

TEDx on Sustainability (4x)




2023 APEC Circular Economy Award



2024 WWF Force of Nature Award

PROFESSIONAL EXPERIENCE

- 4x TEDx speaker on Sustainability
- Make A Difference Travel Impact & Educational Programs (co-founder)
- En-Roads Climate Interactive Ambassador
- AVD Green Building Materials, President
- British School Manila: Sustainability Education Consultant
- The Plastic Solution Education & Consultancy
- US Embassy Young Southeast Asian Leader
- New Zealand Young SEA Business Leader
- The Circle Surf Hostel, Co Founder
- Department of Trade & Industry (DTI) Sustainability Business Mentor Customer
- Environmental & Agriculture Consultant to Zambales (2017)
- Manager, Johnson & Johnson Philippines (2008-2011)

MEDIA FEATURES:

- BBC, CNN, Al Jazeera, BuzzFeed, Rappler, TTG Singapore, Purveyr, ABSCBN, Business Mirror, Agri Magazine, Manila Bulletin, GMA News

AWARDS

- WWF Force of Nature Awardee for Restoration (2024)
- Siklab Nation Builder Award by Phinma/Ramon V Del Rosario (2024)
- DOST Homegrown Heroes (2024)
- French Chamber of Commerce Ph Sustainability Excellence Award (2023)
- APEC Circular Economy Organization Award (2023)
- Japan Good Design Award (2018)
- ASEAN Good Design Award (2018)
- Ten Accomplished Youth Organizations Philippines (2017)
- Villar Sipag Youth Awards Philippines (2017)

EDUCATION:

- Massachusetts Institute of Technology (MIT): Ecosystem Restoration (2024)
- Ateneo De Manila University: Management, Minor in Chinese (2008)
- University of International Business & Economics, Beijing: Scholar (2006)

BUILDS THAT MATTER


Transition from
EXTRACTIVE to
REGENERATIVE


koyley 9h
For us indigenous people,
we also want progress.


is different from our idea of progress.


But the progress you speak of...


Progress for us means taking
care of our land and our sea.


Design for people
City &
Countryside ideas

# Pillars of Sustainable & Regenerative Economy & Education

## Community & Society



## Nature & Environment



## Personal Well Being



## Green Economy



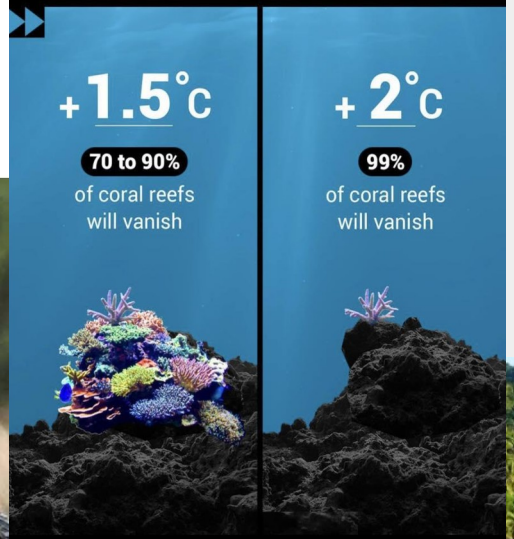
Philippine Star
Suggested for you · 5d ·

The sugarcane industry is considering delaying the start of the milling season until the end of next month to give more time for canes to mature and develop more sugar content.
https://tinyurl.com/4vwtpzxh




233 6 comments 49 shares

unitednations




311 likes
**unitednations** Rising global temperatures have dramatically increased the risk of irreversible loss of marine and... more
View all 5 comments
Add a comment...
12 minutes ago

cnnclimate

NATION

# Casiguran, Aurora scorches at 60 degrees Celsius heat index

Romina Cabrera - The Philippine Star
August 16, 2023 | 12:00am

MANILA, Philippines — The heat index in Casiguran, Aurora reached a sizzli
Celsius on Monday, the highest so far recorded this year, according to the s
bureau.



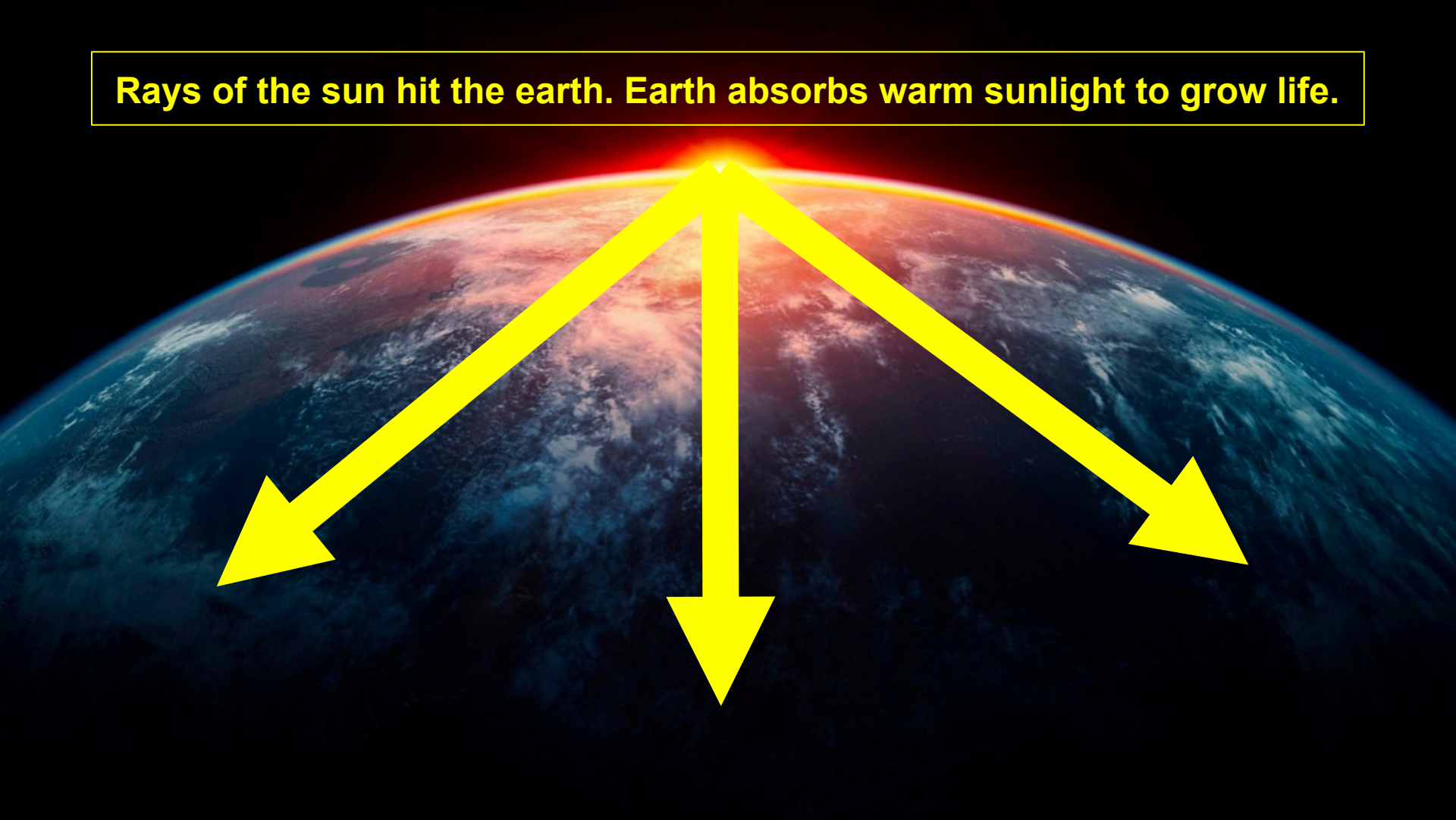
# Four storms churning the West Pacific at the same time mean more bad news for the

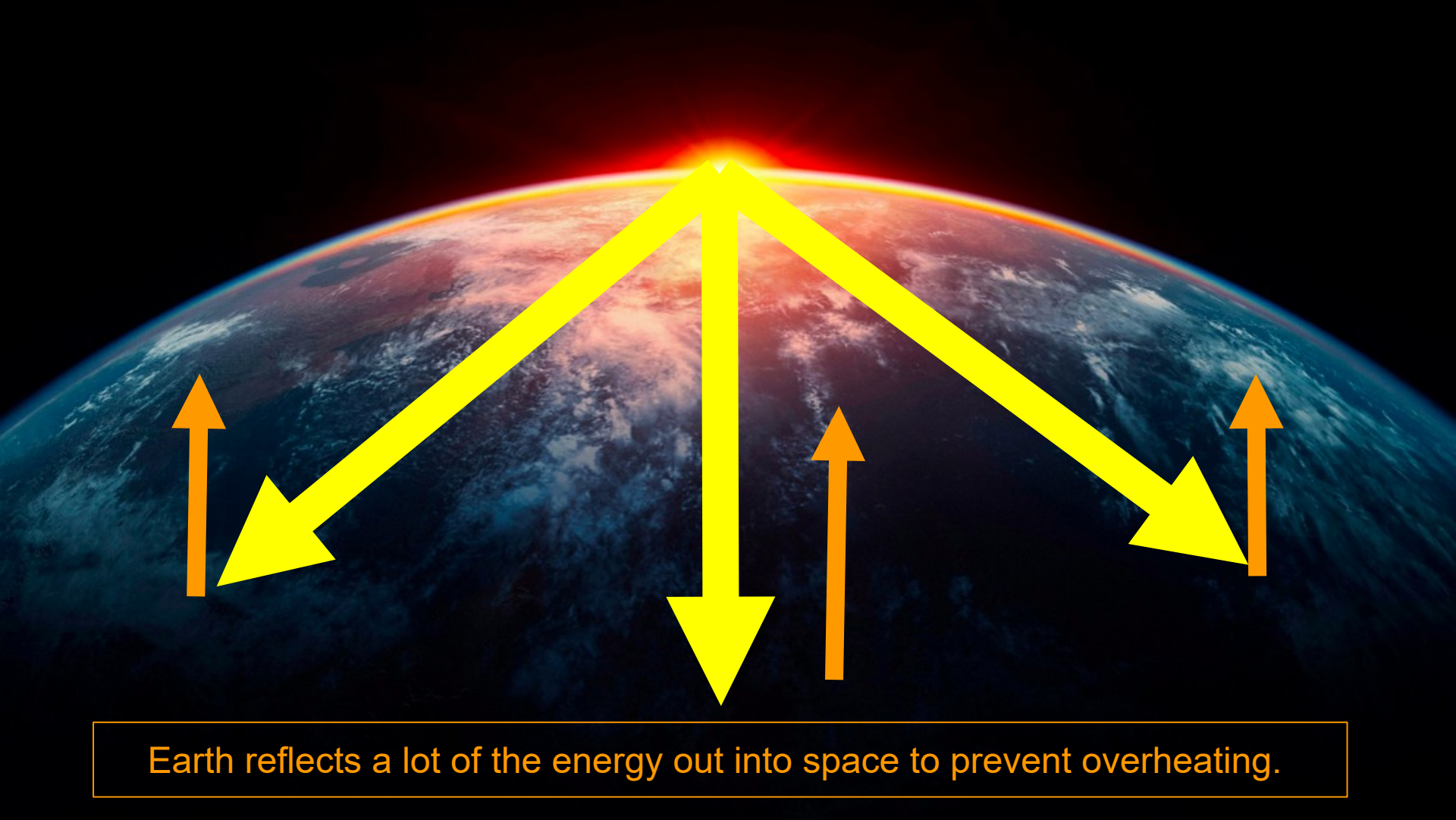


# WHY and HOW did this happen?

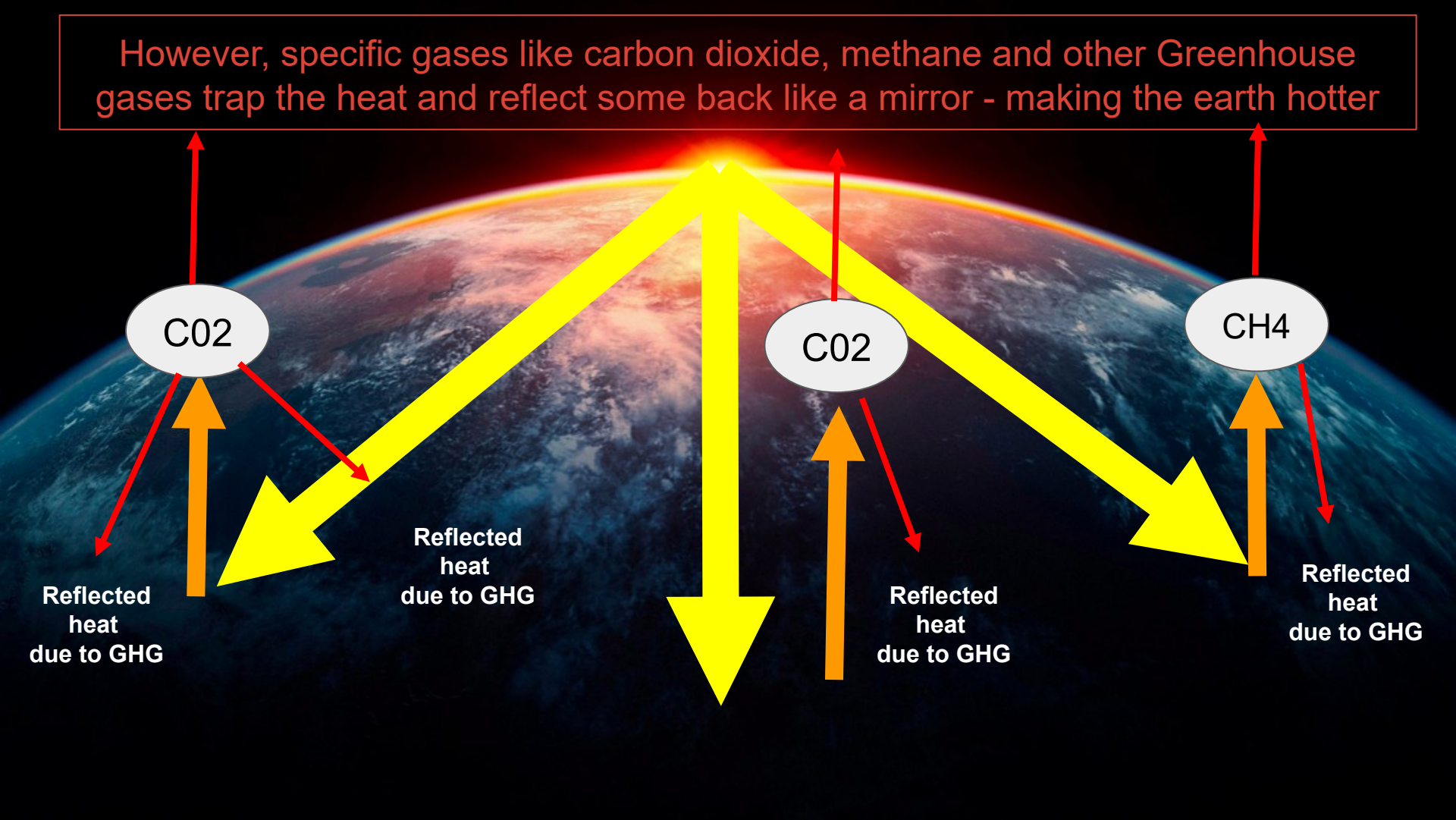


Rays of the sun hit the earth. Earth absorbs warm sunlight to grow life.

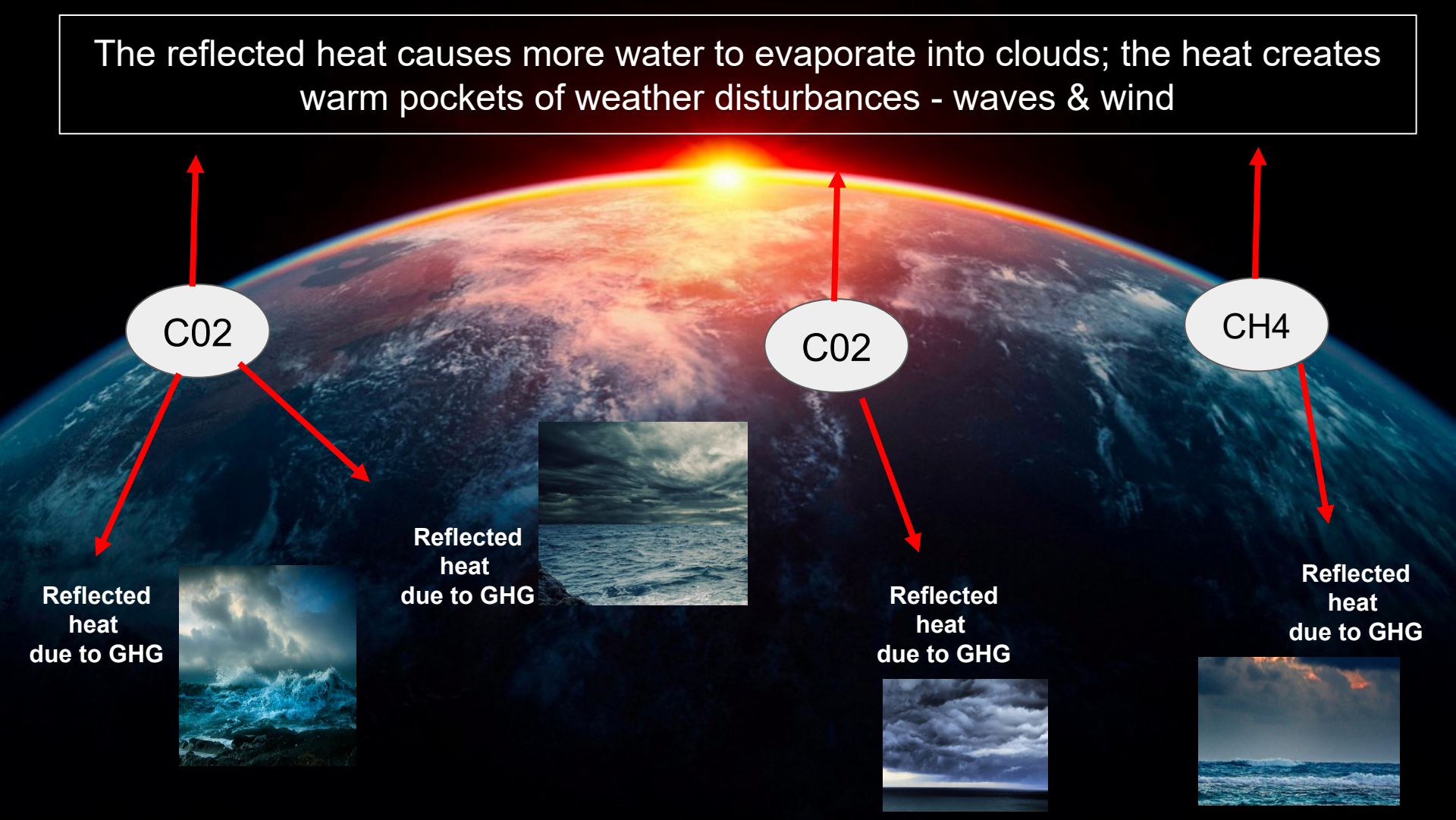




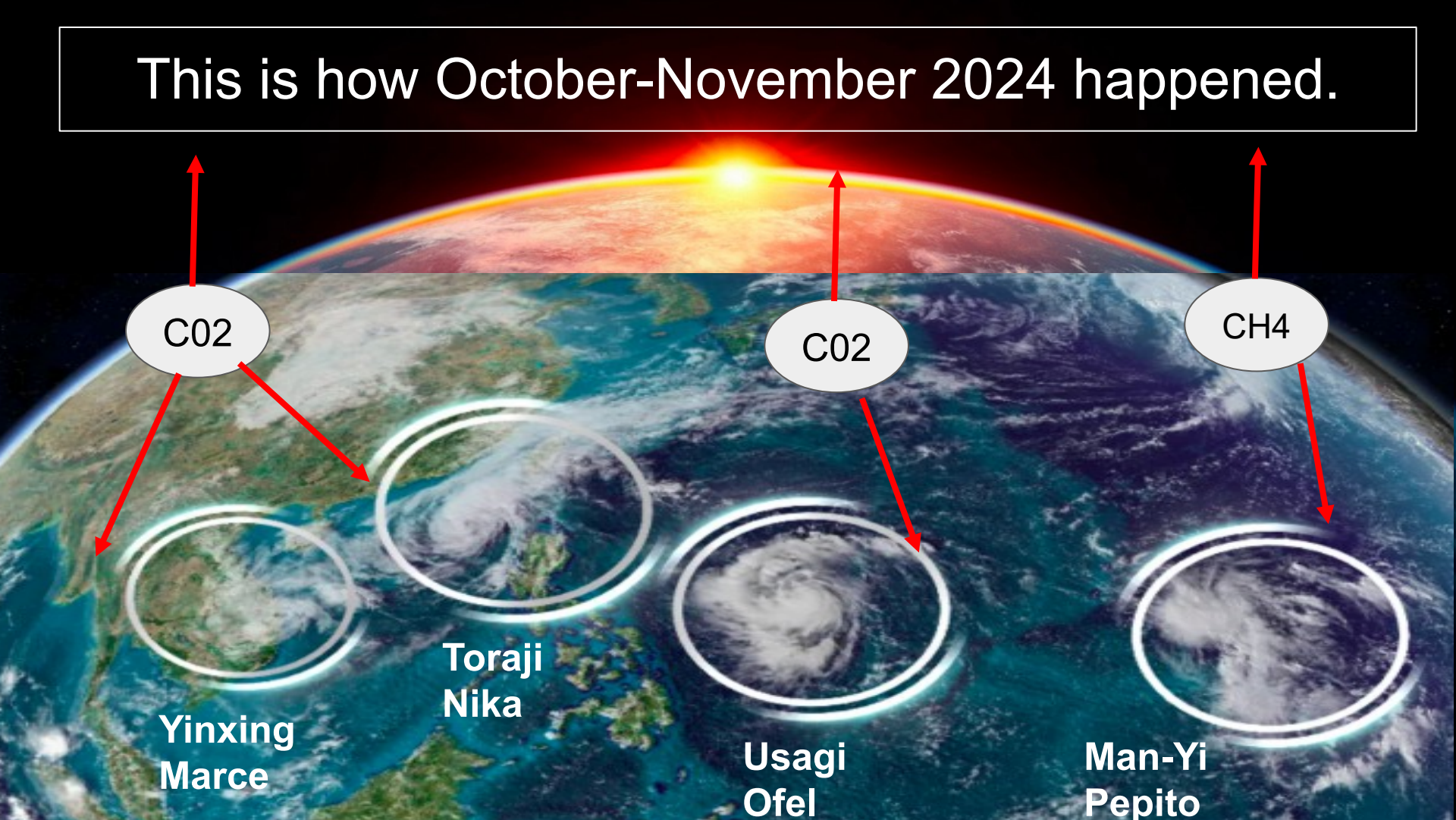
Earth reflects a lot of the energy out into space to prevent overheating.


