



# Desarrollo regenerativo

**Eduard Müller**  
**Rector**



**UCI**

Universidad para la  
Cooperación Internacional

## Visión

Ser una organización de educación superior líder en América Latina en los campos de la investigación, la formación de recursos humanos y el desarrollo de los países de la región.

# Universidad para la Cooperación Internacional |



## Misión

Formar profesionales líderes, capaces de inducir y conducir los cambios requeridos en el **desarrollo económico, ambiental, socio-cultural y político** de los países de América Latina y el Caribe.

# OUR COMMON FUTURE

THE WORLD COMMISSION

ON

AND

Sustainable development: 668,000,000 results  
Desarrollo sostenible: 95,000,000 resultados



Se define «el desarrollo sostenible como la satisfacción de las necesidades de la generación presente **sin comprometer la capacidad de las generaciones futuras** para satisfacer sus propias necesidades».

Ecológico

Sostenible

Equitativo

Económico

Social

## 35 años

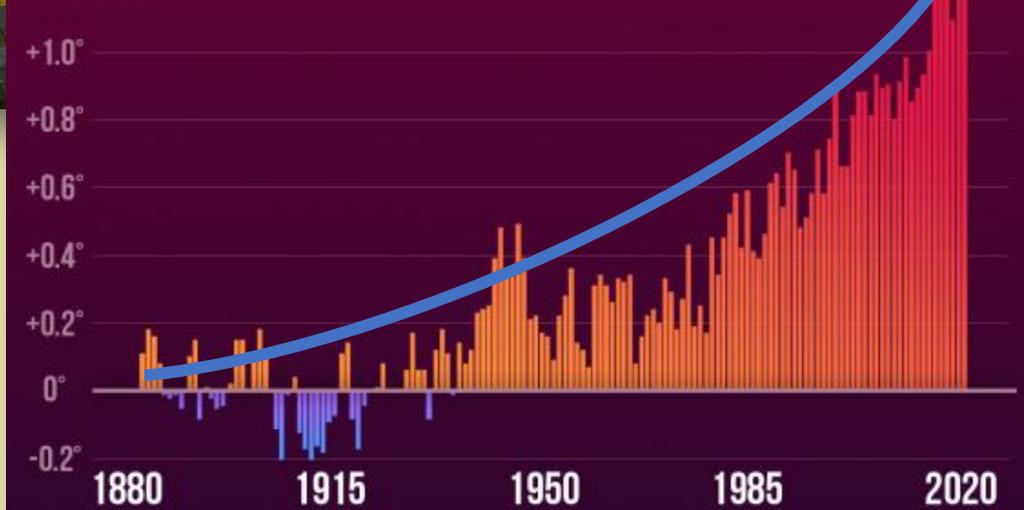


 **ACT NOW**



## GLOBAL TEMPERATURE DEPARTURE FROM 1881-1910 AVERAGE

+1.2°C 2.16°F



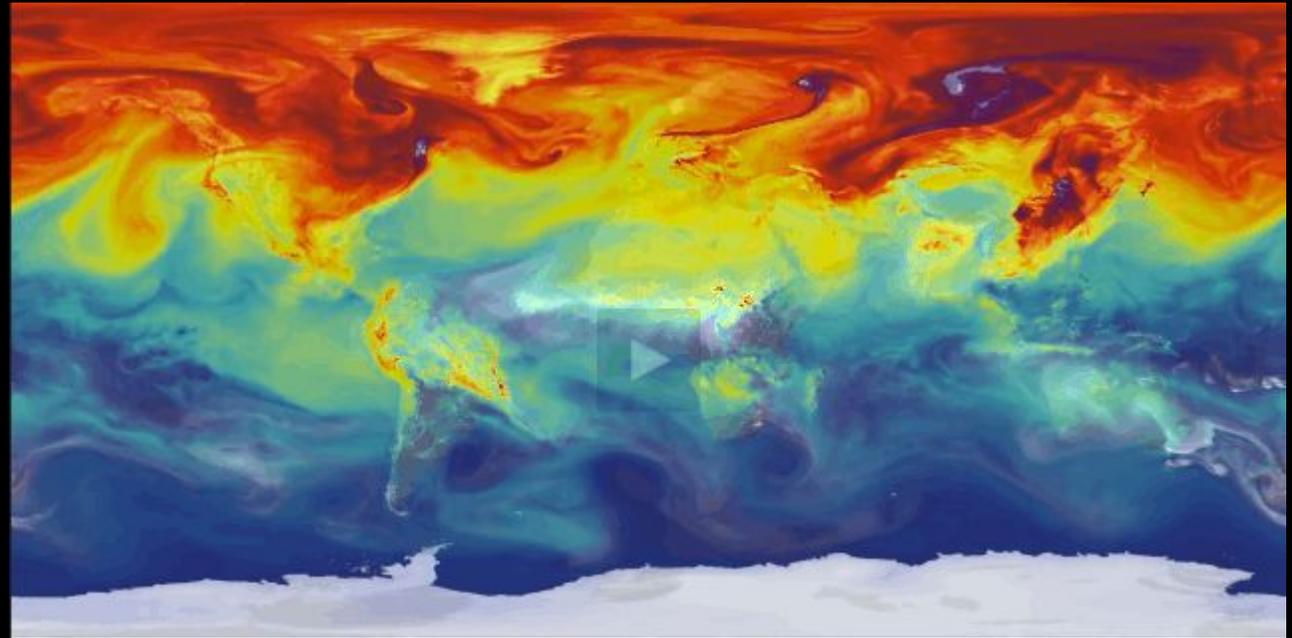
Source: NASA GISS & NOAA NCEI global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910). Data as of 1/14/2021.

CLIMATE CENTRAL



*“Sí, el planeta se destruyó, pero por un lindo momento creamos mucho valor para los accionistas.”*

¿Diagnósticos?  
¿Teoría?  
¿Soluciones lineales?

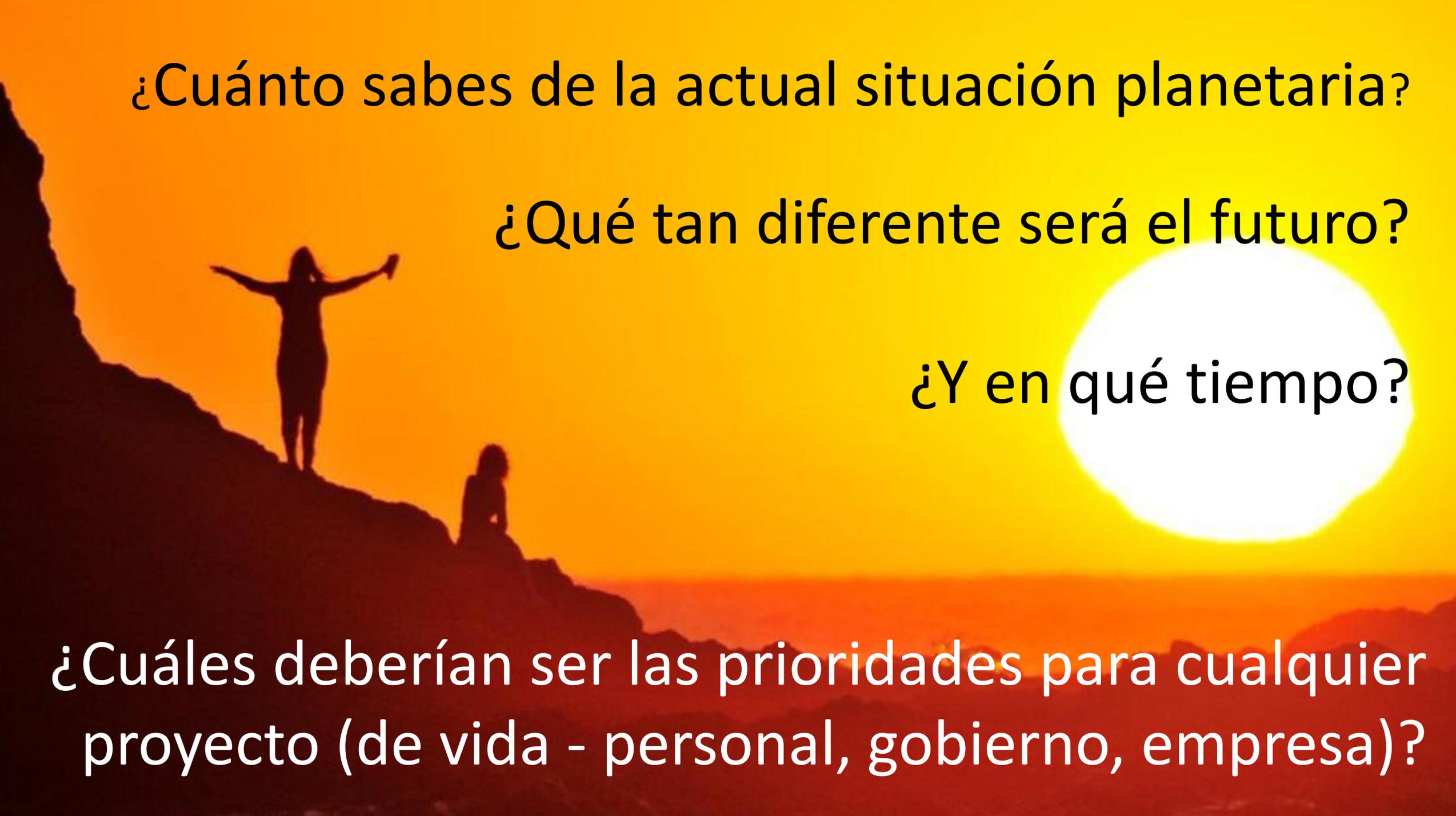


Enfoques holísticos y **ACCIÓN**  
**regenerativa**

¿Tienes un sueño?

¿Cómo será tu vida en 20 años?





¿Cuánto sabes de la actual situación planetaria?

¿Qué tan diferente será el futuro?

¿Y en qué tiempo?

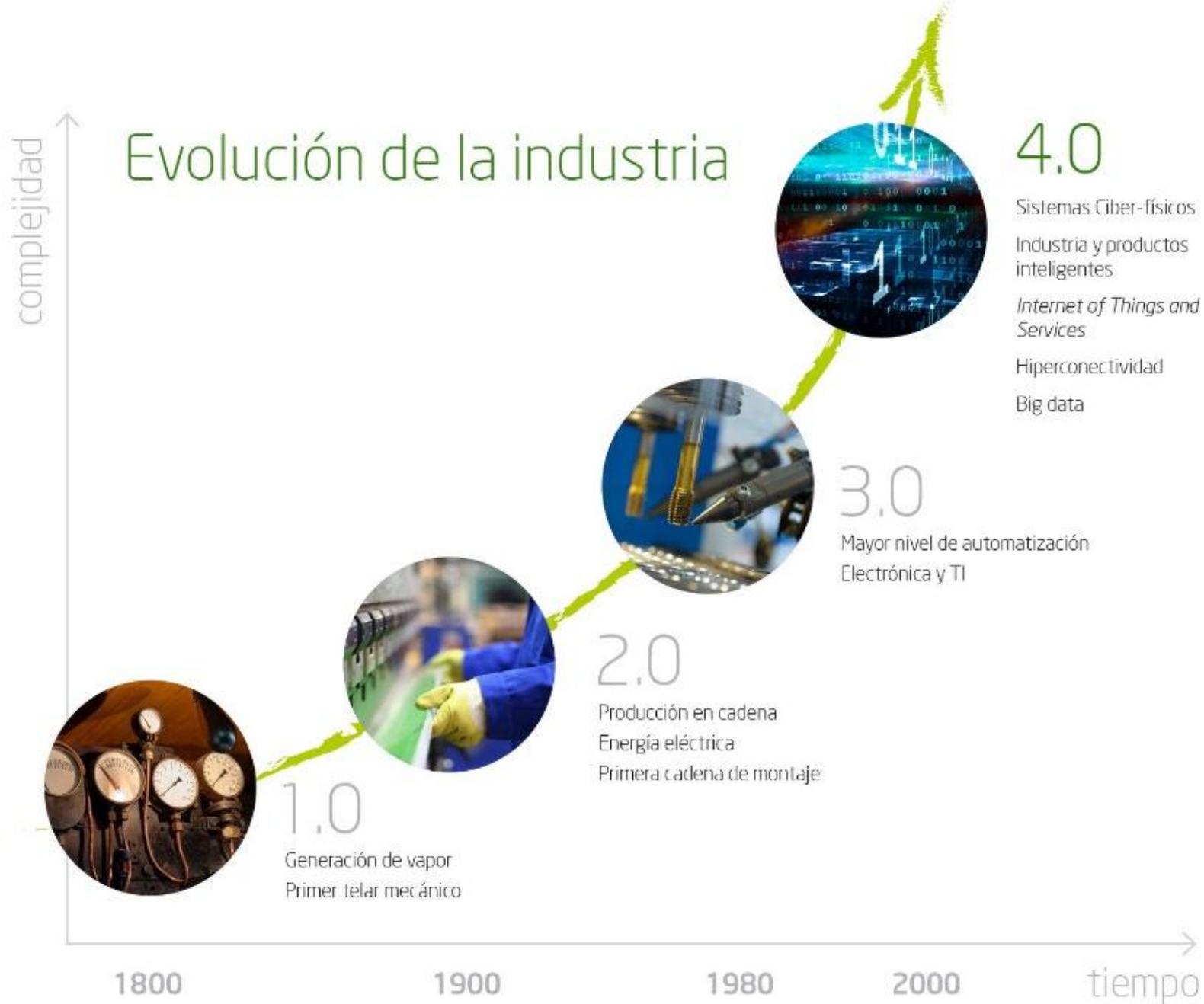
¿Cuáles deberían ser las prioridades para cualquier proyecto (de vida - personal, gobierno, empresa)?

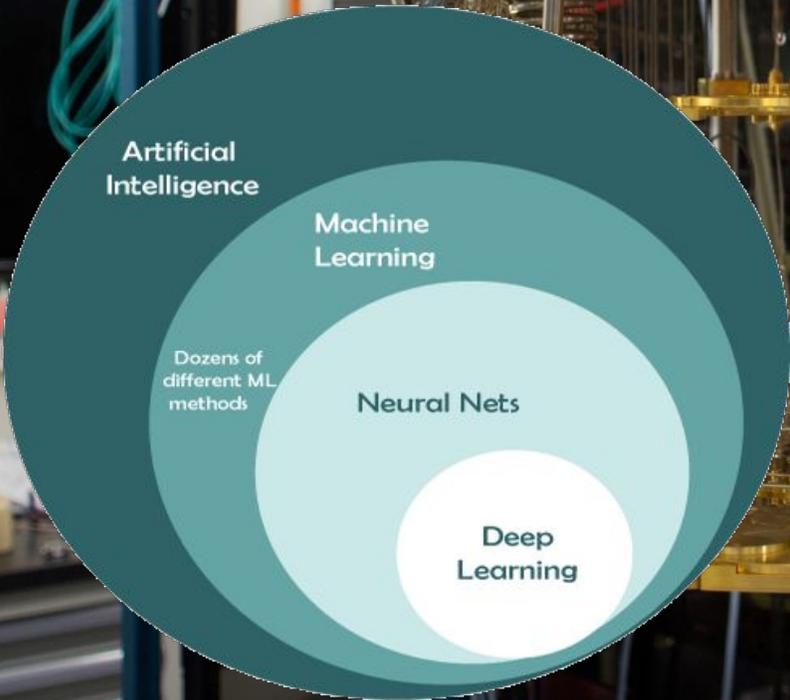
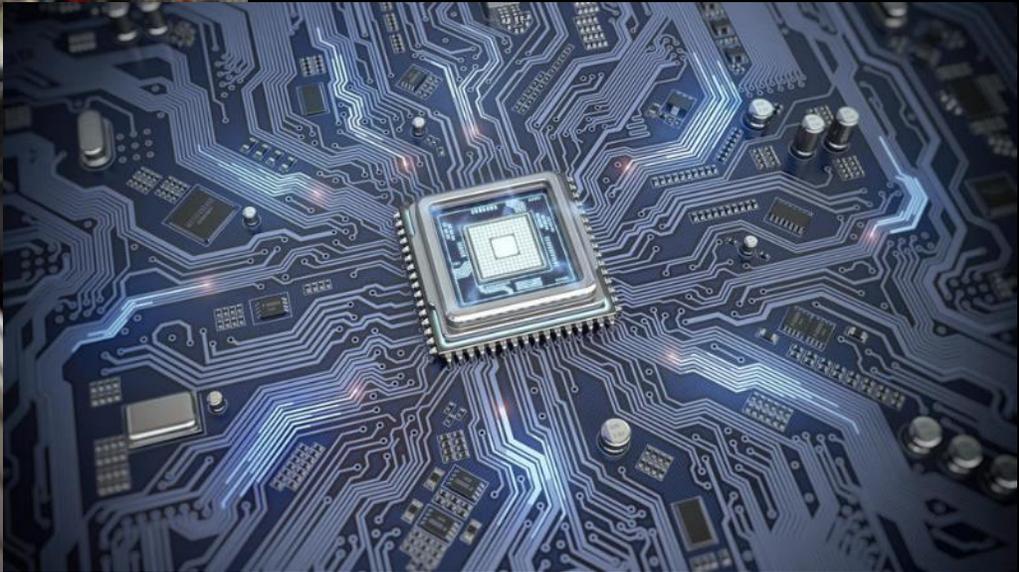
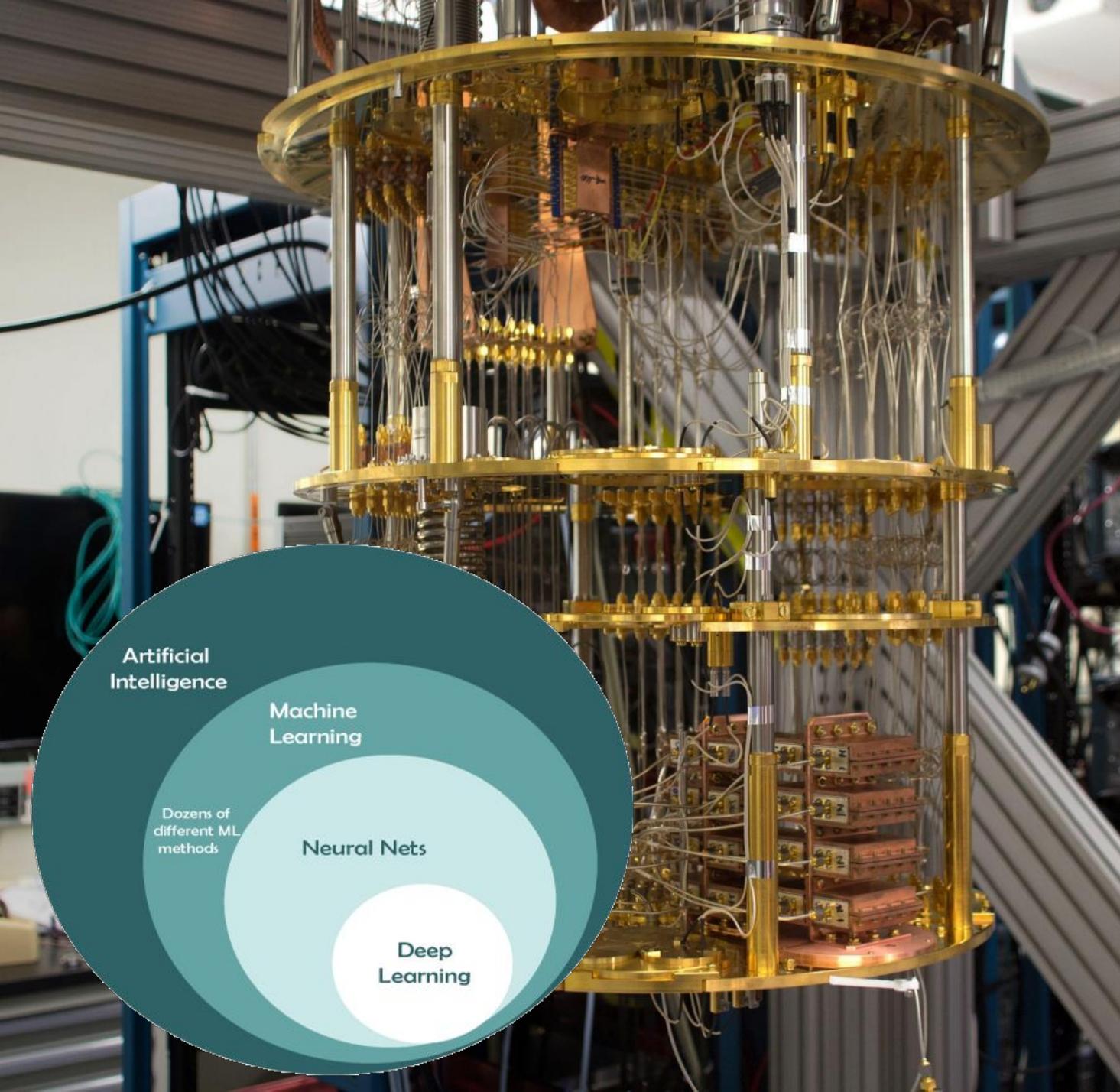
# ¿Momento histórico de nuestra civilización?



# 4<sup>a</sup> RI



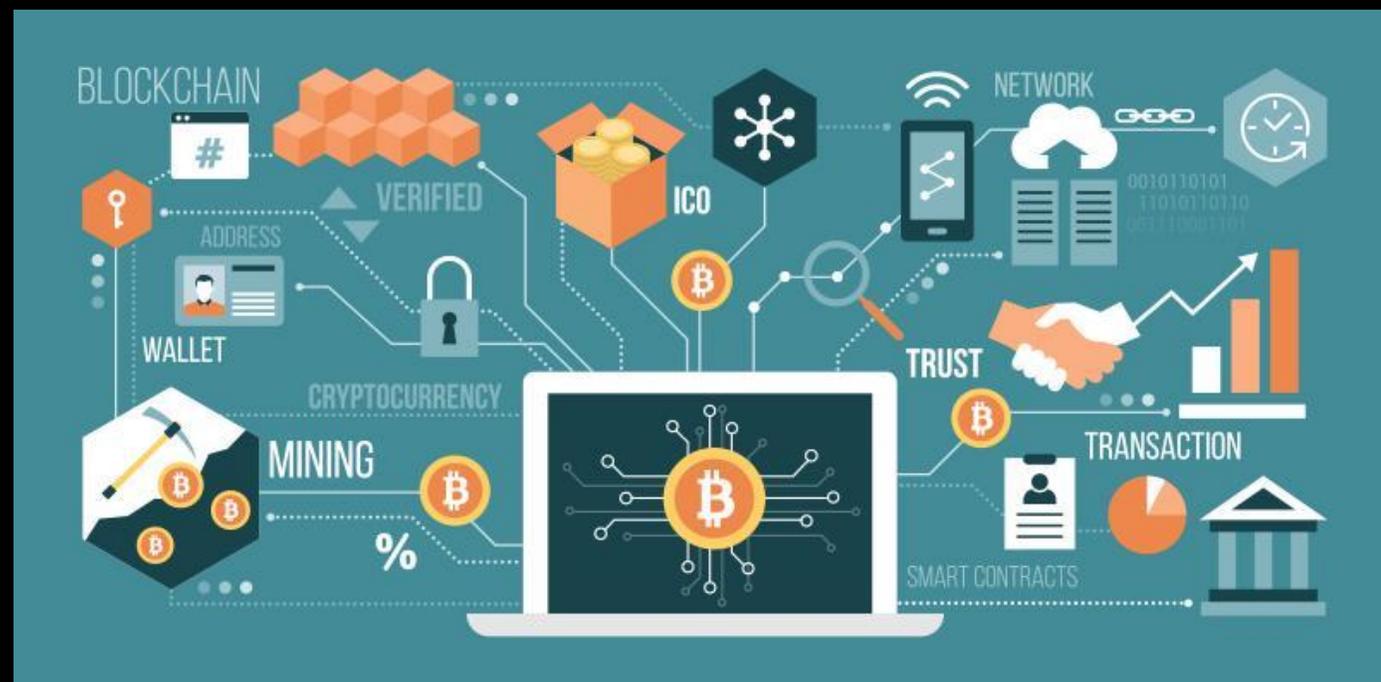
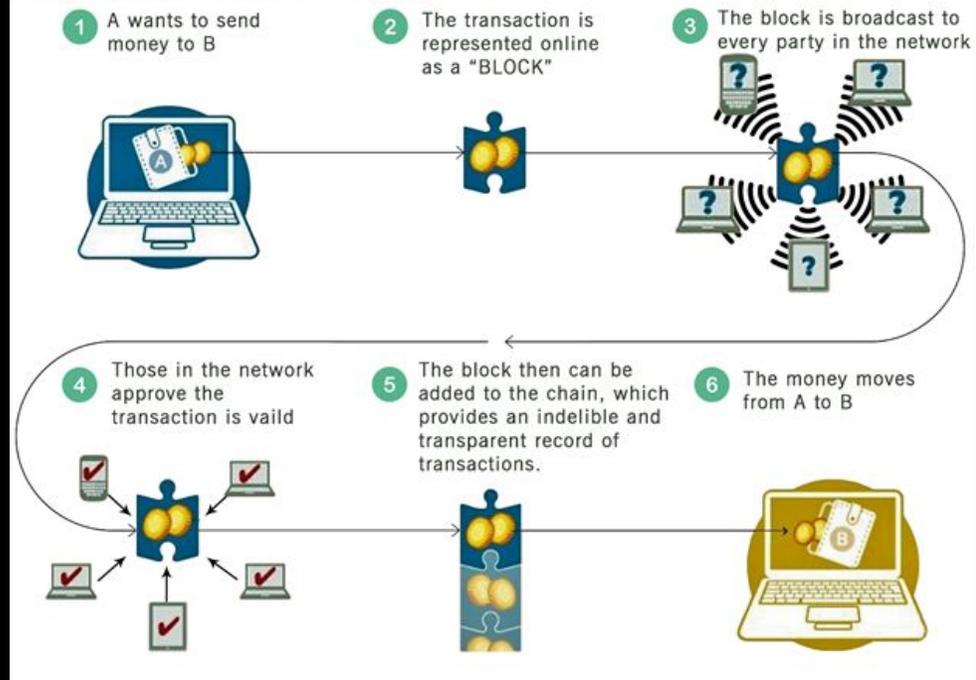








### How a Blockchain works?



MCKINSEY GLOBAL INSTITUTE

# JOBS LOST, JOBS GAINED: WORKFORCE TRANSITIONS IN A TIME OF AUTOMATION

DECEMBER 2017

## Technical automation potential

~50%

of current work activities are technically automatable by adapting currently demonstrated technologies

6 of 10

current occupations have more than 30% of activities that are technically automatable

## Impact of adoption by 2030

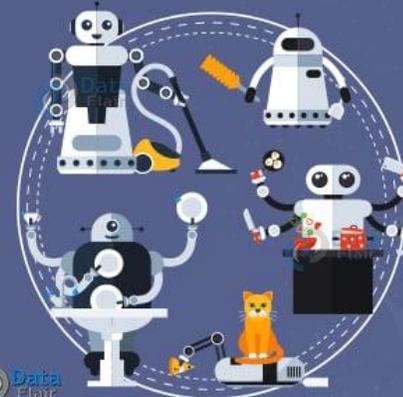
Work potentially displaced by adoption of automation, by adoption scenario, % of workers (FTEs)<sup>1</sup>



Workforce that could need to change occupational category, by adoption scenario,<sup>2</sup> % of workers (FTEs)



## Impact of AI on Jobs



01

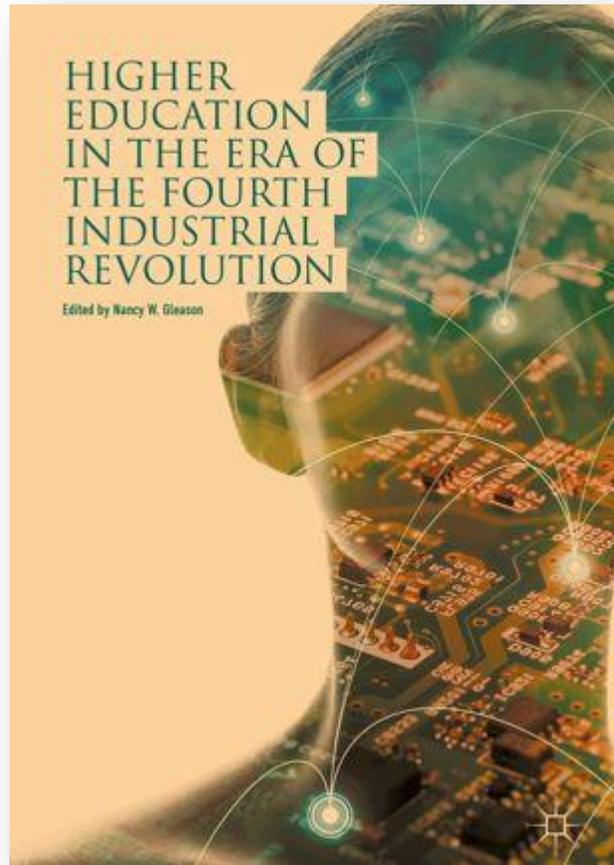
Will AI be a job killer?

