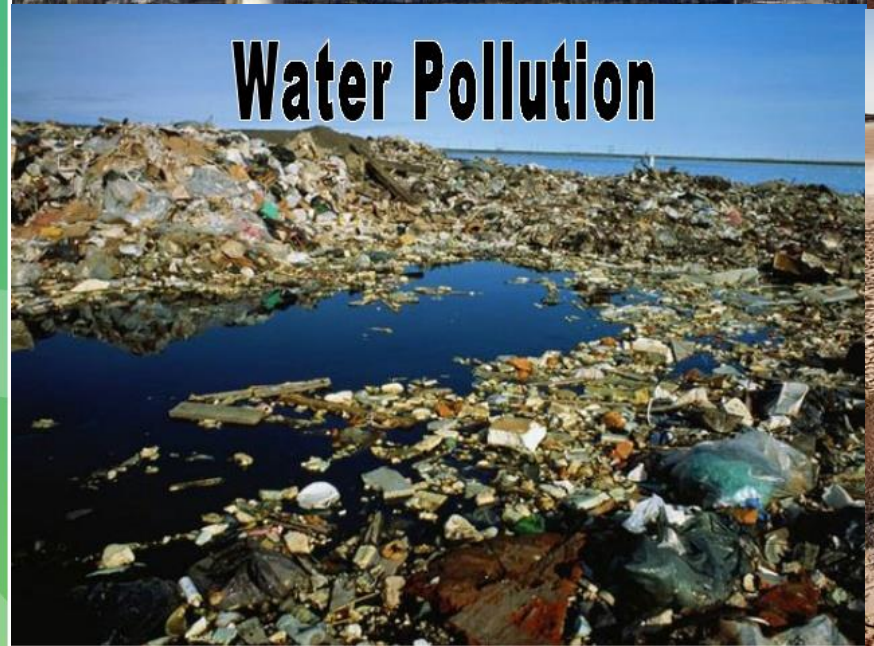
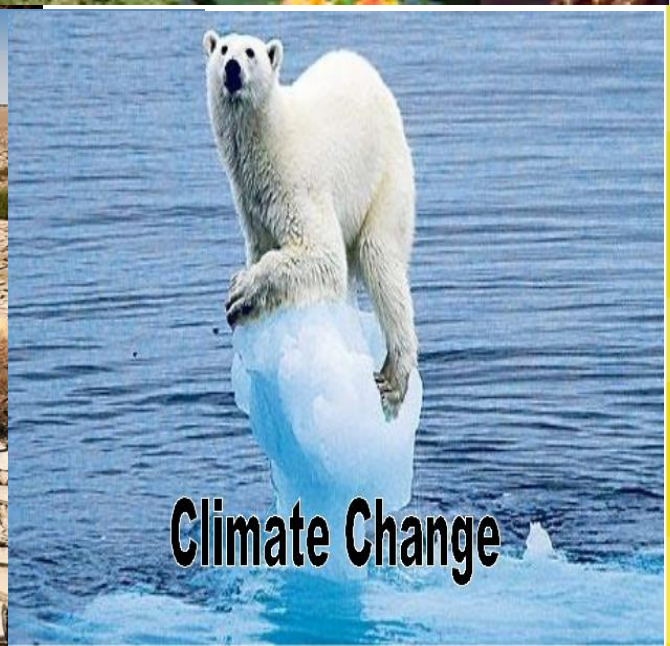
Sustainable Development Goals

