

Mitigation and Adaptation Studies

Class 28: Reflections: Thoughts on Where to Go from Here

Contents:

- Summary: The Key Points
- A Prosperous Society on a Healthy Planet
- Road to Dignity



Key Points

Baseline

During the Holocene, climate and sea level were exceptionally stable

The Holocene was a “safe operating space for humanity”

Syndrome

During the last hundred years, humanity has introduced rapid and large changes

The system is outside the “normal range” and in the dynamic transition into the Post-Holocene; we have increasing disequilibrium

Diagnosis

Easy access to seemingly unlimited energy allowed humans to accelerate flows in the Earth’s life-support system and sustain rapid population growth and increasing demands

Humans are the “Anthropogenic Cataclysmic Virus” (ACV) in the Earth’s life-support system

Prognosis

We are heading rapidly into a very different system state (thresholds, tipping points)

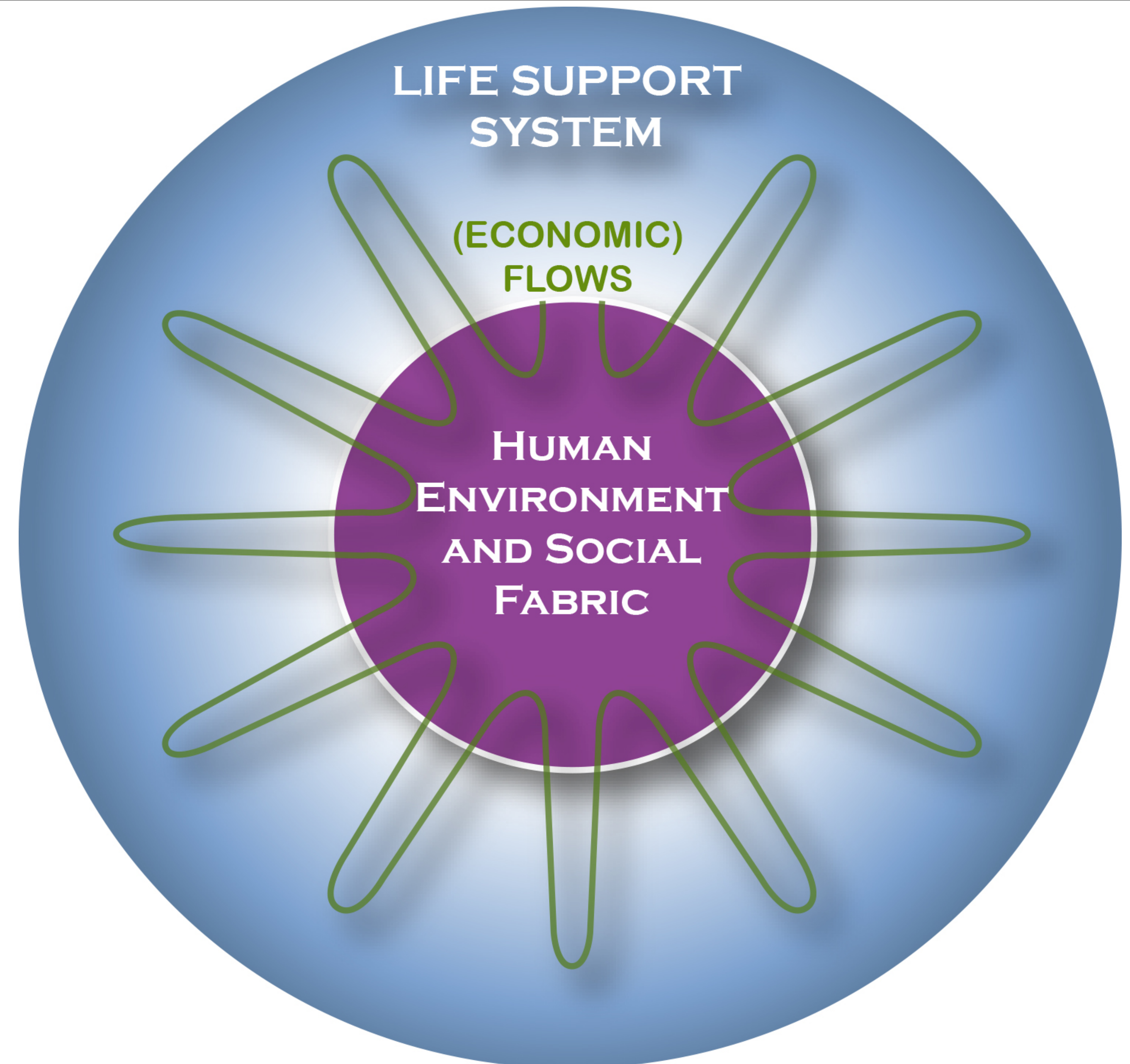
Our knowledge is changing rapidly; there is room for surprises; foresight is needed

Therapy

The current mainstream economic model needs to be modified: Economy has to meet the needs of the present while safeguarding the Earth’s life-support support system

Systems Thinking:

- Flows are at the core of understanding the planetary live-support system
- The health of the planetary system is a result of the physiology

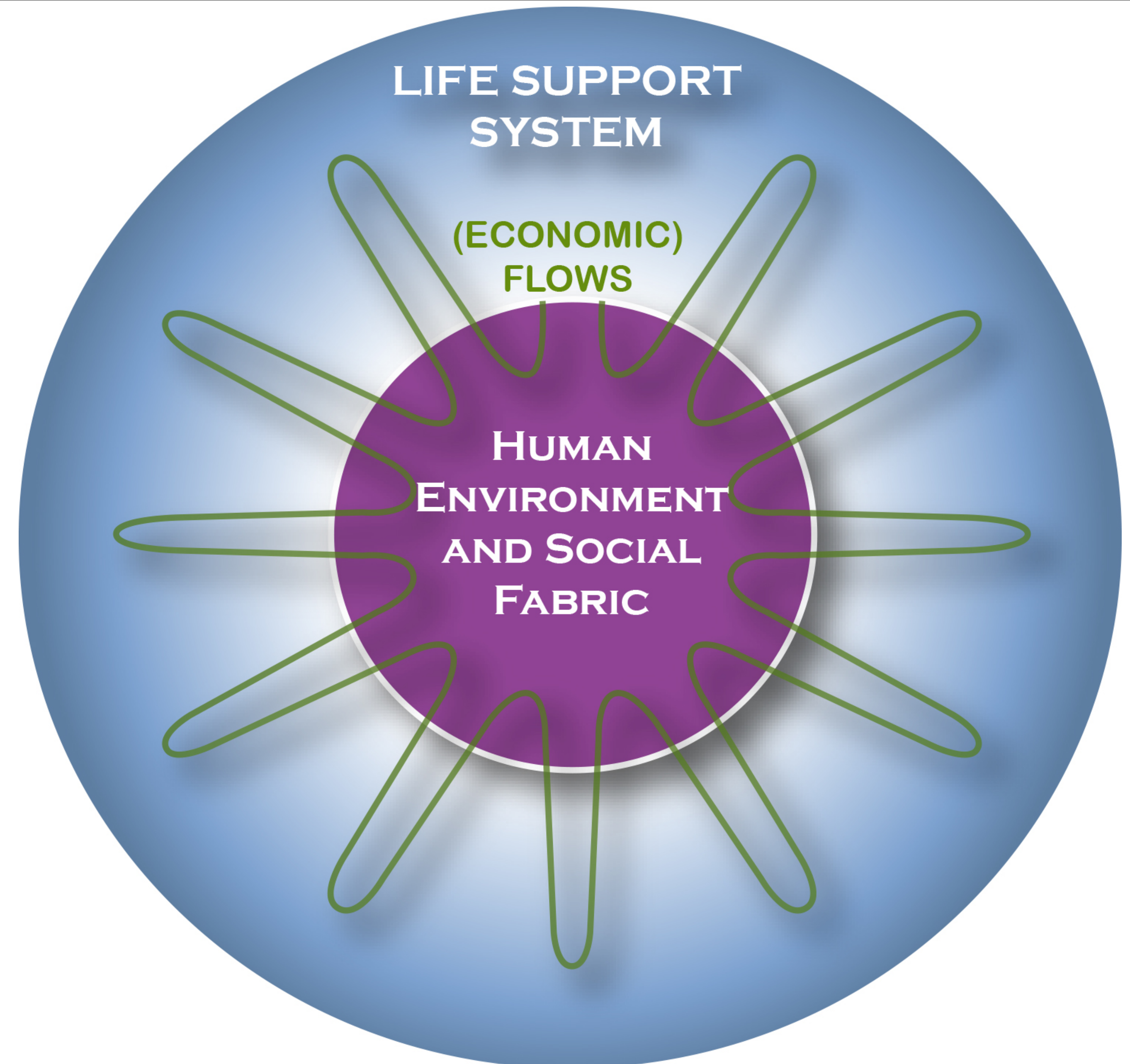


Systems Thinking:

- Flows are at the core of understanding the planetary live-support system
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Core questions:

- How can we safeguard the Earth's life-support system?
- What does this mean: safeguarding the Earth's life-support system?



Normative versus Descriptive Ethics

Normative ethics:

- Duty not to contribute to harm - not to contribute to massive, systemic harm
- Duty to justice
- Obligation to our children's future

Normative versus Descriptive Ethics

Normative ethics:

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- Duty to justice
- Obligation to our children's future

Core question:

- Are we willing to adapt our actions to the consequences of the normative ethics we can agree on

Humanity is facing a wide spectrum of existential threats

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Monbiot, 2019

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The system is the mainstream economic model

*“Capitalism’s failures arise from two of its defining elements. The first is **perpetual growth**. Economic growth is the aggregate effect of the quest to accumulate capital and extract profit. Capitalism collapses without growth, yet perpetual growth on a finite planet leads inexorably to environmental calamity.”*

Monbiot, 2019

Humanity is facing a wide spectrum of existential threats

“First, that it is the system, rather than any variant of the system, that drives us inexorably towards disaster.”

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The system is the mainstream economic model

“A system based on perpetual growth cannot function without peripheries and externalities. There must always be an extraction zone – from which materials are taken without full payment – and a disposal zone, where costs are dumped in the form of waste and pollution. As the scale of economic activity increases until capitalism affects everything, from the atmosphere to the deep ocean floor, the entire planet becomes a sacrifice zone: we all inhabit the periphery of the profit-making machine.”

Monbiot, 2019

Humanity is facing a wide spectrum of existential threats

“First, that it is the system, rather than any variant of the system, that drives us inexorably towards disaster.”