02

Will AI be a job creator?

03

Replacing Redundant jobs



[Higher Education in the Era of the Fourth Industrial Revolution](#) pp 121-144 | [Cite as](#)

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

Authors

Authors and affiliations

Eduard Müller 

Open Access | Chapter

First Online: 22 June 2018



### Abstract

Müller discusses three urgent challenges for higher education in the context of environmental degradation and the fourth industrial revolution. These include the need to move from disciplinary approaches to holistic ones; adapting to disruptive technological advancements. This is about identifying what is truly important for survival of our civilization and responding through appropriate programs that are focused, timed, priced and delivered according to the changing demands of youth. He advocates for a regenerative development approach. Education for regenerative development addresses humanity's greatest challenges, that have escaped the radar of most higher education institutions and, in spite of being of utmost importance for the human civilization to survive, have not been mainstreamed into academic programs and even less into public policy.

[Download](#) chapter PDF

226

STARTUPS ANALYZED

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



A screenshot of a Youmatter article. The header shows the Youmatter logo and a search bar. Below the header is a navigation menu with categories like Planet, Energy & Transport, Health & Well-Being, etc. The main content area features a large image of an electric car charging station and a white car. The article title is 'Are Electric Cars Really Greener?'. Below the image is a profile for André Gonçalves, Editor & Head Of English Market.

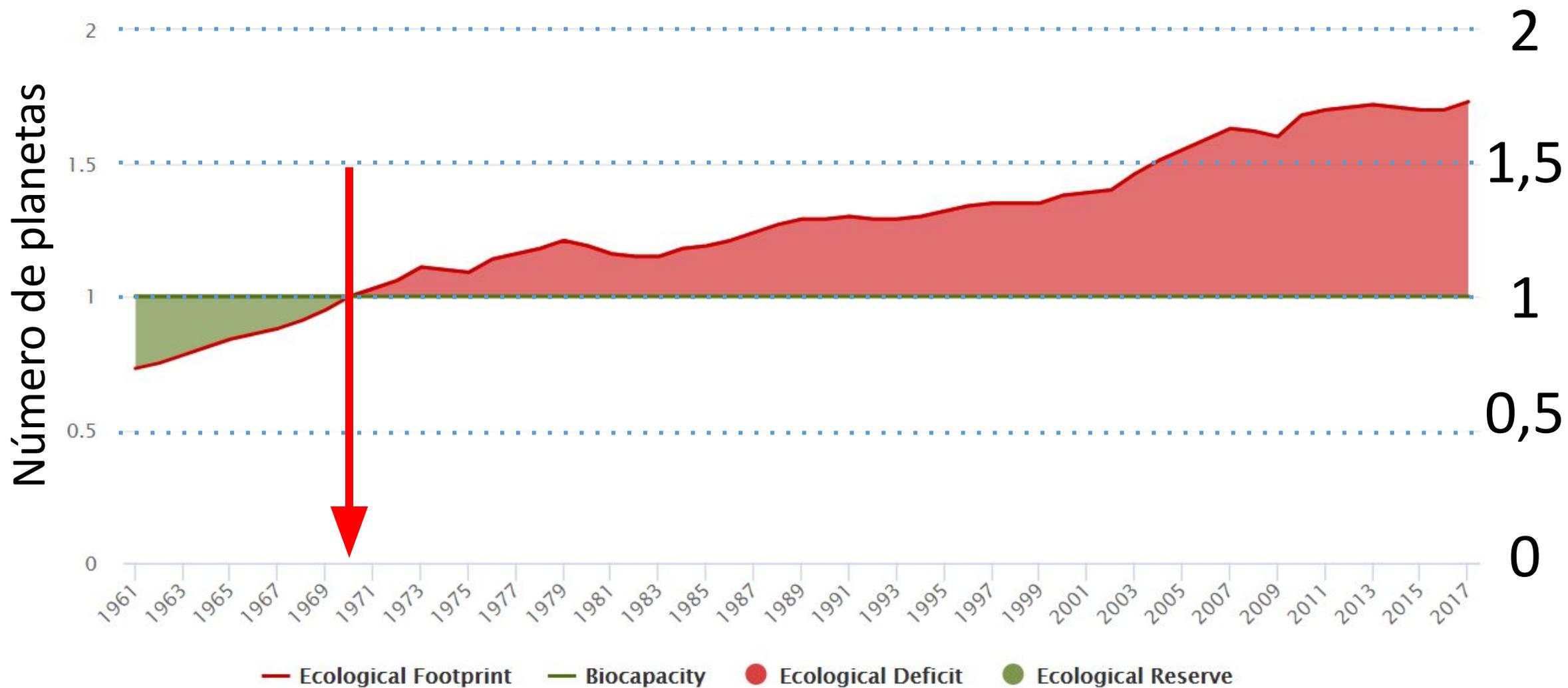
This Global Startup Heat Map illustrates geographical distribution of 226 analyzed as well as 5 selected startups. Data from July 2020.



¿Cómo está el planeta?



# Huella ecológica mundial



Albania



El Entumido

US Dept of State Geographer  
Image © 2011 DigitalGlobe  
Image © 2011 TerraMetrics  
© 2011 Google

Google earth

Imagery Date: 12/5/2010

13°02'26.80" N 87°14'30.97" W elev 29 ft

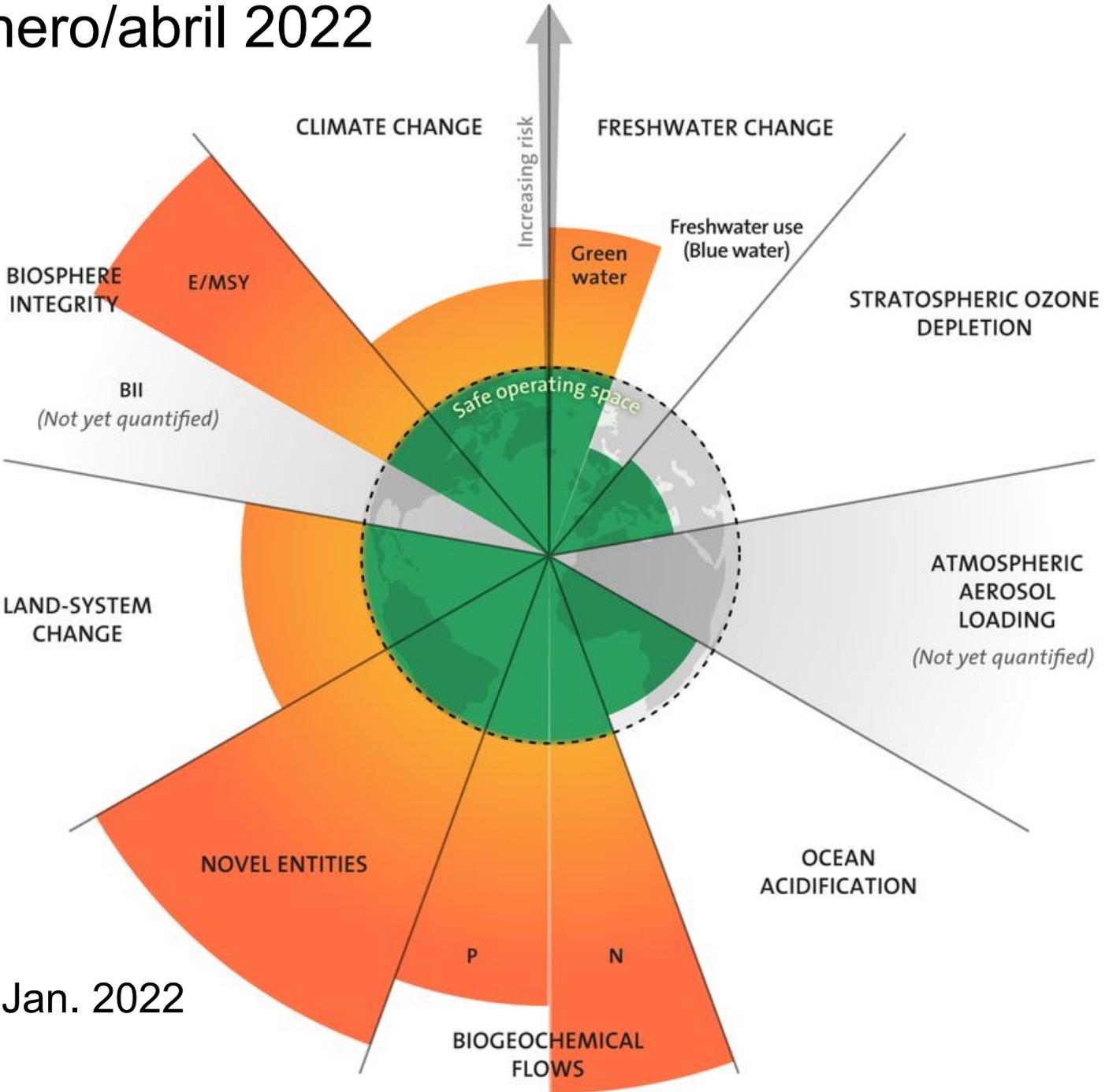
Eye alt 16.47 mi

¿Cuáles deberían ser las prioridades para cualquier proyecto (de vida - personal, gobierno, empresa)?

**El mundo está enfocado en reducción de emisiones, ¿alcanzará?**



Enero/abril 2022



# Updated Planetary Boundaries

(Figure from Wang-Erlandsson et al, 2022)

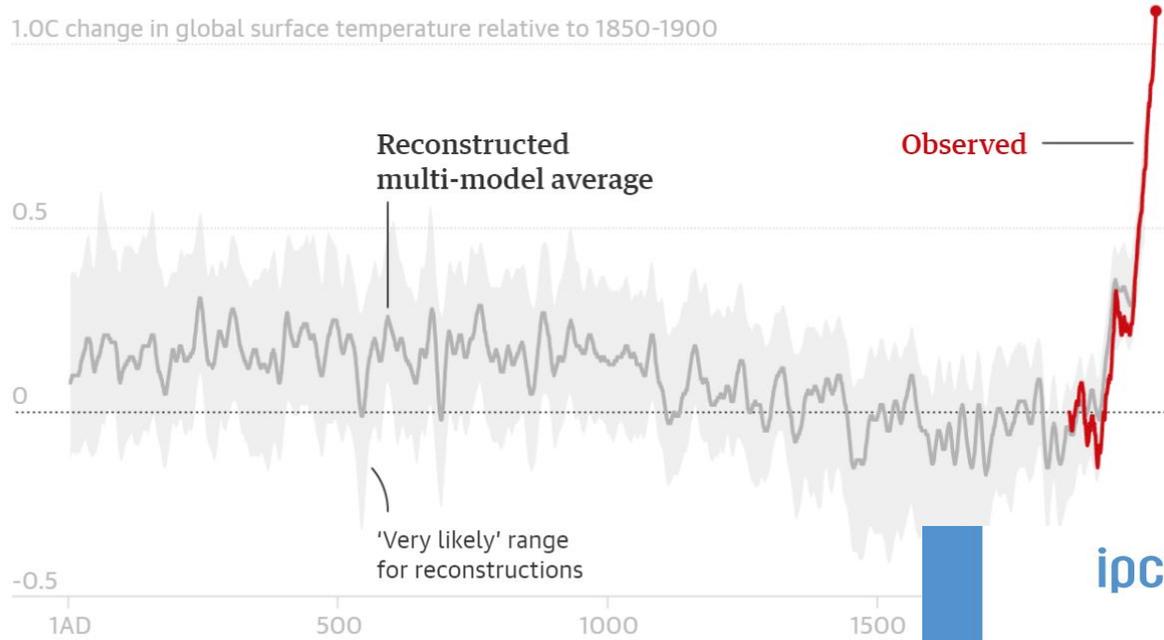
*Zona de operación segura para la humanidad*

Antropoceno

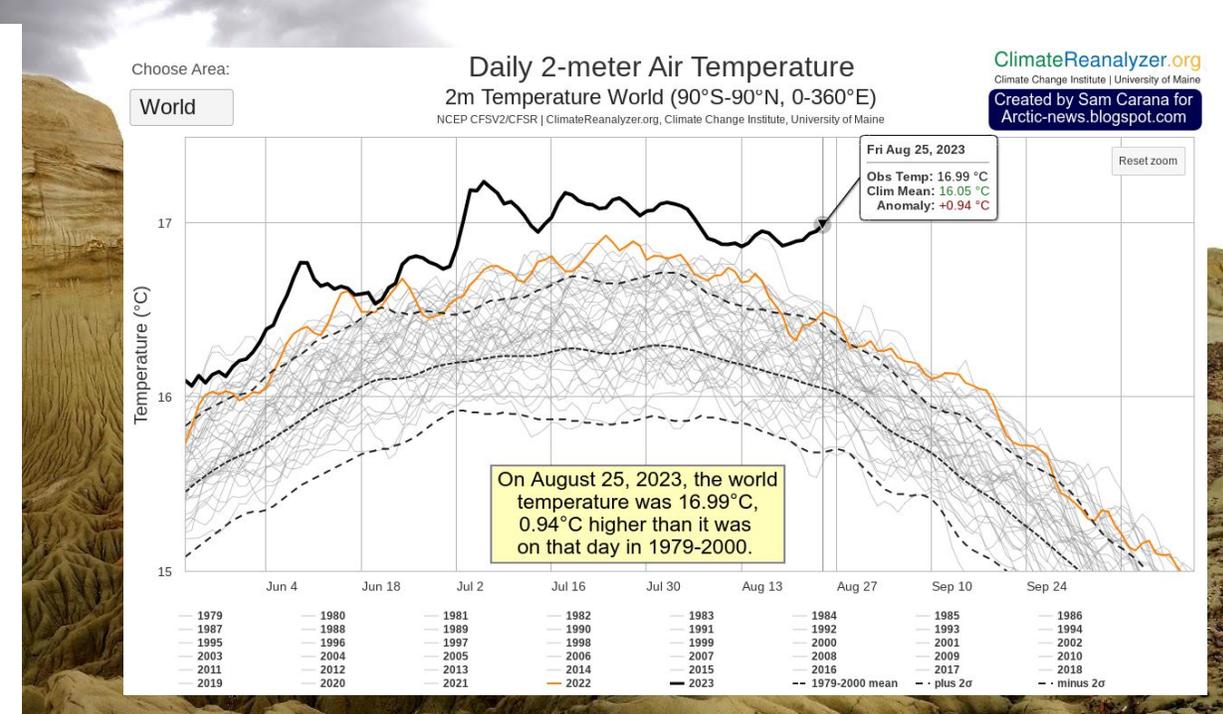
Jan. 2022

# Human influence has warmed the climate at a rate unprecedented in at least the past 2000 years

1.0C change in global surface temperature relative to 1850-1900



Guardian graphic. Source: Intergovernmental Panel on Climate Change



ipcc

REPORTS SYNTHESIS REPORT WORKING GROUPS ACTIVITIES  
NEWS CALENDAR

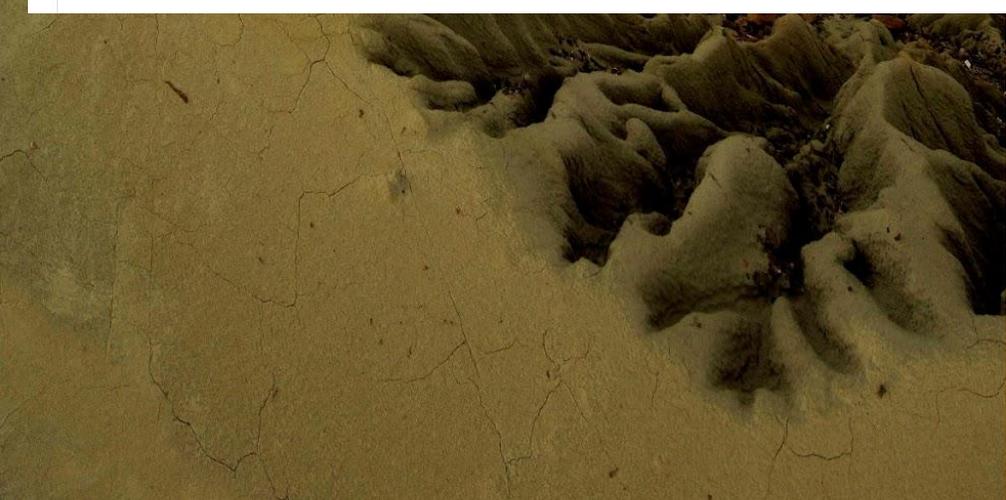
FOLLOW SHARE

## Sixth Assessment Report

The Working Group I contribution to the Sixth Assessment Report is now available.

WORKING GROUP I CONTRIBUTION TO THE SIXTH ASSESSMENT REPORT

**Code Red for Humanity**



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

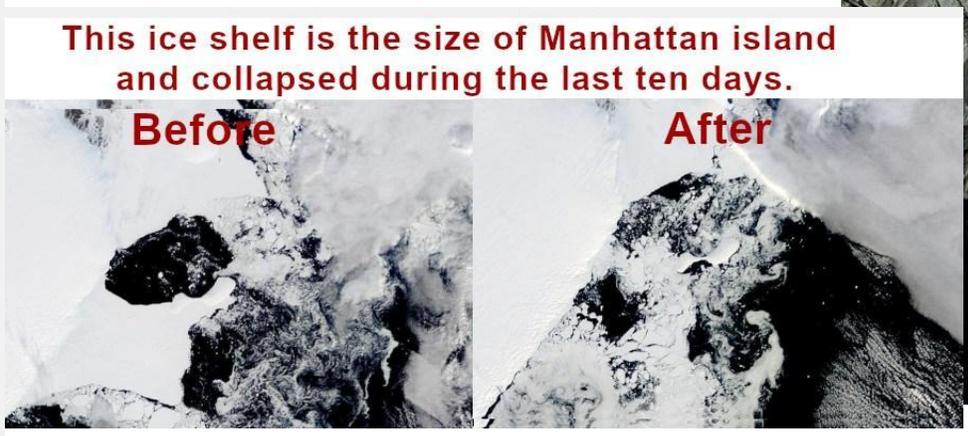
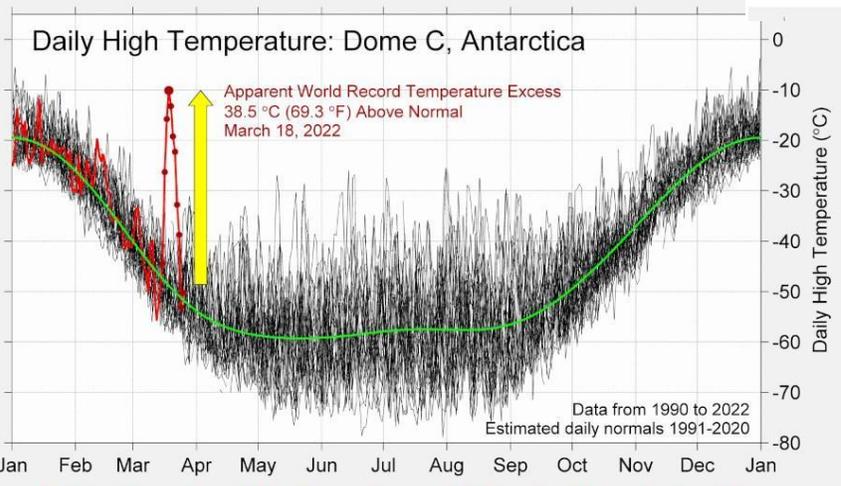
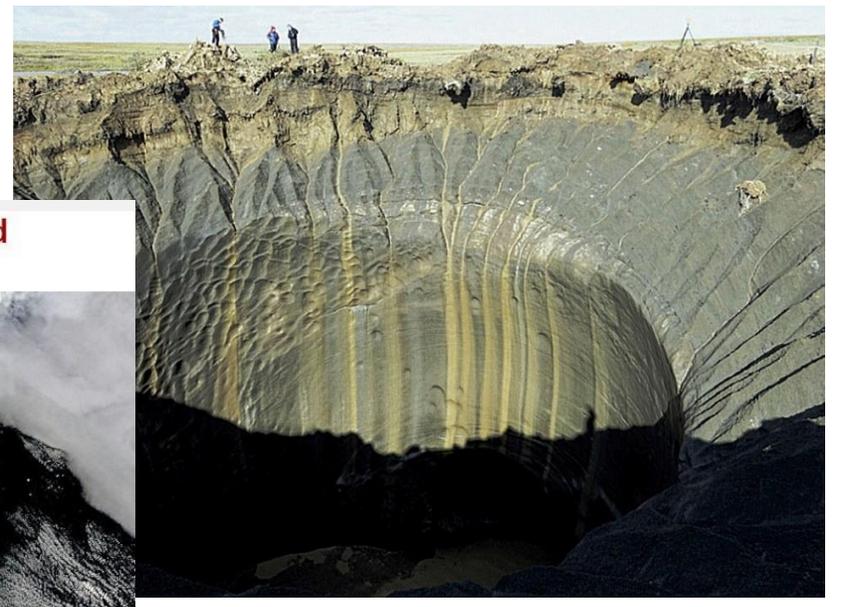
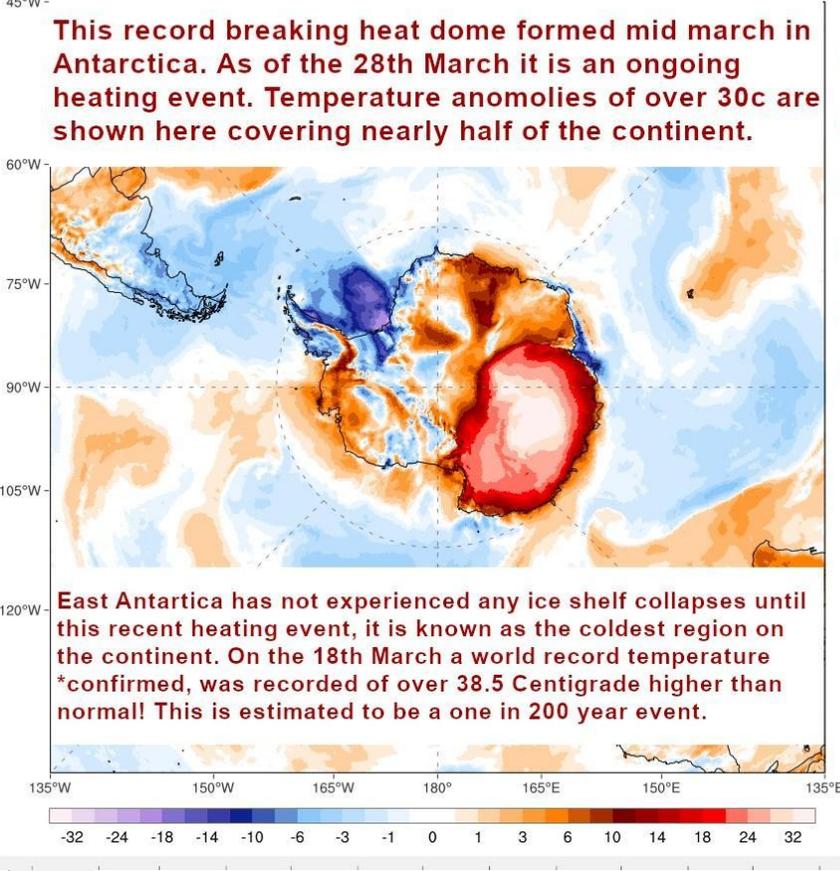
by Seth Borenstein

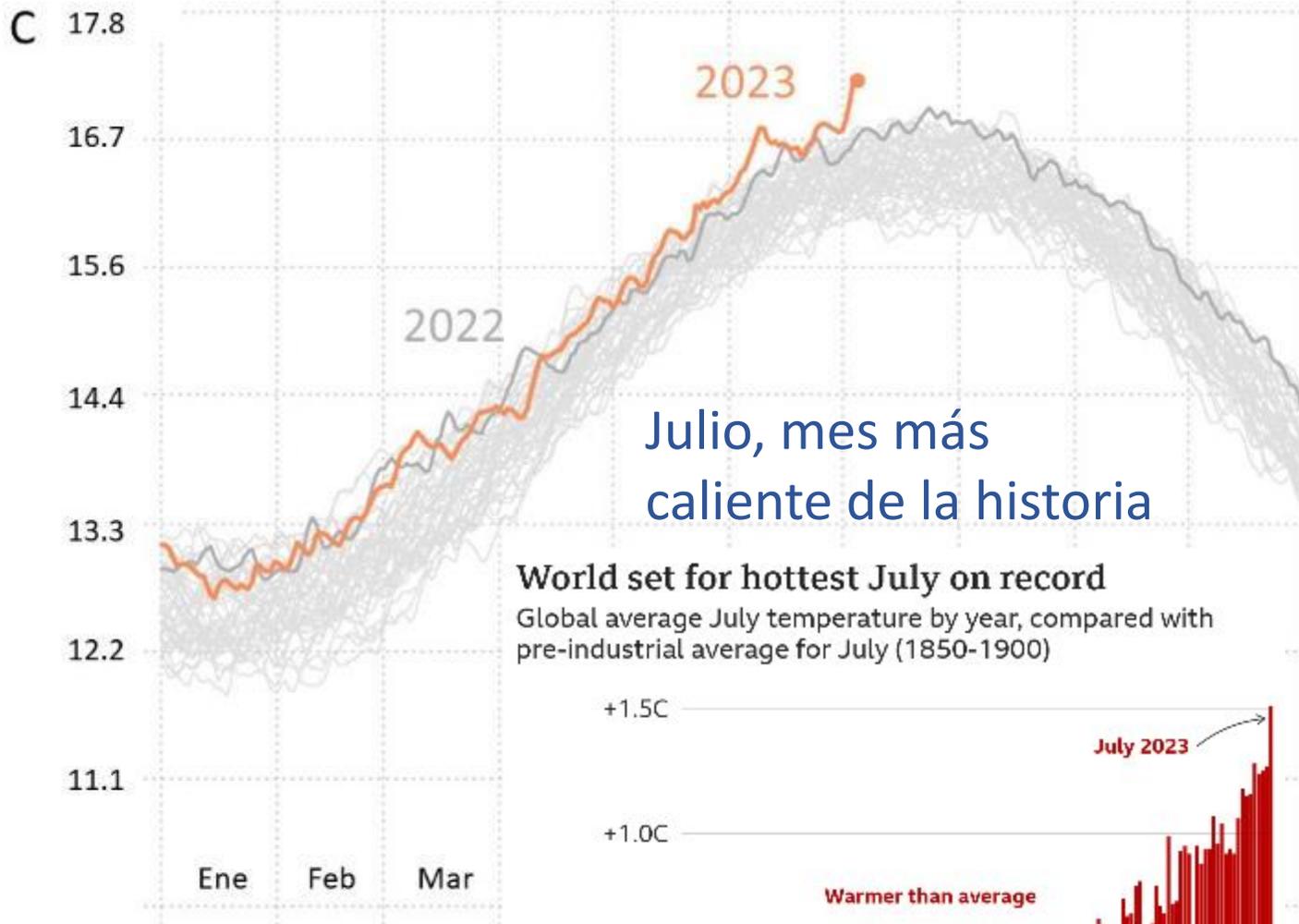


(13) Facebook

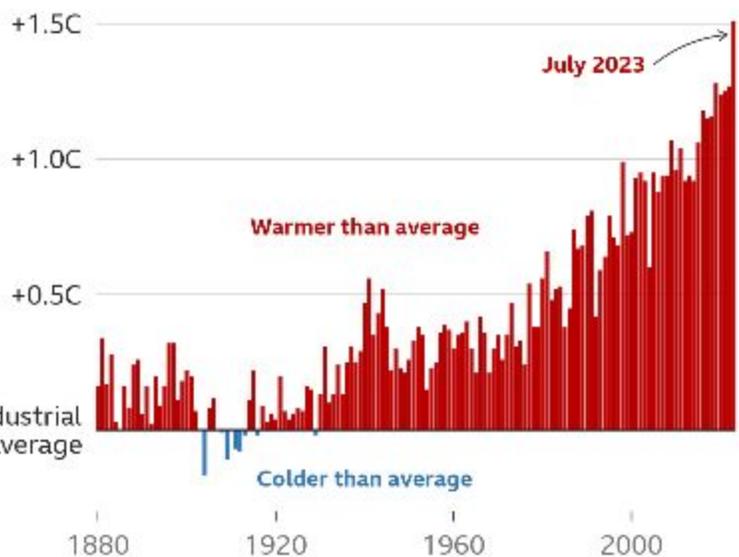
Credit: CC0 Public Domain

Earth's poles are undergoing simultaneous freakish extreme heat with parts of Antarctica more than 70 degrees (40 degrees Celsius) warmer than average and areas of the Arctic more than 50 degrees (30 degrees Celsius) warmer than average.





