

# Regeneration



**UCI**

University for  
International Cooperation

Éduard Müller  
emuller@uci.ac.cr



# OUR COMMON FUTURE

THE WORLD COMMISSION  
ON ENVIRONMENT  
AND DEVELOPMENT

1987

"Sustainable development is development that **meets the needs of the present without compromising the ability of future generations** to meet their own needs."



# Sustainable development

Rio 1992

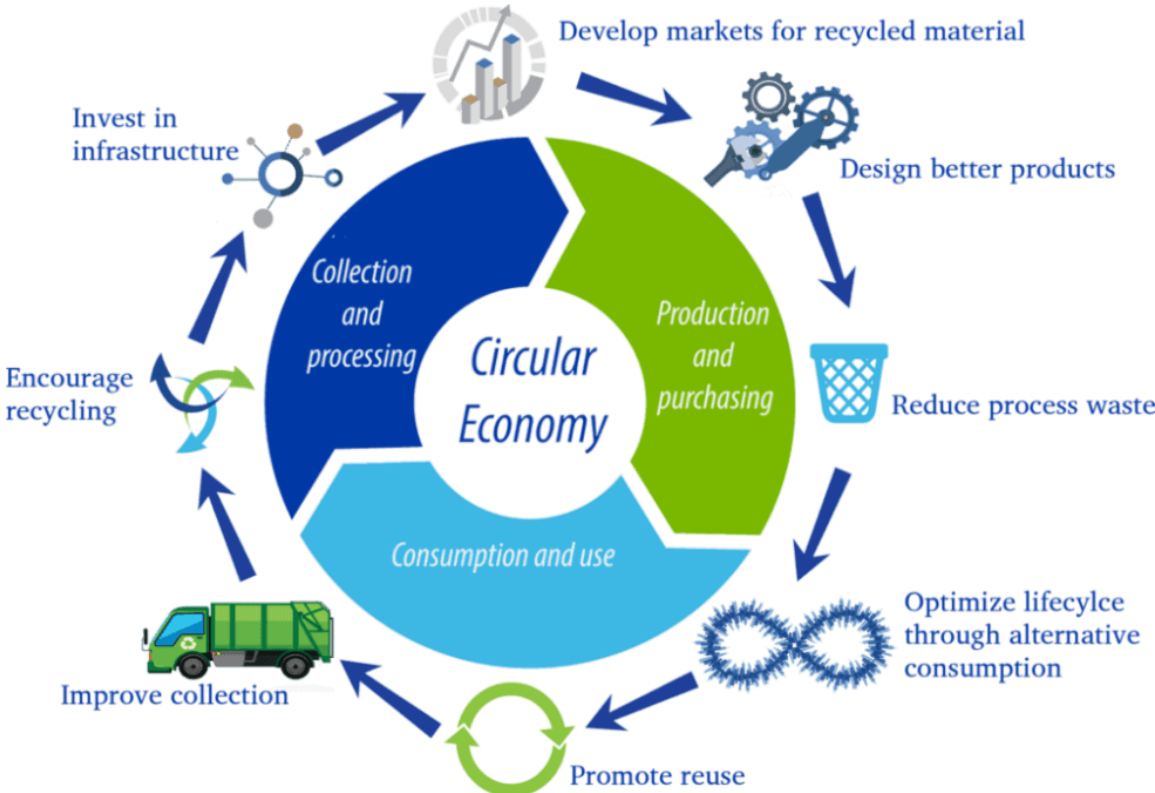
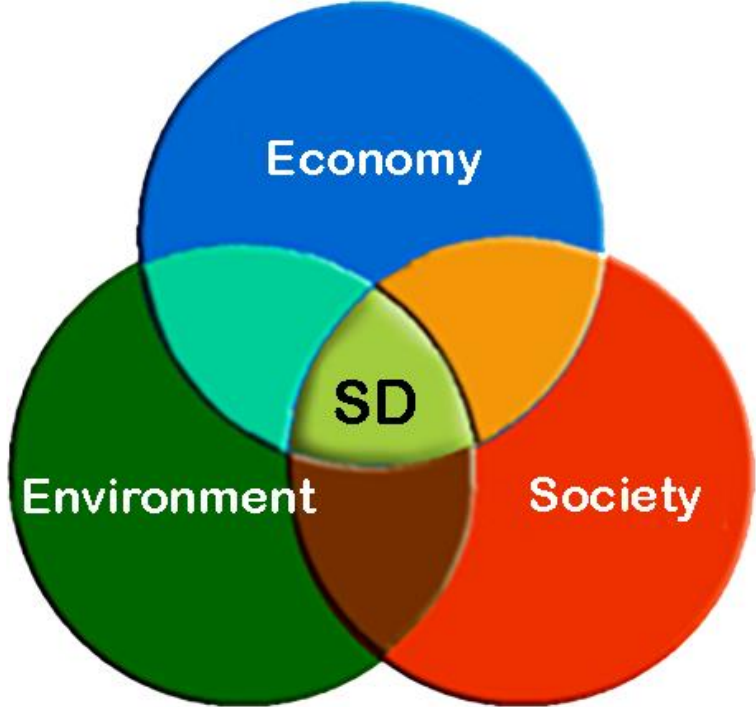
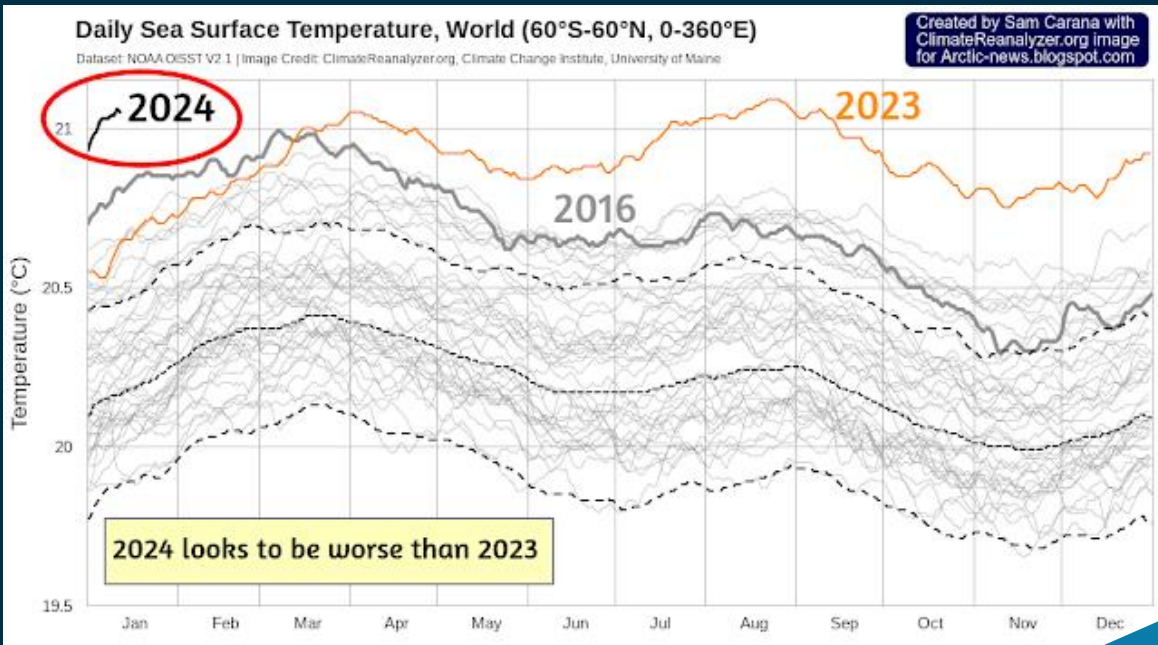


Image: Sustainable Global Resources Ltd. Recycling Council of Ontario



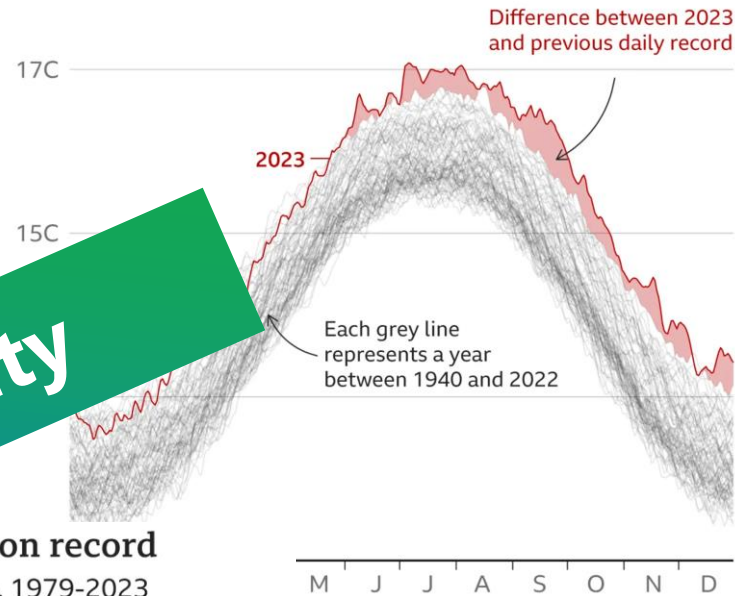




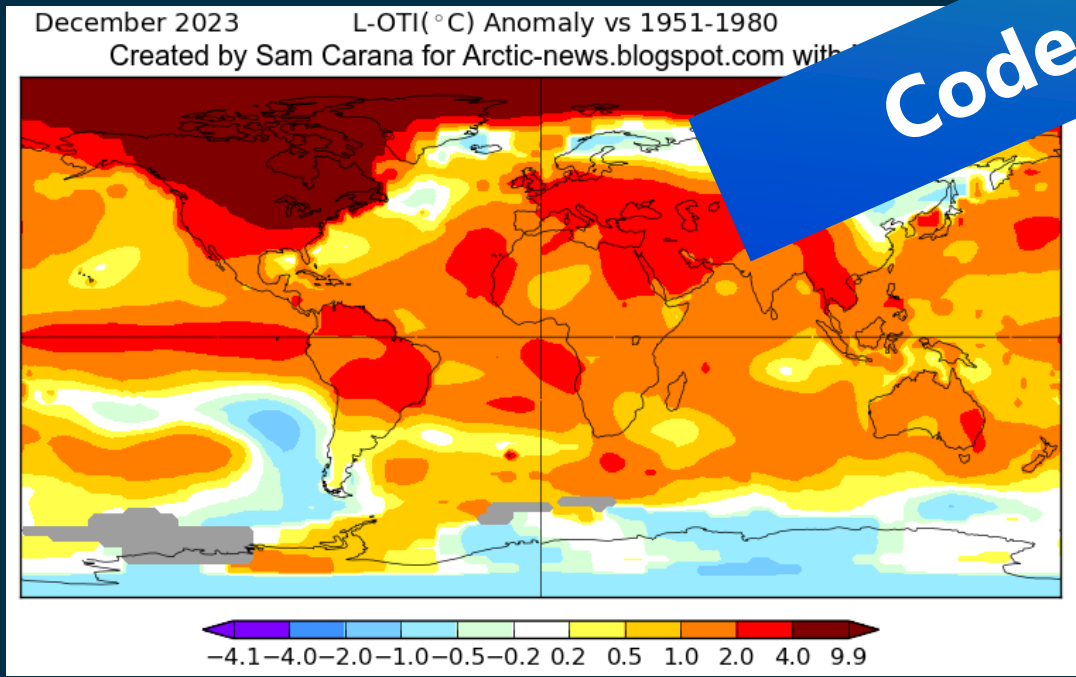
**January 31st was the hottest day of the month, at 1.93°C above the pre-industrial baseline.**

**Global temperatures at record levels in 2023**

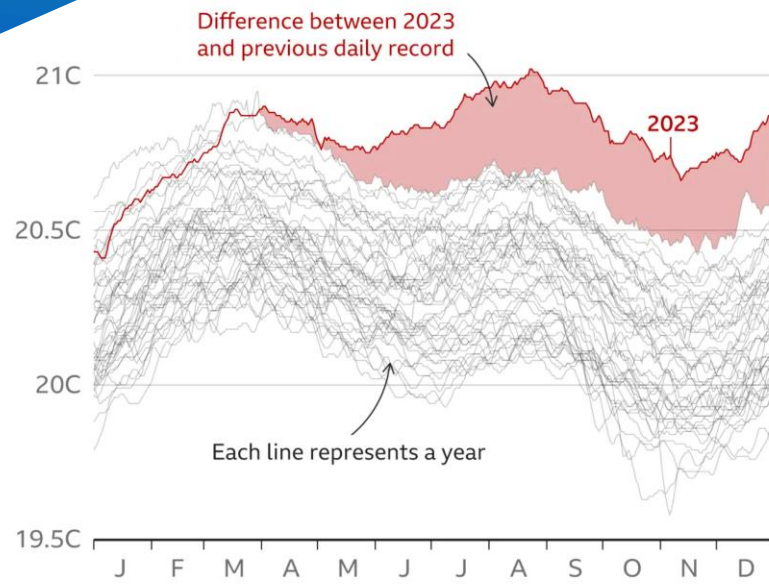
Daily global average air temperature, 1940-2023



**Code Red for Humanity**



Temperatures highest on record  
 Average sea surface temperature, 1979-2023



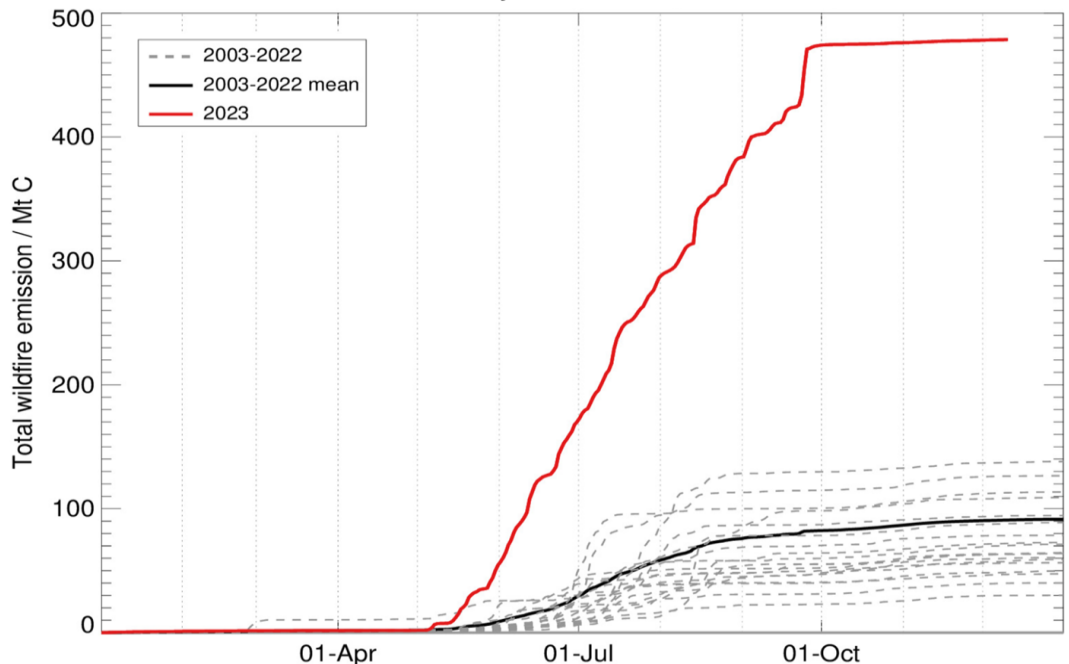
Note: Temperatures between latitudes 60° North and 60° South

Source: ERA5, C3S/ECMWF (data until 30 Dec 2023)

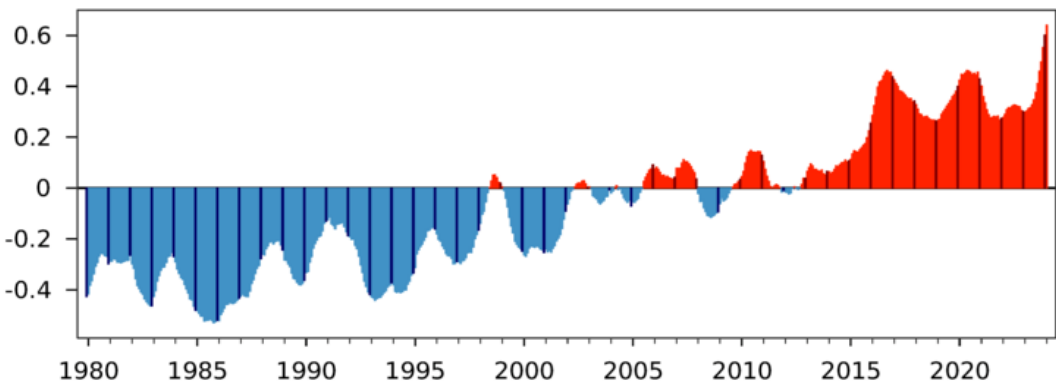
**We got to the tipping points:  
 17.18C  
 Pre-industrial level: 14C**



CAMS GFASv1.2 Cumulative Daily Total Wildfire Carbon Emissions for Canada



Twelve-month global surface air temperature anomalies



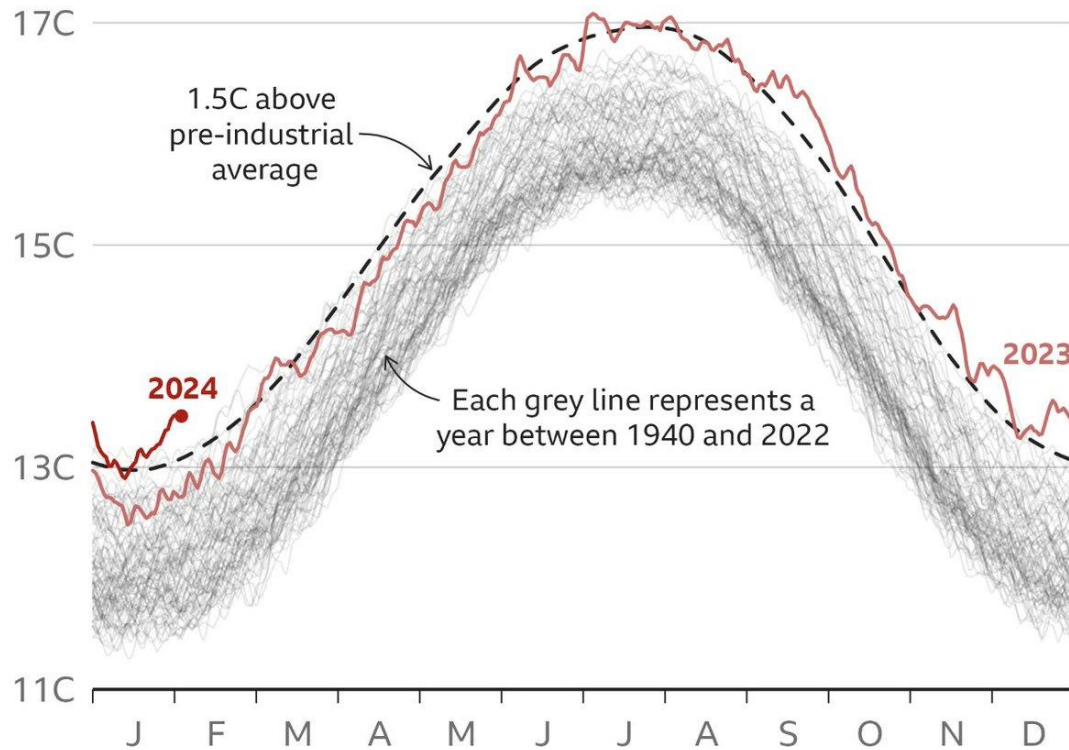
(Data: ERA5. Reference period: 1991-2020. Credit: C3S/ECMWF)



January 2024 was the hottest January on record, at 1.65°C above the pre-industrial baseline.

