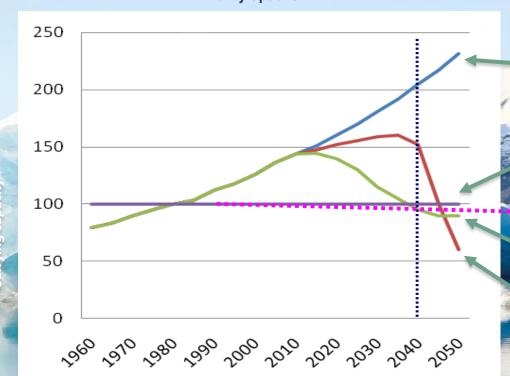


THE LIMITS TO GROWTH - 1972



Policy Options



Business as usual

Original carrying capacity

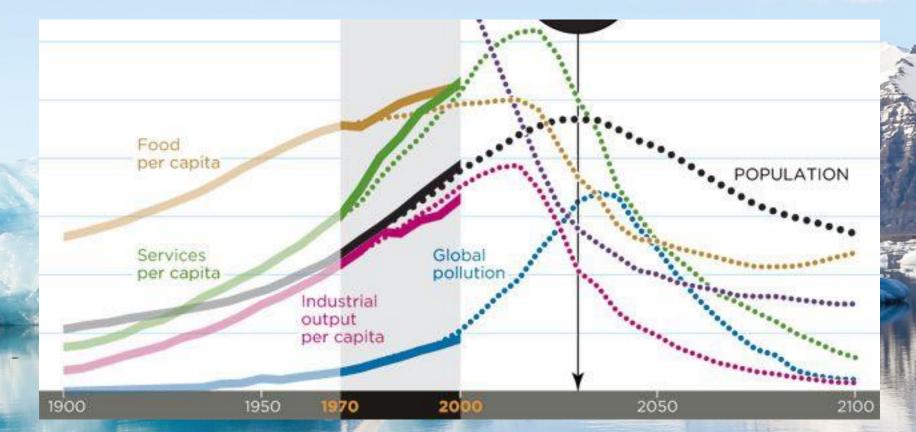
Current carrying capacity

Sustainable future

Limits to Growth

THE LIMITS TO GROWTH - 1972

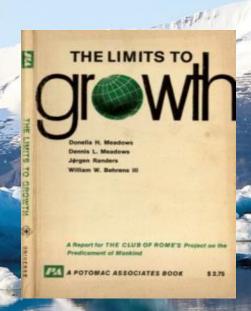




THE LIMITS TO GROWTH - 1972



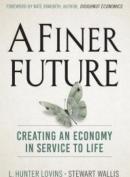
"This supreme effort is a challenge for our generation. It cannot be passed on to the next. The effort must be resolutely undertaken without delay, and significant redirection must be achieved during this decade."



