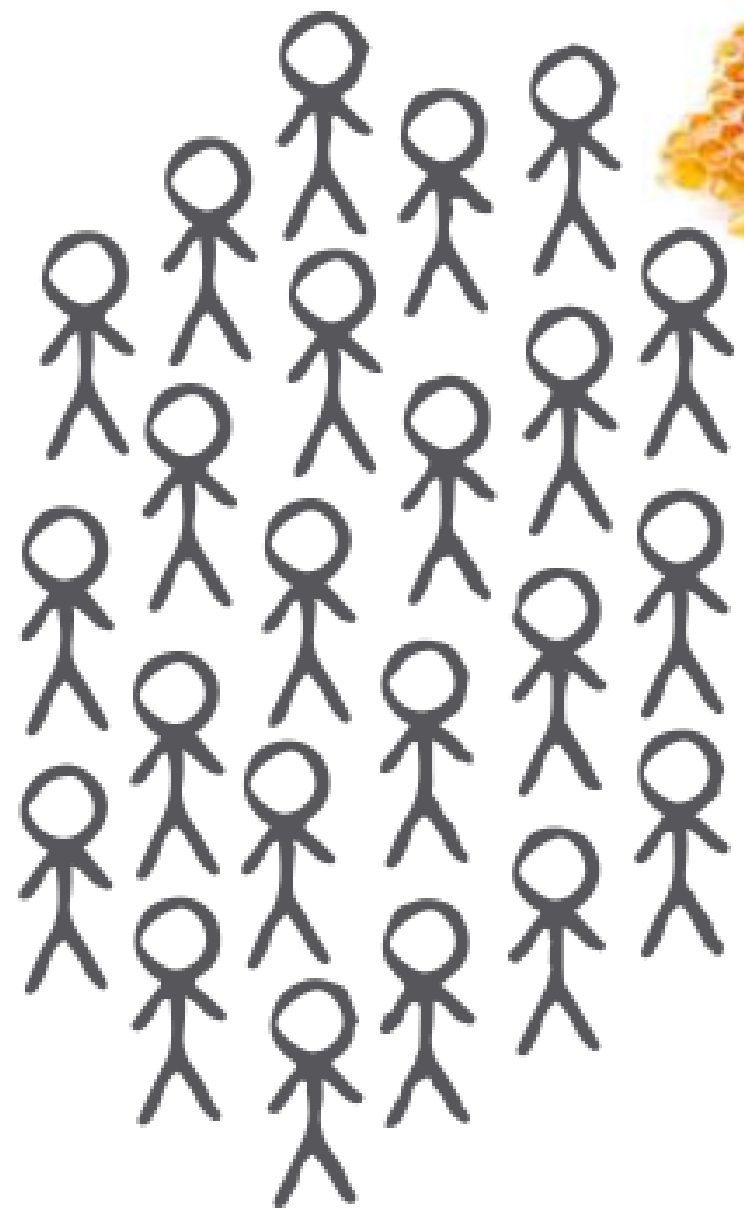
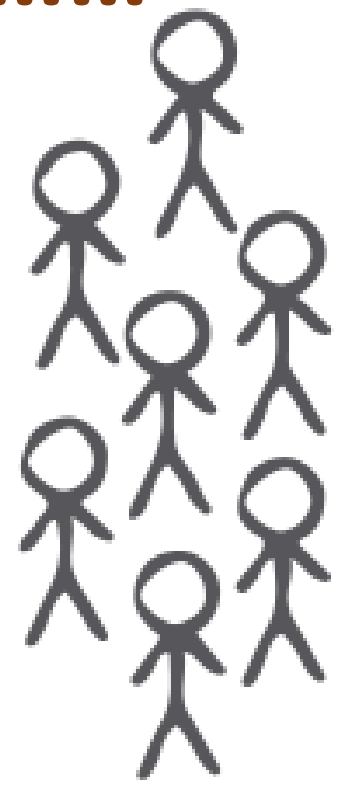
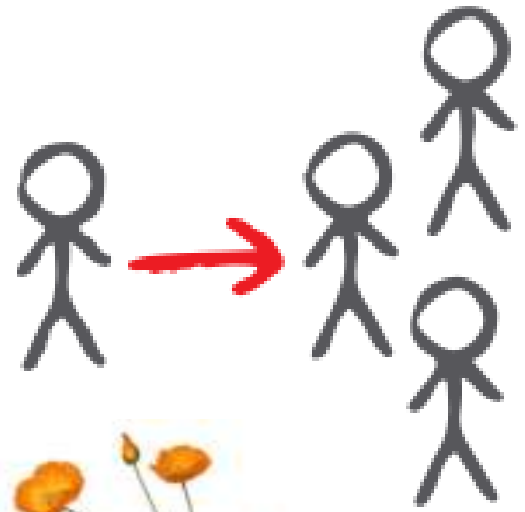
Adapted for **A NEW GENERATION**  
from the *New York Times* Bestseller

# an inconvenient truth

the crisis of  
global warming

**AL GORE**

The Truth is .....