## Global temperatures remain at record levels

Daily global average air temperature, 1940-2024



Note: Temperature data for 3 February 2024 is preliminary

Source: ERA5, C3S/ECMWF



# Biodiversity - Abundance



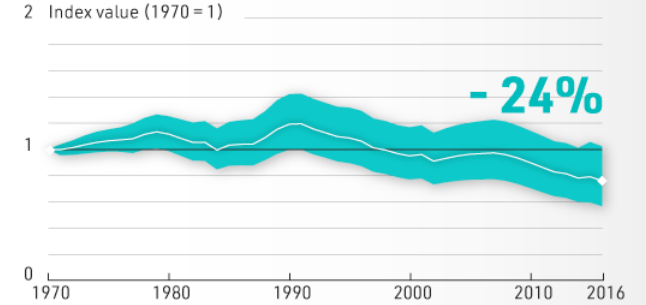
## VISUALIZING THE REGIONAL DECLINE OF EARTH'S BIODIVERSITY

The **Living Planet Index (LPI)** tracks the abundance of mammals, birds, fish, reptiles, and amphibians across the globe.

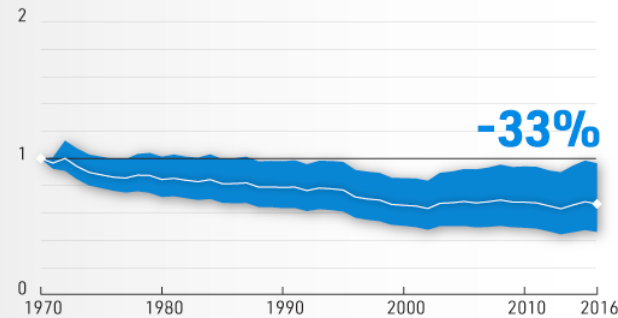


Between 1970 and 2016, vertebrate population sizes dropped by **68%** on average worldwide. However, this rate of this loss varies from region to region.

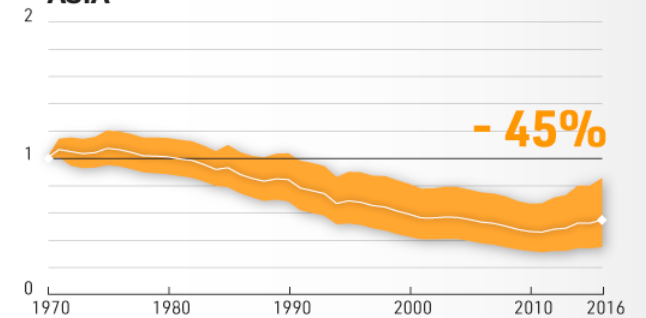
### EUROPE



### NORTH AMERICA

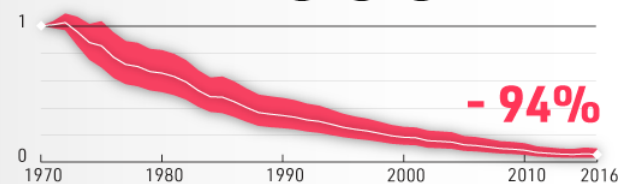


### ASIA

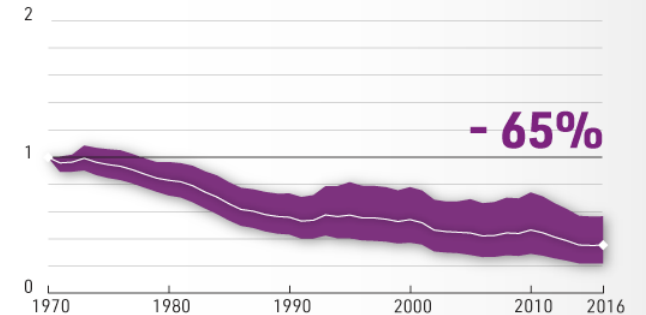


### LATIN AMERICA & CARIBBEAN

Latin America & Caribbean has seen the largest drop in biodiversity at **94%**, mainly driven by a significant decline in reptile, amphibian, and fish populations.



### AFRICA





# Exponential change

- What will humans be doing in 5 years?  
In 10?
- What professions will still exist?
- What new “professions” are required?
- Solutions to current and future challenges?



226

STARTUPS ANALYZED

## 5 Top Carbon Capture & Storage Startups Impacting The Energy Sector



This Global Startup Heat Map illustrates geographical distribution of 226 analyzed as well as 5 selected startups. Data from

Solution?

youmatter

CONSUMPTION / ENERGY & TRANSPORT / LOGISTICS AND INFRASTRUCTURES / NEWS / TRANSPORTATION AND LOGISTICS / TRANSPORTATION AND MOBILITY / TRENDS AND INNOVATIONS /

### Are Electric Cars Really Greener?

André Gonçalves - Editor & Head Of English Market

After studying and working in HR, André studied sustainability management at Lisbon's School Of Economics & Management. He is responsible for the English speaking market of Youmatter since 2018.





**How would you like to be living in 20 years?  
How about your grandchildren?**



We stand at a critical moment  
in Earth's history, a time when  
humanity must choose its  
future.

Earth Charter





We will need to navigate rough waters but we are still on time to  
build the future we want!







We need to find  
multiple pathways **TOGETHER!**



A photograph of a small white boat with a blue stripe on the side, moving through shallow, greenish water near a sandy beach. Several people are on board the boat. The sky is filled with a large number of birds, likely terns, in various stages of flight. The water has small waves and some birds are swimming. The overall scene is vibrant and active.

Join us in co-creating a future of  
abundance and wellbeing!

An invitation for you:

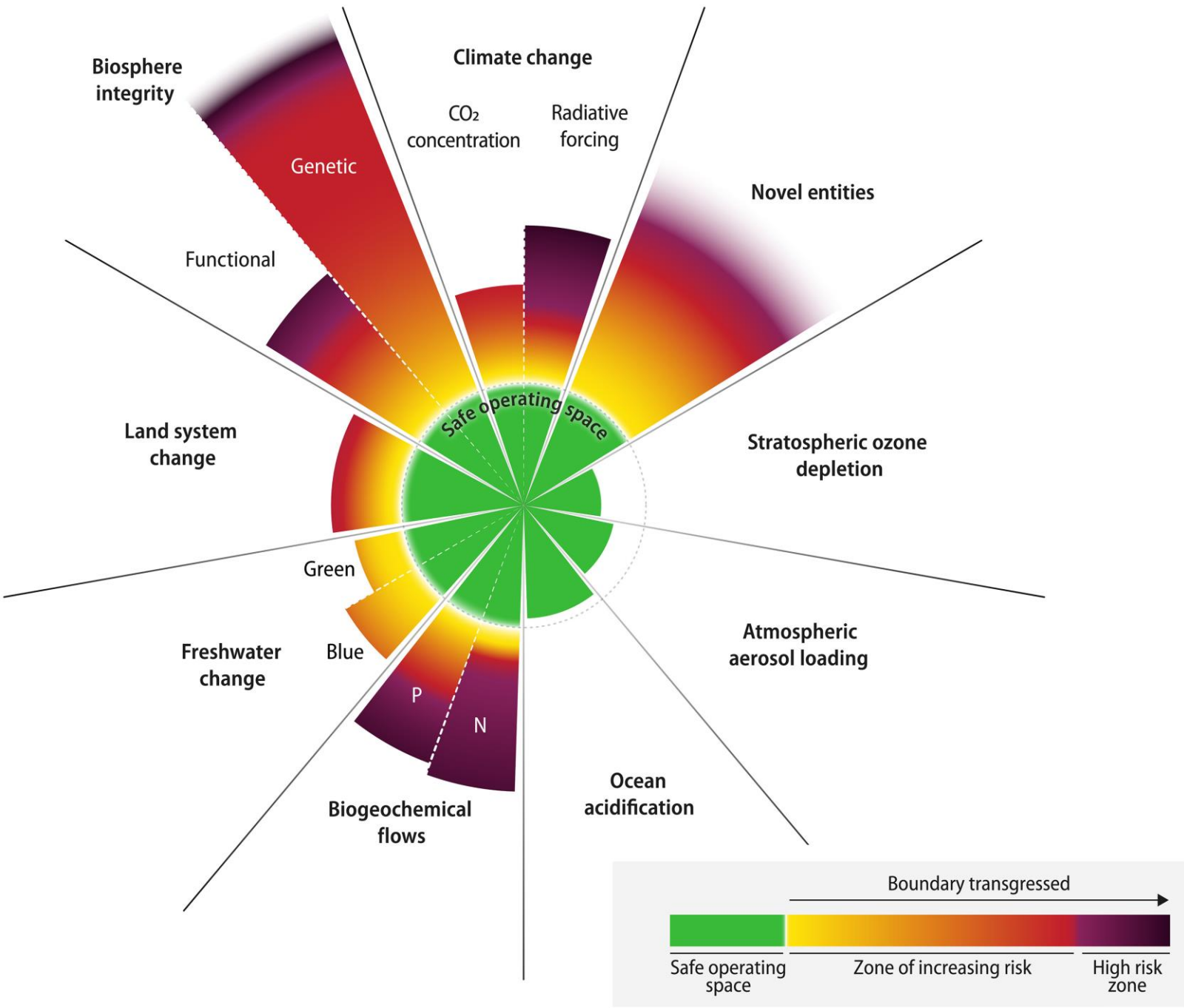




How do we know

where to start?





**Updated Planetary Boundaries**  
 (Figure from Wang-Erlandsson et al, 2022)

*Safe operating space for humanity*

**Anthropocene**



# A holistic approach to regenerative development is the only way to halt biodiversity loss

SDG 15: Sustainably manage forests, combat desertification, halt and reverse degradation, halt biodiversity loss



Dr Eduard Müller, President and Founder, University for International Cooperation, Costa Rica

Humanity has taken dangerous steps in pursuit of its 'development', resulting in substantial losses in biodiversity<sup>1</sup> and ecosystem function<sup>2</sup>. Aware of the implications, in 2002 world leaders agreed that by 2010 a "significant reduction in the rate of biodiversity loss"<sup>3</sup> would be achieved. In the Global Biodiversity Outlook 3, in 2010, Ban Ki-moon, Secretary-General of the United Nations, stated:

**"The target has not been met... the principal pressures leading to biodiversity loss are not just constant but are, in some cases, intensifying. The consequences of failure, if it is not quickly corrected, will be severe for us all."**

## Blog >

Sustainable intensification could end chronic hunger

A holistic approach to regenerative development is the only way to halt biodiversity loss

Improving lives through the advancement of learning

Empowering women to reach society's full potential

Harnessing data to deliver water and sanitation to all

Universal energy access: Going further, faster, and at cost

## All Mentions



RAEngGlobal @RAEngGlobal · Sep 3  
Holistic approach to regenerative development is the only way to halt biodiversity loss, by Dr @EduardMullerC: [ow.ly/VKOv30eKFpR](https://ow.ly/VKOv30eKFpR) #SDGs

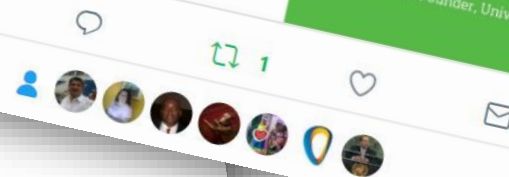
Settings



"We need regenerative development: development that builds a viable, if different, future. Impact assessments must not aim at 'acceptable' levels."

**Dr Eduard Müller**

President and Founder, University for International Cooperation, Costa Rica





# What are our aspirations?

UNIVERSITIES

RANKINGS

DISCOVER

EVENTS

PREPARE

APPLY

Save



Shares

There are many similarities between the lifestyle in Singapore, much so that familiarising oneself with everyday life is likely. International students may still find something uniquely Singaporean.

## A high quality of life

Mercer, the world's largest human resource management consultancy, ranked Singapore as the city with the highest quality of life in Asia in its 2021 Quality of Living Survey.

Efficient city planning, a developed economy, superior geographical location, a reliable public transport system, convenient transportation, a warm climate, along with a top-notch atmosphere make Singapore a study destination suitable for people from all over the world.

Singapore also embraces a rich culture of art, history, architecture, sports, and leisure activities and festivities, attracting many international tourists.



# Singapur



DISCOVER

EVENTS

PREPARE

APPLY

CAREERS

COMMUNITY

## Fantastic Reasons To Study In Singapore

by Stephanie L

Updated April 20, 2021



Sponsored by National University of Singapore (NUS)

Singapore, widely known among its multicultural and multinational residents as the Little Red Dot, has made its mark on the world with many top accolades.

There are countless reasons to love this garden city, from its well-structured urban planning, to its fast-paced economic development, and its status as one of the safest countries in the world.

Not sure  
our chat

# Biocapacity

## COUNTRIES WITH BIOCAPACITY DEFICIT

PERCENTAGE THAT ECOLOGICAL FOOTPRINT EXCEEDS BIOCAPACITY

<b>Singapore</b>	10,300%
<b>Bermuda</b>	5,610%
<b>Réunion</b>	2,580%
<b>Israel</b>	2,450%
<b>Barbados</b>	2,130%
<b>Cayman Islands</b>	1,880%
<b>Bahrain</b>	1,690%
<b>United Arab Emirates</b>	1,570%
<b>Kuwait</b>	1,570%
<b>Cyprus</b>	1,540%

## COUNTRIES WITH BIOCAPACITY RESERVE

PERCENTAGE THAT BIOCAPACITY EXCEEDS ECOLOGICAL FOOTPRINT

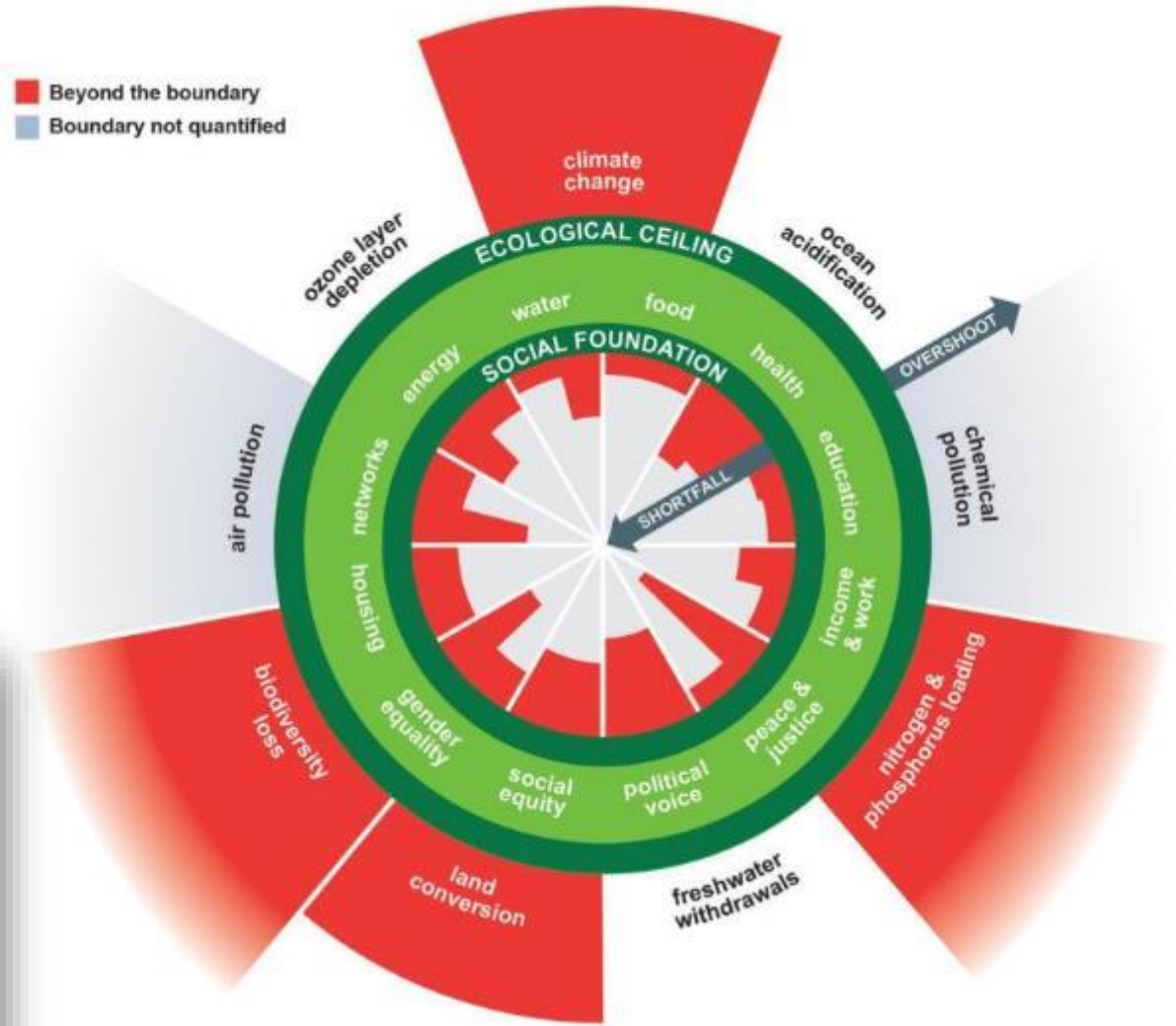
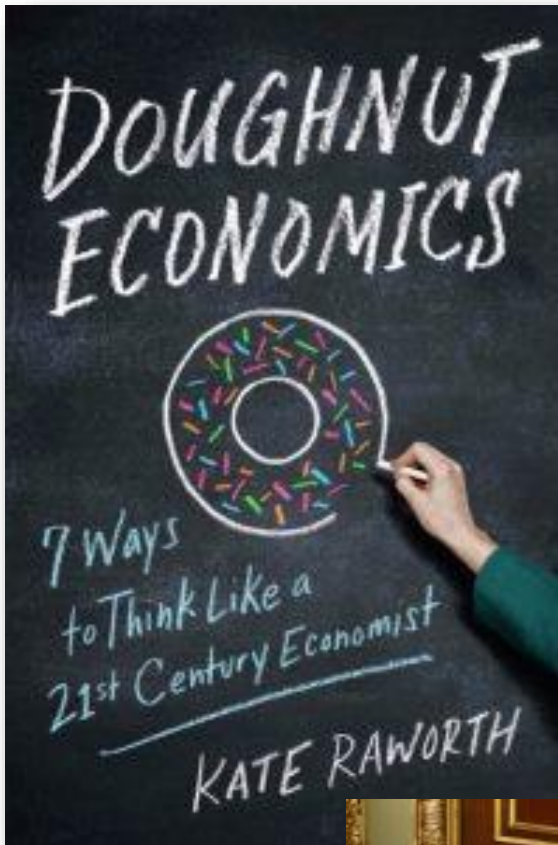
<b>French Guiana</b>	3,950%
<b>Suriname</b>	2,930%
<b>Guyana</b>	2,090%
<b>Gabon</b>	888%
<b>Congo</b>	738%
<b>Central African Republic</b>	540%
<b>Bolivia</b>	402%
<b>Congo, Democratic Republic of</b>	234%
<b>Paraguay</b>	218%
<b>Eritrea</b>	212%