However, specific gases like carbon dioxide, methane and other Greenhouse gases trap the heat and reflect some back like a mirror - making the earth hotter
C02
C02
CH4
Reflected heat due to GHG
Reflected heat due to GHG
Reflected heat due to GHG
Reflected heat due to GHG

The reflected heat causes more water to evaporate into clouds; the heat creates warm pockets of weather disturbances - waves & wind



# This is how October-November 2024 happened.



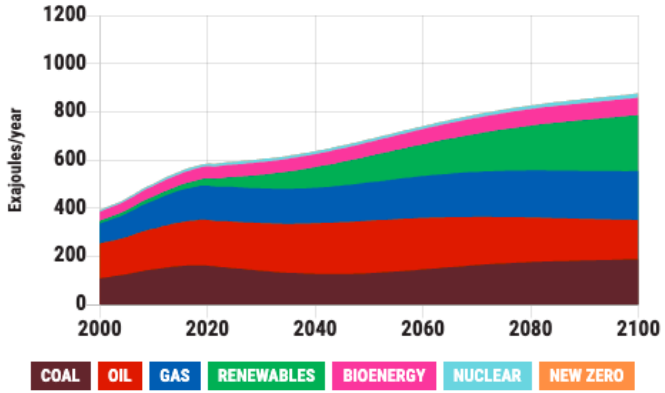

1.5C
of warming
VS
2C
of warming
Current 55 C
Heatwaves
Future 60+ C
Up to
1.1 months
Up to
1.5 months
Freshwater
availability in the Mediterranean*
9%
17%
Heavy rainfall
increase in intensity*
5%
7%

EN-ROADS

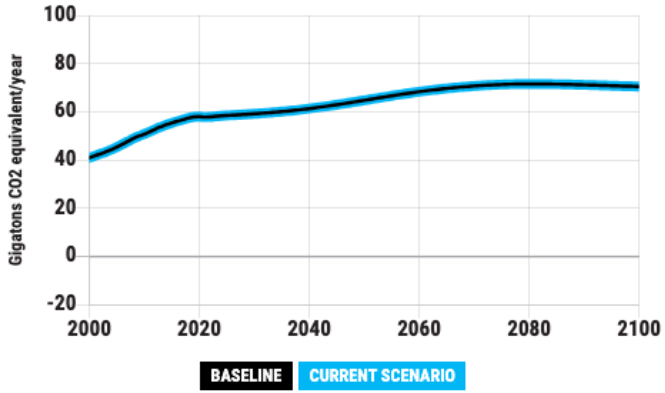
English | Simulation | Graphs | View | Help

Share Your Scenario

## Global Sources of Primary Energy




## Greenhouse Gas Net Emissions




**+3.3°C**

**+6.0°F**

**Temperature Increase by 2100**

### Energy Supply

Coal — status quo

Renewables — status quo

Oil — status quo

Nuclear — status quo

Natural Gas — status quo

New Zero-Carbon — status quo

Bioenergy — status quo

Carbon Price — status quo

### Transport

Energy Efficiency — status quo

Electrification — status quo

### Buildings and Industry

Energy Efficiency — status quo

Electrification — status quo

### Growth

Population — status quo

Economic Growth — status quo

### Carbon Dioxide Removal

Nature-Based — status quo

Technological — status quo

### Other Sources of Greenhouse Gases

Agricultural Emissions — status quo

Waste and Leakage — status quo

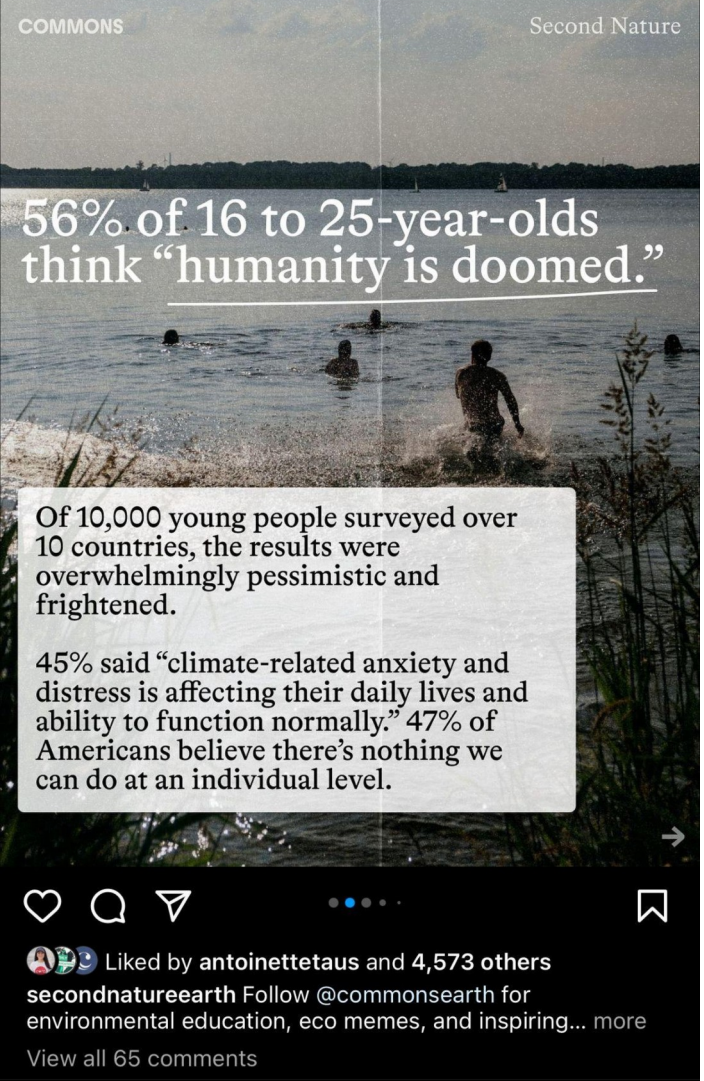
Deforestation — status quo

CLIMATE INTERACTIVE

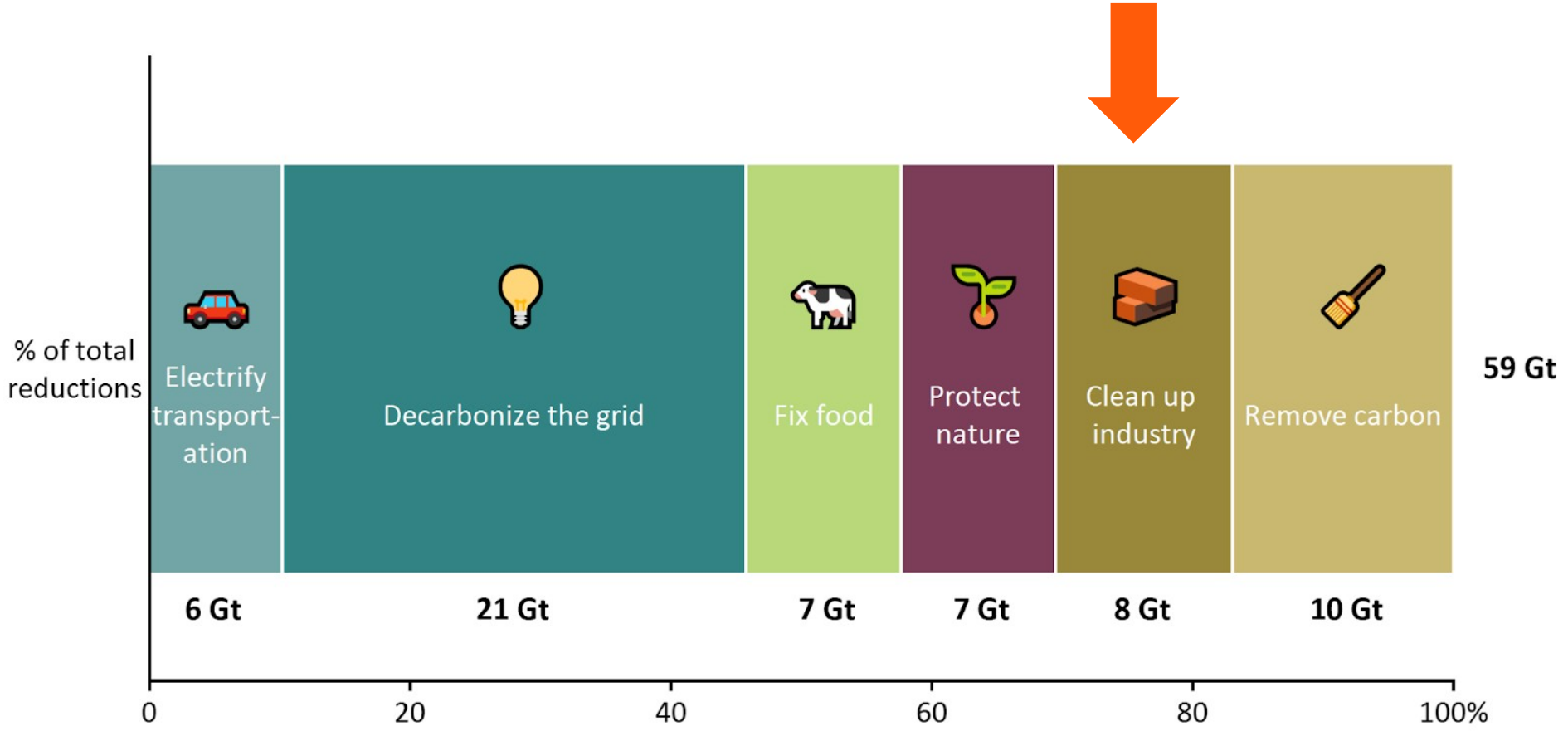
MIT MANAGEMENT SLOAN SCHOOL

Register Your En-ROADS Event

v25.3.1




# Kids are scared. I’m scared. What can we do?



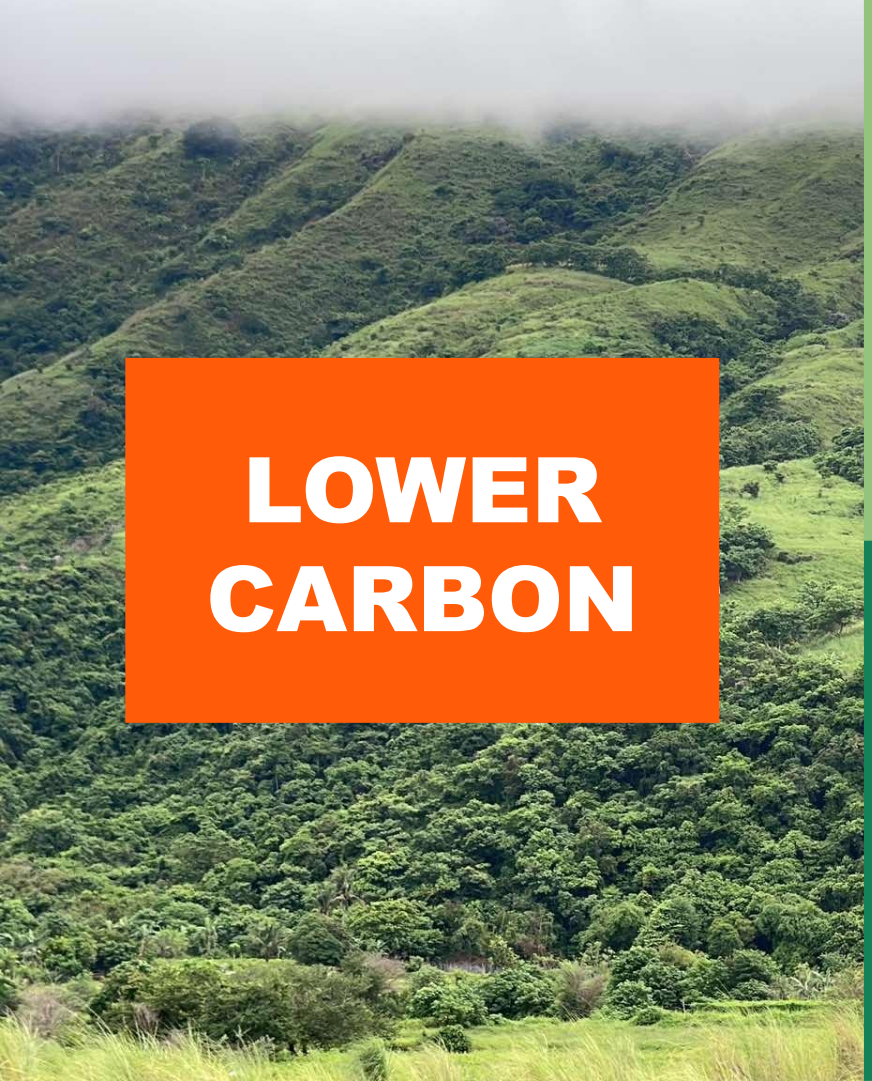

Source: Speed and Scale by John Doerr of the Stanford Doerr School of Sustainability

The **Buildings & Construction Sector** is the largest emitter of greenhouse gases

**37%**



UN Environment Programme: Building Materials & Climate: Constructing a New Future



**LOWER CARBON**

**HOW YOU DESIGN**

**WHAT MATERIALS YOU USE**


You influence industry in a way we cannot - down to the detail of their lifestyle.


People do NOT take care of what they do NOT understand. Earth is a reflection of what’s inside the human mind.

Over crowded, hot, **horrible acoustics.** Hard to listen and understand. HOT….NO AC
3X more students/class
20-50% less space





# Extreme Heat as a ‘New Pandemic’: Thousands in PH Cancel Classes During ‘Hottest Year’

By: Morexette Marie B. Erram March 23, 2024

philstar GLOBAL

HOME HEADLINES OPINION NATION WORLD BUSINESS SPORTS ENT

DUTERTE ICC TRIAL 2025 ELECTIONS INFLUENCE OPERATIONS EXPLAINERS FACT CHECKS C

HEADLINES

## 5,844 schools suspend onsite classes due to extreme heat

Elizabeth Marcelo - The Philippine Star ⓘ

April 12, 2024 | 12:00am

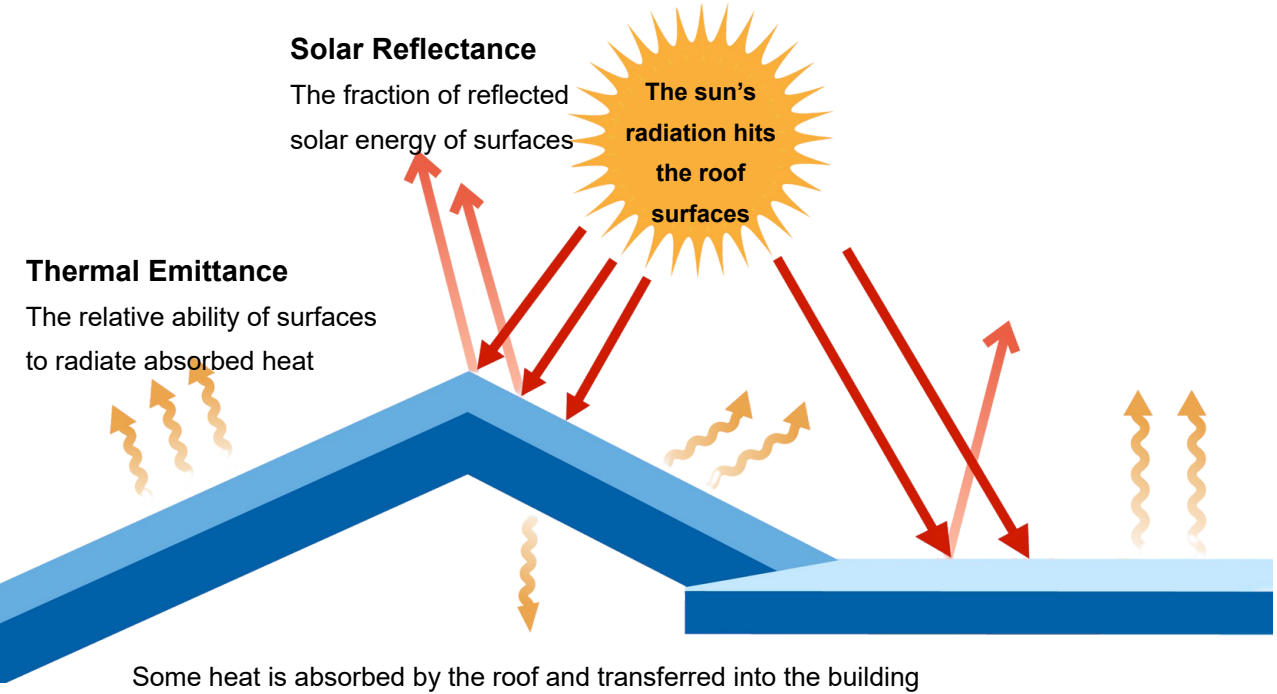
1



Normalizing the disaster: Policy says suspend classes once it hits 43 degrees C.

What can you do about this? Teachers and students need help.

# Effect of Roof Heat to Overall Room Heat




**50-60%**

of a **building's total heat gain,** come from its roof's heat gain

- Mohan Rawat, R.W. Singh – A Study of Comparative Review of Cool Roof Thermal Performance in Various Regions

# Thermal Transmittance of Different Ceiling Systems

## I. 2,400 kg/m3 concrete slab w/ 300mm plenum

| Ceiling Material | Nom. U Value ($W/m^2K$) | % Difference vs. No Ceiling Lining |
|---|---|---|
| 4.5mm fiber cement | 1.619 | 3% |
| 9mm standard gypsum board | 1.558 | 7% |
| 12.5mm acoustic gypsum board (13.1% open) | 1.528 | 8% |
| 12.5mm acoustic gypsum board (13.1% open) + 50mm – 24kg/m3 insulation | 0.644 | 61% |
| 20mm acoustic ceiling tiles | 1.376 | 18% |
| 20mm acoustic ceiling tiles + 50mm – 24kg/m3 insulation | 0.483 | 71% |
| No ceiling lining | 1.668 | - |

*Legend:*

**U Value** measures thermal transmittance (how well a building material conducts heat)

**% Difference vs. No Ceiling Lining** shows how better each material is at insulating compared to having no ceiling lining at all



Bare concrete floor shown

*Notes: U values simulations are based on WUFI software output: https://wufi.de/en/software/product-overview/ | Figures are estimates to simulate the effect of perforations in the lining material*

# Thermal Transmittance of Different Ceiling Systems

## II. 0.6mm metal sheet at 30° slope w/ 300mm plenum

| Ceiling Material | Nom. U Value ($W/m^2K$) | % Difference vs. No Ceiling Lining |
|---|---|---|
| 4.5mm fiber cement | 1.918 | 4% |
| 9mm standard gypsum board | 1.833 | 8% |
| 12.5mm acoustic gypsum board (13.1% open) | 1.806 | 9% |
| 12.5mm acoustic gypsum board (13.1% open) + 50mm – 24kg/m3 insulation | 0.707 | 64% |
| 20mm acoustic ceiling tiles | 1.587 | 20% |
| 20mm acoustic ceiling tiles + 50mm – 24kg/m3 insulation | 0.499 | 75% |
| No ceiling lining | 1.999 | - |

*Legend:*

**U Value** measures thermal transmittance (how well a building material conducts heat)

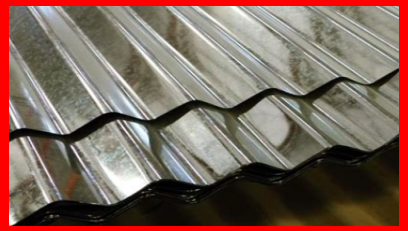
**% Difference vs. No Ceiling Lining** shows how better each material is at insulating compared to having no ceiling lining at all



Pitched roof shown

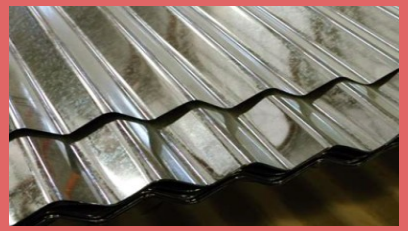
*Notes: U values simulations are based on WUFI software output: https://wufi.de/en/software/product-overview/ | Figures are estimates to simulate the effect of perforations in the lining material*

50°C
Summer!



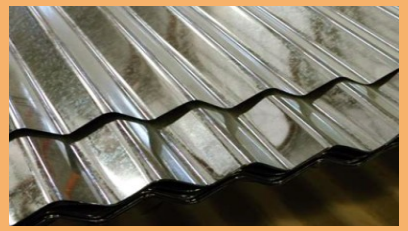
NO CEILING

50-55°C





Cement/ficem
45-50°C





Gypsum
40-45°C





Knauf Mineral Fiber
35-40°C

## IS IT TRUE THAT ACOUSTIC CEILINGS ALSO HELP WITH HEAT INSULATION?



Acoustic ceilings are well known for their ability to reduce the echo and reverberation of sound. Because of this, they are commonly used in recording studios and auditoriums. However, many people tend to overlook their effectiveness as a form of heat insulation.