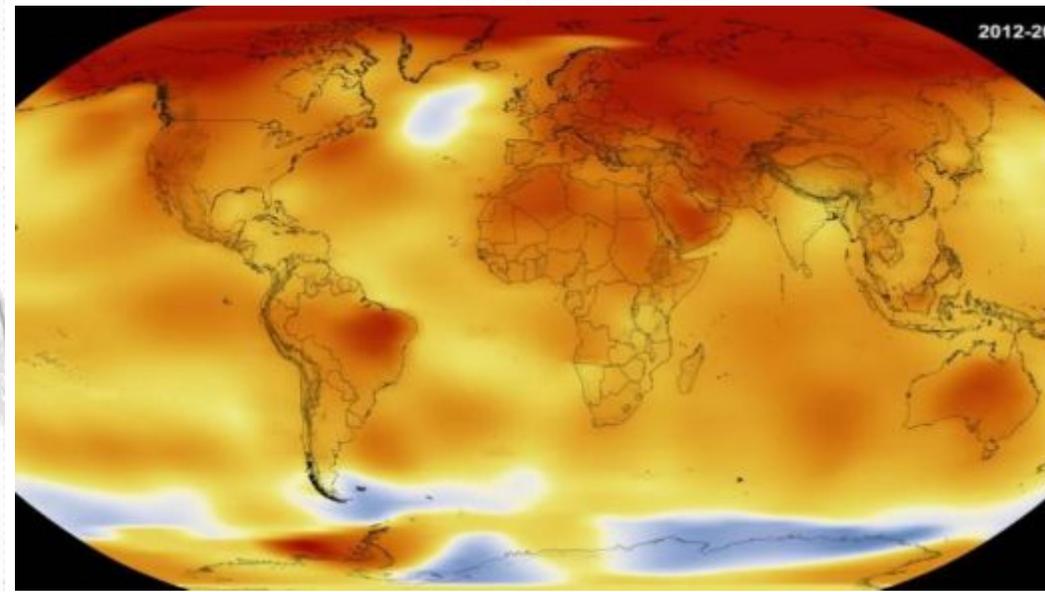
Julio, mes más caliente de la historia



Data for July 2023 is provisional based on NCEP/GFS analysis  
Source: NASA GISTEMP

Planeta llegó a 17.18C  
Nivel preindustrial: 14C

EL MARTES FUE EL DÍA MÁS CALIENTE DE LA HISTORIA EN EL MUNDO; ESPERAN DÍAS MÁS CÁLIDOS

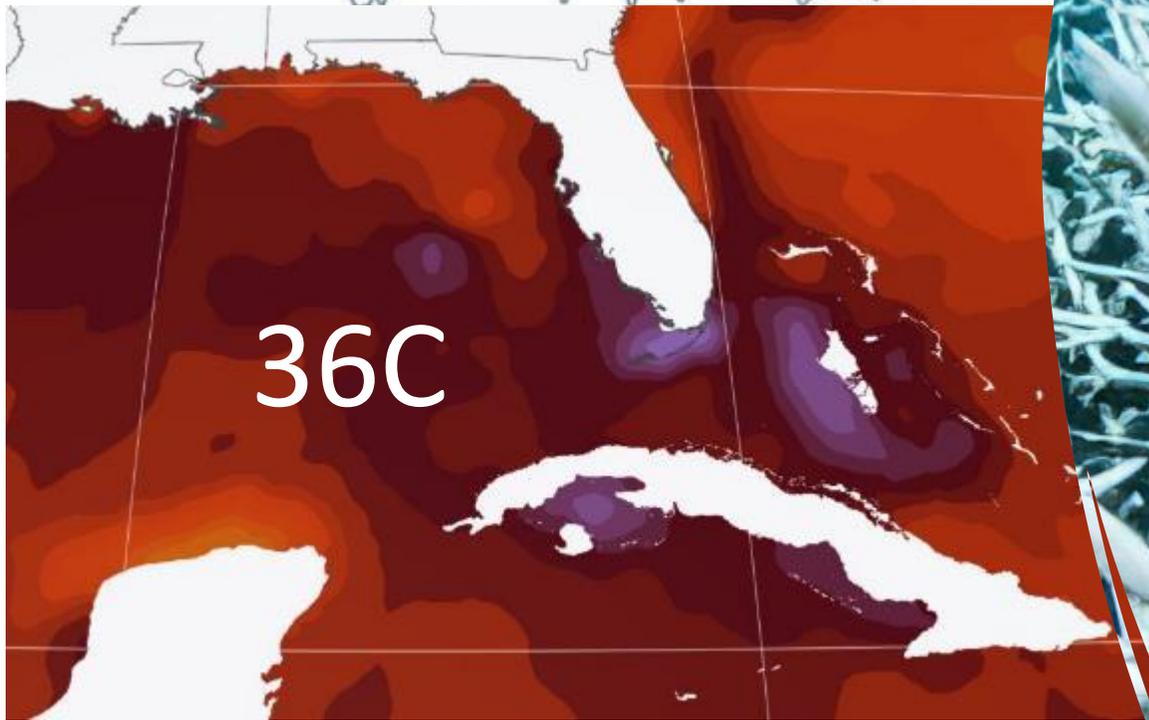


North Atlantic (0-60N) Sea Surface Temperature Anomaly (SSTA)  
from 1982-2011 mean



# Calentamiento de océanos

Florida julio 2023





# Methane Hydrate: Killer cause of Earth's greatest mass extinction

Uwe Brand<sup>a</sup>, Nigel Blamey<sup>a</sup>, Claudio Garbelli<sup>a,1</sup>, Erika Griesshaber<sup>a</sup>, Renato Posenato<sup>d</sup>, Lu Angiolini<sup>b</sup>, Karem Azmy<sup>c</sup>, Enzo Farabegoli<sup>f</sup>, Rosemarie Came<sup>e</sup>  
[Show more](#)

<http://dx.doi.org/10.1016/j.palwor.2016.06.002>

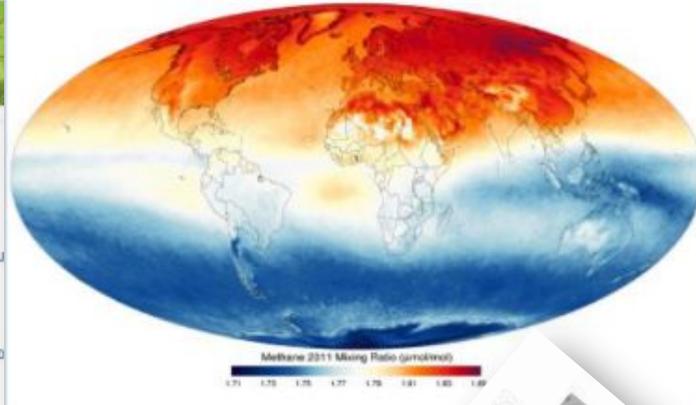
[Get rights and content](#)

## Abstract

The cause for the end Permian mass extinction, the greatest challenge life on Earth faced in its geologic history, is still hotly debated by scientists. The most significant marker of this event is the negative  $\delta^{13}\text{C}$  shift and rebound recorded in carbonates with a duration ranging from 2000 to 19 000 years and sedimentation rates. Leading causes for the event are the emission of greenhouse gases with a duration ranging from several years to thousands of years was temperature. The rapid oxidation of the atmospheric and oceanic methane that gradually produced its warming potential but not before global warming had reached levels lethal to most life on land and in the oceans. Based on measurements of gases trapped in biogenic and abiogenic calcite, the release of methane (of ~3–14% of total C stored) from permafrost and shelf sediment methane hydrate is deemed the ultimate source and cause for the dramatic life-changing global warming (GMAT > 34 °C) and oceanic negative-carbon isotope excursion observed at the end Permian. Global warming triggered by the massive release of carbon dioxide may be catastrophic, but the release of methane from hydrate may be apocalyptic. The end Permian holds an important lesson for humanity regarding the issue it faces today with greenhouse gas emissions, global warming, and climate change.

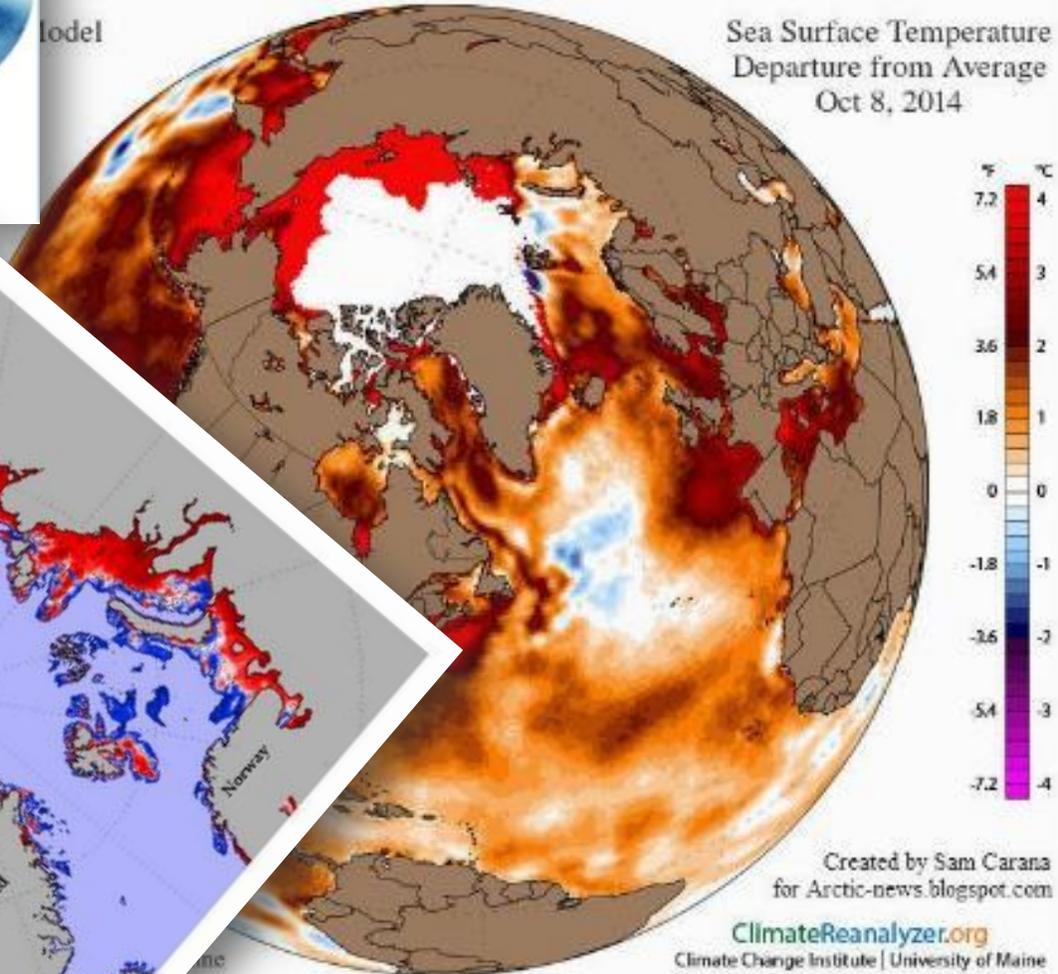
**El calentamiento global por la masiva liberación de dióxido de carbono puede ser catastrófico pero la liberación de metano de los hidratos puede ser apocalíptico.**

Methane concentration: Global distribution

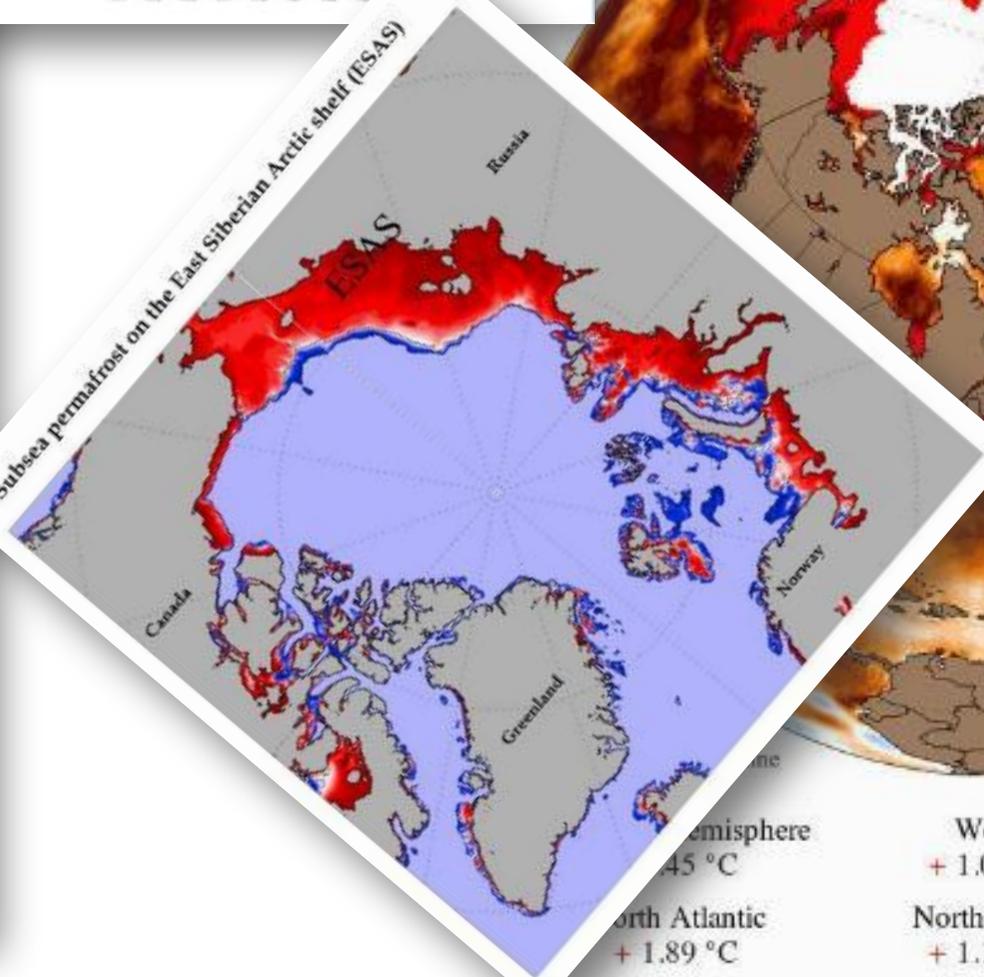


Model

Sea Surface Temperature Departure from Average Oct 8, 2014



Subsea permafrost on the East Siberian Arctic shelf (ESAS)



Northern Hemisphere	World	Southern Hemisphere
+1.45 °C	+1.00 °C	+0.37 °C
North Atlantic	North Pacific	Equatorial Pacific
+1.89 °C	+1.18 °C	+0.55 °C

## 7,000 underground gas bubbles poised to 'explode' in Arctic

By The Siberian Times reporter  
26 March 2017

Bulging bumps in the Yamal and Gydan peninsulas believed to be caused by thawing permafrost releasing methane



With time the bubble explodes, releasing gas

Scientists have discovered as many as 7,000 underground methane bubbles in Siberia after an exercise involving field expeditions. A number of large craters - seen on our images - have formed over the past few years and they are being carefully studied by researchers. Alexey Trovsky, director of Yamal department for science and innovation, said:

With time the bubble explodes, releasing gas



## Earth Changes

### Thousands of underground methane bubbles set to explode in Siberia

Kesavan Unnikrishnan  
Digital Journal  
Wed, 22 Mar 2017 15:07 UTC

As many as 7,000 massive underground methane bubbles, formed by thawing permafrost are set to explode in Siberia. Such explosions, while releasing greenhouse gases, can create massive craters and poses a major safety risk to the local people.



© Steve Jurison/Wiki Commons

As the permafrost continues to melt it gives a Swiss cheese-like appearance to the landscape in the Arctic.

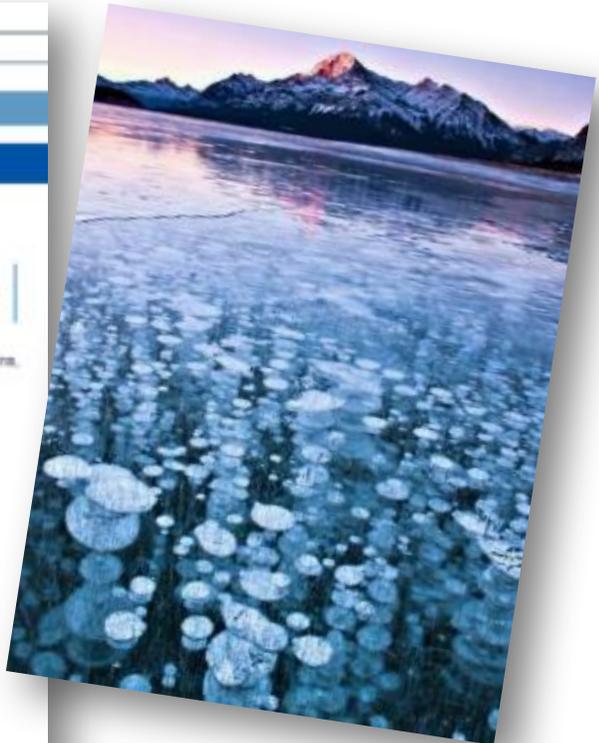
The appearance of numerous craters across the Siberian permafrost over recent years - including the famous one near Batagalin. Later, it was discovered that unseasonably high temperatures have released methane stored in the permafrost. The explosion that forms the craters.

The bubbles, known as bulguniyakh in the local Yakut language, were discovered by researchers in Siberia's remote Bely Island. In a series of field expeditions and satellite surveys, thousands of bulging bumps in the Yamal and Gydan peninsulas have been identified.

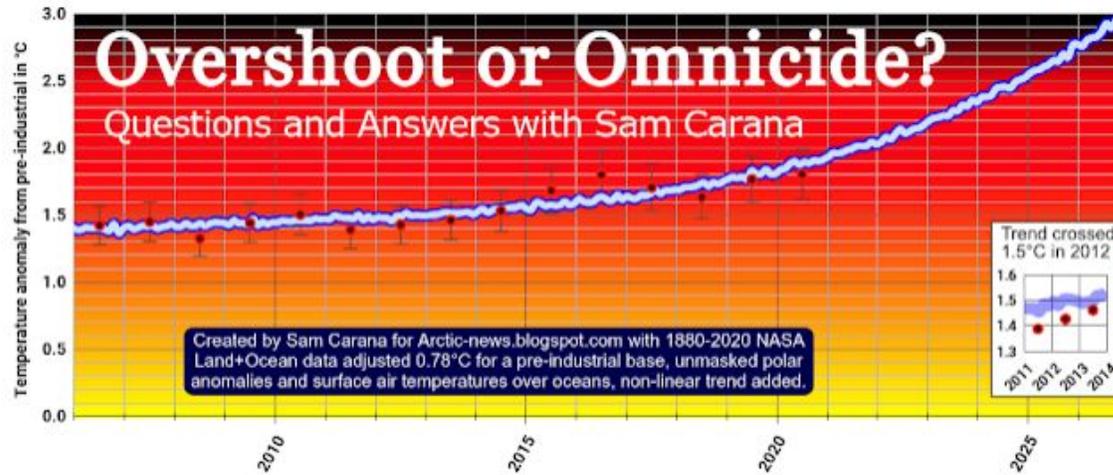
Alexey Trovsky, director of Yamal department for science and innovation, said:

Some of the bumps are dangerous and which are not. Scientists are working on detecting and structuring signs of which are dangerous and which are not. Scientists are working on detecting and structuring signs of which are dangerous and which are not. Scientists are working on detecting and structuring signs of which are dangerous and which are not.

Scientists estimate that 1,000 billion (Gt) of carbon is presently locked up as methane and methane hydrates under the Siberian permafrost. This is a significant amount of carbon that is already in the atmosphere today. Land-based permafrost, in Siberia, was estimated in 2013 to contain 1,000 billion (Gt) of carbon per year - a significant increase on the 3.8 million tons estimated in 2006, and estimates before then of just 100,000 tons.



## Will humans be extinct by 2026?

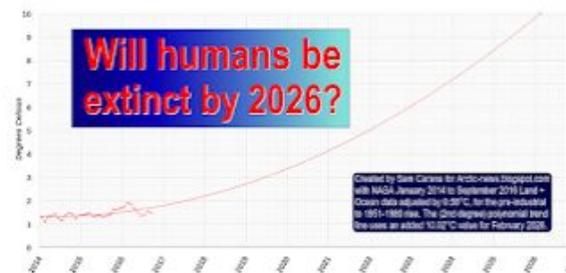


[ image from March 2021 post ]

Note: This page was written mostly in 2016, with some content added later. The image now at the top was added in 2021.

In the Arctic, vast amounts of carbon are stored in soils that are now still largely frozen. As temperatures continue to rise and soils thaw, much of this carbon will be converted by microbes into carbon dioxide or methane, adding further greenhouse gases to the atmosphere.

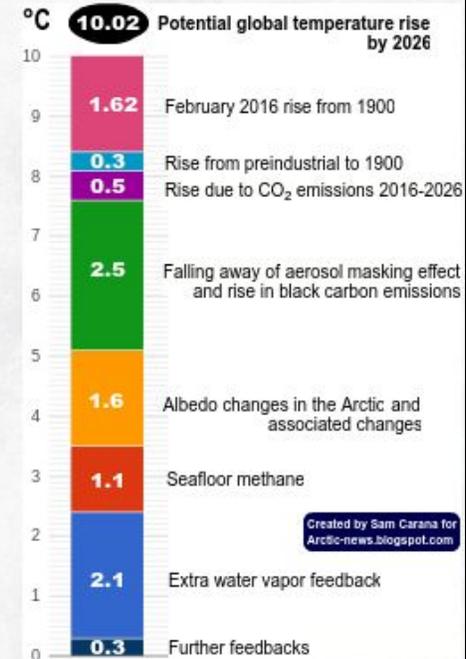
In addition, vast amounts of methane are stored in sediments under the Arctic Ocean seafloor, in the form of methane hydrates and free gas. As temperatures rise, these sediments can get destabilized, resulting in eruptions of huge amounts of



[ 2016 image, click on images to enlarge ]

### 2°C crossed

### EXTINCTION



Will humans be extinct by 2026?

### BLOG ARCHIVE BY MONTH

▼ 2021 (17)

▼ July (2)

[Arctic sea ice disappearing](#)



# Noticias ONU

Mirada global Historias humanas

Búsqueda avanzada

- Regiones
- Temas
- A la carta
- Secretario General
- Prensa

AUDIOTECA SUSCRÍBETE

## Guterres pide en Estocolmo acabar con la guerra suicida contra la naturaleza



Tweet



António Guterres @antonioguterres



Biodiversity is collapsing - and we are the losers.



Only through bold #ClimateAction and strong, credible commitments from all countries can we end this crisis.



The future of humanity depends on everyone's efforts.



Traducir Tweet



2:04 a. m. · 31 ago. 2021 · Twitter Web App



633 Retweets 50 Tweets citados 1.858 Me gusta



Respondiendo a @antonioguterres



We have the solutions and this implies changing the way we produce our food. We can bring back biodiversity and produce healthy food at the same time, it's called regenerative agriculture.

# Biodiversity talks: Ministers in Nagoya adopt new strategy

Chair of the UN biodiversity talks gavelled into effect a set of targets for 2020 to at least halve the loss of natural habitats

Jonathan Watts in Nagoya

@jonathanwatts  
Fri 29 Oct 2010 18:53 BST



Ministers at the UN conference on biodiversity in Nagoya have set targets for 2020. Photograph: AP

Environment ministers from almost 200 nations agreed late tonight to adopt a new United Nations strategy that aims to stem the worst loss of life on Earth since the demise of the dinosaurs.

With a typhoon looming outside and cheering inside the Nagoya conference hall, the Japanese chair of the UN biodiversity talks gavelled into effect the Aichi targets, set to at least halve the loss of natural habitats and expand nature reserves to 17% of the world's land area by 2020 up from less than 10% today.

10 años después

# COP15 ends with landmark biodiversity agreement



January 20, 2023

## Nations Adopt Four Goals, 23 Targets for 2030 In Landmark UN Biodiversity Agreement

Convened under UN auspices, Parties to the UN Convention on Biological Diversity Framework

### Among the goals

- Effective conservation of coastal areas and

### Decoding the 23 targets set at COP15

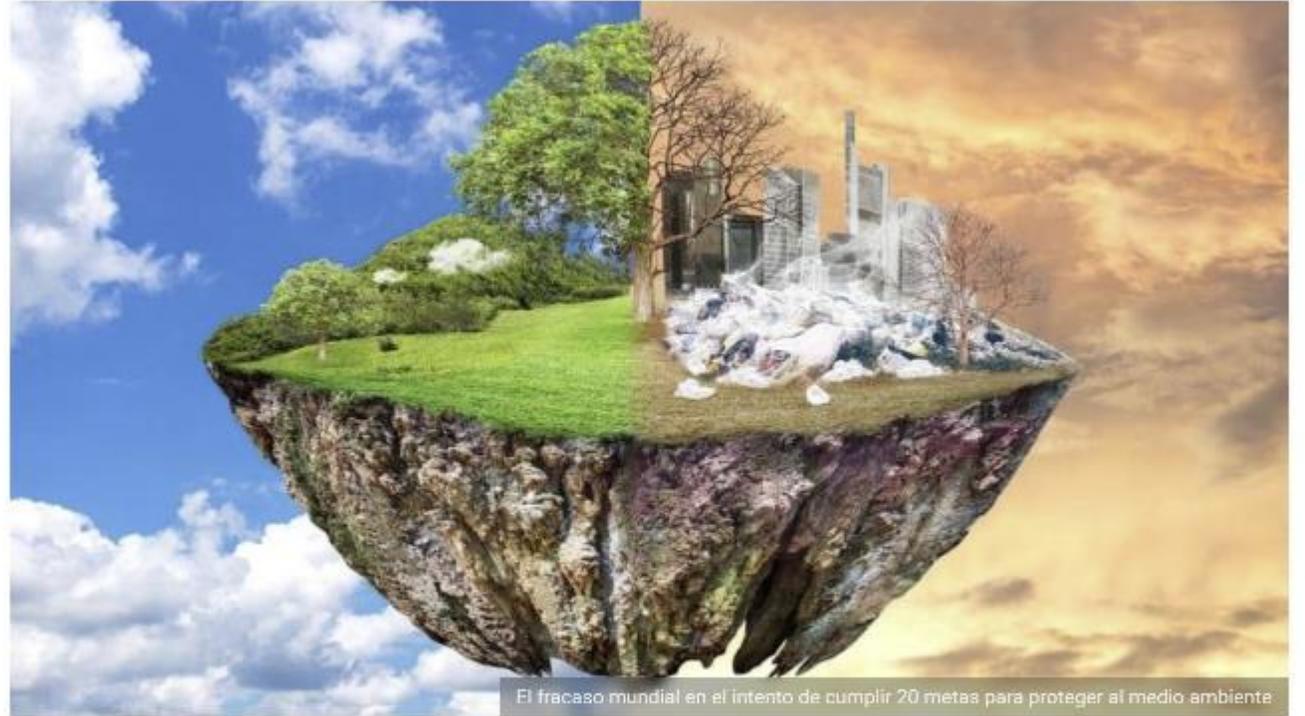
A total of 196 countries have signed a historic deal to protect 30% of the world for nature by 2030 in Montreal

REDUCING THREATS TO BIODIVERSITY	MEETING HUMAN REQUIREMENTS THROUGH SUSTAINABLE USE	TOOLS AND SOLUTIONS FOR IMPLEMENTATION AND MAINSTREAMING
<p><b>1) Halting biodiversity loss:</b> Bringing the loss of areas of high biodiversity importance close to zero, while respecting the rights of indigenous people</p> <p><b>2) Effective restoration:</b> At least 30% of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration</p> <p><b>3) Mapping linkages:</b> Sustainable use of above areas is consistent with conservation outcomes</p> <p><b>4) Saving endangered species:</b> Urgent steps to halt human induced extinction of threatened species; maintain their diversity through in situ and ex situ conservation</p> <p><b>5) Protecting wild species:</b> Sustainable, safe and legal use of wild species; preventing overexploitation</p> <p><b>6) Invasive alien species:</b> Mitigating their impacts by reducing rates of introduction by 50%; controlling them in priority sites such as islands</p> <p><b>7) Tackling pollution:</b> Reduce pollution risks to levels that are not harmful to biodiversity and ecosystem functions</p> <p><b>8) Climate crisis:</b> Minimise impact of climate change and ocean acidification through nature-based solutions</p>	<p><b>9) Serving humans:</b> Ensure use of wild species yields benefits for humans, especially for those most dependent on biodiversity</p> <p><b>10) Ecosystem productivity:</b> Sustainable management of areas under agriculture, aquaculture, fisheries and forestry for resilience and long-term productivity</p> <p><b>11) Handling nature's contributions:</b> Restore, maintain and enhance nature's contributions to people through regulation of air, water, and climate</p> <p><b>12) Biodiversity in urban fabric:</b> Increase the area and quality and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas</p> <p><b>13) Sharing genetic resources:</b> Take effective legal, policy, administrative and capacity-building measures to ensure equal sharing of benefits of genetic resources</p>	<p><b>14) Policy-making:</b> Integration of biodiversity and its values into policies across all levels of govt. other sectors</p> <p><b>15) Legal perils for businesses:</b> Regular assessments by transnational firms of their risks, dependencies, impacts on biodiversity; report on compliance with regulations</p> <p><b>16) Making eco-friendly choices:</b> Encouraging people to make sustainable consumption choices; reduce global footprint of consumption</p> <p><b>17) Biosecurity measures:</b> Adopting such steps for handling of biotechnology and distribution of its benefits</p> <p><b>18) Removal of harmful incentives:</b> Identify by 2025, and eliminate/reform incentives harmful for biodiversity; cut them by \$500 bn per year by 2030</p> <p><b>19) Biodiversity finance:</b> Increasing financial resources, mobilising \$200 billion per year by 2030</p> <p><b>20) Technical cooperation:</b> Strengthen capacity-building and development, access to and transfer of technology</p> <p><b>21) Sharing knowledge:</b> Access to information by decision makers, practitioners and public; access to technologies of indigenous peoples only with their consent</p> <p><b>22) Equal representation:</b> Ensuring equitable representation in decision-making</p> <p><b>23) Gender based review:</b> A gender-responsive approach by recognising women's rights and access to natural resources</p>

Mainstreaming	Sustainable use	Protect biodiversity	Benefits to all	Enhance implementation
1 Understand values	5 Halve rate of loss	11 Protected areas	14 Restore ecosystems	17 Revise NBSAPs
2 Mainstream biodiversity	6 Sustainable fisheries	12 Prevent extinctions	15 Enhance resilience	18 Respect traditional knowledge
3 Address incentives	7 Manage within limits	13 Conserve gene pool	16 Implement Nagoya Prot.	19 Improve knowledge
4 Sustainable production	8 Reduce pollution			20 Mobilize resources
	9 Reduce invasive species			
	10 Minimize reef loss			

FEED BBC

## El fracaso mundial en el intento de cumplir 20 metas para proteger al medio ambiente



El fracaso mundial en el intento de cumplir 20 metas para proteger al medio ambiente

Por: T13

19 DE SEPTIEMBRE DE 2020 - 06:46 HRS.

COMPARTIR



El objetivo de un acuerdo entre 170 países era lograr 20 objetivos para el cuidado de la biodiversidad en 10 años, ninguno de los países que se comprometieron logró ni uno solo de ellos.