# What is development?



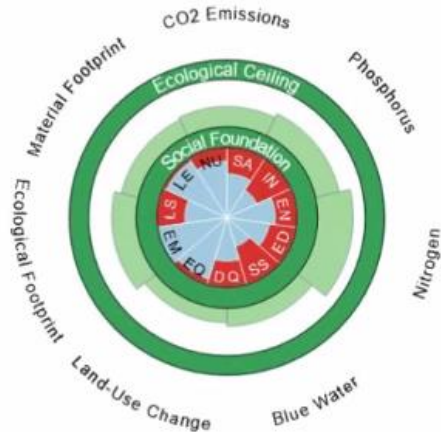






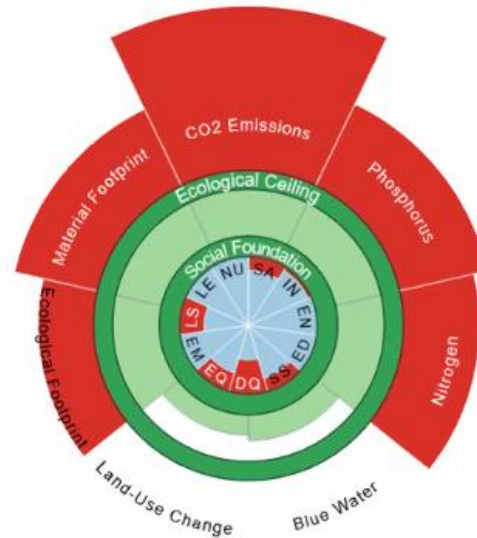
# A Good Life For All Within Planetary Boundaries

**Bangladesh**



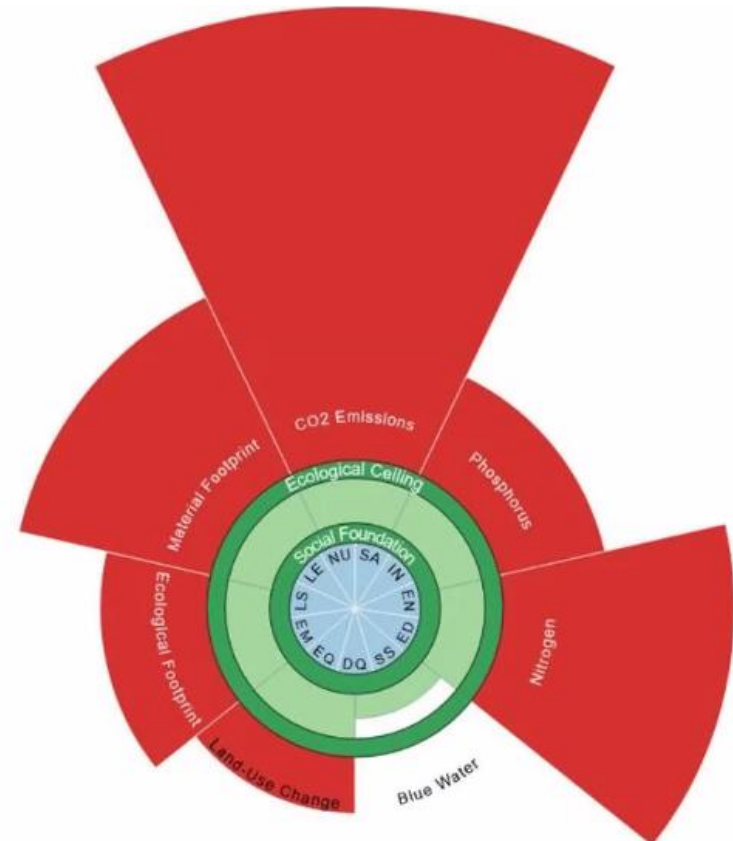
\$5,100 pc

**China**



\$17,200 pc

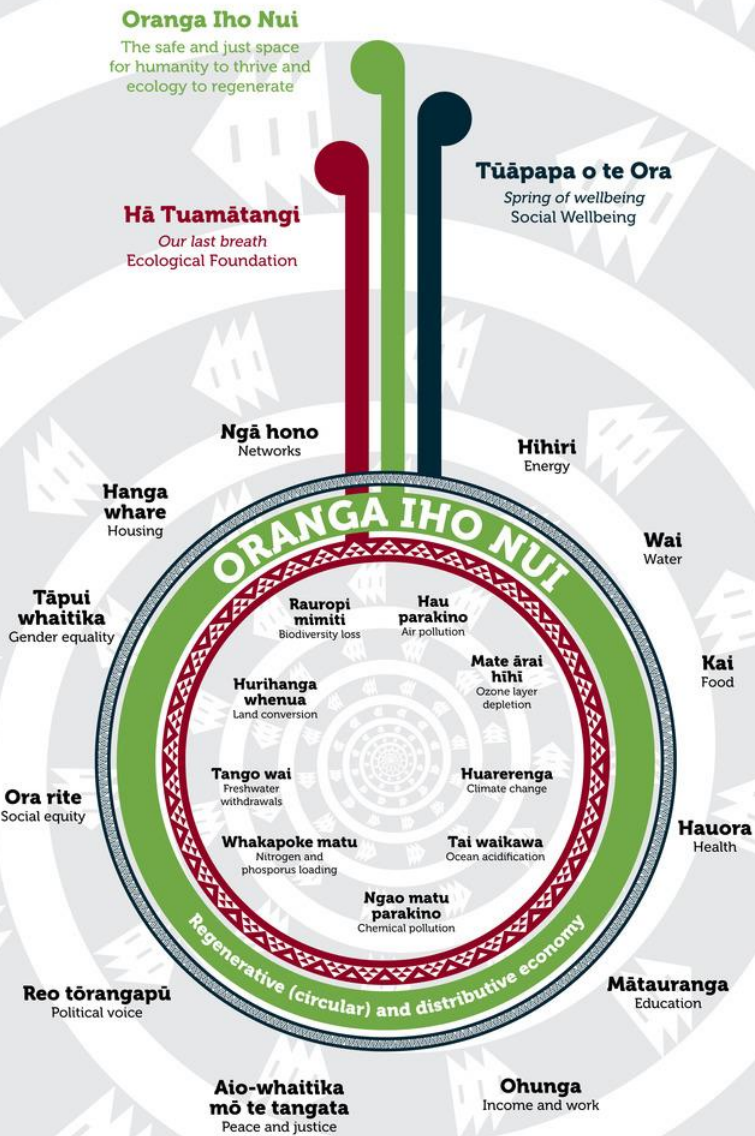
**Norway**



\$44,300 pc



# Te Reo Māori doughnut



The ego or the “I” is born of the division of our consciousness with self-consciousness, and it thrives in division and alienation. Thus, the nature of the ego is such that it is relentless in its denial of reality – this being the continuous, universal transformation, the cosmic flux we are all part of.

**Without compassion, the ego can easily have us be our own worst enemy**, no matter how wise our individual psyche, no matter how civil our society, no matter how profound our religion.

**It is the compassionate element of our being that allows us to embrace our perceived errors and limitations, so we are able to learn from them, enjoy greater truth and be more in harmony with the universal ways.**

A Māori perspective of the iconic doughnut economic model, reimagined by Teina Boasa-Dean and Juhi Shareef. This indigenous reimagining puts the ecological foundation at the centre, denoting that it is Ranginui (the sky, the father of all things) and Papatūānuku (the earth, the mother of all things) that together, enable humanity to thrive.



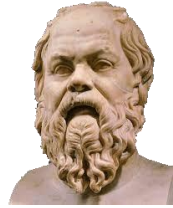
# Challenge #1: Humans and Nature or Humans are Nature?





## Challenge #2

The reductionist approach of Western science and education!



399 BC

- Socrates – Plato: Hypothesis, and **one answer**.



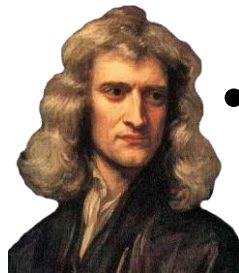
322 BC

- Aristotle - Logic: **True or false**.



1650

- Descartes: **material** and **spiritual** realms are disconnected.



1727

- Isaac Newton: interactions are limited to **forces exerted between the bodies**.







## Result: Detached solutions

### PLAN DE DESCARBONIZACIÓN COMPROMISO DEL GOBIERNO DEL BICENTENARIO



DESCARBONICEMOS  
**COSTA RICA**  
COMPROMISO PAÍS 2018-2050

Avoiding meat and dairy is 'single biggest way' to reduce your impact on Earth

Biggest analysis to date reveals huge footprint of livestock - it provides just 18% of calories but takes up 83% of farmland



📷 Cattle at an illegal settlement in the Jamanxim National Forest, northern Brazil. The 1.3m hectare forest is today a microcosm of what happens in the Amazon, where vast areas of land are prey to illegal woodcutters, stock breeders and gold miners. Photograph: Antonio Scorza/AFP/Getty Images

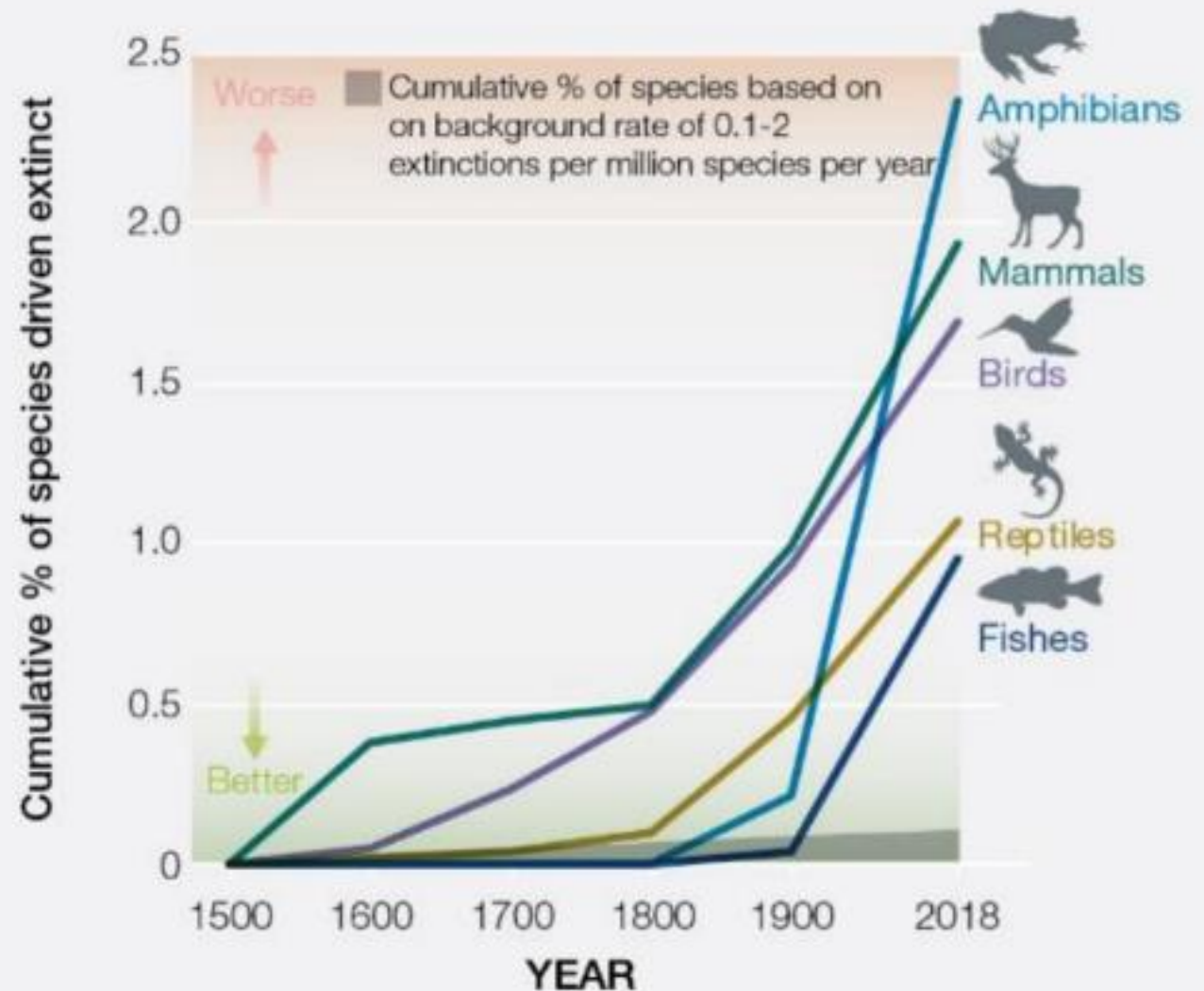


# Challenge #3: Exponential changes

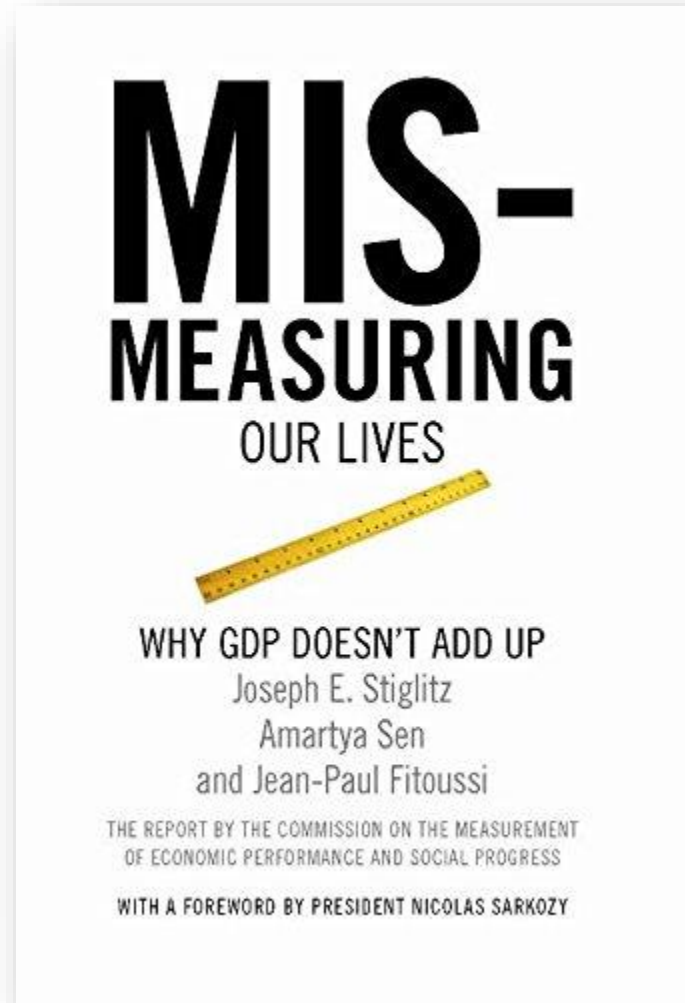
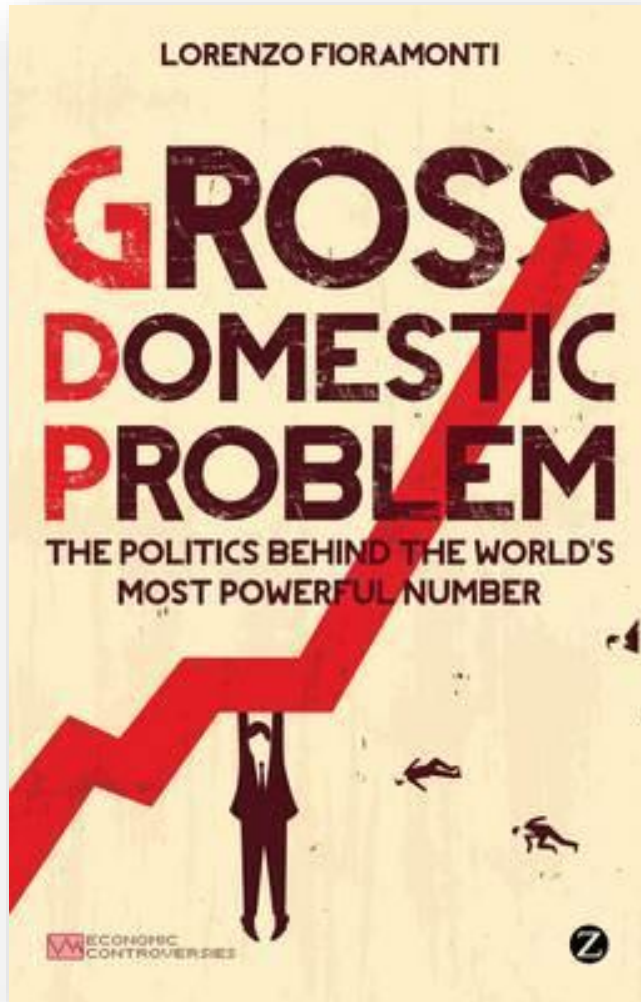