**P50,000/month cooling energy**
**-**
**Less 15% P7,500/month**
**=**
**42,500/month cooling energy**
**X**
**12 mos**
**=**

**P90,000/year savings**

**If the price difference is 650/sq meter then in 1 year you get 138sqm from cooling energy**

AVD Green Builds

KNAUF CEILING Solutions



# Bad acoustics = hearing only 75% of words taught translates into:

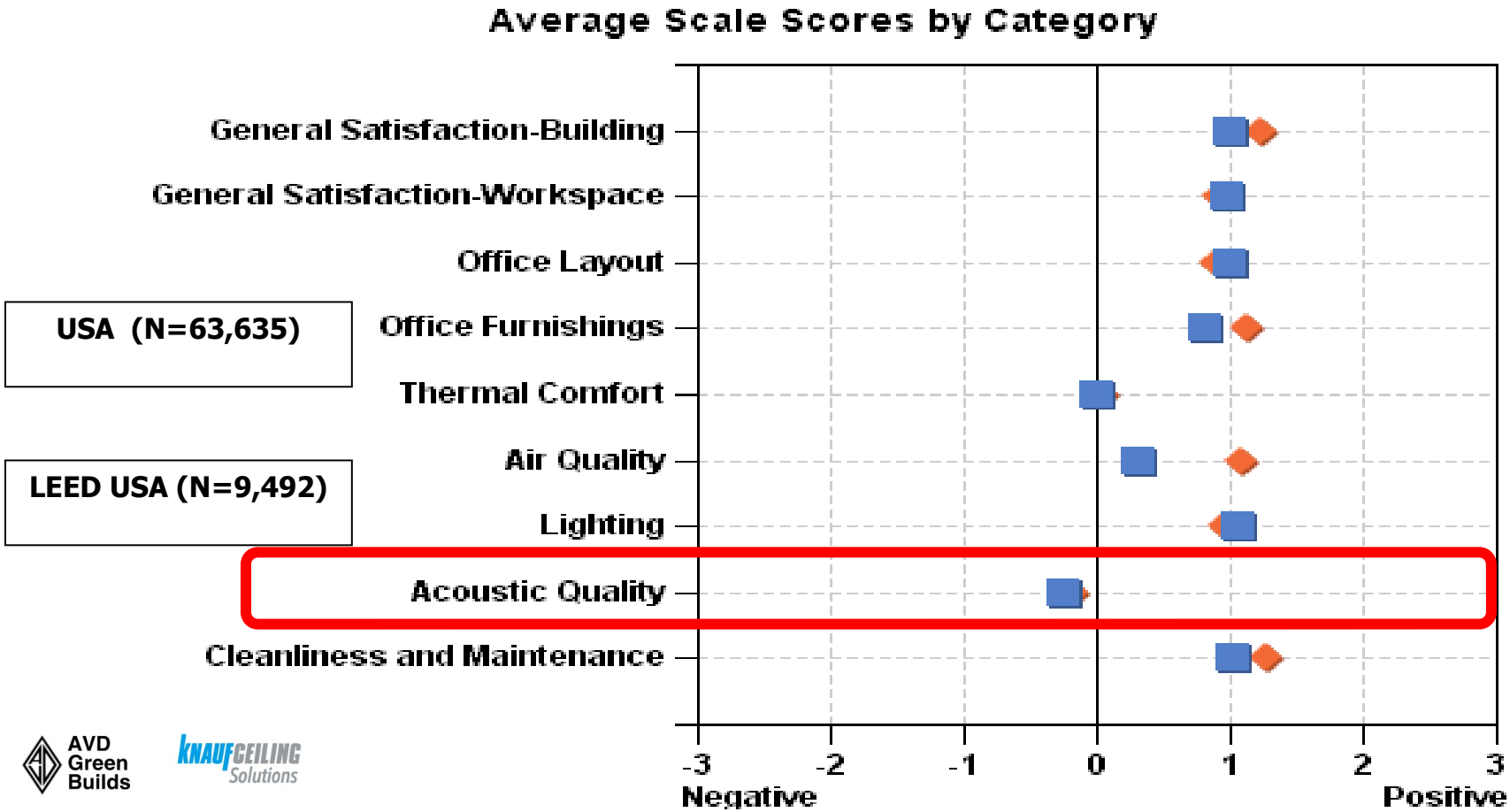
Demotivated studying; 50% comprehension; more energy spent on studying;
15-20% lower grades

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# Designing for people: Connection and privacy

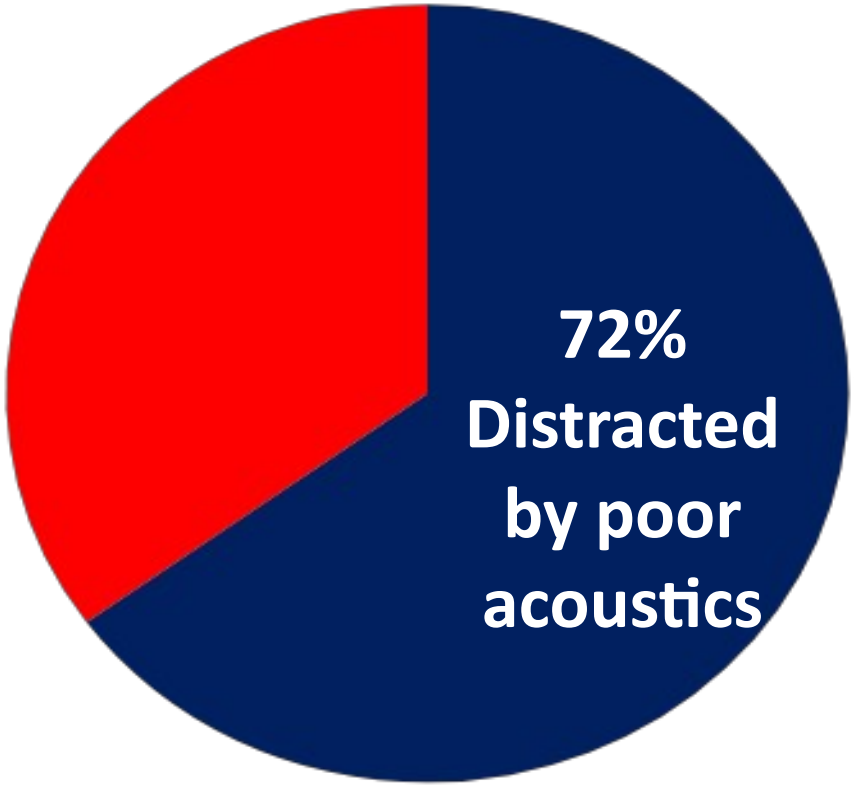
# Armstrong surveyed 73,000 buildings




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# 72% distracted by poor sound. Distracted people = poor performance.






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# Acoustics: top sources of dissatisfaction

**Of those expressing dissatisfaction with acoustics…**

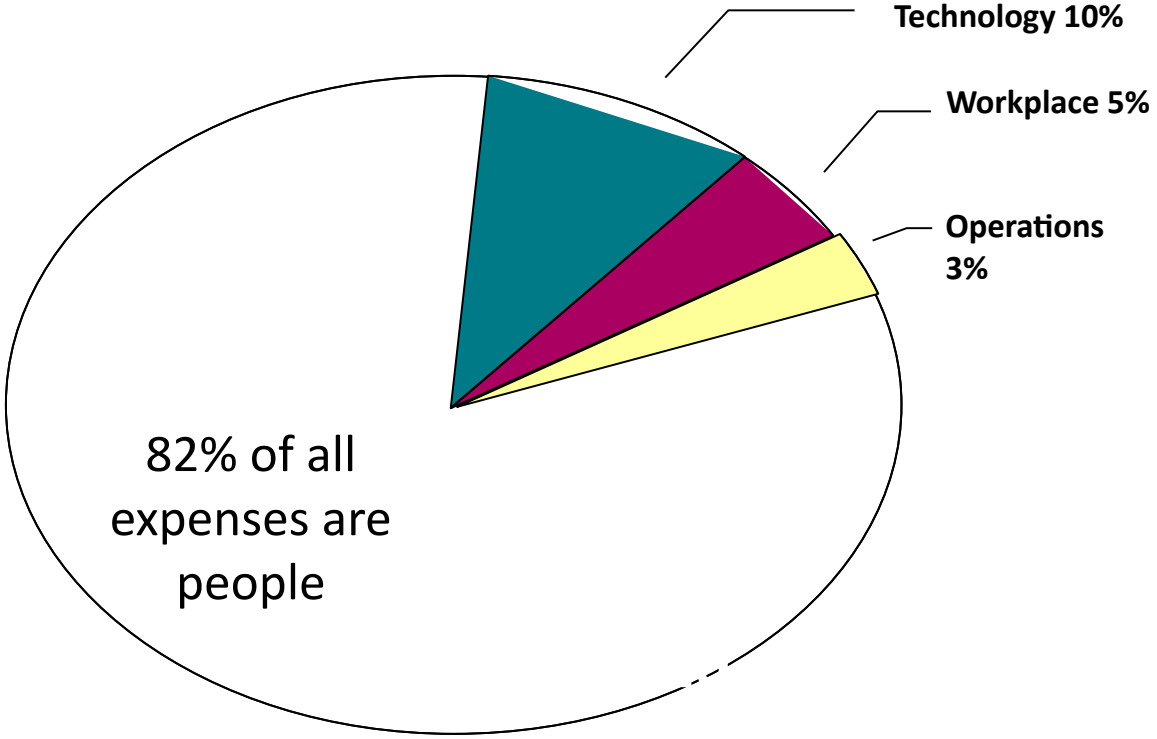
| Rank | Source of dissatisfaction | Private office | Shared office | Cubicles with high partitions | Cubicles with low partitions |
|---|---|---|---|---|---|
| 1 | **People talking on the phone** | **21%** | **50%** | **70%** | **83%** |
| 2 | **People overhearing private conversations** | **25%** | **40%** | **65%** | **71%** |
| 3 | **People talking in surrounding offices** | **15%** | **21%** | **45%** | **54%** |
| 4 | **People talking in the corridor** | **6%** | **12%** | **25%** | **27%** |
| 5 | **Telephones ringing** | **2.5%** | **8%** | **23%** | **31%** |
| 6 | **Office equipment** | **4%** | **5%** | **13%** | **14%** |

Sources of distracting noises include people talking on the phone, overhearing private conversations and people talking in surrounding offices



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KNAUF CEILING Solutions

# The biggest overhead expense of any company over 10 years is people. Poor acoustics distracts and makes the biggest financial investment of any company, less efficient.




Based on cost of doing business over 10-year average

**Distracting Noise Is their #1 problem**

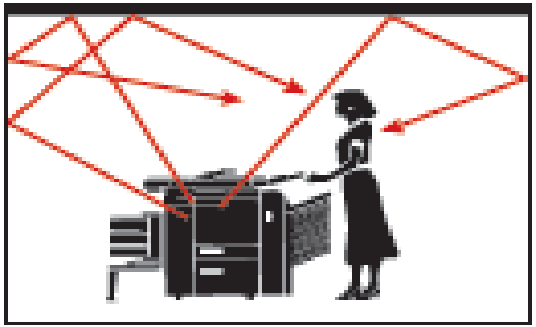
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# How can acoustics help room users?

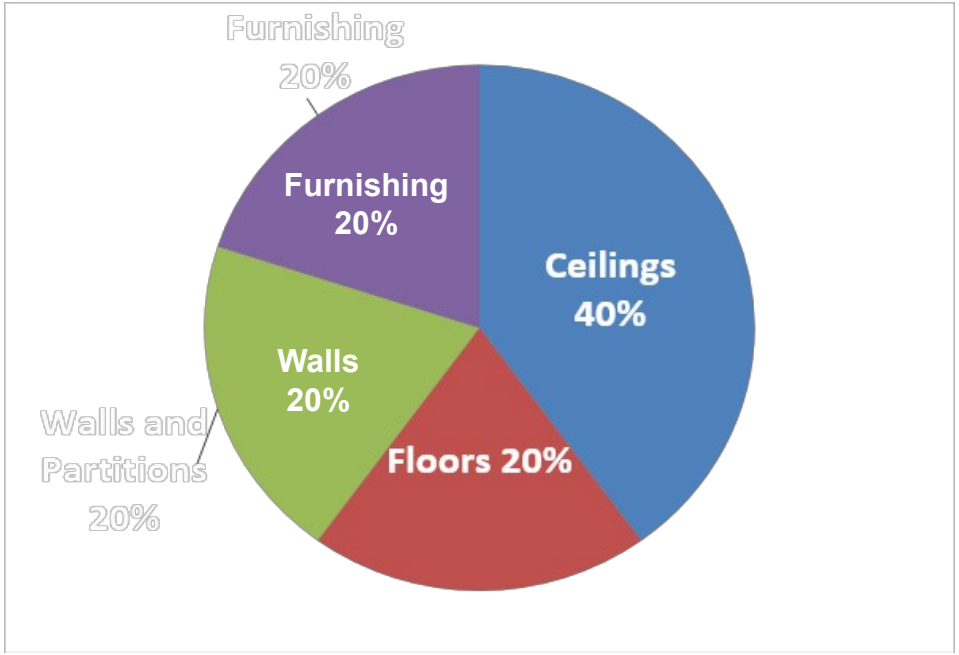
# Acoustic materials control sound in enclosed areas such as offices, schools & hospitals by:

1. **It can *Reduce*** the decibel rating or ***relative loudness*** within the room (example of 70dB to 40dB)
2. ***It can Reduce*** the reverberation time (RT60) or ***echo*** within the room. (example of 2.5 sec to 0.5 sec)
3. ***Prevent and/ or minimize the sound transfer*** from one room to other adjacent spaces/rooms



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# Ceilings affect 40% of acoustic quality of a room. It is the cheapest acoustical treatment.

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But acoustic boards look so boring! What about my brilliant designs?! Architects & designers make visually appealing structures and designs

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For design purposes, you don’t need to put acoustic boards on the entire ceiling.

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# 1 ply vs 2 ply - which absorbs more water per square inch?

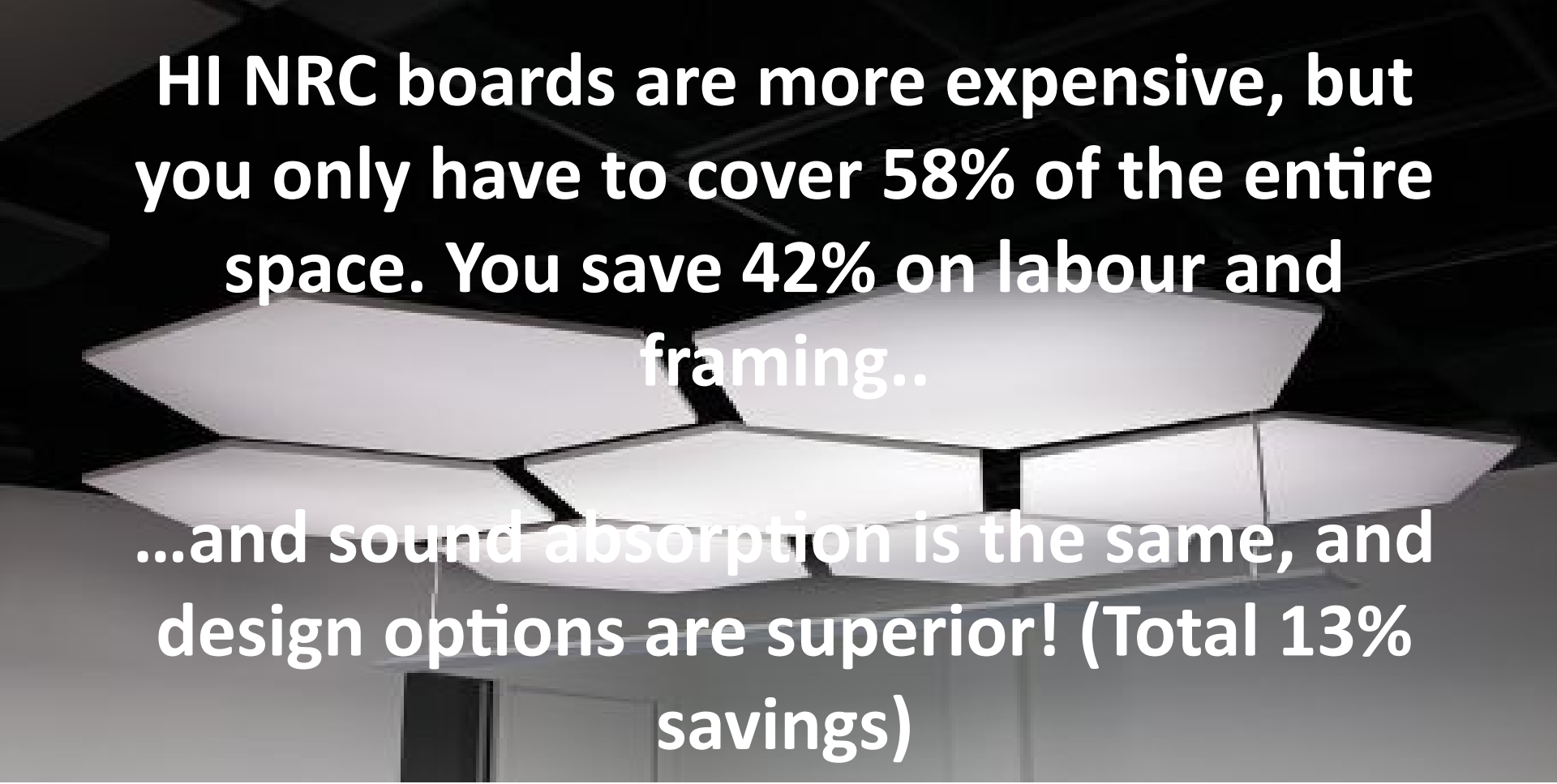







Your ceiling can be
“1 ply” 15mm
Or
“2 ply” 24mm

The thicker, the more sound per square meter absorbed



HI NRC boards are more expensive, but you only have to cover 58% of the entire space. You save 42% on labour and framing..

…and sound absorption is the same, and design options are superior! (Total 13% savings)

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# In rooms that are all 1000sf, using 1000sf of NRC 0.50 is just as effective as using 700 sf of NRC 0.70 and 580sf of NRC 1.00: the result is 0.79secs reverb time

| Ceiling type | Ceiling Area | % of ceiling | Reverb Time Seconds | | | | Cost |
|---|---|---|---|---|---|---|---|
| | | | 500hz | 100hz | 2000hz | Ave | |
| Concrete | 1000sf | 100% | 5.4 | 5.96 | 4.38 | 5.25 | N/A |
| Gypsum | 1000sf | 100% | 2.89 | 3.73 | 3.04 | 3.22 | N/A |
| NRC 0.5 | 1000sf | 100% | 0.76 | 0.76 | 0.82 | 0.79 | 100% |
| NRC 0.70 | 700sf | 70% | 0.88 | 0.73 | 0.74 | 0.78 | 99% |
| NRC 1.00 | 580sf | 58% | 0.82 | 0.77 | 0.74 | 0.78 | 87% |
| NRC 1.00 | 1000sf | 100% | 0.51 | 0.47 | 0.46 | 0.48 | N/A |

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COMMITMENT

We will send zero waste to landfill.

TARGETS FOR 2025

65% reused material

At least 30% less carbon

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# Clear & Cool Classrooms

# Project CCC

**WHAT:**

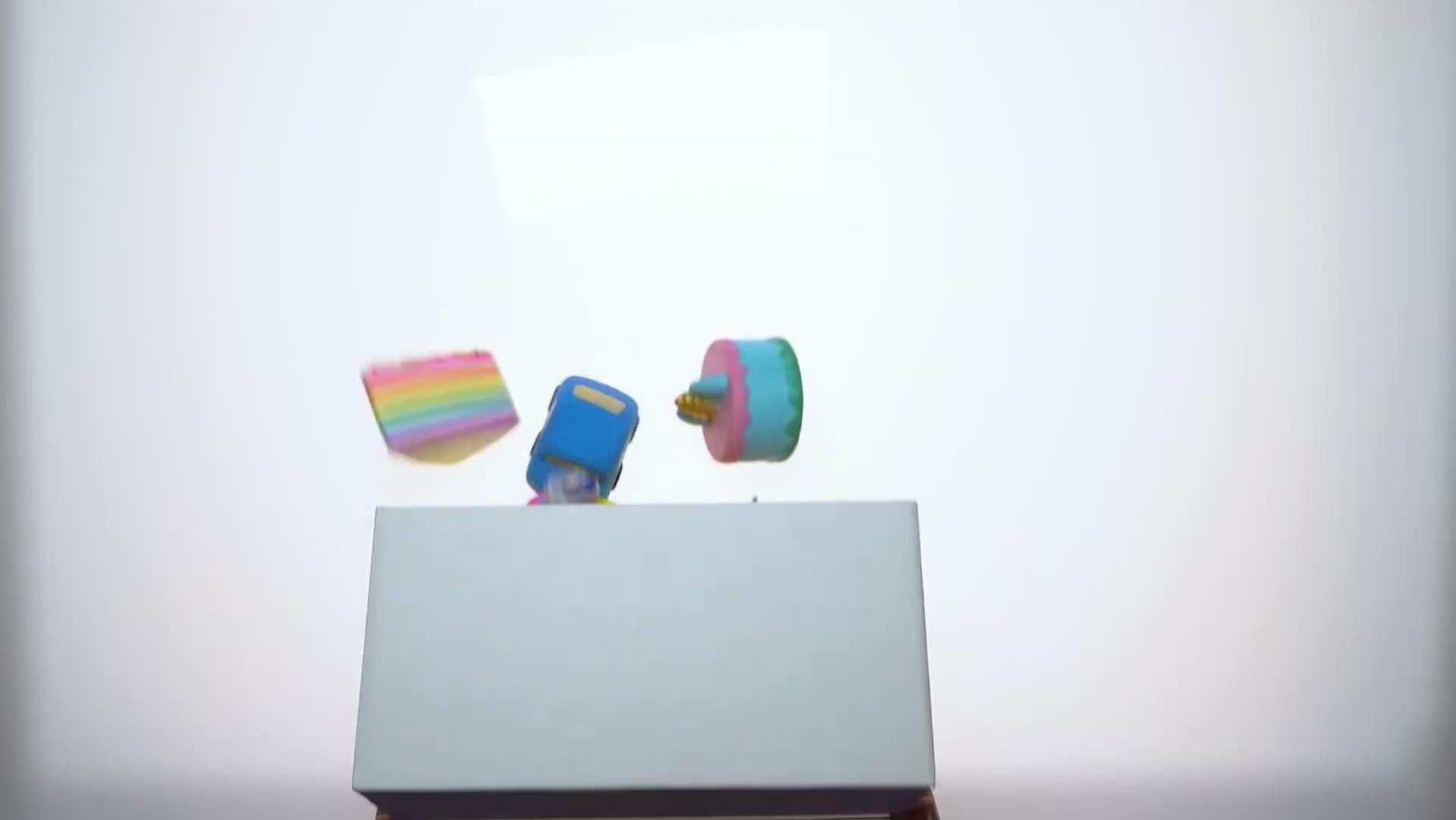
1. Cool them down so teachers can teach and students can learn.
2. Treat acoustically for conducive conservation and clear speech
3. No roof leaks

**HOW:**

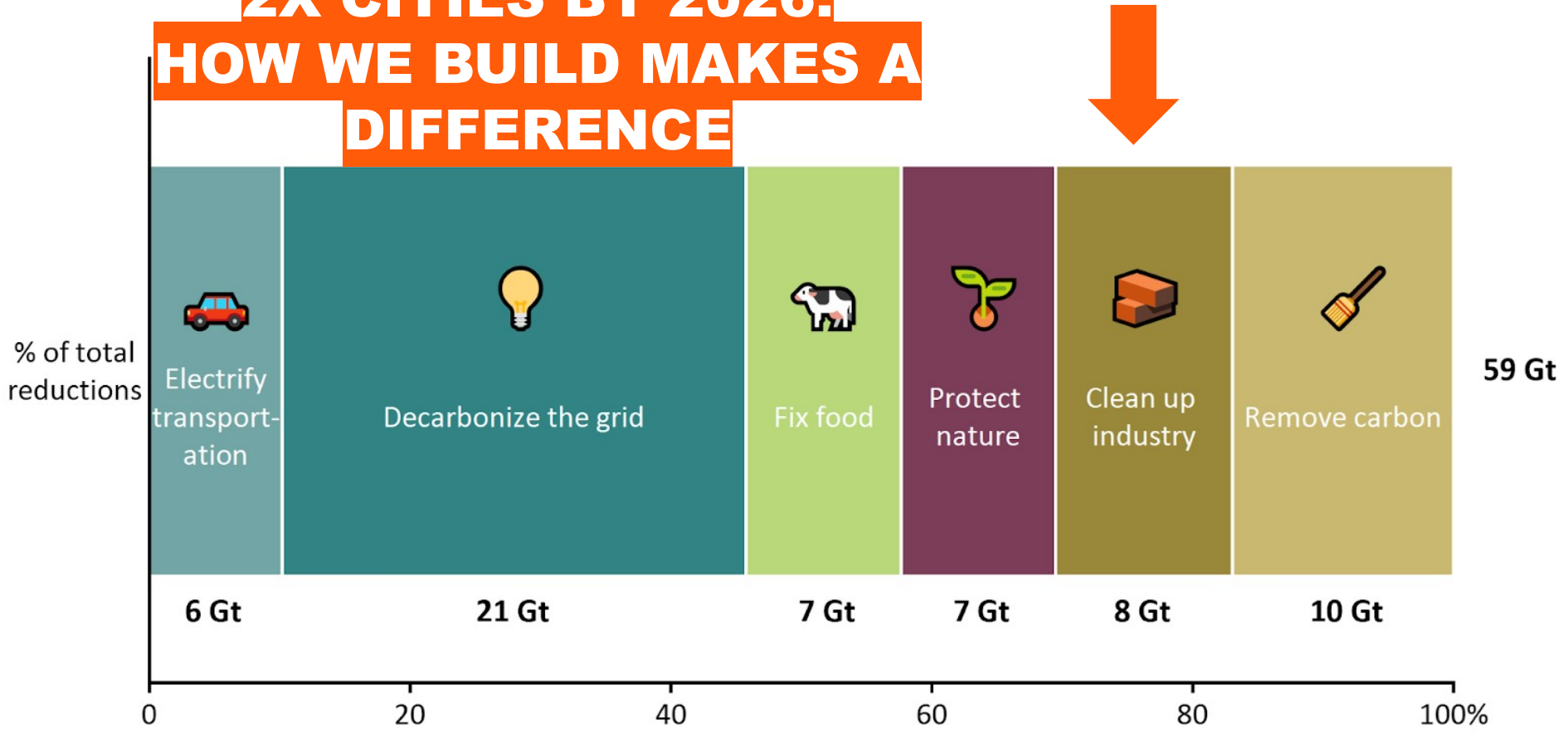
4. Work with all clients (contractors, developers) to donate excess materials to schools. Labor shouldered as well.