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The system is the mainstream economic model

*“This drives us towards cataclysm on such a scale that most people have no means of imagining it. The threatened collapse of our life-support systems is bigger by far than war, famine, pestilence or economic crisis, though it is likely to incorporate all four. Societies can recover from these apocalyptic events, but not from the **loss of soil**, an abundant biosphere and a habitable climate.”*

Monbiot, 2019

Humanity is facing a wide spectrum of existential threats

... but it also depends on the ethics

*“The second defining element is the bizarre assumption that a person is entitled to as great a share of the world’s natural wealth **as their money can buy.**”*

Monbiot, 2019

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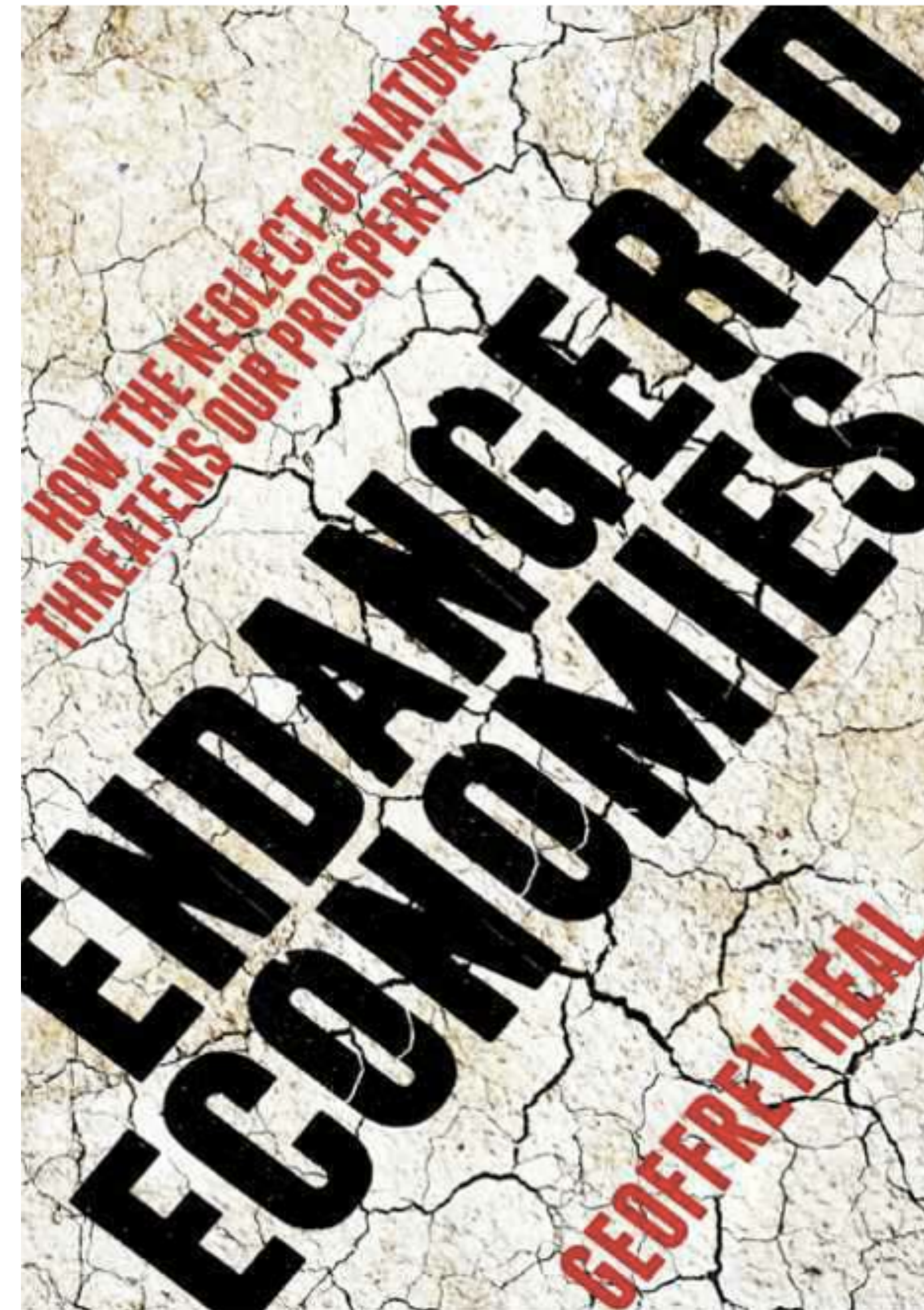


Therapy:

- Short-term:
 - addressing urgent (local) problems: symptoms like climate change, sea-level rise, pollution, ecosystem degradation, extinction, ...
- Long-term:
 - preparing for possible future, including worse/the worst case
 - making fundamental changes to address the causes/sickness

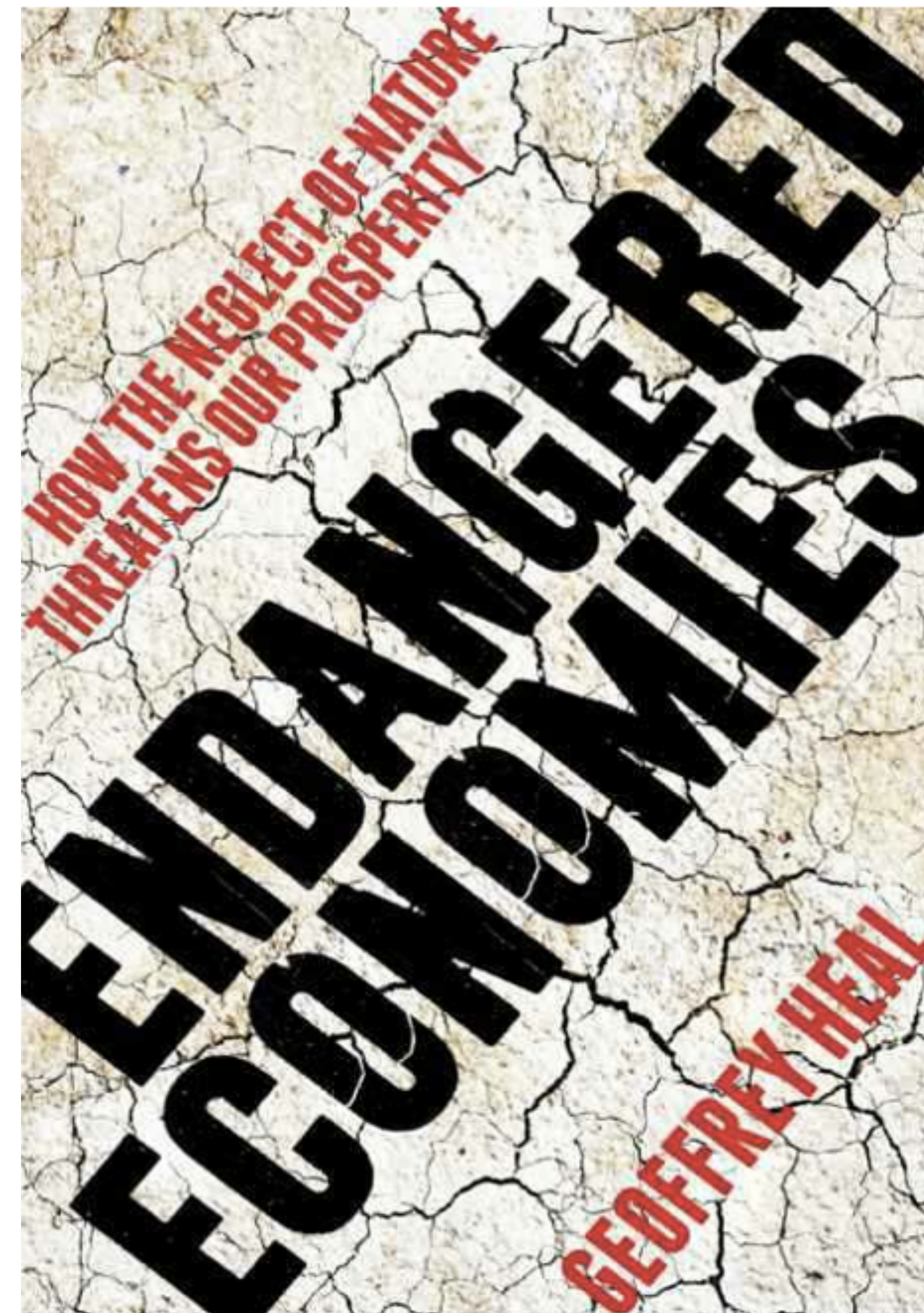
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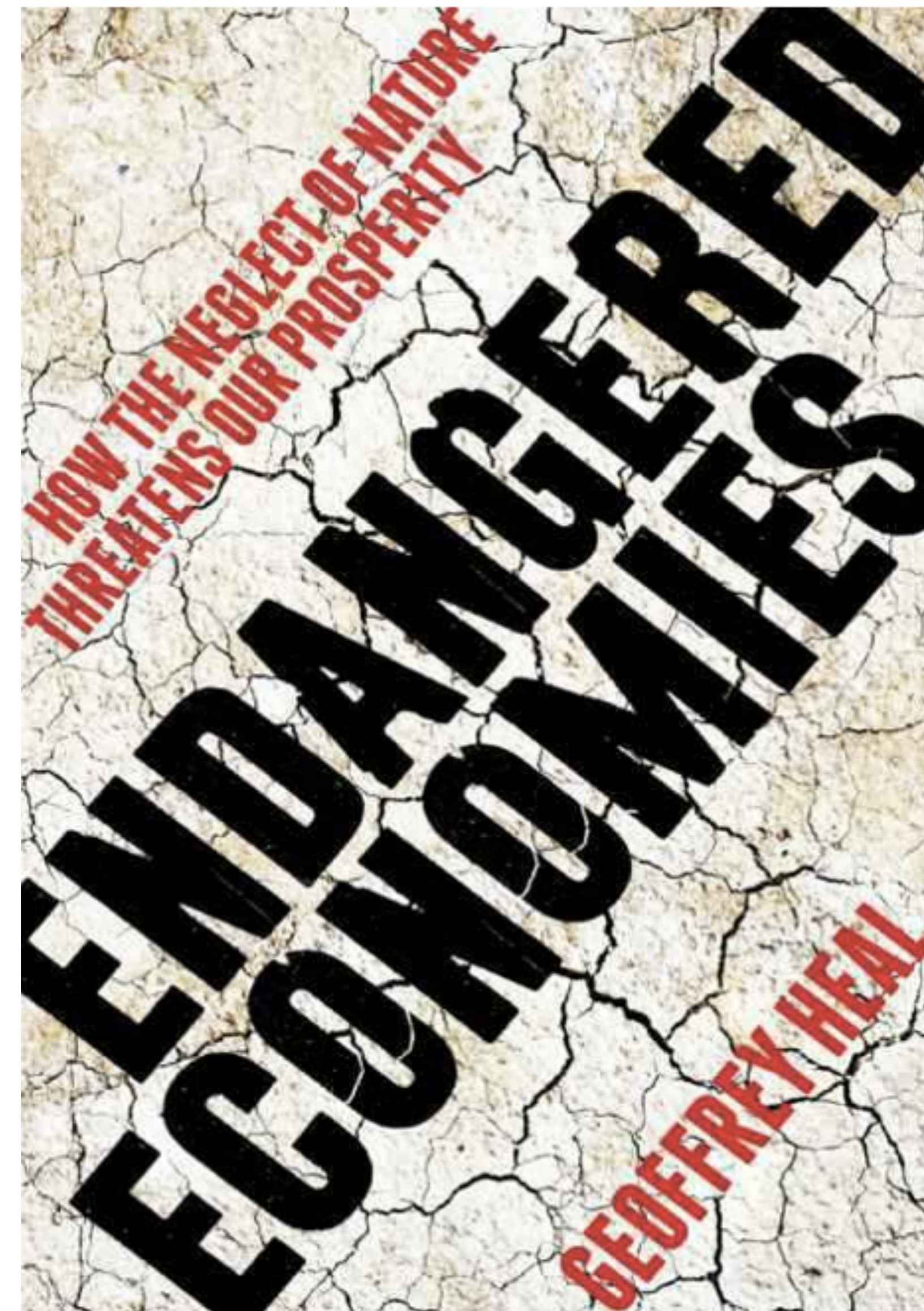
I love the natural world, and I love the fruits of economic and technological progress. There are those who say that I can't have both: that economic progress comes at the expense of the natural world and conservation at the expense of progress. Fortunately, this is wrong: not only can they go together, but in the long run, they must go together. We cannot have sustainable prosperity without the natural world: it provides infrastructure essential to our well-being. Why is conventional wisdom so wrong? Because historically there has been a conflict between economic progress and nature, with the former coming at the expense of the latter. But this is a historical coincidence stemming from the way in which we have organized our economic activity and not in any way a logical necessity. We—humanity—can certainly have progress without the destruction of nature: it is a matter of organizing our economic activity more thoughtfully.

Heal, Geoffrey. *Endangered Economies: How the Neglect of Nature Threatens Our Prosperity*. Columbia University Press. Kindle Edition.



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A Prosperous Society on a Healthy Planet

'Business as usual is not an option.'
Oliver James, author of *Affluenza*

PROSPERITY WITHOUT GROWTH Economics for a Finite Planet

**TIM
JACKSON**

WITH FOREWORDS BY
HERMAN DALY, BILL MCKIBBEN,
MARY ROBINSON & PAVAN SUKHDEV



The existence of a credible and robust mechanism for achieving prosperity matters. And this is more than just a question of the machinery of doing well. The legitimacy of the means to live well is part of the glue that keeps society together. Collective meaning is extinguished when hope is lost. Morality itself is threatened. Getting the mechanism right is vital.

One of the key messages of this book is that we're failing in that task. Our technologies, our economy and our social aspirations are all mis-aligned with any meaningful expression of prosperity. ... In pursuit of the good life today, we are systematically eroding the basis for well-being tomorrow. We stand in real danger of losing any prospect of a shared and lasting prosperity.

