

Creation Care

Why Bother As The Earth Will Be Destroyed by Fire?

City Missions Church Sabbath Service

Saturday 25 July 2020

Handout

- Why Care for Creation?
- What is Creation Care?
- How to Redeem what we have neglected:

Caring for Creation Care or
Speeding its Destruction?

Is Creation
Good?

Whose Creation?



In 1972, the Apollo 17 mission took this composite image of Earth known as "the blue marble." (NASA)

**The earth is the
Lord's, and
everything in it,
the world, and
all who live in it.**

Ps 24:1

It was Good....

Gen 1:

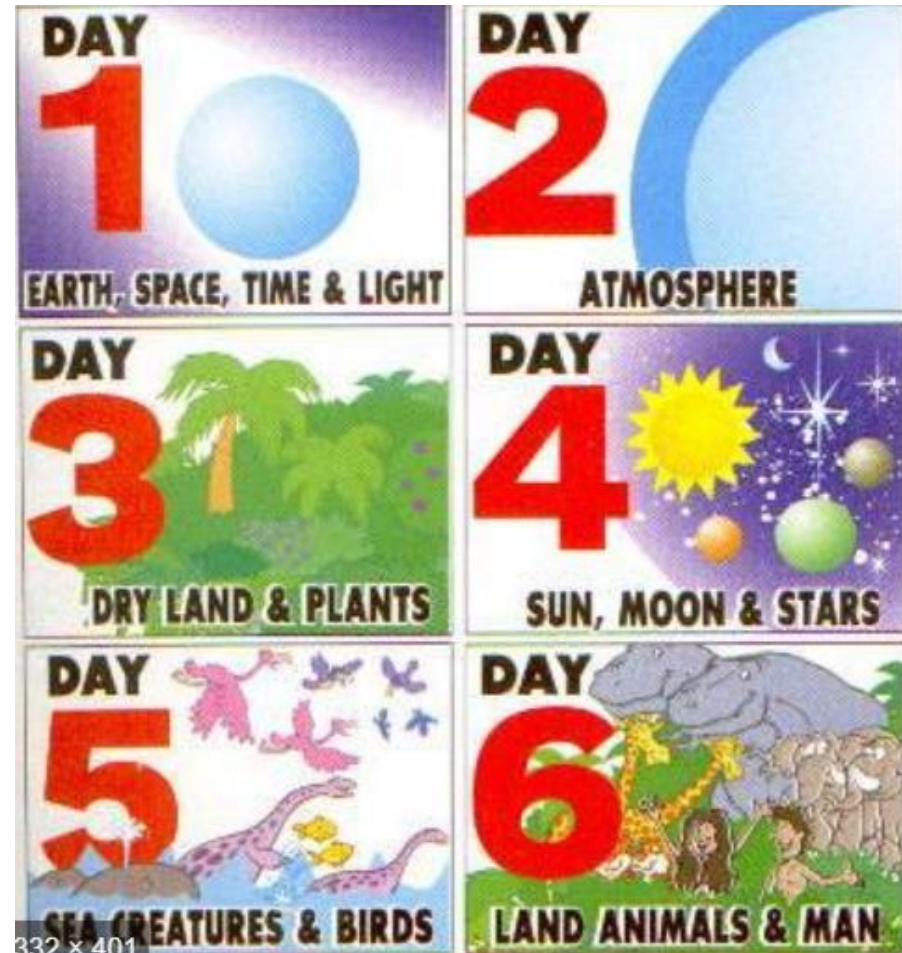
7x

Gen 2:

5x

Very Good: 1x

Not Good: 1x



For the Beauty of the Earth



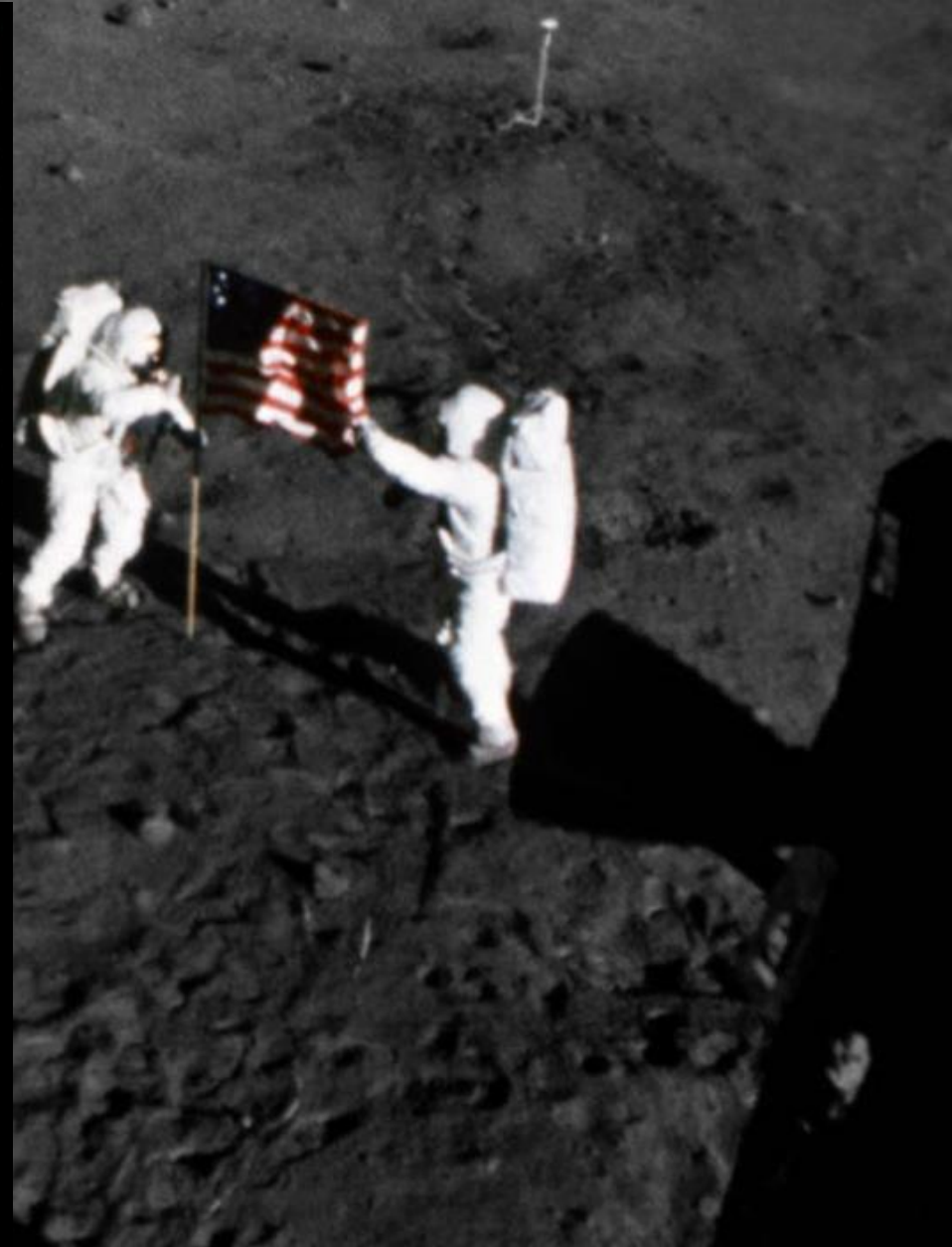
1 For the beauty of the earth,
for the glory of the skies,
for the love which from our birth
over and around us lies.

Refrain:
Christ, our Lord, to you we raise
this, our hymn of grateful praise.

Everything was created through him;
nothing—not one thing!—
came into being without him. **Jn 1:3**

21 July 1969: Aldrin & Armstrong

**God creates,
God communes**



When I consider thy
heavens, the work of thy
fingers, the moon and the
stars, which thou hast
ordered; What is man,
that thou art mindful
of him? and the Son of
Man, that thou visitest
Him?

Why Care
for Creation?

The Owner?

**“Everything under
heaven belongs to me.”**

Job 41:11

Who Built The Garden In Eden?

- And the **LORD God planted** a garden in Eden, in the east, ... Gen 2:8a

Who's the
Caretaker?

Human's Job Description!

- In Genesis 2, God tells humans to “work” and “take care of” the natural world. This charge has never been revoked.

Gen 2:15 ¶ And the LORD God took the man, and put him into the garden of Eden to dress it and to keep it.

2:15 וַיִּקַּח יְהוָה אֱלֹהִים אֶת־הָאָדָם וַיִּנְחֵהוּ בְּגֶן־עֵדֶן לְעֲבֹדָהּ
וּלְשִׁמְרָהּ:

Creation Mandate in Gen 2:15?

לְעַבְדָּהּ וּלְשַׁמְרָהּ:

- to work it

- and take care of it

Subdue & Have Dominion Over Gen1:28



God blessed them and said to them, “Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.” NIV

Then God blessed them and said, “Be fruitful and multiply. Fill the earth and govern it. Reign over the fish in the sea, the birds in the sky, and all the animals that scurry along the ground.” NLT

Dominion

- Be fruitful
- Multiply
- Fill
- Subdue
- Reign

Divine Ownership, Human Stewardship

Dominion vs Domination?

- Work *with* the earth
- Prudently Use resources
- Careful Use and Rest of the earth
- Stewardship for others

- Work *against* the earth
- Plunder for profit
- Endless Exploitation of the earth
- Stewardship for self

Any Other Reasons To Care?

- **Creation is God's** – we're tenants
- **Creation Mandate** – we're caretakers
- **Missional Mandate** – guard way to discover God's character in Rom 1:20
- **Eschatological Reason** - give world a glimpse of God's creation when it is finally freed from sin.

After the Fall:
Creation Not
Worth Caring?

Why Bother?

- ¹⁰ But the day of the Lord will come like a thief. **The heavens will disappear with a roar; the elements will be destroyed by fire, and the earth and everything done in it will be laid bare.**
- ¹¹ **Since everything will be destroyed in this way, what kind of people ought you to be?** You ought to live holy and godly lives ... ¹³ **But in keeping with his promise we are looking forward to a new heaven and a new earth, where righteousness dwells.** 2Pet3:10-11

Everything is Cursed after Gen 3?

17 To Adam he said, "Because you listened to your wife and ate fruit from the tree about which I commanded you, 'You must not eat from it,'

"Cursed is the ground because of you;
through painful toil you will eat food from it
all the days of your life.

18 It will produce thorns and thistles for you,
and you will eat the plants of the field.

19 By the sweat of your brow
you will eat your food
until you return to the ground,
since from it you were taken;
for dust you are
and to dust you will return."

Work is not a curse. Work is cursed!

The Historical Roots of Our Ecologic Crisis

Lynn White, Jr.

A conversation with Aldous Huxley not infrequently put one at the receiving end of an unforgettable monologue. About a year before his lamented death he was discoursing on a favorite topic: Man's unnatural treatment of nature and its sad results. To illustrate

helped to exterminate the monster mammals of the Pleistocene from much of the globe is plausible, if not proved. For 6 millennia at least, the banks of the lower Nile have been a human artifact rather than the swampy African jungle which nature,

nating in our own time in the reclamation of the Zuider Zee. What, if any, species of animals, birds, fish, shore life, or plants have died out in the process? In their epic combat with Neptune have the Netherlands overlooked ecological values in such a way that the quality of human life in the Netherlands has suffered? I cannot discover that the questions have ever been asked, much less answered.

People, then, have often been a dynamic element in their own environment, but in the present state of historical scholarship we usually do not know exactly when, where, or with what effects man-induced changes came. As we enter the last third of the 20th century, however, concern for the problem of ecologic backlash is mounting feverishly. Natural science, conceived as the effort to understand the nature

Lynn White

◆ 'The Historical Roots of our Ecologic Crisis' (1967)

- ◆ Argues that our Western Christian worldview supports and encourages the exploitation of nature



We shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man.

— Lynn Townsend White —

AZ QUOTES

The Flaw In White's argument?

'...[Christianity] not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends... '[Western] Christianity is the most anthropocentric religion the world has seen.'

Lynn White Jr., 'The Historical Roots of our Ecologic Crisis',
Science 155 (1967) 1203-207 (p. 1205)

Anthropocentric vs Theocentric

Wealth
Meaning?

What is Wealth?

Economics of Happiness by Mark Anielski

- **Original Definition of Wealth:**
Conditions of life that contribute to our individual and community well-being.
- **True meaning of wealth has to do more with quality of life than worldly possessions** - also attributes like **health** (physical and mental), **spiritual well-being**, **healthy relationships**, **love and respect**, **conditions of physical living environment** and **well-being of nature.**

Genuine Wealth = 5 Capital Accounts

1. **Human** – minds, bodies, spirits, capabilities
2. **Social** – quality and strength of relationships in community: trust, honesty, common values including tolerance
3. **Natural** - stocks & funds of things in nature
4. **Build** – machines, tools, consumer goods
5. **Financial** – money & other liquid assets

**Current system focuses on (5), some (4), no (1-3)

Capital: Human Social Build Financial



Creation Care
When
Neglected?

Climate
Change?

Atmosphere Absorbs Heat?