AVD Green Builds

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# 2X CITIES BY 2026: HOW WE BUILD MAKES A DIFFERENCE




Source: Speed and Scale by John Doerr of the Stanford Doerr School of Sustainability


REEF


RIDGE

# The Circle Hostel
# La Union PHILIPPINES






BLACK
PULSIFER
PHOTOGRAPHY







paolo manuel soler
14 hrs ·
View on Instagram

The Plastic Solution

Before you decide to buy that small useless plastic sachet of shampoo or that bottled mineral water take a look at this wave and see where it all ends up. Please wake up to this and have at least some concern. We can start by bringing our own water bottles that are reusable and properly sorting out our plastic containers for proper recycling. #pollution #plastic #recycle #reuse #trash #saveourseas #changeiscoming #angatdagat #leaveitgreener

Like · Comment · Share

347

1 share · 19 Comments

View 13 more commer saad.

Carla Laus Oh shit.
Like · Reply · 11 hrs

Jiggy Santillan ewww
Like · Reply · 10 hrs

Peter Ian Capocao aw bro san to ack
Like · Reply · 1 · 10 hrs

Joes Santos saad.
Like · Reply · 9 hrs

Ricardo Soler Stores that sell items in plastic bottles should be made by a special law to charge a




Play
Ground
Associated Press / Newsflare

**Did you know that if a coral has plastic trash on it, it is 89% more likely to get sick?**



**Corals produce 1000 kg of seafood per**


healthy
Lifeless


People do NOT take care of what they do NOT understand

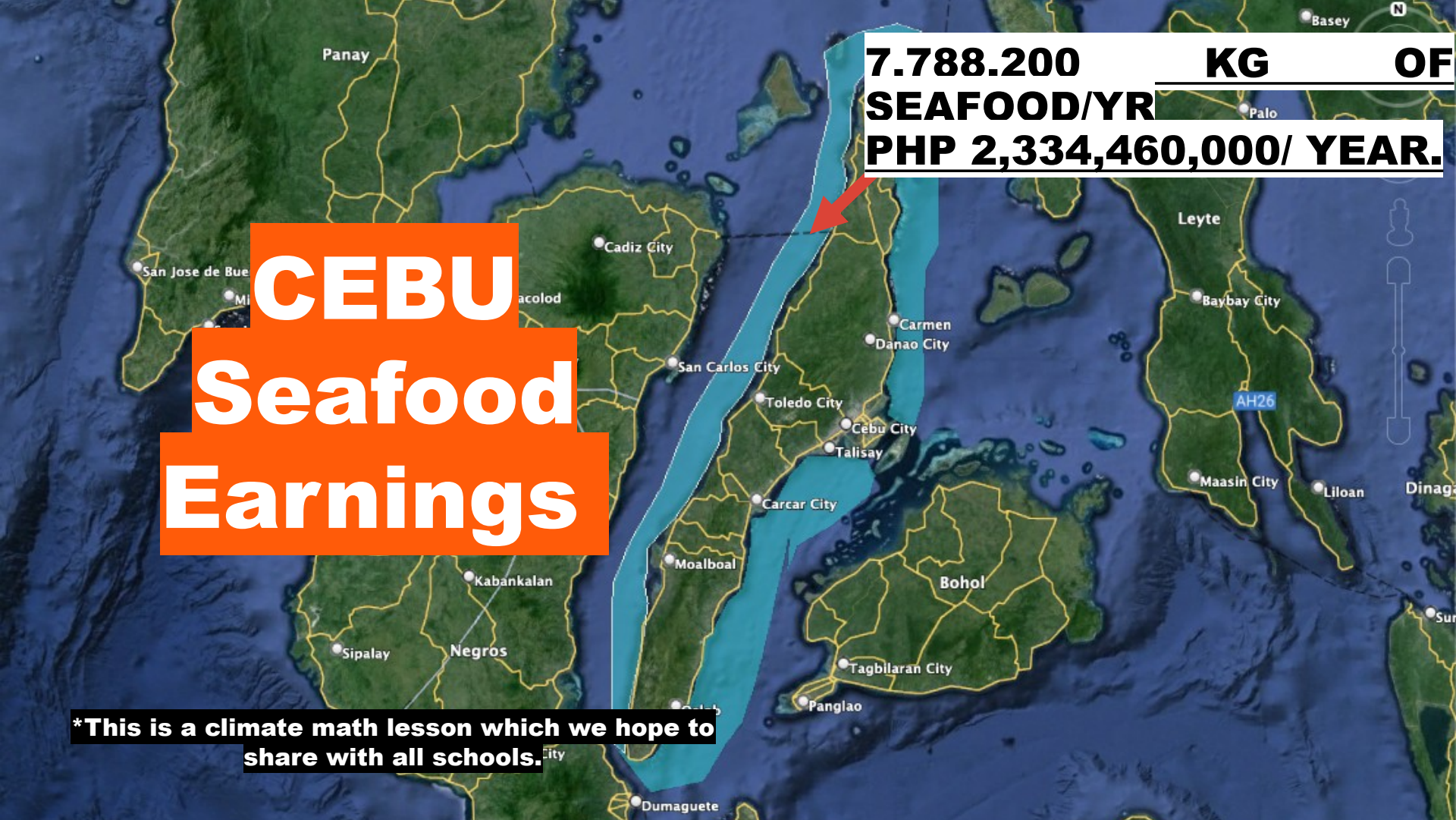
# HOW MUCH MONEY DO WE LOSE TO A DIRTY MANILA BAY FROM RAW FOOD PRODUCTION?

199,400 HECTARES
X
1.5% OF OCEAN HAS REEF
(DATA FROM THE SMITHSONIAN MUSEUM)
=
2,991 HECTARES HAVE REEF
X
1,000 KG SEAFOOD/HECTARE/YEAR
X
2,991 HECTARES
=
**2,991,000 KG OF SEAFOOD**
X
USD 5.55/KG
=
**USD 16,616,667/ YEAR.**

**this is a climate math lesson we hope to share with different schools.


Pasig river: 17,100kg of seafood
Manila Bay:
2,900,000 kg of
seafood
Laguna De
Bay:
911,000 kg of
seafood
*This is a climate math lesson which we hope to share with all schools.
Guiguinto
Bocaue
Bulakan
Hagonoy
Orani
Samal
Bataan
National Park
Abucay
Bagac
Pilar
Orion
Caloocan
Quezon City
Manila
Antipolo
Tanay
Taytay
Real
Santa Maria
Famy
Siniloan
Paete
Kalayaan
Lumban
Santa Cruz
Pila
Luisiana
Los Baños
Calauan
Majayjay
Lucban
Santo Tomas
Tagaytay
Alfonso
Calamba
Cabuyao
Santa Rosa
Dasmariñas
General Trias
Tanza
Naic
Silang
Amadeo
Muntinlupa
Laguna de Bay
E3
63
E2


9.285.000 KG OF
SEAFOOD/YR
PHP 2,785,500,000/ YEAR.
BOHOL
Seafood
Earnings
*This is a climate math lesson which we hope to share with all schools.
Carmen
Danao City
San Carlos City
Toledo City
Cebu City
Talisay
Carcar City
Moalboal
Oslob
Bohol
Tagbilaran City
Panglao
AH26
Maasin City
Liloan
Surigao


7.788.200 KG OF
SEAFOOD/YR
PHP 2,334,460,000/ YEAR.
CEBU
Seafood
Earnings
*This is a climate math lesson which we hope to share with all schools.
Panay
Cadiz City
San Carlos City
Carmen
Danao City
Toledo City
Cebu City
Talisay
Carcar City
Moalboal
Kabankalan
Sipalay
Negros
Bohol
Tagbilaran City
Panglao
Dumaguete
Leyte
Baybay City
Maasin City
Liloan
Palo
AH26




The Plastic Solution
Page Liked · November 26, 2017 ·

#Repost @gapssabuero (@get_repost)
• • •
Taken in 2014

Every time I go for a dip with my camera or with a boog or with a speargun, I always find these things floating around. Wish boardies have bigger pockets.

One time at tuason, (a few of you who were there might recall this)crowded line up, there was one soda bottle drifting around about 30 meters further from the line up. Out of the 60 people in the wide tuason line up, no one went out. Scared to go out further maybe or too shy to initiate or shy to be called a hero of the afternoon. picking up a plastic bottle floating in the ocean ain't heroics. It's our duty. Whatever the reason is, 60 people, 30 meters, one small plastic bottle. No one gave a.. No one.
-
SUPPORT LOCAL, GUIDE THE GROMS, PROTECT THE OCEAN, SAFEGUARD THE ISLAND
-
#cloud9 #siargao #ocean #surf #surfer #surfing #barrel #tube #travel #wanderlust #underwater #nature #Philippines #love #waves #beauty #photographer #surfphotography #sunrise #sunset #Hawaii #Bali #indo #photography

Write a comment...

The Plastic Solution

The No. 1 island in the world is now swimming in plastic.




The Plastic Solution

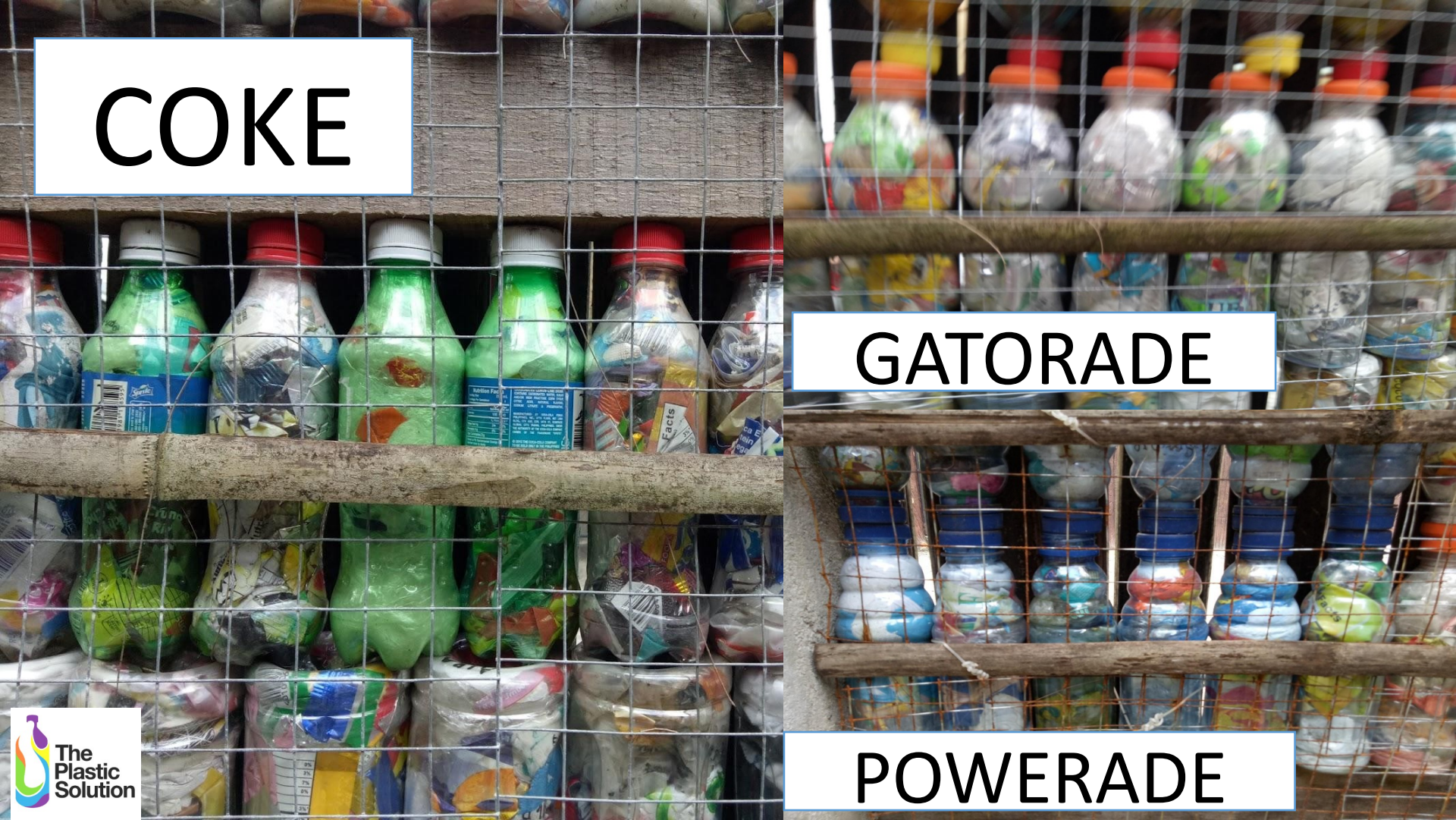
EVERYONE DINED IN BUT USED DISPOSABLE PLASTIC ANYWAY;
OUR MINDSET TOWARDS PLASTIC USAGE NEEDS TO CHANGE


BBC
Raf Dionisio
PlasticSolutionsPH
#PlasticFree
starts with me
they think that a plastic
wrapper for biscuits

The Plastic Solution

# Actual hollow blocks are still used in the corners, and bottom. Plastic bricks are used as fillers in between




COKE
GATORADE
POWERADE
The Plastic Solution

The Plastic Solution

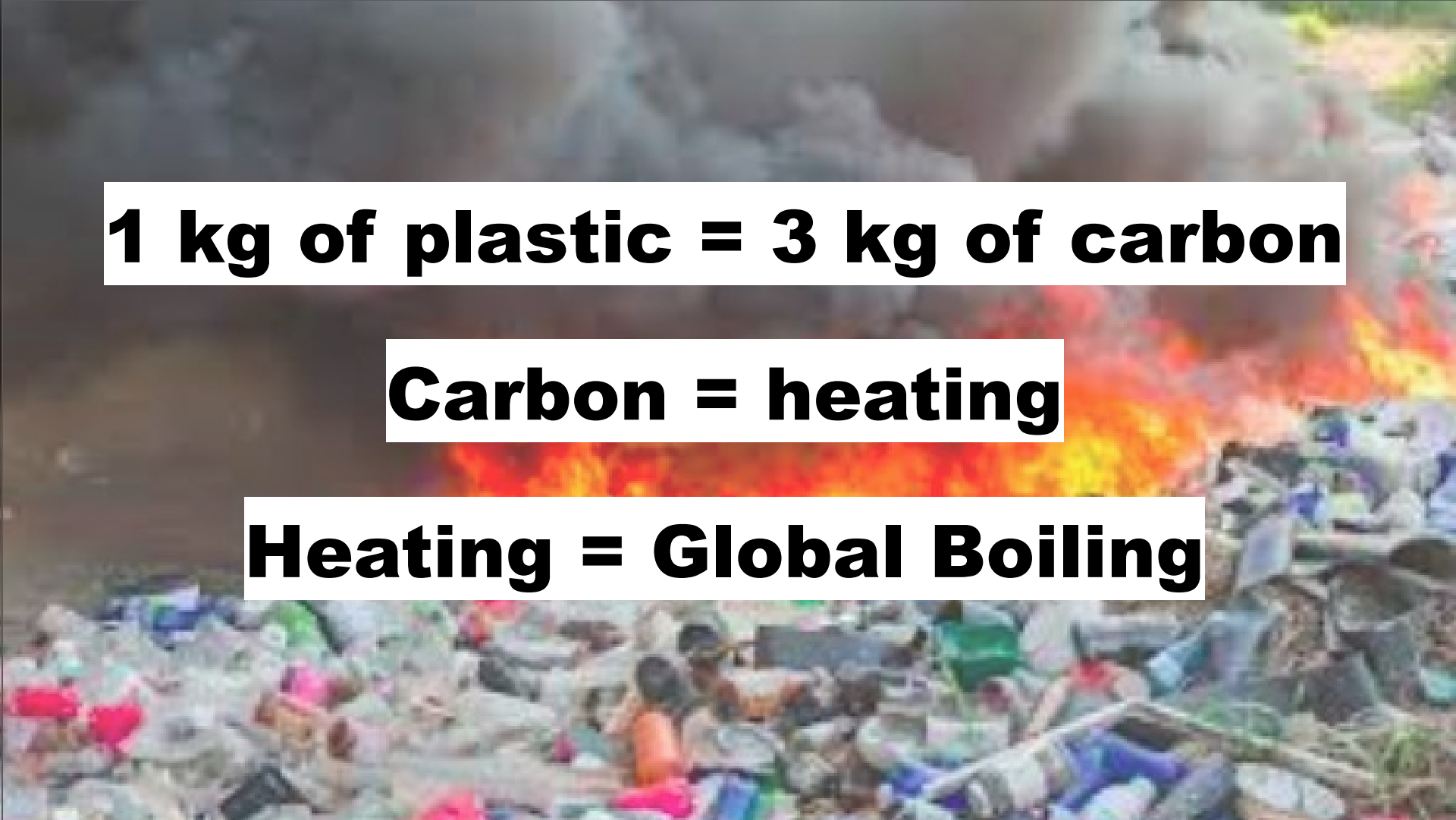
# 1,500 KG of plastic in the wall; NOT in the ocean!



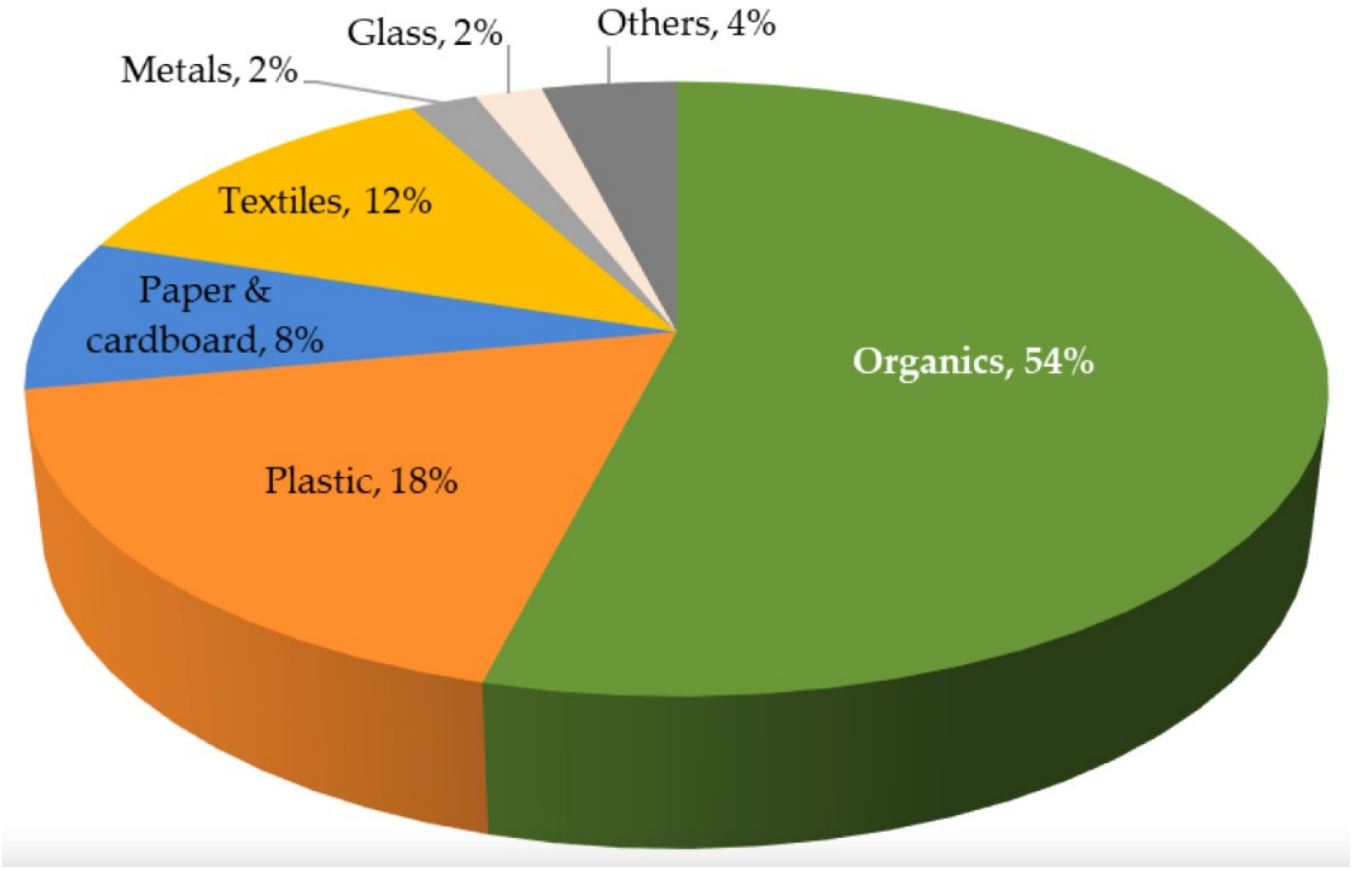


Build a nursery to grow the 30,000,000 trees

The Plastic Solution


1 kg of plastic = 3 kg of carbon
Carbon = heating
Heating = Global Boiling

# PLASTIC IS A SMALL PART OF TOTAL WASTE






**Recycle Waste (good)**

**Reduce Waste (better)**

PORMS
PHILIPPINE ALLIANCE FOR RECYCLING AND MATERIALS SUSTAINABILITY

# LEVEL-UP CLEAN-UP

**Solutions reduce, recover, and recycle**

September 29, 2024
Las Piñas Parañaque
Wetland Park (LPPCHEA)
6:30am-1:00pm

ICC Philippines INTERNATIONAL COASTAL CLEANUP

Coca-Cola Philippines · THE LIGHTHOUSE MARINA RESORT LEGACY FOUNDATION · MAD TRAVEL MAKE A DIFFERENCE

Limited slots available. Please register using the link below and wait for a confirmation.