Jackson, Tim. *Prosperity without Growth: Economics for a Finite Planet* (Kindle Locations 356-364). Taylor and Francis. Kindle Edition.

HALF-EARTH



*Our Planet's
Fight for Life*

EDWARD O.
WILSON

WINNER OF THE PULITZER PRIZE

For the first time in history a conviction has developed among those who can actually think more than a decade ahead that we are playing a global endgame. Humanity's grasp on the planet is not strong. It is growing weaker. Our population is too large for safety and comfort.

...

Meanwhile, we thrash about, appallingly led, with no particular goal in mind other than economic growth, unfettered consumption, good health, and personal happiness. The impact on the rest of the biosphere is everywhere negative, the environment becoming unstable and less pleasant, our long-term future less certain.

Wilson, Edward O.. Half-Earth: Our Planet's Fight for Life . Liveright. Kindle Edition.

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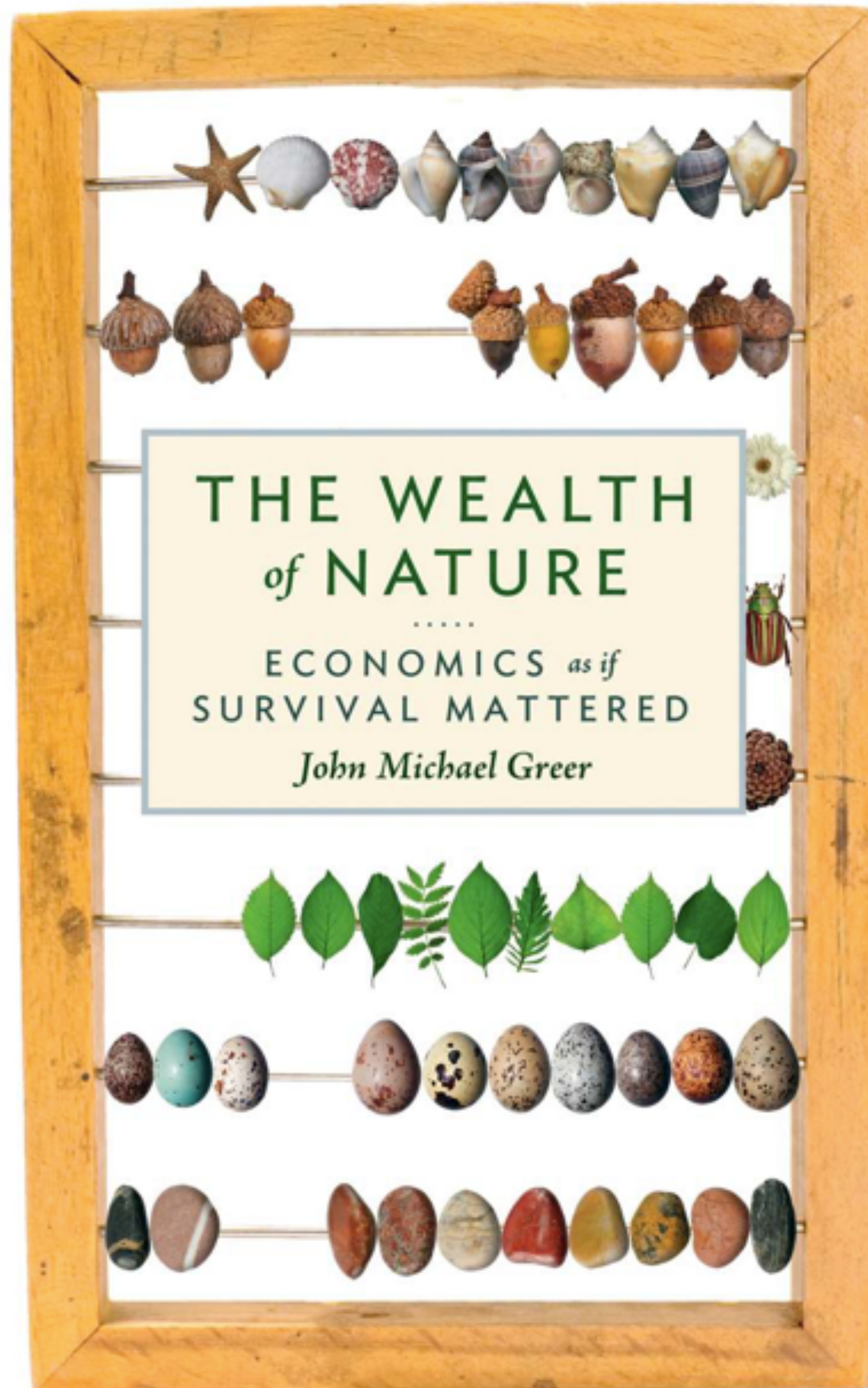
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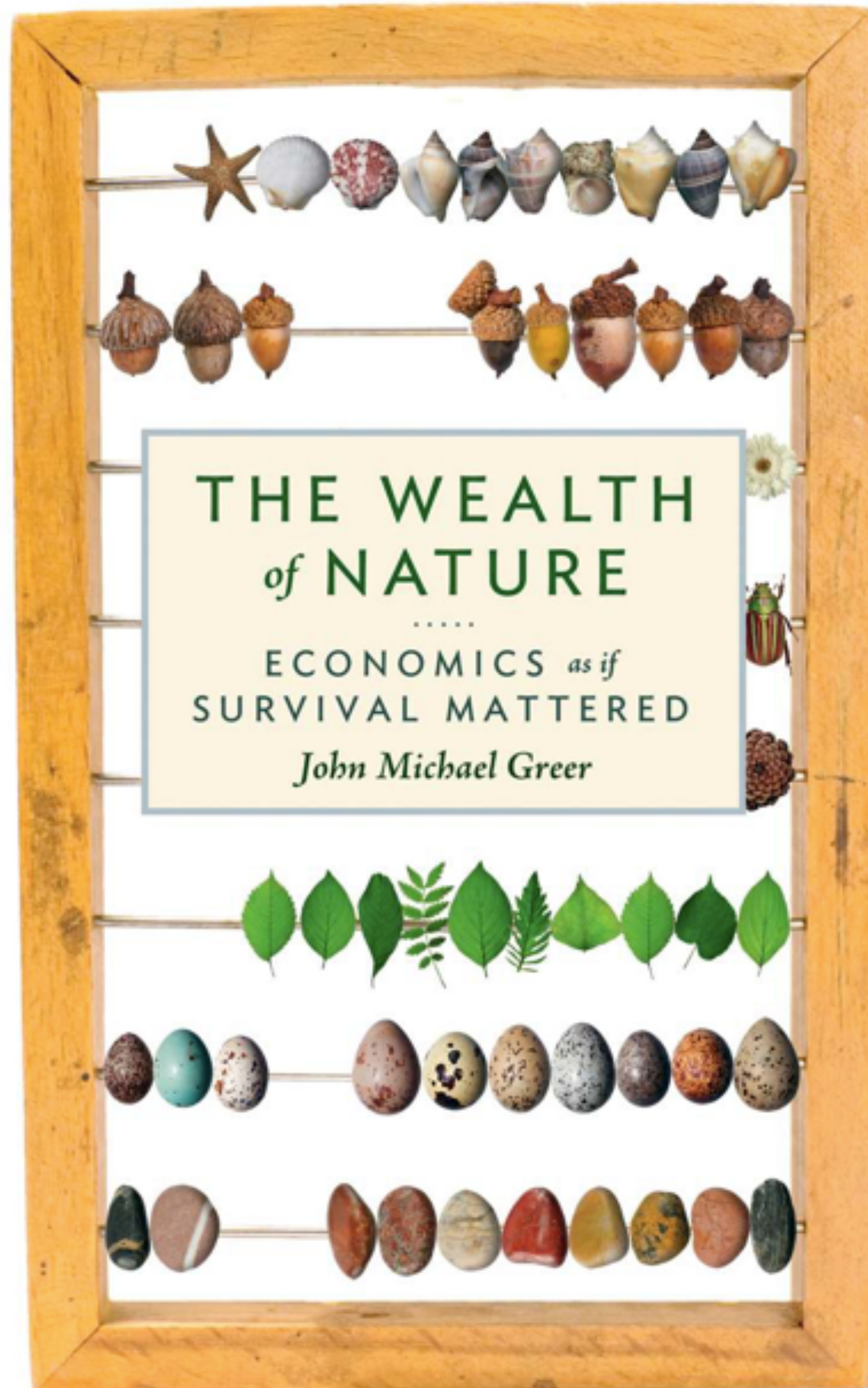
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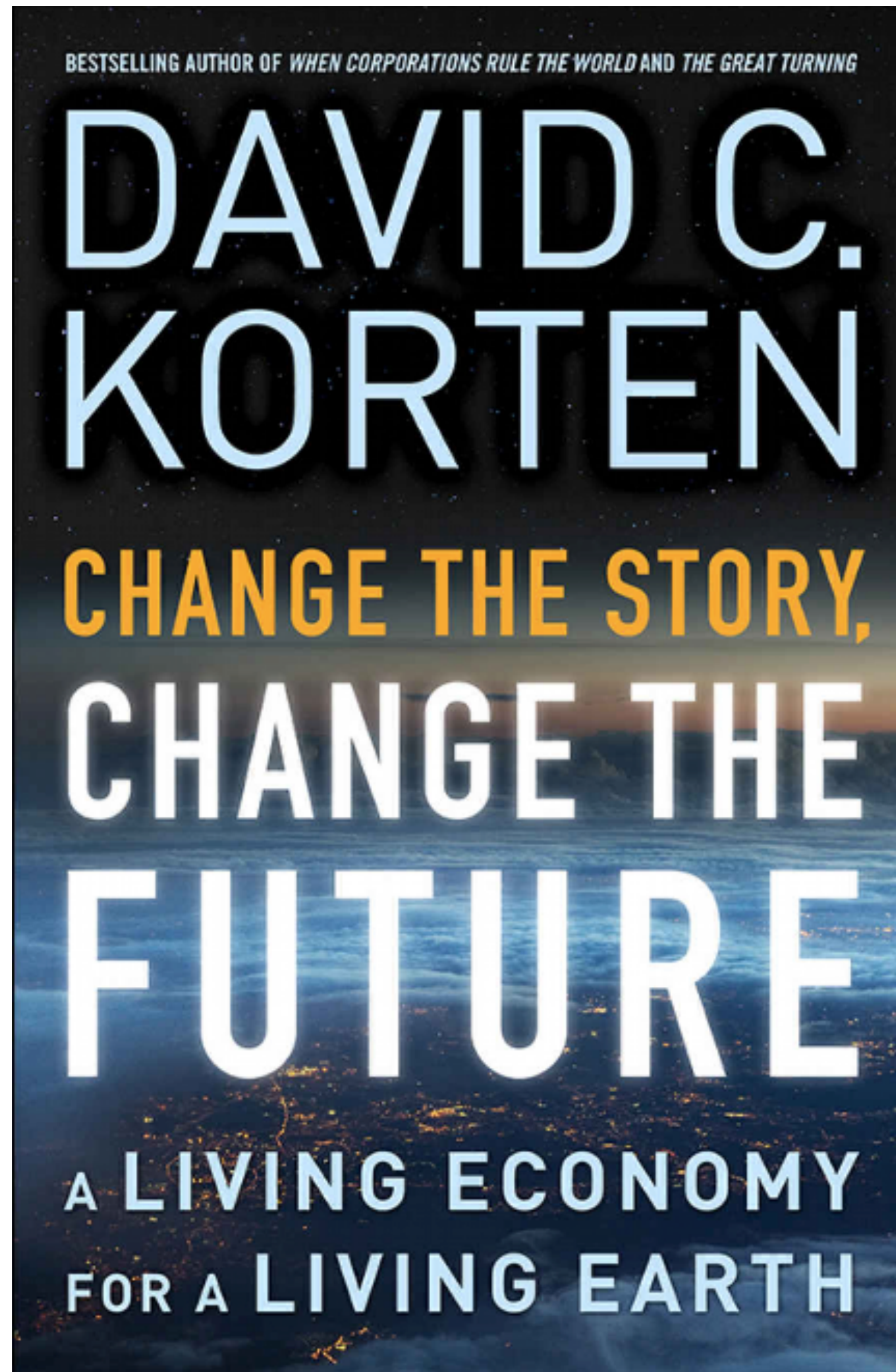
MANY PEOPLE nowadays assume that the collapse of the current economic order in the industrial world must lead to mass death and a descent into savagery. This hardly follows. Most of the world's nations have undergone political and social collapse at least once in the course of the last century; the process can certainly be traumatic, but it isn't the end of the world. Whatever crises drive today's industrial order to its end, and whatever national or international traumas supervene until some degree of stability returns, there will be a place for new policies when the future governments of today's industrial nations, or the governments of the new political units that emerge from the wreckage, get to work picking up the pieces.