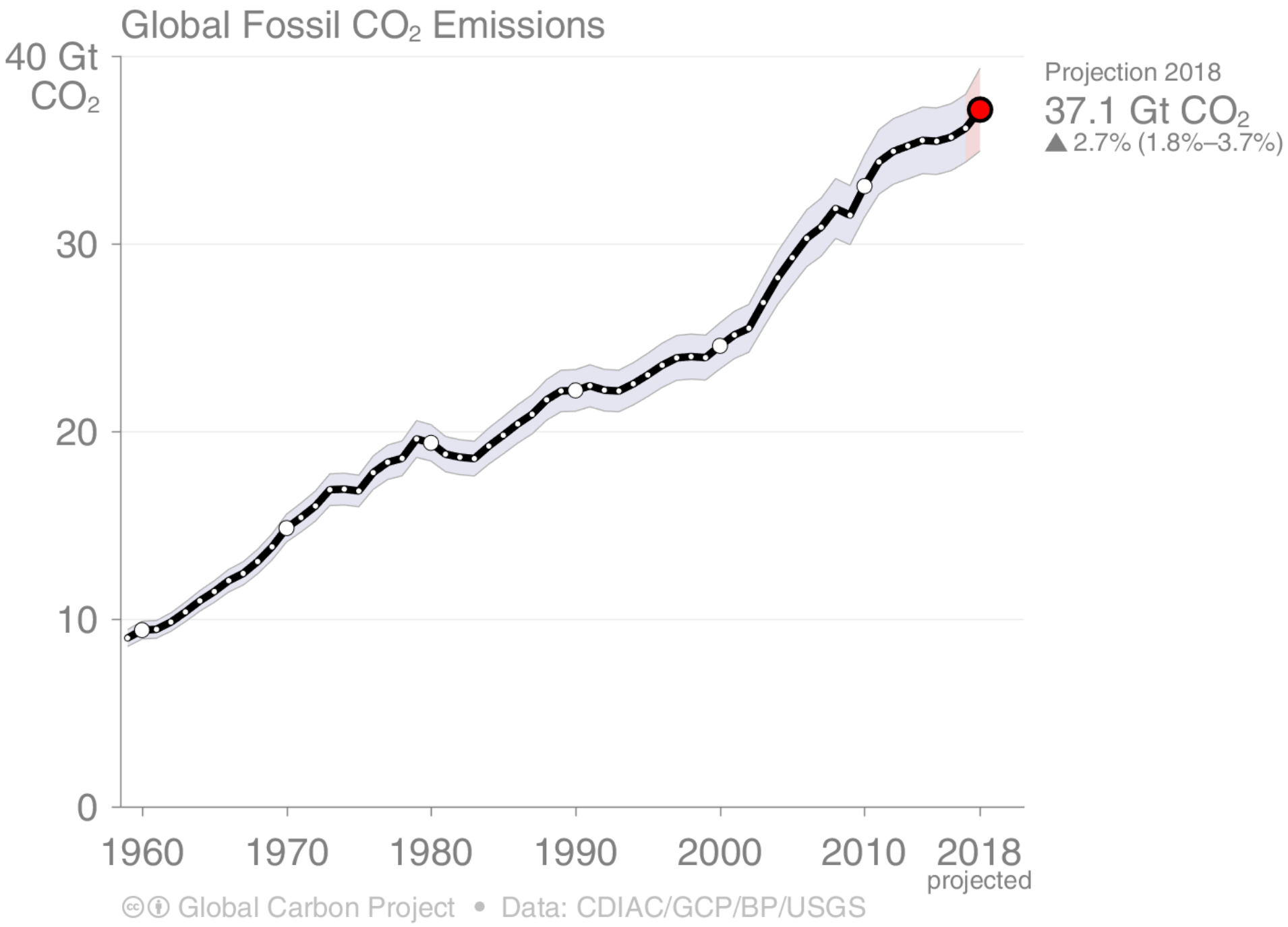
Ecological Crisis





Degeneration → Green Development → Sustainable → Restorative → Regeneration

Anthropocentric, ecologically imperialistic, 98% old-growth forests destroyed, 94% large ocean fish depleted, 80% rivers can't support life anymore.


Global Fossil CO_2 Emissions
40 Gt CO_2
30
20
10
0
1960
1970
1980
1990
2000
2010
2018
projected
Projection 2018
37.1 Gt CO_2
▲2.7% (1.8%–3.7%)
Global Carbon Project • Data: CDIAC/GCP/BP/USGS

Oligarchic Capitalism (Expansionist, Exploitative, Perpetual Growth, Profit Maximisation, Excessive Consumerism)

Environmental Changes/ Ecosystem Disruption

Climate Change

Ozone Depletion

Deforestation

Biodiversity Loss

Land Degradation & Desertification

Loss & Degradation of Wetlands

Freshwater Depletion & Contamination

Damage to Coastal Reef Ecosystems

Effects

Direct: Floods, Landslides, Forest Fires, Water Shortage, Ultraviolet Radiation, Pollutant Contamination

Health: Infectious Diseases, Poor Nutrition, Psychological Disorders

Long-term: Health Problems, Population Displacement, Loss of Livelihood, Conflict, Social Turmoil

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Sustainable Development & Sustainability: Buzzwords, Catch-phrases

Sustainable: 1610s > "bearable"

1845 > "defensible"

1965 > "capable of being continued at a certain level"

Brundtland Commission--Our Common Future (1987):