- **Nitrogen:**

No

- **Oxygen:**

No

- **Carbon dioxide**

Yes

- **Water vapor**

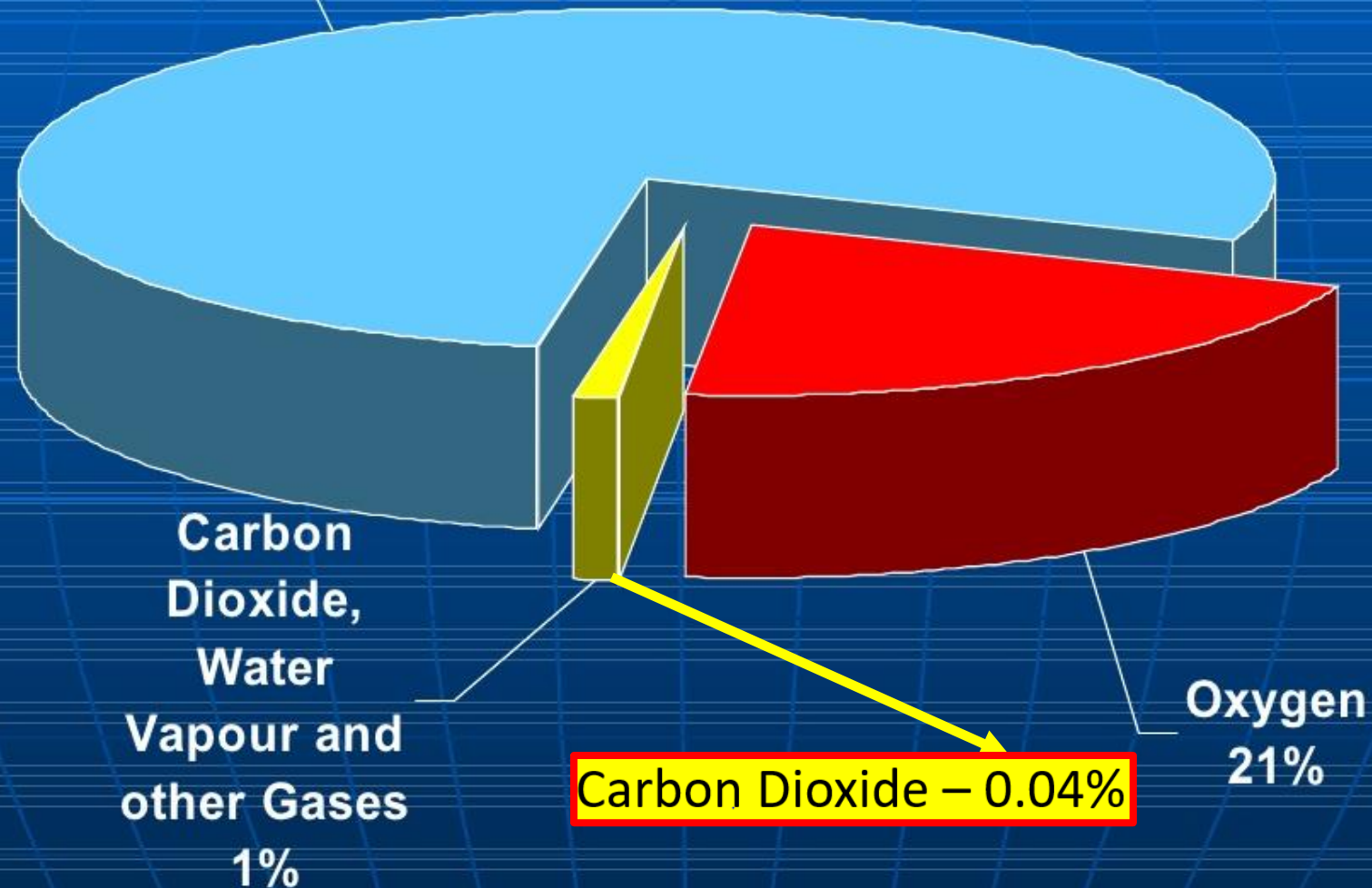
Yes

- **Methane**

Yes

Composition of Air

Nitrogen
78%

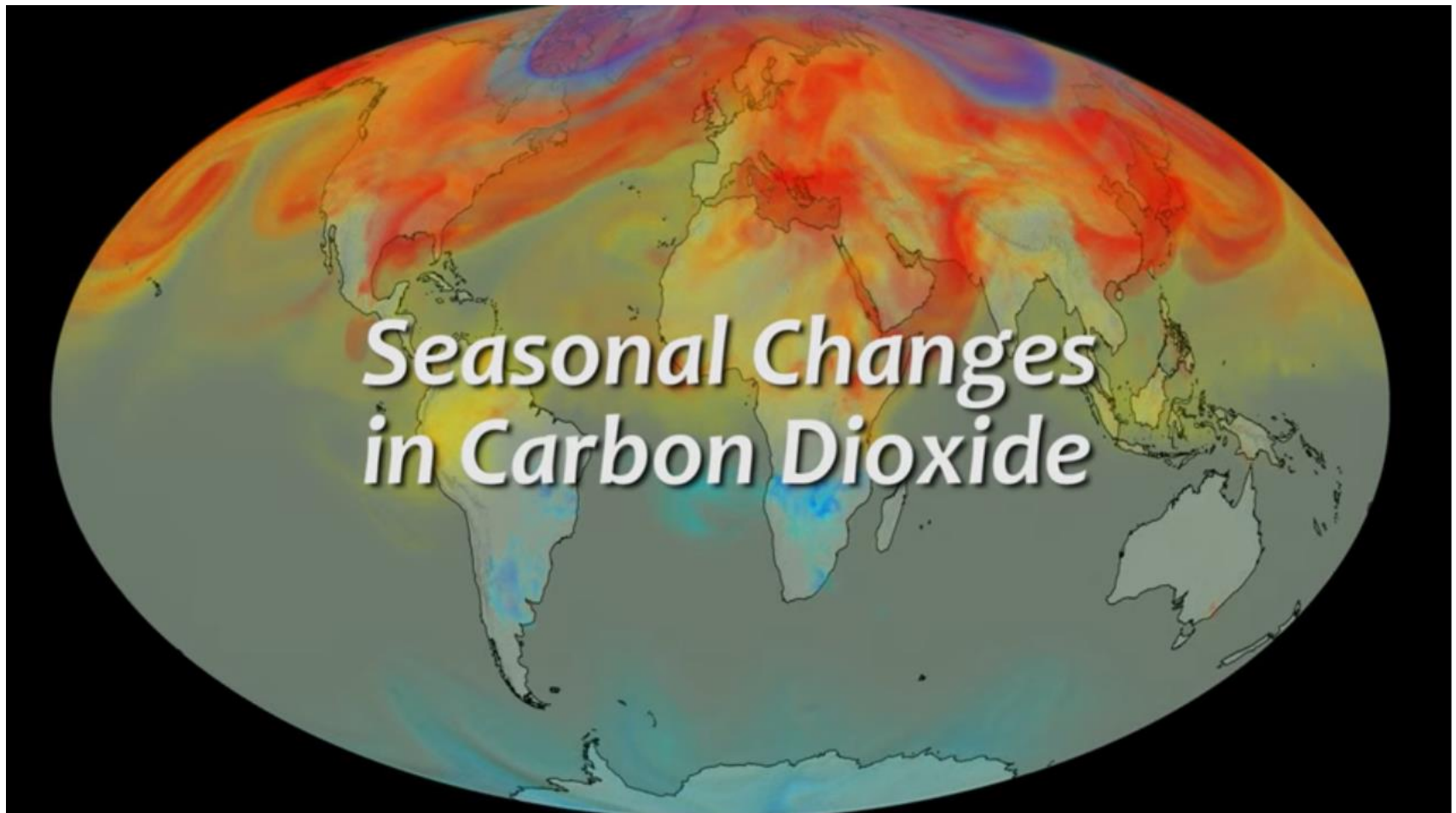


Carbon
Dioxide,
Water
Vapour and
other Gases
1%

Oxygen
21%

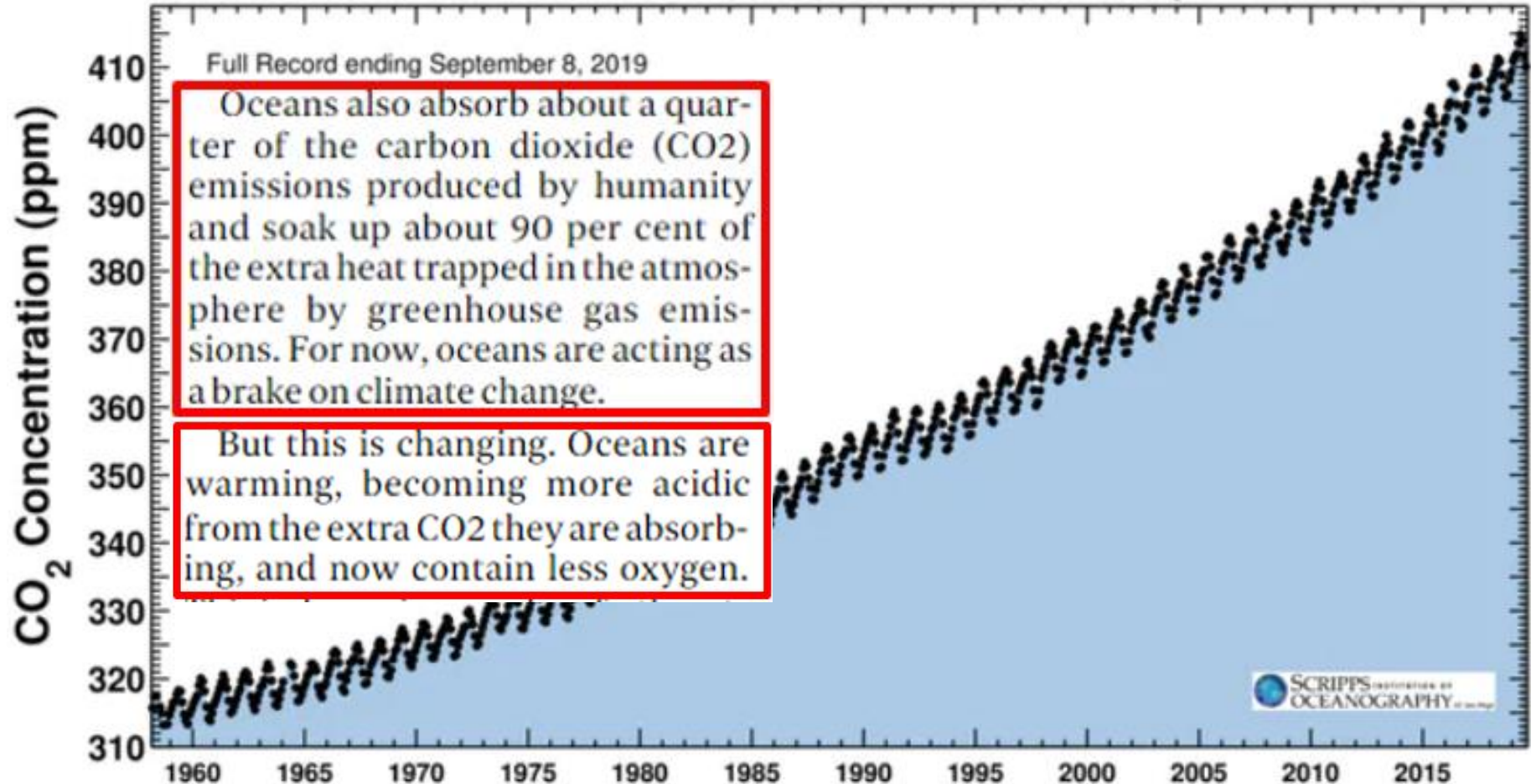
Carbon Dioxide – 0.04%

<https://www.youtube.com/watch?v=X2TOrKdJsqs&feature=youtu.be>



Latest CO₂ reading
September 08, 2019

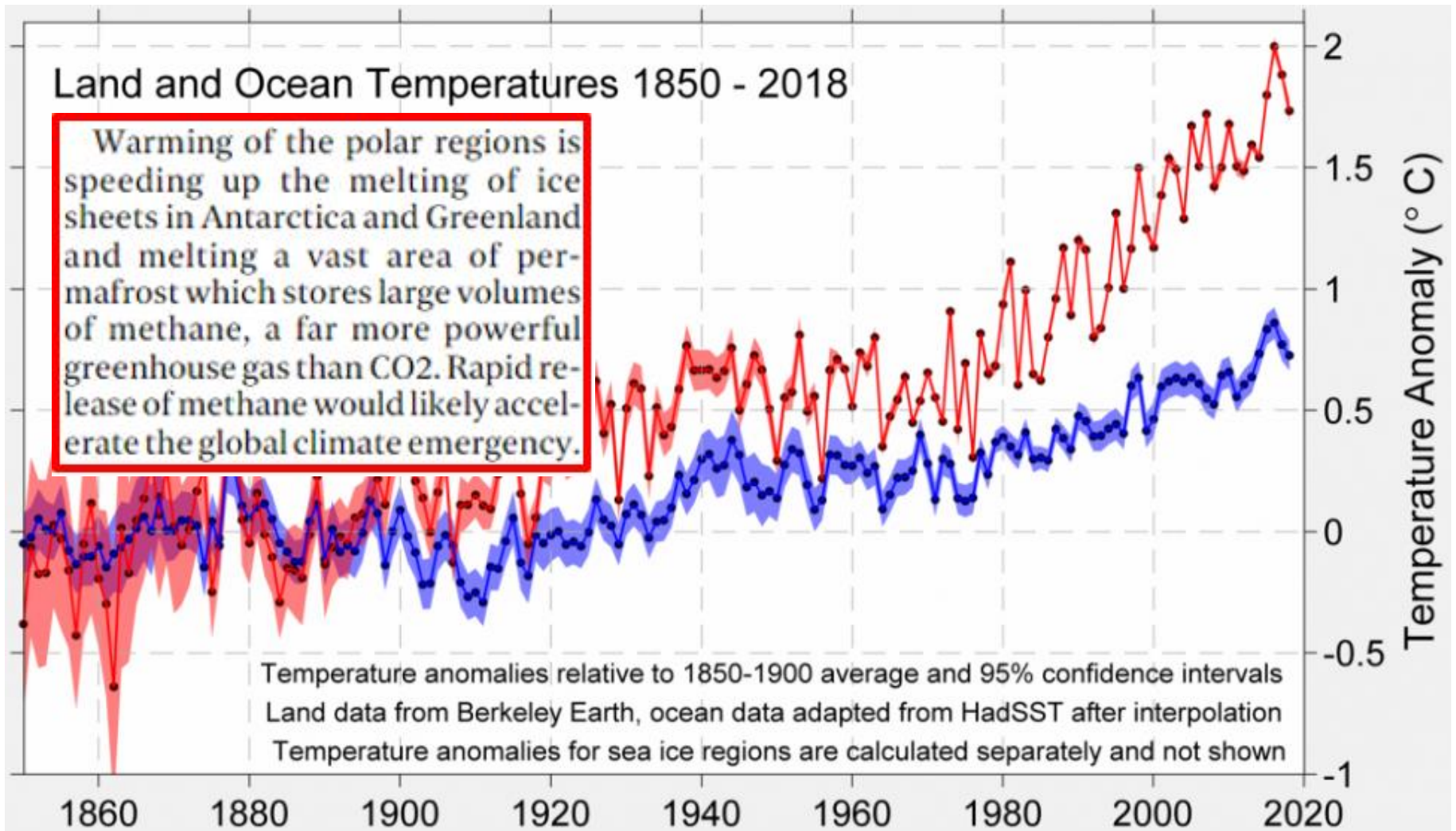
Carbon dioxide concentration at Mauna Loa Observatory



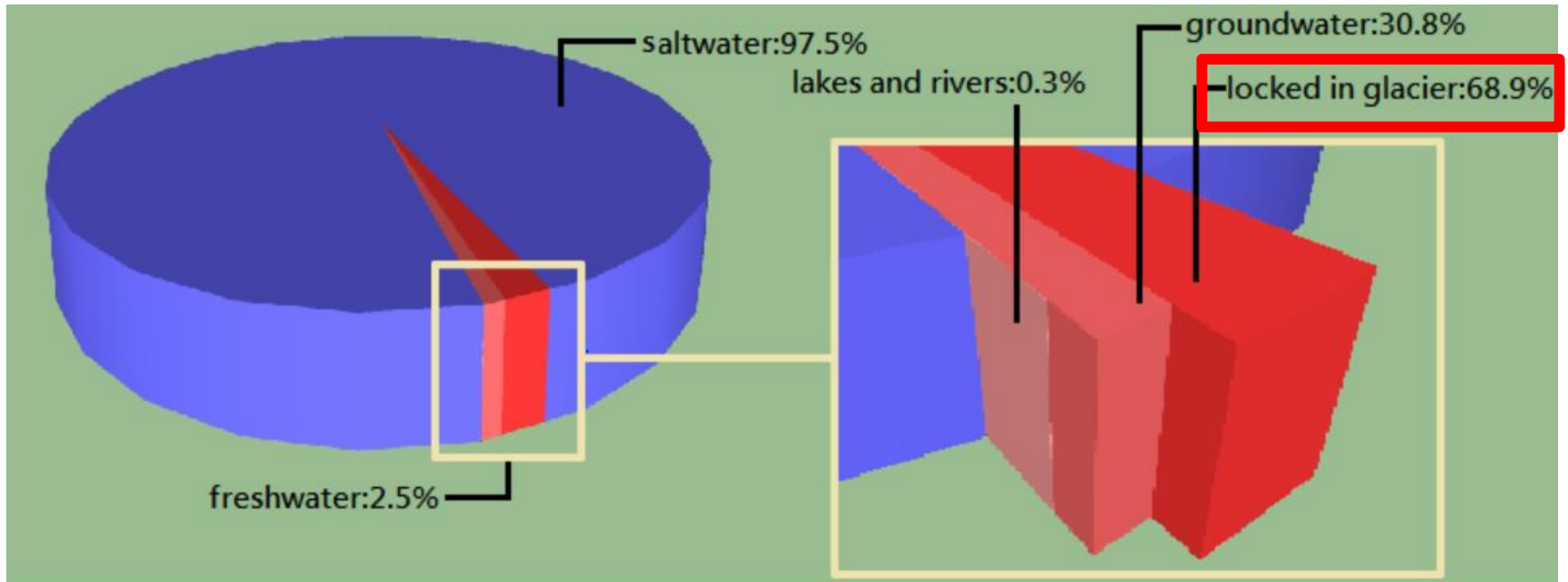
The 'Keeling Curve,' named for scientist Charles David Keeling, tracks the accumulation of carbon dioxide in Earth's atmosphere, measured in parts per million. Scripps Institution of Oceanography.

Land and Ocean Temperatures 1850 - 2018

Warming of the polar regions is speeding up the melting of ice sheets in Antarctica and Greenland and melting a vast area of permafrost which stores large volumes of methane, a far more powerful greenhouse gas than CO₂. Rapid release of methane would likely accelerate the global climate emergency.



Water, water, every where,
Nor any drop to drink.



Sea ice and Glaciers?

- **Sea ice** forms from salty ocean water.
- Sea ice grows, forms, and melts strictly in the ocean. Doesn't raise sea level. Triggers other devastating consequences: depleting ice on which walrus can haul out or polar bears hunt to changing weather systems around the world by altering the pattern of the Jet stream.
- **Glaciers** form from fresh water
- Glaciers are land ice. Icebergs are chunks of glaciers that fall into the ocean.
- Will raise sea level!



So What?



1) **Growth** in vegetation on tundra



which replaces **reflective** snow and ice with darker vegetation.

For example, melting ice leaves areas of **darker ocean**, which absorbs more heat and so causes further shrinkage.



+3° ?

Asian cities will be worst affected

The regional impact of these changes is highly uneven, with four out of five people affected living in Asia.



- Paris climate agreement tried to limit global warming to 2C above pre-industrial levels. Latest projections: 3.2C increase by 2100.
- Scientists at Climate Central estimate 275 million people worldwide live in areas that will eventually be flooded at 3C of global warming.

Top 20 Megacities Below the Line

MEGACITY	POPULATION AFFECTED	% OF CURRENT POPULATION
1. Shanghai, China	11,500,000	39%
2. Hong Kong, China	6,200,000	28%
3. Taizhou, China	6,100,000	67%
4. Mumbai, India	5,900,000	27%
5. Calcutta, India	5,800,000	25%
6. Tianjin, China	5,100,000	12%
7. Jakarta, Indonesia	4,900,000	11%
8. Nantong, China	4,700,000	72%
9. Ho Chi Minh City, Vietnam	4,400,000	44%
10. Osaka, Japan	4,100,000	25%
11. Chittagong, Bangladesh	4,000,000	44%
12. Tokyo, Japan	3,800,000	15%
13. Hanoi, Vietnam	3,800,000	30%
14. Huaiyin, China	3,400,000	43%
15. Shantou, China	3,100,000	23%
16. Nam Dinh, Vietnam	3,100,000	74%
17. Jiagmen, China	3,000,000	51%
18. Khulna, Bangladesh	2,900,000	22%
19. Barisal, Bangladesh	2,800,000	40%
20. Lianyungang, China	2,800,000	92%

**Cities
affected
(if sea
levels up
6 meters)**

Sea Levels:
Singapore

Sea Level Today



Sea Levels Rise 1 Metre



Sea Levels Rise 1 Metre



What Can We Do?



polder

an area of low land that was once under the sea but that has been separated from it by dykes (= walls or channels built to prevent water covering an area):



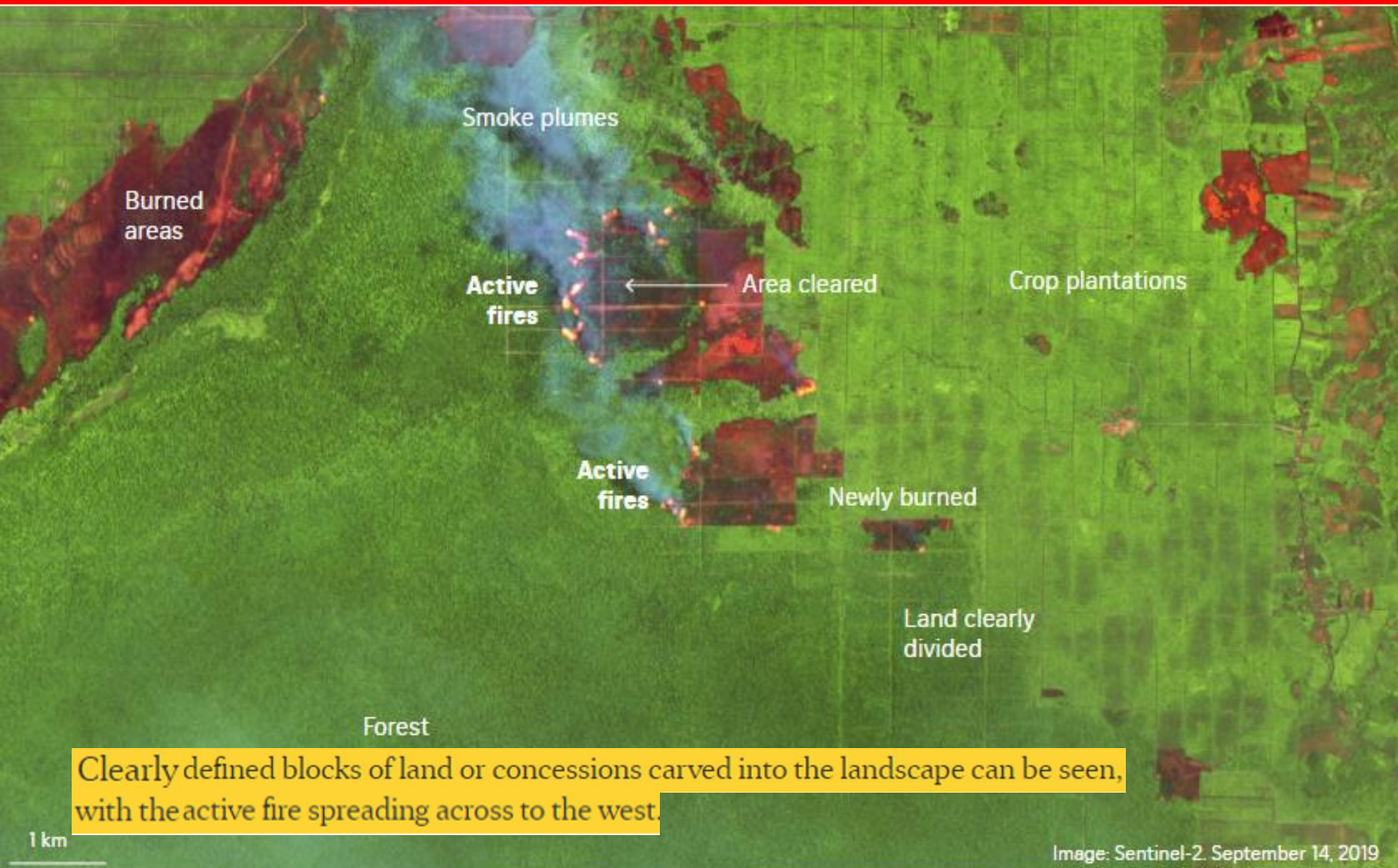


Haze

Haze: Blind to Borders



Proof Humans are Burning Forests?