Greer, John Michael. *The Wealth of Nature: Economics as if Survival Mattered* (p. 191). New Society Publishers. Kindle Edition.



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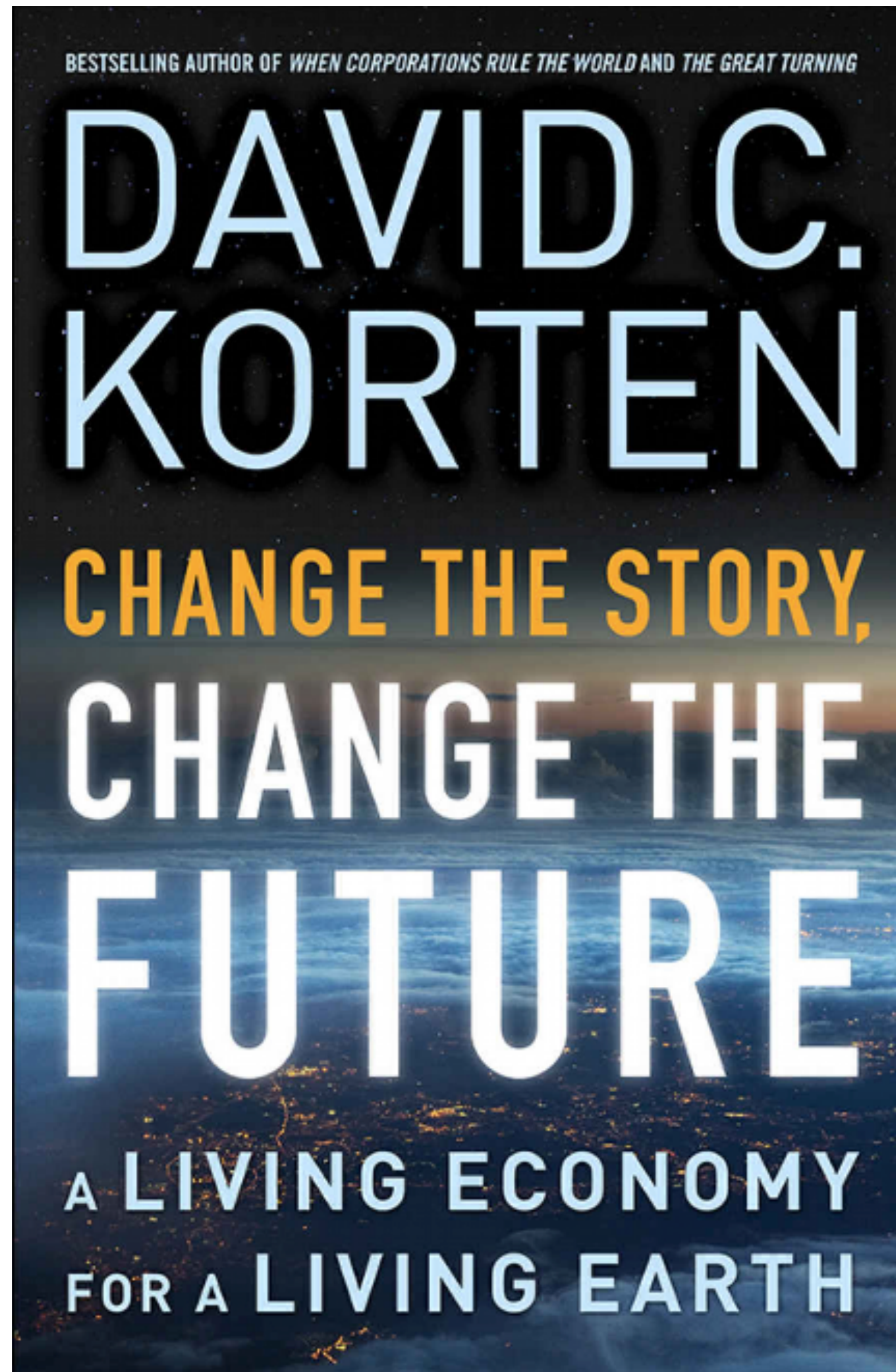
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The only valid purpose of an economy is to serve life. To align the human economy with this purpose, we must learn to live as nature lives, organize as nature organizes, and learn as nature learns guided by a reality-based, life-centered, intellectually sound economics that embraces the values and insights of the Sacred Life and Living Earth story.

The quest for a new economics begins with a simple question for which the answer should be obvious: Is the purpose of the economy to maximize the profits of money-seeking corporate robots or the health and well-being of living households?

Korten, David C.. Change the Story, Change the Future: A Living Economy for a Living Earth (p. 99). Berrett-Koehler Publishers. Kindle Edition.

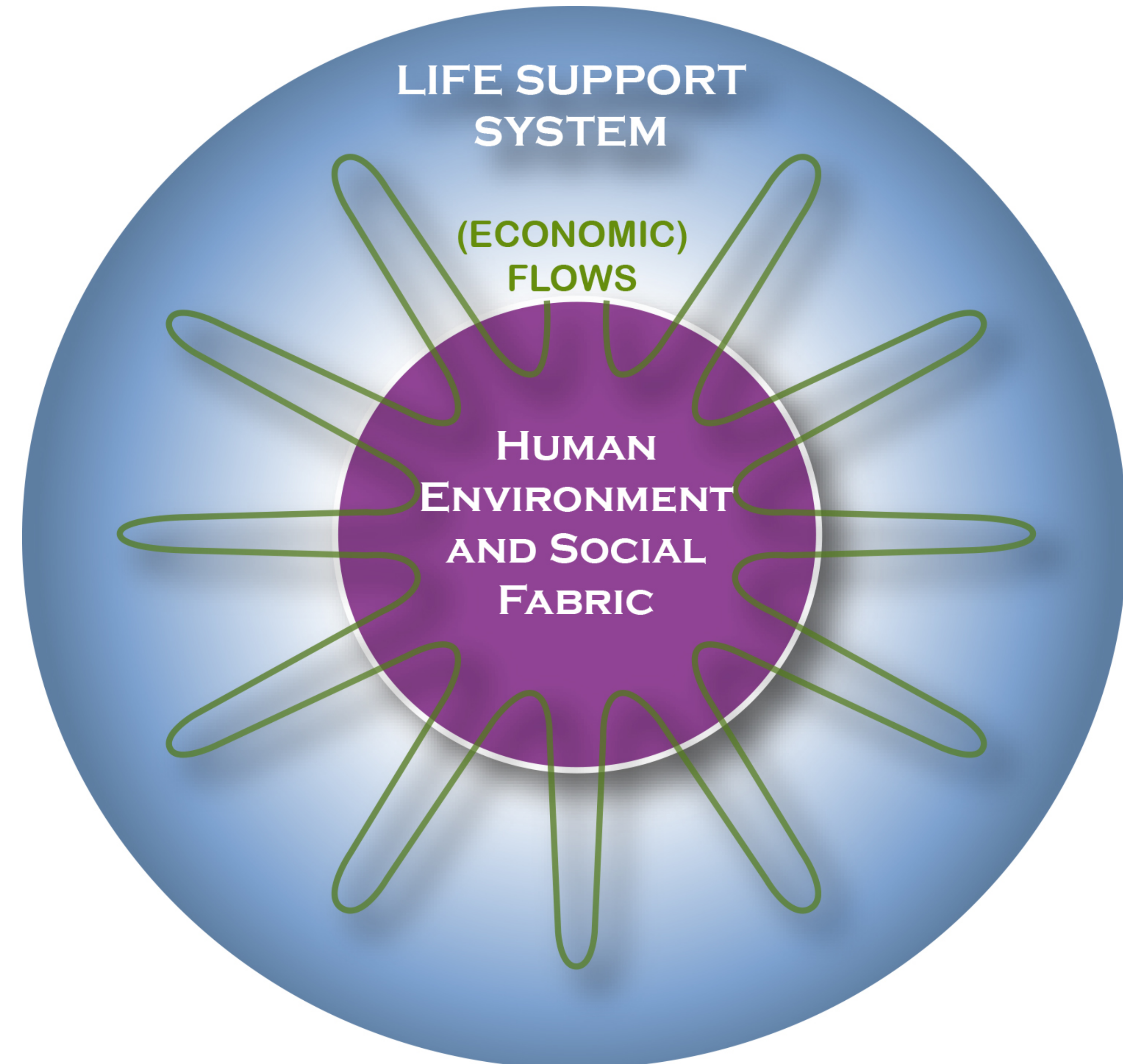


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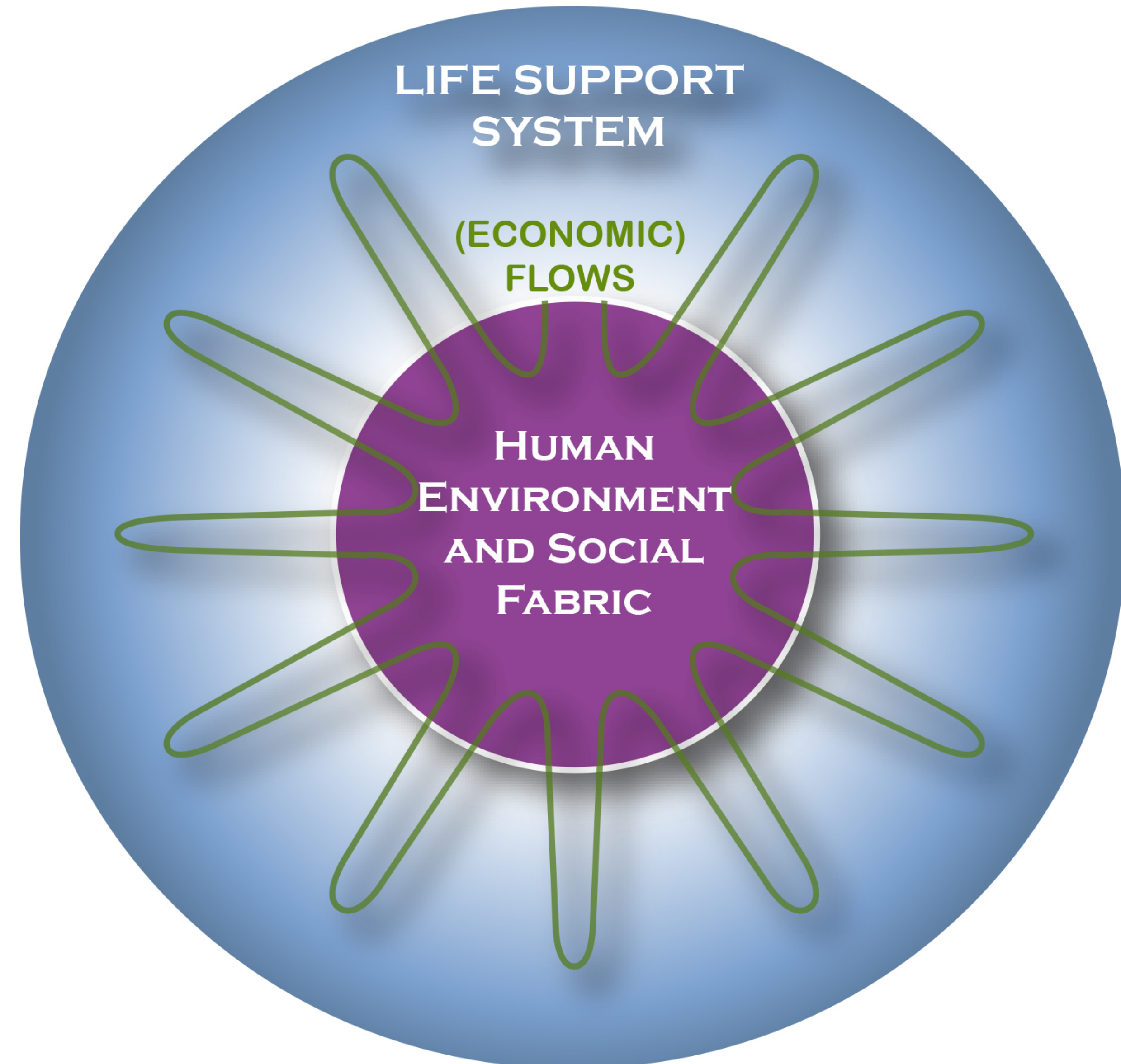
Redefining the purpose of economy:
To meet the needs of the presence while safeguarding Earth's life support systems, on which the welfare of current and future generations depends (*based on definition of sustainable development by Griggs et al., 2013*).