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

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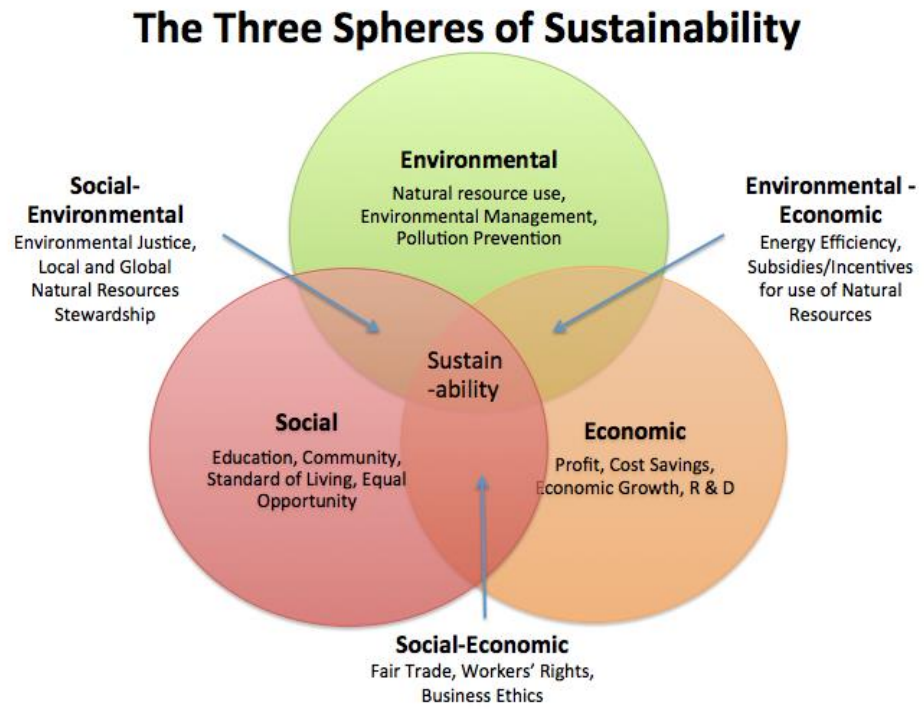
Sustainable Development vs Sustainability

↓ ↓

Government & Business NGOs & Academics

Development = Growth

Sustainability: Focus on environmental constraints



Sustainable: root word—sustain which means strengthen or support.

Two key questions:

(1) Can we strengthen or support the current system?

(2) Ecosystems are not static; they are dynamic. So what are we sustaining?

After more than three decades of sustainable development, we now have more pollution, greater biodiversity loss, and climate change.

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Criticisms on Sustainable Dev.

• Oxymoron	Contradictions, Conflicting objectives: Economic Growth & Ecological Sustainability
• Chameleon-like	Multiple meanings, interpretations, vague, empty signifiers, & meaningless
• Anthropocentric	Human wants/ needs/interests over ecology, Profits before Planet.
• Hypocrisy	Fake Greenery, Green washing. Putting the foxes in charge of the chicken coop.
• Ideological Smokescreen	Diversionary strategy from real causes of ecological degradation & effective solutions.
• Hegemonic Discourse	Ideological domination, TINA, Maintenance of the status quo. Business as usual.

September 2015: the UN adopted the 2030 Agenda for Sustainable Development

So did Coca Cola & Monsanto

LSE's Jason Hickel refers to SDGs promotion as "the world's largest advertising campaign" – a slick social media operation that has Beyoncé, One Direction, Malala, Mafikizolo, and countless other major personalities on the roster, with the likes of Gary Lineker and Gareth Bale entertaining audiences with their #dizzygoals.

https://sustainabledevelopment.un.org/sdgs

https://www.globalgoals.org/

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Critical phrases:
William Easterly: SDGs should stand for "Senseless, Dreamy, Garbled".
The *Economist*: "sprawling and misconceived", "unfeasibly expensive", "worse than useless", "a betrayal of the world's poorest people"
A SDGs critic: "High school wish list for how to save the world"
Hickel: "nothing in them that's really *new*", "reflects old thinking", "calls for little more than business as usual", "a missed opportunity" and "actively dangerous".

Hickel: Five good reasons to think twice about the SDGs:

(1) Contradiction: Growth (Goal 8) & Ecological Balance. Linear vs Circular. Infinite Growth is impossible in a Finite World

(2) "Growth does not reduce poverty"

(3) Ignores inequality. "Poverty is simply inequality materialised" (Gomes 2012).

(4) "Big drivers of poverty left unaddressed"

(5) Mismeasurement of poverty: money metric

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Poverty:

More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. (Truman 1949)

We are deeply aware of the hunger, vulnerability, and deprivation that still shape the daily lives of more than a billion people in the world today . . ., the 1.2 billion people living in extreme poverty . . . Today, 870 million people in the world do not have enough to eat. Undernourished women give birth to underweight babies, who are less likely to live to their fifth birthday and more likely to develop chronic diseases and other limitations. (UN 2014b: 4, 40)

(Source: Ziai, Aram (2016), Development discourse and global history: from colonialism to the sustainable development goals)

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Solutions to Poverty:

For the first time in history, humanity possesses the knowledge and the skill to relieve the suffering of these people . . . we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. (Truman 1949)

[T]here is a chance now to do something that has never before been done – to eradicate extreme poverty, once and for all . . . We have a historic opportunity to do what no other generation has ever done before: to eradicate extreme poverty by 2030 and end poverty . . . We are convinced that . . . the world possesses the tools and resources it needs to achieve a bold and ambitious vision. (UN 2014b: 4, 47)

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Technical Solutions:

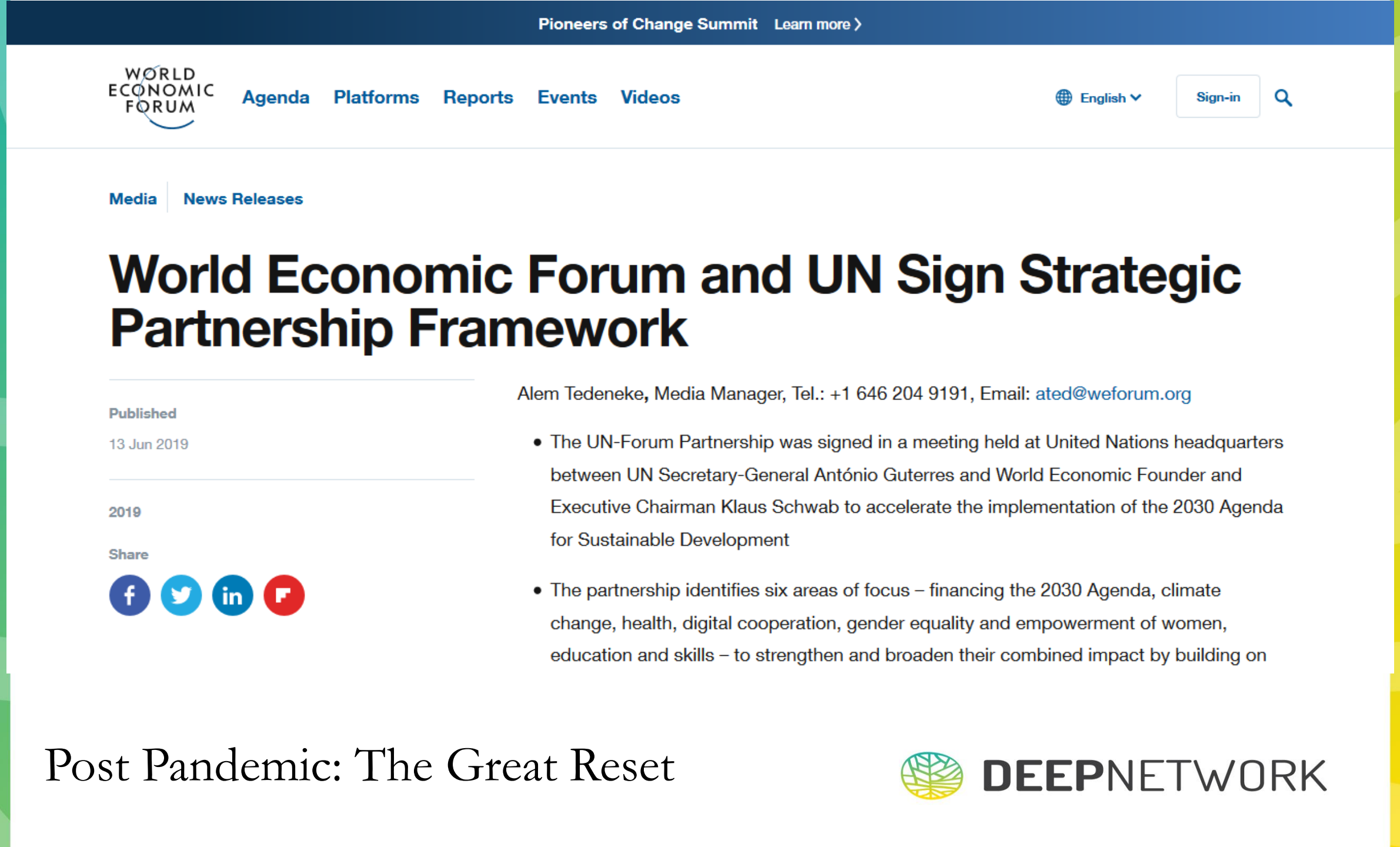
[O]ur imponderable resources in technical knowledge are constantly growing and are inexhaustible. I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life . . . Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge. (Truman 1949)

The resources, know-how and technology that are needed [to eradicate poverty] already exist, and are growing every year. . . . Developed countries . . . can encourage innovation, diffusion and transfer of technology. . . . Scientists and academics can make scientific and technological breakthroughs that will be essential to the post-2015 agenda. Every country that has experienced sustained high growth has done so through absorbing knowledge, technology and ideas from the rest of the world . . . A profound economic transformation can end extreme poverty and promote sustainable development, improving livelihoods, by harnessing innovation, technology, and the potential of business. (UN 2014b: 18, 10f, 29)

Economic Growth:

Their economic life is primitive and stagnant. . . . we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. . . . we should foster capital investment in areas needing development. Our aim should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens. . . . this program can greatly increase the industrial activity in other nations and can raise substantially their standards of living. . . . Greater production is the key to prosperity and peace. (Truman 1949)

The Panel calls for a quantum leap forward in economic opportunities and a profound economic transformation to end extreme poverty and improve livelihoods. There must be a commitment to rapid, equitable growth – not growth at any cost or just short-term spurts in growth, but sustained, long-term, inclusive growth that can overcome the challenges of unemployment (especially youth unemployment), resource scarcity and – perhaps the biggest challenge of all – adaptation to climate change. (UN 2014b: 8)