## Hot poles: Antarctica, Arctic 40 and 30 degrees Celsius above normal

by Seth Borenstein



## Challenge #4: Wide acceptance of wrong methods



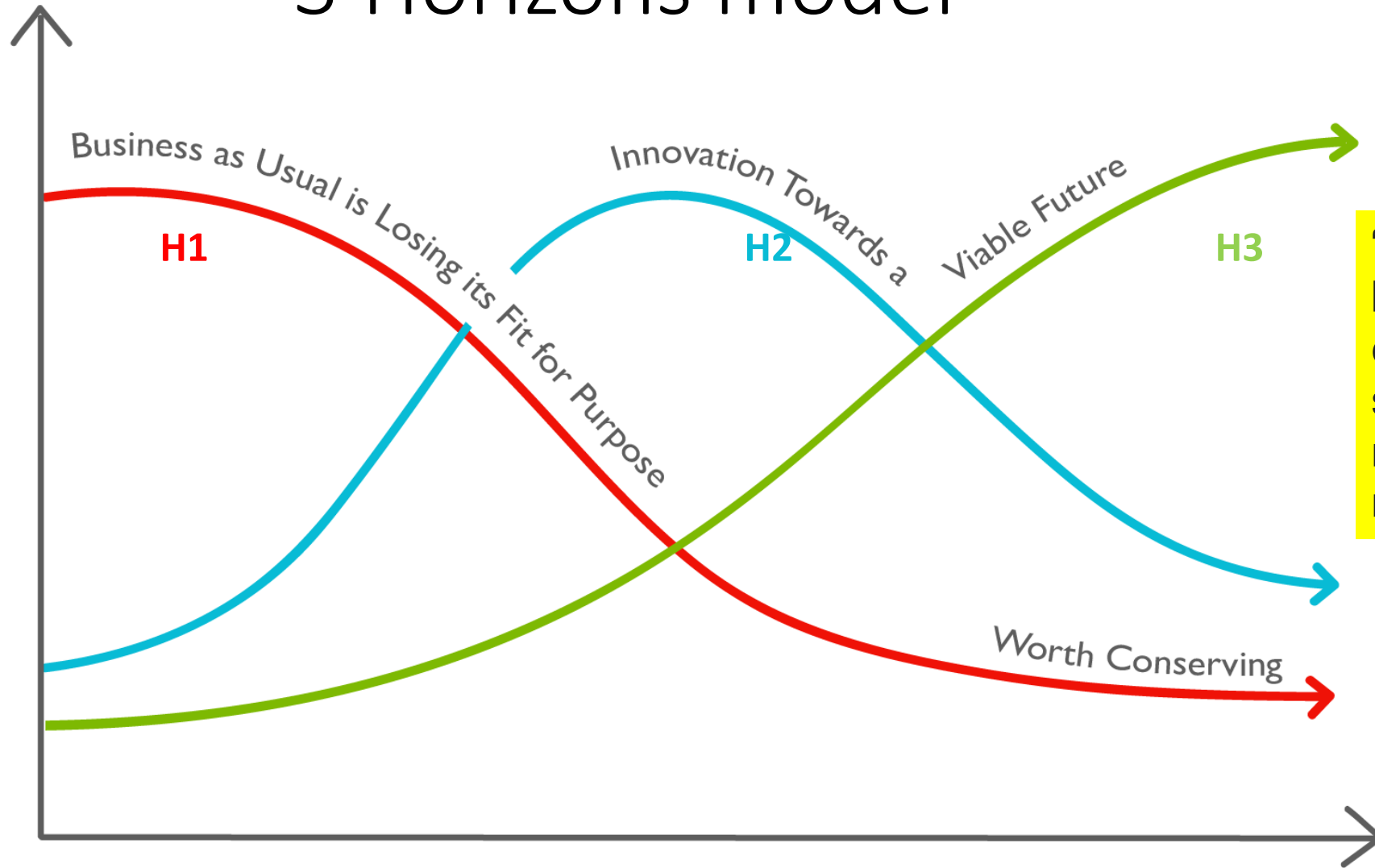


## Challenge #5: Unlearning



Pattern

# 3 Horizons model



Regeneration

“You never change things by **fighting** against the existing reality. To change something, build a new model that makes the old model **obsolete**.” B. Fuller

Evolution → Transformation



## Spirituality

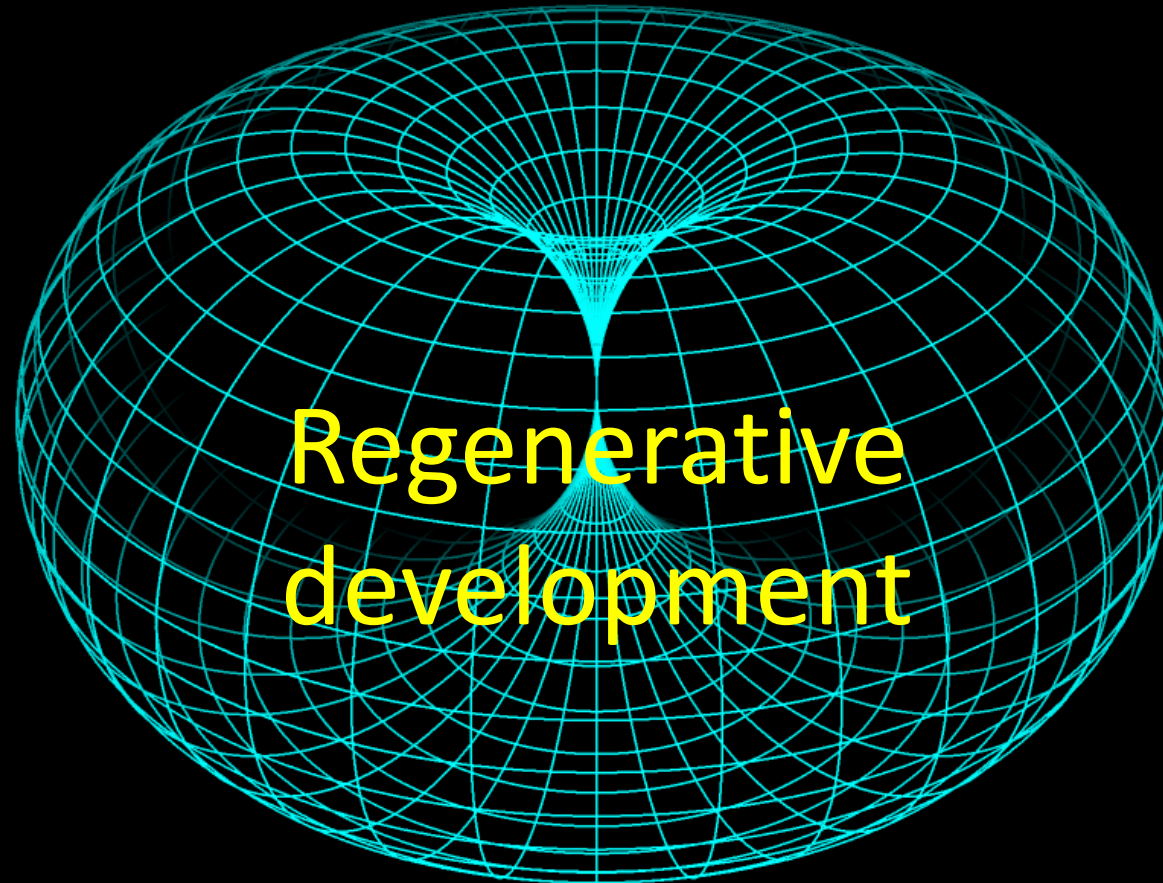
ethics, values, compassion, mindfulness,  
something greater than myself

## Politics

Youth, young women,  
transparency, good  
for all

## Economies

Regenerative,  
wellbeing, inclusion,  
for all life forms



Regenerative  
development

## Culture

Identity, equality  
amalgam, pride,  
heritage, feminine  
principle

## Society

Self determination,  
active participation

## Mother Earth

Ecosystems – biodiversity  
Functional landscapes and seascapes



## Regenerative development

- **Truly holistic development**, departing from the reductionist approach and understanding that the **basis of life is the integrity and function of all ecosystems** that provide essential services to life on the planet.
- New symbiotic relationship with Nature – **benefit for all life forms**.
- It is about **equality, transparency, peace, true education, enlightenment and happiness and HOPE!**

Sustainability = minimize impacts

Regeneration = recover the capacity for life and increase benefits for all

Spirituality involves the **recognition of a feeling or sense or belief that there is something greater than myself**, something more to being human than sensory experience, and that the greater whole of which we are part is cosmic or divine in nature. ... An opening of the heart is an essential aspect of true spirituality.

Maya Spencer, 2012













# What Is Premeditated Ignorance?

*Premeditated Ignorance is the quality or condition of deliberate unawareness. It is when people do not know because they do not want to know. For, if they did know, they would have to take responsibility for the knowledge; and, they would thereby be required to renegotiate their identity and to relinquish the status, privilege, and authority, that are derived from the false order of knowledge. At the very least, they would be compelled to leave their comfort zone.*



# Best scientifically documented planetary extinction...



Data → Information → Knowledge → **Wisdom?**

In 2017 we produced the same amount  
of data as what was produced up to 2016.

# Wisdom

“**Wisdom** or sapience is the ability to **think and act** using knowledge, experience, understanding, common sense, and insight.

Wisdom is associated with attributes such as **compassion**, **experiential self-knowledge**, **non-attachment** and virtues such as **ethics** and **benevolence.**”



A lush, misty tropical forest with tall trees and dense foliage. The scene is filled with various green plants, including ferns and broad-leafed trees, creating a vibrant and textured environment. The lighting is soft and diffused, typical of a forest interior.

# Mother Nature's Wisdom

We are nature  
Functional biomimicry



# Regenerative society

- Participatory
- Decision making
- Common Good
- Cooperation
- Wellbeing





# Culture

- Identity
- Pride
- Heritage
- Values
- Feminine principle
- Link to spirituality







# Politics / policy

- New ideas, new paradigms

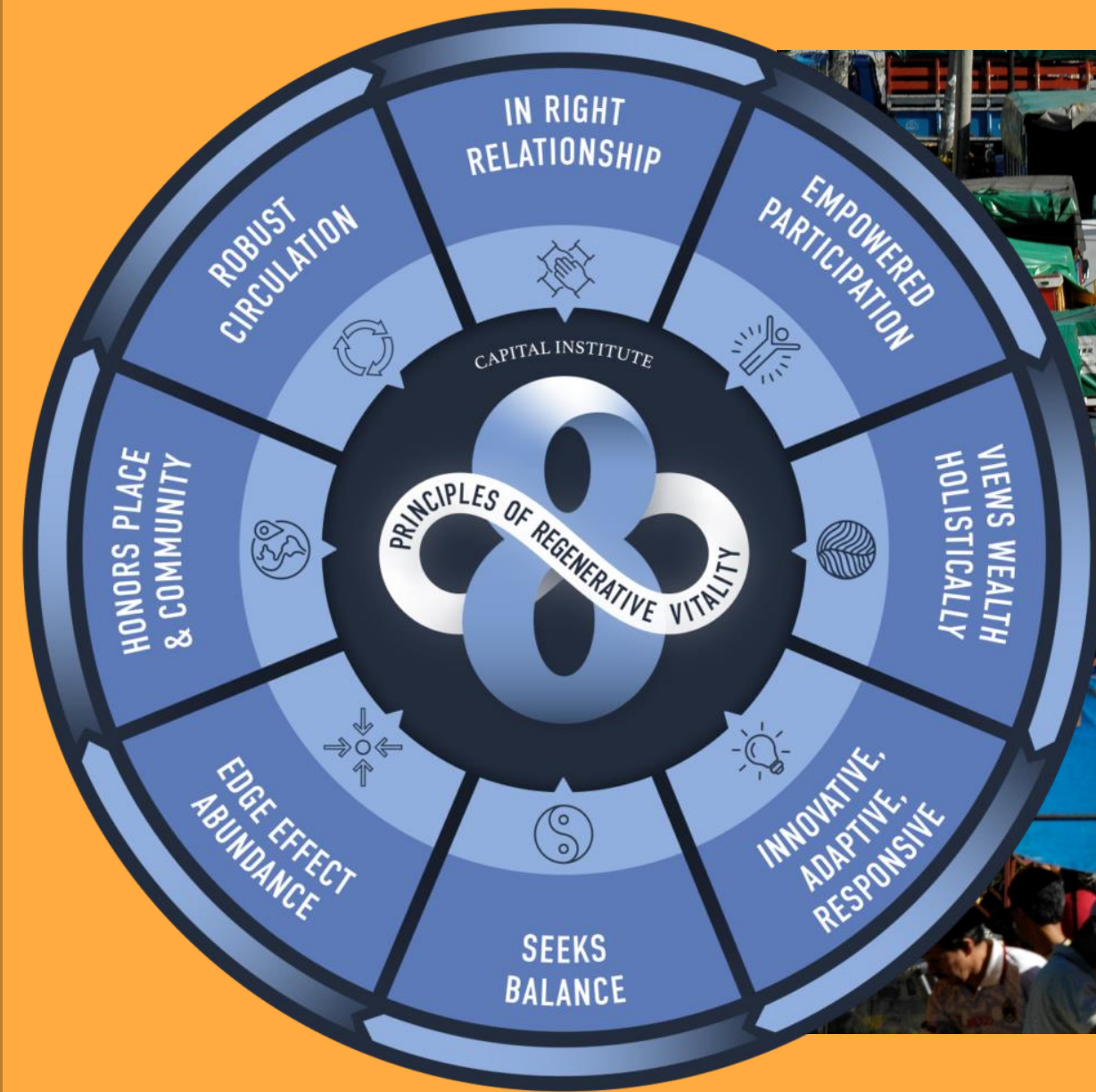
- Youth actively involved

- Inclusive

- Common good above individual

- True democracy





## Economies

- Local
- Inclusive
- Good for business, nature and people
- Cooperation not competition
- Wellbeing for all life forms







WELLBEING  
ECONOMY  
ALLIANCE

# FOR AN ECONOMY IN SERVICE OF LIFE



WEAll is the leading collaboration of organisations, alliances, movements and individuals working to transform the economic system

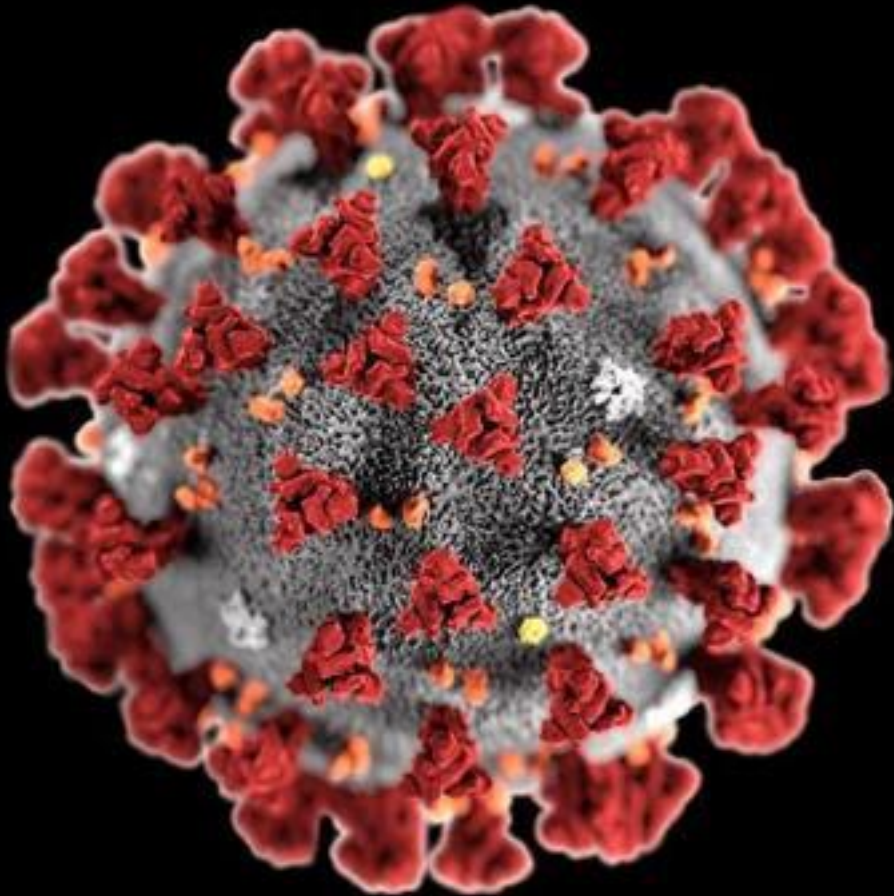
**THOUSANDS OF PEOPLE AND ORGANISATIONS ARE WORKING TOWARDS A WELLBEING ECONOMY**

[Become a Member](#)

[Receive updates](#)