How To Get More Stupid?



One shows that living in an area of the US with high carbon monoxide pollution does more harm to a baby in utero than the mother smoking 10 cigarettes a day.

Even one day of bad air can make you slower and dumber

The economic case for fighting pollution to boost productivity

Robin Harding

Everybody loves a good productivity hack. Clever tips on getting more from each working hour are a well-loved genre, from complicated to-do lists and tomato-shaped timers, to advice on mindfulness and the merits of going barefoot. That's not to mention the supposed gains in creativity and concentration from surrounding your desk with the colours red and blue.

But there is one action that seldom appears on these lists, despite a growing volume of evidence to suggest it has a pronounced effect on both physical and mental productivity: working in a location with good air quality.

Particulates – especially fine and ultra-fine particles below 2.5 micrometres in diameter – are widely recognised as a long-term health issue, even if many people

discounting long-term health risks from cigarettes and alcohol. But to have your cognition impaired right here, right now, as you try to work or study is something else. The evidence increasingly suggests that particulates do not just penetrate the heart and lungs but also the brain.

The health impact should be enough to motivate action. But if confirmed, these effects also change the economics. Ill health at

air pollution has lasting consequences, leading to an average of 0.15 fewer years of university education and ultimately US\$30 (£41) less in monthly salary.

Every child has to take the exams and the date is fixed, so richer students cannot dodge the pollution and the authors can control factors such as school quality. Consider the extremes: parents will go to improve their

productivity for citrus pickers exposed to higher ozone levels. There are studies showing that German professional footballers – who cannot change the date or venue for a fixture – make fewer passes on days with greater air pollution.

Then there are the horrible effects found in many studies of child development. One shows that living in an area of the US with high carbon monoxide pollution does more

It also stunts child development and seems to have an instantaneous effect on productivity: You become slower and dumber while breathing polluted air.

harm to a baby in utero than the mother smoking 10 cigarettes a day.

A study of almost 3,000 schoolchildren in Barcelona found that kids exposed to more air pollution suffered slower cognitive development. This affects the poorest most of all, but nobody who lives in a city is safe.

In recent years, climate change has come to dominate environmental policy – for good reason. Yet that is a challenge for which humans are psychologically ill-equipped.

There are essentially no gains from stopping climate change, only losses averted, and the problem is totally resistant to individual action. Nothing a single person does makes any difference.

Tackling air pollution, on the other hand, benefits everybody and is amenable to action at every scale. What is more, it appears the benefits will be felt straight away.

Individuals can install filters to improve indoor air quality. Small groups can monitor and publicise local air quality: Once particulates start to affect property prices, watch how seriously people take them.

Cities and nations can regulate polluting vehicles and power generators. Since most particulate emissions come from the same fossil fuel sources as greenhouse gases, it is also a policy to tackle climate change, framed in a way more likely to find public favour.

If there was a pill available that improved exam results, reduced your chances of dementia and made you more productive at work, it would sell by the billion. Since reducing air pollution is such a pill, why not take it? FINANCIAL TIMES

Avraham Ebenstein, Victor Lavy and Sefi Roth

The long run economic consequences of high-stakes examinations: evidence from transitory variation in pollution

LSE Research Online

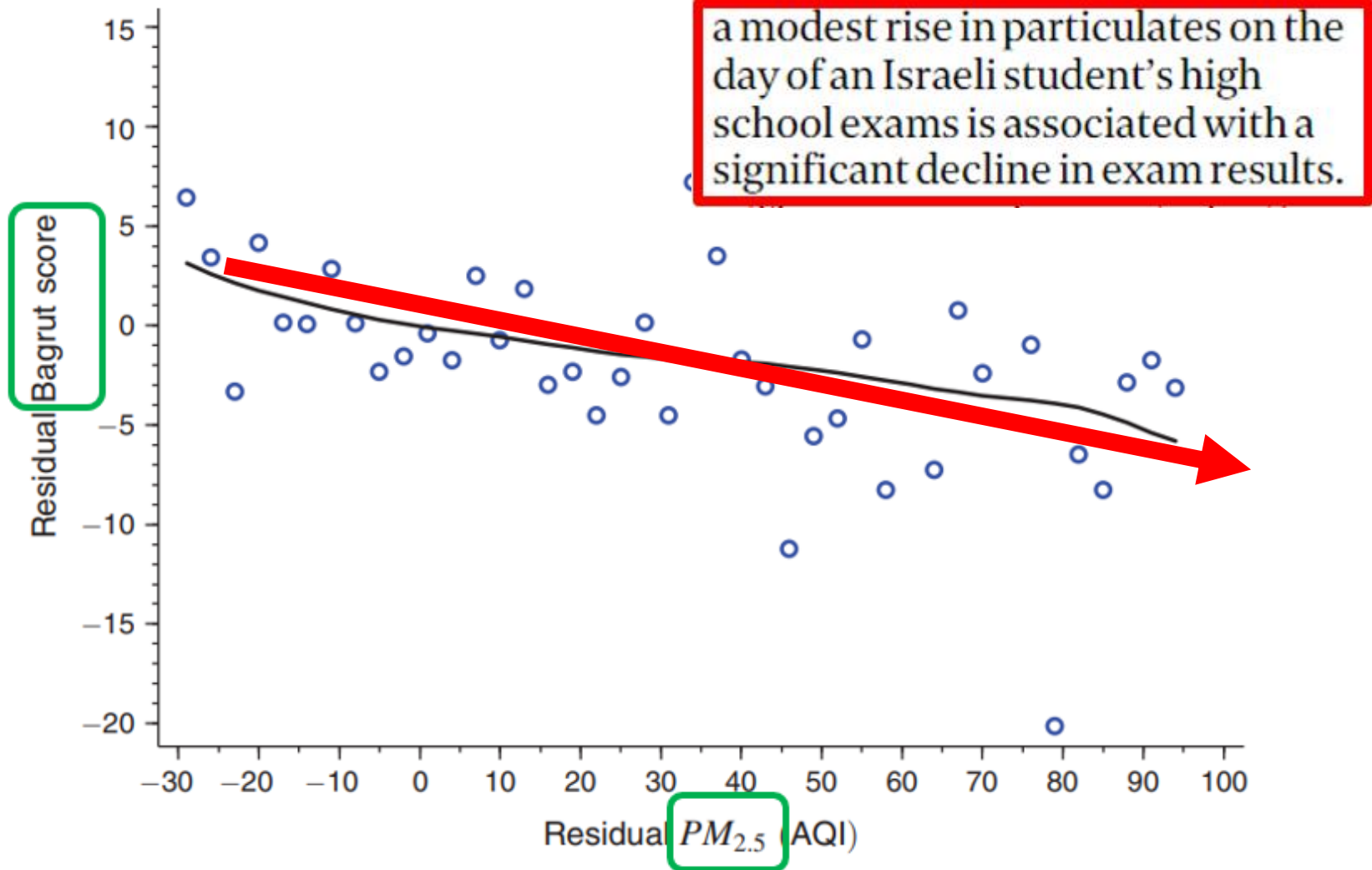


FIGURE 1. SCATTER PLOT OF RESIDUAL $PM_{2.5}$ (AQI) AND BAGRUT TEST SCORES

Affects
Complexion!

Haze ages skin faster

To protect skin, cleanse and moisturise it well, take antioxidants and drink lots of water



Joyce Teo

The haze season is upon us and some people are feeling the effects of the air pollution.

The haze can cause respiratory infections, cardiovascular complications and irritate the eyes and skin as small particles in the air can enter bodies to wreak havoc.

What is less obvious is the premature ageing that it can trigger in the skin.

Sunlight exposure is undoubtedly the main cause of premature skin ageing. But there is now more research showing that air pollution is also a significant contributor, says Associate Professor Andrew Tan from the Lee Kong Chian School of Medicine at the Nanyang Technological University.

In the past few years, several studies done in Asia have shown that exposure to PM2.5, which are tiny particles that have a diameter of 2.5 microns or less, is associated with skin ageing, largely due to the increase in oxidative stress, an imbalance of free radicals and antioxidant defences in the body, he says.



Prof Tan says a 2017 systematic review and meta-analysis of 13 studies concluded that both PM2.5 and PM10 have a statistically significant impact on skin diseases.

“If you live in highly polluted cities, your skin will age faster. More of the tiny particles in the air will get into the skin and damage skin cells, causing uneven pigmentation and wrinkles.”

Over a prolonged period, repeated short-term exposure to haze may contribute to premature skin ageing. PHOTO: ISTOCKPHOTO

PM_{2.5} &

Covid-death?

Airbone Pollution ~ +8% Covid Death

A [Harvard University study](#) based on 45,817 COVID-19 deaths in the US to April 22 showed a significant relationship between airborne pollution (PM_{2.5}) and COVID-19 mortality, with a 1ug/meter³ increase in pollution resulting in an 8% increase in COVID-19 death. So COVID-19 is also starting to look like a disease significantly associated with airborne pollution.

Haze Is
Profitable
For Some?



This is not the Red Planet. This is Jambi, Indonesia

Haze map updated as of Sept 23, 7.40pm

Jakarta plans soil tests to spot plantation firms causing haze

Action to be taken against those that used illegal methods to clear land for crops

Wahyudi Soeriaatmadja
Indonesia Correspondent
In Jakarta

Indonesia plans to conduct soil tests to identify plantation companies suspected to have cultivated oil palm, pulp wood or other crops on land after using slash-and-burn techniques to clear it.

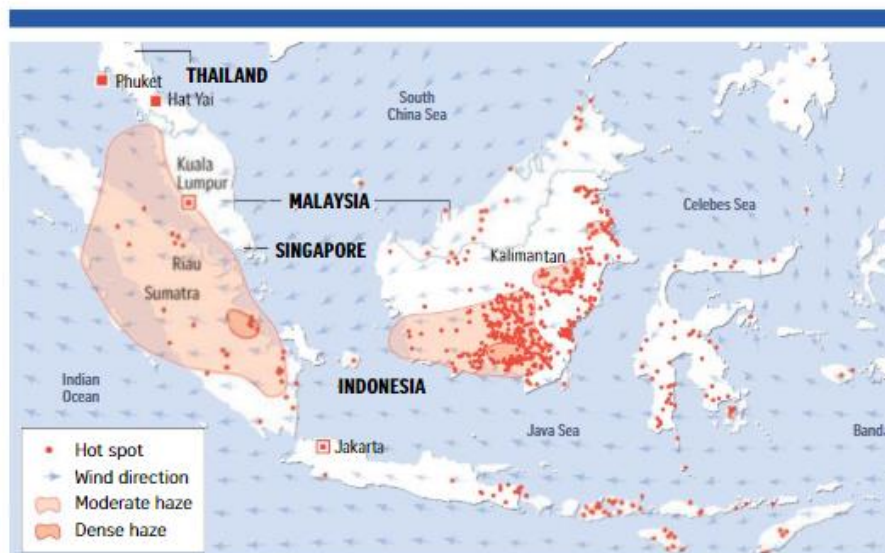
For a start, the authorities will target the concessions sealed off by the Environment and Forestry Ministry between last month and this month. These belong to 51 companies – 14 of which are foreign-affiliated – and one individual.

"Their existing crops might be on land that they had cleared by burning, say a year or five years ago. Traces of that would still be there," said the ministry's law enforcement director-general Rasio Ridho Sani.

"We have spoken to our legal counsel and various (technical) experts on our plan to go about doing this," he said during a talk show in Jakarta yesterday.

Last week, the government charged that errant plantation companies had resorted to the slash-and-burn method for clearing land to make way for new plantings, a far cheaper way to do so as opposed to utilising excavators and hiring labour, which would have cost seven million rupiah (\$\$685) per hectare.

Mr Rasio said his ministry had three options to deal with errant firms – imposing administrative sanctions, which could mean fines and revoking of business licences; fil-



NOTE: Haze map updated as of Sept 23, 7:40pm

Source: NATIONAL ENVIRONMENT AGENCY STRAITS TIMES GRAPHICS

ing a civil suit to seek compensation; or pursuing a criminal case to send company management to jail.

Administrative sanctions, Mr Rasio said, were the quickest way to deal with the problem as there was no need to wait for a court ruling. Filing suits before a district court, whether civil or criminal, would mean a lengthier process. But, even if the government lost the case, it would affect the companies' credibility in the eyes of their creditors, partners and customers, said Mr Rasio.

He pledged to step up law enforcement by working with local leaders – regents, city mayors and provincial governors – in fire-prone regions. The local authorities also issue permits for the running of plantations and therefore have the right to monitor the firms and apply penalties.

Mr Rasio told The Straits Times yes-

terday that a few Singapore-affiliated and Malaysian firms were among the 14 foreign-affiliated ones whose concessions were affected by fires.

The government had earlier named one Singapore-affiliated company. It was Hutun Ketapang Industri, a West Kalimantan province-based rubber plantation subsidiary of another Indonesian company, Sungai Menang, which is a wholly owned subsidiary of Indonesia's Sampoerna Agro. Singapore-based Sampoerna Agri Resources owns two-thirds of Sampoerna Agro.

Four firms affiliated with Malaysian corporate groups, with concessions in West Kalimantan and Riau provinces, had also been named. They were Sime Indo Agro (a unit of Sime Darby Plantation), Sukses Karya Sawit (a unit of IOI Corporation) and Rafi Kamajaya Abadi

(a unit of TDM). Only one – Adei Plantation and Industry (a unit of Kuala Lumpur Kepong Group) – was operating in Riau.

Further checks by The Straits Times showed two other Malaysian-affiliated companies were also implicated. They were Sawit Mitra Abadi, a unit of Genting Plantations, and Tabung Haji Indo Plantation, a unit of Malaysia's Tabung Haji.

"These companies opted to save costs, avoiding renting bulldozers. Such costs are nothing compared to the economic and health costs suffered by the haze victims today and the costs borne by the government to fight fire," said Mr Yudi Anantasa, deputy head of the Agency for the Assessment and Application of Technology.

wahyudis@sph.com.sg

Emergency declared in Riau province to tackle fires better

Linda Yulisman

Meanwhile, from just 9,072 per

This comes after pollution in Riau's capital of Pekanbaru hit record highs, with the PM10 Pollutant Standards Index crossing 700 on Sunday.

The fires and the haze in the province will likely lead to material losses of up to 50 trillion rupiah (\$\$4.9 billion), the Environmental Study Centre in Riau University estimated.

Agency (BNPB) acting spokesman Agus Wibowo said that with emergency declared, fires in the two provinces will be deemed a disaster.

"All components (of society) will be deployed, and the number of personnel and funds will be increased to put an end to the problem," he told reporters.

Indonesia, home to the world's third-biggest tropical rainforest after the Amazon and Congo Basin, is struggling to tackle the fires engulfing Sumatra and Kalimantan which are spreading haze in the region.

From January to last month, fires raged across 328,724ha of land, of which 27.3 per cent was peatland, according to the BNPB.

Some 49,266ha of the affected areas was located in Riau, and more than 80 per cent of it was peatland.

Peat fires are more difficult to extinguish as they can continue burning underground for weeks.

government considers that we still have sufficient resources in terms of personnel and funds, and therefore, we have yet to need foreign assistance, both from Malaysia and Singapore," he said.

Malaysia has offered its assistance in battling fires in both Kalimantan and Sumatra.