THE LIMITS TO GROWTH - A LEGACY



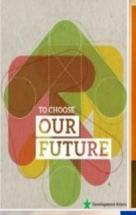


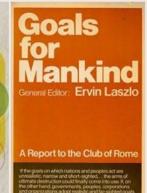


ANDERS WIJKMAN - JOHN FULLERTON A REPORT TO THE CLUB OF ROME

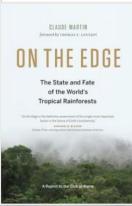


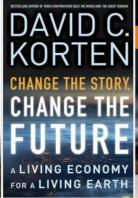


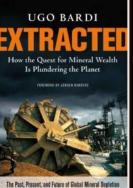




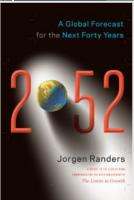




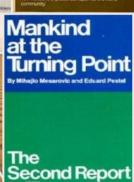


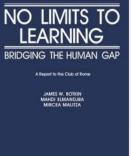


A Report to the Club of Rosse



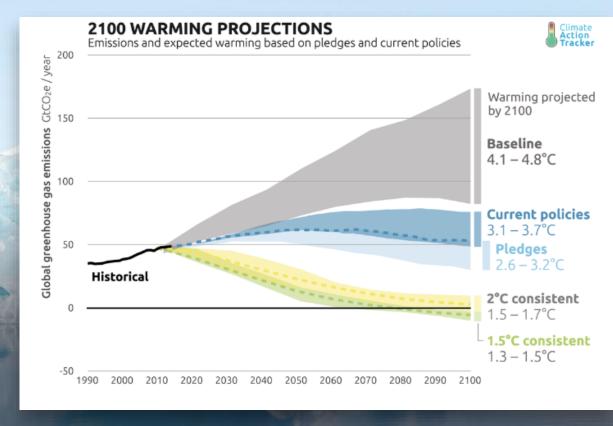






INTERNATIONAL CLIMATE LANDSCAPE - A REALITY CHECK.







TO COMMITMENTS FOR OUR GLOBAL COMMONS





- By 2030, declare critical ecosystems as Global Commons and protected areas, through a regime of stewardship and co-responsibility by the entire global human community.
- By 2020, set a universal global moratorium on deforestation, using a net-zero deforestation and degradation metric and, by 2025, triple annual investments in forest conservation and forest landscape restoration.
- 3. By 2020, sign an immediate moratorium on developing Arctic oil and gas reserves, support withdrawal from fossil energy exploration and use and establish a Cryosphere Preservation Plan to protect this critical ecosystem more broadly.
- 4. In 2020, significantly enhance public and private finance flows for restoration of critical ecosystems, including by mobilising \$200billion for the GCF and GEF over the next decade.

- 5. In 2020, halt the decline of critical and vulnerable ocean ecosystems and habitats and secure a robust New Ocean Treaty (under UNCLOS) for the protection and sustainable use of biodiversity in areas beyond national jurisdiction, which constitute half of our planet.
- 6. In 2020, launch a permanent public-private Planetary Emergency fund for the Global Commons building upon the G7 Amazon Emergency Fund and committing the necessary capital to insure humanity against present and inevitable future crises.
- 7. By 2020, ensure all sovereign wealth funds commit to defunding deforestation and, by 2025, halt all investments driving continued deforestation and unsustainable land-use change of intact and irreplaceable ecosystems.

- 8. By 2025, require all large publicly-listed and family-owned companies to commit to science-based targets, shift to green investments (climate mitigation and adaptation as well as ecosystems protections and regeneration), disclose using available taxonomies and report according to material risks from the Planetary Emergency.
- 9. By 2025, halt all conversion of wetlands, grasslands and savannahs for the production of agricultural commodities and triple annual investments in their effective protection, restoration and resilience.
- 10.By 2020, introduce financial mechanisms and policy instruments to support local farmers, foresters and indigenous people to secure their livelihoods and to shift to regenerative agriculture, sustainable forestry and other sustainable land-use practices.

10 URGENT ACTIONS FOR THE TRANSFORMATION





TRANSFORMING ENERGY SYSTEMS

- Halt all fossil fuel expansion, investments and subsidies by 2020 and shift investments and revenues to low-carbon energy deployment, research, development and innovation.
- Continue the doubling of wind and solar capacity every four years, and triple annual investments in renewable energy, energy efficiency and low-carbon technologies for high-emitting sectors before 2025.
- Set a global floor price on carbon (>30
 USD/ton CO2 and rising) immediately for
 developed countries and no later than 2025
 for the most advanced transition economies,
 that internalises high-carbon energy
 externalities in all products and services.

SHIFTING TO A CIRCULAR ECONOMY

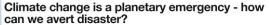
- Agree in 2020 to halve consumption and production footprints in developed and emerging economies and close loops in inefficient value chains, by 2030.
- Internalise externalities in unsustainable and high-carbon production and consumption through targeted consumption taxes and regulation, as well as consumption-based accounting, by 2025.
- Develop national and cross-national roadmaps for all countries towards regenerative land-use and circular economies, including a reduction in global carbon emissions from basic materials to netzero, by 2030.