The cover of the 'Global Biodiversity Outlook 5' report. The title is in large green font. Below it, 'SUMMARY FOR POLICYMAKERS' is written in smaller black font. The central graphic is a large, colorful mosaic of various images related to biodiversity, including animals, plants, and environmental scenes, arranged in a shape that resembles a map of the world. At the bottom, there are logos for the UN Environment Programme, the Convention on Biological Diversity, and the 2011-2020 United Nations Decade on Biodiversity.

# Global Biodiversity Outlook 5

SUMMARY FOR POLICYMAKERS



UN environment programme



2011-2020 United Nations Decade on Biodiversity

# Biodiversidad en colapso exponencial



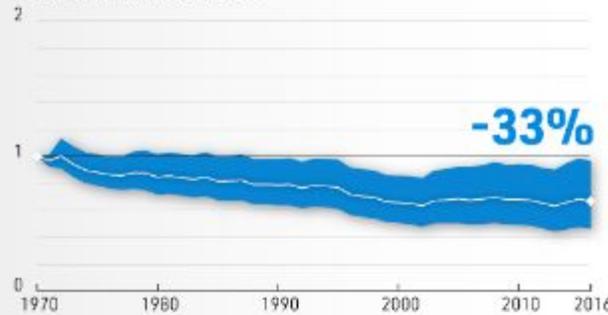
## Visualización de la reducción de la biodiversidad planetaria: **Abundancia**

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



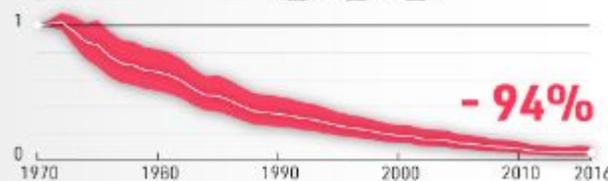
Between 1970 and 2016, vertebrate population sizes dropped by **68%** on average worldwide. However, this rate of this loss varies from region to region.

### NORTH AMERICA

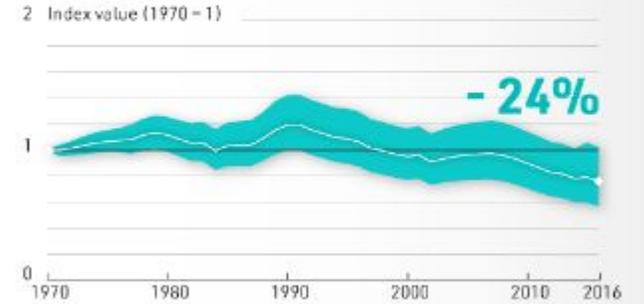


### LATIN AMERICA & CARIBBEAN

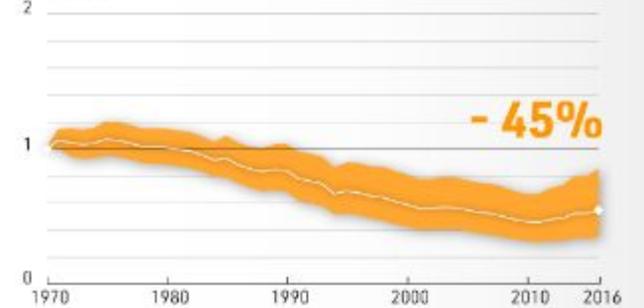
Latin America & Caribbean has seen the largest drop in biodiversity at **94%**, mainly driven by a significant decline in reptile, amphibian, and fish populations.



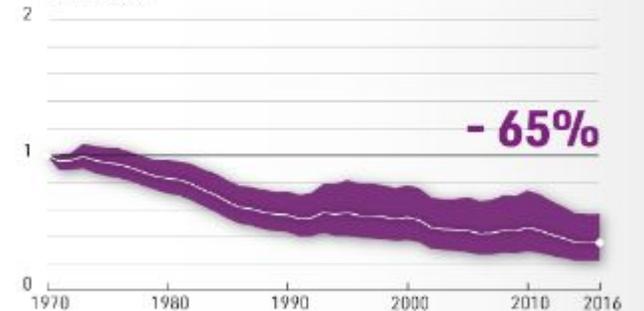
### EUROPE



### ASIA



### AFRICA



ÚLTIMA HORA

## 2035: el año en que las abejas ticas podrían desaparecer si persiste abuso de los plaguicidas

Jeffrey Garza jeffrygarza.asesor@larepublica.net | Viernes 11 junio, 2021 02:28 pm



Imagen con fines ilustrativos. Shutterstock/La República



Las abejas que habitan en Costa Rica tienen fecha de expiración, el año 2035, si el país sigue abusando de los plaguicidas y no prohíbe los que son más mortales para este vital insecto.

Así lo estima la Cámara Nacional de Fomento de la Apicultura, que puja por la prohibición del uso del fumigante abejicida, responsable de la muerte de las

LIZA GROSS SCIENCE JAN 24, 2019 4:15 PM

## Pesticides Are Harming Bees in Literally Every Possible Way

The weed killer dicamba is emerging as a big culprit in the mass die-off of bees.



Beekeepers are struggling to adapt their hives to the use of dicamba, a pesticide that kills many of the flowering plants that bees depend on. DANIEL SCHOENEN/GETTY IMAGES

THIS STORY ORIGINALLY appeared on [Reveal](#) and is part of the [Climate Desk](#) collaboration. It was produced in collaboration with the [Food & Environment Reporting Network](#), an independent nonprofit news organization.

While soybean farmers watched the [drift-prone weed killer dicamba](#) ravage millions of acres of crops over the last two years, Arkansas beekeeper Richard Coy noticed a parallel disaster unfolding among the weeds near those fields.

TRENDING NOW



Regeneración incluye rescate cultural y de agrobiodiversidad

**7.000 especies** de plantas han sido cultivadas desde el inicio de la agricultura hace 12.000 años.

Hoy, solo como **15 especies de plantas y 8 de animales** producen 90% de los alimentos.



# 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

## 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



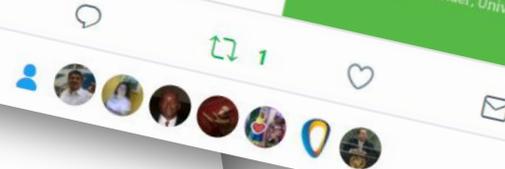
LIFE ON LAND



"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





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REUTERS SUSTAINABILITY

# Only 60 Years of Farming Left If Soil Degradation Continues

Generating three centimeters of top soil takes 1,000 years, and if current rates of degradation continue all of the world's top soil could be gone within 60 years, a senior UN official said

December 5, 2014 8

By Chris Arsenault

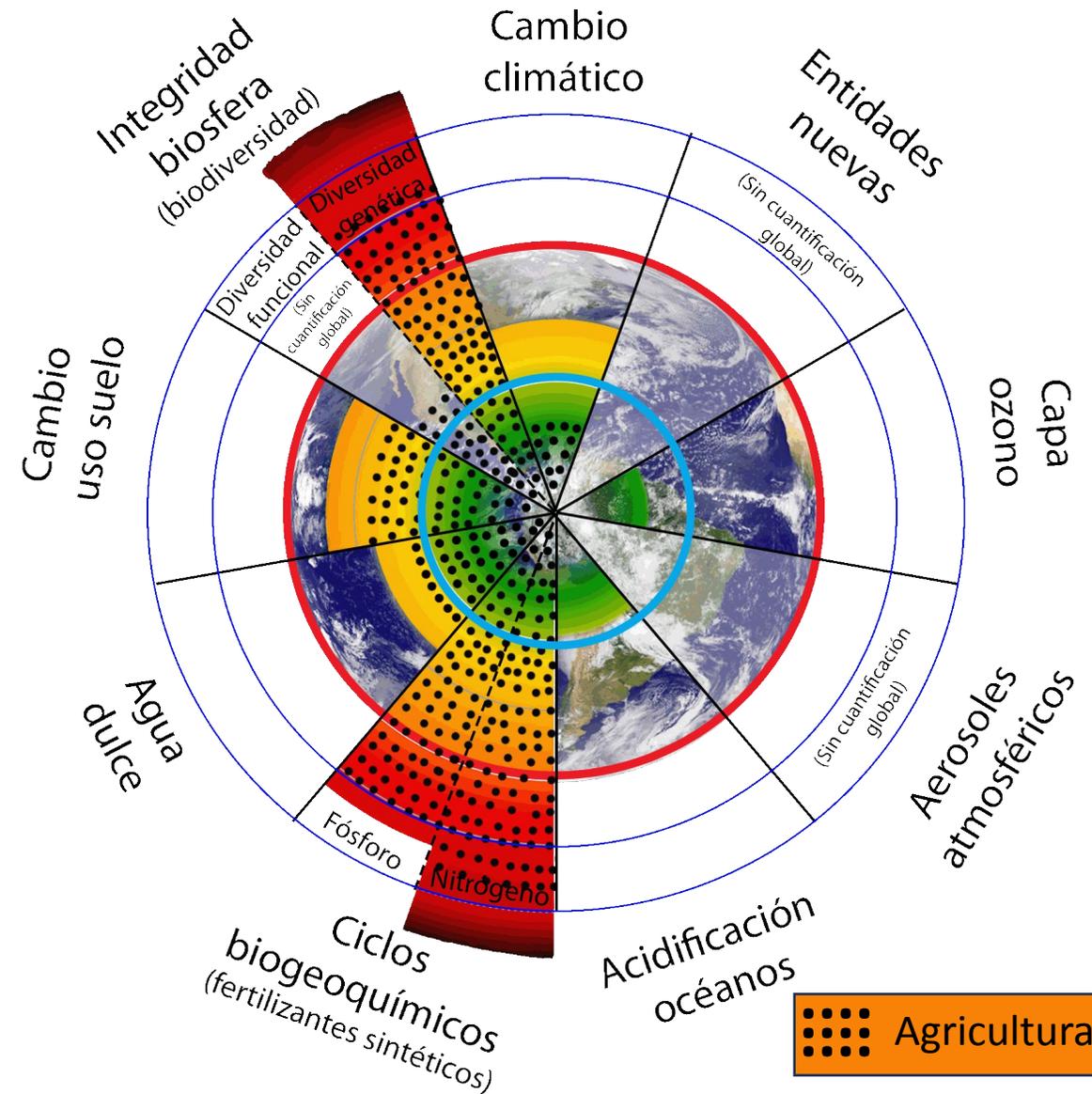
ROME (Thomson Reuters Foundation) - Generating three centimeters of top soil takes 1,000 years, and if current rates of degradation continue all of the world's top soil could be gone within 60 years, a senior UN official said on Friday.

About a third of the world's soil has already been degraded, Maria-Helena Semedo of the Food and Agriculture Organization (FAO) told a forum marking World Soil Day.

The causes of soil destruction include chemical-heavy farming techniques,

Germany  
HEalthcare  
Soiland  
energy  
gObal  
EUssia  
EnteRprise  
NorWay  
biOtech  
Romania  
PoLand  
UnioD States  
innoVation  
China

# Agricultura: 80% del cambio global



El  
alred

el



Alimentación:

¿Causa?

¡Solución!



Colza – (ácido erúxico)

**Aceite de Canola:**

Canada oil (“can” + “ola”)

Canada (“can”) oil (“o”) low (“l”) acid (“a”)

**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, CRÉAM, 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**

INGREDIENTS: COLOR COATING (SUGAR, VEGETABLE OIL [PALM KERNEL AND HYDROGENATED PALM, PARTIALLY HYDROGENATED COTTONSEED AND SOYBEAN OIL], WHEY POWDER, NONFAT DRY MILK, SORBITAN MONOSTEARATE, POLYSORBATE 60, FD&C YELLOW #5 LAKE, RED #40 LAKE, SOY LECITHIN [EMULSIFIER], VANILLIN [ARTIFICIAL FLAVOR], NATURAL AND ARTIFICIAL FLAVORS), WHITE CANDY (SUGAR, NONFAT MILK POWDER, PARTIALLY HYDROGENATED PALM KERNEL OIL, SOY LECITHIN [EMULSIFIER], MONOGLYCERIDES, ARTIFICIAL COLOR [TITANIUM DIOXIDE], ARTIFICIAL FLAVOR), CONFECTIONERY COATING (SUGAR, PARTIALLY HYDROGENATED VEGETABLE OIL [PALM KERNEL, COCONUT, PALM], COCOA POWDER, WHEY POWDER [MILK], SOY LECITHIN [EMULSIFIER], VANILLIN [ARTIFICIAL FLAVOR]), CHOCOLATY CANDY (SUGAR, PARTIALLY HYDROGENATED VEGETABLE OIL [PALM KERNEL, COCONUT, PALM], COCOA PROCESSED WITH ALKALI, DEXTROSE, COCOA POWDER, WHEY POWDER [MILK], SOY LECITHIN [EMULSIFIER], VANILLIN [ARTIFICIAL FLAVOR]).  
CONTAINS: SOYBEAN, MILK AND COCONUT PRODUCTS.  
MAY CONTAIN TRACE PEANUTS/TREE NUTS/WHEAT/SOY/MILK OR EGG PRODUCTS

Everyone's favorite  
now be enjoyed  
flavored  
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¡Dióxido de titanio!

# Flashback Friday: What 1960's Holstein genetics look like today

A research project started in 1964 to maintain the Holstein genetics at the time is still being carried out today at the University of Minnesota Morris

Research Dairy.

BY CHRISTY ACHEN, 2018 HOARD'S DAIRYMAN EDITORIAL INTERN

"The 1960's Holsteins here are basically a herd frozen in time," said Brad Heins, an associate professor and manager of the University of Minnesota's Organic Dairy Research and Outreach Center in Morris, Minn.



This cow from the U of M Morris Research Dairy is a living representation of genetics from the 1960s.

Heins explains that the cows are smaller in stature and carry more body condition than today's contemporary Holsteins. They are more fertile and have fewer health problems as well. However, the 1960's cows only average around 40 pounds of milk per day, approximately 60 pounds less than today's Holsteins.

The genetics of this herd go back farther than Pawnee Farm Arlinda Chief and Round Oak Rag Apple Elevation, which many of today's Holsteins trace back to.

When this herd was started in 1964 by Charles Young, 20 A.I. bulls at the time were chosen based on predicted transmitting ability for milk yield. Once the original supply of

# Pérdida de la diversidad genética: No hay capacidad de adaptación



## ARTIFICIAL BREEDING

by Chad Dechow

### Holstein lineages trace back to two bulls

**M**OST breeders have some sense that our current dairy cattle population has undergone a bottleneck due to intensive selection for yield and conformation. An upcoming paper in the April 2015 *Journal of Dairy Science* helps to document the extent of that bottleneck for Holsteins. All Holstein A.I. sires can be traced through three bulls born in the 1960s, and the pedigrees of those three bulls can be traced back to two bulls from the early 1880s.



Dechow

#### Three "young" bulls

Those three bulls are Round Oak Rag Apple Elevation, Pawnee Farm Arlinda Chief, and Penstate Ivanhoe Star. Approximately 51 percent of sires born this decade can be traced to Elevation, and his sire lineage can be traced to a bull named Neptune H born in 1880. Chief and Penstate Ivanhoe Star can be traced to a bull named Hulleman who was born in 1881.

Chief is responsible for nearly all of the Hulleman descendants, and approximately 49 percent of bulls born this decade trace through Chief. We may well look back at this decade as the end of Penstate Ivanhoe Star's male lineage as he is currently responsible for less than 1 percent of

means that 10 percent of Ivanhoe's genes are the same as what we would find in an average modern Holstein. This compares with a relationship of approximately 14 percent with modern Holsteins cows for both Chief and Elevation.

#### Carried two lethal genes

The rapid decline of the Ivanhoe male lineage is due largely to the fact that Penstate Ivanhoe Star and his son Bell carried two lethal genetic conditions — BLAD (through Ivanhoe) and CVM (through Penstate Ivanhoe Star's dam). Bull studs began eliminating bulls that carried the defects and, subsequently, culled many of the Ivanhoe line's male descendants.

While the rapid decline in male lineages is alarming, it is important to keep in mind that many bulls have contributed to genetic variation in Holsteins through their female descendants. Because dairy producers are primarily concerned with the genetic potential of cows, it is not clear that the limited male lineages present any real challenges for Holstein breeders.

The one area where there appears to be a lack of variation, however, is the Y chromosome. The male sex chromosome is only inherited through male lineages. There is potential for variation to be added to the Y through mutation, and a small

masculinity. Genes on other chromosomes do contribute to a male's reproductive performance, but the lack of Y chromosome variation does limit how much we could select for improved male reproductive performance to some degree.

While we can trace all current sires through two male lineages, there are at least two others that were in existence as late as the 1960s. Those bulls are Netherland Prince and Netherland Jacob, both born in 1880. Semen from both of these lineages is currently in storage as part of the NAGP (National Animal Germplasm

Program) of the University of Minnesota. It contains a genetically diverse range of genes. The program is a valuable genetic resource.

The effort to preserve genetic diversity of the bull lineage through the NAGP is a good example of how to preserve genetic diversity of the bull lineage through the NAGP. The effort to preserve genetic diversity of the bull lineage through the NAGP is a good example of how to preserve genetic diversity of the bull lineage through the NAGP.

born during that experiment.

The short-term objective of the project is to allow for the evaluation of Y chromosome variation and to facilitate research trials to determine if such variation is associated with male reproductive performance parameters. Generally speaking, we know less about Y chromosome genes than those in the rest of the genome.

#### May rediscover value

In the long term, this effort may result in the reintroduction of lost genetic diversity that is of value to dairy producers. We know for



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**Climate Pledge campaign boosts Meat Free Monday message**



 **Nacionales Internacionales Opinión Deportes Ambiente Economía Cultura Ciencia**

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](http://lr21.com.uy) · 3 Febrero, 2019 · En Ambiente  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

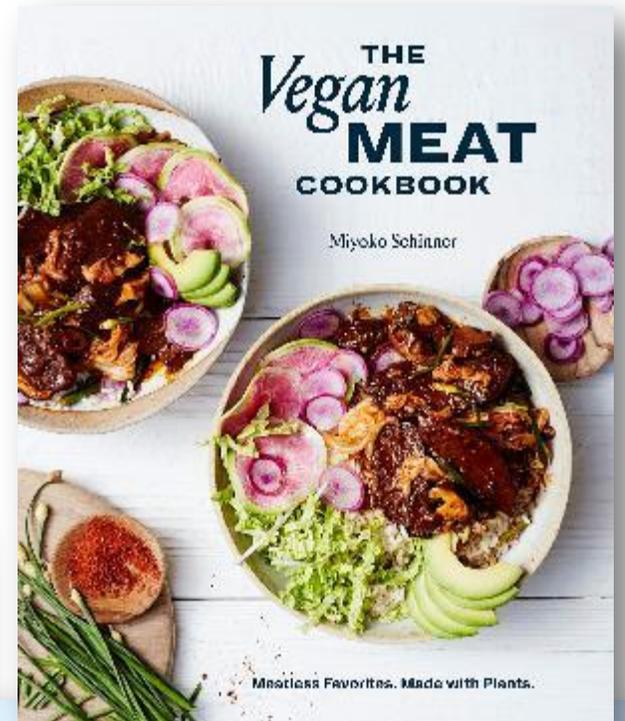


Image credits: Reuters.



## Scientific Challenges and Solutions for Cultured Meat Manufacturing

By Andy Tay, PhD April 7, 2021



## ESTOS SON LOS 4 PAÍSES LATINOAMERICANOS QUE DESPERDICIAN MÁS COMIDA

Argentina, Brasil, México y  
Colombia



De acuerdo con la revista *AnimalGourmet*, en América Latina se desperdician alrededor de 348 000 toneladas de alimentos al día, la cual es una cantidad suficiente para alimentar a los habitantes de Perú. Esto quiere decir que es en total 127 millones de toneladas de alimentos que se pierden al año; o visto de otra manera, alrededor del 15 por ciento de los alimentos disponibles –muy a pesar de que hay 47 millones de habitantes en condición de hambruna–.

En palabras de la representante de la Organización de las Naciones Unidas para la Alimentación y la Agricultura –FAO– en Chile, Eve Crowley, "Lo que se pierde y desperdicia en los alimentos solamente a nivel de venta es más de lo que se necesita para alimentar a todas las personas que padecen hambre en la región". Crowley calcula que cada latinoamericano malgasta 223 kilos de frutas, verduras, carne, pescado y productos lácteos al año. Principalmente en países como Argentina, Brasil, México y Colombia.

La data informa que, por ejemplo, los argentinos no consumen el 12,5 por ciento de lo que producen; es decir, unas 16 millones de toneladas al año, de las cuales, 14,5 millones se pierde siquiera antes de llegar a los consumidores. Mientras que en México se desperdicia el 37 por ciento de lo que el país produce, alrededor de 10,4 millones de toneladas. En total, y según las estimaciones de la FAO, los desperdicios que se generan tan sólo en América Latina y el Caribe representan el 6 por ciento de las pérdidas mundiales de alimentos, las cuales, a su vez, causan un "perjuicio estimado en 940 000 millones de dólares al año."

Quizá esta sea la razón por la que el Programa Mundial de Alimentos de la ONU asegura que "hay suficiente alimentos para que todos los habitantes del planeta tengan lo necesario para vivir una vida sana y productiva"; sin embargo, en el planeta se desechan 1,300 millones de toneladas anuales, impidiendo la alimentación de 2

# Desperdicio de alimentos

223 kilos desperdiciados por persona al año

348 000 t/día

127.000.000 t/año

15% de los alimentos disponibles

47 millones de habitantes en condición de  
hambruna

# Producción agrícola y uso de fertilizantes y plaguicidas América Latina

Producción agrícola 1989=100%

Anuarios estadísticos FAO

**Fertilizantes**

**Plaguicidas**

**Productividad**

año

Ligero incremento en producción es por incremento de área plantada

# Costa Rica

Año	ha agricultura	Plaguicidas t
1977	345,000	2,800
2006	451,000 (↑30.7%)	12,000 (↑328%)

Estado de la Nación 2012

**Cuadro 1. Rendimiento de los principales cultivos según hectáreas sembradas (toneladas por hectárea)**

Cultivos	1991-1996	2006-2011	
Café verde	1.46	1.05	-30%
Arroz cáscara	4.25	3.91	-8%
Caña de azúcar	80.36	70.00	-13%
Nuez de palma	15.65	17.10	
Bananos	43.69	44.88	
Fuente: IICA (2013)			



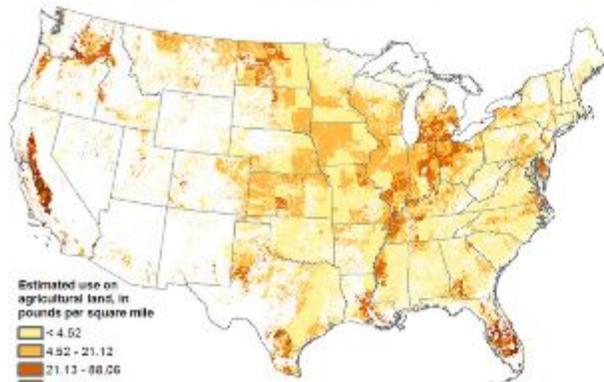
# GLYPHOSATE: UNSAFE ON ANY PLATE

FOOD TESTING RESULTS AND  
SCIENTIFIC REASONS FOR CONCERN



In one form or another, whether as refined sugars such as a high fructose corn syrup or beet sugar,

**Estimated Agricultural Use for Glyphosate, 1992**  
EPest-Low



Food Democracy Now! Glyphosate: Unsafe on Any Plate

FOOD | NOV. 14, 2016 10:55AM EST

## Alarming Levels of Glyphosate Found in Popular American Foods

U.S. Right to Know

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SHARE THIS STORY

By Carey Gillam

Independent tests on an array of popular American food products found massive residue levels of the weed killer glyphosate. The nonprofit organizations behind [Democracy Now](#) and [The Detox Project](#)—released a report Monday that det groups are calling for corporate and regulatory action to address consumer

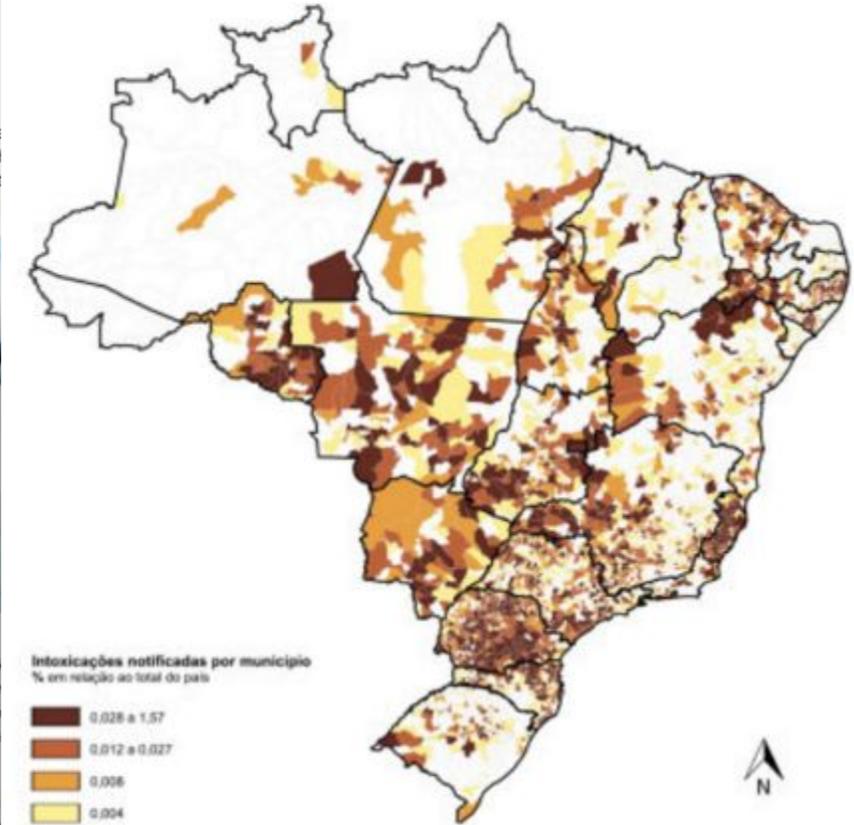


combinations of persistent pesticide residues in their food.<sup>27</sup>

**Estimated Agricultural Use for Glyphosate, 2014 (Preliminary) EPest-High**



### BRASIL PESSOAS INTOXICADAS POR AGROTÓXICO DE USO AGRÍCOLA MUNICÍPIOS (2007 - 2014)



Nota: do total de 25.106 intoxicações notificadas no período, 7.437 (29,62%) não possuem informação sobre o município em que houve o agravo, portanto não estão representadas no mapa.

0 500 Km

OCTOBER 12, 2018

# New study links common herbicides and antibiotic resistance

by University of Canterbury



Un nuevo estudio encuentra que las bacterias desarrollan resistencia a los antibióticos hasta 100,000 veces más rápido cuando se exponen a los herbicidas más utilizados del mundo, Roundup (glifosato) y Kamba (dicamba) y antibióticos, en comparación con sin el herbicida.



Credit: CC0 Public Domain

A new study finds that bacteria develop antibiotic resistance up to 100,000 times faster when exposed to the world's most widely used herbicides, Roundup (glyphosate) and Kamba (dicamba) and antibiotics compared to without the herbicide.