# What can you do ?

<b>ACTION</b>	<b>Description</b>
<b>Reduce Carbon Footprint</b>	Use public transportation, walk, or cycle instead of driving. Support energy-efficient practices at home.
<b>Save Energy</b>	Turn off lights and appliances when not in use. Use energy-efficient LED bulbs and appliances.
<b>Conserve Water</b>	Be mindful of water usage, fix leaks, and use water-saving fixtures to reduce water waste.
<b>Practice Waste Reduction</b>	Reduce, reuse, and recycle. Minimize single-use plastics and opt for eco-friendly alternatives. Compost organic waste.
<b>Support Sustainable Products</b>	Choose eco-friendly and ethical products with certifications like organic, fair trade, and sustainably sourced items.
<b>Promote Renewable Energy</b>	Advocate for renewable energy use and support policies that encourage its implementation.
<b>Plant Trees</b>	Participate in tree-planting initiatives and support reforestation efforts to combat deforestation and absorb CO2.
<b>Educate and Inspire</b>	Share knowledge and passion for environmental issues. Encourage others to take sustainable actions.
<b>Vote for the Environment</b>	Support political candidates and policies prioritizing environmental protection and sustainability.
<b>Participate in Community Initiatives</b>	Join or organize local environmental events, cleanups, or awareness campaigns to promote collective responsibility.

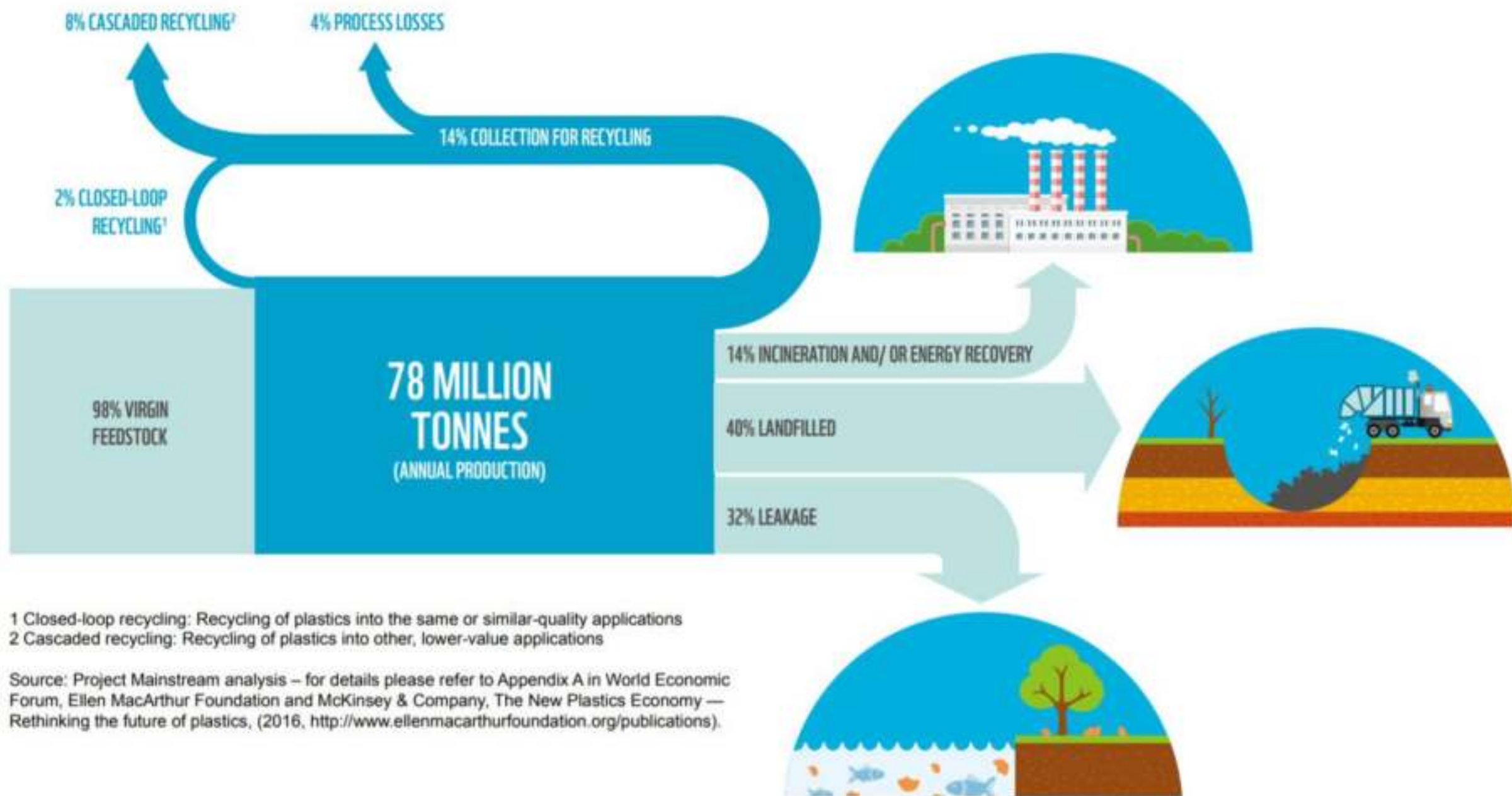
# 5Rs of consumption and waste management