Post Pandemic: The Great Reset

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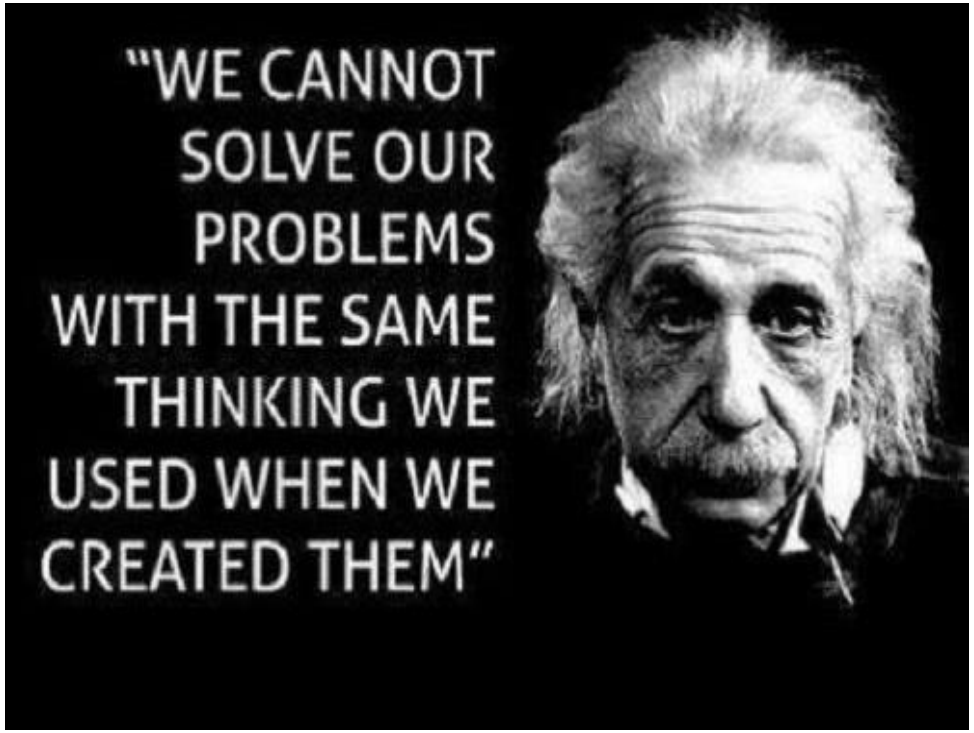
"The Corona crisis and the Need for a Great Reset" is a guide for anyone who wants to understand how COVID-19 disrupted our social and economic systems, and what changes will be needed to create a more inclusive, resilient and sustainable world going forward. Thierry Malleret, founder of the Monthly Barometer, and Klaus Schwab, founder and executive Chairman of the World Economic Forum, explore what the root causes of these crisis were, and why they lead to a need for a Great Reset. Theirs is a worrying, yet hopeful analysis. COVID-19 has created a great disruptive reset of our global social, economic, and political systems. But the power of human beings lies in being foresighted and having the ingenuity, at least to a certain extent, to take their destiny into their hands and to plan for a better future. This is the purpose of this book: to shake up and to show the deficiencies which were manifest in our global system, even before COVID broke out.

Sustainable development is inadequate and ineffectual to address the ecological crisis. We need to regenerate! Not just keep things as they are.



Regenerate (verb):

- Grow after loss or damage (as in the case of body tissue)
- Bring new and more vigorous life to an area, revive, revitalise, renew, rejuvenate, resuscitate.
- Implicitly, to improve not just restore.

Proponents contend that since humans have degraded ecosystems to such an extent making it impossible for these to regenerate naturally and what is needed are efforts to repair, resuscitate or improve degraded environments to enable nature to take its course.

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"Your people dreamed of huge factories, tall buildings, as many cars as there are raindrops in this river....Now you begin to see that your dream is a nightmare."[How might we make things better?]"That's simple. All you have to do is change the dream....You need only plant a different seed, teach your children to dream new dreams."—Elder of Ecuador's Shuar tribe

Buen Vivir: Cosmovision. Living in harmony with nature. Eco-centric living.