CREATING A JUST AND EQUITABLE SOCIETY FOUNDED IN HUMAN AND ECOLOGICAL WELL-BEING

- Introduce economic progress indicators that include socioecological and human health and well-being by 2030, recognising that the latter depends on the flourishing and stewardship of natural ecosystems.
- 8. Provide legal tools by 2025 that allow indigenous, forest and tribal communities to secure their rights to traditional land, recognising their vital role as stewards of these lands in mitigating climate change and ecosystem degradation. Such mechanisms must include funding and legal aid to guarantee that these communities have access to justice.
- Shift taxation from labour to the use of all natural resources, final disposal, emissions to land, air and water by 2020.
- Establish clear funding and retraining programmes for displaced workers, rural and industrial communities by 2025.

COVID 19: CALLS FOR HEALTHY PLANET FOR HEALTHY PEOPLE







15 Jan 2020
Sandrine Disson-Decléve
Co-President, The Club of Rome

- The Earth has coped relatively well with emissions so far.
- . But 'tipping points' are being reached.
- . Read the World Economic Forum's Global Risks Report

15 Jan 2020, WEF



Emergence from emergency: The case for a holistic economic recovery plan

Mar 24, 2020 | Climate Emergency, Emerging New Civilization

Climate change, blodiversity loss and deforestation are contributing drivers behind pandemics. Like COVID-19, these crosscutting challenges do not observe national borders and can be managed only through collective action, write Sandrine Disson-Decklev and Johan...

24 March 2020, Euractive

24 March 2020, Project Syndicate

A Green Reboot After the Pandemic

Mar 24, 2020 | SANDRINE DIXSON-DECLÈVE, HUNTER LOVINS, HANS JOACHIM SCHELLNHUBER, KATE RAWORTH

In addition to threatening millions of lives and the global economy, the COVID-19 pandemic has demonstrated that human societies are capable of transforming themselves more or less overnight. In fact, there's no better time than now to usher in systemic economic change.

CALL TO ACTION TO G20 LEADERS:
EMERGING FROM THE EMERGENCY
WITH PEOPLE, PLANET,
PROSPERITY AT THE HEART OF THE
COVID-19 RECOVERY

It is time to hames our fears, build hope and drive action to build resilient societies on the longerterm

We call on G30 Leaders, Heads of State and Finance Ministers, to have the courage, wisdom and

We call on GOL Leaders, Heads of State and Finance Hinisters, to have the course, wisdom and foreight for make their economic receivery plant stageted wourks both short and long term health and well-being for people. In doing so, such leadership will help secure a path toward greater retellience, by improving global health. receiving global health, resulting all pollution and generatous gene emissions, rebuilding our relationship with nature, rethinking how we use land and transforming our food systems to produce healthy food in harmony with local ecologies and socioeconomic well-being colorosomic with the second colorosom of the second color second co

It is important to acknowledge that in addition to the COVID-9 pandemic, the planet is facing a deeper and longer-term crisis, sooted in a number of interconnected global challenges. Recent research on the ecology of diseases suggests that wildlife trafficking, unsustainable food systems, biodiversity loss and deforestation are key drivers behind pandemics. Like COVID-9s, climate change biodiversity loss and financial collogace of not observe national or even physical borders. The planet is facing a deep systems crisis, rooted in a number of interconnected global challenges.

climate change, biodiversity loss and deforestation are contributing drivers behind pandemics, interacting with high levels of global travel, trade and high-density living.

Planetary Emergency Partnership letter, 9 April 2020

COVID-19 RECOVERY: KEY RECOMMENDATIONS



- 1. COVID-19 shows that overnight transformational change is possible and highlights the importance of resilience to a multitude of convergent shocks across our health, economic and finance systems
- Technology, governance and socioeconomic systems are currently mutating to respond to the crisis. Falling back
 to 20th century models of growth, planetary destruction and inequality is not an option. Europe should face
 this moment as an opportunity for deeper systemic change, innovation and renewal.
- COVID-19 EXIT requires fast and strong responses to save as many lives as possible and address the devastating impacts on peoples' livelihoods and security
- 4. COVID-19 RECOVERY must not give up EGD, Climate objectives, SDG's and instead work towards the transition to resilient, low-carbon economies and nature-rich societies to reach a higher level of economic, social, environmental and institutional sustainability:
 - investing in renewable energy instead of fossil fuels
 - investing in nature and reforestation
 - investing in sustainable food systems and regenerative agriculture
 - shifting to a more local, circular and low carbon economy
- 5. People, Planet and Prosperity must be at the center of this deep transformation

A FINER FUTURE - WHAT WILL IT TAKE TO AVOID COLLAPSE?