RRRRR	Principle	Explanation
R		
R		
Reduce	Minimize consumption	Be mindful of what you buy and use only what you need. Reduce your overall consumption to decrease environmental impact.
Reuse / Repair	Extend the lifespan of items/materials	Instead of disposing after one use, find ways to reuse items. This reduces waste and conserves resources.
Recycle	Process used materials into new products	Recycling involves converting used materials (e.g., paper, glass, plastic, metal) into new products to save resources.

# 5Rs of consumption and waste management

RRRRR	Principle	Explanation
Refuse	Say no to unnecessary or harmful items	Refusing single-use plastics, excessive packaging, don't buy if you don't use it once/week
Rot	Aerobic Composting of organic waste	Composting turns organic waste (e.g., food scraps, yard trimmings) grow your own food, eat plant-based food
Reduce	Minimize consumption	Be mindful of what you buy and use only what you need. Reduce goods or food with far transportation
Reuse / Repair	Extend the lifespan of items/materials	Instead of disposing after one use, find ways to reuse items. This reduces waste and conserves resources.
Recycle	Process used materials into new products	Recycling involves converting used materials (e.g., paper, glass, plastic, metal) into new products to save resources.

## Global Flows of Plastic Packaging Material in 2013



# Food choices affects environment

Food Choice	Environmental Impact
Plant-Based Diet	Lower greenhouse gas emissions and reduced environmental impact. Livestock farming, especially for beef and lamb, is associated with higher emissions and deforestation.
Local and Seasonal Foods	Reduces carbon footprint associated with transportation and refrigeration. Supports sustainable agriculture and community resilience.
Organic Foods	Avoids synthetic pesticides and fertilizers, promoting environmentally friendly farming practices.
Reduce Food Waste	Minimizes demand for resources used in food production and lowers greenhouse gas emissions from decomposing food.
Water Footprint	Some food items have higher water footprints, choosing low water-intensive foods can conserve water resources.
Eco-Friendly Packaging	Choosing products with minimal or eco-friendly packaging reduces plastic waste and environmental impact.
Sustainable Practices	Supporting companies and producers that follow sustainable and environmentally responsible practices reduces the overall environmental impact of the food industry.
GMO Considerations	Evaluating the environmental implications of GMOs requires careful consideration of specific crops and practices.

I understand but can someone guide or mentor me?



<https://youtu.be/P0bDaLAQmCo>



# The gardeners of the Earth- Elderly



**NEVER TOO OLD at 80 years old**



**I was a meat eater but a WFPB promoter**

**IDENTITY CRISIS**

**A big struggle and guilt**

**EMOTIONAL CRAVINGS Vs SUFFERINGS**

**Health, environment reasons is not strong enough for me to change**

**Vs**

**It's their EYES and their UNIVERSAL NEEDS of  
comfort, fear, happiness and love that are no  
different from YOU and ME**