Similarly, Singapore's Minister for the Environment and Water Resources Masagos Zulkifli said in a Facebook post on Wednesday that the Republic had offered technical firefighting assistance to Indonesia.

Meanwhile, the Indonesian police have identified 296 suspects for starting the fires. Nine of them are companies, said National Police spokesman Dedi Prasetyo.

He added that in Central Kalimantan, police are investigating 33 companies whose concessions were ravaged by fires.

lylinda@sph.com.sg

BAD Economics Today!

- To clear 1 ha land costs \$685 pha.
- Clearing by burning costs \$6 pha.
- From Jan-Aug 2019, 328,700 ha burnt. Cost of clearance is \$225.16 mn vs \$1.92 mn by fire.
- **Material losses \$4.9 Bn (Riau University)**
- **Farmers saved \$223 mn by using fire to clear forest and imposed on others externalities of \$4,900 mn!**

Change Today's Bad Economics

- Year 1: - \$4.9 Bn (Riau) – \$2 mn (Farmer)
- Year 4 to 34: \$1.9 Bn or PV of \$34 Bn ($i=3\%$)
- **Socialised Cost = \$4.9 Bn**
- **Privatised Gain = \$34 Bn over 34 years**

Think

Arigh

New Attitude Toward Creation

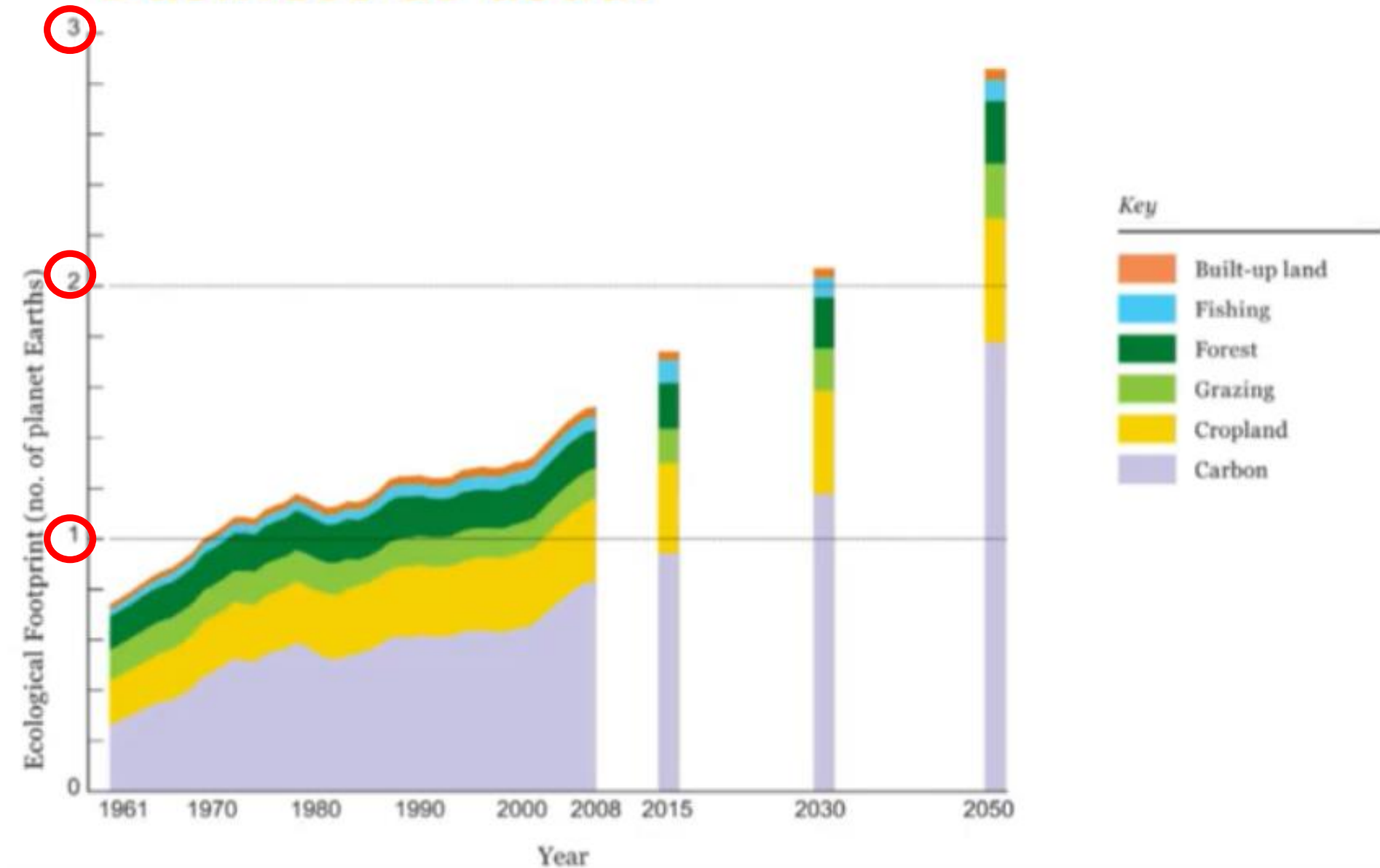
- Dominion not Domination
- Human Stewardship, not Human Ownership
- Trustees for God, not Exploiters of God's creation.
- Creation Care, not Callous Consumerism

CONSUMERISM an IDOL?

- **Consumerism** is a social and economic order that **encourages the acquisition** of goods and services *in ever-increasing amounts*. Wiki
- **Need is a new religion of materialistic values.**
- I desire to desire – for novelty or gratification
- I shop therefore I am
- **Identity via acquisition/consumption is idolatry**
- What good will it be for a man if he gains the whole world and loses his soul?

How Many
Earths Needed
To Sustain
Current Lifestyle

Ecological Footprint: 'Business as usual'



How Many Trees In The World?

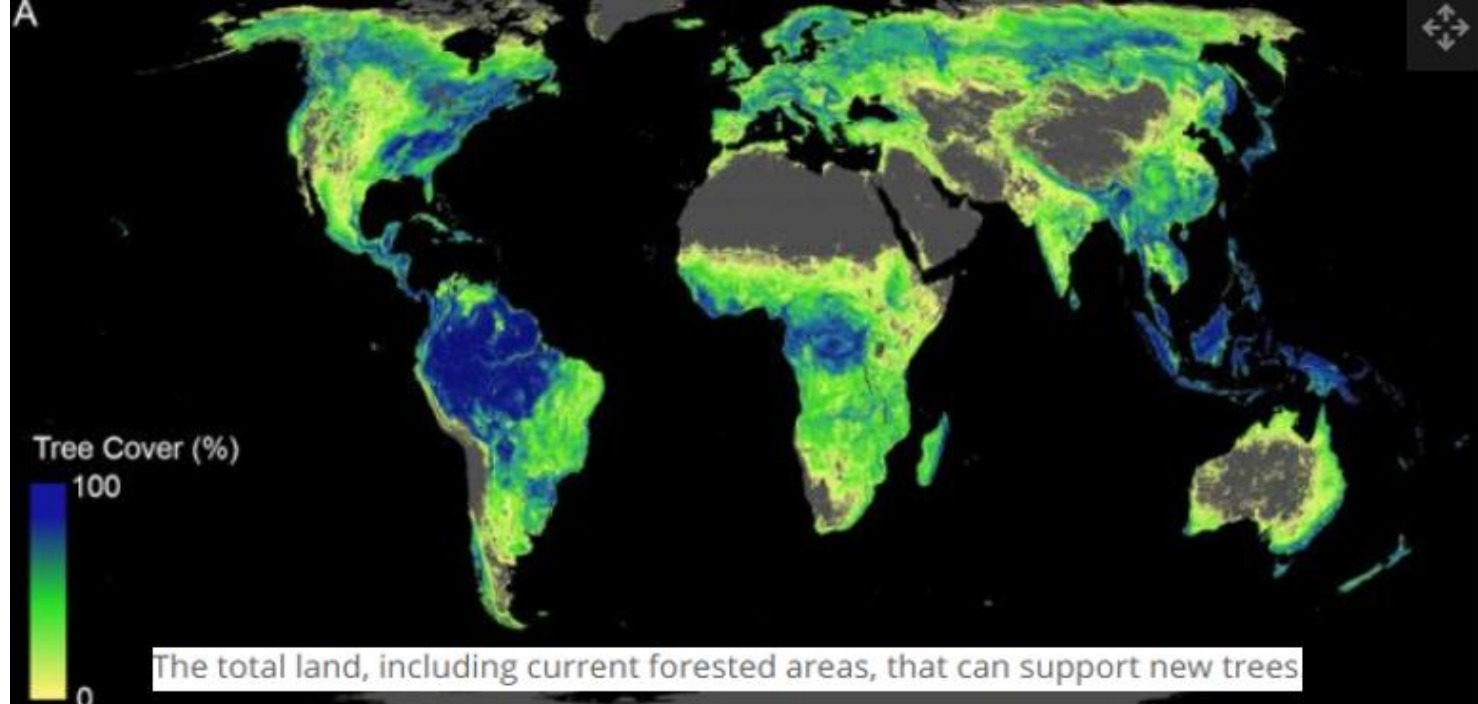
nature

3,040,000,000,000



1 more Trillion Trees?

- **Earth has 3 trillion trees; halved since human civilization began.**
- Human activity: [deforestation](#), land-use changes and forest-management practices lose 15 billion trees pa.
- **Earth has 9 million km² to spare for new trees.** 1 Trillion trees needs 10 million km².
- **Once matured, store two-thirds of the 300 billion metric tons of carbon humans released** into the atmosphere since Industrial Revolution.
- **+10 million square km of forestland can limit climate change to 1.5 degrees Celsius by 2050.**



1 Million Trees in 10 Years ~Enough?

REGULATE WATER CYCLE Healthy forests also play a role in regulating water cycle, slowing down floodwaters and cleaning the water that flows into our waterways.

Greening the red dot

NParks plans to plant a million trees in 10 years starting this year. How will this impact Singapore?

What **1,000,000** trees mean

Able to provide canopy cover sheltering a land area equivalent to about

5

Toa Payoh towns

TOA PAYOH

One million trees include those planted along our streetscapes to create **nature ways**...



The greening of **industrial estates**...



Enhancement planting in our **nature reserves, gardens**...



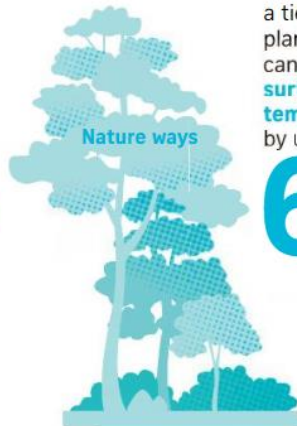
Parks and park connectors.



Planting of additional trees in a tiered, forest-like planting structure can **reduce land surface temperatures** by up to

6°C

Nature ways



Urban Heat Island maps

BEFORE: Land surface temperature map in 2018.



AFTER A projection of land surface temperatures across the island after 1 million trees are planted.



NParks aims to have

300km

of nature ways by 2030. This is about the distance from Johor Baru to Kuala Lumpur.



BY THE NUMBERS

Total number of trees in Singapore

7m

Number of trees in nature reserves and nature areas managed by NParks

4m



Number of urban trees along our streets, in parks and on state lands

2m

An estimated

1m

trees are managed by town councils

Number of trees planted by NParks annually

50,000

Source: NParks STRAITS TIMES GRAPHICS: LEE HUP KHENG

1 million Trees in 10 years Enough?

- To offset carbon, plant 1 tree per pax hour of flight.

Covers only 2 SIN-LONDON flights monthly!

Do We Ban Palm Oil?

So

how do we protect people's livelihoods

and

the environment?



Is there a Solution?

Please buy sustainable palm oil



Teen activist warns world leaders: We won't let you get away with this

In a stinging speech addressed to world leaders, climate activist Greta Thunberg, 16, accused them of betraying the young with their failure in fighting global warming. Here's a transcript of her speech at the UN Climate Action Summit on Monday.



Climate activist Greta Thunberg tells world leaders at the UN summit: "And if you choose to fail us, I say: We will never forgive you." PHOTO: EPA-EFE

How dare you pretend that this can be solved with just "business as usual" and some technical solutions?

With today's emission levels, that remaining CO2 budget will be entirely gone within less than 8¹/₂ years.

dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction and all you can talk about is money and fairy tales of eternal economic growth. How dare you!

For more than 30 years, the science has been crystal clear. How dare you continue to look away and come here saying that you're doing enough, when the

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day, that figur
less than 350
How dare you
be solved wi
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With today's e
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in 8¹/₂ years.
There will not
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cause these n
comfortable.
I not mature e
like it is.

You are failing
people are start
your betrayal. The eyes of all
future generations are upon you.
And if you choose to fail us, I say:
We will never forgive you.

We will not let you get away with
this. Right here, right now, is
where we draw the line. The world
is waking up. And change is
coming, whether you like it or not.

To have a 67 per cent chance of staying below a 1.5 deg C global temperature rise – the best odds

given by the Intergovernmental Panel on Climate Change – the

world had 420 gigatons of CO2 left to emit back on Jan 1 last year.

Today, that figure is already down to less than 350 gigatons.

hundreds of billions of tons of your
CO2 out of the air with technologies
that barely exist.

So a 50 per cent risk is simply not
acceptable to us – we who have to
live with the consequences.

To have a 67 per cent chance of
staying below a 1.5 deg C global
temperature rise – the best odds
given by the Intergovernmental
Panel on Climate Change – the
world had 420 gigatons of CO2 left

Covid Lockdown
For Earth's
Convalescence?

Some cities see bluer skies during

Covid-19 cleans the air but not for all

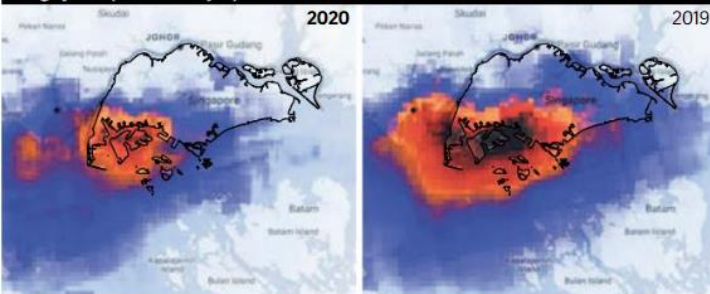
Satellite analysis of nitrogen dioxide (NO_2) emissions during recent lockdowns and movement restrictions shows drops in the pollutant, which is produced from burning fossil fuels. Long-term exposure to NO_2 leads to inflammation of the airways, which can worsen symptoms of asthma and other respiratory diseases. The left panel for each city shows improved air quality in recent weeks versus the same period last year on the right. But in some cities, $\text{PM}_{2.5}$ readings remained largely the same.

Amount of nitrogen dioxide

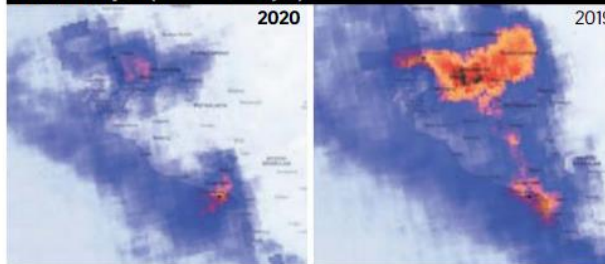


NOTE: The measurement used in the images is micromol per sq m. The darker the colour, the worse the air pollution.