**Nature does not need us,  
we need nature.**



**We have become disconnected  
from Mother Earth.**

**We have not learned to  
become better human beings.**

**We prefer to remain blindfolded  
instead of confronting reality.**





**We are Nature!**  
**We are one!**















# ~~R~~Evolution

EGO



ECO



SEVA

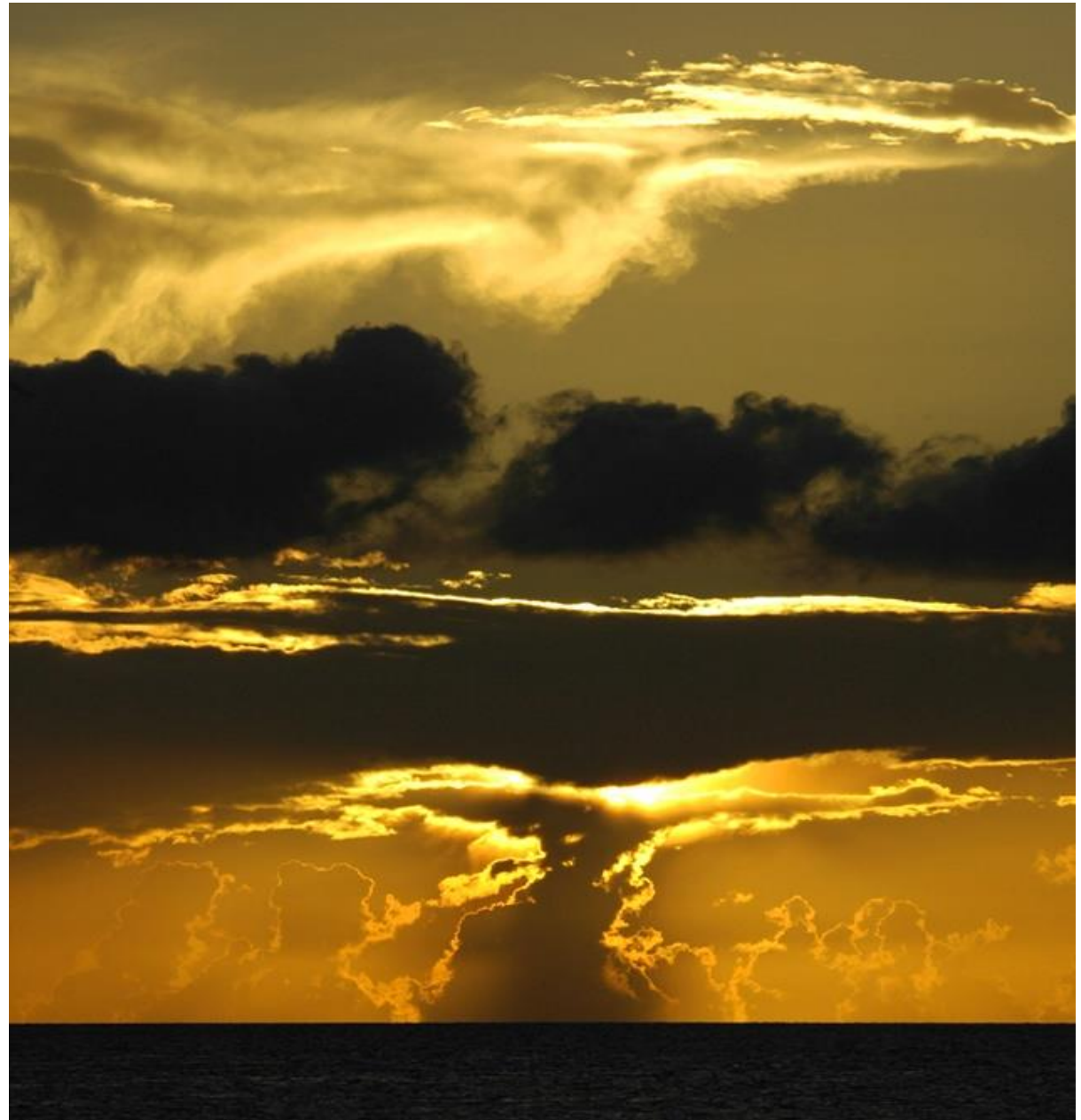


Seva means giving more than you take.



Who is  
responsible  
for the  
future?

How do we  
build the  
future?







~~We are told we need to  
learn to adapt to a  
changing planet.~~


**We build the future we want!  
Build a better tomorrow!**





Are you going to be mere spectators of a **“new normal”** or are we going to co-create a better future?





The choice is ours: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life.

Fundamental changes are needed in our values, institutions, and ways of living.

We must realize that when basic needs have been met, human development is primarily about being more, not having more.

Earth Charter



**Food:**

**Cause?**

**Solution!**





Noticias | Jun 3, 2015

# Costa Rica es el consumidor más voraz de plaguicidas en el mundo

por Jorge Araya



ÚLTIMA HORA

## Un 64% de vegetales frescos nacionales tiene residuos de plaguicidas

Jeffry Garza jeffrygarza.asesor@larepublica.net | Jueves 11 junio, 2020 09:14 am

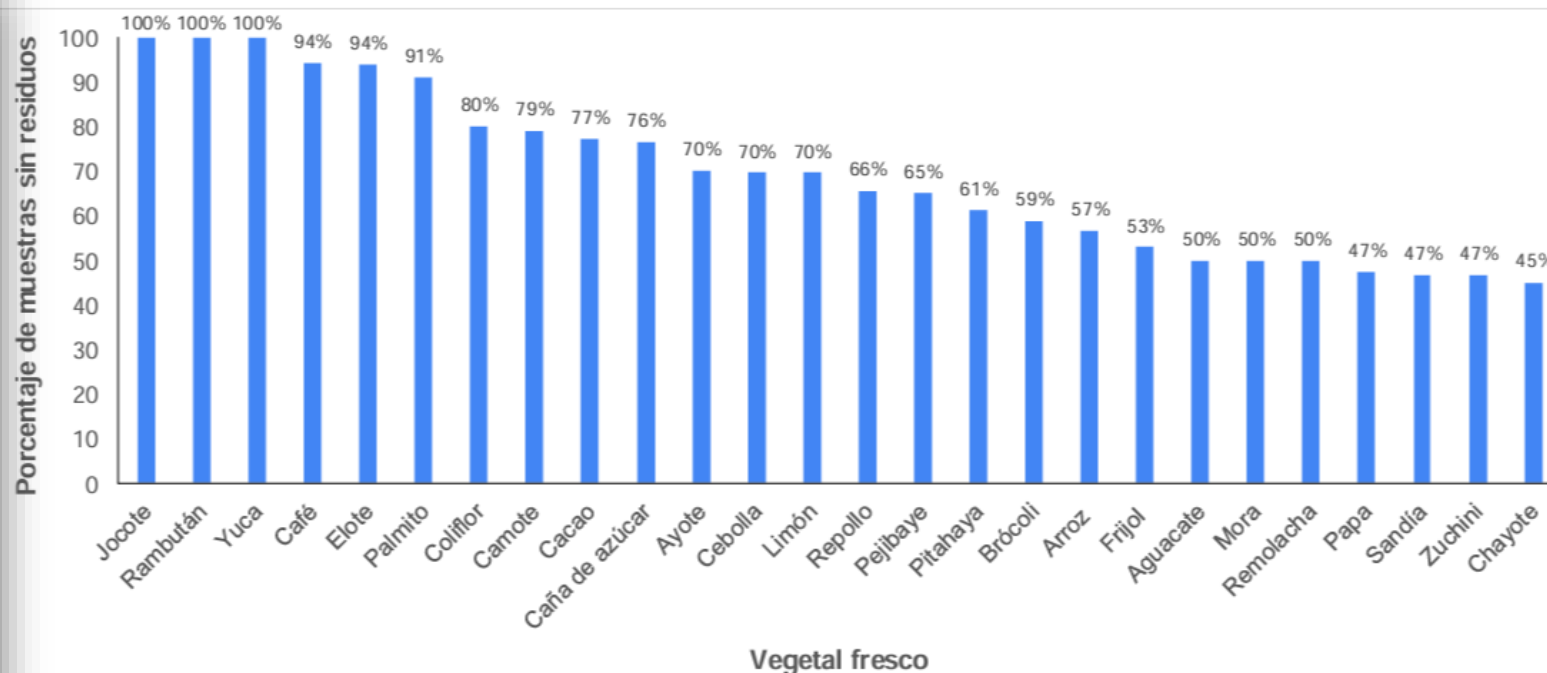


Imagen con fines ilustrativos. Shutterstock/La República



Un 64,2% de los vegetales frescos que se producen en Costa Rica tiene algún residuo de agroquímicos, reveló el último análisis de residuos de plaguicidas del Servicio Fitosanitario del Estado (SFE).

	<b>Informe del año 2021</b> <b>Análisis de residuos de plaguicidas realizados a vegetales frescos</b>	Código:	AE-RES-INF-001-2022
		Página:	9 de 33



**Figura 5. Porcentaje de vegetales frescos de producción nacional sin residuos de plaguicidas detectados. Año 2021.**





← / NEWS

“With negative **impacts on the well-being of at least 3.2 billion people**, the degradation of the Earth’s land surface through human activities is pushing the planet towards a sixth mass species extinction,”

## Media Release: Worsening Worldwide Land Degradation Now ‘Critical’,

“Without urgent action, **further losses of 36 gigatons of carbon from soils** - especially from Sub-Saharan Africa – is projected by 2050 (equivalent to nearly 20 years of emissions from the global transportation sector - all freight and passenger traffic by land, air, water and sea).”

← / NEWS

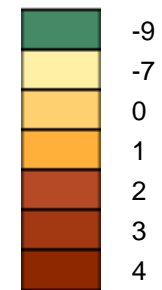




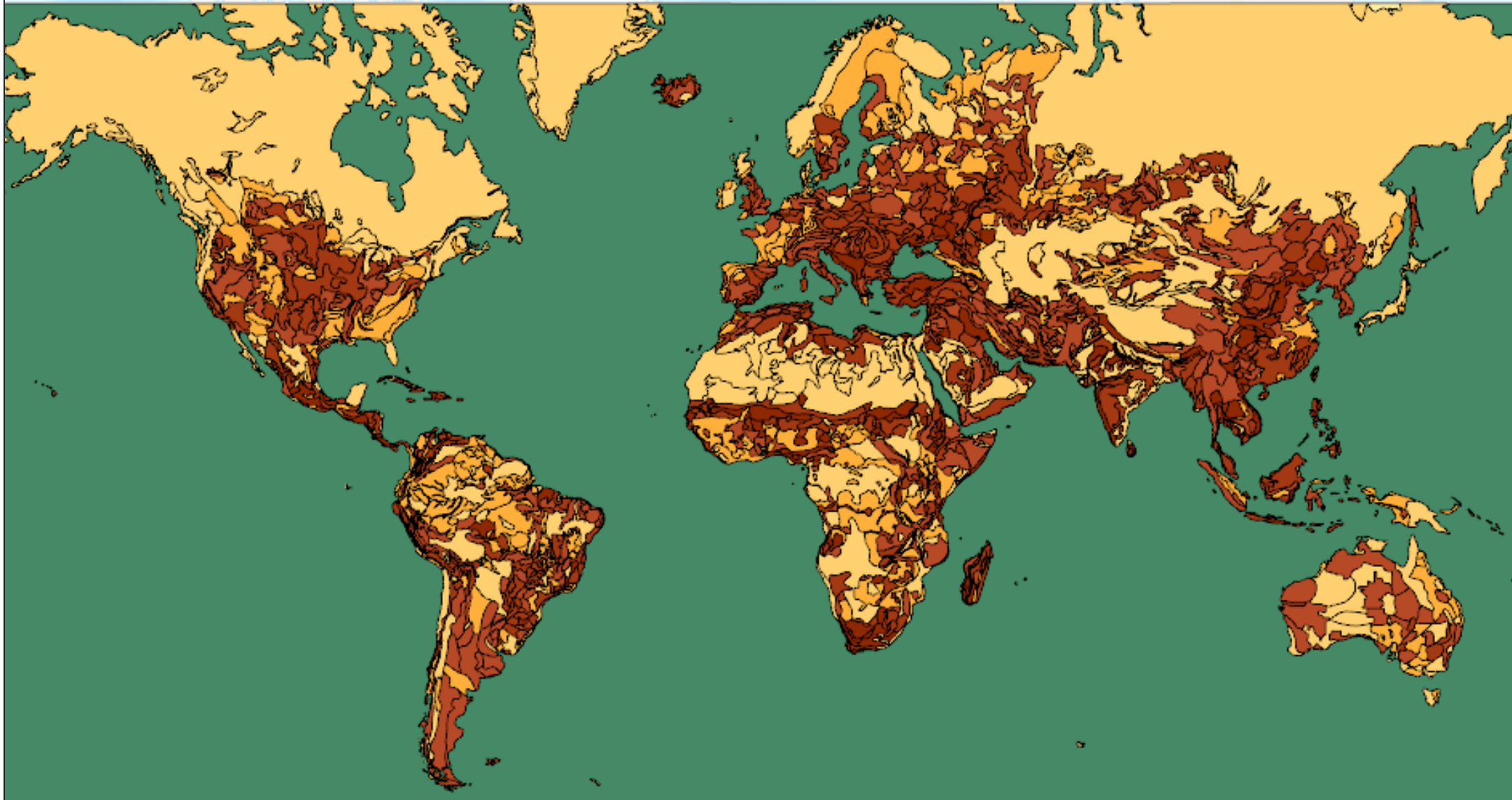
Created: Aug. 23, 2022 by Data Basin Temporary User (Last modified on Aug. 23, 2022)

Legend

Global Assessment of  
Human-induced Soil  
Degradation  
(GLASOD)



Displaying:  
**SEVERITY**



Global Assessment of Human-induced Soil Degradation (GLASOD)

<https://databasin.org/datasets/7254137cabb042298cae0b769cba589f/>

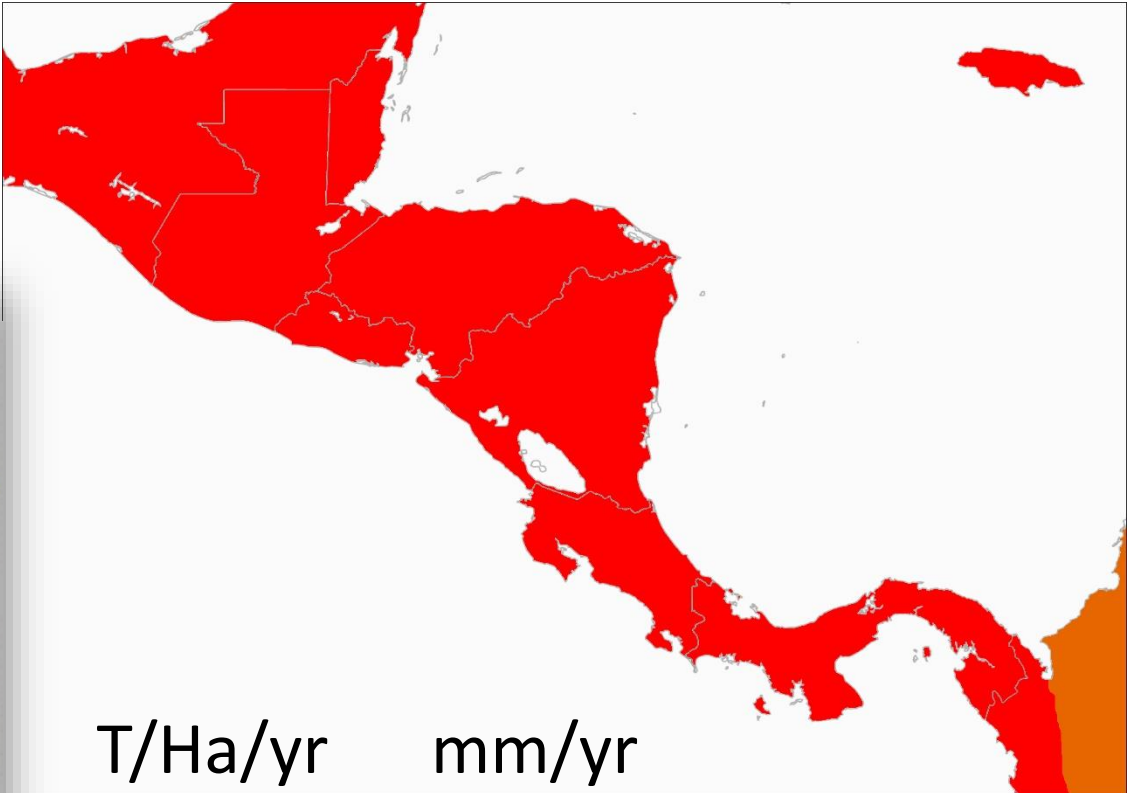








0 1450 km (900 miles)





# Erosion



	T/Ha/yr	mm/yr
	>200	>13
	200-100	13-6
	100-60	4-0,4
	60-5	0,4-0,06
	6 – 1	<0,06
	<1	<0,06



# Agriculture is biology, not chemistry





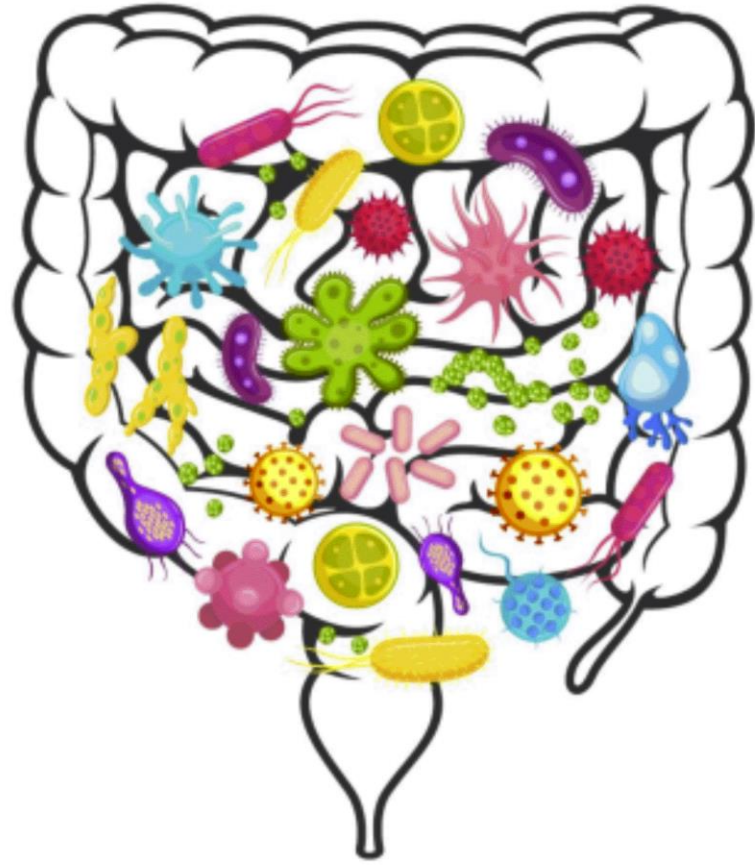
# Yogurt: Healthy?