MICROBIOTA

## El glifosato afecta a tus bacterias intestinales

Detrás de los problemas de salud que provocan las alteraciones de la microbiota podría haber un factor oculto: la exposición al glifosato, el herbicida más utilizado actualmente en la agricultura.



El glifosato es uno de los herbicidas más utilizados en agricultura y, según Stephanie Seneff, investigadora del Massachusetts Institute of Technology, altera la microbiota y está probablemente detrás de la epidemia de sensibilidad al gluten, diabetes, Alzheimer, enfermedad de Crohn y muchas otras enfermedades.

### El glifosato, enemigo de la microbiota

Este efecto del glifosato lo explica en un estudio publicado en *Entropy* en 2013 junto al investigador independiente Anthony Samsel.

Los investigadores sugieren que el herbicida interfiere en la síntesis de aminoácidos aromáticos por parte de la microbiota, impide el transporte de compuestos azufrados e inhibe una enzima (citocromo P450) desintoxicante. Estas acciones biológicas podrían desencadenar los procesos que llevan a muchas enfermedades metabólicas y degenerativas neurológicas.

Uno de los argumentos que se utilizan para defender que el glifosato no afecta a la salud humana es que en las plantas actúa por una ruta metabólica que no existe en los animales: la ruta del ácido shikímico, necesaria para sintetizar los aminoácidos esenciales aromáticos (fenilalanina, tirosina y triptófano).

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

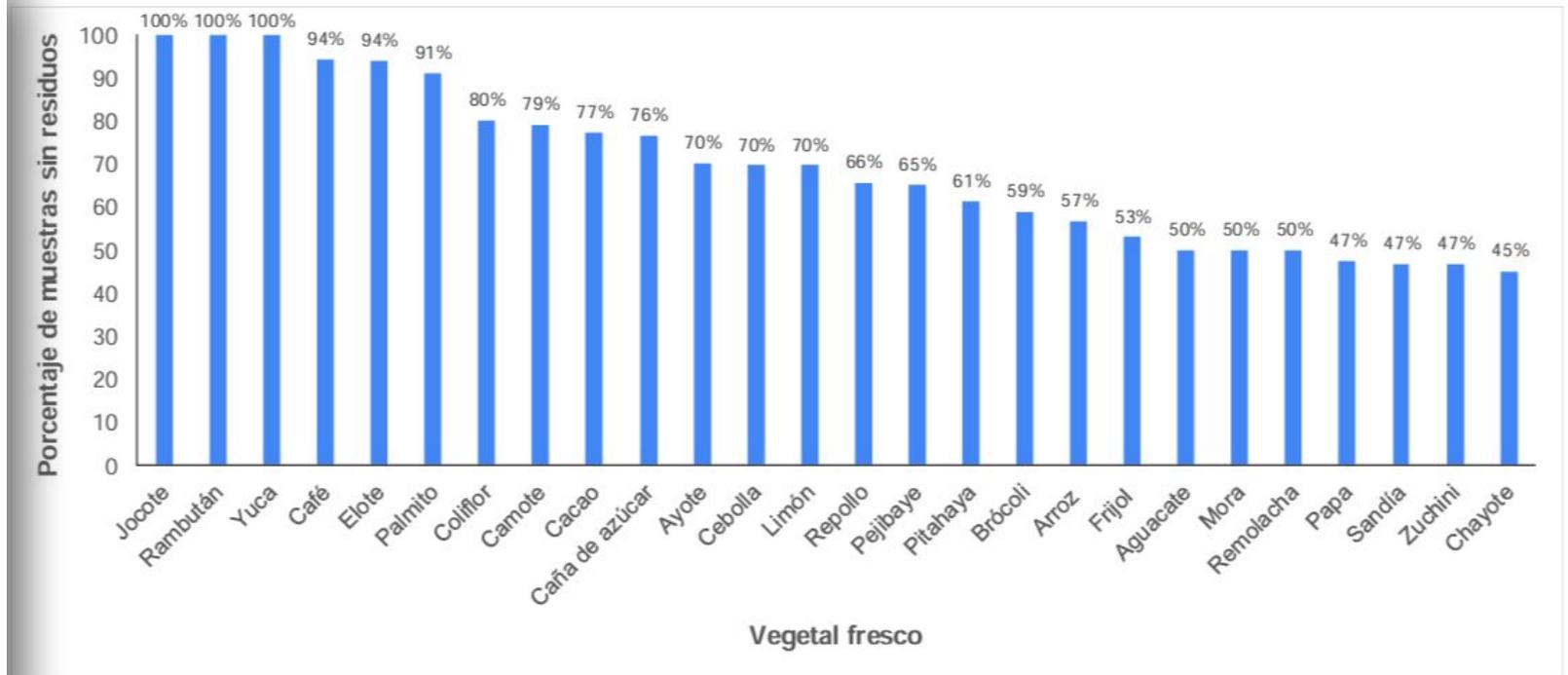


Imagen con fines ilustrativos. Shutterstock/La República



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:	<b>AE-RES-INF-001-2022</b>
		Página:	9 de 33



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

# Colapsos en funciones ecosistémicas

- Ivermectina







## BEYOND BLOOD AVOCADOS



Avocados. Photo courtesy of Pexhere



# ¿Está manchado de sangre el aguacate que estás comiendo?

Juanan Navarro

CONCIENCIA SOCIAL - 02 enero, 2019

El aguacate es el *bestseller* del *pornfood* contemporáneo. Una pieza básica en el engranaje alimenticio del *healthy millennial way of life*. Su deliciosa, unido a una calidad nutritiva maravillosa, ha conquistado nuestros corazones hasta tal punto que su demanda escaló a las **500.000 toneladas en 2018** tan solo en Europa. Somos verdaderamente felices con nuestros aguacates. O al menos lo éramos. Porque solo unas semanas atrás el famoso chef irlandés JP

## Should you stop eating 'blood avocados'?

Some British and Irish restaurants are ditching avocado dishes over concerns about the environment and Mexican drug cartels



Avocados in Michoacán, Mexico. Photograph: Ronaldo Schemidt/AFP/Getty Images

**A**voocado on toast might be off the menu. British and Irish restaurants are increasingly ditching them over concerns that Latin American imports are damaging the environment and funding Mexican drug cartels. Growers in Michoacán, west Mexico, have had their land seized by drug lords who are reported to be profiting from a year by selling the so-called "blood avocados" to British

rawberry Cafe in Great Missenden, Buckinghamshire, once served 10 avocado dishes each week. The owner, Katy Brill, made the "ethical" decision to stop because of ethical concerns over imports, she says. "Primarily I just felt that it didn't fit with my ethos of serving local food," she says. "If you can eat with the season and support local producers, that's always going to be sustainable because it's

Economía y Política

## Rodrigo Chaves levanta la restricción a importación del aguacate hass desde México

La ministra de Agricultura y Ganadería (MAG), Laura Bonilla tendrá la instrucción directa de apoyar a los productores nacionales



# Comunicado de prensa: La degradación del suelo a nivel mundial empeora y ahora es "crítica", poniendo en riesgo el bienestar de 3200 millones de personas

La degradación de la tierra ha llegado a un nivel "crítico" en todo el mundo, con un 75% de tierras degradadas y proyecciones de un aumento a más del 90% para el año 2050



RIBE

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REUTERS SUSTAINABILITY

# Only 60 Years of Farming Left If Soil Degradation Continues

Generating three centimeters of top soil takes 1,000 years, and if current rates of degradation continue all of the world's top soil could be gone within 60 years, a senior UN official said

December 5, 2014 8

By Chris Arsenault

ROME (Thomson Reuters Foundation) - Generating three centimeters of top soil takes 1,000 years, and if current rates of degradation continue all of the world's top soil could be gone within 60 years, a senior UN official said on Friday.

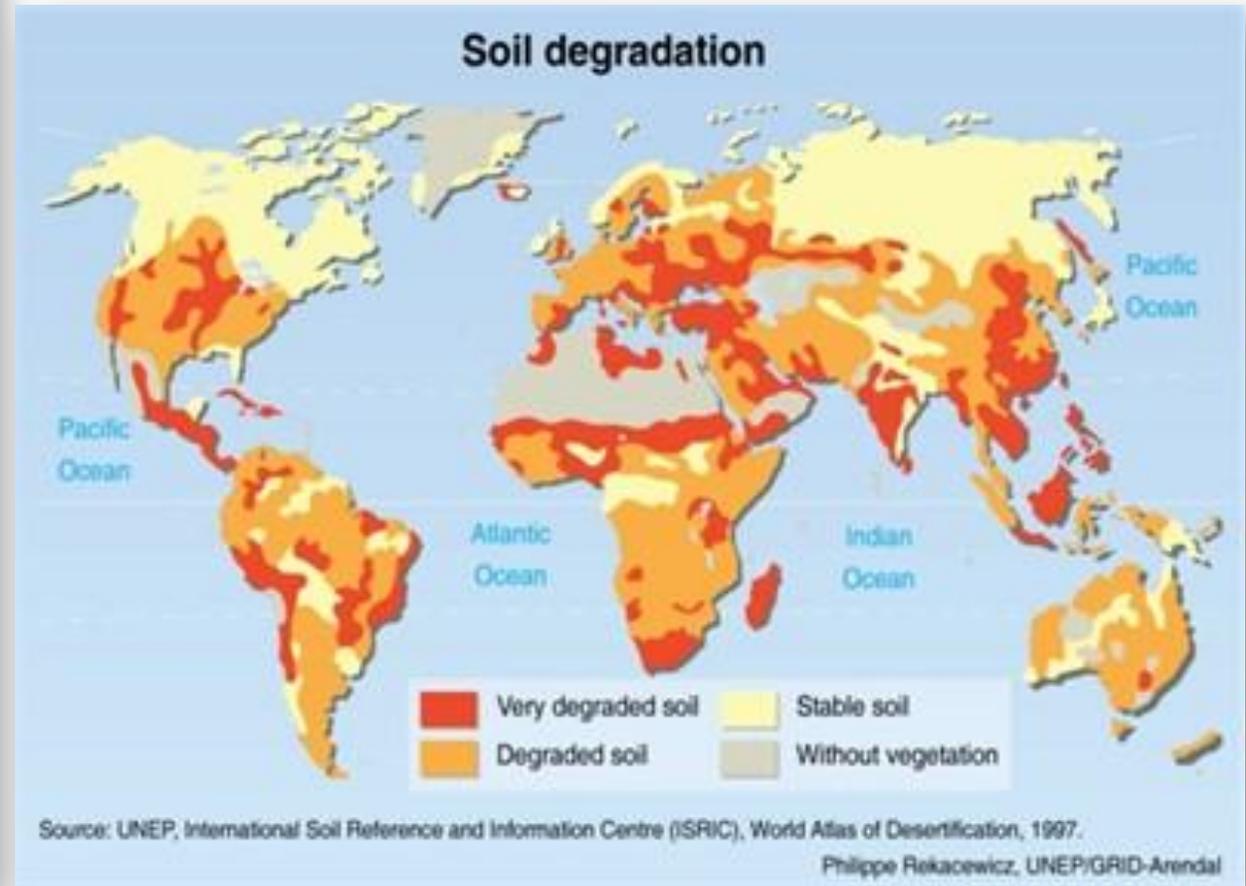
About a third of the world's soil has already been degraded, Maria-Helena Semedo of the Food and Agriculture Organization (FAO) told a forum marking World Soil Day.

The causes of soil destruction include chemical-heavy farming techniques,

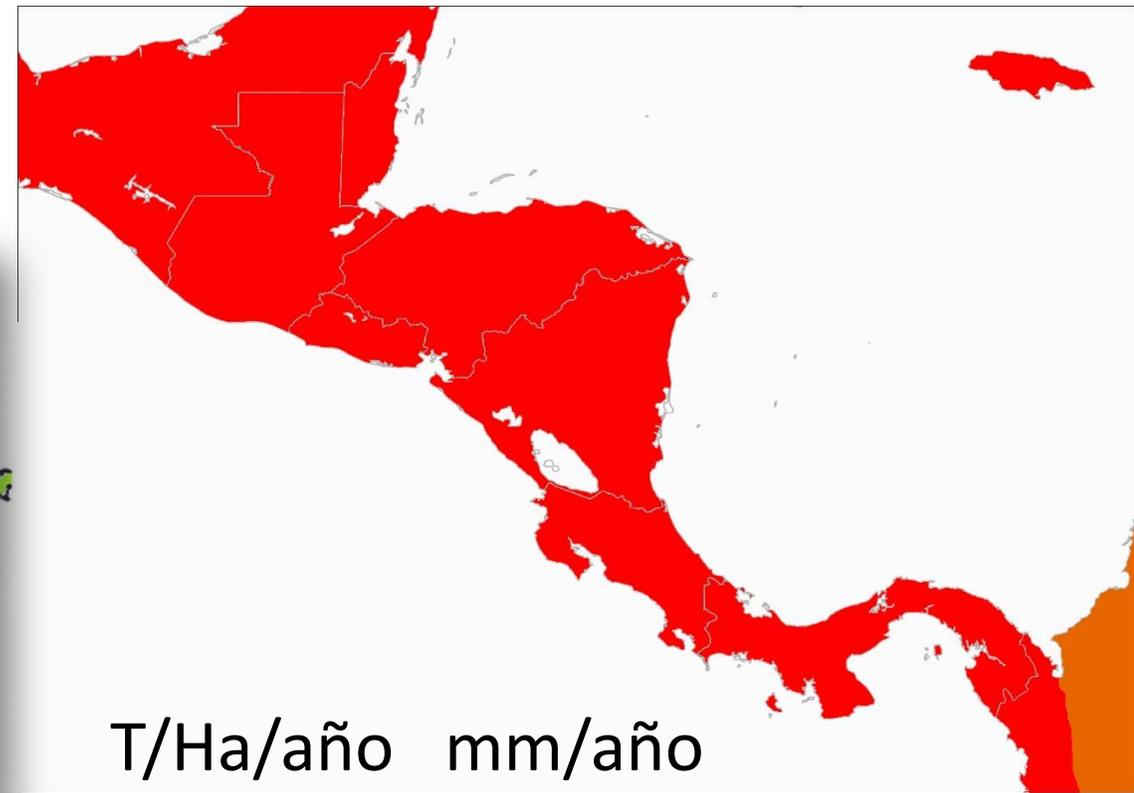
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HEalthcare  
SoTland  
energy  
gObal  
EUssia  
EnteRprise  
NorWay  
biOtech  
Romania  
PoLand  
UninD States  
innOvation  
Chna

# Agricultura

Entre 1850 y 2000 se han perdido alrededor de  $78 \pm 12$  Gt de carbono del suelo

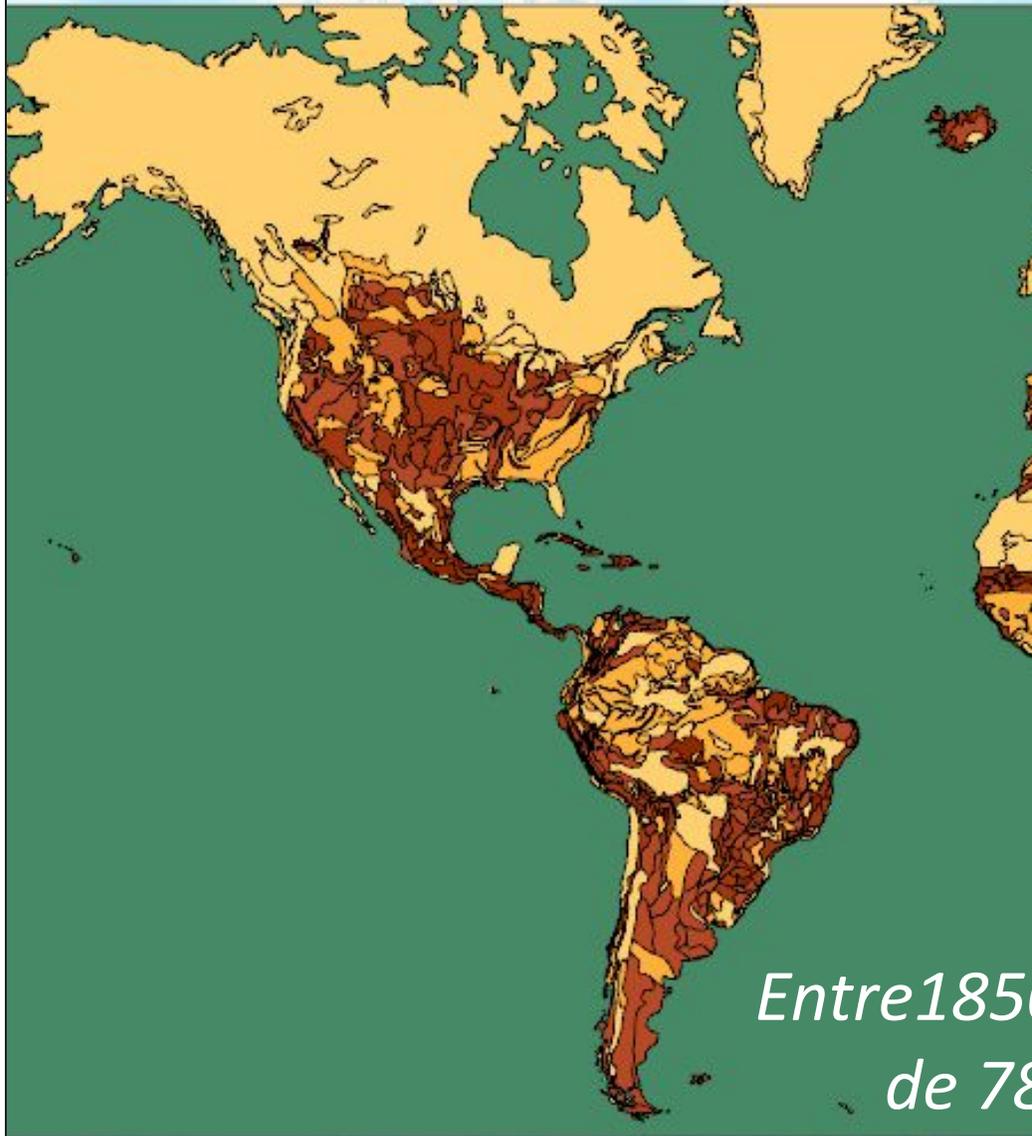


# Erosión Hídrica y Eólica



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

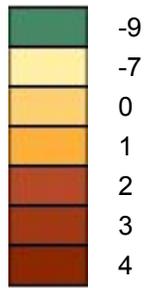
Created: Aug. 23, 2022 by Data Basin Tempora



*Entre 1850  
de 78*

Legend

Global Assessment of Human-induced Soil Degradation (GLASOD)



Displaying: SEVERITY

Global Assessment of Human-induced

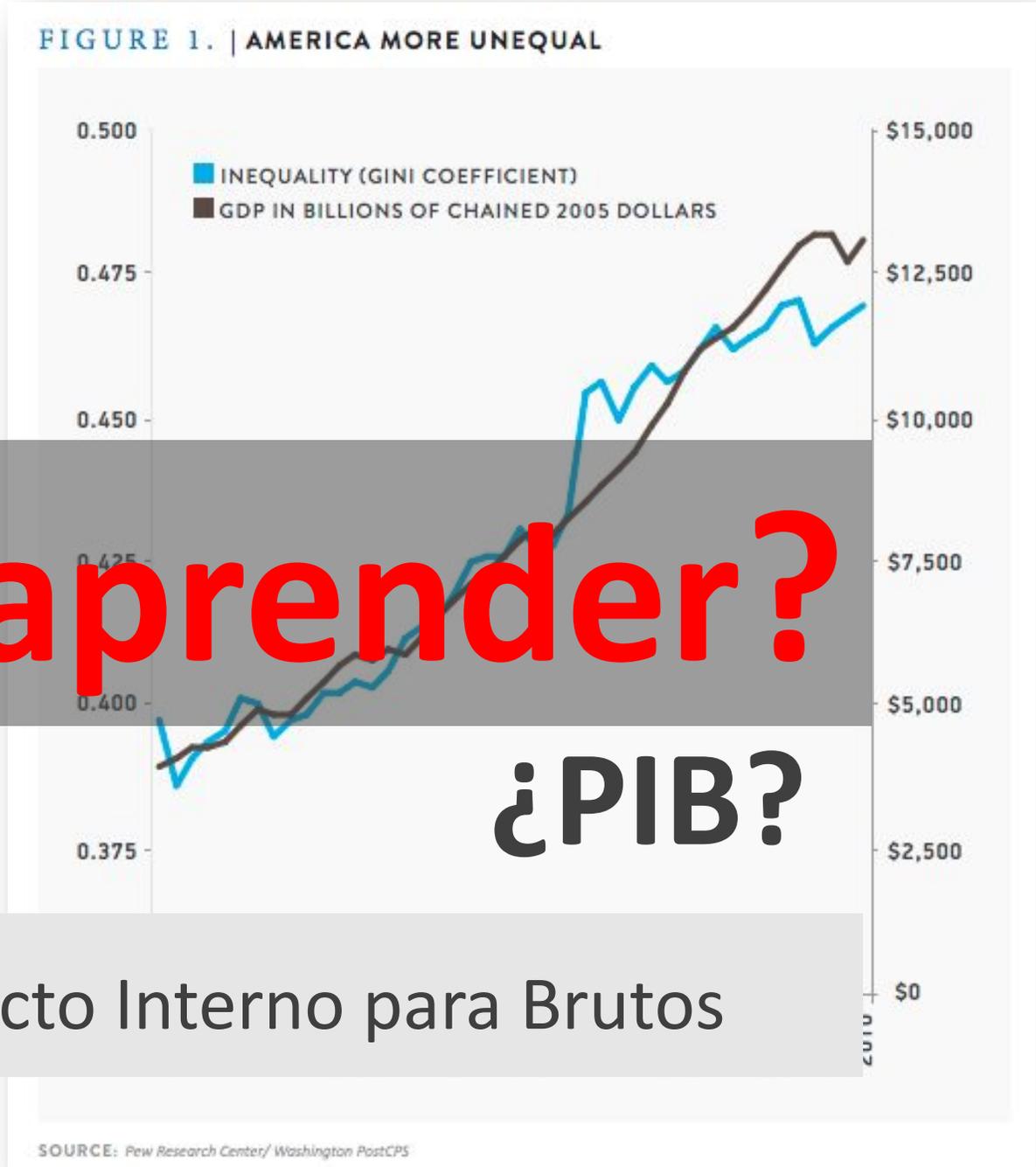
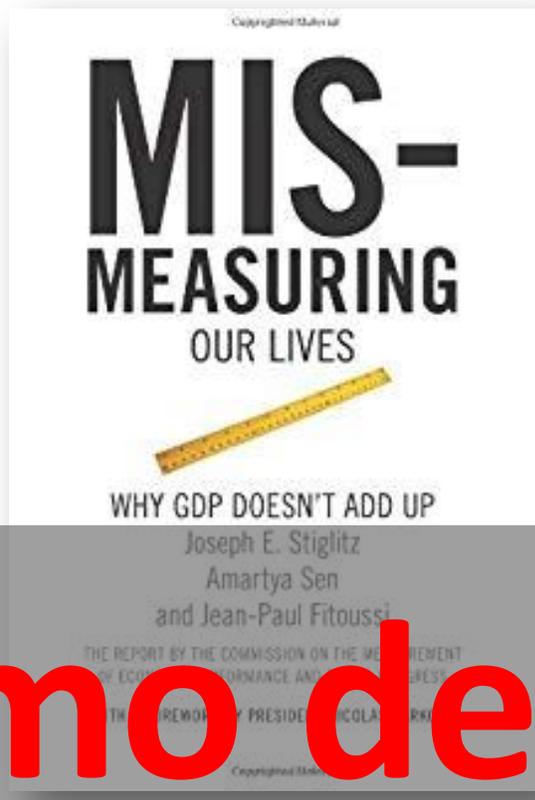
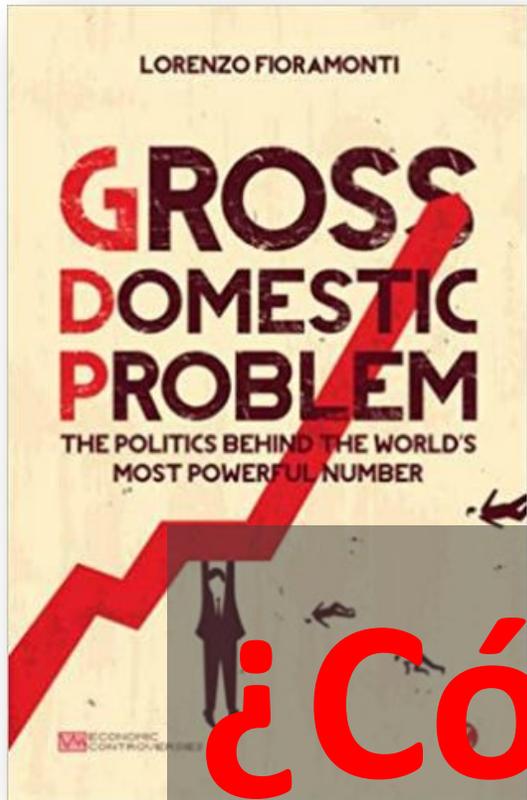
<https://databasin.org/datasets/7254137cabb04>



0 1450 km (900 miles)

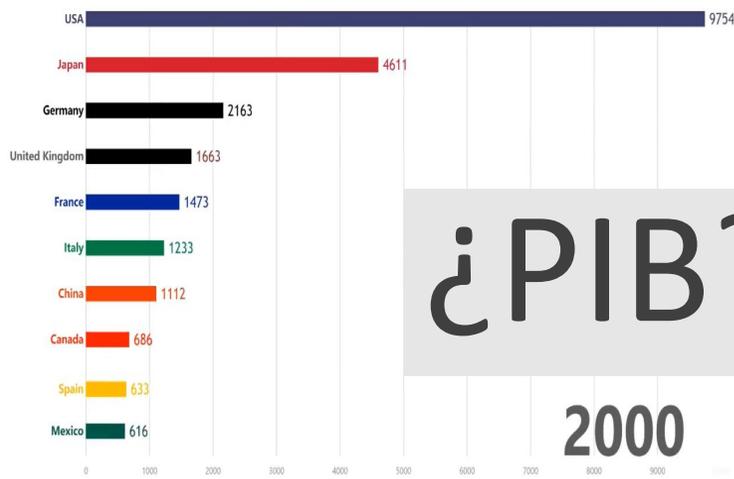
# ¿Qué es desarrollo?





¿Cómo desaprender?

World GDP by Country in Billions USD



¿PIB? = Producto Interno para Brutos

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

### A high quality of life

Mercer, the world's largest human resource management consulting firm, ranked Singapore as the city with the highest quality of life in Asia in its 2019 Quality of Life Survey.

Efficient city planning, a developed economy, superior geographical location, a reliable public transport system, convenient transportation, a warm climate, along with a tolerant and multicultural atmosphere make Singapore a study destination suitable for people from all over the world. Singapore also embraces a rich culture of art, history, architecture, food and sports.