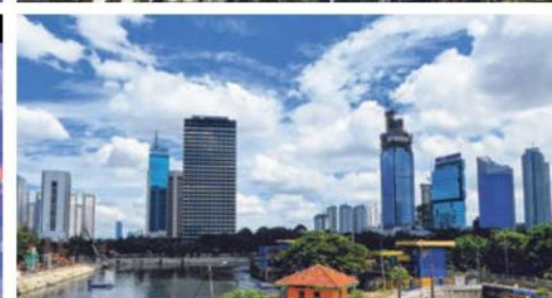
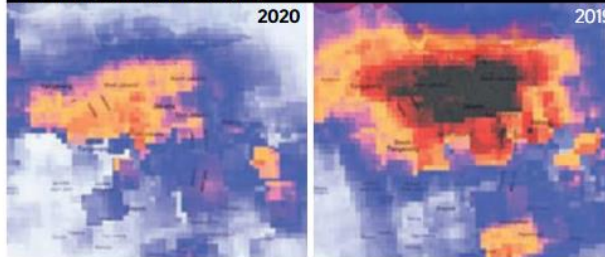
Singapore (Feb 10-May 5)



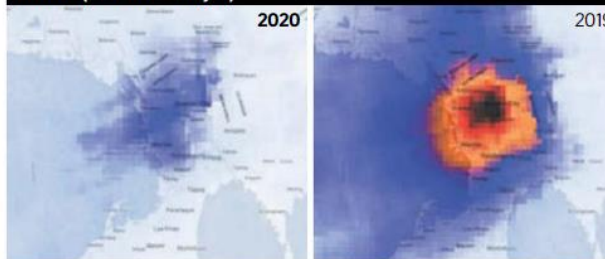
Kuala Lumpur (March 18-May 5)



Jakarta (March 12 to May 5)



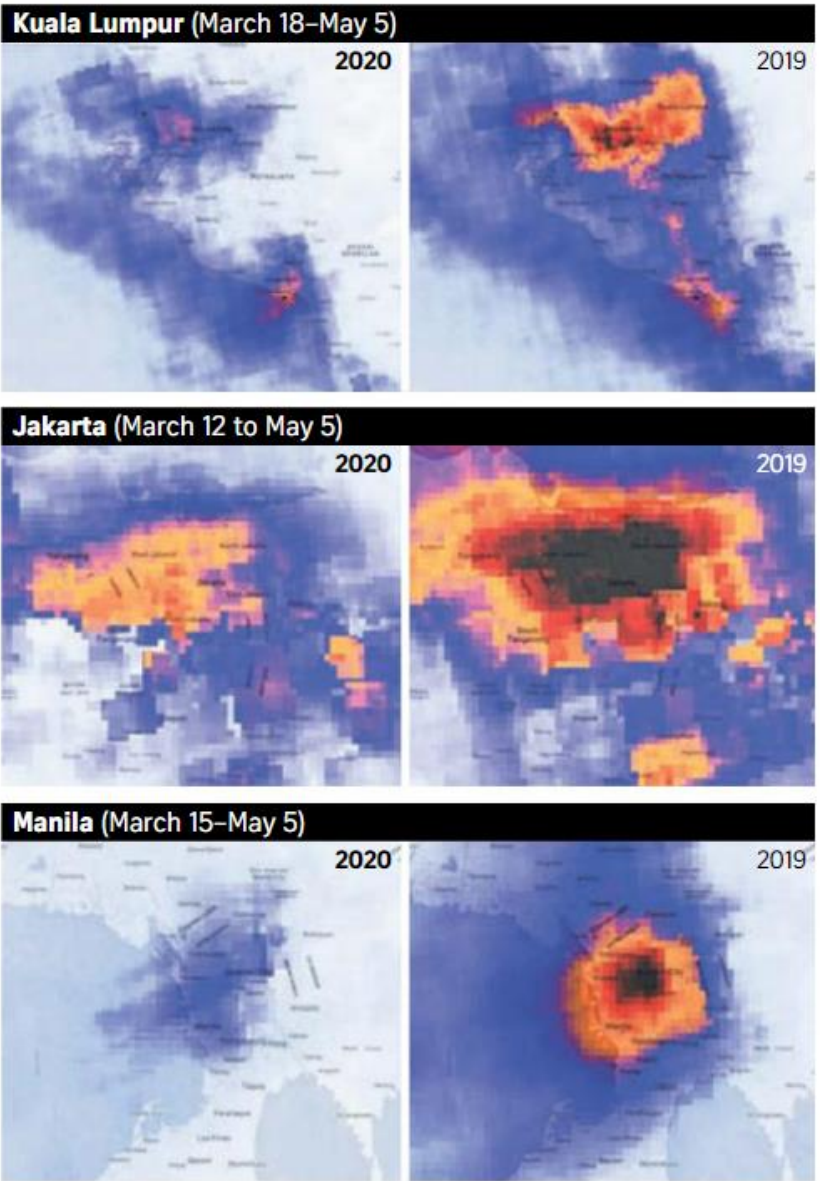
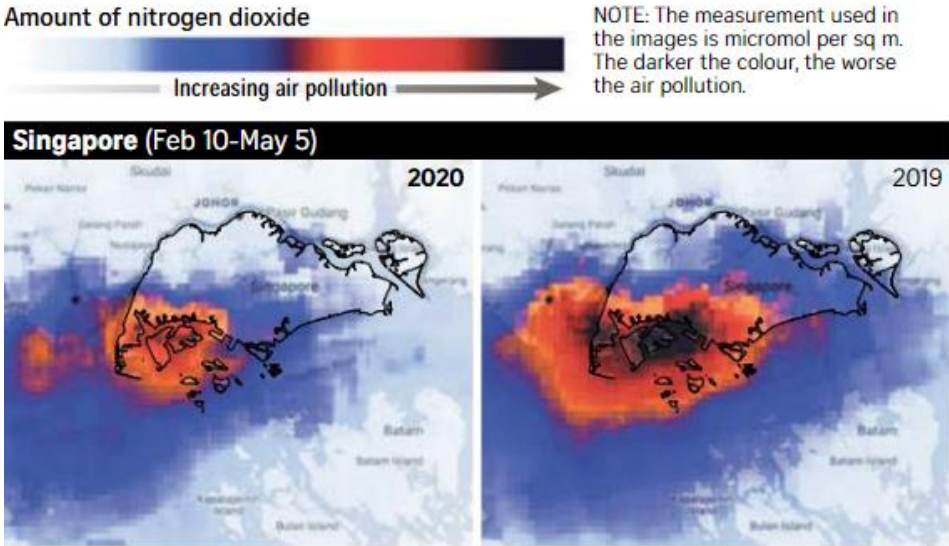
Manila (March 15-May 5)



PHOTOS: CENTRE FOR RESEARCH ON ENERGY AND CLEAN AIR, LIM YAOHUI, AFP, EPA-EFE, REUTERS STRAITS TIMES GRAPHICS

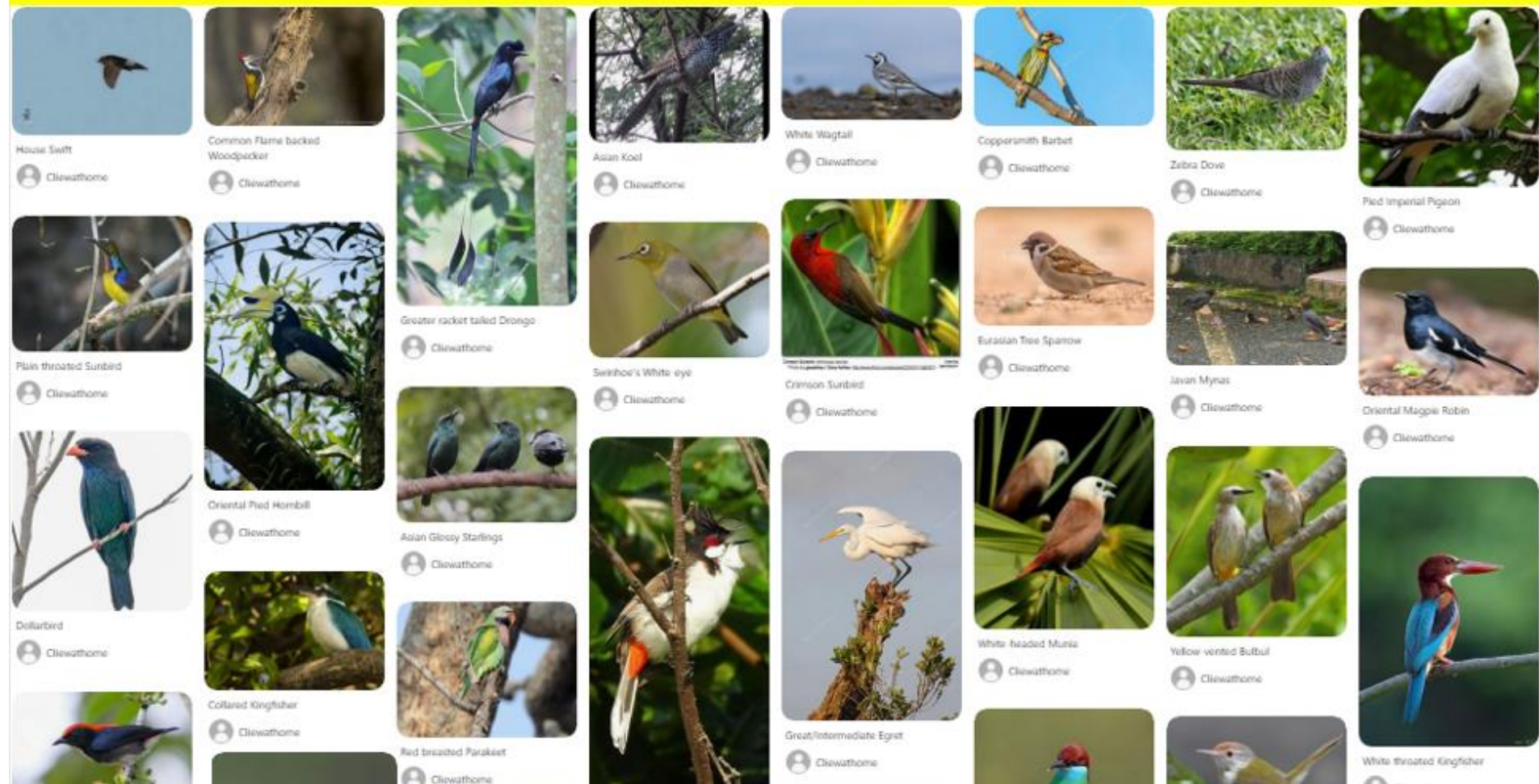
Covid-19 cleans the air but not for all

Satellite analysis of nitrogen dioxide (NO_2) emissions during the pandemic shows drops in the pollutant, which is produced from burning fossil fuels. The left panel for each city shows improved air quality in 2020 on the right. But in some cities, $\text{PM}_{2.5}$ readings remained large



Benefit of
Clean Air in
Singapore?

Birds of Greenleaf – April to July 2020



World-wide: > 9,000 species!

I know all the birds of the mountains

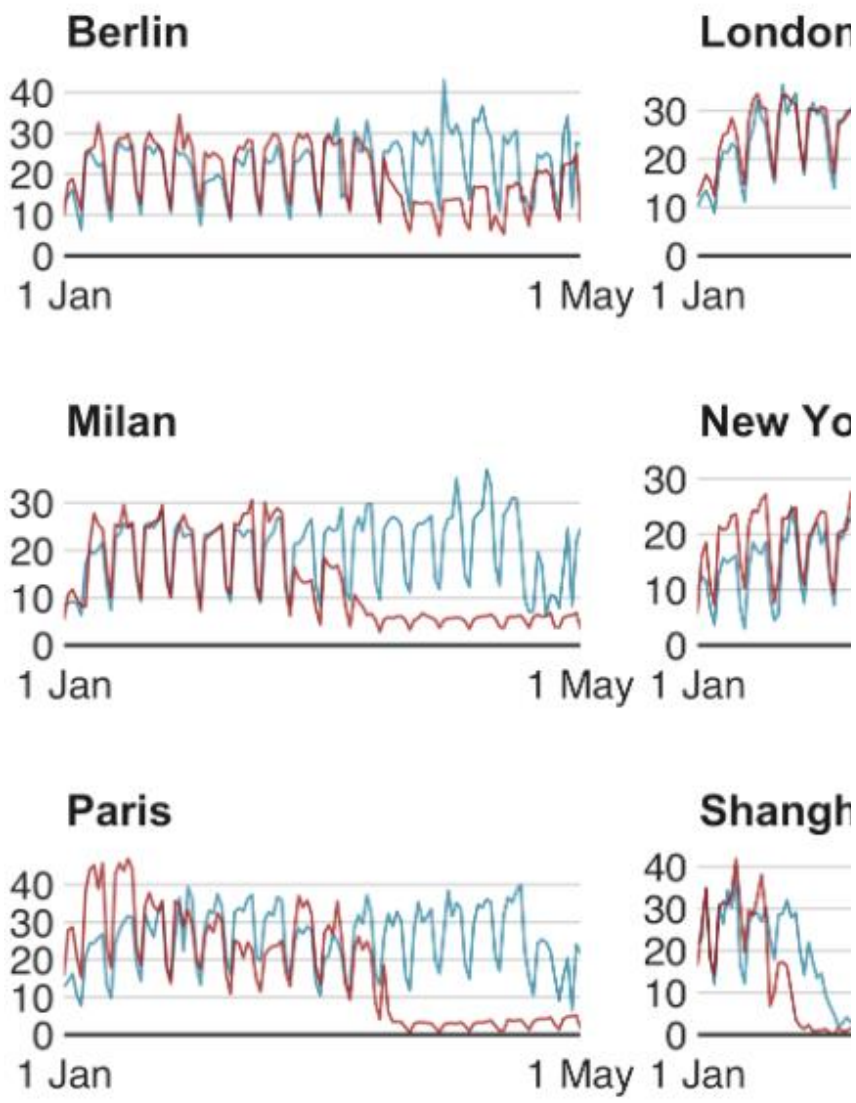
Ps 50:11

More
Lockdowns
Good?

Traffic flows in selected cities

Average congestion per day

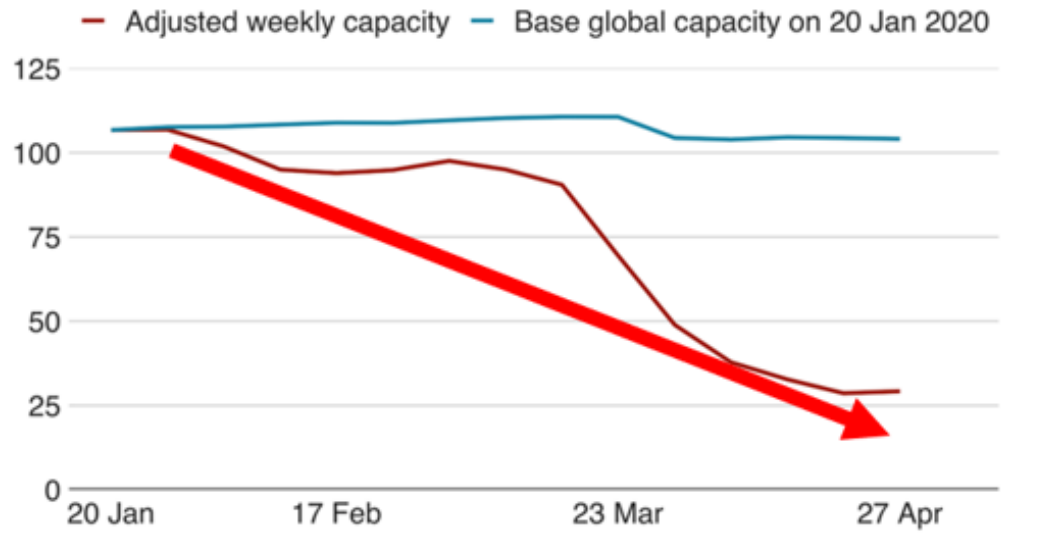
— 2019 — 2020



Source: TomTom, 5 May 2020

Airline capacity hit by coronavirus

Scheduled seats (millions)