Shifting Cultivation, Slash & Burn Agriculture, Swiddening, Agroforestry

A form of biomimicry

Regeneration International

https://regenerationinternational.org

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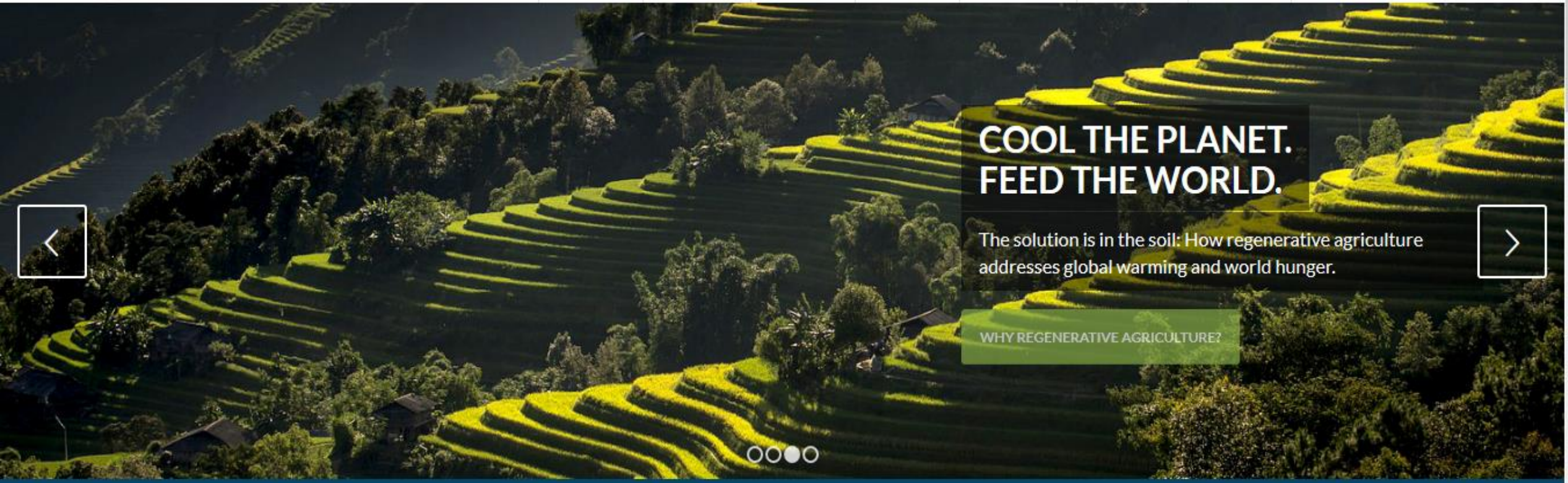

The future of agriculture is **regenerative**

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REGENERATIVE ORGANIC AGRICULTURE

THE PROBLEM

Excess CO_2 in the atmosphere causes climate change. This results in more hurricanes, tornadoes, typhoons, floods, droughts, winter storms and heat waves. Such catastrophic weather events are sure to keep increasing in number and frequency. Agriculture has played a role in creating climate change, but now, with your help, it can be part of the solution.

OUR SOLUTION

A global transition to regenerative organic agriculture, which means working with nature to use photosynthesis and healthy soil biology to draw down greenhouse gases. Regenerative Organic Agriculture actually can capture even more carbon than we emit into the atmosphere, tipping the needle past 100 percent to reverse climate change.

Our study, *"Regenerative Organic Agriculture & Climate Change"* is available at rodaleinstitute.org/regenerative-organic-agricultutre-and-climate-change/

1. Photosynthesis

The process plants use to change carbon dioxide from the atmosphere into oxygen and carbon-based sugars.

2. Nutrient exchange

Carbon-based sugars ooze out of the plant's roots to feed microorganisms, mostly bacteria and fungi, living in the soil nearby.

Microorganisms create nutrients, which, in turn, feed the plant.

3. Capturing carbon

Temporary root sugars and dead organic materials (e.g. plant debris and compost) are eaten by microorganisms and converted into more stable materials to store carbon in the soil for decades to centuries.

4. Restoring balance, reversing climate change

More photosynthesis means more sugars, which means microorganisms will thrive. Healthy microorganisms create abundant nutrients for plants. Building healthy soil and eliminating the use of toxic agricultural chemicals and practices brings carbon levels back into balance, reversing climate change.

FOUR CENTRAL PRACTICES OF ORGANIC FARMING

Cover crops provide a green cover of photosynthesizing plants that keep the microorganisms thriving and actively storing carbon, rather than leaving the soil bare between growing cash crops.

Compost is organic matter that has decomposed. It is used as a fertilizer and soil amendment, and even as a natural pesticide. Since compost comes from food waste, manure, dead leaves and grass clippings, it also reduces waste sent to landfills.

Rotating crops provides a balanced diet to microorganisms, promoting carbon storage and soil health.

Tillage is a common agricultural practice of breaking up the soil in preparation for planting crops. Microorganisms living in soil are killed by tillage. A no-till approach allows soil to become healthier every year.

Recent discoveries

- New research shows that mycorrhyzal fungus is emerging as a critical soil microorganism when it comes to capturing carbon.
- Mycorrhyzal fungi secrete glomalin that acts as glue holding colonies of microorganisms together, protecting and connecting them in soil.