**INGREDIENTS:** MILK, YOGURT (CULTURED MILK, CULTURED NONFAT MILK), CORN SYRUP, SUGAR, RASPBERRY SWIRL (SUGAR, WATER, RED RASPBERRY PUREE, PECTIN, CITRIC ACID, PHOSPHORIC ACID, MALIC ACID, XANTHAN GUM), WHEY, LEMON CAKE PIECES (WHEAT FLOUR, SUGAR, WATER, MARGARINE [PALM OIL, SOYBEAN OIL, SALT, MONO AND DIGLYCERIDES, ARTIFICIAL FLAVOR, COLORED WITH ANNATTO, CALCIUM DISODIUM EDTA, VITAMIN A PALMITATE], EGGS, POWDERED SUGAR, TURMERIC [FOR COLOR], MONO AND DIGLYCERIDES, LEMON OIL, CITRIC ACID, BAKING POWDER [SODIUM ACID PYROPHOSPHATE, SODIUM BICARBONATE, MONOCALCIUM PHOSPHATE], SALT), BUTTERMILK, CREAM, NATURAL FLAVOR, CITRIC ACID, SODIUM CITRATE, MONO & DIGLYCERIDES, LOCUST BEAN GUM, GUAR GUM, PECTIN, TURMERIC (FOR COLOR), CULTURES.\*  
\*LIVE AND ACTIVE YOGURT CULTURES INCLUDING S. THERMOPHILUS AND L. BULGARICUS.

**CONTAINS: MILK, WHEAT, EGGS, AND SOY**









## REVIEW

# Managing soils for negative feedback to climate change and positive impact on food and nutritional security

Rattan Lal

Carbon Management and Sequestration Center, The Ohio State University

-157ppm

**ABSTRACT**

The increase in atmospheric concentration of carbon dioxide to 415 ppm in 2018, along with the enrichment of greenhouse gases, has led to a global mean temperature increase of 1°C. Among anthropogenic sources, historic land use and conversion of natural to agricultural eco-systems has and continues to be an importance source. Global depletion of soil organic carbon stock by historic land use and soil degradation is estimated at 133 Pg C. Estimated to 2-m depth, C stock is 2047 Pg for soil organic carbon and 1558 Pg for soil inorganic carbon, with a total of 3605 Pg. Thus, even a small change in soil organic carbon stock can have a strong impact on atmospheric CO<sub>2</sub> concentration. Soil C sink capacity, between 2020 and 2100, with the global adoption of best management practice which creates a positive soil/ecosystem C budget, is estimated at 178 Pg C for soil, 155 Pg C for biomass, and 333 Pg C for the terrestrial biosphere with a total CO<sub>2</sub> drawdown potential of 157 ppm. Important among techniques of soil organic C sequestration are adoption of a system-based conservation agriculture, agroforestry, biochar, and integration of crops with trees and livestock. There is growing interest among policymakers and the private sector regarding the importance of soil C sequestration for adaptation and mitigation of climate change, harnessing of numerous co-benefits, and strengthening of ecosystem services.

**ARTICLE HISTORY**

Received 5 November 2019

Accepted 16 January 2020

**KEY WORDS**

Soil carbon; anthropocene; historic carbon loss from soils; soil carbon sink; international initiatives on soil carbon sequestration



Join in >



FOLLOW US...    



Home

How MFM helps

News

Recipes

Get involved

Supporters

Schools

Store



## Climate Pledge campaign boosts Meat Free Monday message



Inicio / Ambiente / "Para frenar el calentamiento global hay que dejar de comer carne", dice Christiana Figueres

## "Para frenar el calentamiento global hay que dejar de comer carne", dice Christiana Figueres

Por [Lr21.Com.Uy](#) - 3 Febrero, 2019 - EnAmbiente  2



Christiana Figueres. Redes

Montevideo, 3 Feb (lr21.com.uy).- Para frenar la catástrofe en ciernes que significa el calentamiento global, hay que dejar de comer carne. Así lo afirmó Christiana Figueres, quien fuera hasta hace poco más de un año la máxima responsable las Naciones Unidas para el Cambio Climático y una de las voces con mayor autoridad para hablar de este tema.

"Salí de Davos alentada. A pesar de que el cambio climático ha sido catalogado por cuarto año consecutivo como la principal amenaza para la economía mundial, por primera vez se habla de él como algo a lo que hay que hacer frente de forma colaborativa", dijo la experta.

El 2019 arrancó con una noticia poco halagüeña: un estudio de la firma Rhodium Group confirmó que Estados Unidos sigue siendo el segundo mayor emisor de gases de efecto



# Bill Gates Wants You to Avoid Eating Beef and Switch to Synthetic Meat to Fight Climate Change

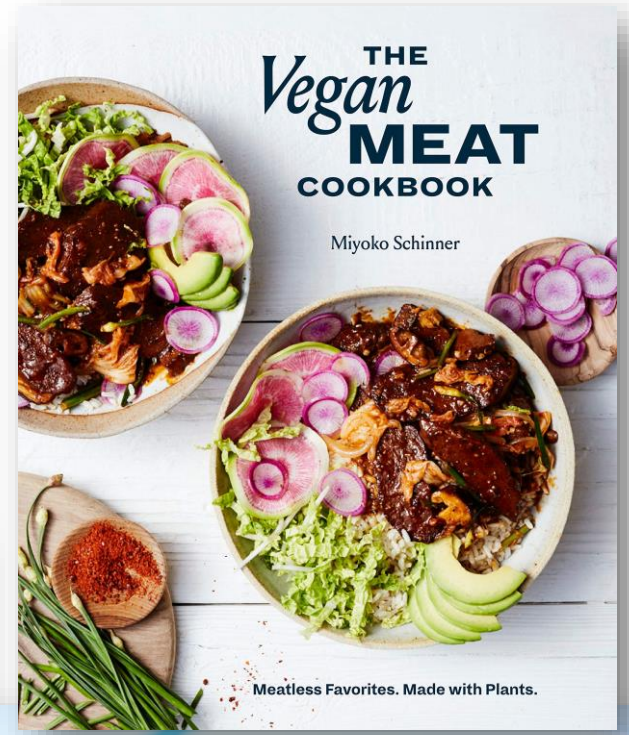


Image credits: Reuters.



## Scientific Challenges and Solutions for Cultured Meat Manufacturing

By Andy Tay, PhD - April 7, 2021 0





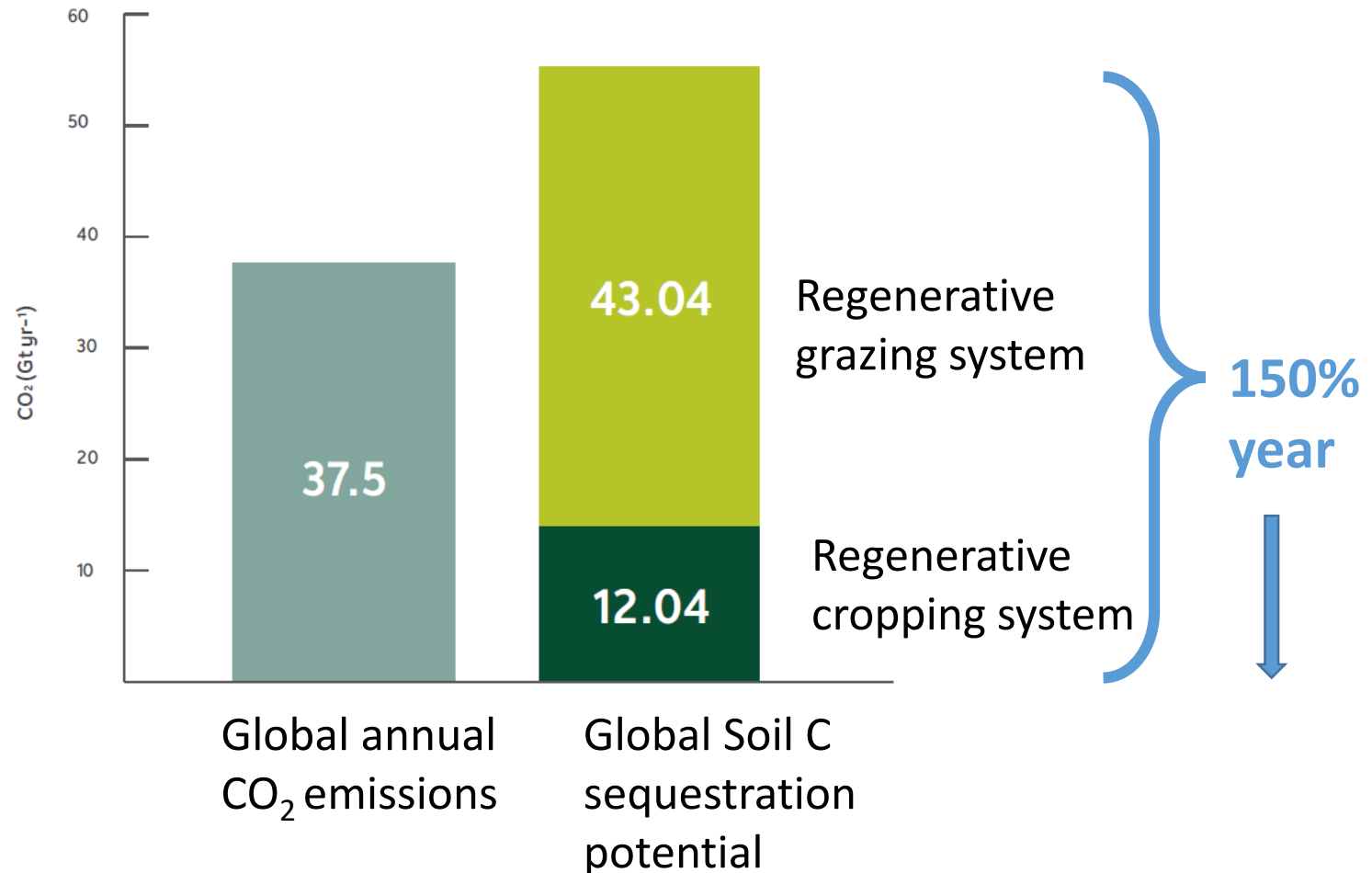
# Carbon sequestration potential of global adoption of regenerative agriculture



**REGENERATIVE AGRICULTURE**  
*and the SOIL CARBON SOLUTION*

SEPTEMBER 2020

AUTHORED BY:  
Jeff Moyer, Andrew Smith, PhD, Yichao Rui, PhD, Jennifer Hayden, PhD







# Holistic Grazing

3.500 million ha of grasslands could capture 88 - 210 GtC, would bring us down to 350 ppm CO<sub>2</sub> in 30 years.

2014, Seth J. Itzkan



Helping solve climate change from the ground up.



TCU addresses UN's pre COP 25 in Costa Rica on importance of soil health to fight climate change.





Measurement, Reporting & Verification

# MRV COLLECTIVE

An expanding coalition of MRV (Measurement, Reporting & Verification) companies building an open MRV protocol (off-chain and on-chain) to accelerate investment in Nature-based-Solutions for climate mitigation.

[join the collective](#)



# SIF's Solutions: Better Measurement

- The University of Texas at Dallas has developed electrochemical sensors for SIF that measure soil organic matter, soil inorganic carbon, total soil carbon, pH, moisture, bulk density, nitrate and other soil health parameters **accurately, in-situ and in real-time**
- Our **affordable sensors** have been validated by Texas A&M University and show over 90% accuracy both in-lab and in-field against the gold standard.

June 2023

[hbrainard@sif.earth](mailto:hbrainard@sif.earth)



THE UNIVERSITY  
OF TEXAS AT DALLAS





News Center > Science & Technology

## UTD Team's New Sensor May Be Groundbreaking Tool for Soil Health

By [Kim Horner](#) | March 8, 2023



UT Dallas researchers received funding from public benefit corporation Soil in Formation to create an electrochemical sensor designed to

**“Prasad said the sensor represents a paradigm shift in soil testing.”**

**PEER -REVIEWED:** “Prasad’s team described the testing of soil using electrochemical sensors in an article published June 29, 2022, in the [Journal of The Electrochemical Society.](#)”

ADVERTISEMENT

BUSINESS | HEALTHCARE | TECHNOLOGY

Building Dallas’ Future Professionals, Leaders and Business

WORKFORCE AND ECONOMIC DEVELOPMENT

## ‘Groundbreaking’ Soil Sensors From UT Dallas Bioengineers Could Help Combat Climate Change, Food Insecurity

“This is the equivalent of having a wearable health sensor on your body that tells you in real time what’s happening. Think of it as a wearable for the soil,” Dr. Shalini Prasad said.





# Educating the future professionals now!

Exponentiality of planetary collapse and technological development

Uncertainty

Permanent change

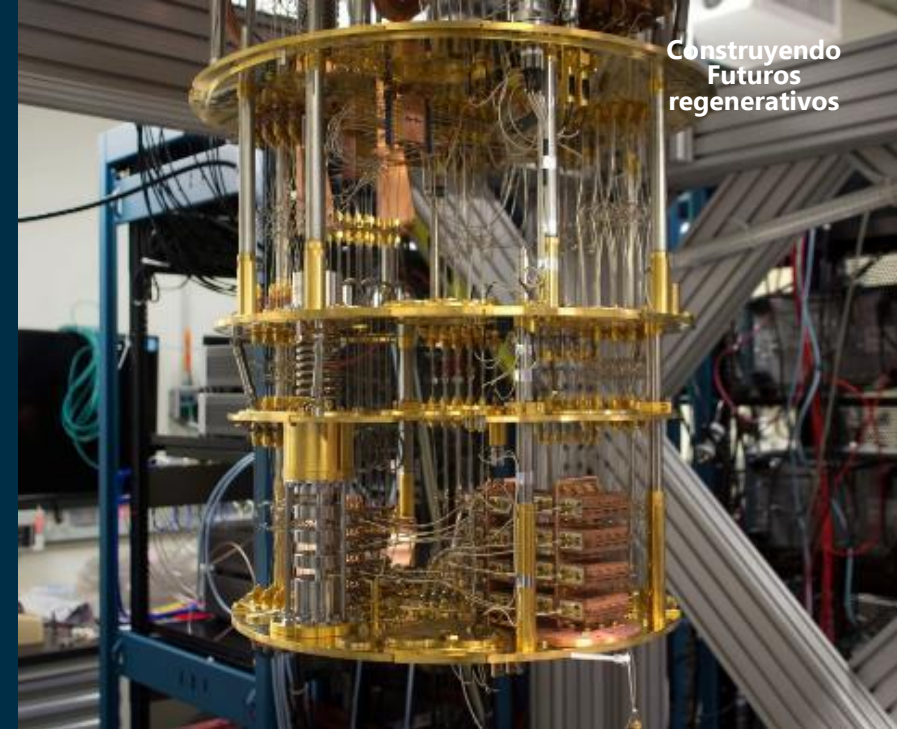
Disruption

Changing institutional frameworks

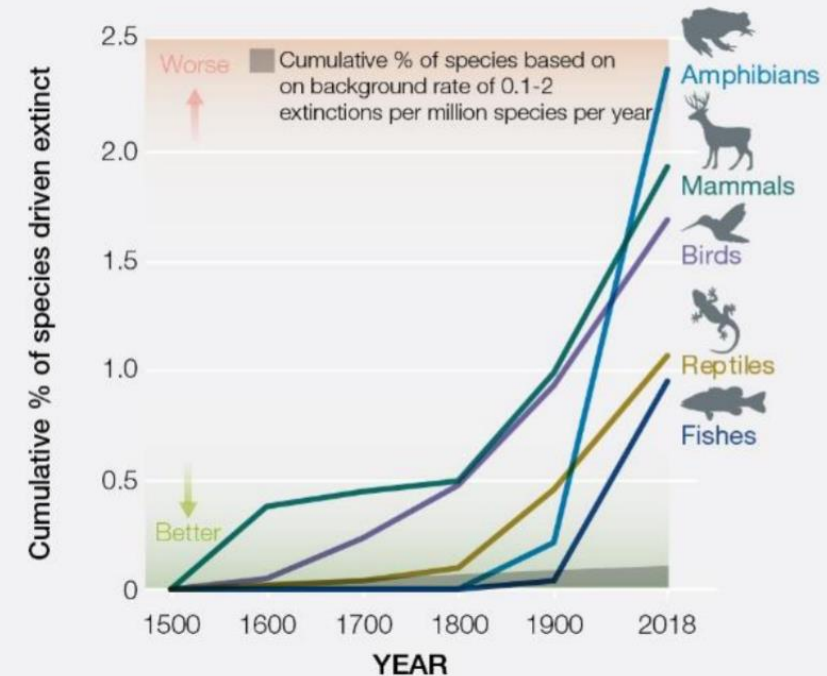
Political and social pressures - violence

Fake news and manipulation of the populations

Scarcity vs. abundance



Construyendo  
Futuros  
regenerativos





# HIGHER EDUCATION IN THE ERA OF THE FOURTH INDUSTRIAL REVOLUTION

Edited by Nancy W. Gleason

Chapter

## Regenerative Development in Higher Education: Costa Rica's Perspective

Higher Education in the Era of the Fourth Industrial Revolution, 2018

ISBN : 978-981-13-0193-3

Eduard Müller



[Read Online](#)





# Education for the Future?

**How do we learn to co-create the future we want?**

**We are part of the answers if we act, now**

**Principles and values – ethics and respect**

**“Soft” skills = critical skills**

**It starts with me!**



**What do we need to learn?**

**How do we learn?**

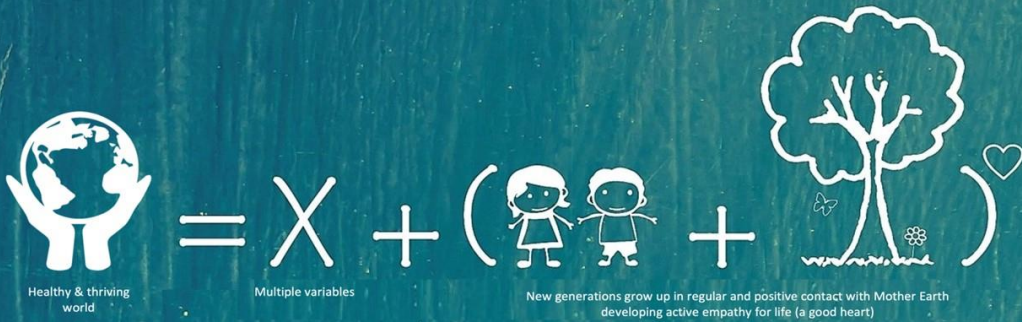
**Why do we learn?**

**Where do we learn?**

**How do we measure what we learned?....**







## Escalating “TiNi: Children’s Land” methodology

*An innovative methodology that catalyzes the regeneration of life with the new generations and Mother Earth as allies*



## Children’s Land (TiNi)

It is a methodology that connects children and youngsters with Mother Earth and empowers them as agents of change for sustainable development. It consists in granting them a space of land, which can be from three pots, where they nurture life and biodiversity with love generating well-being for themselves, others and nature.