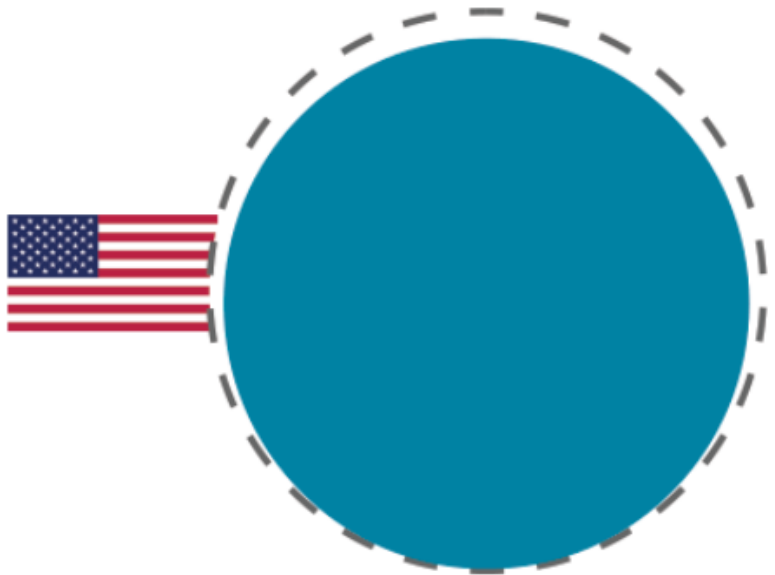


Source: OAG

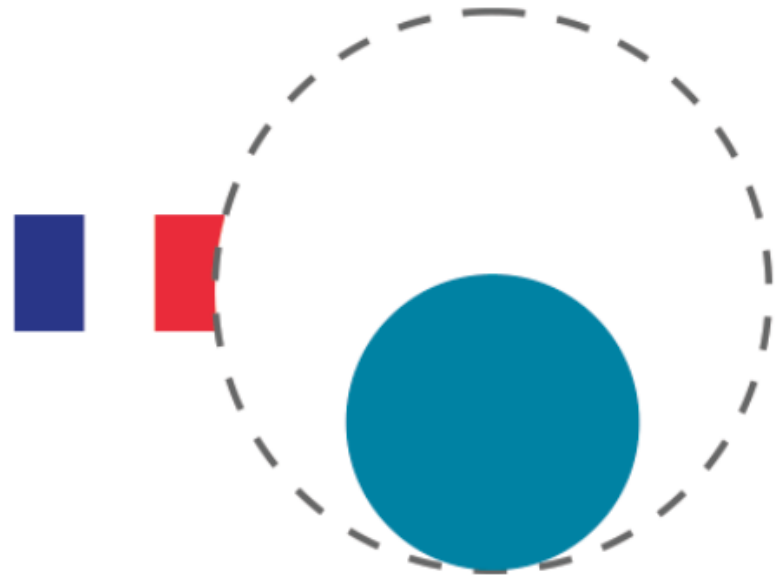
BBC

Effect of Lockdown! **Not the same**

Lockdown impact on CO2 emissions in March



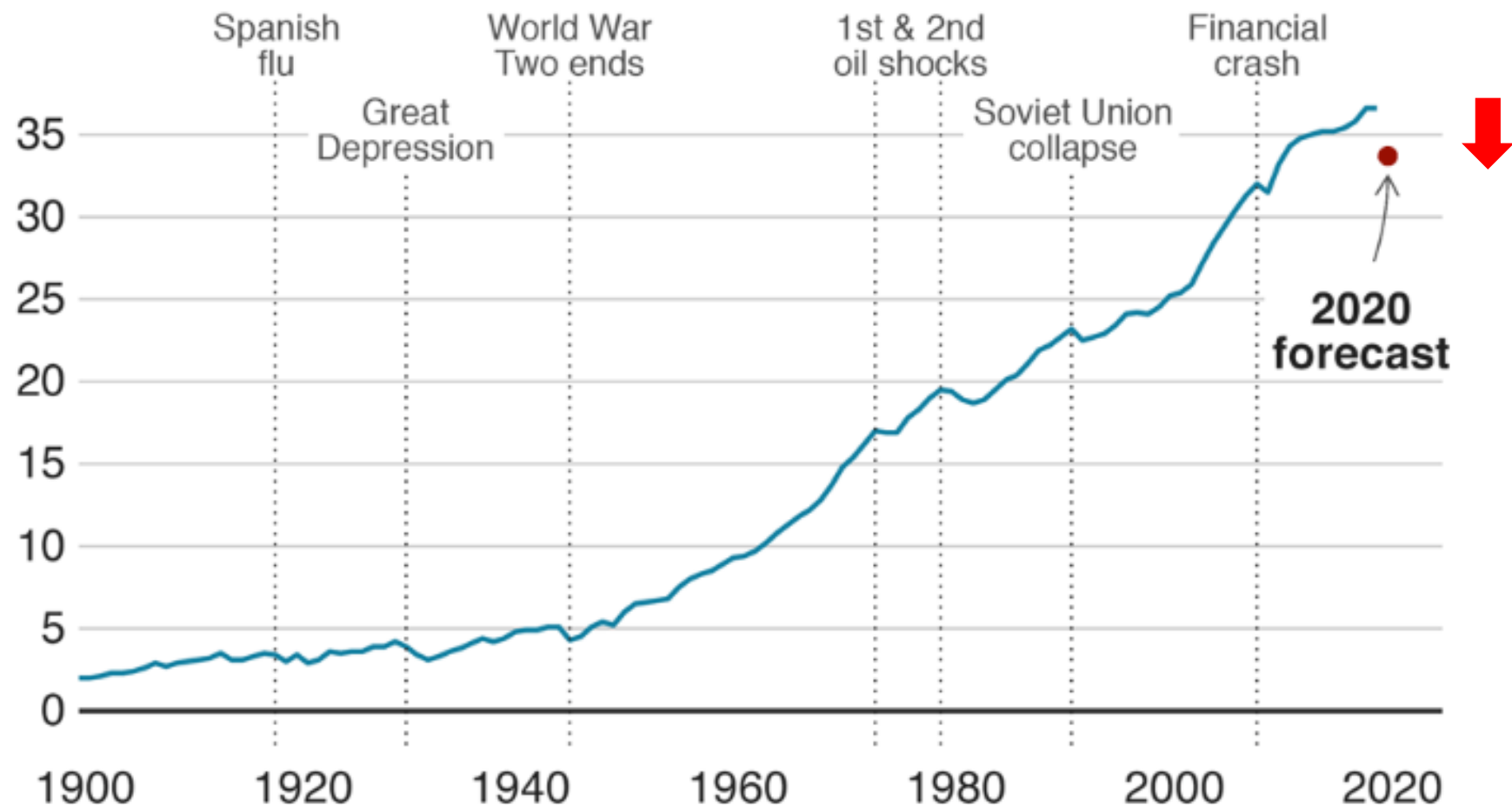
New York: Down **10%**



Paris: Down **72%**

Global CO2 emissions, 1900-present

Billion tonnes of CO2 per year

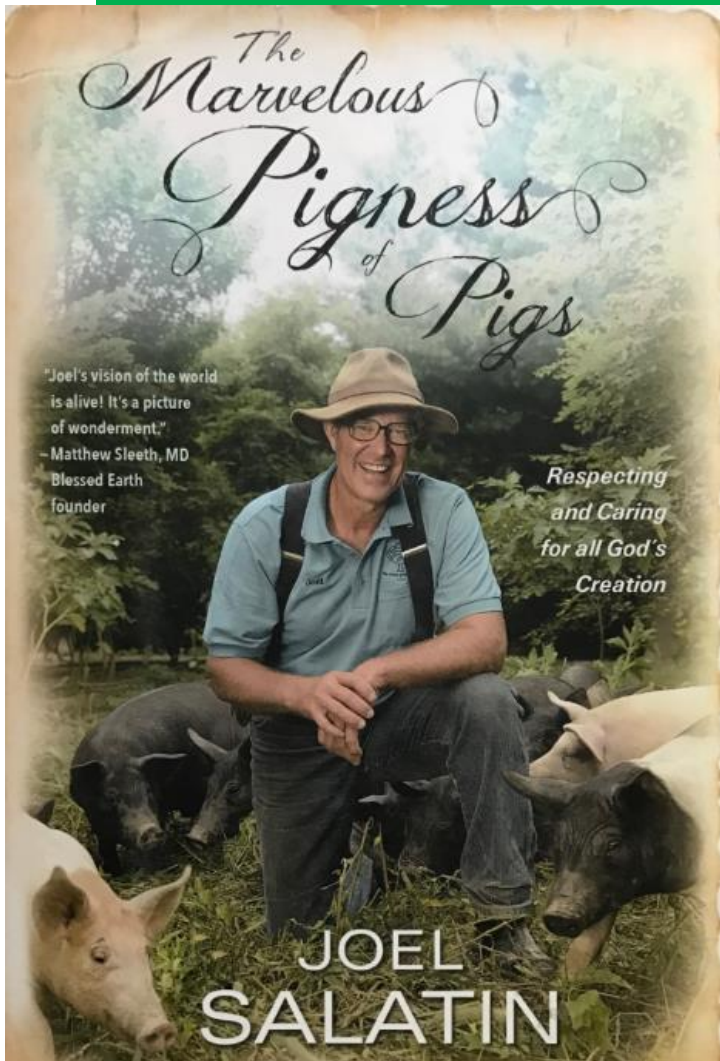


Source: Global Carbon Project, CDIAC & IEA

Jesus Interested in Ecology?

- **Love your neighbour as yourself.**
- **Who suffers when there is human mismanagement and waste? The poor!**
- **¹⁶ For by him all things were created, in heaven and on earth, visible and invisible, whether thrones or dominions or rulers or authorities—all things were created through him and for him. Col 1: 16**

Farmer-Theologian



Creation is an object lesson of spiritual truth. In other words, the way God set things up, physical principles should show, viscerally, what we don't see spiritually.

Every day I pray, 'Lord, let me operate this farm exactly like you would if you were here in person.' It's a 'What Would Jesus Do?' situation, realizing that the land is holy; indeed, all of creation can be sanctified by our interaction with it.

“I see ecology in every verse.”

- ***Healing the earth serves as a fundamental object lesson of God’s healing of our spiritual condition.***
- ***Adhere to God’s nature patterns as an indicator of humility and obedience to his plan.***
- ***Embrace physical stewardship as a visceral template for how far God’s redemptive capacity stretches.***

Why PolyFace? Not MonoFace?



Cows Graze Within Electric Fence



On Salatin's Polyface Farm, 50 head of beef graze pasture first. Controlled by portable electric fences, the cattle leave a trail of manure and 4 to 5 inches of grass stubble in their wake.

Chicken Tractor Follows Cow Path



Four days after the cattle chow down on the grass, the chickens are put on that pasture to clean up after them. Salatin says both his layers and broilers love to pick through fresh manure for insects, including emerging fly maggots, and undigested food particles, both helpful sources of protein. "The chickens sanitize the field, eating the parasites," adds Salatin.

Chickens follow 3-4 Days Later



Chickens are attracted to the lush regrowth stimulated by the grazing cattle.

"One to 2 inches of grass residue is ideal. Four to 5 inches works fine, but 6 to 7 inches is difficult. Long grass also isn't as clean. The broilers mash it over and their manure will not make contact with the soil surface."

Cleaning up after Cows



Replicate Polyface Farm?



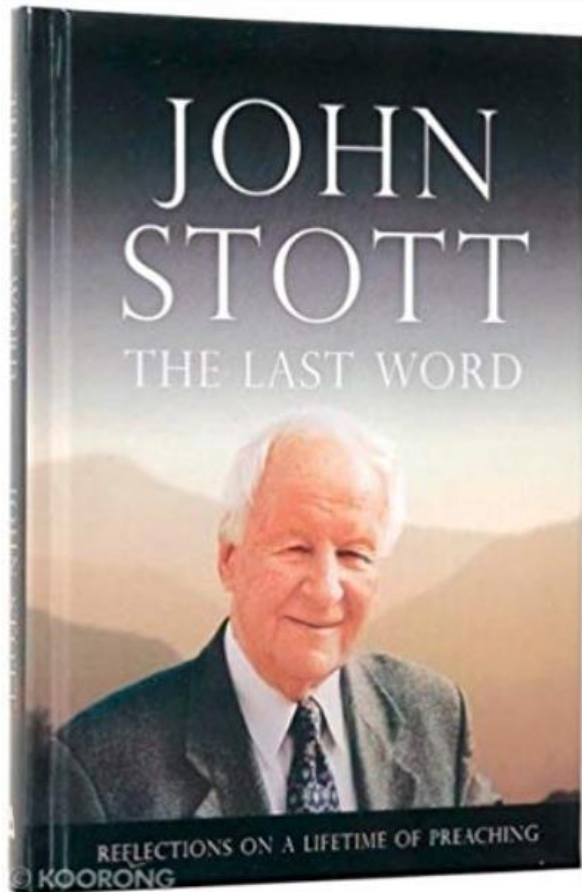
Replicate Polyface Farm ~UK stats?

- **Price £3.50** for 1.35kg bird
 - Fully Grown in **35 days** = Tasteless
 - Constant dim light day and night discourages rest and speeds up growth.
 - 1/4 antibiotic resistant e-coli.
- **Price £9.50** for free range (£12.80 if organic)
 - Grown in **81 days**
 - Natural lighting

Forgiveness Farming?

- Joel passionately believes that his work in redeeming the earth with his gifts and talents puts flesh and practicality around the theological concept of Christ redeeming the soul.

John Stott's Last Book



At 88, final work focussed on 8 areas that Christians often neglect as a way of avoiding costly—or radical—discipleship and include **“Creation Care.”**

Care for the creation has nothing to do with *deification* of nature. On the other hand, it entirely rejects *exploitation* of the earth.”

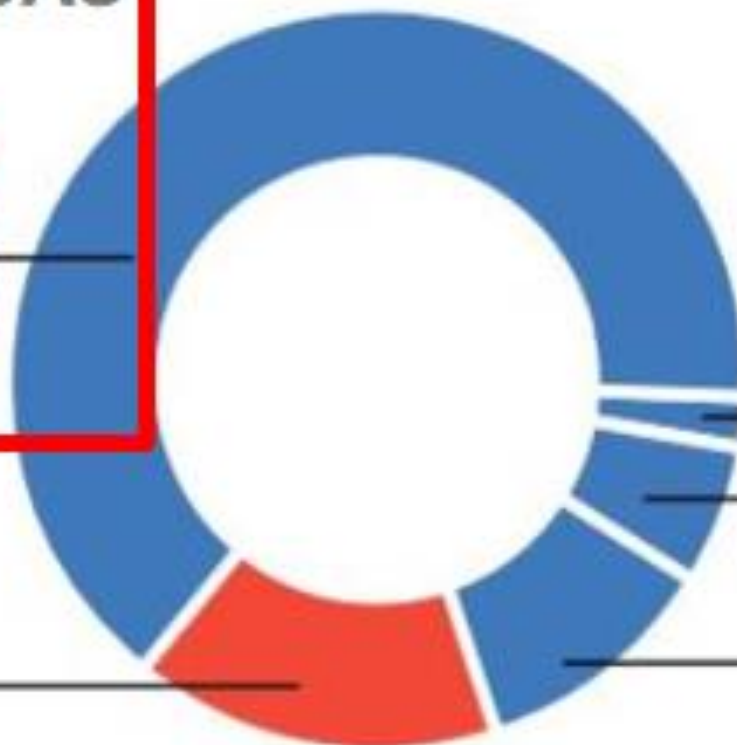
What I eat
Matters?

Macro-
Perspective?

GHG BY GAS

CO₂
(fossil
fuel and
industry)
65%

Methane
16%



F-gases
2%

Nitrous oxide
6.2%

CO₂
(forestry, others)
11%

Methane CH_4

also

Matters?

G-20 carbon 'food-print' highest in meat-loving nations

Study says imbalanced diets of a number of big economies hurting climate and health

PARIS • If everyone alive consumed steaks and dairy the way Brazilians and Americans do, we would need an extra five planets to feed the world, according to the first report to compare the carbon emissions from food consumption in the Group of 20 (G-20) nations, released yesterday.

Of the world's big economies, only the per-capita carbon "food-prints" in India and Indonesia are low enough to help meet the Paris climate target of capping global warming at 1.5 deg C, according to the Diet for a Better Future report.

has an impact on disease, including viral outbreaks such as the coronavirus, the authors said.

"The current pandemic has highlighted just how broken our food system is," said Dr Loken.

"The food that we eat and how we produce it are also key drivers in the emergence of deadly viruses such as the one that leads to Covid-19."

Deforestation in particular erases the boundary between human settlements and natural reservoirs of disease in wild animals.

The problem of waste is concentrated in wealthy nations, Dr Loken said, adding: "It's an issue mainly because rich people throw away too much food."

It said that in China, where sustained economic growth has boosted consumption of meat and imported food, the average diet – on a planetary scale – would exceed the 1.5 deg C threshold by nearly twofold.

The production of food for 7.7 billion people is responsible for a quarter of the global carbon emissions that drive climate change.

About 40 per cent of that comes from livestock production and food waste, with the rest generated by rice production, fertiliser use, land conversion and deforestation to ac-

The report also argues that there are sweeping benefits – both for health and economies – to shifting towards healthier diets rich in legumes, vegetables, fruit and nuts, and light on dairy and meats, especially beef and lamb.

Earlier research has calculated that an overhaul of the global food system could unleash trillions of dollars each year in new business opportunities, and save even more in terms of reduced damage to people's health and the planet.

AGENCE FRANCE-PRESSE

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The production of food for 7.7 billion people is responsible for a quarter of the global carbon emissions that drive climate change.

About 40 per cent of that comes from livestock production and food waste, with the rest generated by rice production, fertiliser use, land conversion and deforestation to accommodate commercial crops.

- If everyone alive consumed steaks and dairy the way Brazilians and Americans do, we would need an extra five planets to feed the world,

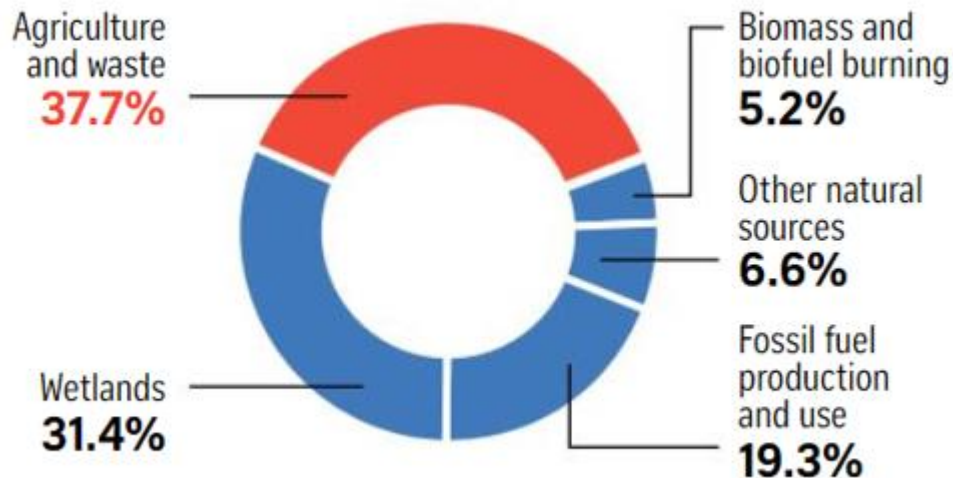
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SOURCES OF METHANE



“The controversy is who is the worst offender in terms of methane growth in the atmosphere – is it cows or the fracking guys?”

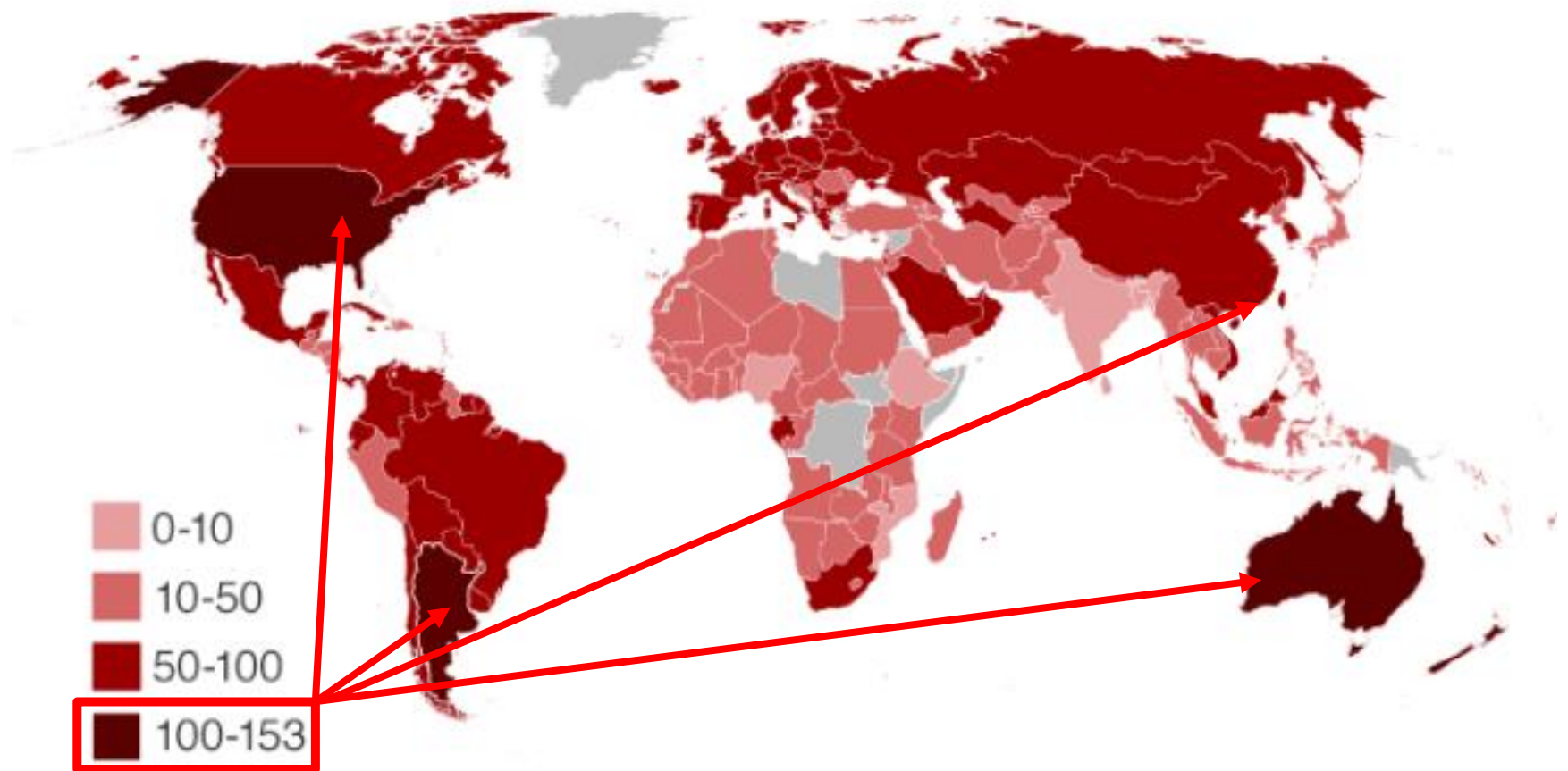
“As this paper shows... agriculture is still more important – there are still more emissions from farming than fossil fuels,”

He said that livestock, particularly cows and sheep, was the largest source of mankind's methane emissions, driven in part by the growing middle-class demand for meat.