THE MINIMUM REQUIREMENT FOR AN ECONOMIC SYSTEM THAT CAN SUSTAIN HUMANITY IS ONE THAT:

- I. LIVES WITHIN ECOLOGICAL LIMITS
- 2. MEETS THE BASIC NEEDS OF ALL HUMANS; AND
- 3. HAS SUFFICIENT EQUALITY TO MAINTAIN SOCIAL STABILITY AND ENABLE BASIC NEEDS TO BE MET

A Finer Future, Creating an economy in service to life, A report to the Club of Rome 2018 – L. Hunter Lovins, Stewart Wallis, Anders Wijkman, John Fullerton



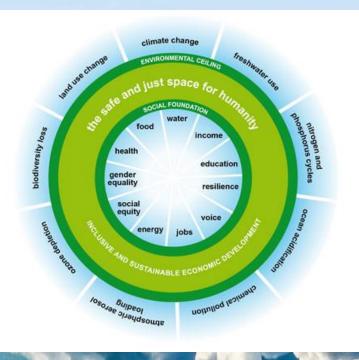
EMERGENCY – WHAT WILL IT TAKE TO AVOID COLLAPSE AND FUTURE CRISES?



1947-1979 Source: United for a Fair Economy (www.FairEconomy.org): Based on analysis of US Census Bureau data 1980-2007 Source: Congressional Budget Office, Average Income Pretax (www.cbo.gov): 2007 Dollars ©2011 Design by Witte Design, LLC • Tucson, Arizona • www.ConnectTheDotsUSA.com



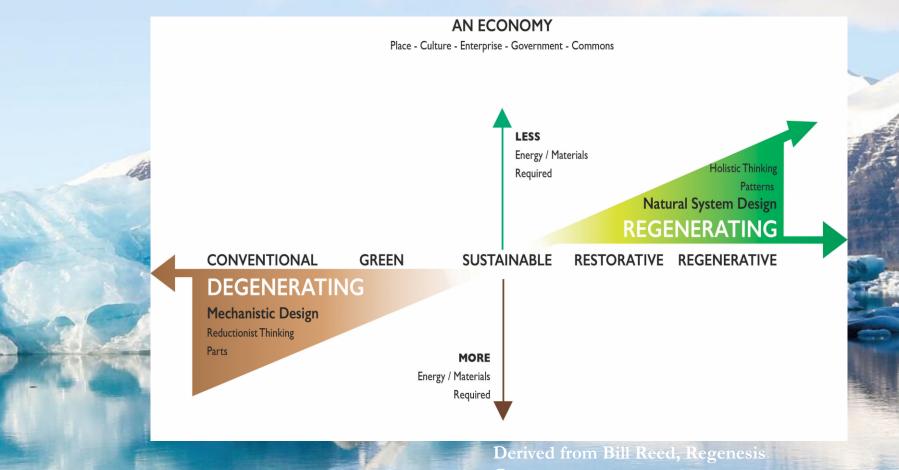
THE DOUGHNUT - WHAT WILL IT TAKE TO AVOID COLLAPSE?