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Rationale:

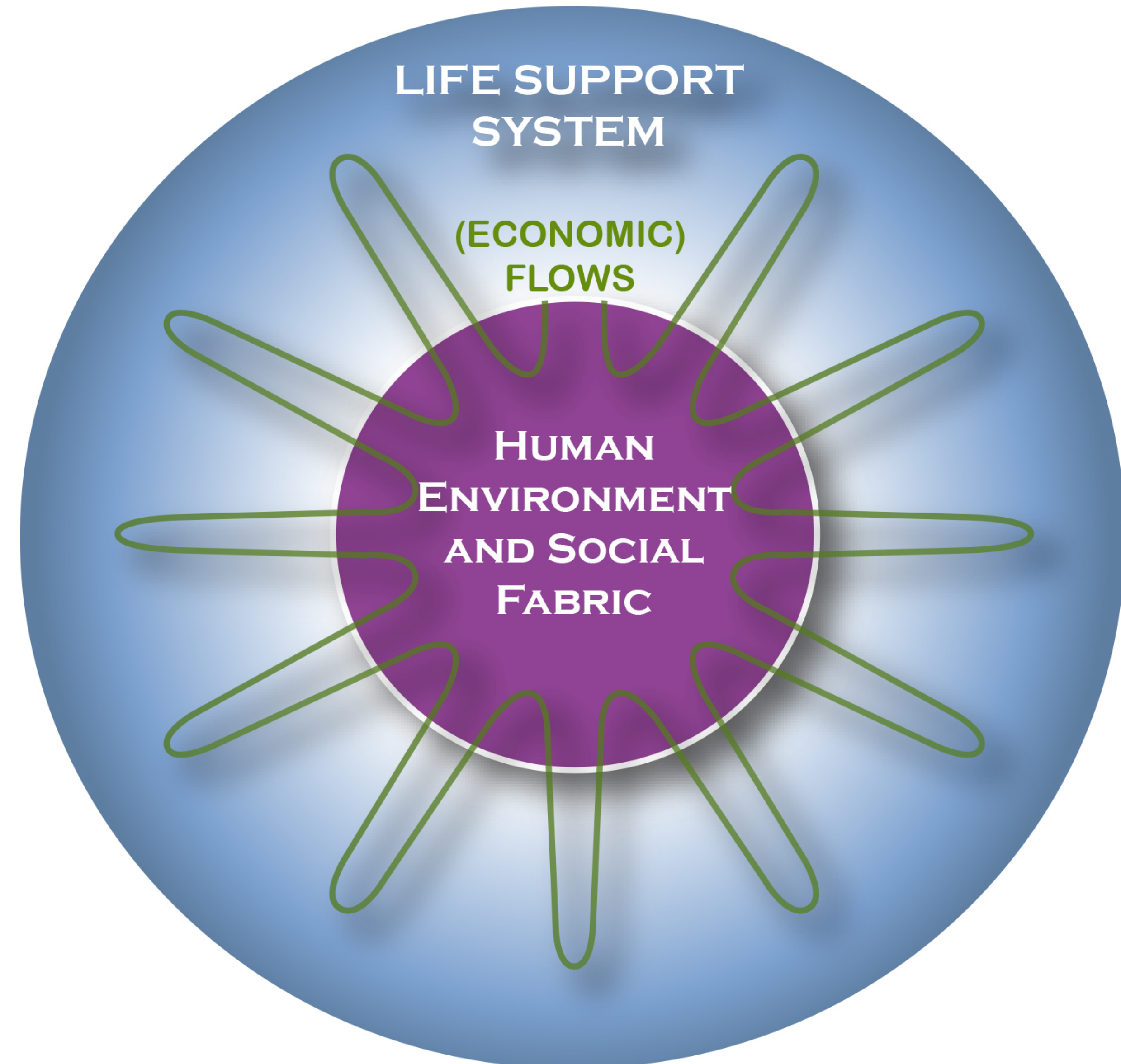
- Economy is the link between humanity and Earth's life-support system.
- Ethical, social and economic rules regulate the flows.
- Measure wealth creation and distribution by accounting for natural, social, and economic wealth.



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Agenda 2030: “The Road to Dignity”





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SUSTAINABLE DEVELOPMENT GOALS

1

NO POVERTY



2

ZERO HUNGER



3

GOOD HEALTH AND WELL-BEING



4

QUALITY EDUCATION



5

GENDER EQUALITY



6

CLEAN WATER AND SANITATION



7

AFFORDABLE AND CLEAN ENERGY



8

DECENT WORK AND ECONOMIC GROWTH



9

INDUSTRY, INNOVATION AND INFRASTRUCTURE



10

REDUCED INEQUALITIES



11

SUSTAINABLE CITIES AND COMMUNITIES



12

RESPONSIBLE CONSUMPTION AND PRODUCTION



13

CLIMATE ACTION



14

LIFE BELOW WATER



15

LIFE ON LAND



16

PEACE, JUSTICE AND STRONG INSTITUTIONS



17

PARTNERSHIPS FOR THE GOALS







SDGs and the Agenda 2030 are intended as our “Road to Dignity,” and we are on this road together.



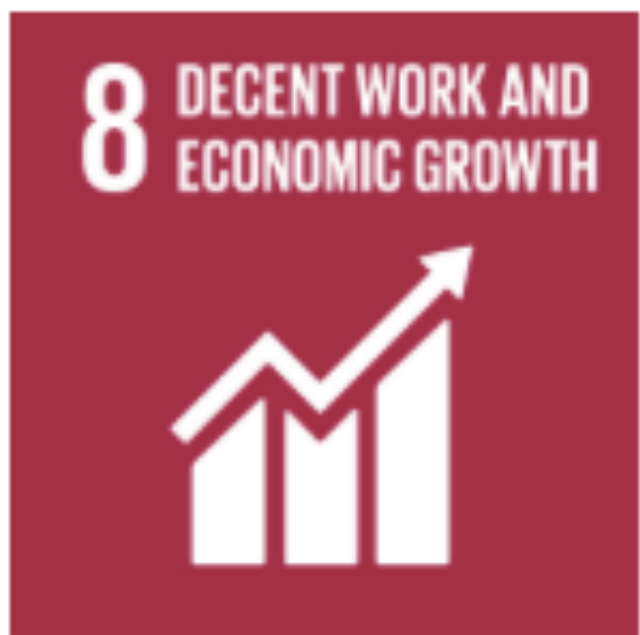


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Instead of being technology and science-driven, the Earth observation and science communities need to be problem-driven and part of the process.

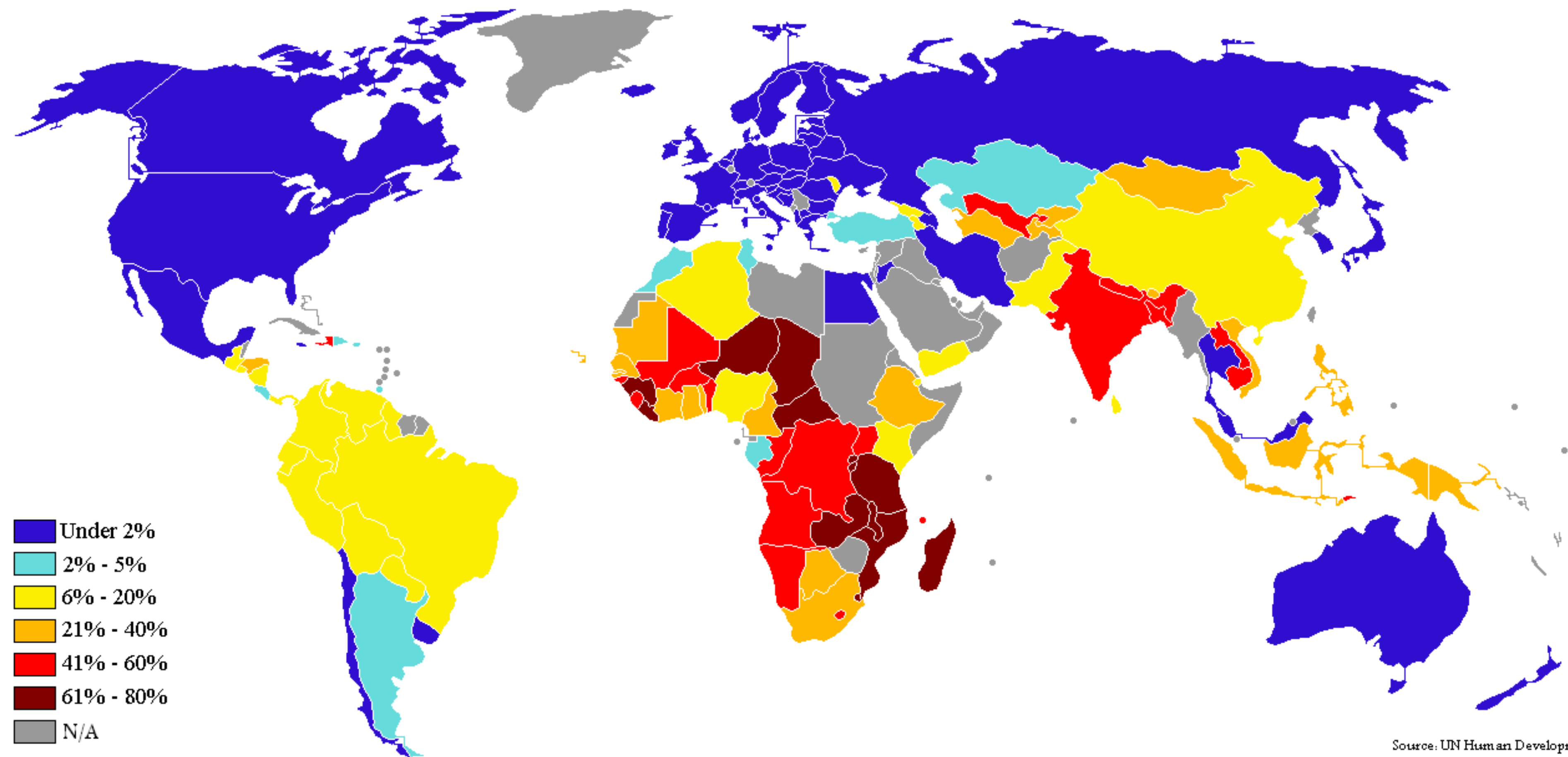


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The SDGs are about real-world problems, about people suffering, ...