Rice farming is another major source of methane, along with manure, wood burning and bush fires, and even termites.

Who eats the most meat?

Meat consumption (kg per person per year)



Source: UN Food and Agriculture Organization / Our World in Data

BBC

Beef Consumption Per Capita

World Beef Consumption By Country				
World		129,472,923,360	7,432,663,275	17.4
Rank	Country	Consumption	Population	Per Capita
1	Uruguay	427,696,280	3,444,071	124.2
2	Argentina	5,269,041,800	43,847,277	120.2
3	Hong Kong	839,960,220	7,346,248	114.3
4	United States	25,714,687,680	324,118,787	79.3
5	Brazil	16,532,445,380	209,567,920	78.9
6	Paraguay	489,425,640	6,725,430	72.8
7	Australia	1,580,712,540	24,309,330	65.0
41	Singapore	77,161,700	5,696,506	13.5

Global methane emissions soar to record level: Study

Cows are major producers of greenhouse gases (GHG)

RUMINANT STOMACH SYSTEM

Cows, sheep, goats

CH₄ Methane

- Around 60 per cent of manmade CH₄ emissions are estimated to come from agriculture and waste
- About half of that comes from the digestive processes of livestock

Methanogen

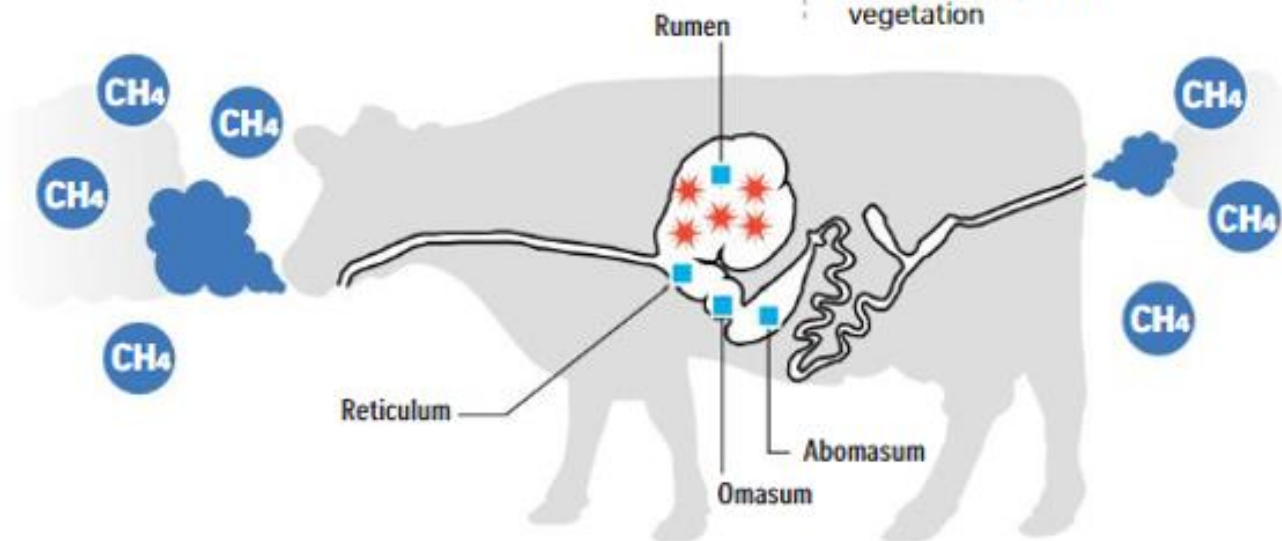
- A bacterial microbe in the rumen
- Feeds off other organisms and decaying organic matter
- Converts carbohydrates into simpler molecules

Enteric fermentation

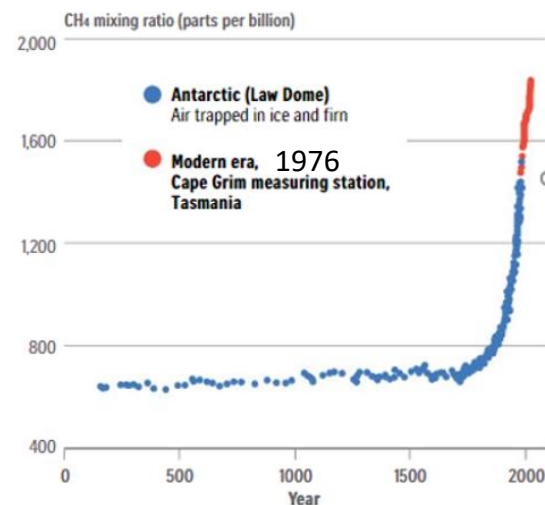
- Methanogens in the stomach of farm animals help digestion and produce methane as a by-product

Natural methane sources

- Wetlands
- Geological, oceans, termites, wild animals, permafrost, vegetation



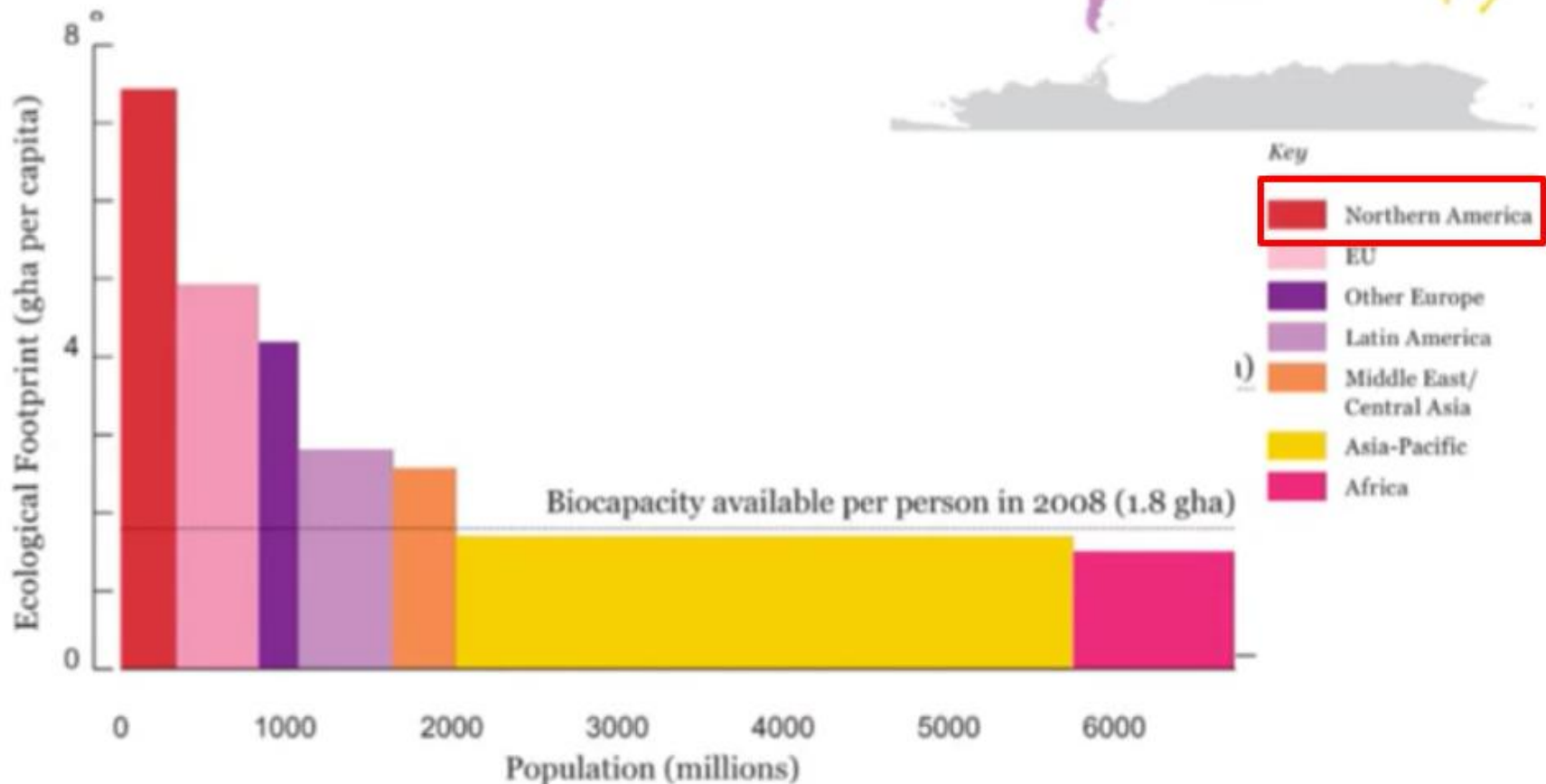
ATMOSPHERIC METHANE CONCENTRATIONS



Sources: AGENCE FRANCE-PRESSE,
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

Who's Using Most Resources?

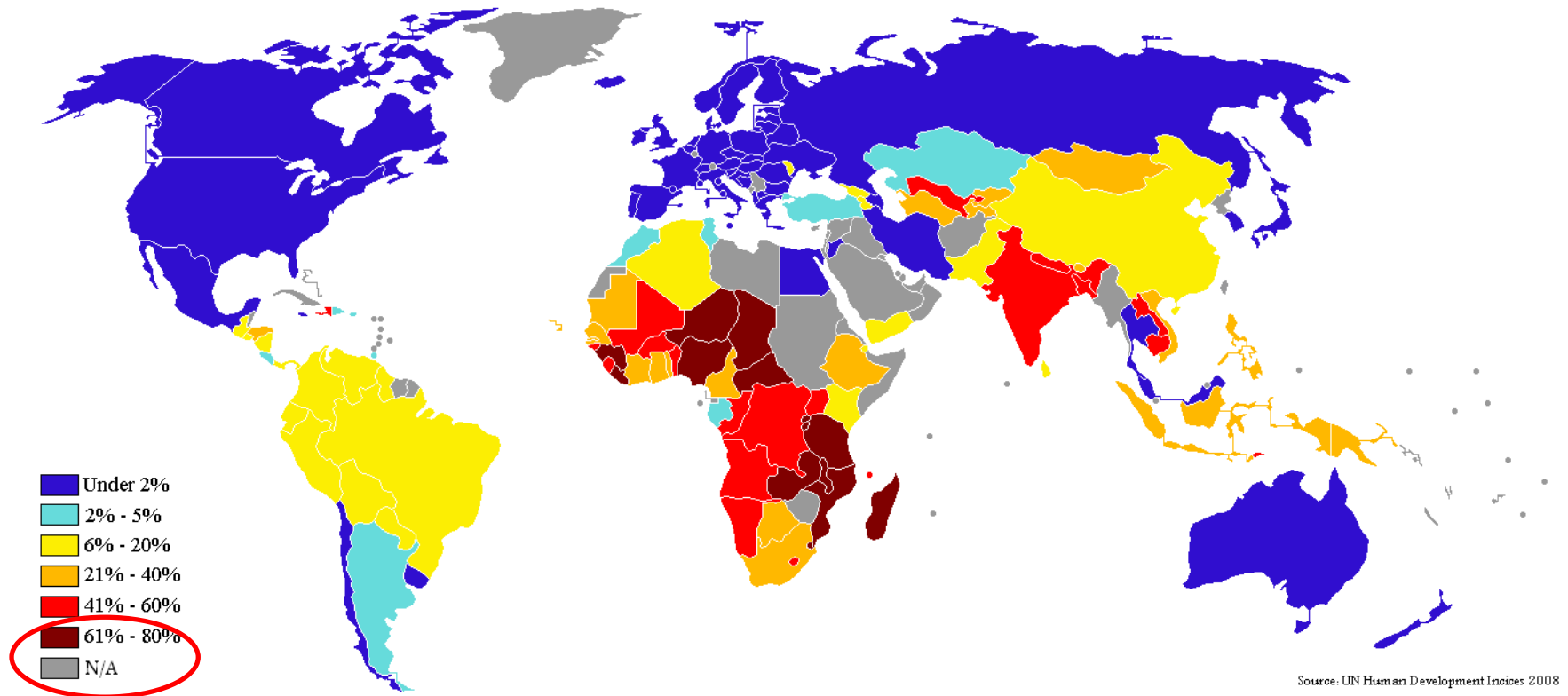
Ecological Footprint by geographic grouping



Why Are There Hungry People?

- **World** produces enough **food** for 1.5x global population or 10 billion (cf 7.6 billion in 2018).
- 33%: feed animals
- 5%: biofuels
- 33%: wasted along the food chain

Living On < US\$1 daily



- Live Simply
- That others may simply live!

- Don't export rubbish to your neighbours!

Who's disposing Waste Improperly

Malaysia to return illegally imported plastic waste to where it came from



What Can
I do?

What is your carbon footprint?

Hard Choices

By plane

(distance: 316km)

Passenger load: 180

Cost: From \$74 to \$191 for flights a person, RM\$55 (\$\$18) for KLIA Ekspres a person

Travel time: 1 hour flight time. Add 3 hours for check-in and immigration clearance at airports and 30 minutes travel from KLIA to Kuala Lumpur via KLIA Ekspres.

11,160kg or 6,091m³
(regular airline)

According to atmosfair, the most CO₂-friendly airline is AirAsia:

6,120kg or 3,340m³

34kg or 18.6m³
a passenger

e traveller transport.

By car

(distance: 355km)

Passenger load: 4

Cost: \$149.20 a car
Approximately \$45 for petrol; toll charges at Woodlands (\$1) and Tuas (\$1.30 for off-peak, \$2.50 for peak hours) checkpoints; Malaysia's Foreign Registered Vehicles Entry (VEP) fee (RM\$25) and Plus Toll charges (RM\$2.90).

Travel time: About 4½ hours. Add two-hour buffer for traffic and immigration clearance.

40kg or 21.8m³
(Toyota Prius)

70kg or 38.2m³
(Honda Accord)

By bus

(distance: 350km)

Passenger load: 30

Cost: \$28 to \$50 an adult

Travel time: Average 6 hours. Traffic and immigration clearance could add anywhere from 45 minutes to a couple of hours, especially on long weekends.

300kg or 163.7m³

By train (distance: 316km)

Passenger load: 300

Cost: \$23.05 a person
Shuttle Tebrau from Woodlands to Johor Baru (\$5), shuttle train from JB Sentral to Gemas (RM\$21), ETS train from Gemas to KL Sentral (RM\$31).

Travel time: 6 hours, but add 2 hours for transit buffer.

231kg or 126m³

0.77kg or 0.4m³
a passenger

10kg or 5.5m³
a passenger

17.5kg or 9.6m³
a person
(Honda Accord)

10kg or 5.5m³
a person
(Toyota Prius)

62kg or 33.8m³
a passenger
(regular airline)

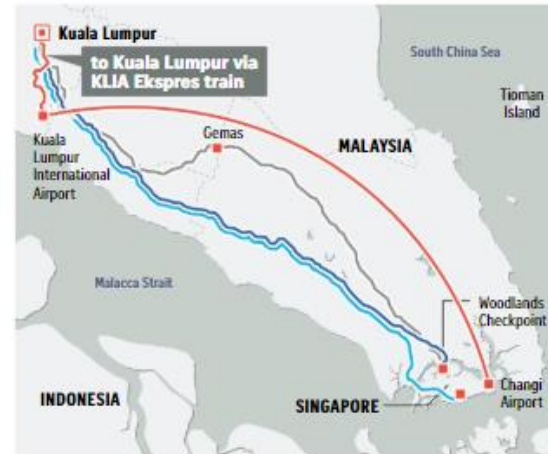
PASSENGER LOAD

One car = 4 passengers

One bus = 30 passengers/75 cars

One plane = 180 passengers/45 cars/6 buses

One train = 300 passengers/75 cars/10 buses/16 planes



By plane By train
By car By bus

Practical Advice for You & Me

- **Use sustainable forms of energy;**
- **Switch off unneeded appliances;**
- **Buy just necessities**
- **Reduce + Reuse + Recycle**

Did you know?