Plastic Lumber



Circular Fashion



Beach Clean Up



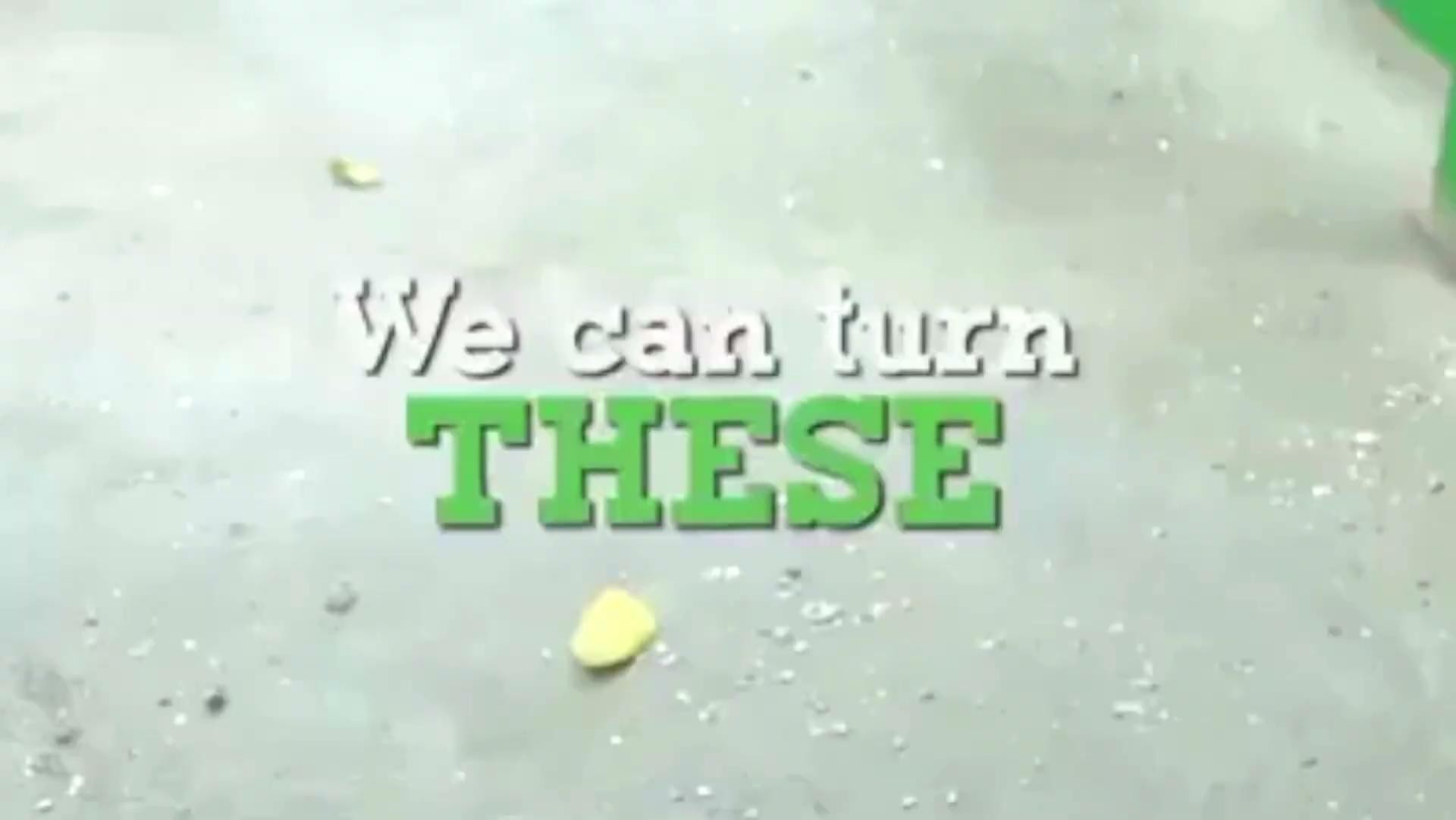
Seed Ball Making




Pillow Making




Biochar


We can turn
THESE

# Product use has led to 500 tons of plastic upcycled



# Sachet waste into boards



# Sachet waste into plastic lumber





WASTO

WASTE SOLUTIONS

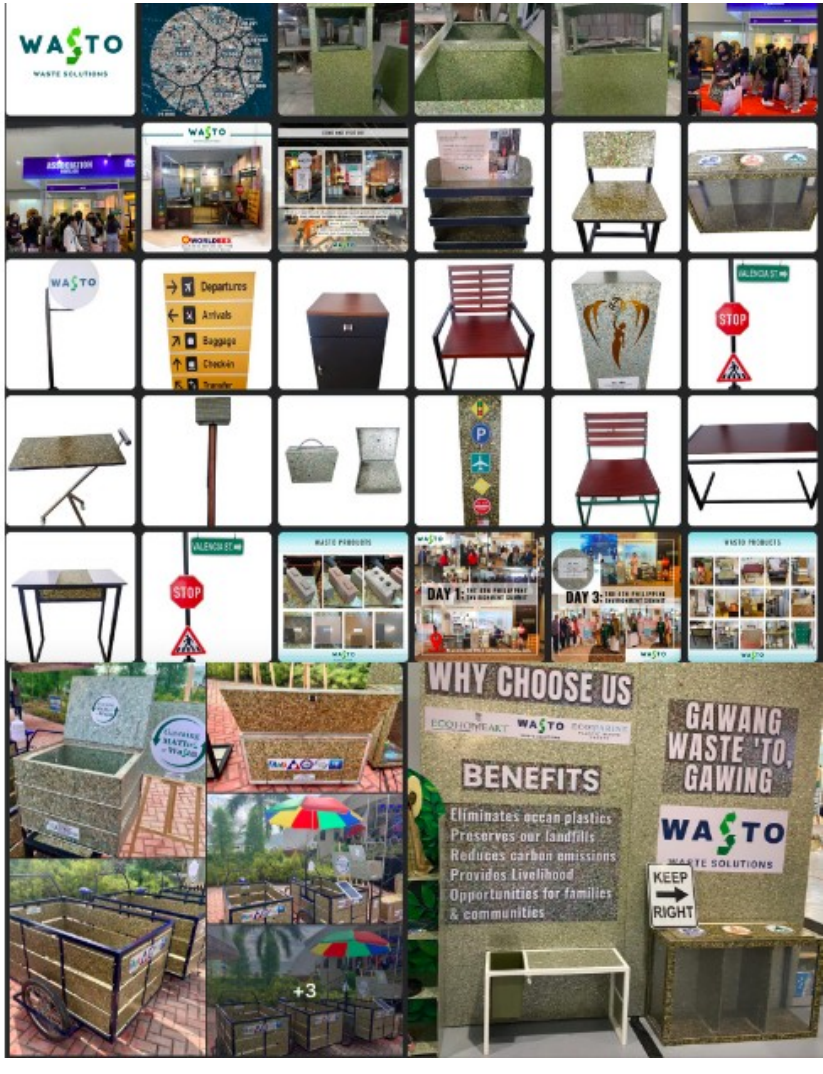


**Michelle Bautista- Tañada**

WASTO Waste Solutions

WASTO by Alpha Distinct Development Solutions Inc., encourages Filipinos to be more active in saving the environment through “Regenerative Sustainability” by integrating plastic, agricultural & industrial waste in its product line as part of our daily lifestyle.

From plastic waste polluters, we can be waste product producers.



# THE EXTENDED PRODUCER RESPONSIBILITY

- Companies can do their own EPR Program or partner up with NGOs, LGUs, and/or other companies.
- Can join Producer Responsibility Organization.
- Third-party auditor to certify their claims on their annual reports.

## THEY HAVE TO PAY A FINE IF THEY FAILED TO MEET THE REGULATIONS.

**1st offense** ₱ 5-10 Million

**2nd offense** ₱ 10-15 Million

**3rd offense** ₱ 15-20 Million and suspension of business permit until they comply



**WE CANNOT BUILD RECYCLING FAST ENOUGH TO SOLVE THIS ISSUE.**

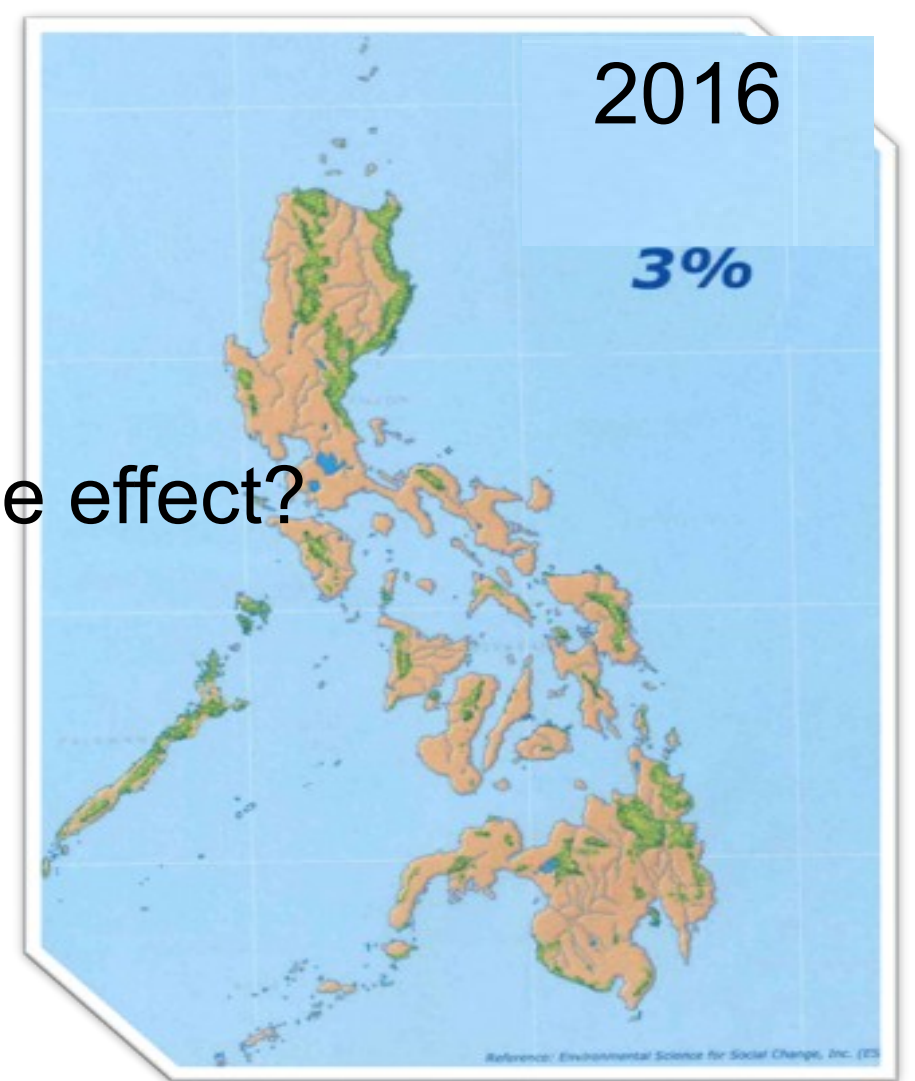
**IT IS FASTER TO REDUCE YOUR PLASTIC USE.**

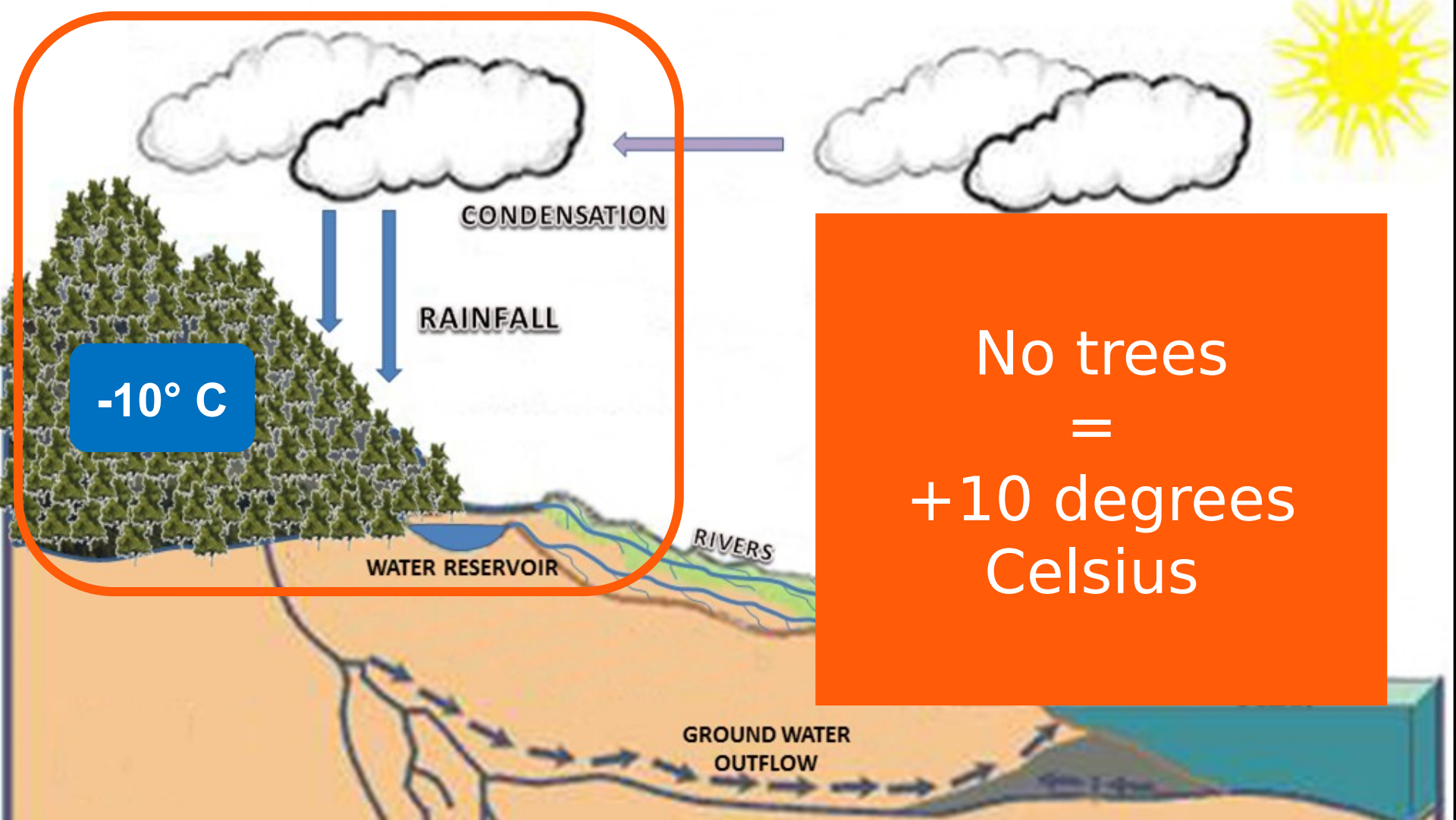

REEF


RIDGE




What is the effect?




CONDENSATION
RAINFALL
-10° C
WATER RESERVOIR
RIVERS
GROUND WATER
OUTFLOW
No trees
=
+10 degrees
Celsius


Air
33.3 °C
34.6 °C
39.4 °C
33.1 °C
32.9 °C
33.6 °C
VIA ARCFLY
No trees =
heat
Air
33.9 °C
40.6 °C
59.4 °C
66.6 °C
70.0 °C
60.1 °C
40.6 °C

# How Drought and Extreme Heat Are Killing the World's Crops

Justin Worland @justinworland | Jan. 6, 2016

## Developed countries were hardest hit

Drought and extreme heat dramatically reduced production of key crops during the second half of the 20th century and will likely pose an increasingly dramatic problem in the coming decades, according to new research.





See the 100

# How Drought and Extr[illegible]s the World's Crops

ITS 2024 AND HAPPENING AGAIN!!!!

Justin Worland @justinworland | Jan. 6, 2016

## Developed countries were hardest hit

Drought and extreme heat dramatically reduced production of key crops during the second half of the 20th century and will likely pose an increasingly dramatic problem in the coming decades, according to new research.



# Wildfires are getting more extreme and burning more land. The UN says it's time to 'learn to live with fire'

By Rachel Ramirez, CNN

5 minute read · Published 1:47 AM EST, Wed February 23, 2022





A firefighter battles flames during the Creek fire in the Cascadel Woods area of unincorporated Madera County, California, in September 2020. Josh Edelson/AFP/Getty Images



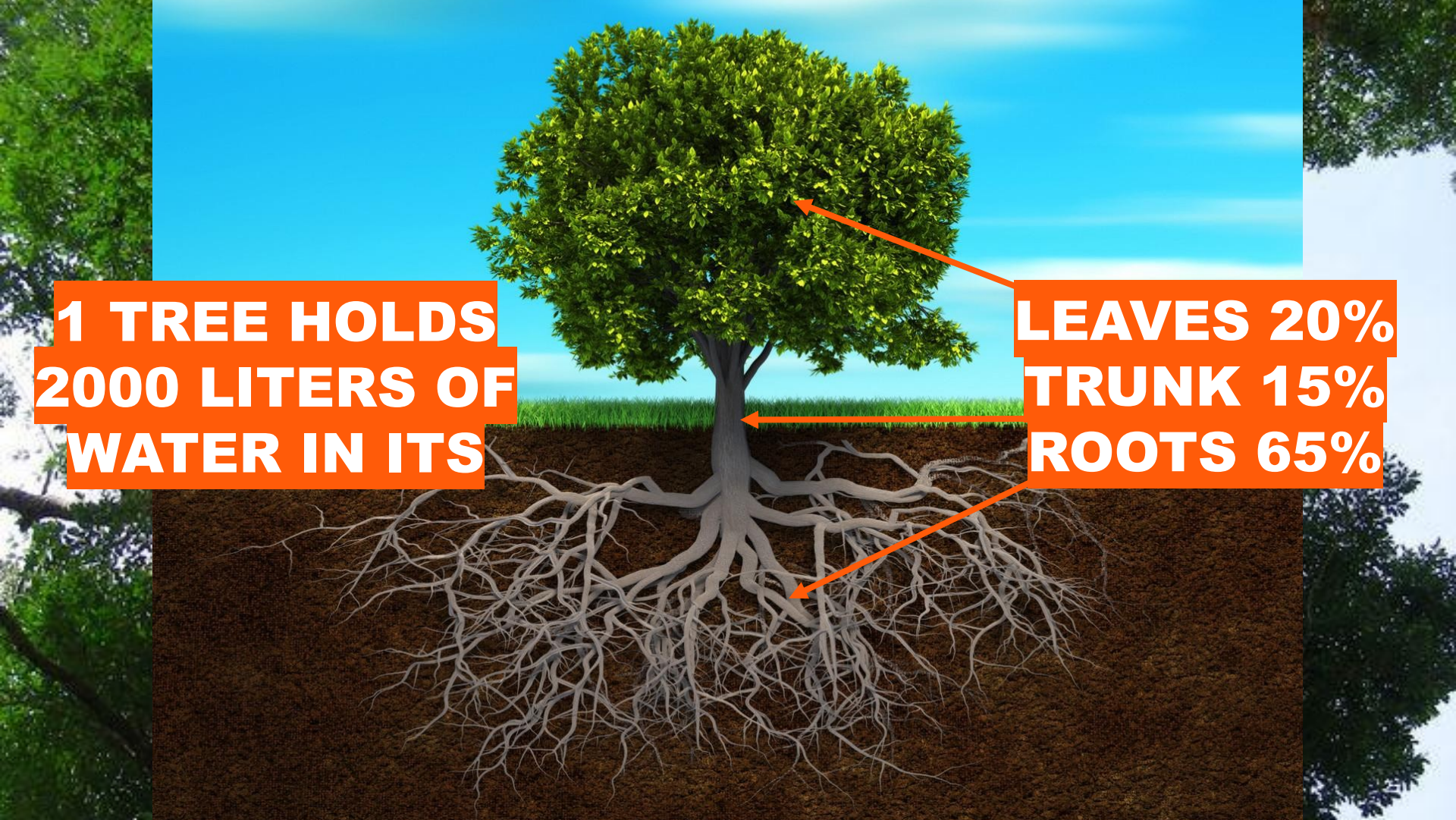




CAT 4 STORM
EXPECT MORE
STORMS IN
2024 VS 2023
© 2010 Sean R. Heavey



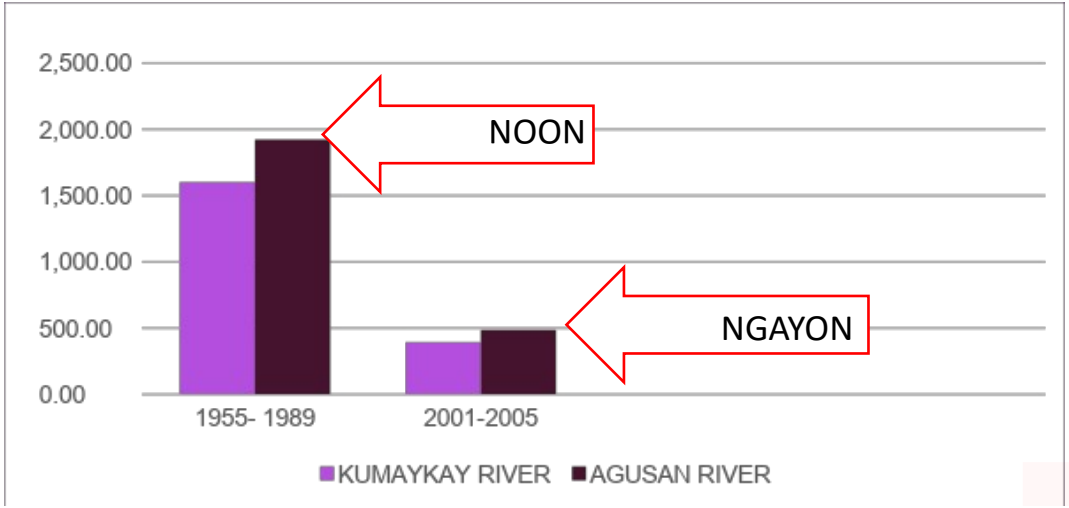
Lack of trees causes flooding in lowland communities because nothing holds the water during the rainy season(Philippines Germany China USA)


1 TREE HOLDS
2000 LITERS OF
WATER IN ITS
LEAVES 20%
TRUNK 15%
ROOTS 65%

# Rivers lost 75% of their water from 1950-2005



KUMAYKAY RIVER
MANOLO FORTICH, BUKIDNON






AGUSAN RIVER
BUKDINON


森の実箱
博評館博
2015




HEADLINES

# Rice prices surge to P56 per kilo

Ramon Efren Lazaro, Romina Cabrera - The Philippine Star

August 16, 2023 | 12:00am

25



Aling bundok ang mas maraming tubig para sa pagtanim?
2000 litro/puno









We set our goals:
RAIN FOREST
(4,000 ha) – Water &
climate change


MAD TRAVEL
MAKE A DIFFERENCE
TRIBES AND TREKS
ZAMBALES

Welcome to the Ancestral Domain of the Aetas of San Felipe, Zambales. Hike with us! (1 hr on volcanic ash)





MAD TRAVEL
MAKE A DIFFERENCE

Too hot? Tired? Take a GRAB CAR-abao instead!


MAD TRAVEL
MAKE A DIFFERENCE
Experience and learn tribal archery!

# Learn about indigenous herbal medicine against snake bites, rabies, fever and much more!






Eat tribal food (don’t panic it’s organic)

MAD TRAVEL
MAKE A DIFFERENCE









Plant forest trees, bamboo or fruit trees.