### 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

Not sure  
our chat



# ¿Cuáles son nuestras aspiraciones?

# Singapur

# Biocapacidad

## Países con déficit de biocapacidad

% en que la huella ecológica supera la biocapacidad

<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%

## Países con reservas de biocapacidad

% en que esa biocapacidad supera la huella ecológica

<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%

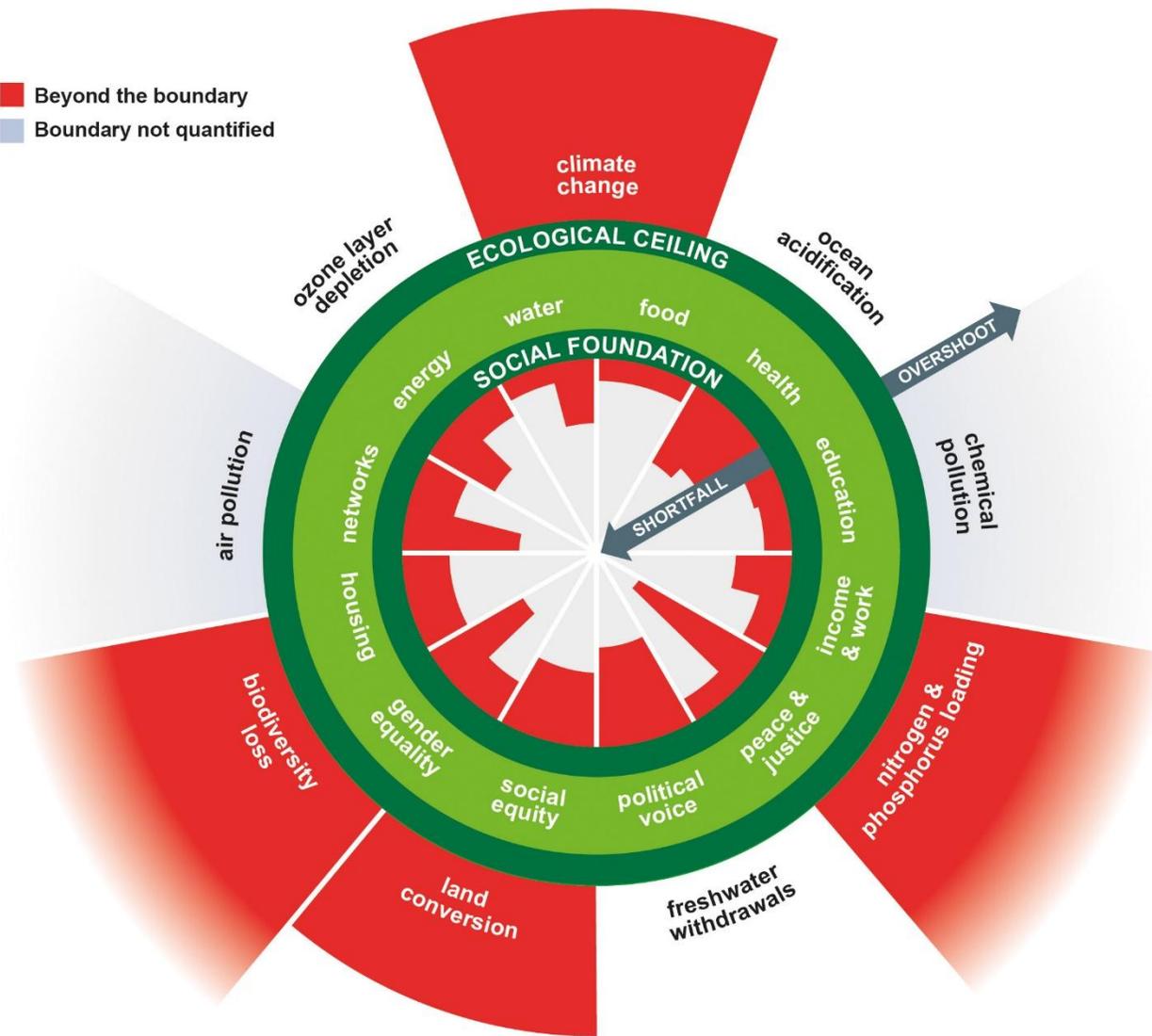
Empresas Sostenibles

# Amsterdam adoptará el modelo 'donut' para reparar la economía posterior al coronavirus

🕒 2 semanas hace sustainability

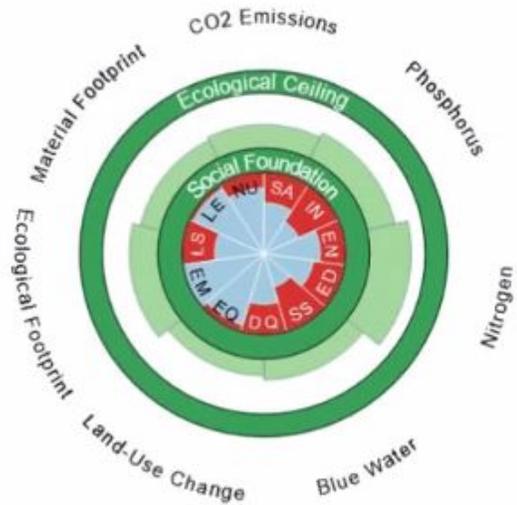


■ Beyond the boundary  
■ Boundary not quantified



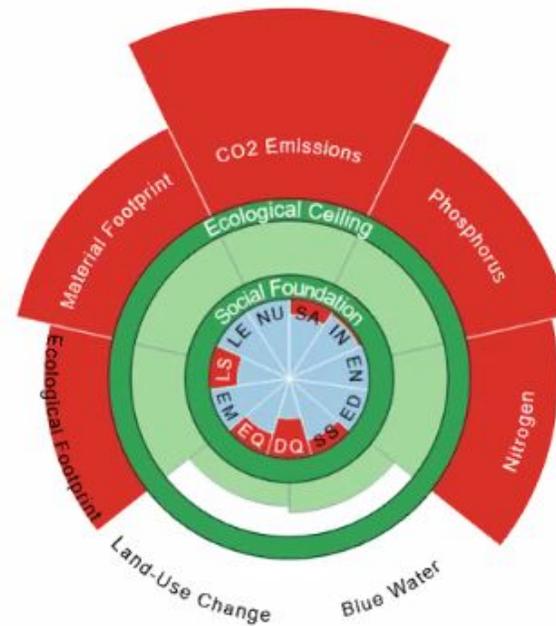
Funcionarios holandeses y economista británico usarán una guía para ayudar a la ciudad a prosperar

# Bangladesh



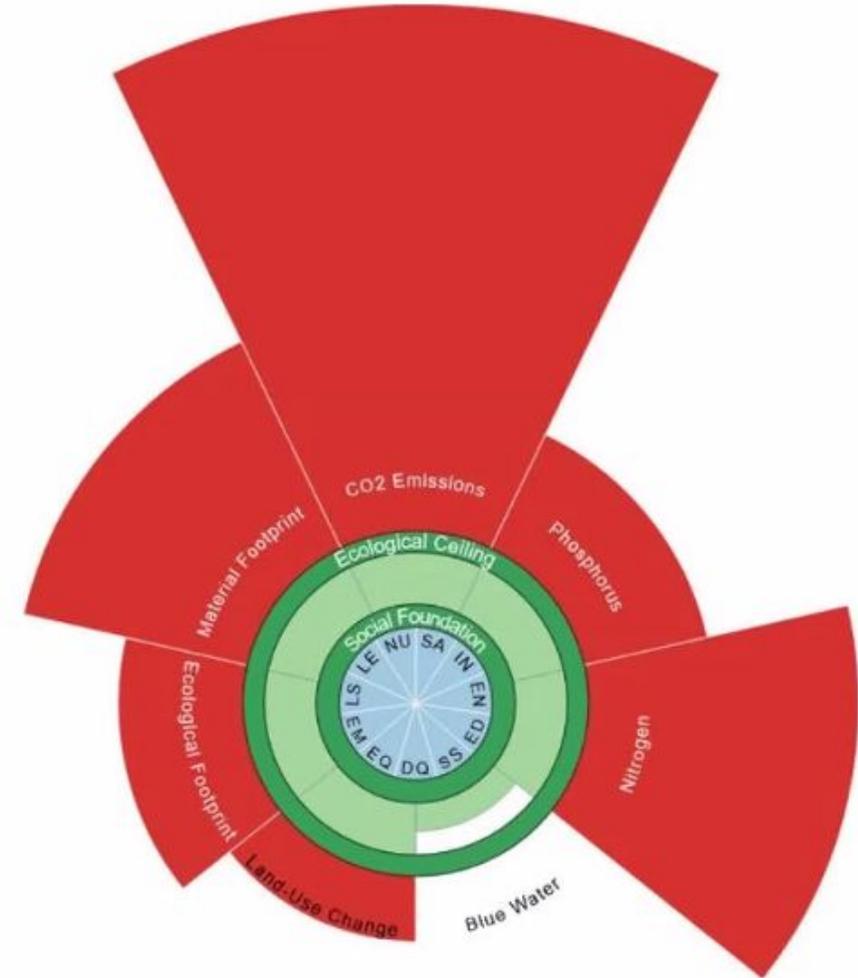
**\$5,100 pc**

# China

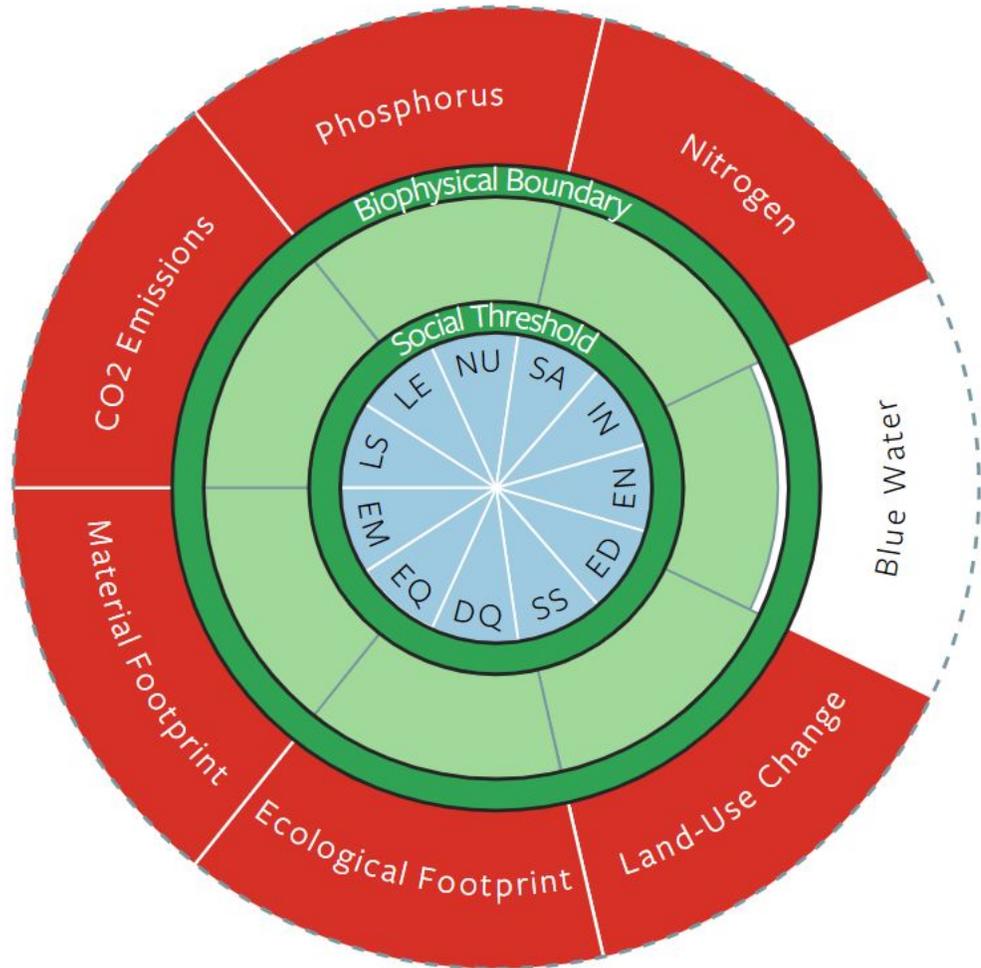


**\$17,200 pc**

# Norway



**\$44,300 pc**



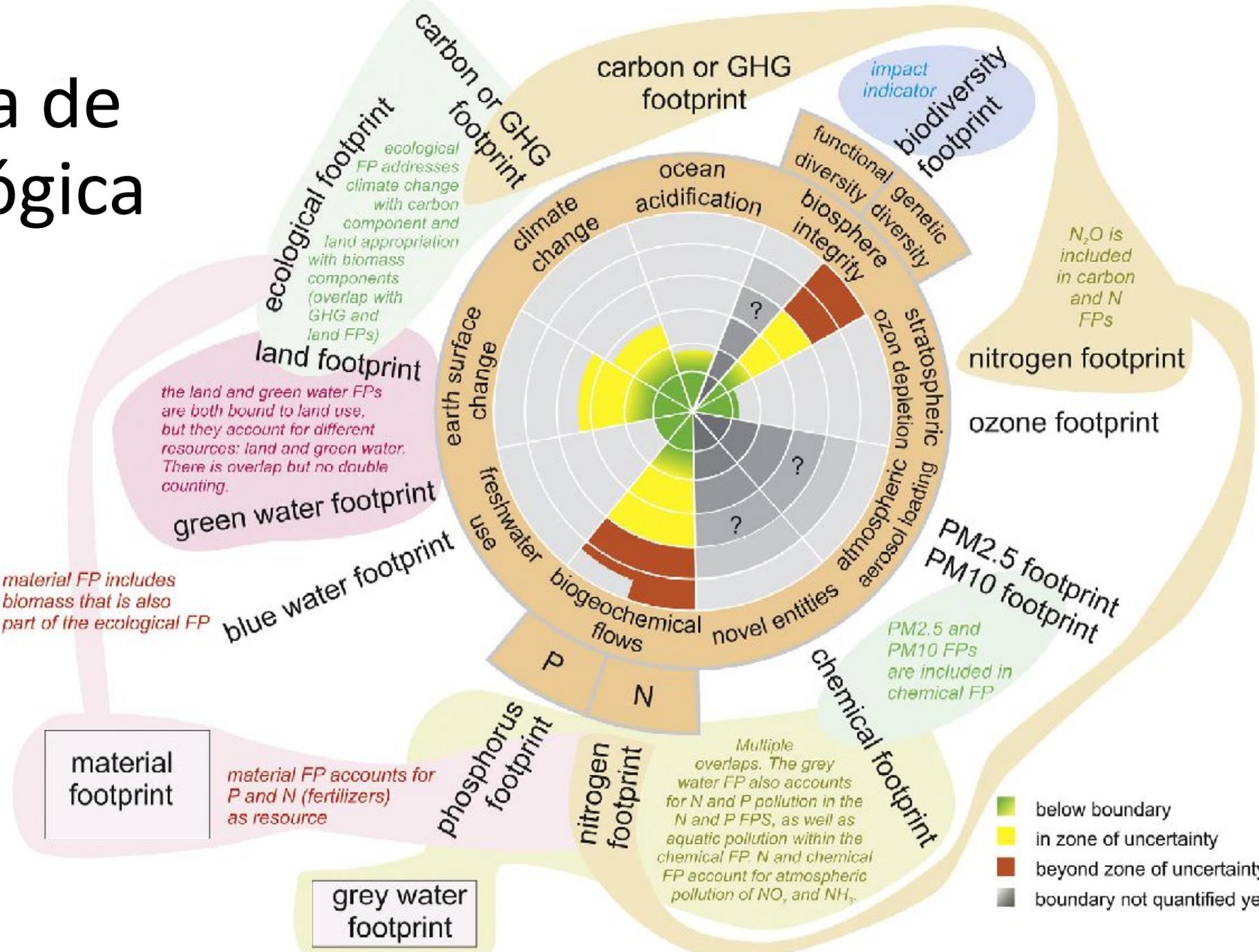
LS - Life Satisfaction	ED - Education
LE - Healthy Life Expect.	SS - Social Support
NU - Nutrition	DQ - Democratic Quality
SA - Sanitation	EQ - Equality
IN - Income	EM - Employment
EN - Access to Energy	

¿Es el gobierno?  
¿Es el empresariado?

o

¿Es la gente? - ¡nosotros!

# La gran familia de la huella ecológica



# Extinción planetaria mejor documentada de la historia...



Acción

Datos → Información → Conocimiento → ¿Sabiduría?

Cada año generamos más datos que lo que se generaron hasta el año anterior.

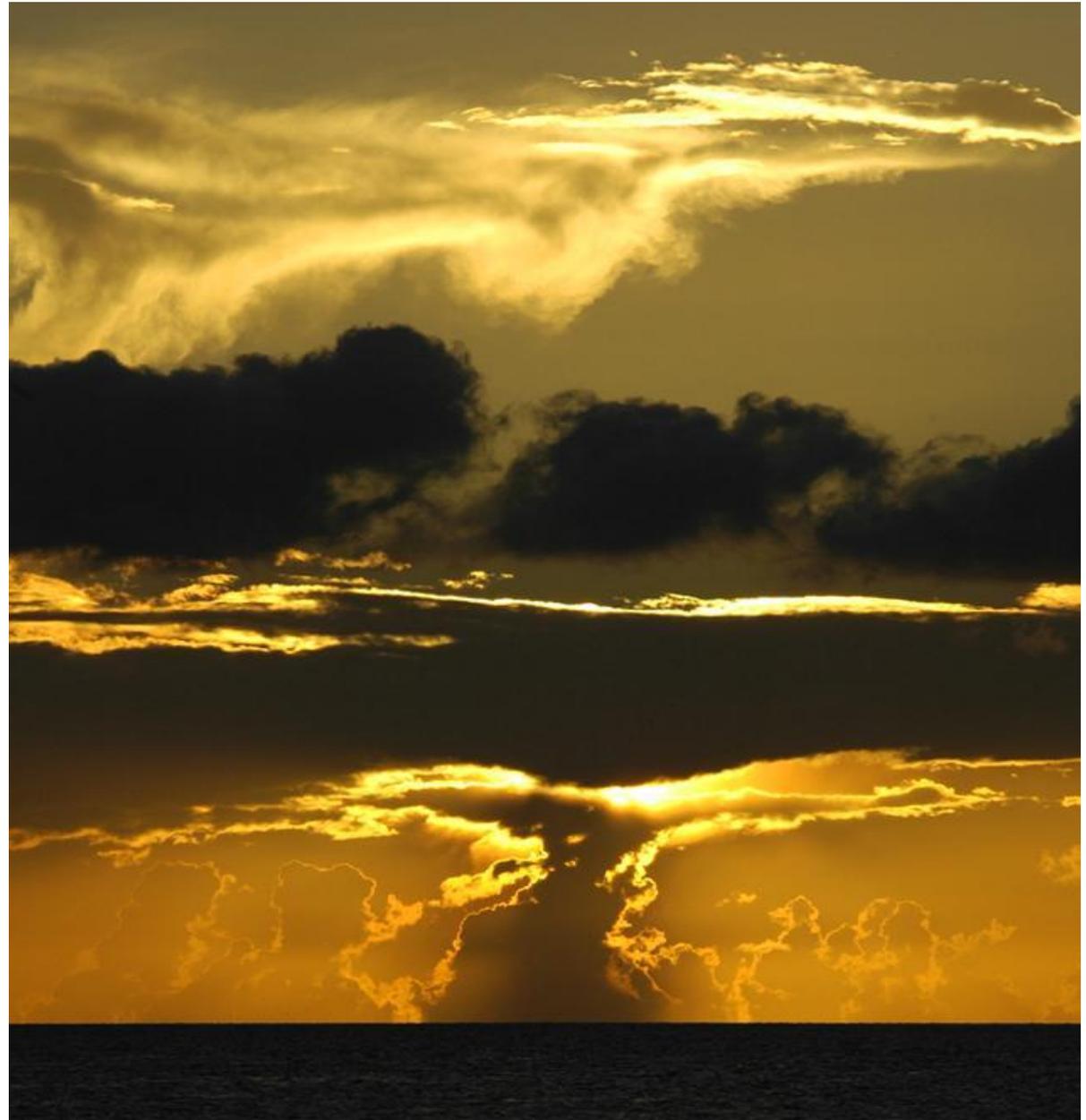
# Sabiduría

“La sabiduría o sapiencia es la **capacidad de pensar y actuar** utilizando el conocimiento, la experiencia, la comprensión, el sentido común y la percepción.

La sabiduría está asociada con atributos como la **compasión**, el autoconocimiento experiencial, el **desapego** y virtudes como la **ética** y la **benevolencia**”.

¿De quién  
depende el  
futuro?

¿Cómo  
construimos  
el futuro?

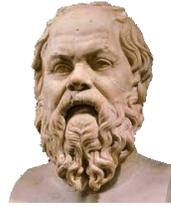


# Reto #1: ¿Humanos y Naturaleza o Humanos son Naturaleza?



## Reto #2

¡El enfoque reduccionista de la educación occidental es un reto clave!



399 BC

- Socrates – Plato: **una pregunta**, la hipótesis, para **una respuesta**



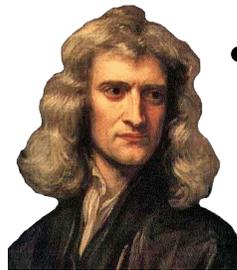
322 BC

- Aristóteles - 'Analítica' – Lógica: proceso de encontrar hechos razonados – **verdadero o falso**.



1650

- Descartes: **reino material y espiritual están desconectados**. Mente humana está separada de la naturaleza, los humanos controlan la naturaleza.



1727

- Isaac Newton: universo de cuerpos que se comportan uniformemente, las interacciones se limitan a **simples relaciones** dependiendo de las **fuerzas que se ejercen entre los cuerpos**.



## Resultado: Soluciones desconectadas

### PLAN DE DESCARBONIZACIÓN COMPROMISO DEL GOBIERNO DEL BICENTENARIO



COSTA RICA  
GOBIERNO DEL BICENTENARIO  
2018 - 2022



DESCARBONICEMOS  
COSTA RICA  
COMPROMISO PAÍS 2018-2050

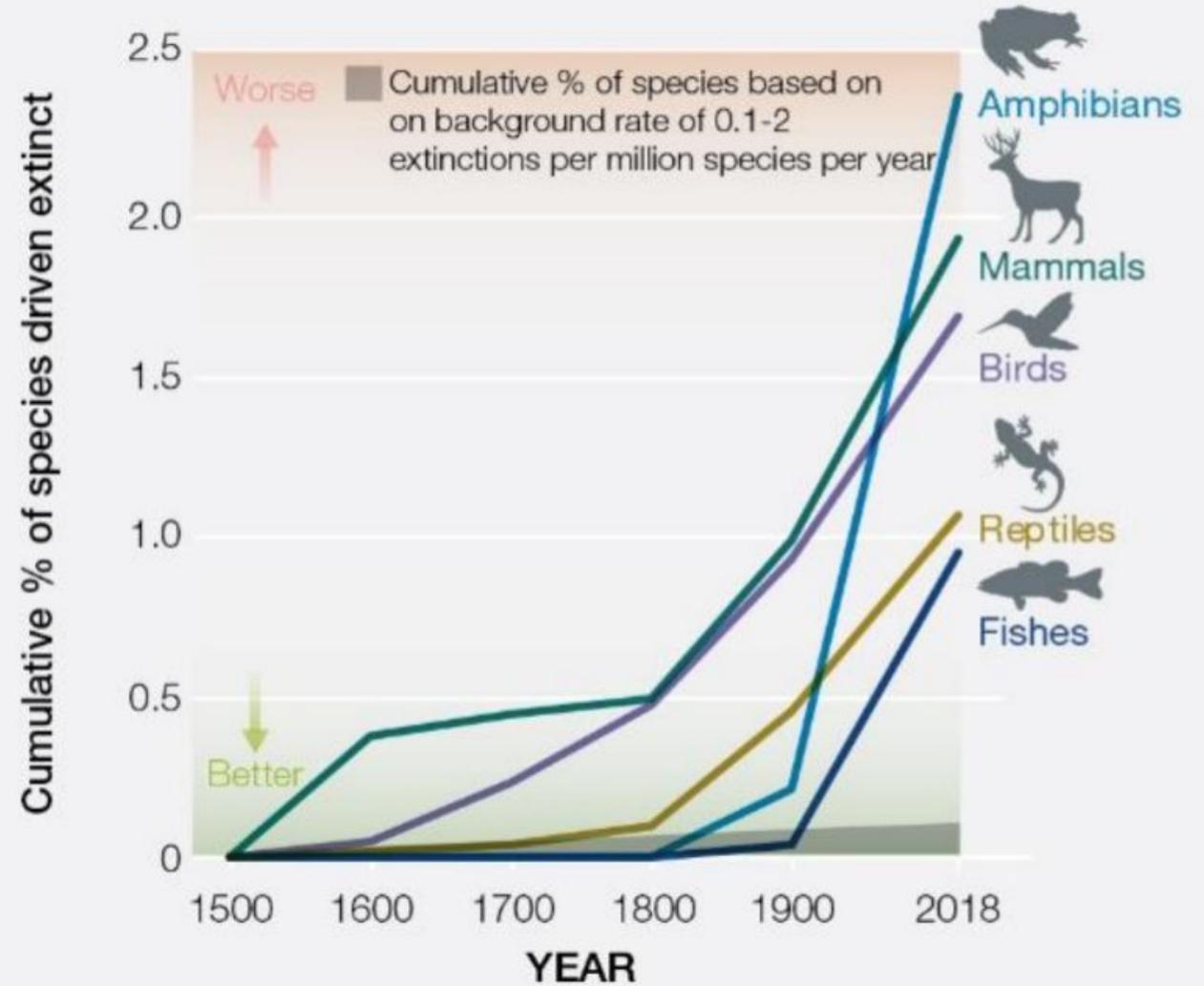
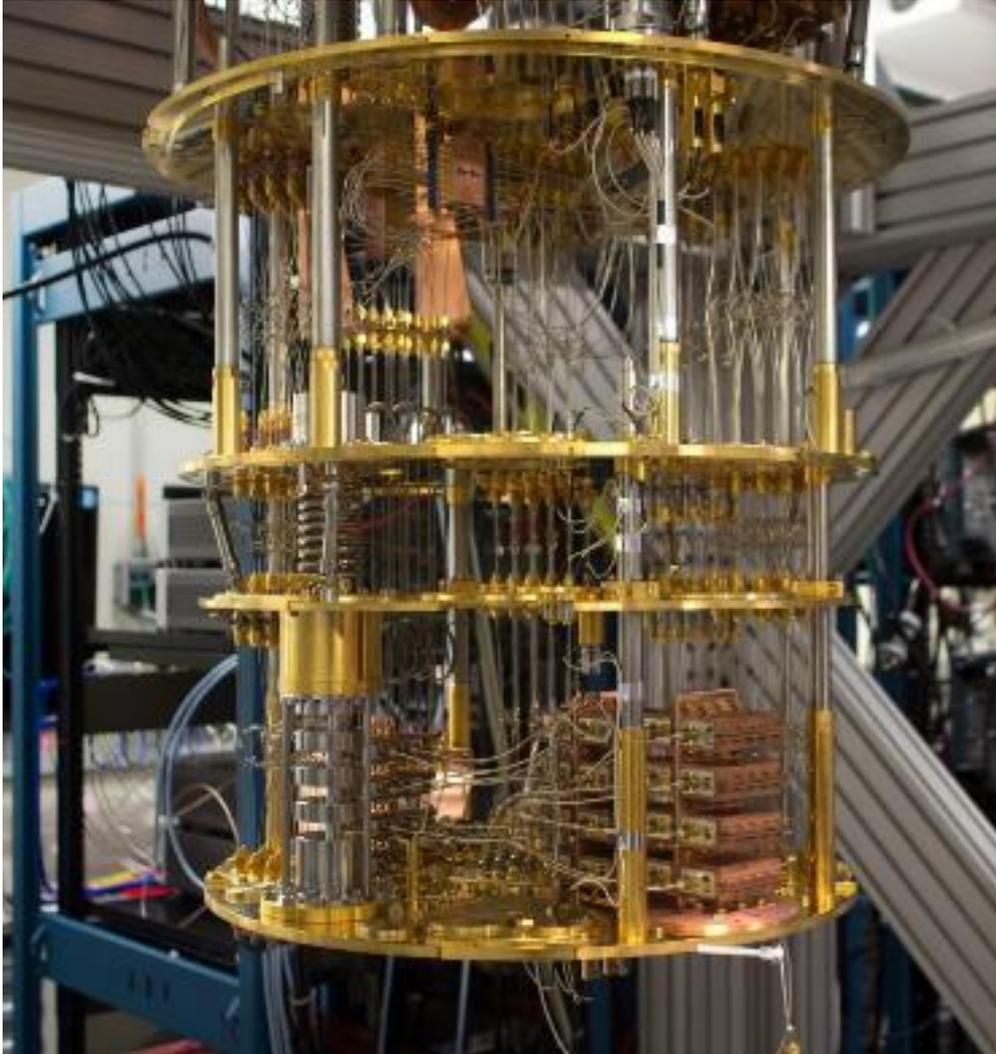
## Avoiding meat and dairy is 'single biggest way' to reduce your impact on Earth