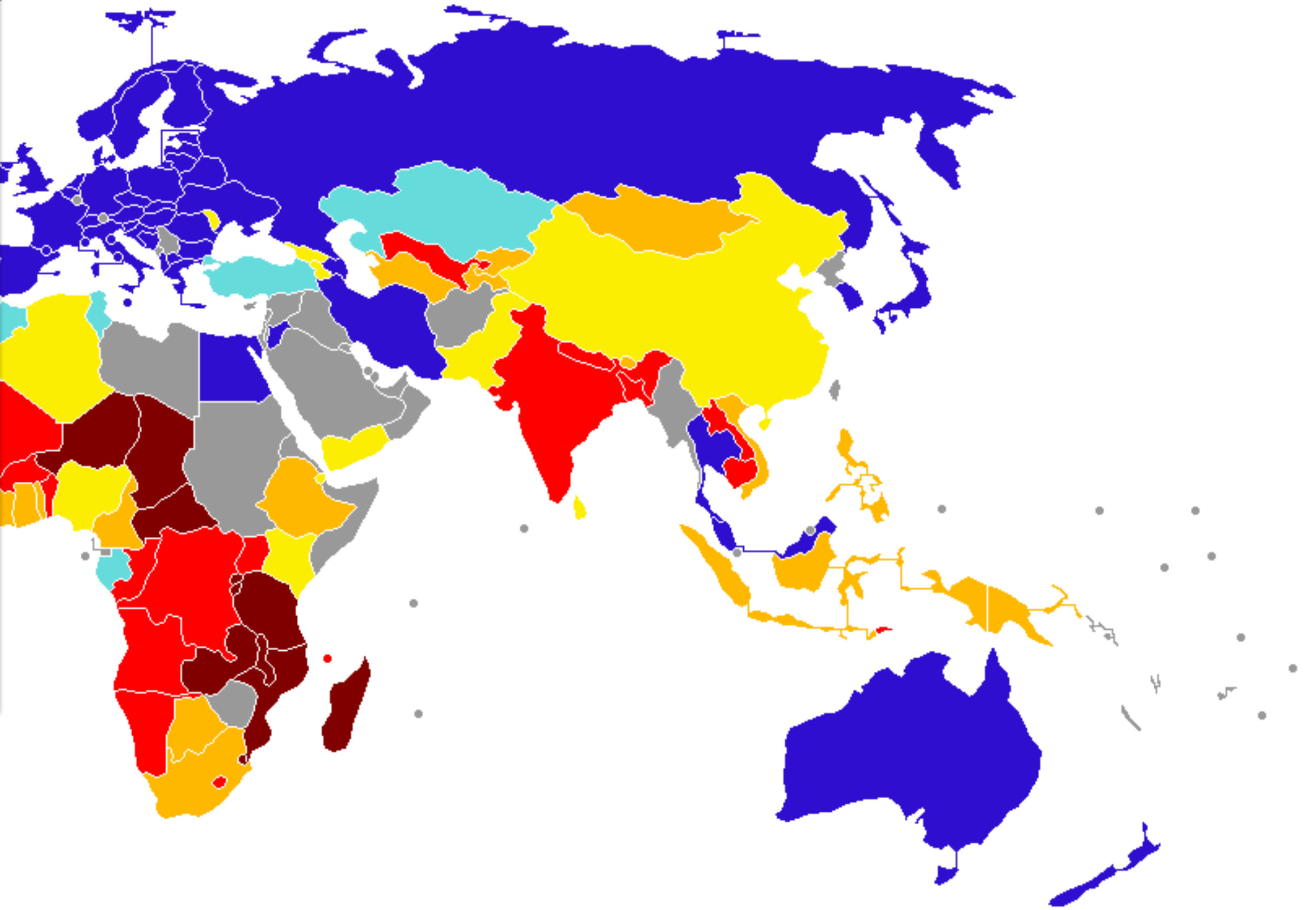
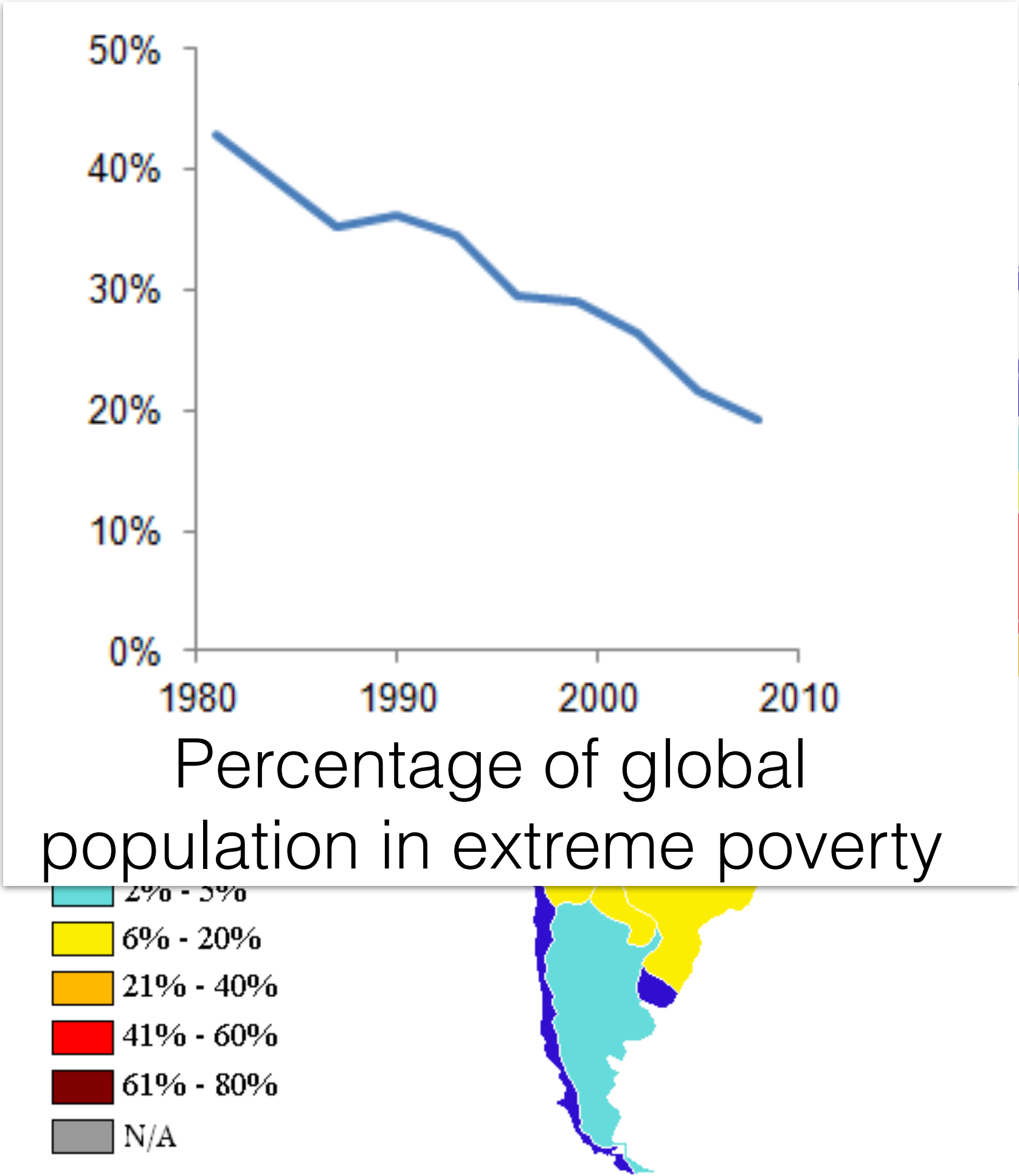


Source: UN Human Development Indices 2008

Percentage of population living on less than \$1 a day (2008-2009), UN Human Development Index, 2008

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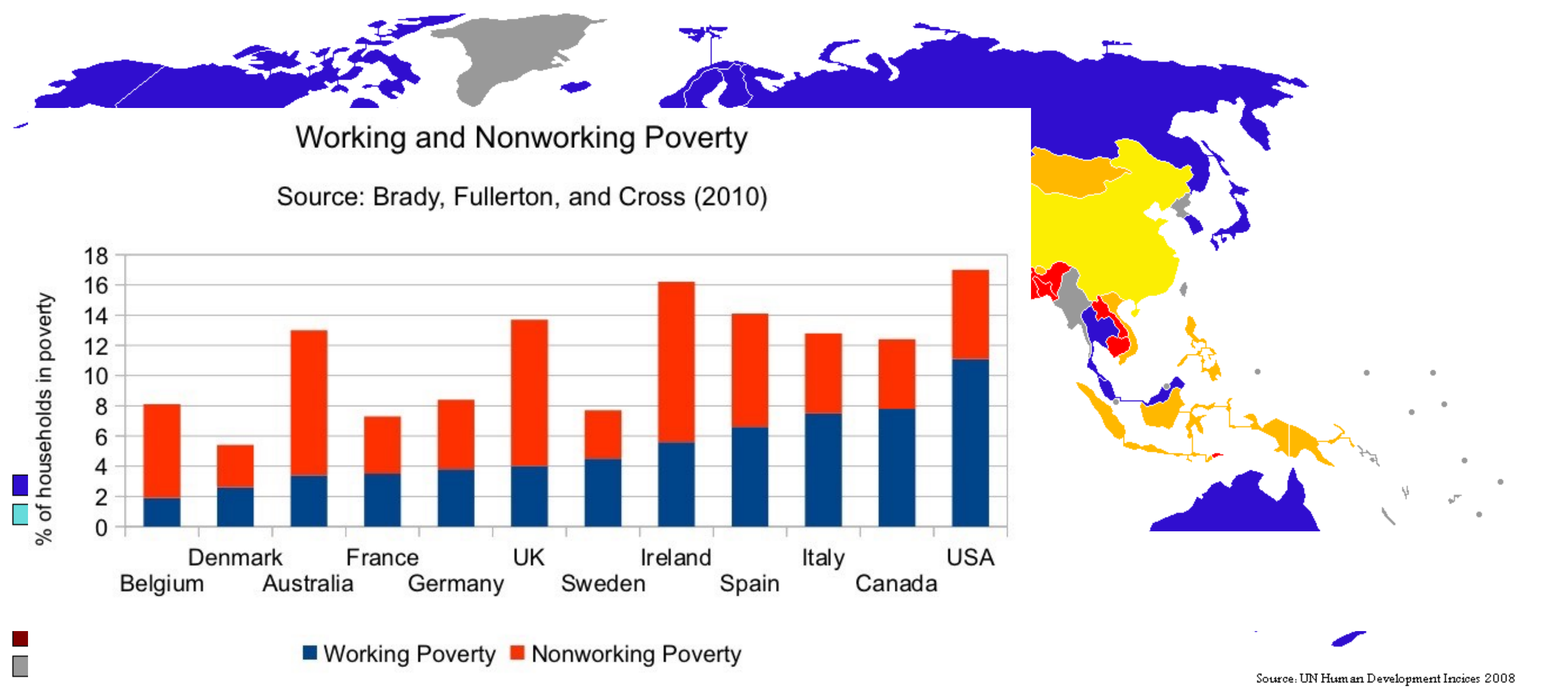