MAD TRAVEL
MAKE A DIFFERENCE



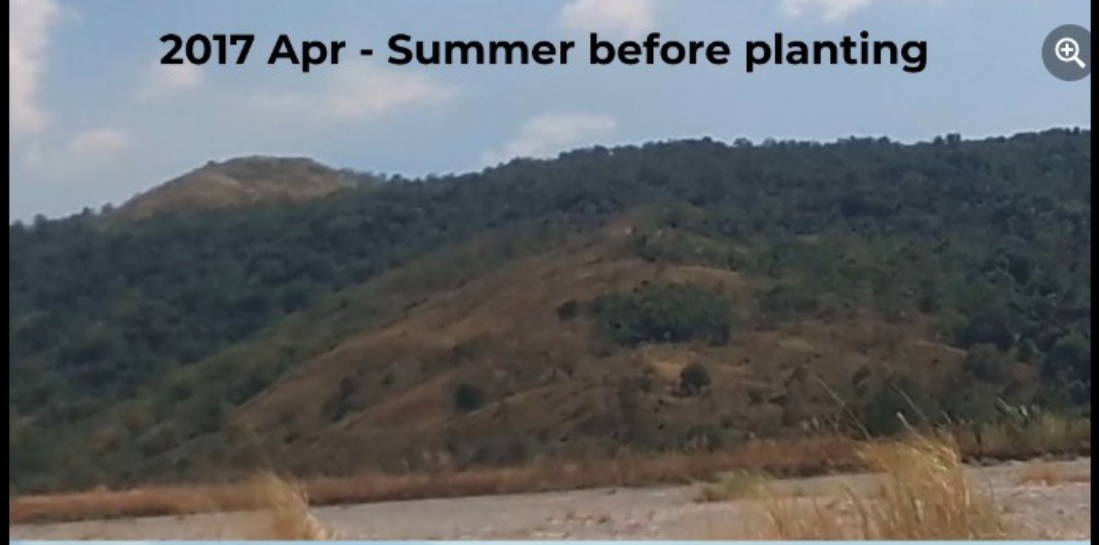

# SEEDS OVER MONEY

MAD TRAVEL
MAKE A DIFFERENCE


THANK YOU TO EVERYONE WHO HAS SUPPORTED THIS REFORESTATION PROJECT.




One Tree Planted
MAD
For The Future
(NGO)
Nadine
Bioten
2020
2021
2023
MAD TRAVEL
MAKE A DIFFERENCE







**No trees no water**

**A lot trees, a lot of water**

Raf Dionisio
Yesterday at 8:44 AM .

...eta communities of Yangil ...orking with us on restoring ... and for helping build a ...sed on agroforestry where taking care of nature builds wealth. Cashew, tea, honey and calamansi are some of the exciting agro forestry products that will provide income for all.

Maraming salamat sa katutubong Aeta ng Yangil at Banawen na kakampi namin para ibalik ang kalikasan sa kanilang lupaing ninuno. Salamat sa tulong ni... **See more**

— with **Husna Dela Cruz** and **33 others**.

Edit

183 23K

Most relevant

Comment as Raf Dionisio


We planted 84,000 trees since 2016. But we lost 22,000 trees to fire in 2023-24.
MAD TRAVEL
MAKE A DIFFERENCE


Flood Aug 1, 2023
FLOOD
AUG 2023


Fire Feb 23, 2024
FIRE
FEB 2024 (6 MOS LATER)




Dry grass (light brown) is the fuel of the fire: Sample of dry cogon

# BIOCHAR



Biochar is charred biomass from agricultural wastes like rice hull, rice straw, bagasse, corn stovers produced by high heating of these materials with very limited oxygen similar to charcoal but where biochar is meant for soil amendments and charcoal is for cooking

# Turn dry grass and wood waste into biochar (solid carbon) through pyrolysis at 500 -1000 degree Celsius fire.

# Biochar is carbon negative (can have credits)



Dry grass/ wood/leaves

+



Low oxygen & high heat fire (burn leaves inside while covered)

=




Biochar


Biochar kiln


Highlights and Notes
Solid carbon


BIO-CHARCOAL

SOIL



SOIL + BIOCHAR



# Holds 5x its weight in water





**BIOCHAR = TALLER HEALTHIER PLANTS**

**5% OF SOIL**

Bad burn - open air. Carbon released as smoke. 10% carbon retrieval



VS



Clean smoke / cleaner burn. 30% carbon retrieval

# Cleaner burn results in 300% more carbon sequestered






FROM THIS:
1 Kg Cement = 0.9 Kg Carbon
(Cement + dirty energy)

Stanford University

Stanford | Doerr
School of Sustainability

Impact | Community | Admissions & education | The school | News & events

News & Events

Research topics | School news | In the media | For journalists | Subscribe | Search all news

Research, Cities & Society, Climate

# For a low-carbon cement recipe, Stanford scientists look to Earth's cauldrons

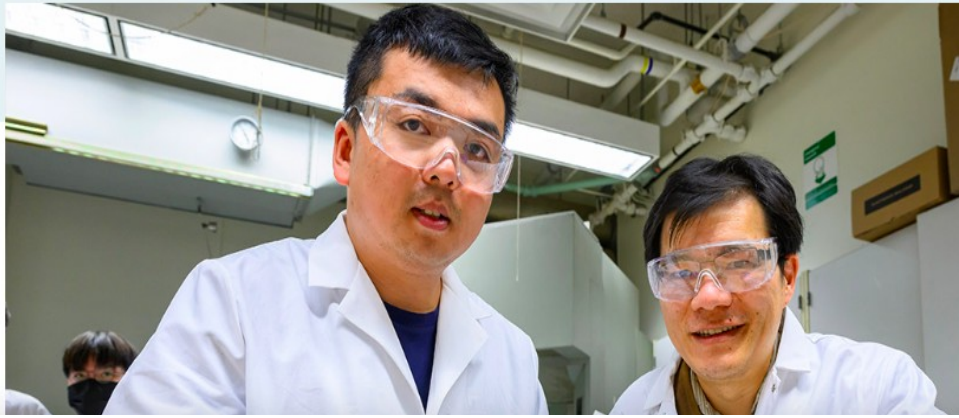
As the most-used building material on the planet and one of the world's largest industrial contributors to global warming, concrete has long been a target for reinvention. Stanford scientists say replacing one of concrete's main ingredients with volcanic rock could slash carbon emissions from manufacture of the material by nearly two-thirds.

CONCRETE INSTITUTE of AUSTRALIA

About | Recognition | Resources | Professional Development

# Strong concrete with biochar

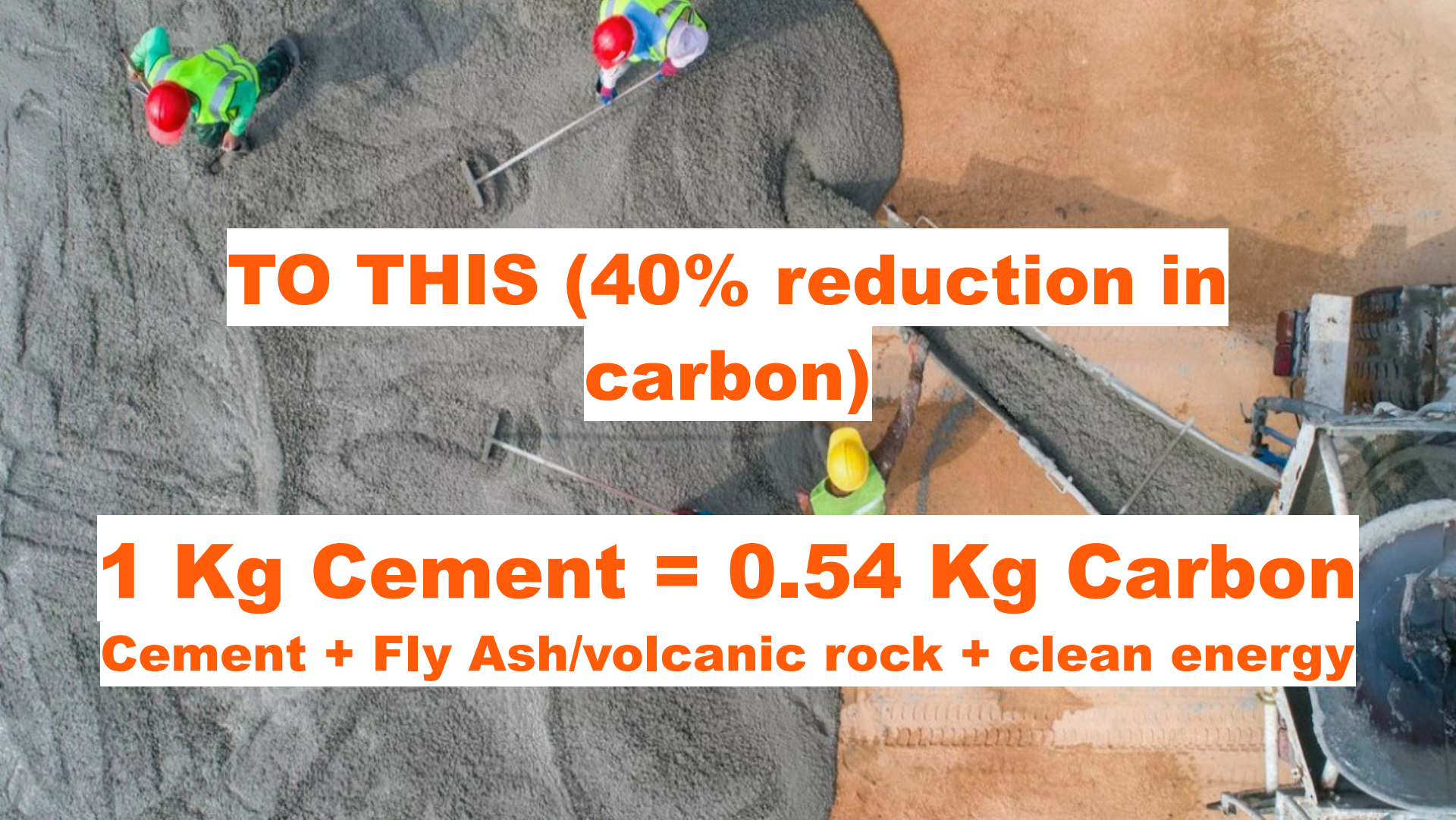
Monday, 15 May 2023 · General



Research, Cities & Society, Climate

# For a low-carbon cement recipe, Stanford scientists look to Earth's cauldrons

As the most-used building material on the planet and one of the world's largest industrial contributors to global warming, concrete has long been a target for reinvention. Stanford scientists say replacing one of concrete's main ingredients with volcanic rock could slash carbon emissions from manufacture of the material by nearly two-thirds.


TO THIS (40% reduction in carbon)
1 Kg Cement = 0.54 Kg Carbon
Cement + Fly Ash/volcanic rock + clean energy

nission is by reducing the consumption of cement. It is widely recognized that the manufacturing of cement, hich is the primary material used in construction globally, constitutes a significant source of greenhouse as emissions, contributing to approximately 8 percent of total emissions globally.

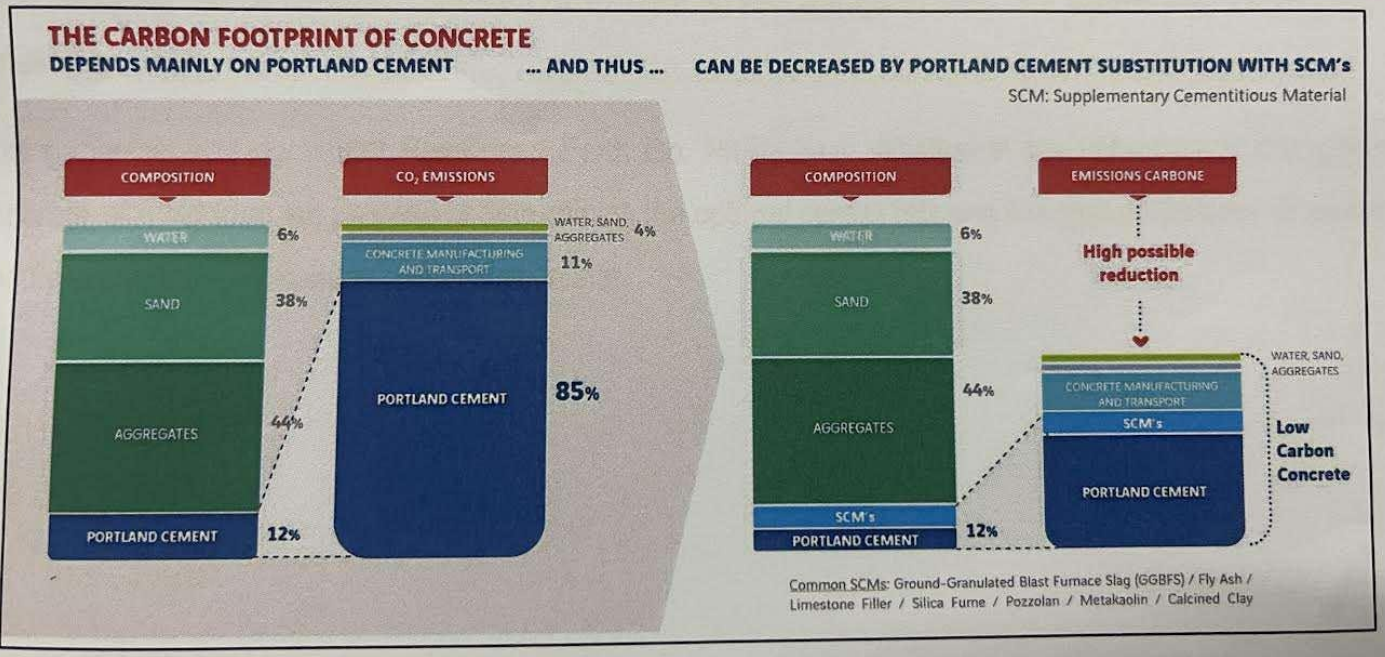
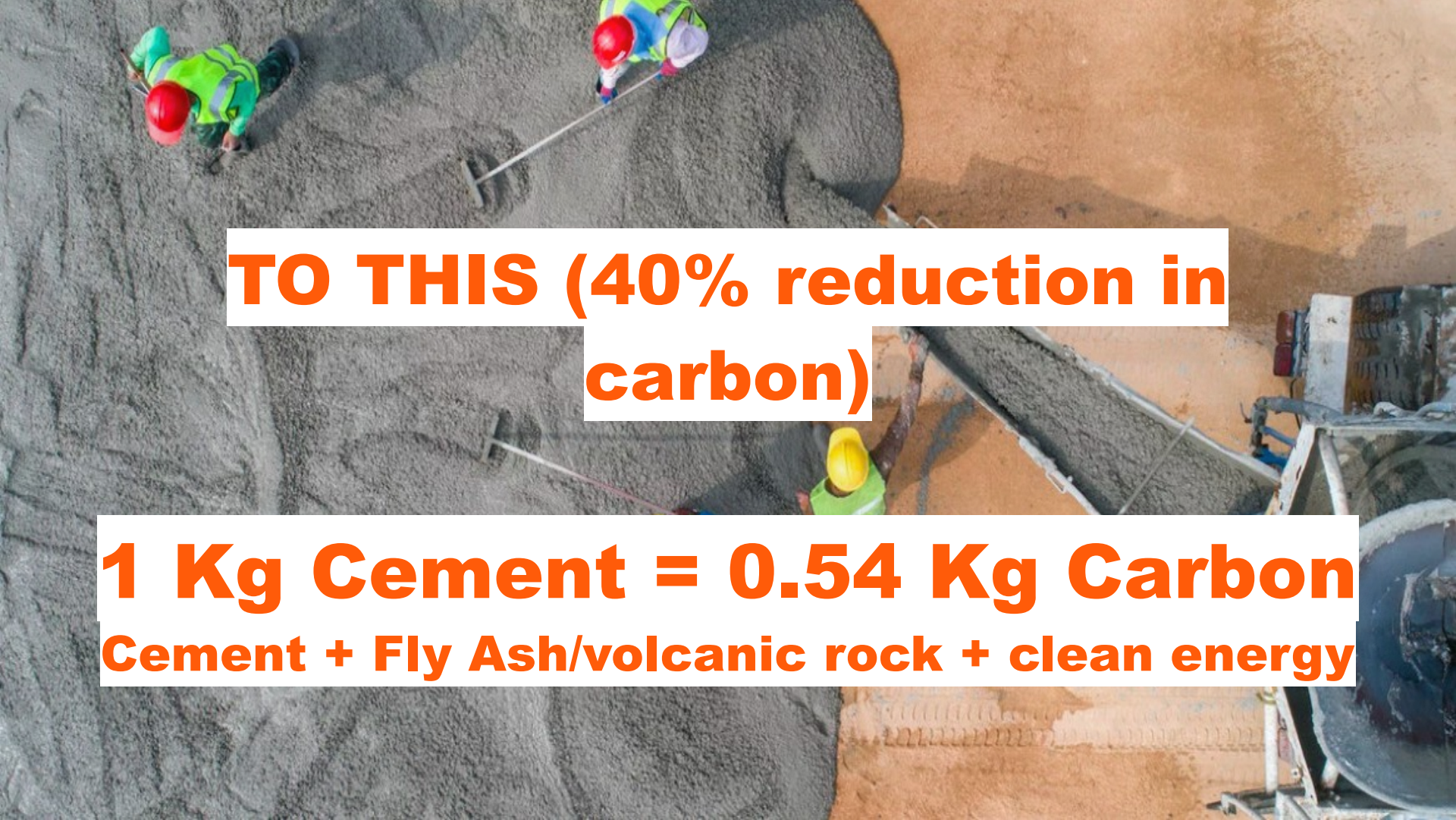



*Figure 1: Concrete Carbon Footprint Diagram from Low carbon Concretes, definition and how do we get there? by Terre Armee (2023)*

e figure above illustrates the composition of concrete alongside the CO2 emissions associated with each mponent. Notably, Portland cement emerges as the primary source of carbon dioxide emissions. The most


TO THIS (40% reduction in carbon)
1 Kg Cement = 0.54 Kg Carbon
Cement + Fly Ash/volcanic rock + clean energy

# HOUSING PROJECT USING BIOCHAR TECHNOLOGY WALL PLASTER



**Located at:**
**AUGUSTUS COMPOUND BRGY. STO ROSARIO, IBA ZAMBALES**

# BENEFITS

A. Sound Acoustics
B.Insulates from outside solar heat
C. Controls Humidity inside room
D. Absorbs/reduces presence of molds
E. Binding Air-Borne Microbial Toxins
F. Protection against electromagnetic radiation (e.g. Cellular Sites Radiation)
G. Air-Refreshing




# HOW TO USE

25 Kilogram bags of Biochar Palitada with a coverage of two (2) square meters

Add 10 liters of water

For a smooth-like finish, mix 1 liter of water with the supplemented mixture of portland cement and Biochar

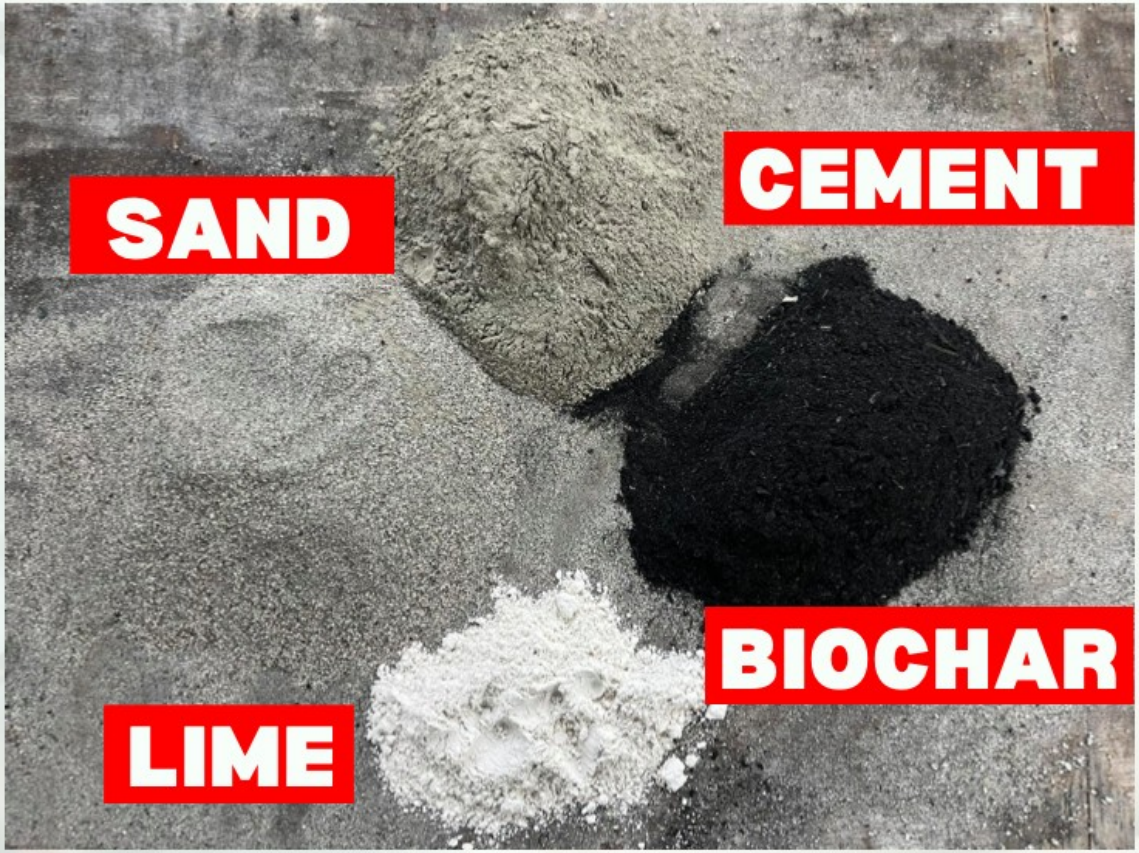
It can be painted with any color using ONLY water based paints

# BENEFITS

- Regulation/Buffering of Humidity
- Insulation
- Noise Protection: Toxin Binding (Solvent,BOC)
- Blocking the High Frequency Radiation
- Low Electrostatic charging of Air
- Conservation of Wood
- Reduction of Dust (mites)
- Deodorizing
- Aesthetic
- Anti-Bacteriological Fungicide (repellent)
- Air Cleaning
- Increase of Redox Potential
- Emission of Far-Infrared Radiation



# INGREDIENTS OF BIOCHAR PALITADA



# CARBONCOAT

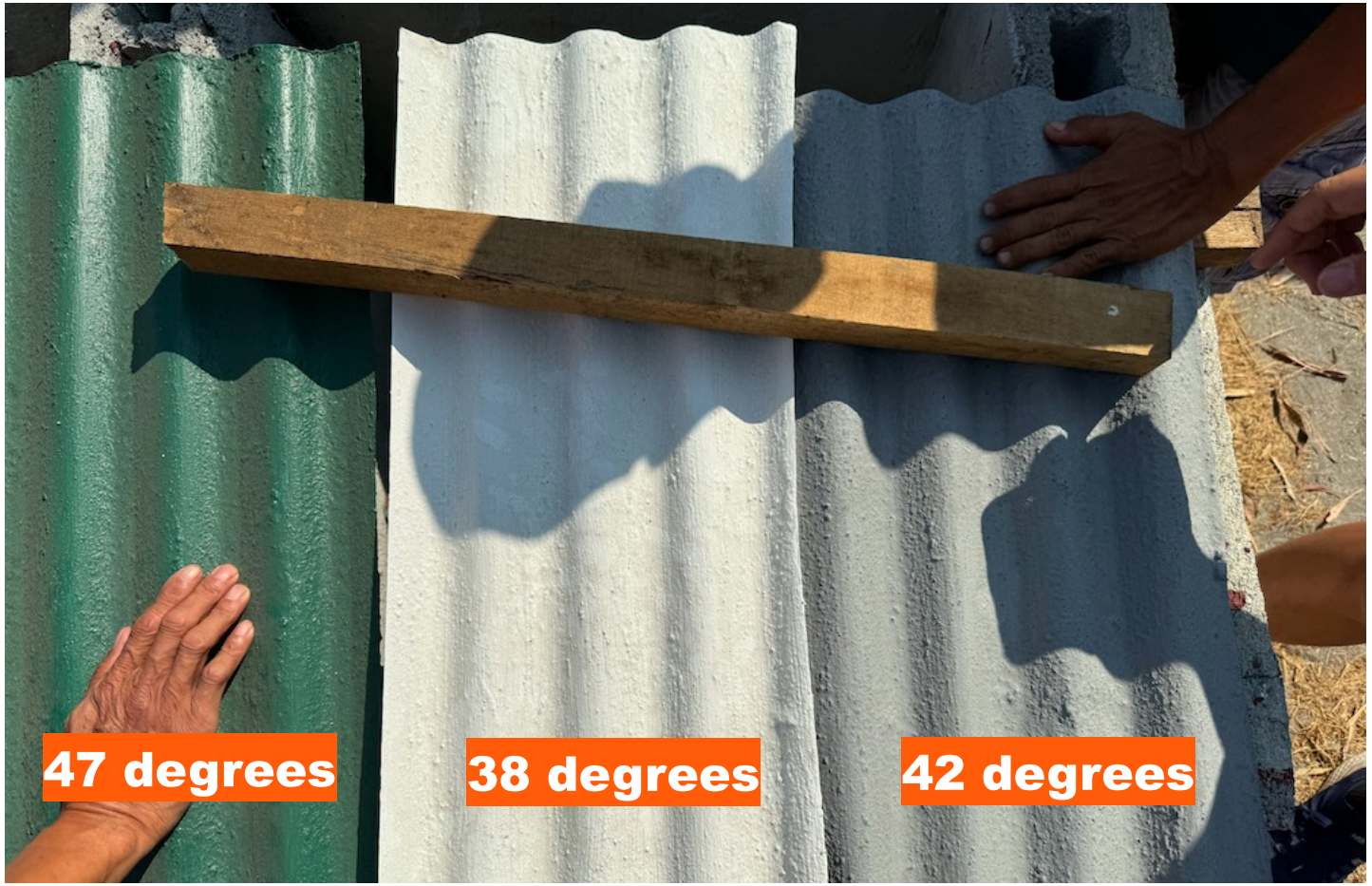



It is formulated to insulate and protect roofing sheets for building energy efficient.