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

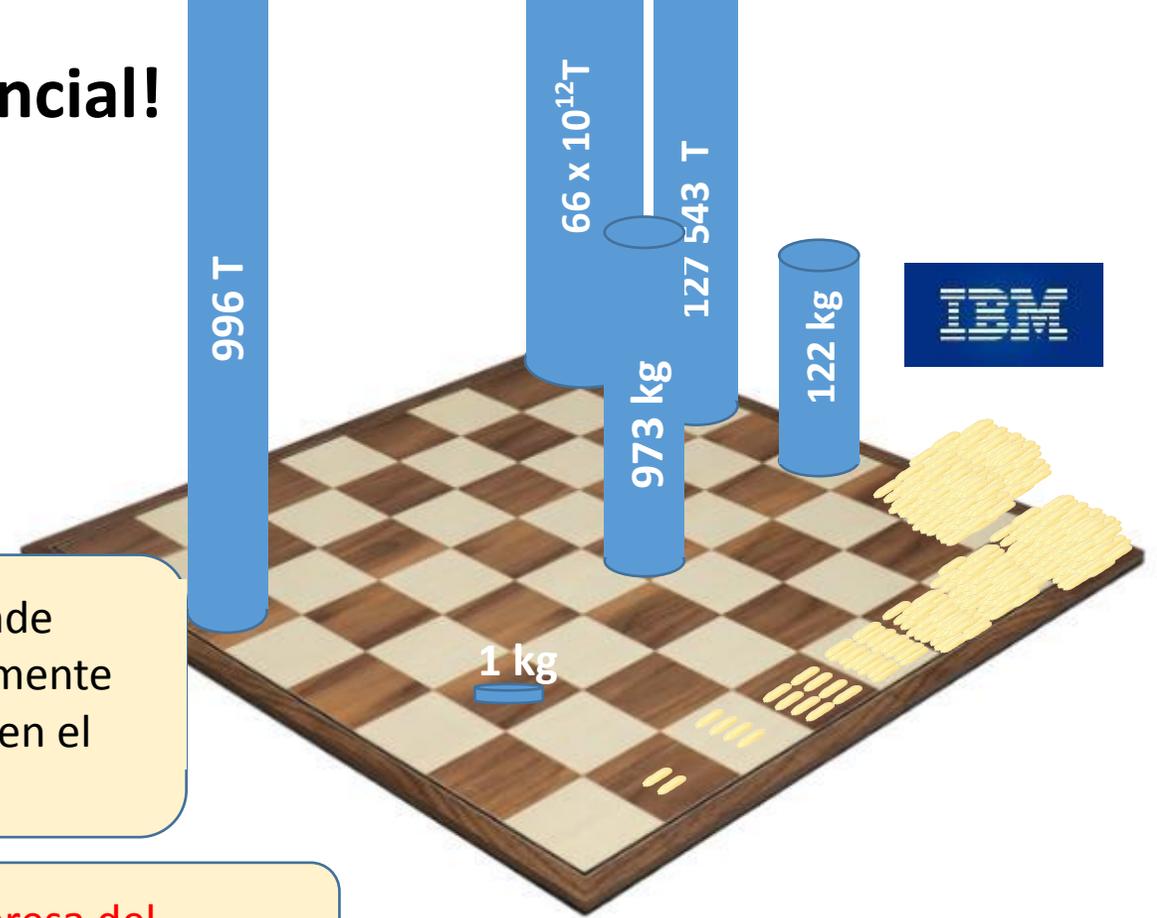
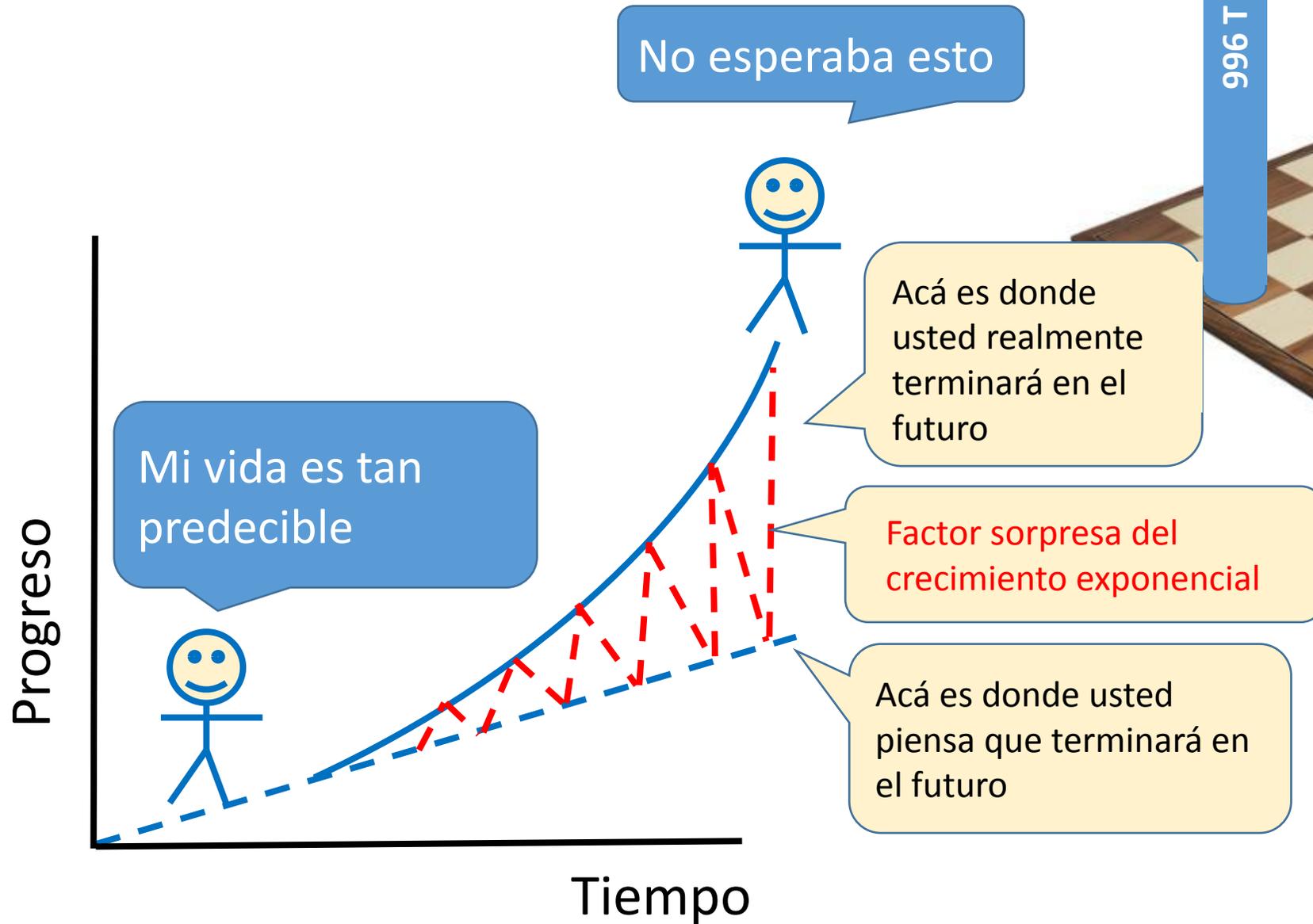


📷 Cattle at an illegal settlement in the Jamanxim National Forest, northern Brazil. The 1.3m hectare forest is today a microcosm of what happens in the Amazon, where vast areas of land are prey to illegal woodcutters, stock breeders and gold miners. Photograph: Antonio Scorza/AFP/Getty Images

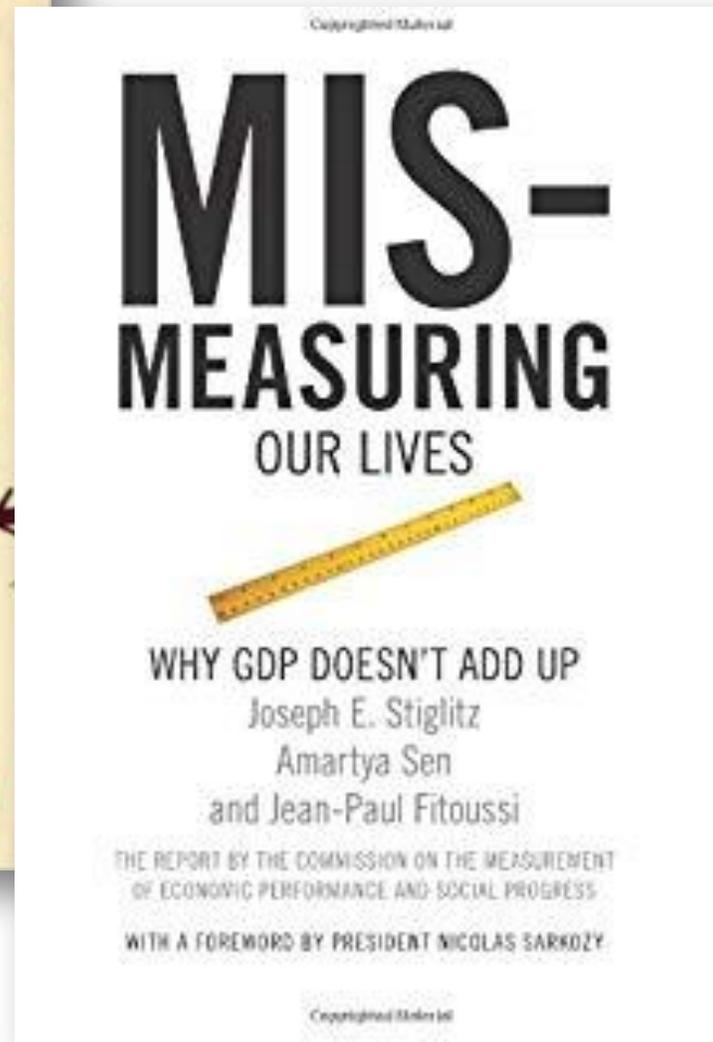
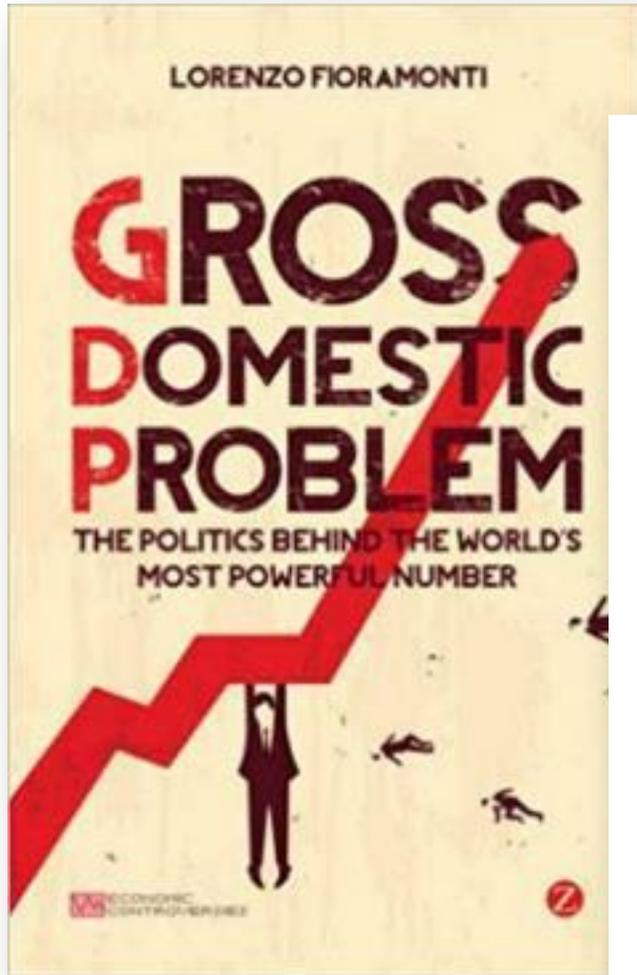
# Reto #3: Cambios exponenciales



# ¡El cambio ahora es permanente y exponencial!



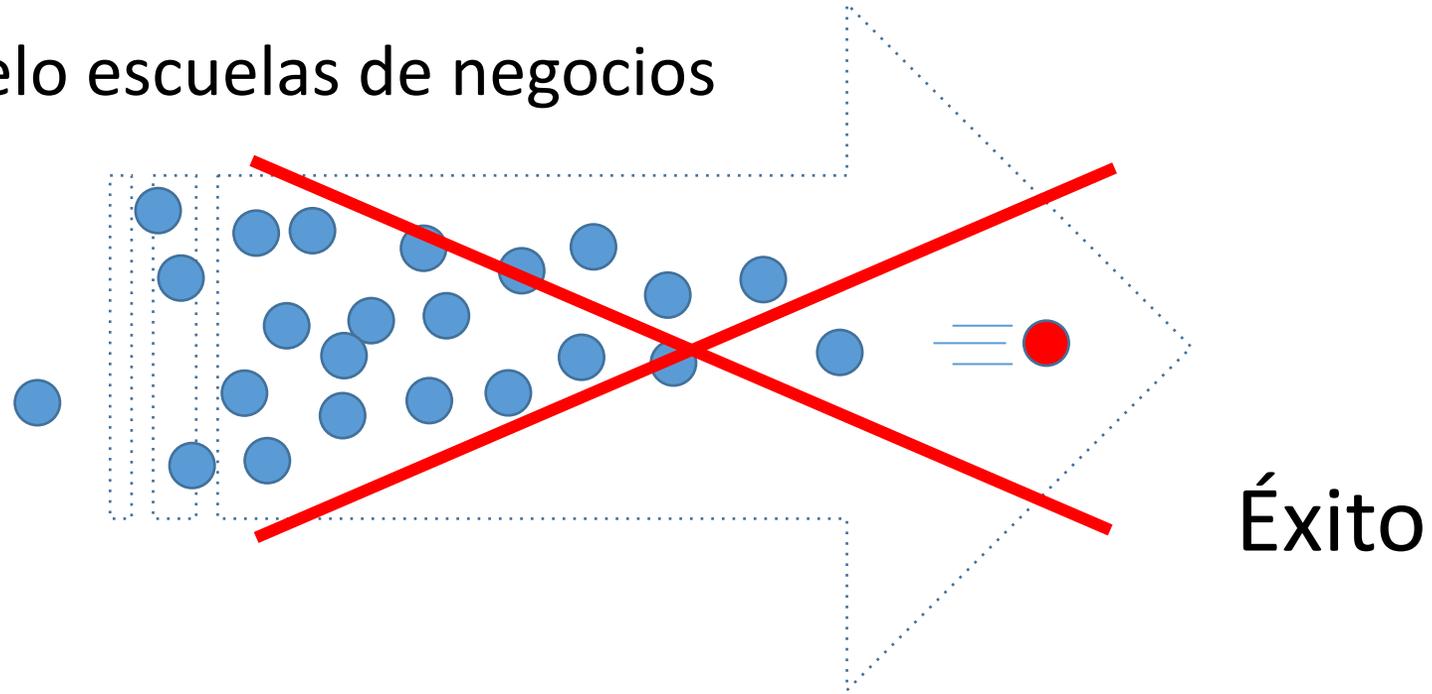
# Reto #3: Aceptación amplia de métodos equivocados



Reto #4: desaprender

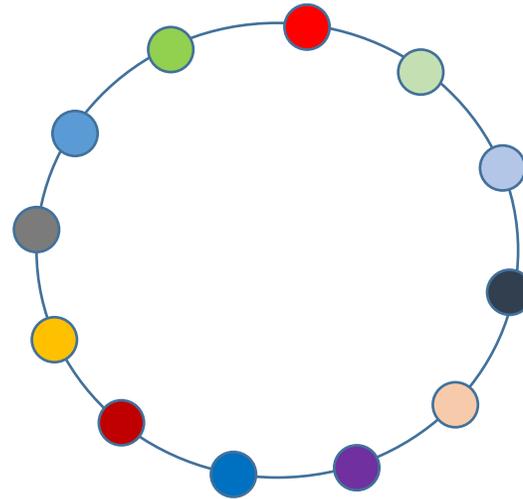


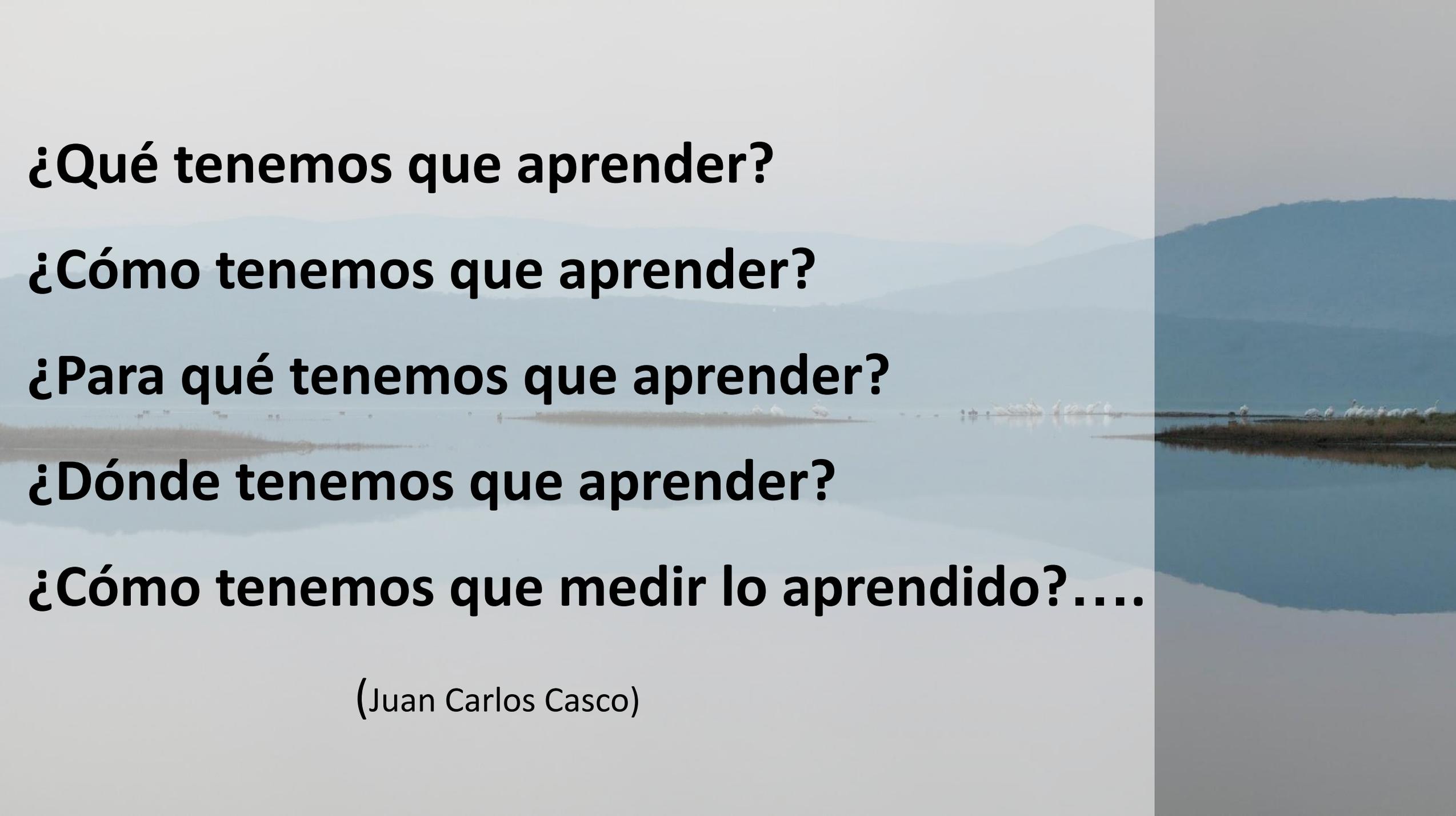
# Modelo escuelas de negocios



Reto:  
**NO** al  
individualismo!  
**SÍ** a lo colectivo.

Vs.





**¿Qué tenemos que aprender?**

**¿Cómo tenemos que aprender?**

**¿Para qué tenemos que aprender?**

**¿Dónde tenemos que aprender?**

**¿Cómo tenemos que medir lo aprendido?.....**

(Juan Carlos Casco)

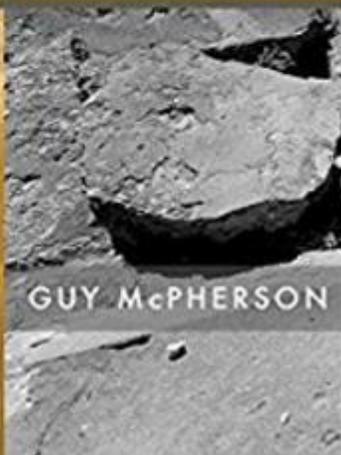
Cómo vivir  
con la  
muerte en  
la mente.

## EXTINCTION DIALOGS

HOW TO LIVE WITH DEATH IN MIND

CAROLYN BAKER

GUY McPHERSON



## Workshop on Managing Planetary Collapse

In the next 50 years, humanity will go through the most profound changes in our history as a species. We have already crossed at least four planetary boundaries and are in full overshoot-and-collapse. The only way to ensure our survival is to regenerate vital ecosystems all over the Earth—by weaving the path of regeneration toward planetary health.



Host: Joe Brewer at the School for Applied Cultural Evolution

Venue: Rancho Margot in Costa Rica

Dates: January 25-29th 2019

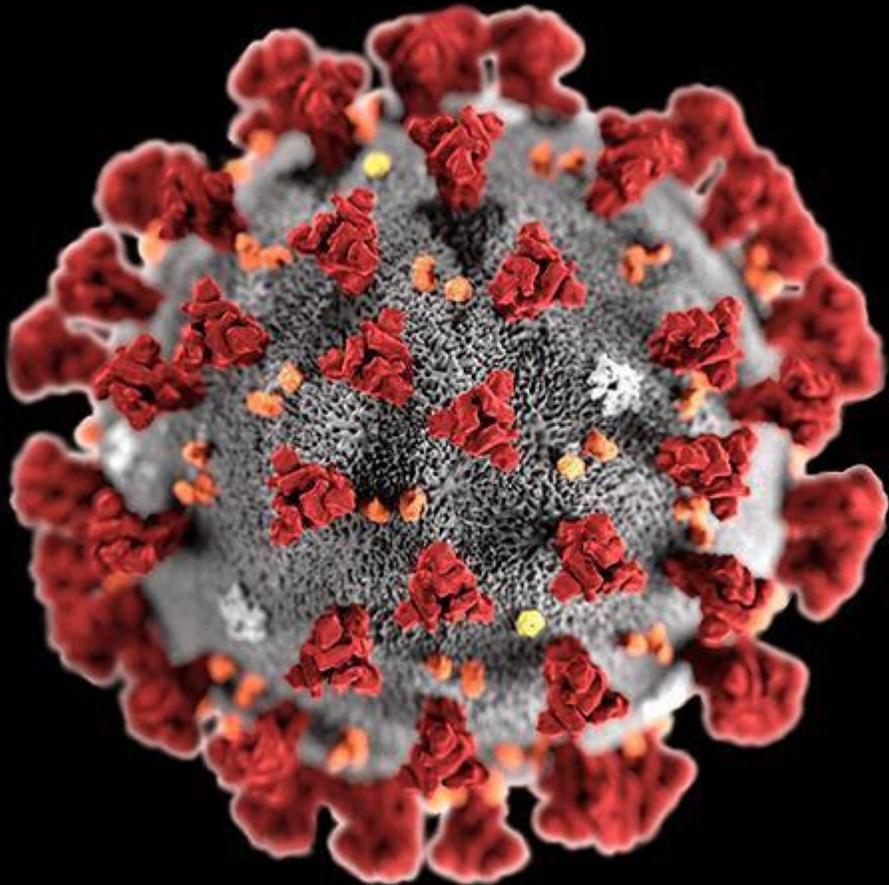
Price: \$1200\* inclusive of meals and accommodations



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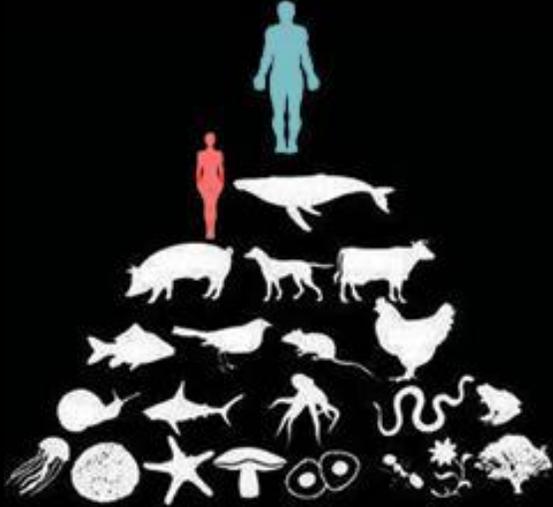
# La Naturaleza no nos necesita, nosotros necesitamos de ella.



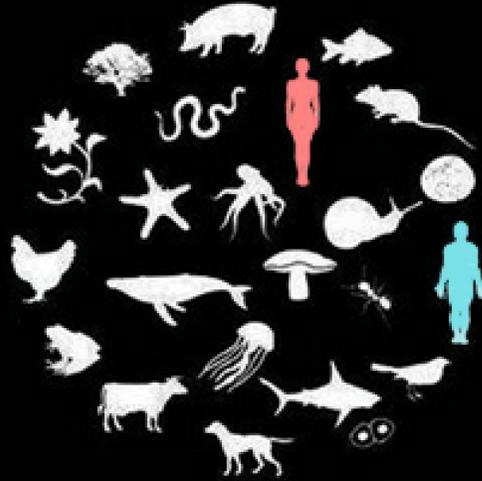
- Nos hemos desconectado de la Madre Tierra.
- No hemos aprendido a ser mejores seres humanos.
- Preferimos mirar para otro lado antes de enfrentar la necesidad de un cambio.

# ~~R~~Evolución

EGO



ECO



SEVA



Seva sólo se logra con una relación de amor y humildad ante todos los seres vivos. **Seva significa dar más de lo que se toma.** Es una actitud requerida para crear una nueva cultura que nutre y permite el cuidado.



¿Seremos meros  
espectadores de la  
“nueva normalidad”  
o co-construimos un  
futuro mejor?



~~Nos dicen que tenemos  
que adaptarnos al  
cambio climático~~

**¡El futuro se construye!  
Nosotros somos el futuro.**

¡Todos podemos co-crear el futuro!

¡Con Esperanza, guía y liderazgo!

Tenemos la ciencia, creemos sabiduría.



# Desarrollo regenerativo

- Un desarrollo a **favor de la vida**.
- **Desarrollo verdaderamente holístico**, apartándose del reduccionismo y entendiendo que la base de la **vida es la integridad y función de todos los ecosistemas** que proveen servicios esenciales para la vida en el planeta.
- Se trata de **equidad, transparencia, paz, educación verdadera, conciencia y felicidad**.



# Espiritualidad

Ética, valores, compassion,  
conciencia plena

# Política

Juventud, mujeres  
jóvenes,  
transparencia, bien  
para todos

# Economía

Regenerativa,  
inclusión y bienestar  
para todas las formas  
de vida

# Cultura

Identidad, principio  
feminine, equidad



# Desarrollo Regenerativo

# Sociedad

Autodeterminación,  
participación activa

# Madre Tierra

Ecosistemas- biodiversidad, paisajes  
funcionales, terrestres y marinos

A stylized illustration of Costa Rica in a tropical setting. The map of Costa Rica is shown in a light yellow color, centered on a dark blue background that represents water. The map is surrounded by various tropical elements: green leaves of different shapes and sizes, a large orange parrot with white markings on its face in the top left, a small orange hummingbird in flight in the bottom center, and a vibrant red and orange bird of paradise flower in the bottom right. In the top right corner, there is a small illustration of two people in a boat, one rowing and one using a long pole. The overall style is flat and graphic.