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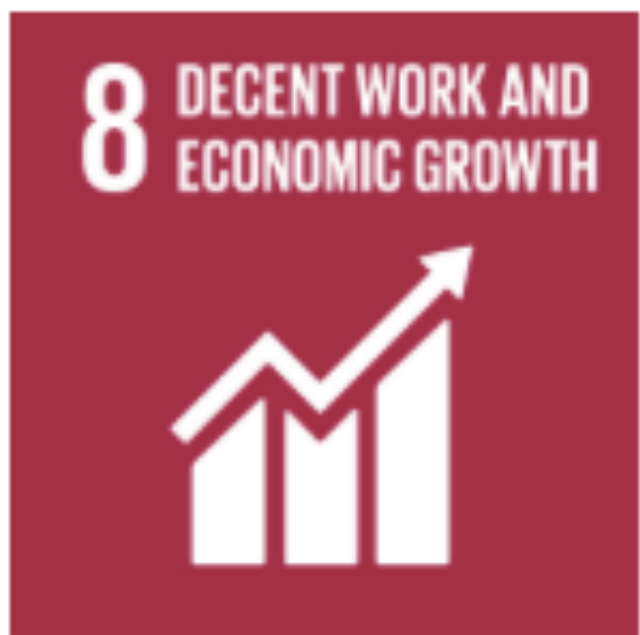
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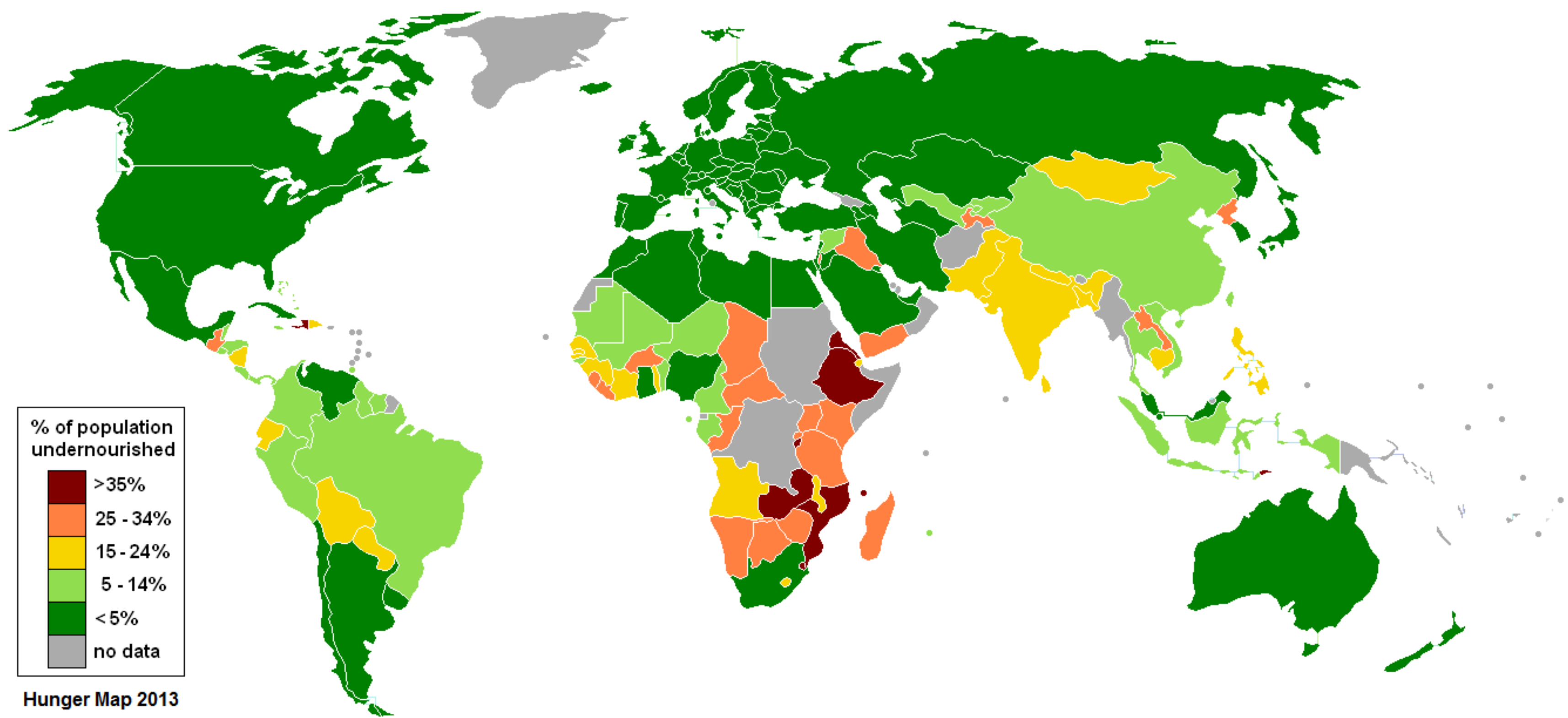
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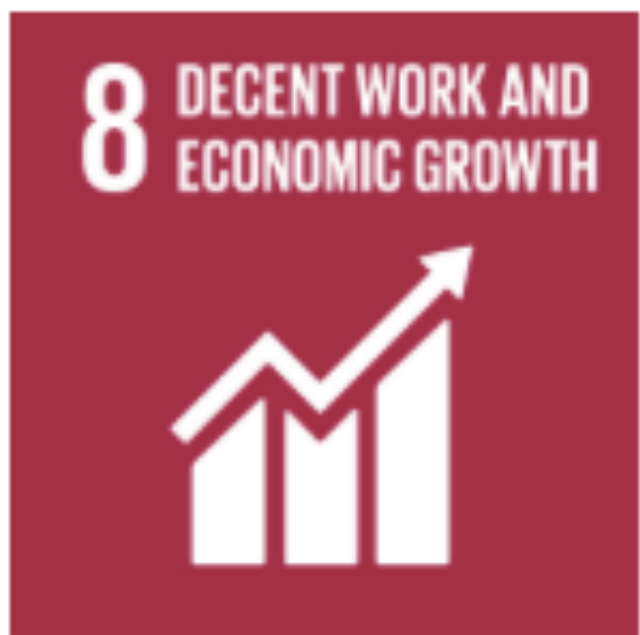
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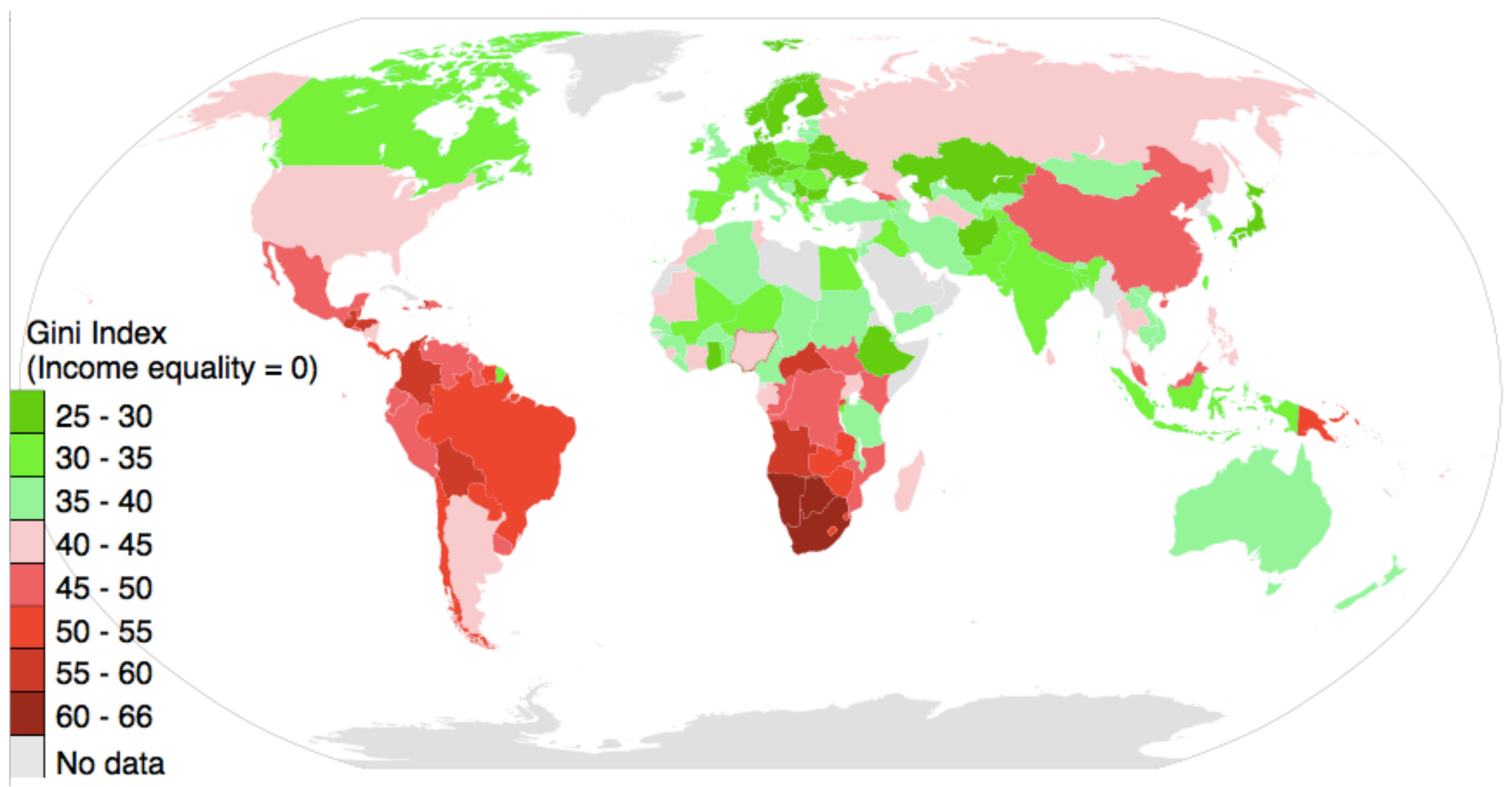
Percentage of population undernourished



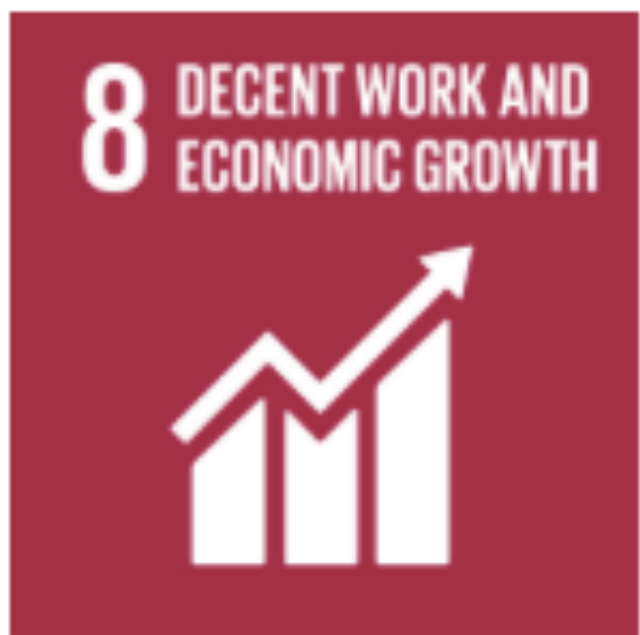
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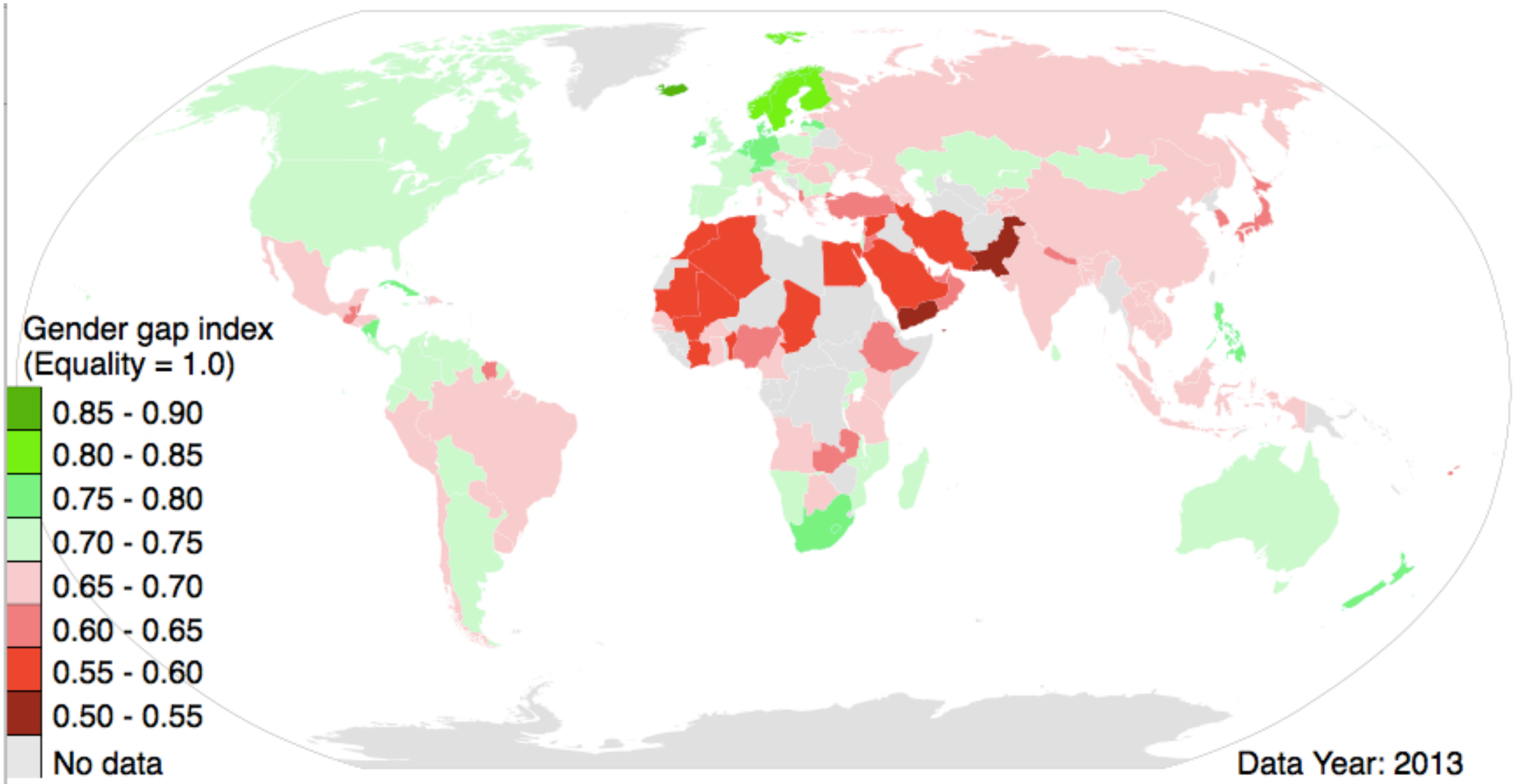