- Built to last
- Cost effective
- Effective carbon sink absorption
- Excellent in physical protection
- Substantial Insulation

A 1 gallon can cover approximately 20 square meters for one paint coat.

# Biochar Paint Can Reduce Heat




Under noon time sun biochar paint reduces heat.

**Regular yero: 50 degrees Celsius +++**

# DIFFERENT KILNS



TOP LIT UP DRAFT



ADAM RETORT SYSTEM (FIXED)



RICE HULL OPEN KILN



DOUBLE OPEN DRUM KILN

DIFFERENT BIOMASS WASTE REQUIRES DIFFERENT KILNS

# The Future of Carbon Sequestration and Construction





2 year old bamboo above


Bamboo in
BALI, INDONESIA

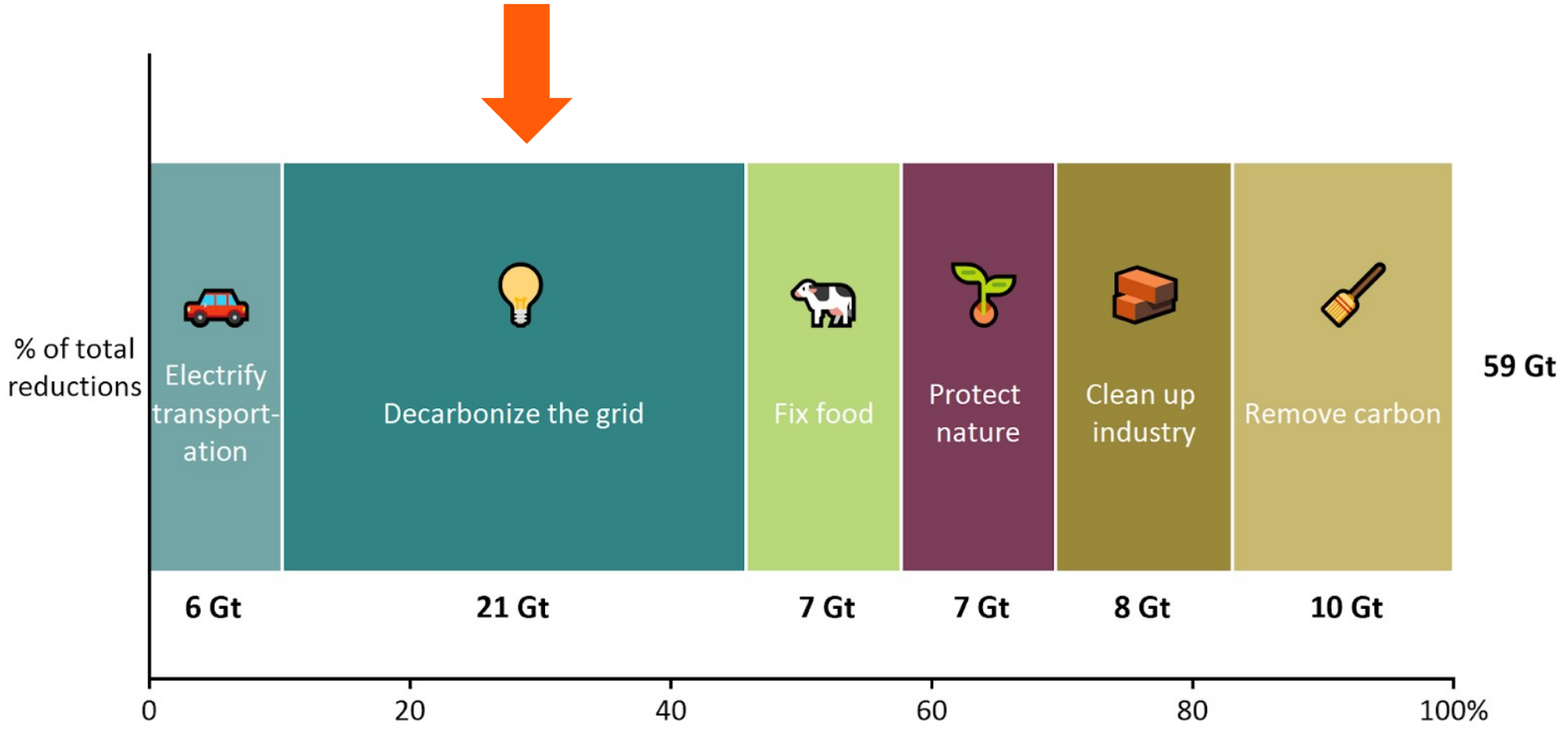





Bamboo in
DAVAO, PHILIPPINES
It can be done!







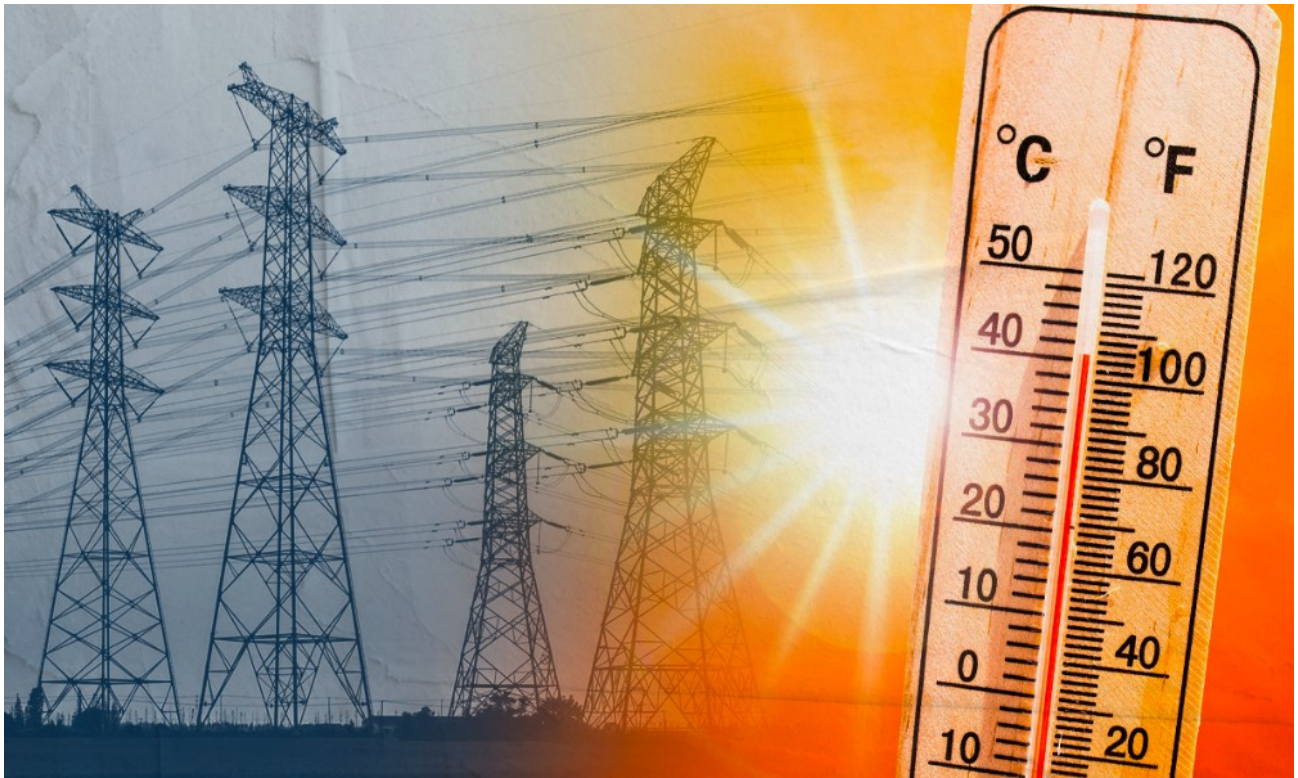

Source: Speed and Scale by John Doerr of the Stanford Doerr School of Sustainability





# Record PH heat drives power supply alerts, bares grid weaknesses

By: Cristina Eloisa Baclig - Content Researcher Writer / @inquirerdotnet
INQUIRER.net / 11:33 AM April 30, 2024





# Solar Panels

**LONGi**

**5.800 kW** Total Solar Power

**10 x 580 Watt Panels** (LR5-72HTH-580M)

**6,952 kWh** per year

**29%** energy savings

**4 tons** of carbon/year (worth 814 trees or 126,000km of gas car driving)

Scan to connect with **green financing** options to support your projects!

AVD Green Builds

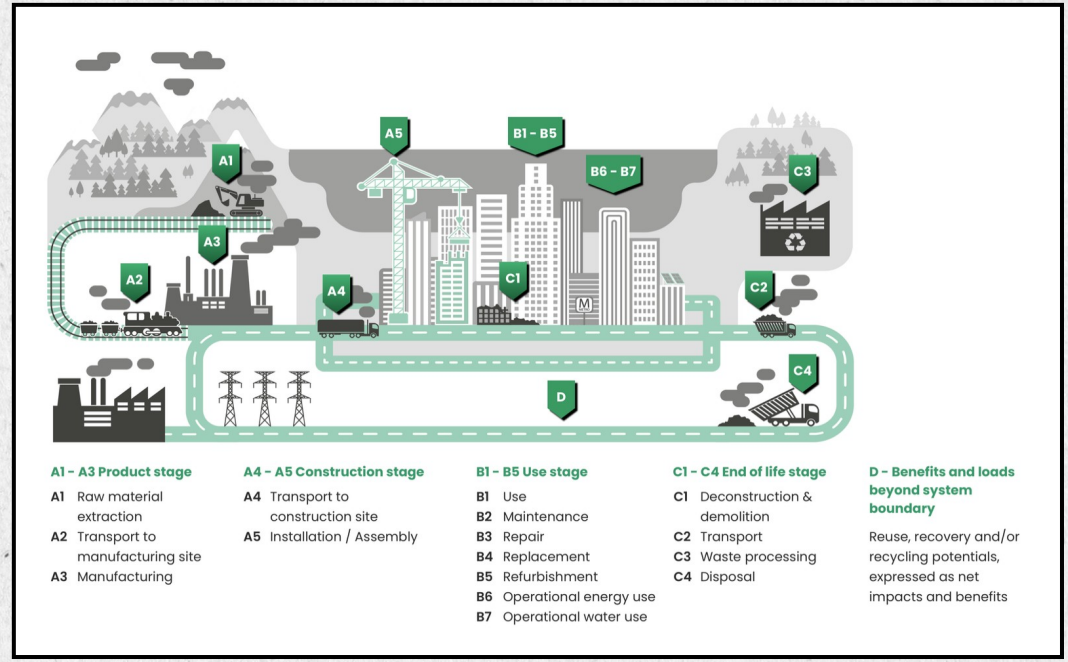
There used to be 1000 EVs in ph.

After 1 year there are 10,000. Who wants free gas?

# How is a Building’s Environmental Impact Measured?

**Life-cycle Assessment (LCA)** is a scientific methodology used to calculate the environmental impacts, including carbon footprint, of a product, service, or process.

- **Product**
- **Construction**
- **Usage**
- **End of Life**
- **Reuse***




OneClick LCA : Life Cycle Stages

MAD TRAVEL
MAKE A DIFFERENCE

# The world will only continue to build - and we need you to succeed in a low carbon way to inspire others.

You can paint your roof anti rust, reduce heat and sequester carbon

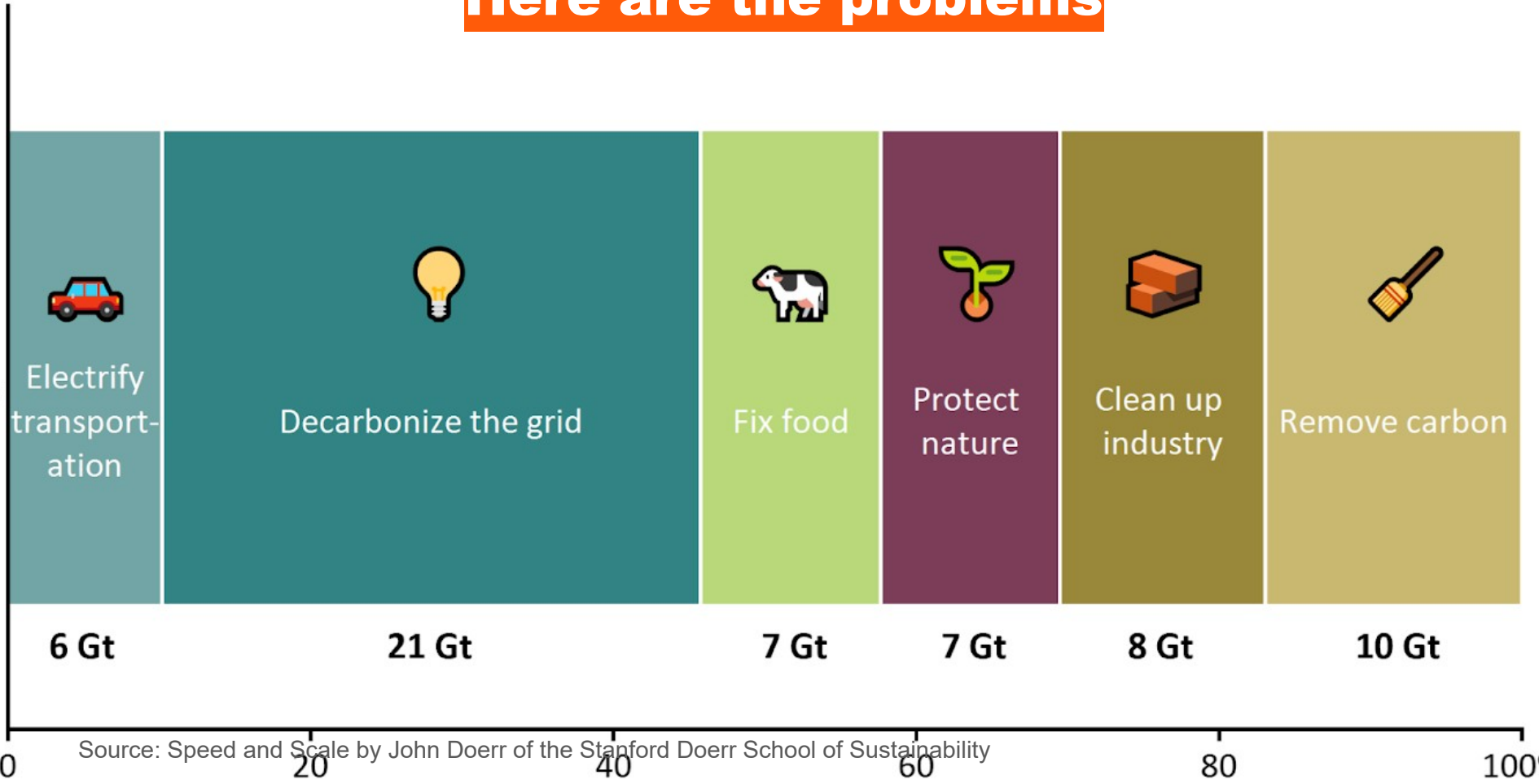
# THERE IS NO WEALTH ON A DEAD PLANET

you can influence sustainability by what you learn, how you design, how you teach and how you demand better from

# Want to access the products?

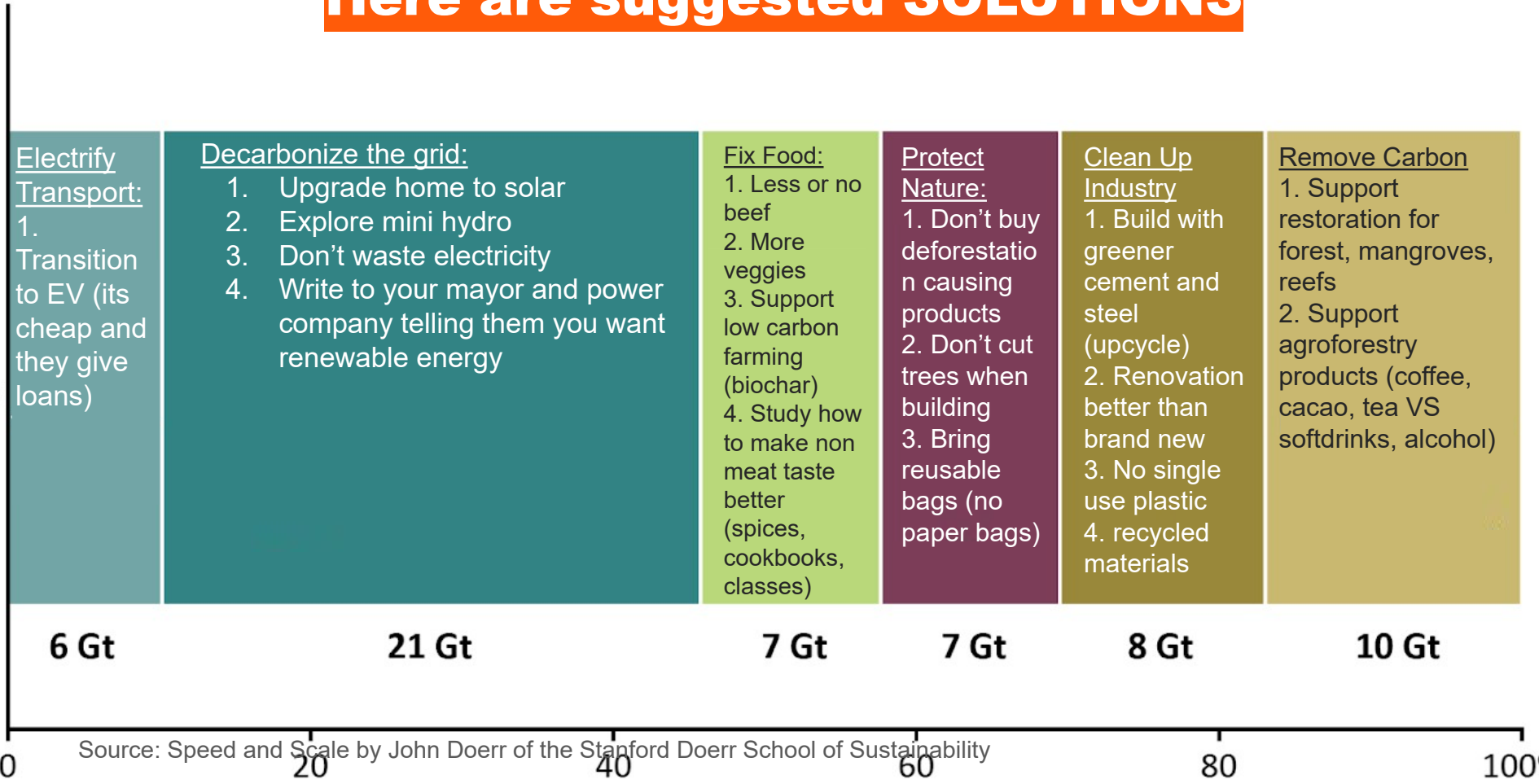
# info@avdph.com

# Here are the problems




Source: Speed and Scale by John Doerr of the Stanford Doerr School of Sustainability

# Here are suggested SOLUTIONS




Source: Speed and Scale by John Doerr of the Stanford Doerr School of Sustainability

Do you want to be invited to sustainability events? Email

raf@avdph.com

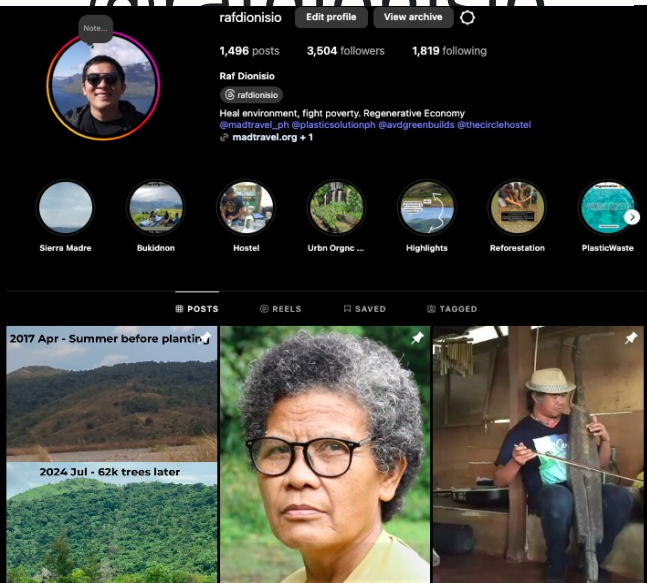
raf@madearth.org

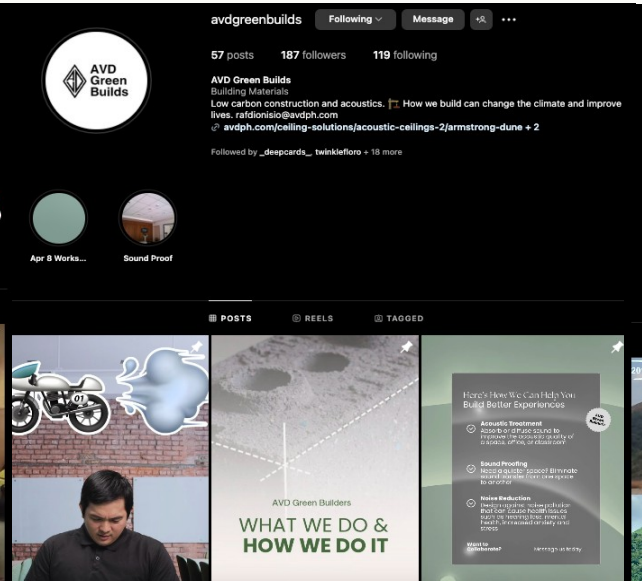
MAD EARTH

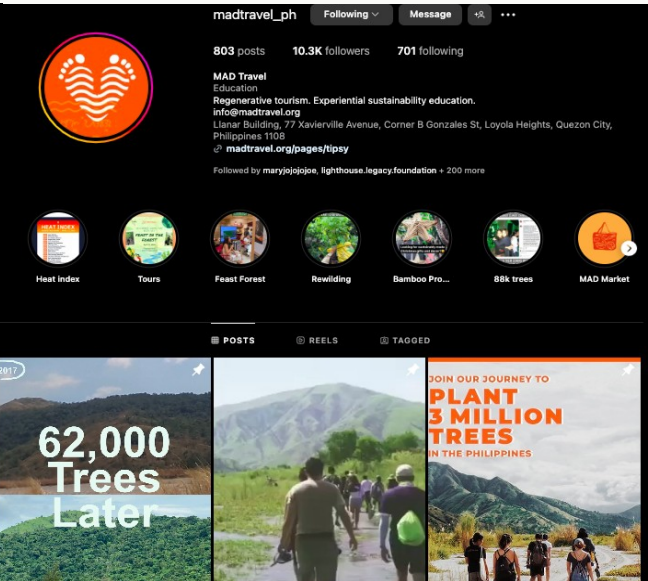
MAKE A DIFFERENCE

# Please Follow Us Online

@madtravel_ph
raf@madearth.org
@avdgreenbuilds raf@avdph.com
@rafdionisio



# Slides to add/BACK UP SLIDES

1. Avd dna and mad dna
2. Make acoustic charts look nicer
3. Raise cash for classrooms project
4. Study permaculture….or call it something else…rainwater harvesting…
5. Knauf plant - how they reduced carbon and increased energy efficiency
6. **The embodied carbon of knauf products vs other products? Like cement walls….**
7. **Other sustainability initiatives of knauf…**
8. **Insulation design - the space in between + insulation?**
9. Biochar paint or biochar palitada?
10. Landscape design with temp reduction via grass/trees
11. Passive cooling techniques?