Carbon pollution origins

Source: Environmental Protection Agency

Coach Mark Smallwood

Executive Director of the Rodale Institute

Reversing climate change

CLIMATE CHAOS seems overwhelming and unsolvable, but we can begin reversing the destructive trend today. The answer is farming. Not just business-as-usual industrial farming, but farming as though the Earth matters. Farming as though water and soil and land matter. Farming as though clean air matters. Farming as though human health, animal health and ecosystem health matter. Farming in a way that restores and even improves our land. This kind of farming is called Regenerative Organic Agriculture, and it is the solution to climate change we need to implement today.

At Rodale Institute, we have proven that Regenerative Organic Agriculture can sequester carbon from the atmosphere and reverse climate change.

Regenerative Organic Agriculture improves the resources it uses, rather than destroying or depleting them. It is a holistic approach to growing food that encourages continual on-farm innovation for environmental, social, economic and spiritual well-being. It is an umbrella that includes practices that often fall separately under certified "organic," "fair trade," "local," and other labels, and aims to continuously improve soil, food, human health, communities and the wider world.

Regenerative Organic Agriculture refers to working with nature to utilize photosynthesis and healthy soil microbiology to draw down greenhouse gases.

Healthy soil is the key to climate change, food security and more. With the use of cover crops, compost, crop rotation and reduced tillage, we actually can sequester more carbon than is currently emitted, tipping the needle past 100 percent to reverse climate change.

Simply put, if we make the soil healthy, we can reverse climate change.

As a pioneer in organic agriculture, Rodale Institute is poised to lead farmers into this new era, and we look forward to working and sharing our research and technology throughout the world.

Sincerely,

Coach Smallwood

60 gigatons

2012 emissions

Roughly 52 gigatons of carbon dioxide equivalent (~52 $GtCO_2e$).

50 gigatons

OUR VISION

Global regenerative organic agriculture can capture all of our current annual global greenhouse gas emissions and more, drawing down excess carbon from the atmosphere every year.

40 gigatons

CO_2 increasing fast

Concentrations of CO_2 in the atmosphere in 2013 were 142 percent greater than before the Industrial Revolution, as reported by the World Meteorological Organization.

30 gigatons

Lowering emissions not enough

Most of the largest nations have set goals for reducing emissions by the year 2020. Reducing emissions will not reverse climate change but will only slow the effects. We also must focus on trapping excess carbon in soil.

20 gigatons

What is a gigaton?

A gigaton equals 1 billion metric tons. One metric ton (2,200 pounds) is what a cubic meter of water weighs. One billion metric tons is what 1 cubic kilometer (1 billion cubic meters) of water weighs (264 gallons).

10 gigatons

Walk for an Organic Planet

It all starts with personal choice, so demand organic! You can also support Rodale Institute's *"Walk to Washington D.C."* by visiting www.crowdrise.com/organicplanet and pledging $1 for every mile Coach Smallwood walks.

Farming

Degenerative	Regenerative
• Intensive	• Organic & Ecological
• Extensive use of toxic chemicals	• Rejuvenate the soil, grasslands, forests. Replenish water.
• Monoculture	• Crop diversity
• Based on industrial agriculture systems that destabilise the climate, degrade soil, water, biodiversity, health & local economies	• Promote food sovereignty, restore public health & prosperity, absorb excess carbon from the atmosphere & storing it in the soil

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Key Points about Ecological Regeneration:

- Goes beyond environmental restoration
- Regenerative practice requires human intervention
- Entails practices and actions to stimulate or help reinvigorate natural regeneration of degraded environments or severely disrupted ecosystems.
- Examples:
  - Replanting native species
  - Rewilding
  - Building small dams to trap run-off water to revive wetlands
  - Improving the condition of soils by mulching with compost and minimizing damage to the microorganisms and worms to revive or resuscitate degraded ecosystems
  - Community Gardens

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Loess Plateau, China

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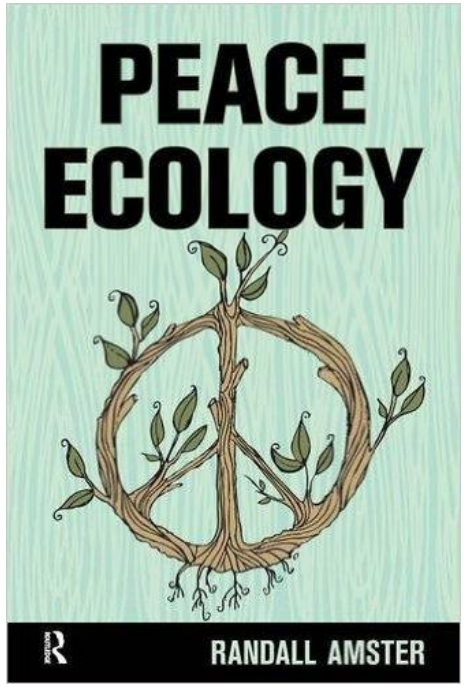

Peace ecology considers peace, nonviolence, social justice, protection of communities, ecological regeneration of degraded environments, recognition of human rights and the rights of species and nature as interconnected concerns and aspirational goals.