**¡Construimos el futuro que queremos!**



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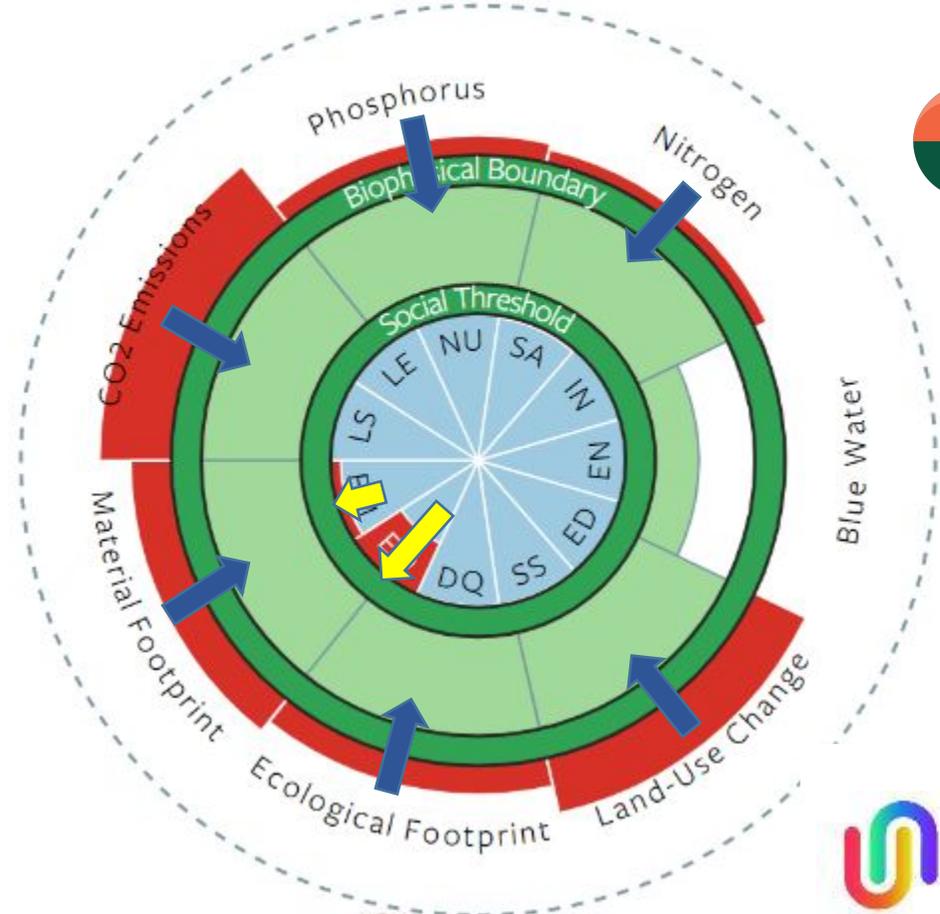
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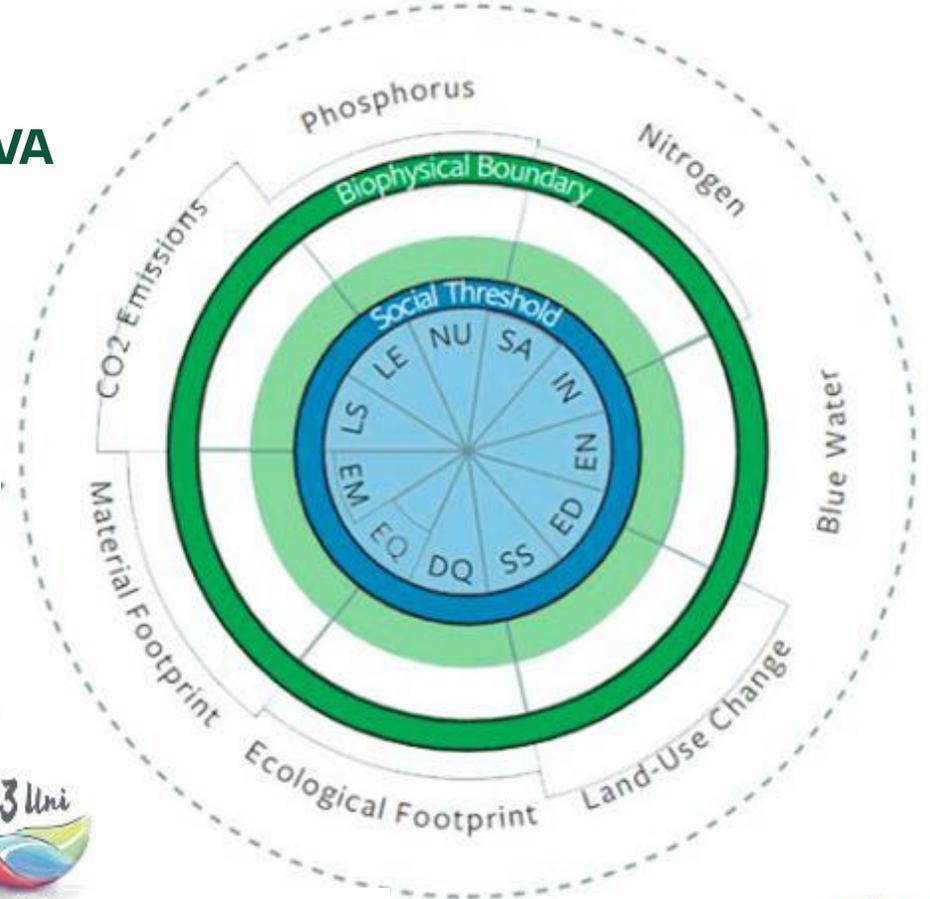
**COSTA RICA  
REGENERATIVA**

Costa Rica

Dona ideal



 **COSTA RICA  
REGENERATIVA**



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 **UBIQUITY  
UNIVERSITY**

  
a university for the  
third horizon

 **REGENERATIVE  
COMMUNITIES NETWORK**

 **NATURAL CAPITALISM  
SOLUTIONS**

 **Savory**

 **WELLBEING  
ECONOMY  
ALLIANCE**

 **THE  
CARBON  
UNDERGROUND**

 **SEEDS  
THE CONSCIOUS GROWTH**

 **Earth  
Charter  
Initiative**



 **NATURAL PACT**



 **COMMON  
EARTH**

 **BRAVE EARTH  
TIERRA VALIENTE**

 **BLUE MARBLE  
evaluation**



 **CAPITAL INSTITUTE**

 **cambiatius**

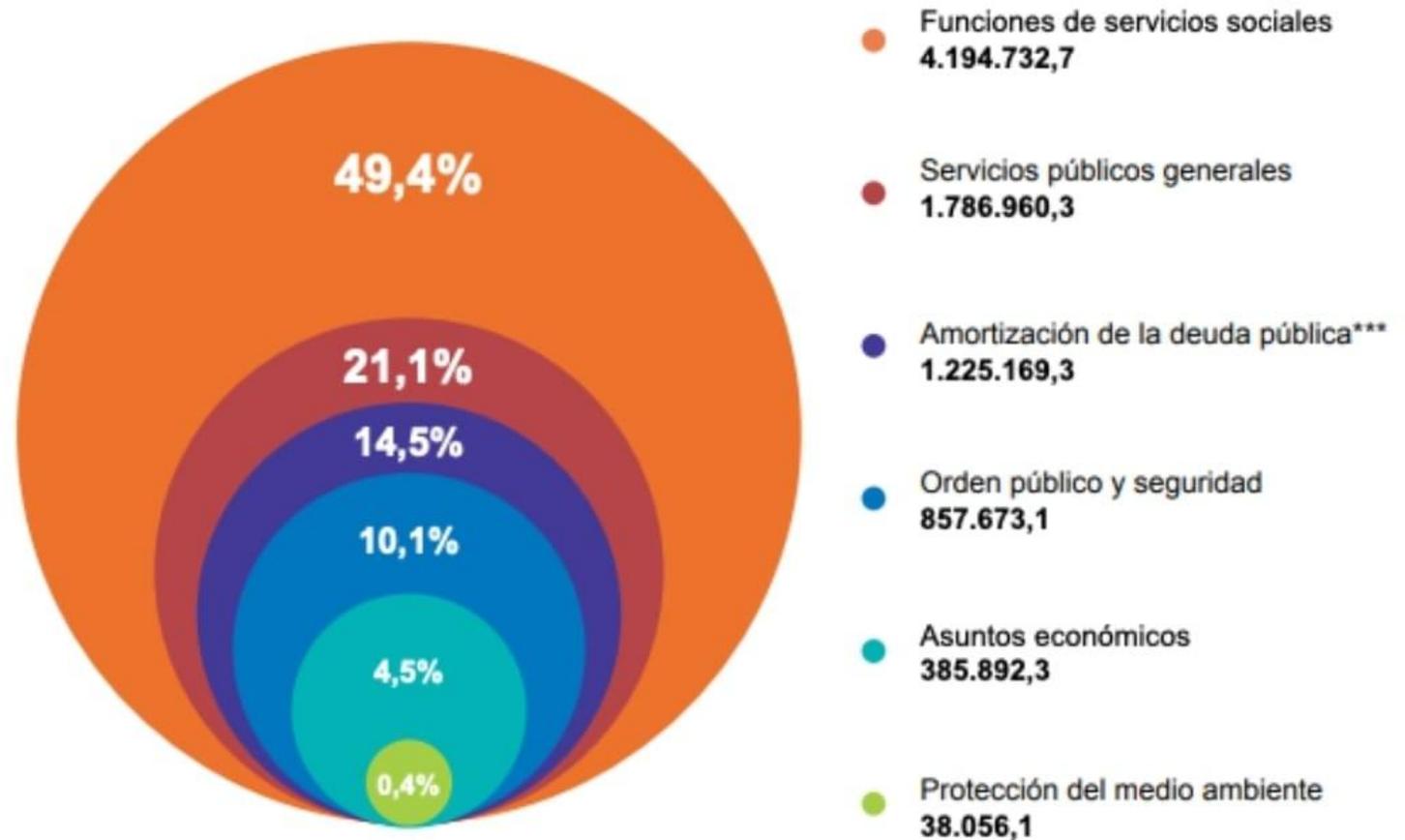
 **RANCHO  
Margot**



REGENERATIVE EARTH

# ¿Prioridades claras en Costa Rica?

## ¿En qué se utilizaron los recursos del presupuesto nacional? (clasificación funcional)\*\*



# ¿Qué significa desarrollo territorial?

- **Resiliencia ecológica:**

- Recuperación de **biodiversidad y servicios ecosistémicos** para regenerar paisajes funcionales: agua y suelos. Eliminación de fertilizantes y plaguicidas. Captura de carbono en suelos y bosques. Diversificación de la producción de alimentos a través de agricultura regenerativa y ganadería holística.

- **Resiliencia social:**

- **Empoderamiento** de las comunidades y fortalecimiento de su capacidad de **organización y determinación** de su propio desarrollo.

- **Regeneración cultural:**

- Fortalecimiento de la cultura local que amalgama a las comunidades. **Diálogo de saberes**. Recuperar su **autoestima**.



# ¿Qué significa desarrollo territorial?

- **Economía regenerativa:**

- **Desarrollo local** con encadenamientos productivos y de servicios. Más allá de la economía circular o verde. Economía que permita alcanzar el **bienestar comunitario**. **Seguridad alimentaria**.

- **Política:**

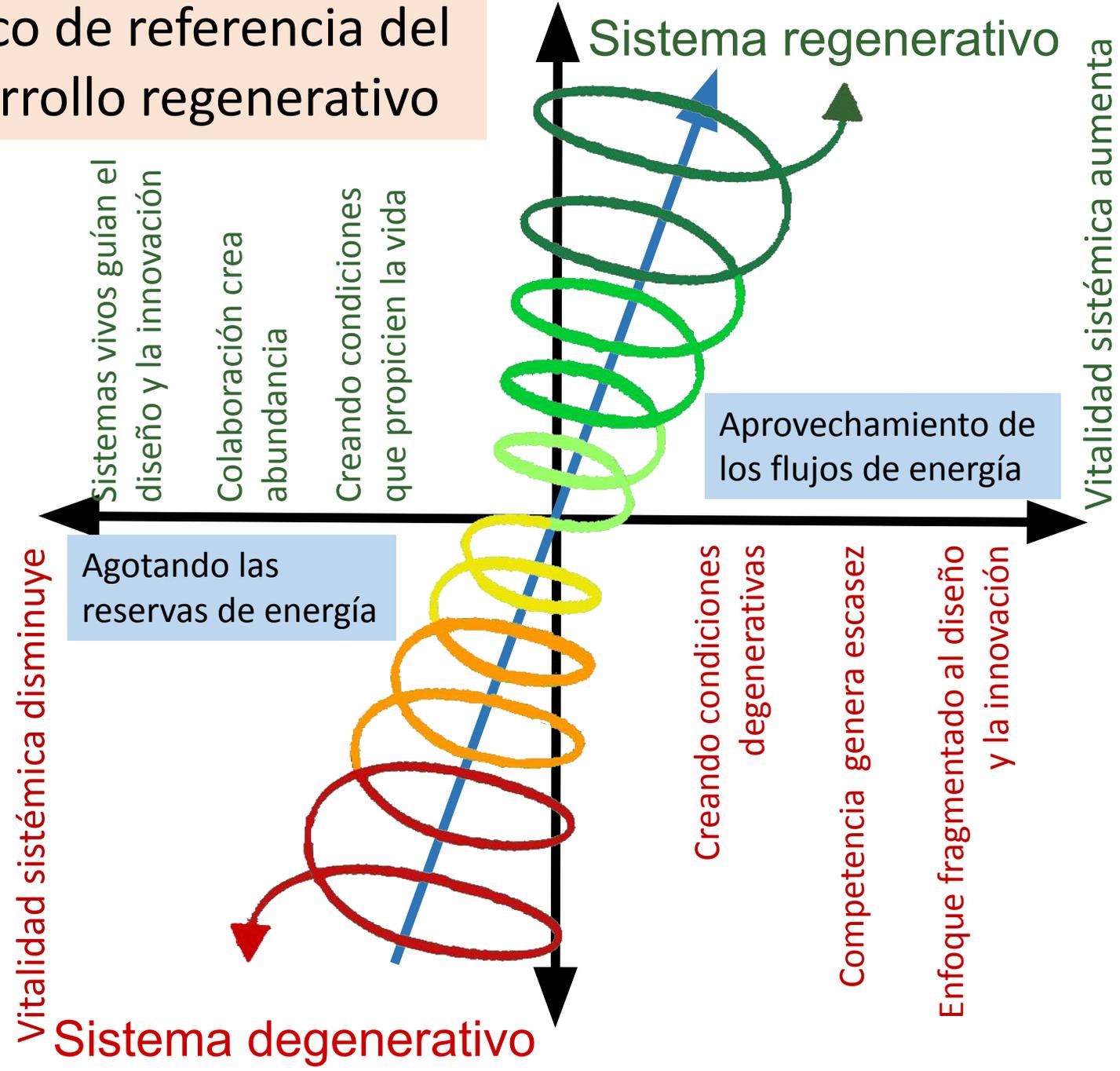
- Empoderamiento de las comunidades para su **gobernanza local**. Inclusión y **formación de jóvenes** para la política pública, especialmente **mujeres jóvenes**. Negociación, gestión de conflictos, toma de decisiones, definición de prioridades, liderazgo comunitario.

- **Recuperación y fortalecimiento de la espiritualidad:**

- Ética, valores, solidaridad, compasión, **empatía**, **conciencia plena**, **relación y respeto profundo** con la naturaleza y comunidades humanas.



# Marco de referencia del desarrollo regenerativo



## Regenerativo

Participación apropiada y diseño como en la naturaleza.

## Conciliador

Reintegrando seres humanos como parte integral de la naturaleza.

## Restaurativo

Humanos haciendo cosas para la naturaleza

## Sostenible

Punto neutro sin seguir dañando

## Verde

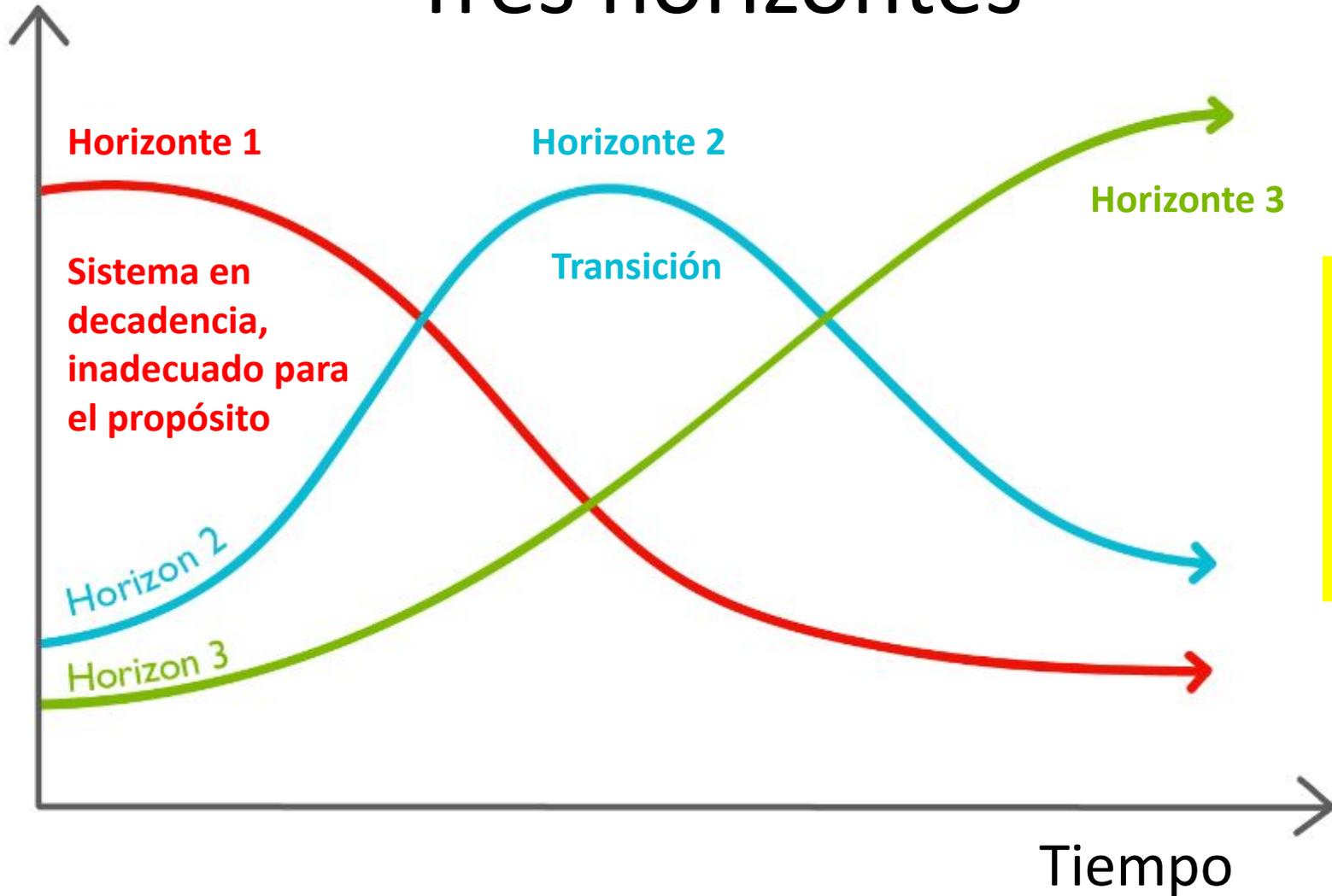
Mejoras relativas

## Práctica convencional

Obediencia para evitar acciones legales

Patrón

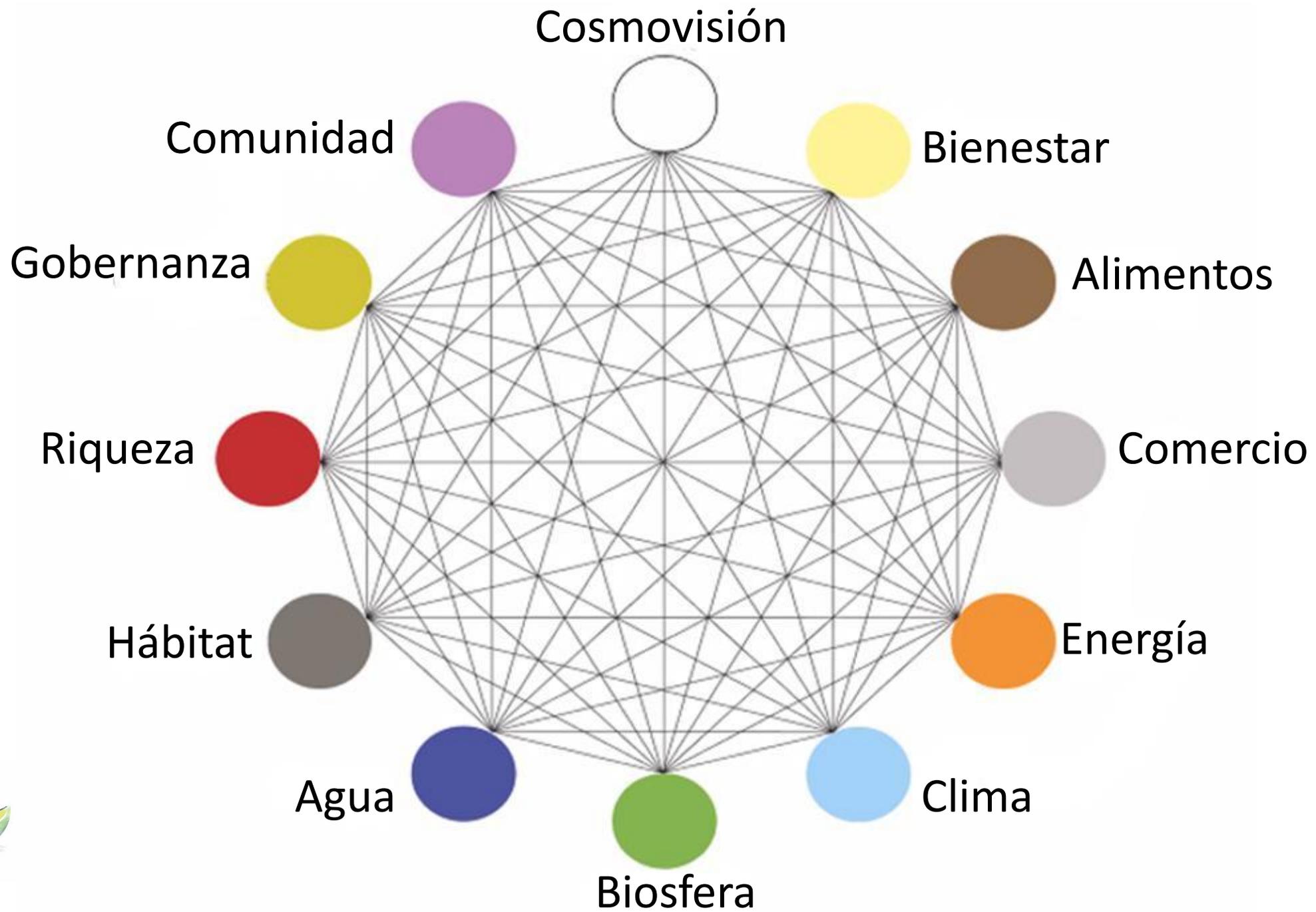
# Tres horizontes



Mundo regenerativo,  
de bienestar para los  
seres humanos y toda  
la comunidad de vida

“Nunca cambias cosas  
peleando la realidad  
existente. Para cambiar algo,  
construye un modelo que  
haga obsoleto al anterior.  
B. Fuller

¿Qué vale la pena conservar?



# ¿Permitimos un mundo de degradación y fragmentación?



# ¿O creamos un mundo de regeneración y sinergias?



anthony.hodgson@h3uni.org

# Diálogo de saberes para la regeneración

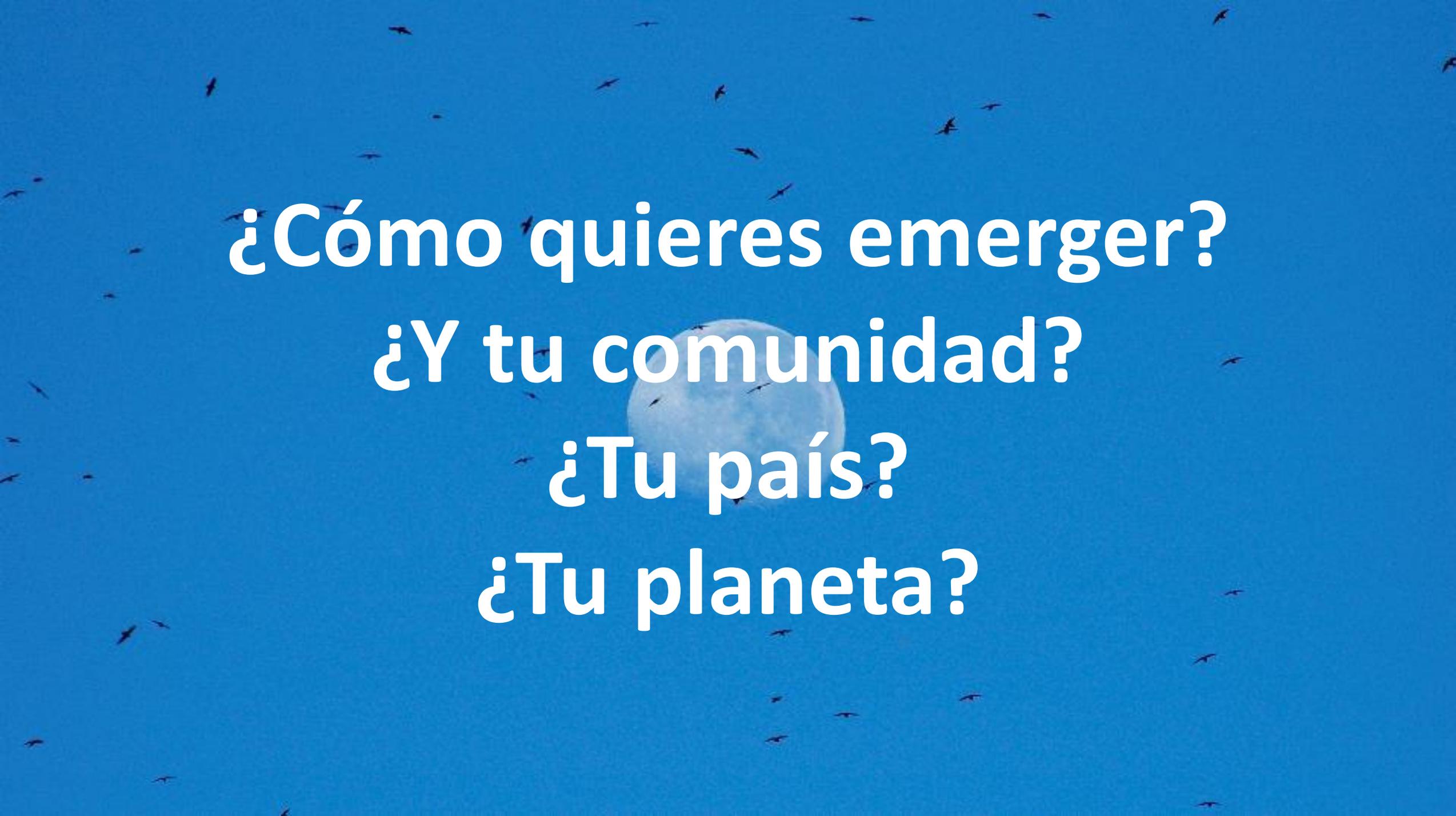


Trascender el pensamiento humano de superioridad sobre la naturaleza y elevar la importancia de los ciclos, las relaciones y el cuidado de la vida.

Esta nueva y alternativa forma de entender el mundo es la recuperación de nuestro vínculo con la naturaleza, un **renacimiento del principio femenino**.

Lo femenino que Boff describe como integralidad, cuidado, sentimiento de pertenencia a un todo mayor, generador de poder, vitalidad y espiritualidad.





**¿Cómo quieres emerger?**

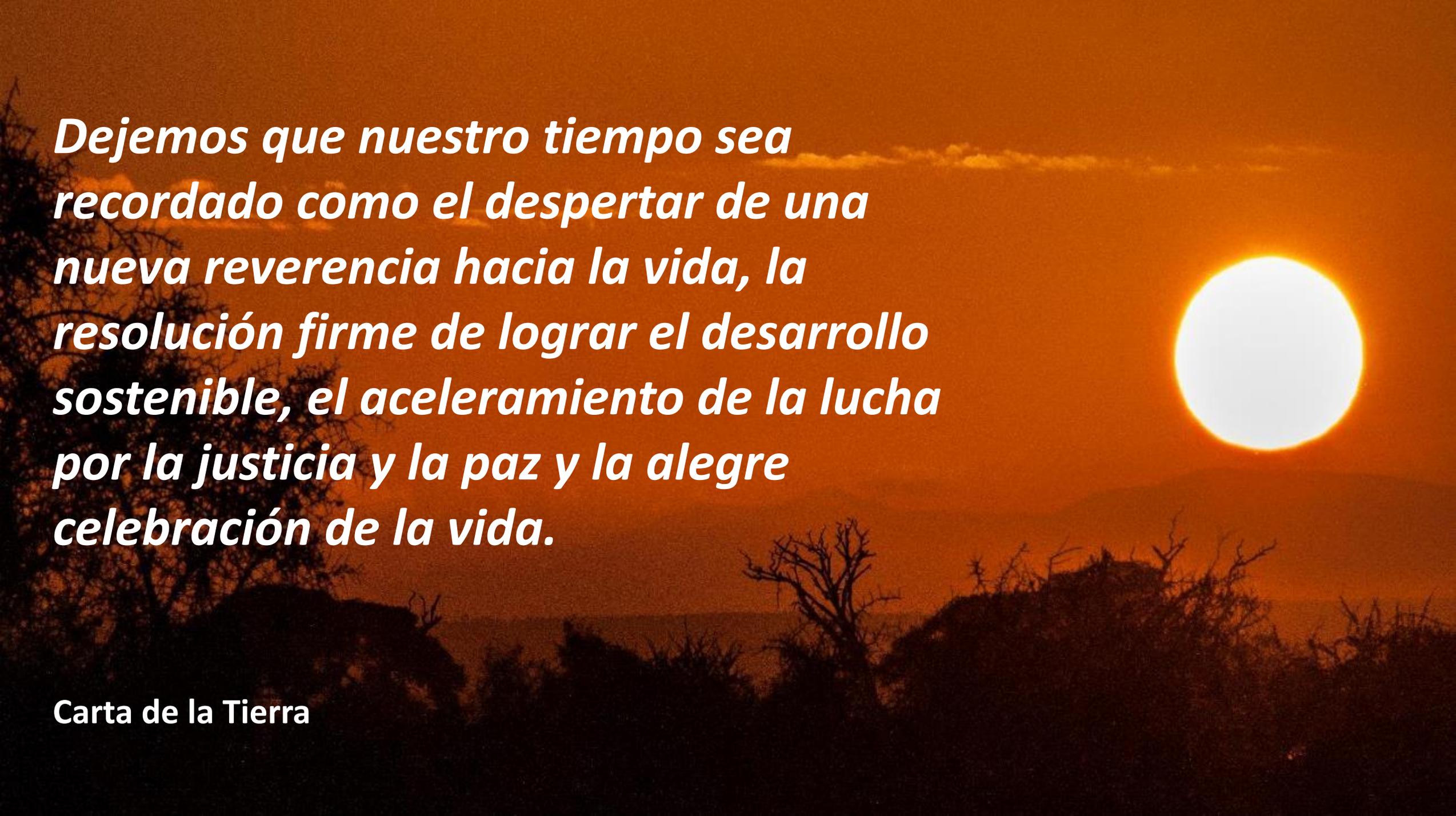
**¿Y tu comunidad?**

**¿Tu país?**

**¿Tu planeta?**

A satellite-style image of the Earth from space, showing the Americas. The planet's surface is covered in a dense network of brown, jagged cracks, symbolizing environmental damage or climate change. The text "¡Ya no más!" is written across the center in a bold, orange, sans-serif font.

**¡Ya no más!**



*Dejemos que nuestro tiempo sea recordado como el despertar de una nueva reverencia hacia la vida, la resolución firme de lograr el desarrollo sostenible, el aceleramiento de la lucha por la justicia y la paz y la alegre celebración de la vida.*

Carta de la Tierra



# Una nueva relación entre humanos y planeta



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