A Children’s Land can be implemented at home, school, in the neighborhood or community, in urban and rural areas, and in various ecosystems. Children’s land helps develop active empathy for life and is an indicator of the children’s contribution to the sustainable development of their neighborhood.

✓ Recognized as a good practice in Education for Sustainable Development by **UNESCO (2012)**.

✓ Recognized by the **Ministry of the Environment of Peru** as a good practice of Education for Sustainable Development (2013).

✓ Institutionalized by the **Ministry of Education of Peru** as EsVi - Spaces of Life, currently in +5900 schools. (2015).

✓ Institutionalized by the **Ministry of Education of Ecuador** as Children’s Land for Good Living, present in +6000 schools (2017).

✓ Recognized as one of the best 7 innovative initiatives in Latin America for social impact by **VIVA (2020)**.

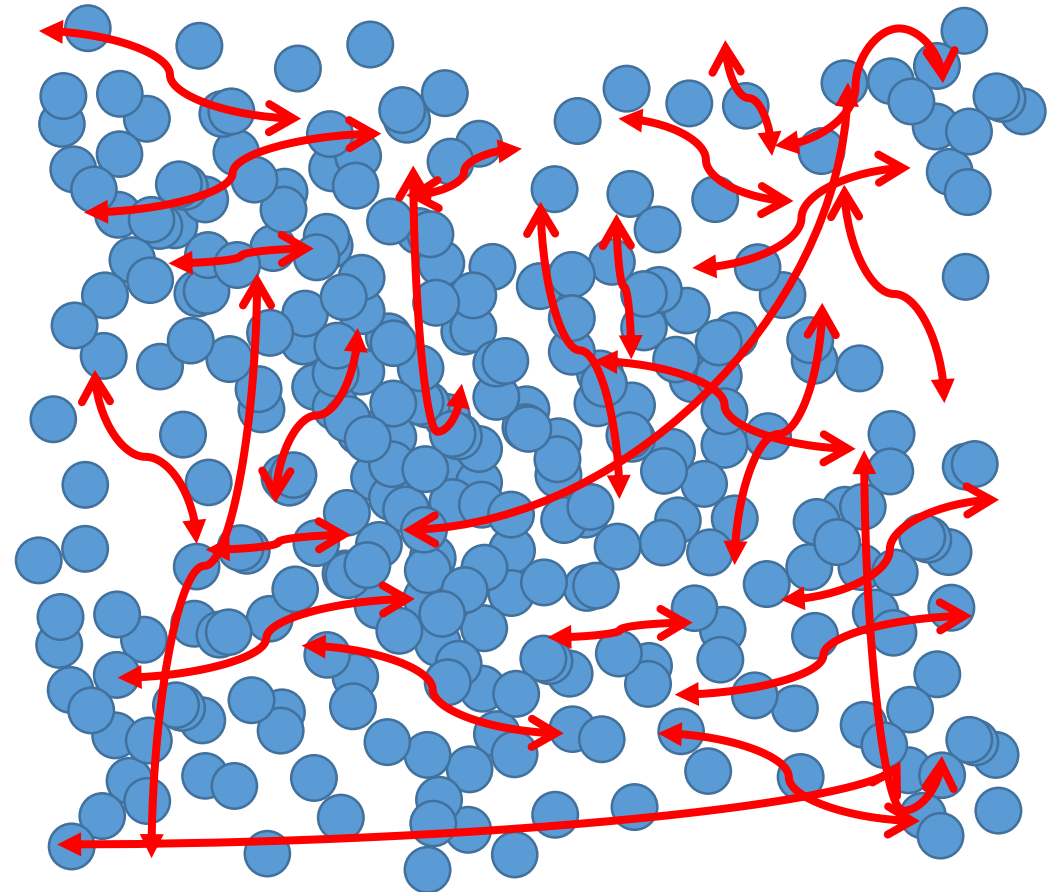
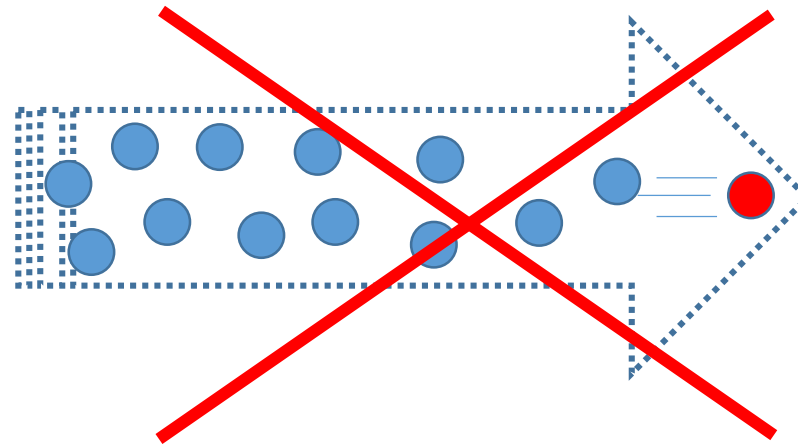
✓ Present in Peru, Ecuador (+ Galapagos), Colombia, Brazil, Chile (+ Rapa Nui), El Salvador, Canada, Japan and India.



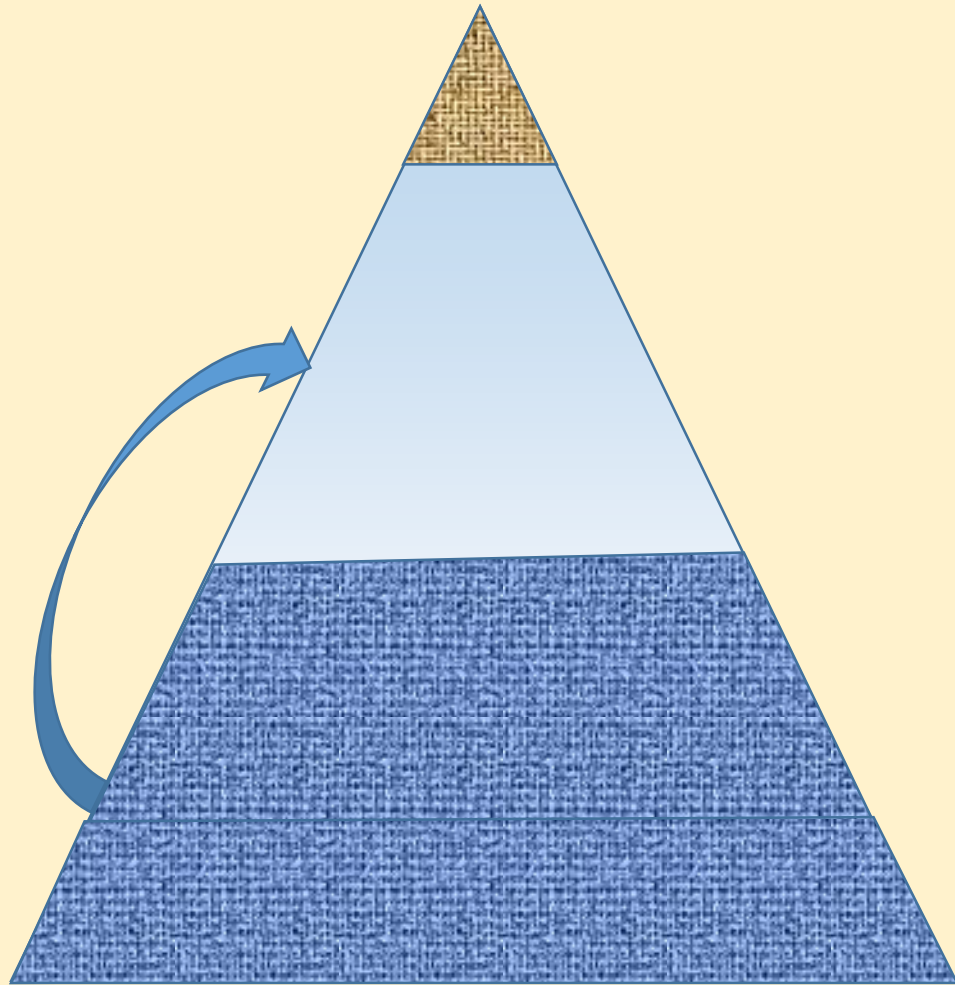
# Complete redesign of education:

## Passion + spirituality

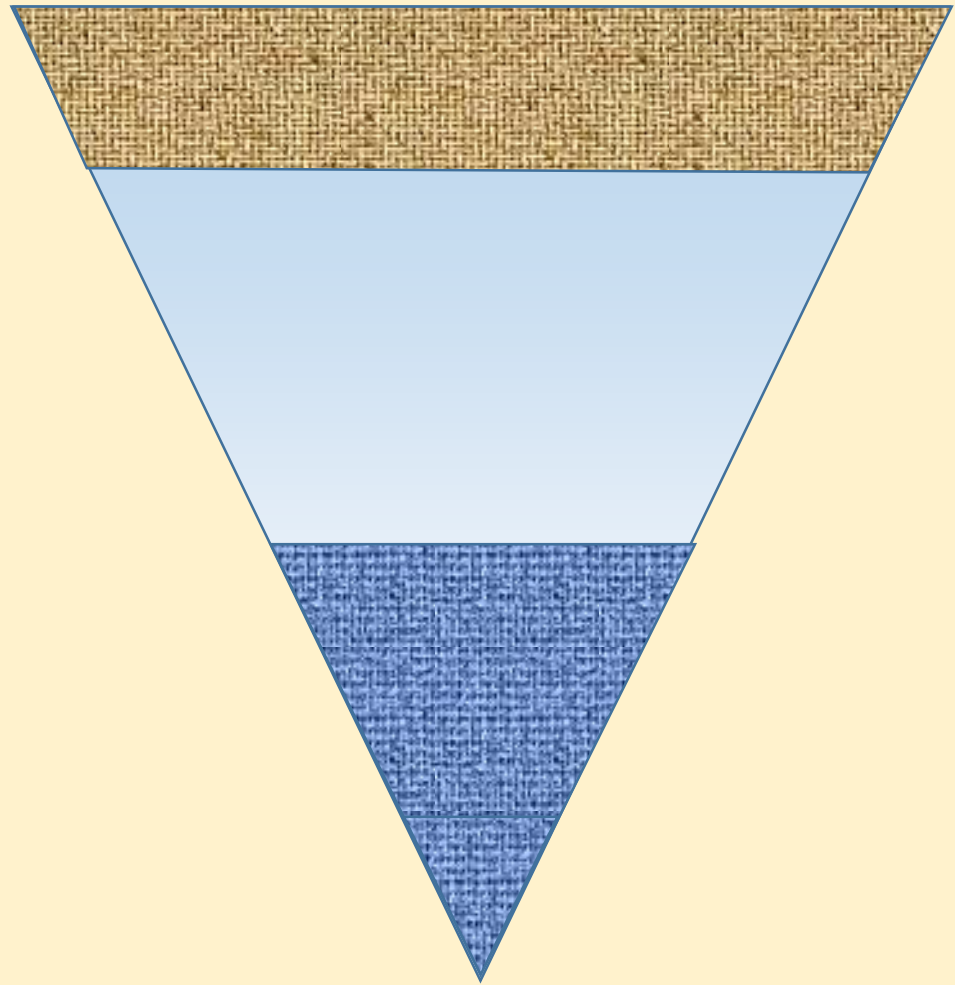
- Cooperation
- Co-creation
- Responsibility
- Creativity
- Mindfulness
- Resilience
- Adaptability
- Proactivity...







Problems



Resources  
required



# Education for the future!



Clase abierta con Melina Ángel

## Biomímesis para la regeneración

Jueves 12 de mayo, 5:00 p.m. (Costa Rica)  
Participación gratuita



UCI  
Universidad para la  
Cooperación Internacional

### The Fierce Urgency of Now

The denigration of our planetary environment has reached a critical point – in the last 50 years there has been a 69% loss of biodiversity of insects, and forests, according to the World Wildlife Fund. This means that sustainability is no longer an option for humanity. One cannot destroy a habitat. The only option left for us is regeneration. Regenerative Development is a holistic approach to development where the environment is enhanced. Humans must re-vitalize, renew, and regenerate both community and planet to ensure not only our survival but the survival of



## Certificate in Regenerative Entrepreneurship

### Professional Certificate

Be a pioneer in co-creating regenerative development initiatives and contribute to grow true and pragmatic solutions to solve the most challenging planetary issues.



Are you ready to unlearn and transform your paradigms in a transdisciplinary journey?

Start date:  
**May 31st, 2022**

For more information: [cre@uci.ac.cr](mailto:cre@uci.ac.cr)

ether!  
olution  
ng first  
ration!

ion thrive.

he sky. As to  
we need to  
gical history  
w much" is  
and many  
before we  
d through  
planet, we  
rich soils  
or better  
eneration  
tunities  
ther to  
allow  
heart,

lobal  
que  
ing  
ing  
fic  
es  
s  
r





## Regenerate Costa Rica Hub

Recovering the safe operating space for humanity through carbon capture, biodiversity and wellbeing

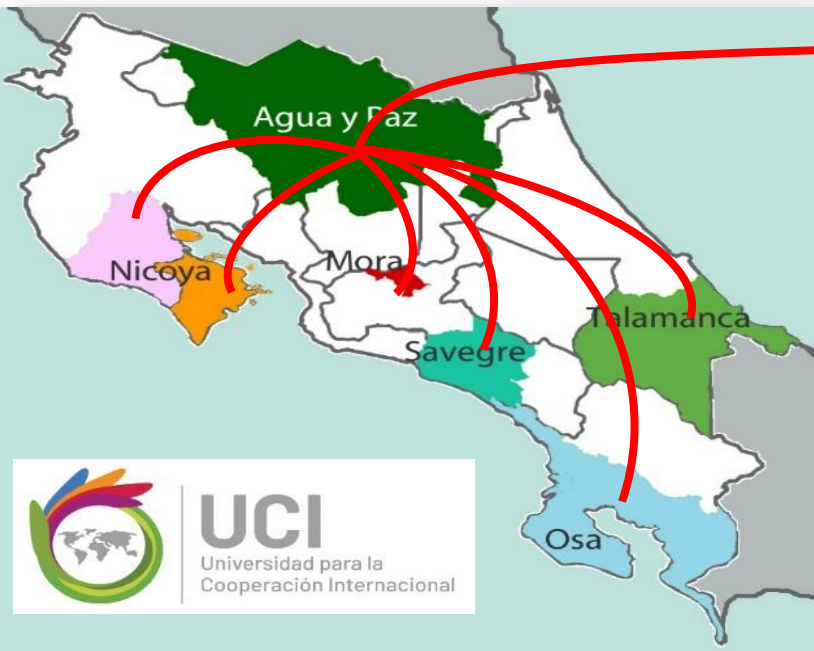
- ↓ CO<sub>2</sub>
- ↑ Biodiversity
- ↑ Wellbeing – livelihoods

Launched on July 20, 2018 and member of the Regenerative Communities Network  
<https://regencommunities.net/>

## Regenerative communities

Bringing together regenerative territories and bioregions: **Learning sites.**

Impact at scale



Network of networks coordinated for co-creation of solutions.

First responders for regeneration – regenerative entrepreneurs

Regenerative entrepreneurs.