Dr. Kate Raworth, Doughnut Economics

- CURRENT FAILURE: MEET BASIC HUMAN MIN TO ENSURE DIGNITY
- CHALLENGE: MEET THE NEEDS OF ALL WITHIN PLANETARY BOUNDARIES
- ENSURE NO ONE FALLS SHORT OF LIFE'S
 ESSENTIALS (FOOD, HOUSING, HEALTHCARE,
 POLITICAL VOICE)
- ENSURE DON'T OVERSHOOT PRESSURE ON EARTH'S LIFE-SUPPORTING SYSTEMS, ON WHICH WE FUNDAMENTALLY DEPEND
- THE DOUGHNUT IS A COMPASS FOR HUMAN PROGRESS THIS CENTURY

A REGENERATIVE ECONOMY - WHAT WILL IT TAKE TO AVOID COLLAPSE?



A CIRCULAR ECONOMY - WHAT WILL IT TAKE TO AVOID COLLAPSE?

- Agree in 2020 to halve consumption and production footprints in developed and emerging economies and close loops in inefficient value chains, by 2030.
- Internalise externalities in unsustainable and high-carbon production and consumption through targeted consumption taxes and regulation, as well as consumption-based accounting, by 2025.
- Develop national and cross-national roadmaps for all countries towards regenerative land-use and circular economies, including a reduction in global carbon emissions from basic materials to netzero, by 2030.



EMERGENCE FROM EMERGENCY – TRANSFORMING ENERGY SYSTEMS FOR NEW HEALTH AND DECARBONISATION REVENUE





In 2030, 17 solutions would cost at most

of how much we subsidise fossil fuels today

Direct fossil fuel subsidies in 2015 are

\$548 billion globally



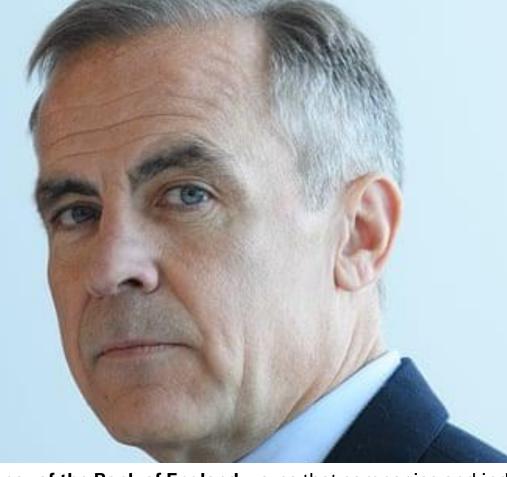


NEW EU LEADERSHIP -POLITICAL BALANCE









Mark Carney, Governor of the Bank of England warns that companies and industries which aren't aiming for net-zero emissions will go bankrupt.



ESIR DGR&I Recovery: Protect-Prepare-Transform Europe Europe needs to play a central role in changing our systems to ensure greater resilience by design, not by disaster. Research and innovation is essential part of COVID19 EU response:

- PROTECT People-Planet-Prosperity
- PREPARE better for the next crises
- TRANSFORM Society, economy and regenerate the planet

EU GREEN DEAL - INTEGRATED ACTION ON CLIMATE, BIODIVERSITY AND HUMAN



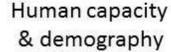




EMERGENCE FROM EMERGENCY - WHAT WILL IT TAKE TO AVOID COLLAPSE?

Digital revolution

Artificial intelligence, big data, biotech, nanotech, autonomous systems



Education, health, ageing, labor markets, gender, inequalities

Smart cities

Decent housing, mobility, sustainable infrastructure, pollution





Consumption & production

Resource use, circular economy, sufficiency, pollution

Food, biosphere, & water

Sustainable intensification, biodiversity, forests, oceans, healthy diets, nutrients



Decarbonization & energy

Energy access, efficiency, electrification, decent services

CAN WE CREATE A **WORLD IN BALANCE?**

- Emergency plans across all jurisdictions
- Action now for resilience later
- Transformational not incremental
- Collaborative not individual
- Business unusual not bau
- More strategic & targeted
- Risk taking an absolute
- Just transition & buffers
- Circularity vs linearity
- Pragmatic yet radical
- Pricing what matters

"It is time to harness our fears, build hope & drive action to build resilient societies in the longer term"

BE THE LEADER THAT YOU WANT TO SEE – REMEMBER OUR MOONSHOT IS PLANET EARTH!