<https://www.facebook.com/reel/926484268581966>



**My Fridge used to look like a MORGUE  
and now it looks like RAINBOW**

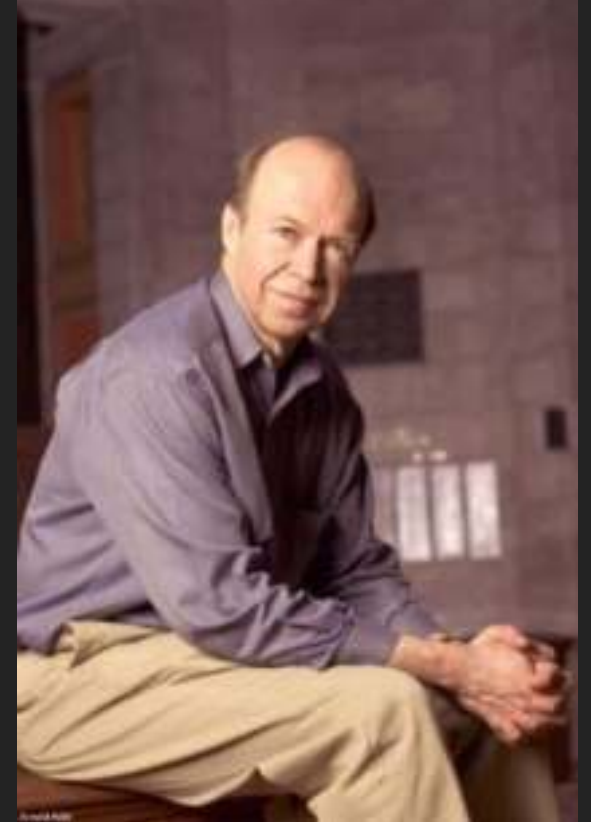


# Dr. James E. Hansen

- Adjunct Professor, Department of Earth & Environmental Sciences
- Head of NASA Goddard Institute for Space Studies

We have exceeded the  
**Tipping Level**

But we have not reached  
the **Point of No Return - 1.5**  
**degree celcius**





# BLOCKED/BAN OUTPUT FROM AI

What is the solution to save EARTH?

---



Nobody can go back  
and start a new

*beginning*

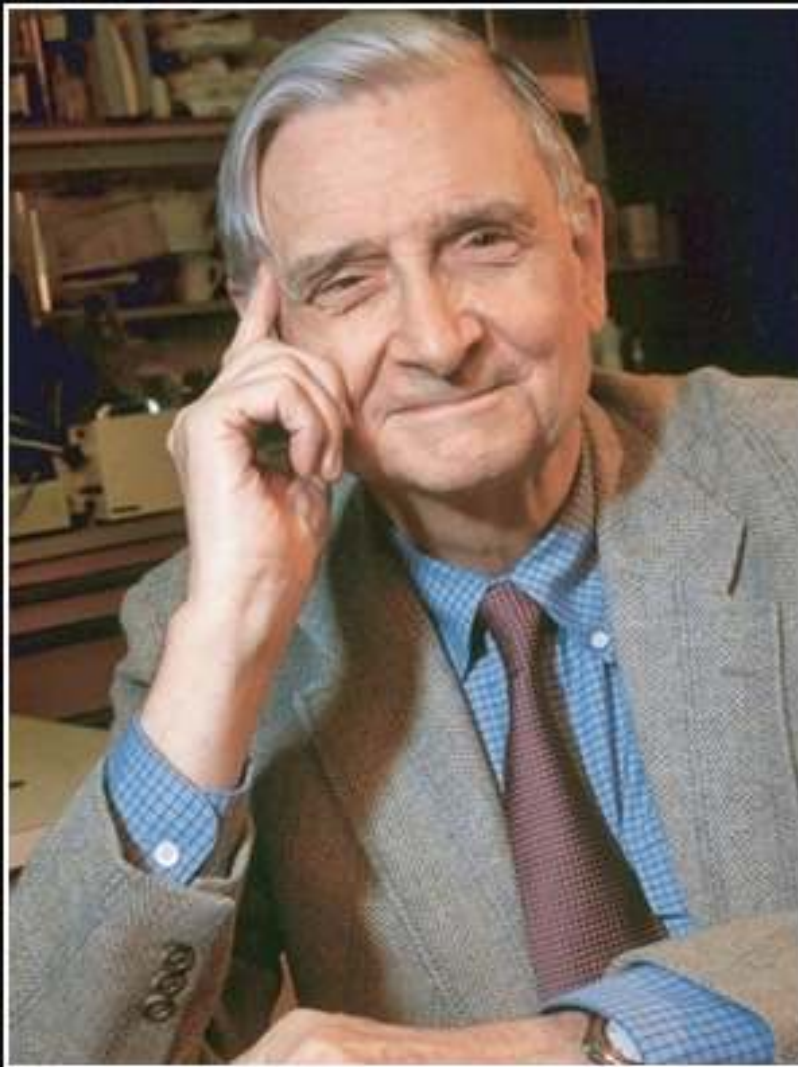
but anyone can  
start today and  
make a new

*ending.*

© quotes.snydle.com

- Maria Robinson





If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos.

— *E. O. Wilson* —

AZ QUOTES