Amster (2015, 203) provides a list of viable alternatives:

- community gardening
- organic farming
- collaborative water management
- reinvigorating the commons
- demonetizing our relationships
- decommodifying the stuff of nature
- preserving nature for its own sake and as a potential pathway to peacebuilding
- navigating crises through mutual aid
- forestalling crises through sustainable practices
- resisting militarism on all levels
- practicing compassionate and radical generosity
- moving toward green energy sources
- relocalizing the foundation of our lives
- respecting diversity both socio-politically and ecologically, and
- working across borders of all types

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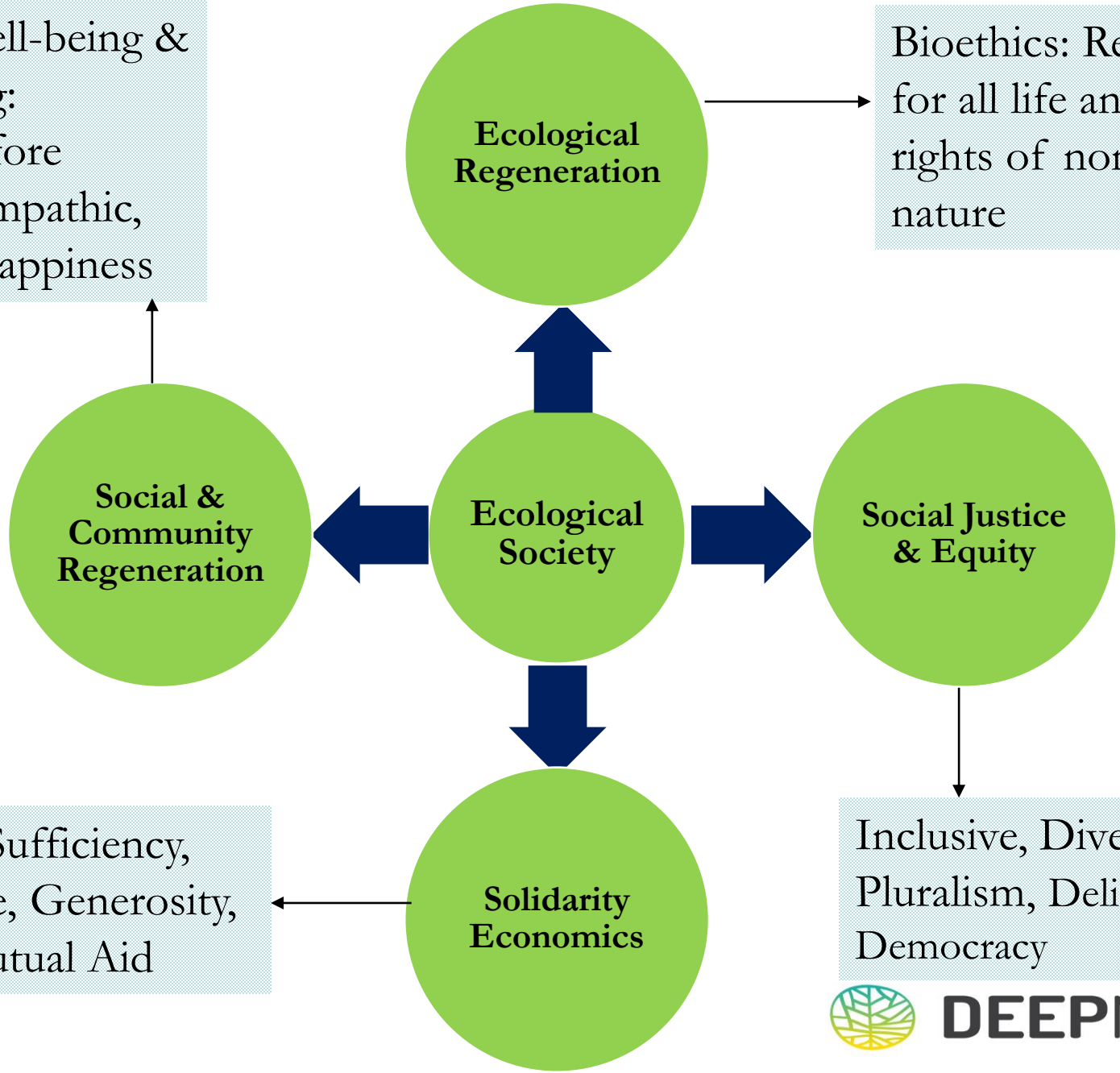
Human Well-being & Flourishing: 'People before Profits', Empathic, Holistic, Happiness



Bioethics: Respect for all life and the rights of non-human nature

'Regenerative conciliation': 'human beings take an interest in each other's progress and happiness'. (Firmin 1885: 662)

Simplicity, Sufficiency, Cooperative, Generosity, Sharing, Mutual Aid

Inclusive, Diversity & Pluralism, Deliberative Democracy

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