**Global regenerative university**





COSTA RICA  
REGENERATIVA



**Colombia  
Regenerativa**



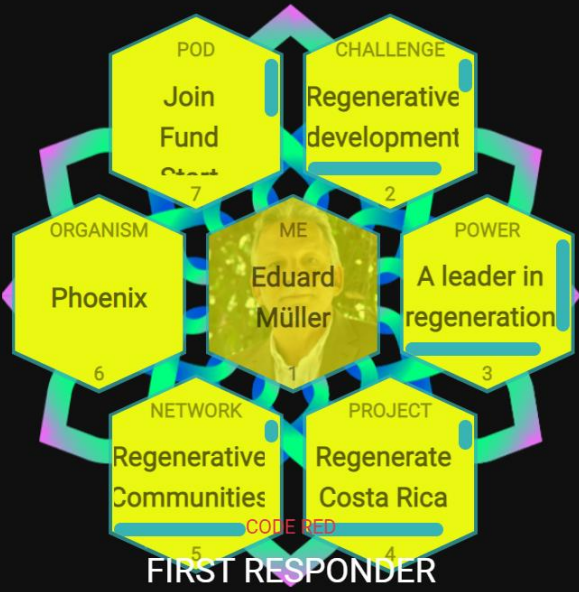
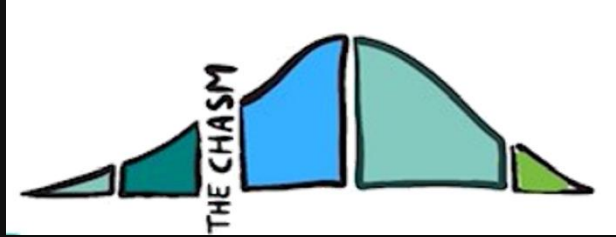
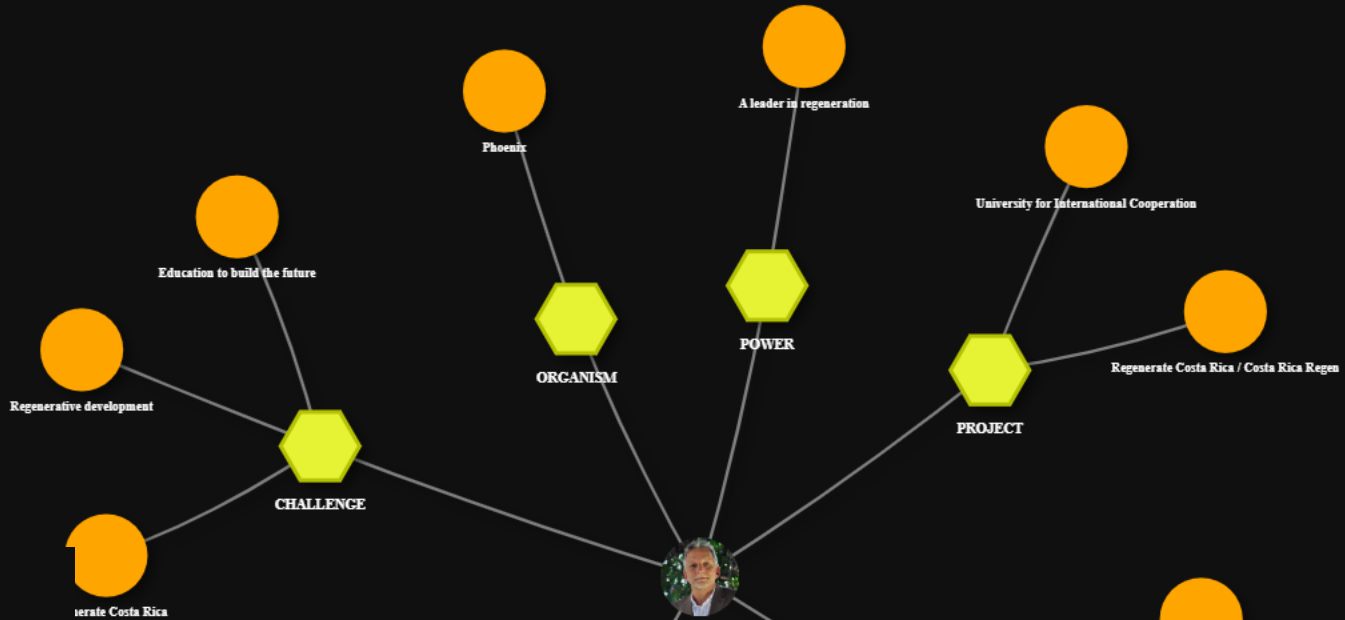
# Fast Tracking Regenerative Agriculture and Bioregional Reorganization

Melina Angel, Luis Camargo, Eduard Muller

#CATALYST2030  
#reGenerationRising  
#RegenAgriculture

Post COVID-19 Food Security and Community Resilience

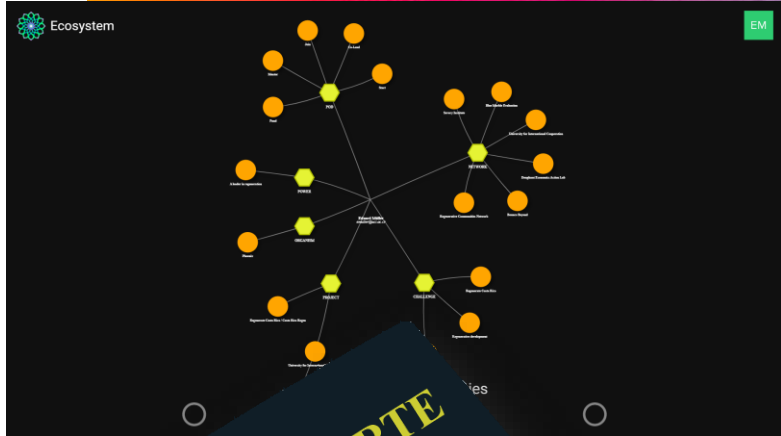




Collaboration Opportunities







**UCI**  
Universidad para la Cooperación Internacional

*Humanity is part of a vast evolving universe. Earth, our home, is alive with a unique community of life. The forces of nature make existence a demanding and uncertain adventure, but Earth has provided the conditions essential to life's evolution. (Earth Charter)*

*We have now crossed critical boundaries that threaten future life on Earth.*

**Educating the new professionals in regeneration to avert planetary collapse.**

**Hope!**  
*Yes, we can revert the damage through regeneration!*

*Humanity has already recognized that regeneration is one of the best alternatives to creating a better future for all. Investment opportunities for projects is increasing. Nevertheless, one of the main challenges is that we don't have enough people trained in regeneration. UCI is going to contribute to solving this with a unique global program to educate and train **first responders for regeneration.***

✓  
**Regeneration networks**

✓  
**Experts**

✓  
**Bioregions + projects**

✓  
**Mentors**

✓  
**Rutas de aprendizaje en línea**

✓  
**Co-creating regenerative solutions through joint projects**

✓  
**Passaport**

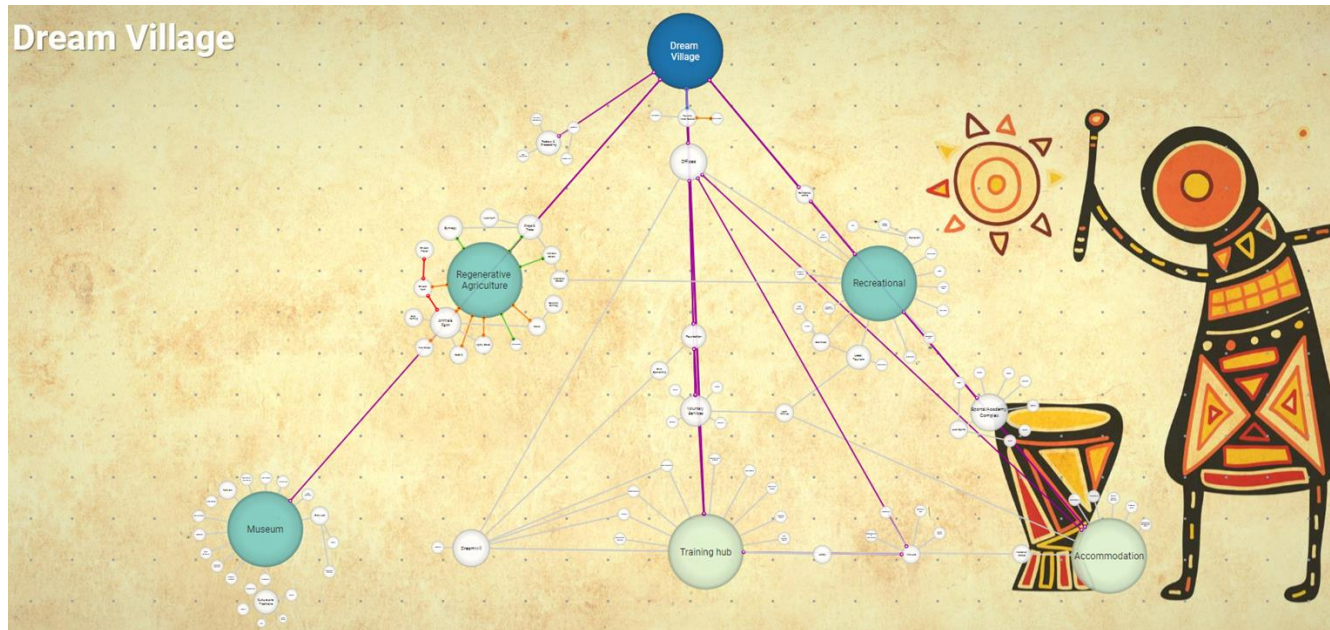




# DREAM VILLAGE

A regenerative and indigenous knowledge project for young africans

Dream Village



7vortex



Dream Village is a regenerative and indigenous knowledge college that empowers individuals to turn their dreams into reality and **bridge the gap** between traditional and modern ways of living

Since 2018, we have trained over 50 young Africans to establish sustainable businesses that benefit society. Additionally, we have provided education and resources to over 2000 local smallholder farmers, particularly women and marginalized communities. Our focus on regenerative practices promotes biodiversity, improves soil health and reduces the impact of climate change on local communities



"A community that plants together, harvests together"



We empower young people with digital and ICT tools to improve their productivity and provide them access to the global knowledge base.

Why let valuable indigenous knowledge go to waste? Using digital tools, we engage youth in learning from the older generation and make the experience both fun and practical.



Join us in building a sustainable future by supporting us to train regenerative and indigenous practices in our communities. Together, we can plant, grow and harvest a thriving environment for all

"Keep the smiles"





# What we need, urgently!

- **Holistic approaches** using different sources of knowledge (science, indigenous, local)
- Flexible pathways: **principles**, not recipes
- Research that allows for **immediate action** – storytelling beyond publication
- Actions conducive to **life** - regeneration
- **Local well-being** above corporate and trade
- Massive **(re)education** – First responders for regeneration<sup>®</sup>
- Give **HOPE and guidance**



**We build the  
future we want!**

**Regenerate  
Costa Rica**



**UCI**

University for  
International Cooperation



**COSTA RICA  
REGENERATIVA**

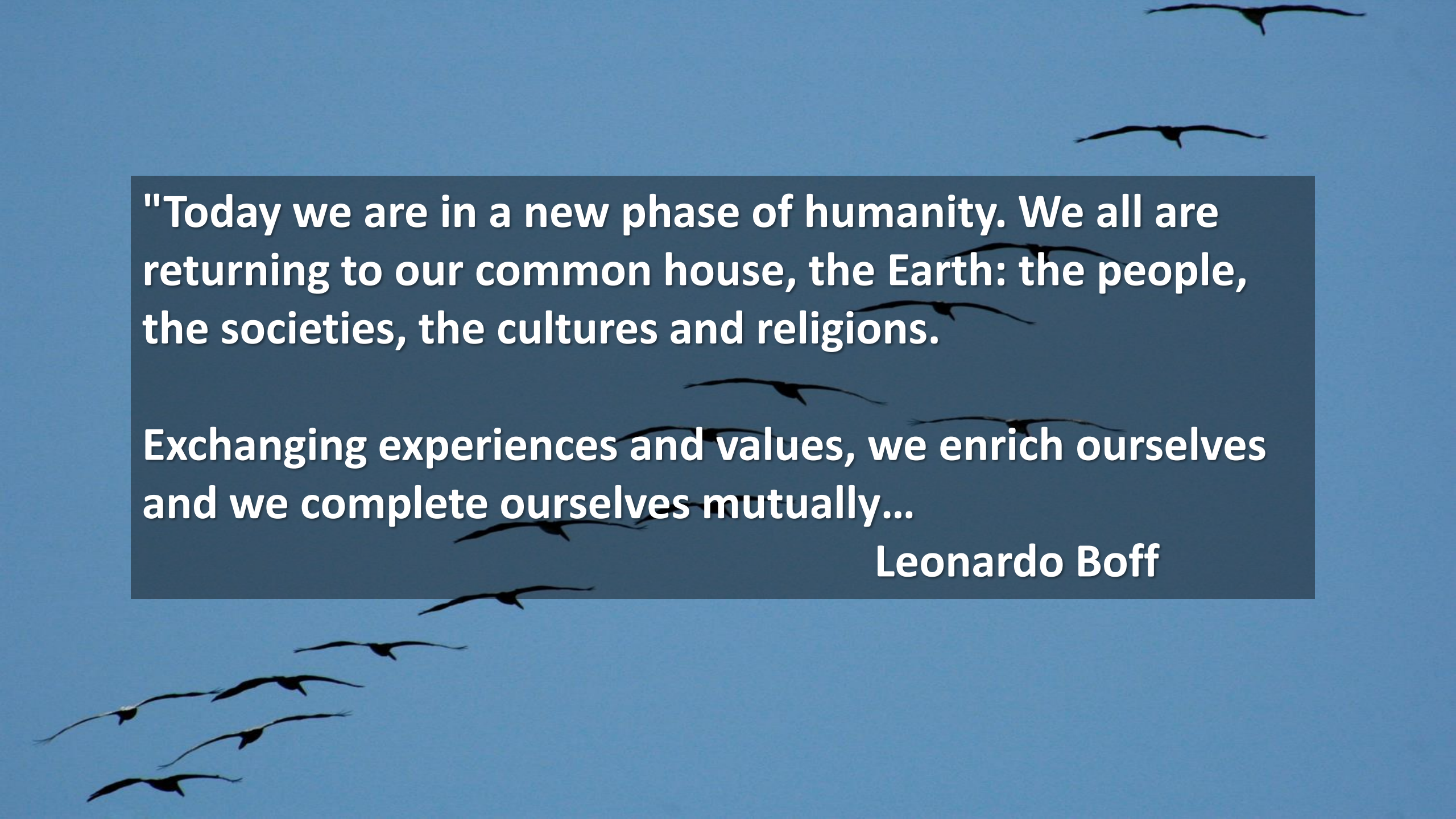




# Future?

- **Cooperation**
- Scale
- Consciousness
- Business models
- Narrative
- Education
- Demonstration
- Guidance
- **HOPE!**





**"Today we are in a new phase of humanity. We all are returning to our common house, the Earth: the people, the societies, the cultures and religions.**

**Exchanging experiences and values, we enrich ourselves and we complete ourselves mutually...**

**Leonardo Boff**



# Global empathy

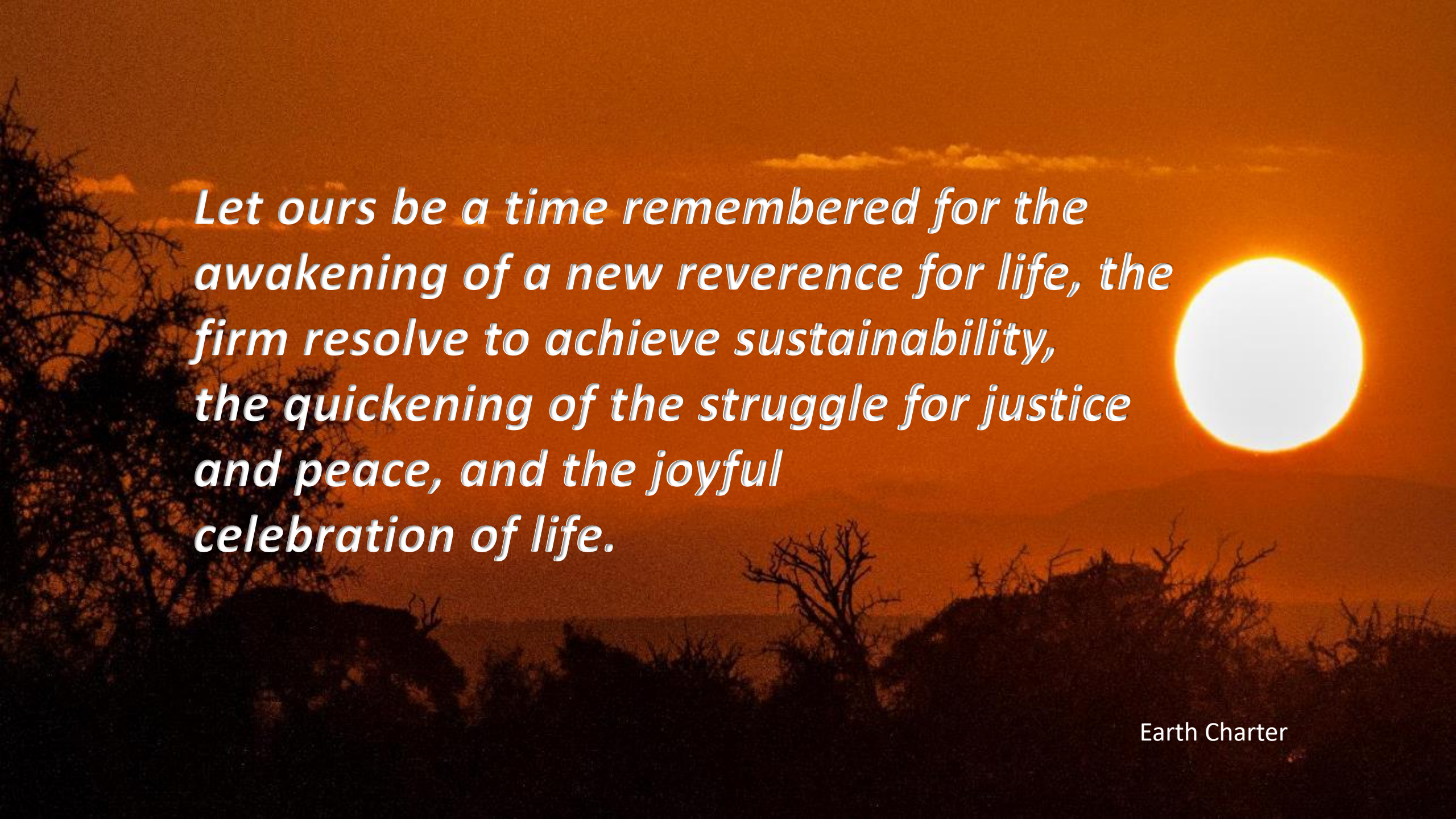
Many things have to change course, but it is **we humans** **above all who need to change**. We lack awareness of our common origin, of our mutual belonging, and of a culture to be shared with everyone.

This basic awareness would enable the development of **new convictions, attitudes and forms of life**.

A **great cultural, spiritual and educational challenge** stands before us, and it will demand that we set out on the **long path of renewal**.

Laudato Si'





*Let ours be a time remembered for the  
awakening of a new reverence for life, the  
firm resolve to achieve sustainability,  
the quickening of the struggle for justice  
and peace, and the joyful  
celebration of life.*





# A new relationship between humans and planet



**UCI**  
Universidad para la  
Cooperación Internacional





**Is he  
prepared?**





Thank you!