- **The average Briton “throws out his or her body weight in rubbish every three months.” Why?**

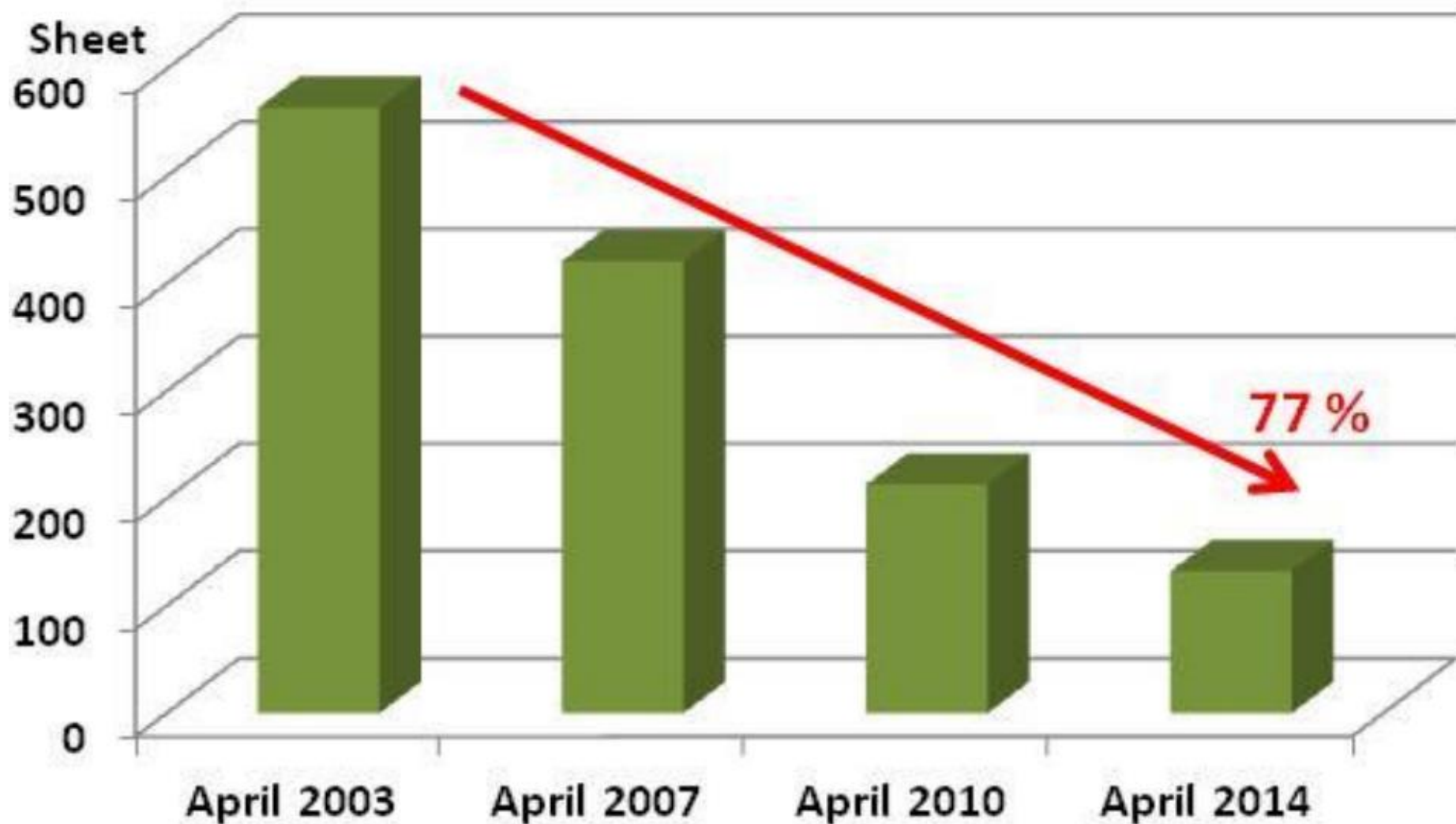
Excessive waste from packaging and consumerism!

prime now

amazon



A4 Paper Consumption (Ave. per staff)



Stott: Why Care for Creation?

- **Who owns this planet that we call home?**
- The world reflects and praises God who created it. **To sully the world is to sully this reflection. To harm the natural world is to disable its ability to praise and reflect God.**

Why Preach on Creation Care?

- **The gospel, not the green movement, must remain our first concern.**
- **Fortunately, creation care complements the gospel, not competes with it.**
- For many, it is a starting point for sharing the gospel. Where there is a growing sensitivity to environmental problems — it strengthens the credibility of our witness.

Tikkun Olam?



Conclusion?

- What Does Jesus Care About?
- Creation
- Souls
- **Jesus: Great Shepherd of our Soul**

The End

The Lord's Supper: Holy Communion: Same-Same?

CMC 25 July 2020

Lord's Supper

- A command
- Of Christ
- In Bible

ΤΟΥΤΟ ΠΟΙΕΊΤΕ
ΕΙΣ ΤΗΝ ΕΜΗΝ
ΑΝΑΜΝΗΣΙΝ

Do this in
remembrance of me!

Holy Communion

- A sacrament
- Of the Church
- Not in Bible
- Who *invented* sacrament?

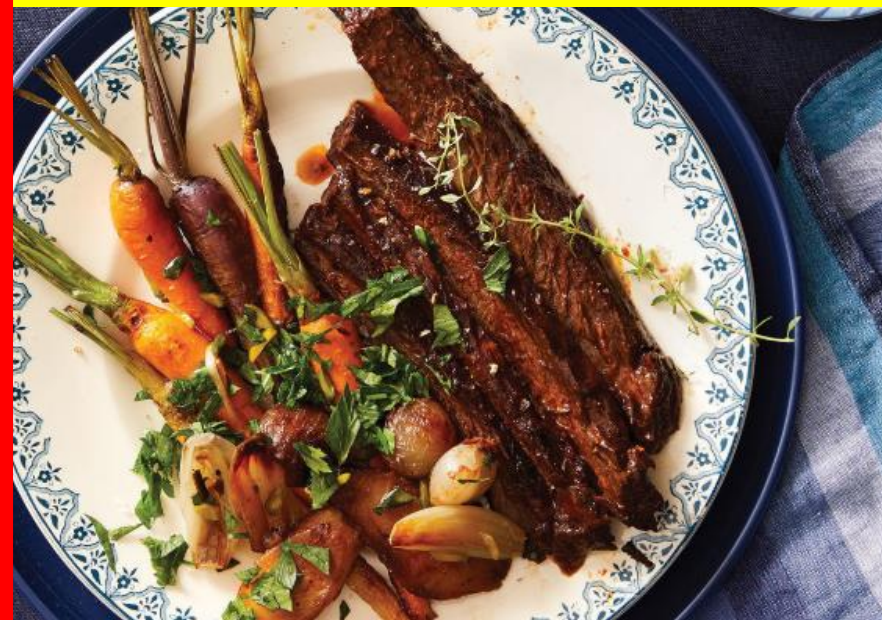
Do This (is) ...

- A Comment?
- A Suggestion?
- An Invitation?
- **A Command?**

Holy Communion



The Lord's Supper



So What Am I To Eat?

- First, *Eat* Only the Lord's Supper?
- Second, *Receive* only Holy Communion?
- Third, Have both?
- Fourth, Skip both?

Objections to eating a meal called the Lord's Supper?

- **Name: EatSafe Supper?**
- EatSafe @Home!
- EatSafe copies Supper@Home in Acts 2.

Summarise In 2-Sentences?

- **The Lord's Supper** is a meal we eat in *obedience to Jesus*.
- **Holy communion** is a *sacrament of the church*.

Traditions and Commandments

M15

- **15 Then Pharisees and scribes came to Jesus from Jerusalem and said, ² “Why do your disciples break the tradition of the elders? For they do not wash their hands when they eat.”**
- **³ He answered them, “And why do you break the commandment of God for the sake of your tradition?”**

In 1-Sentence?

**Obey Christ
Always!**

Who Started
Sacraments?

Henry Wheeler

History and Exposition of the
Twenty-Five Articles of
Religion of the Methodist
Episcopal Church



HENRY WHEELER

Article XVI – Of the
sacraments

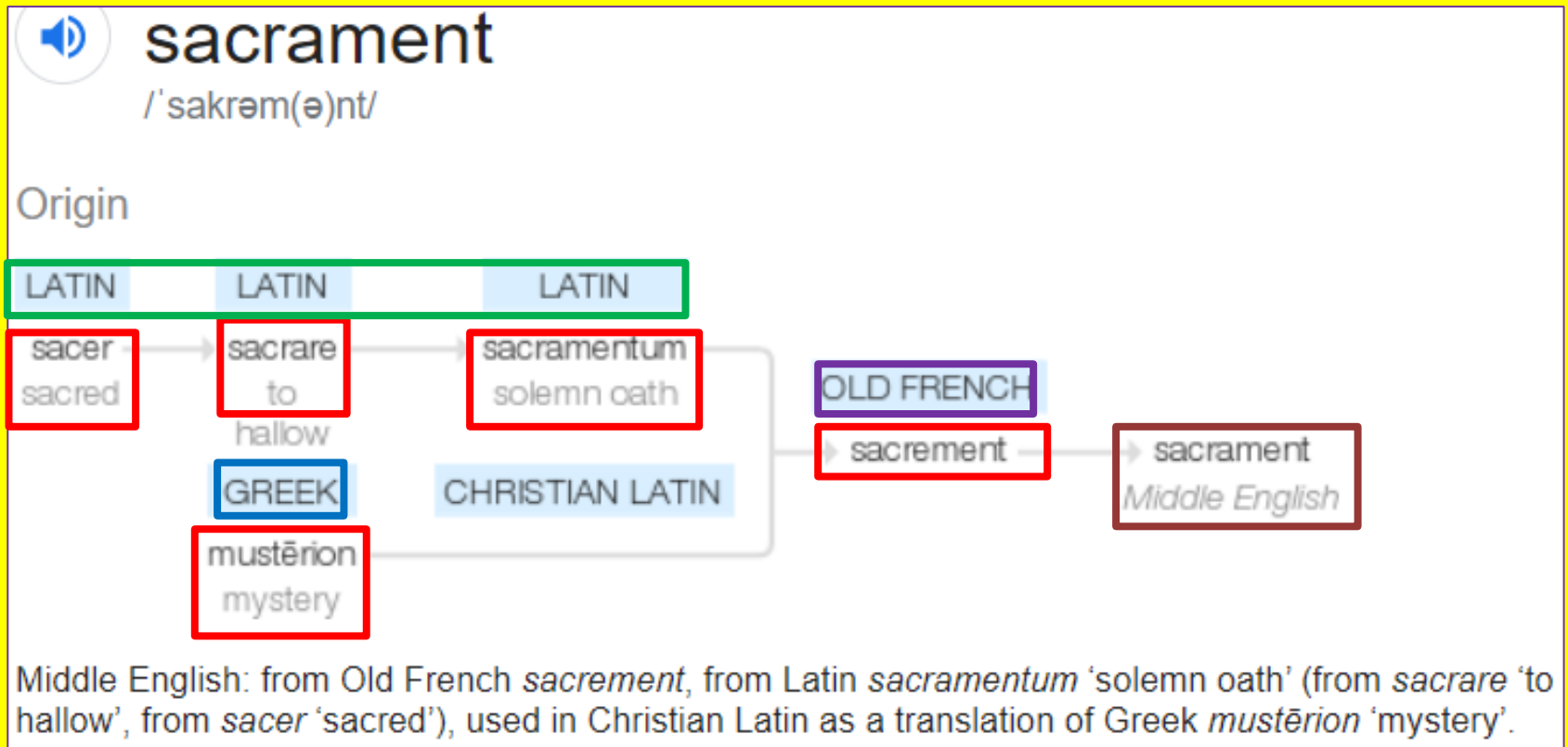
They are an outward and
visible sign of an inward
and spiritual grace given
unto us, ordained by
Christ himself

Sacrament Etymology

- The **English** word "sacrament" is derived indirectly from the Ecclesiastical Latin *sacrāmentum*, from Latin *sacrō* ("hallow, consecrate"), from Latin *sacer* ("sacred, holy").
- This *in turn* is derived from the **Greek** New Testament word "*mysterion*".

Sacrament Etymology

Who Invented idea of sacrament?



Sacramentum Originator?

- In Ancient Rome, the term meant a soldier's oath of allegiance.
- Tertullian, a 3rd-century Christian writer, was the son of a soldier. He suggested that just as the soldier's oath was a sign of the beginning of a new life, so too was initiation into the Christian community through baptism and Eucharist.

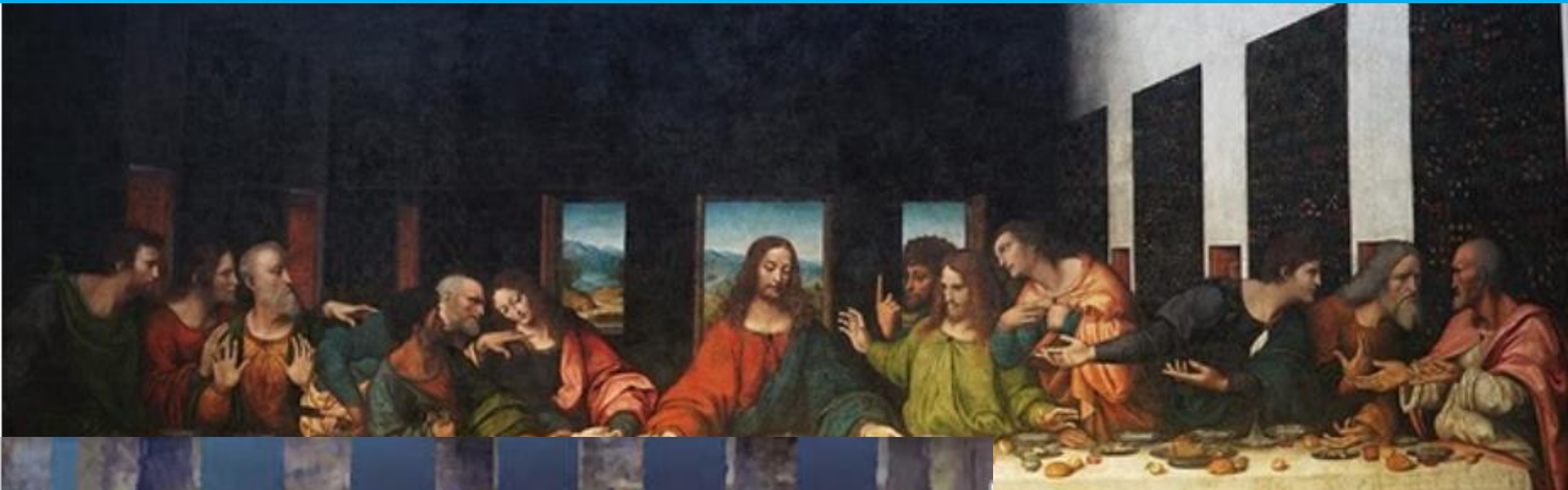
What Else Is
Different?

Calorific & Social Difference?





Seating @Last Supper?



Did Jesus Throw Bread To Judas?



- Revd Ng Koon Sheng said: "This is possibly how it could have happened. Jesus and the apostles were likely to have reclined around a triclinium - an ancient Roman set-up where couches are placed along three sides of a low table in a dining room."
Good Friday Service @St Paul's Church on 3 April 2015

Who Breaks the Bread?

- 1 Cor 10:16 ¹⁶ Is not the cup of thanksgiving for which ***we give thanks* [Eulogeoumen]** a participation in the blood of Christ? And is not the bread that ***we break* [klōmen, κλῶμεν]** a participation in the body of Christ?

Who Consecrates?

- At the Last Supper, did Jesus consecrate the bread?
- And the wine?

Jesus' Prayer at the Last Supper?

For Bread:

- **Blessed are you, LORD our GOD, King of the universe who causes bread to arise from the ground**

בָּרוּךְ אַתָּה ה' אֱלֹהֵינוּ מֶלֶךְ הָעוֹלָם הַמוֹצִיא לֶחֶם מִן הָאָרֶץ

For Wine:

- **Blessed are you, LORD our GOD, King of the universe who is the Creator of the fruit of the vine.**

בָּרוּךְ אַתָּה ה' אֱלֹהֵינוּ מֶלֶךְ הָעוֹלָם בּוֹרֵא פְּרֵי הַגָּפֶן

Can We Copy Jesus? Menu? Prayers?

- Following Jesus?
- Obeying Jesus's commands?
- Eating the Last Supper's Menu?
- Praying to thank God the Giver, before eating bread or drinking wine?
- Praying in Hebrew, like the Jews?

Replicating Lord's Supper?

- **Menu of Last Supper + Prayers at Last Supper = *Lord's Supper*?**
- **Come with also 5 Pauline Attitudes:**
- **(1) Remembrance ~ *Anamnesis***
- **(2) Participation ~ *Koinonia***
- **(3) Proclaim ~ *kataggello***
- **(4) Fellowship ~ 5x [*synerchomai*]**
- **(5) Thanksgiving ~ *eucharistEsas***

Jesus' Prayer at the Last Supper?

For Bread:

- **Blessed are you, LORD our GOD, King of the universe who causes bread to arise from the ground.**

For Wine:

- **Blessed are you, LORD our GOD, King of the universe who is the Creator of the fruit of the vine.**

**Enjoy the Lord's Supper: in remembrance,
partaking, in fellowship, with
thanksgiving!**



Objections to eating a meal called the Lord's Supper?

- **Name: EatSafe Supper?**
- EatSafe @Home!
- EatSafe copies Supper@Home in Acts 2.

The Point?

Obey Christ
Always!

Jewish Prayers For

Bread

בָּרוּךְ אַתָּה, יְיָ אֱלֹהֵינוּ,
מֶלֶךְ הָעוֹלָם,
הַמּוֹצִיא לֶחֶם מִן הָאָרֶץ.

*Baruch Atah, Adonai Eloheinu,
Melech haolam,
hamotzi lechem min haaretz.*

Blessed are You, Adonai our God,
Sovereign of all,
who brings forth bread from the earth.

Wine

בָּרוּךְ אַתָּה, יְיָ אֱלֹהֵינוּ,
מֶלֶךְ הָעוֹלָם,
בוֹרֵא פְּרִי הַגָּפֶן.

*Baruch atah, Adonai Eloheinu,
Melech haolam,
borei p'ri hagafen.*

Blessed are You, Adonai our God,
Sovereign of all,
Creator of the fruit of the vine.

The End