Evs from 1k to 10,000k

# Coming soon:

Empowering communities to create your own cement using limestone and local products

33% of the world’s landfill is construction waste.

# Determining Optimal Mix through substitution of Cement with Flyash

| Determining Project Requirements | Determining Material Proportions | Flyash Substitution | Conducting Trial Mix | Quality Testing |
|---|---|---|---|---|
| The process begins with selecting target strength and workability | Determine the proportions of cement, water, aggregates and admixtures. | Replace a percentage of cement with flyash | Conduct multiple concrete batches with varying flyash percentages | Testing for concrete workability and compressive Strength |

# Permaculture

it’s about growing systems that sustain life.

It takes its cues from ecosystems, asking: how do relationships between soil, water, plants, animals, and people support one another over time?

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# The Core Idea *Explained*

Permaculture is a design approach for meeting human needs while regenerating the health of the living systems we depend on. It draws from how ecosystems work, looking at the relationships between soil, water, plants, animals, and people —to support life over time.

It's used to grow food, manage water, build shelter, and restore land. It can begin on a balcony or a whole farm —and deepen through training, observation, and hands-on practice.

The Origin →

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# The Origin

*The word comes from "permanent" + "agriculture".*

Coined by Australians Bill Mollison and David Holmgren in the 1970s, permaculture began as a response to industrial farming.

It quickly expanded into a philosophy for how to live more resiliently —by observing ecosystems and mimicking their relationships.

Observation Comes First →

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# Observation Comes First

Before any action, permaculture invites you to spend time observing your place.

Watch how water gathers and moves. Notice where plants thrive, where winds settle, where sunlight shifts. Observe how people interact with one another and their surroundings. These patterns are the foundation of good design. Observation turns land into a teacher —and design into a response.

Design in Relationships →

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# Design in Relationships

Permaculture designs in relationships —between water, soil, plants, animals, and people. A tree might offer shade, food, and habitat. Chickens might help compost, fertilize, and control pests.

Each element has many functions and supports other aspects of the design. This kind of layered thinking creates systems that are resilient, efficient, and alive.

Permaculture's Three Ethics →

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# Permaculture's Three Ethics

These three ethics guide every decision:

— Care for the Earth
— Care for People
— Care for the Future

They turn values into action—shaping systems that regenerate land, nourish communities, and redistribute excess.

Context Is Everything →

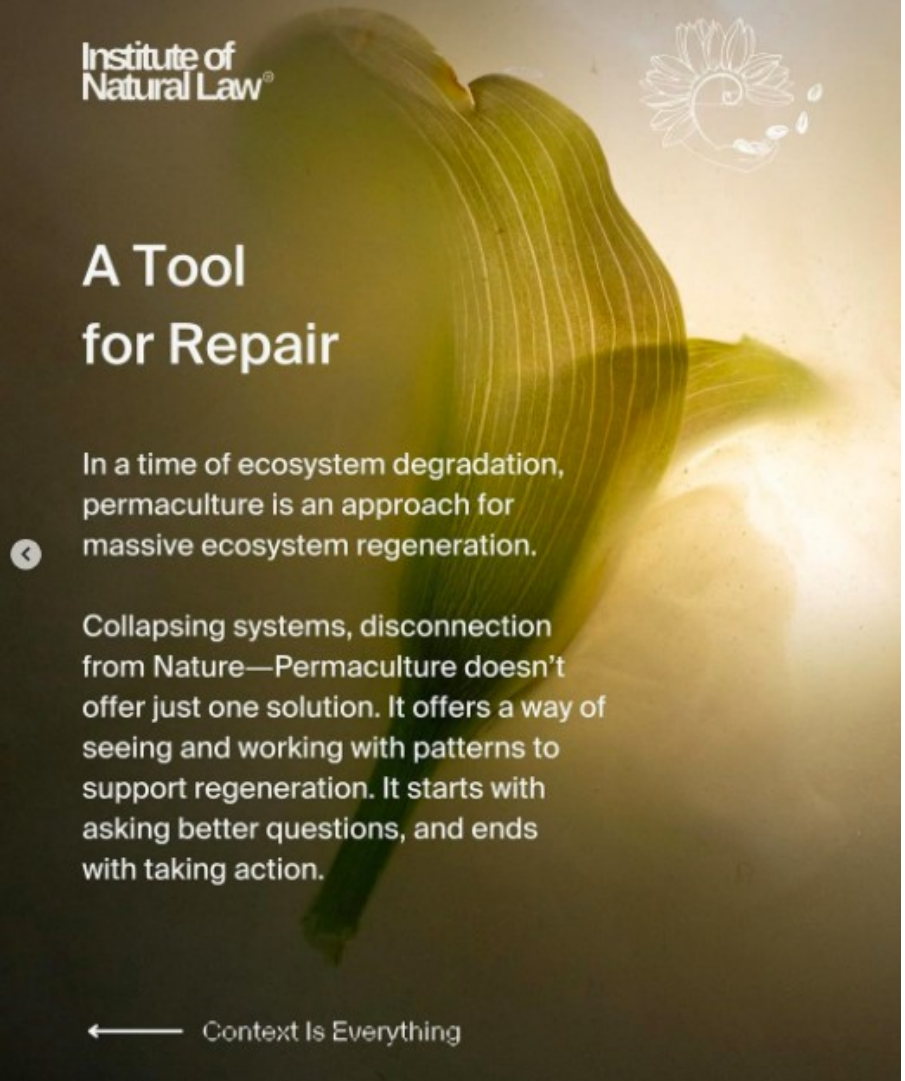
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# Context Is Everything

Remember, Permaculture adapts to support the local environment and people.

Techniques that regenerate a rainforest differ from those used in a desert. Resilient design for an urban dweller in the US differs from that of a village dweller in Uganda. That's why it begins with careful, place-based thinking.

A Tool for Repair →

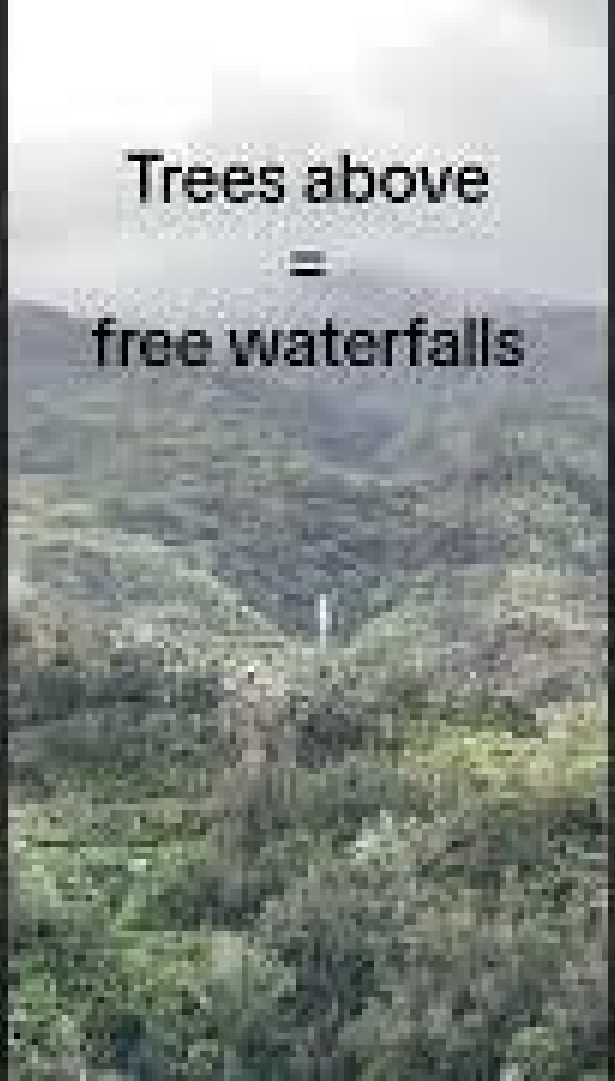

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Natural Law®
A Tool
for Repair
In a time of ecosystem degradation, permaculture is an approach for massive ecosystem regeneration.
Collapsing systems, disconnection from Nature—Permaculture doesn't offer just one solution. It offers a way of seeing and working with patterns to support regeneration. It starts with asking better questions, and ends with taking action.
Context Is Everything

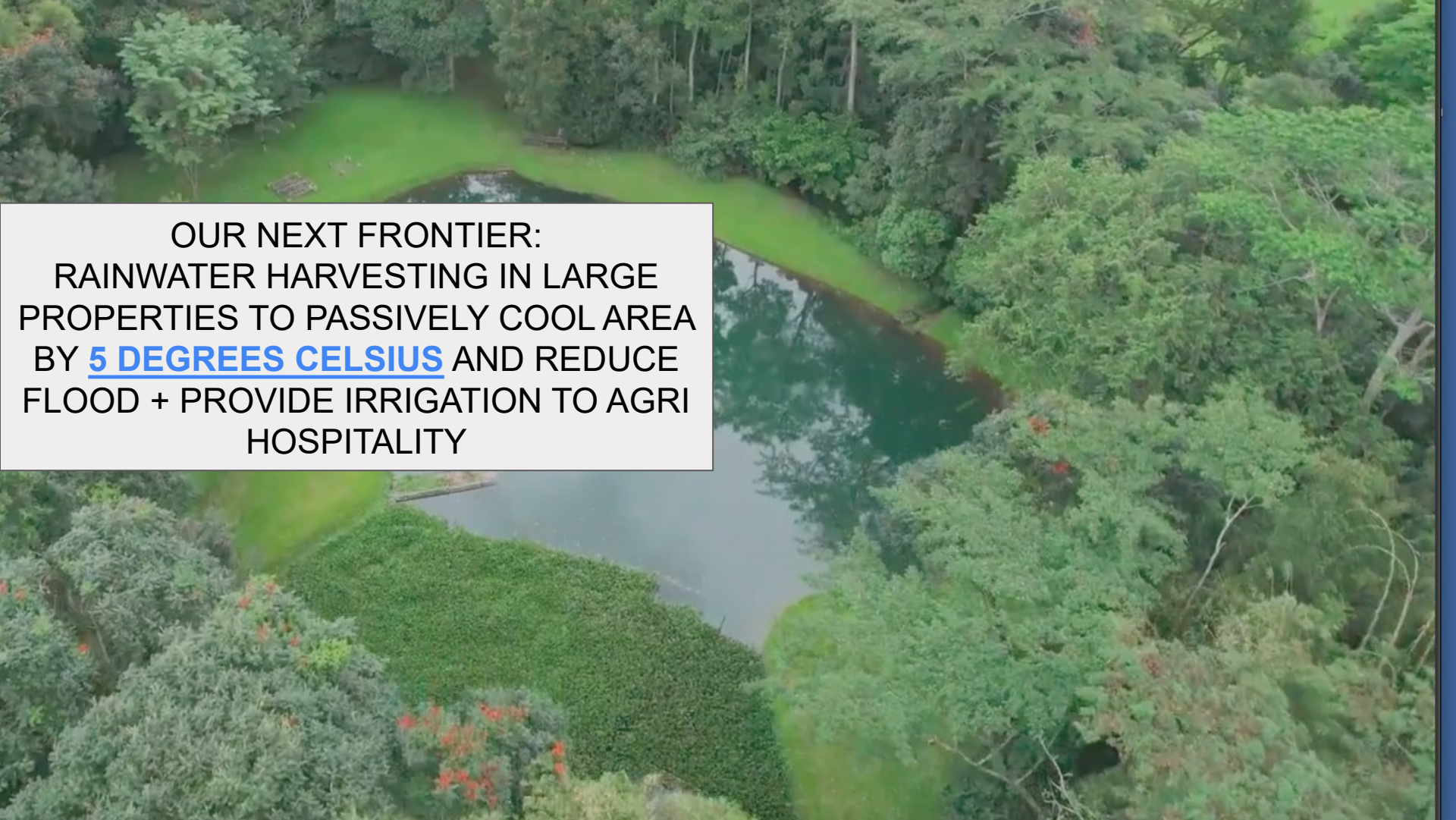
# Examples of permaculture vs no permaculture

| | |
|---|---|
| Designer listens to context and space + project owner<br>Water<br>Temperature<br>Wind<br>Sunlight<br>soil | Designer listens to project owner<br>Water<br>Temperature<br>Wind<br>Sunlight<br>soil |

# Benefits

1. Save time
2. Save money
3. Reduce carbon
4. Better quality of life


Trees above
=
free waterfalls


OUR NEXT FRONTIER:
RAINWATER HARVESTING IN LARGE PROPERTIES TO PASSIVELY COOL AREA BY 5 DEGREES CELSIUS AND REDUCE FLOOD + PROVIDE IRRIGATION TO AGRI HOSPITALITY



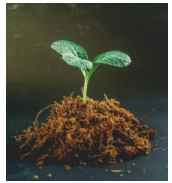
ENOUGH WATER FOR THE ENTIRE 30 HECTARE FARM - UNAFFECTED BY EL NINO

# 9 SWALE

Close 27/28 Media



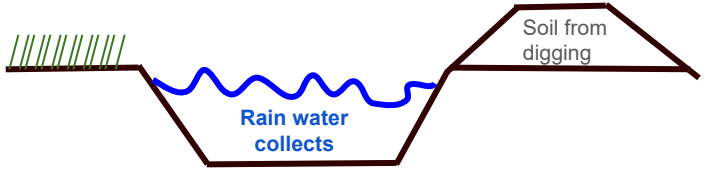

# 10 PLANT ON SWALE & BERM





Plant soil holding grass or trees

Plant soil holding grass or trees




# 11 FINAL FORM





# When owners have idle land, they usually want to make it revenue generating. Usually office rental, mall, subdivision - but what if you had options?

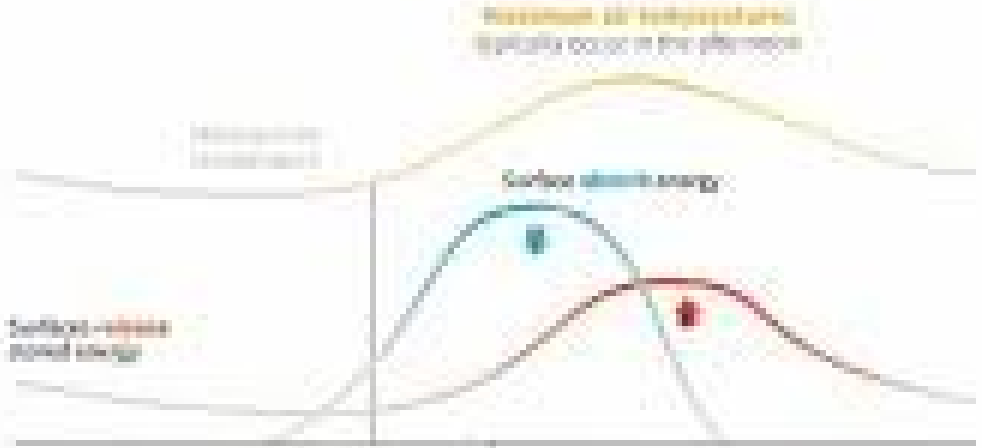






Surfaces release stored energy



EDCOM2
The Second Congressional Commission on Education

# MISEDUCATION

## *The Failed System of Philippine Education*

## EDCOM II YEAR ONE REPORT




#ItaasAngAntas #BangonEdukasyon

edcom2ph

www.edcom2.gov.ph

# Breakdown of Success:
# 4 Pillars of Sustainable & Regenerative Economy

**Community & Society**



**Nature / Environment**



**Personal Well Being**

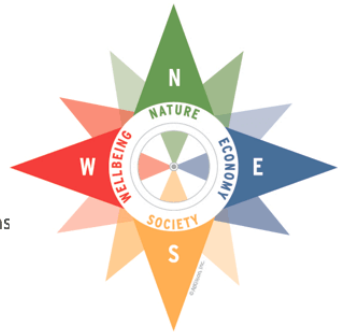


**Economy**




## The Sustainability Compass

- ***N = Nature***
  Environment, resources, ecosystems, climate
- ***E = Economy***
  Production, consumption, jobs, investment, money
- ***S = Society***
  Government, culture, institutions social concerns
- ***W = Wellbeing***
  Individual health, families, self-development, quality of life




MAD TRAVEL
MAKE A DIFFERENCE


ARABICA
ROBUSTA
LIBERICA
Fruity & Dark
Light Citrus
Anonas
Guyabano
Banaba
Coffee leaf


Kasuy - Mahilig sa init:
P100,000 to P200,000 per hectare
May puno na, may pera pa
2.1M liters of water per hectare
2020
2021
2023
MAD TRAVEL
MAKE A DIFFERENCE




# Kape - kailangan ng silong  4-6 hours of sunlight per day (sa Narra, tipolo)

# P100,000 per hectare

may pera ka na, gising ka pa
94,000 Liters of water per hectare
400 coffee trees and 400 native trees

MAD TRAVEL
MAKE A DIFFERENCE







# Tsaa/Tea - Buong taon ang pag-ani

# P100,000 per hectare

may pera ka na, may iced tea ka pa
(pampababa ng blood pressure at diabetes)
100,000L - 1ML per hectare

MAD TRAVEL
MAKE A DIFFERENCE



# Cacao - kailangan ng silong  4-6 hours of sunlight per day (sa Narra, tipolo, kasuy, niyog)

# P100,000 per hectare

may pera ka na, gising ka pa
2M Liters of water per hectare
400 cacao trees and 400 native trees/kasuy

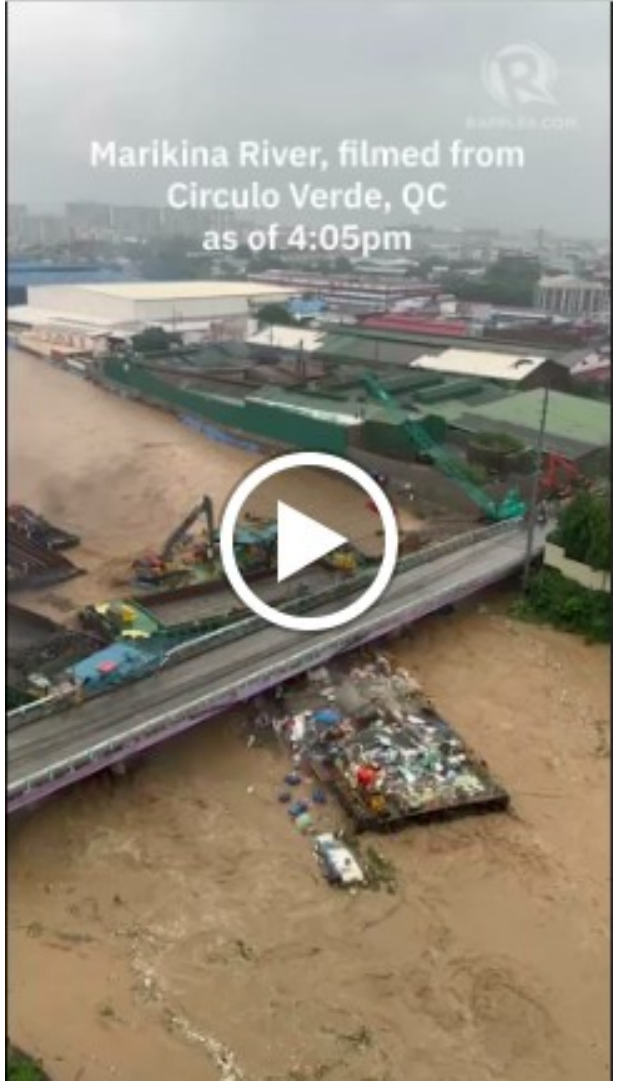
MAD TRAVEL
MAKE A DIFFERENCE




100,000 Trees
200,000,000 L
Water
Protected area

What can be
planted below?

# DESIGN WITH WATER REFILLING IN MIND




# Top call center: 50% absenteeism during Odette and Carina. Massive econmic loss

Jo Jo Beltran

Magandang hapon Po sir,

Malakas parin po ang Ulan dito sir,




15.11106 N, 120.13833 E

**25,000 more in 2024**

Altitude
301 m

**We hope to eventually empower them to make sustainable lumber - but to be planted in a different area**

9/6/24
10:08 AM




AVD Green Builds

MAD EARTH
MAKE A DIFFERENCE

Join free decarbonization training with AVD Green Builds MAD Earth, Komunidad and 3Zero House - featuring
MIT Technology