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Women carry out 70% of the global work hours but they only earn 10% of the global salary



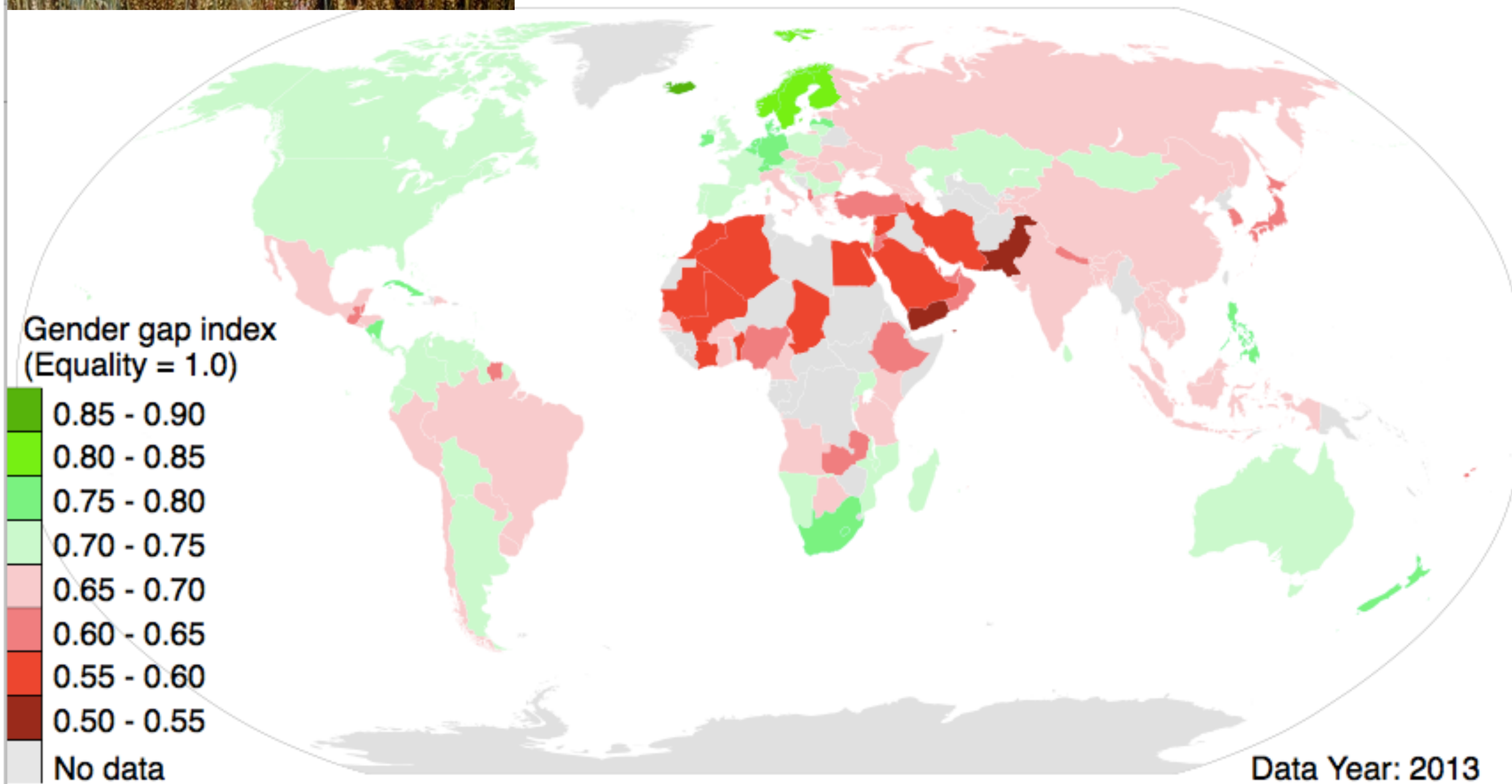
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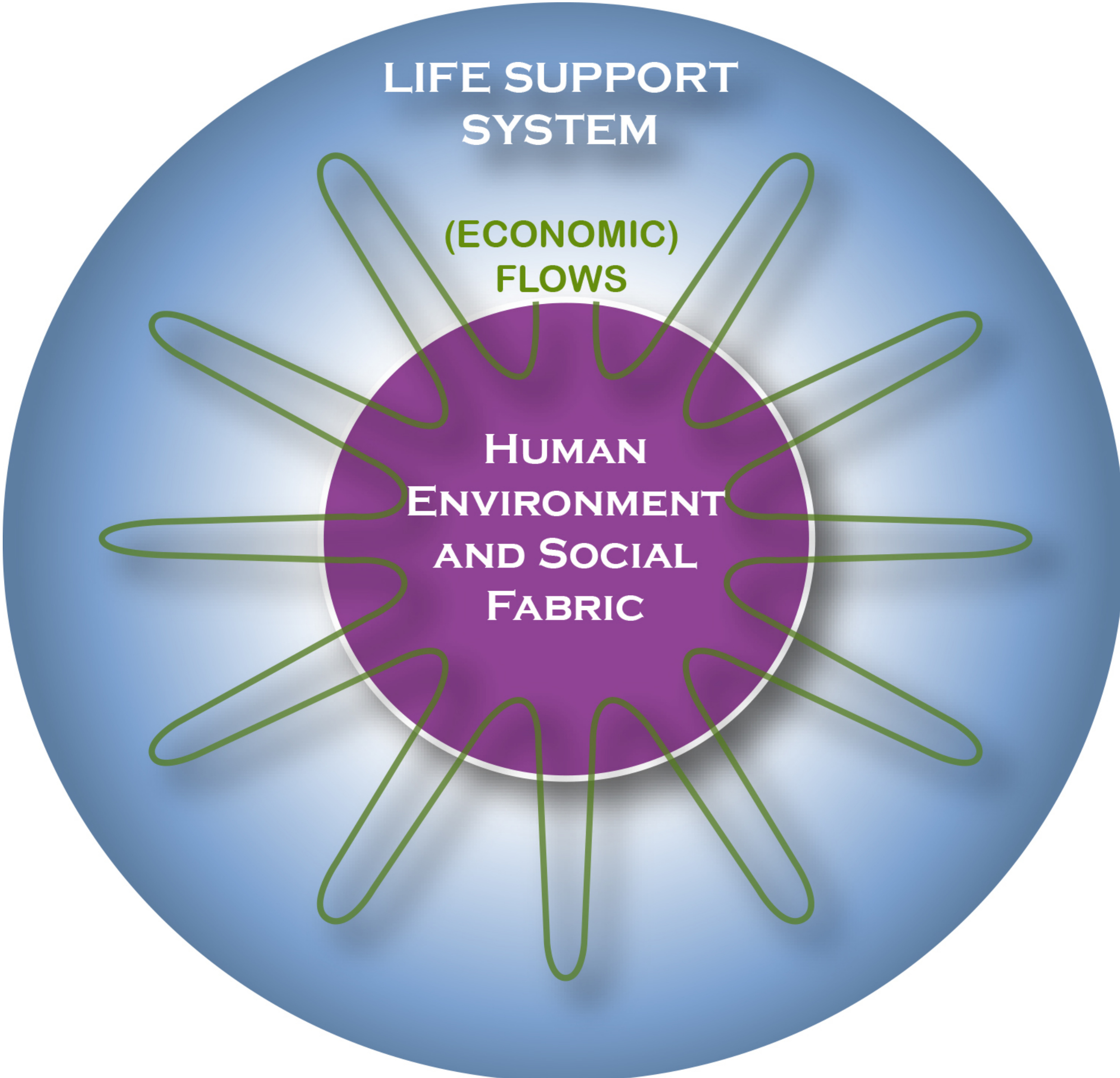


Women make major contributions to crop production. Women have the least access to the means for increasing yields and moving from subsistence crops to market-oriented production



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Feeding a
growing
Population

2 ZERO
HUNGER



Agenda 2030: “The Road to Dignity”

Feeding a
growing
Population



Accelerating energy
flow by accelerating
C cycle

2 ZERO
HUNGER



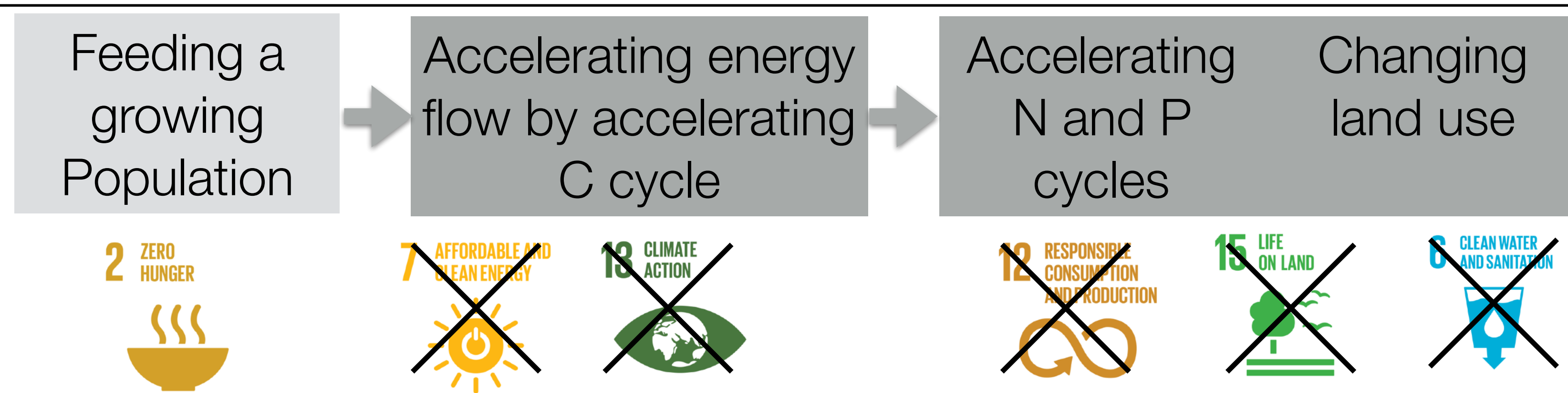
~~7 AFFORDABLE AND
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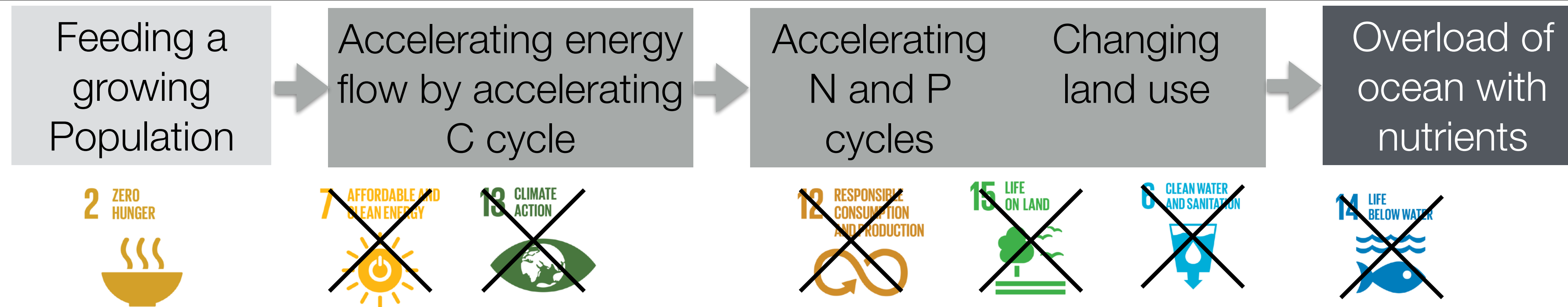
~~13 CLIMATE
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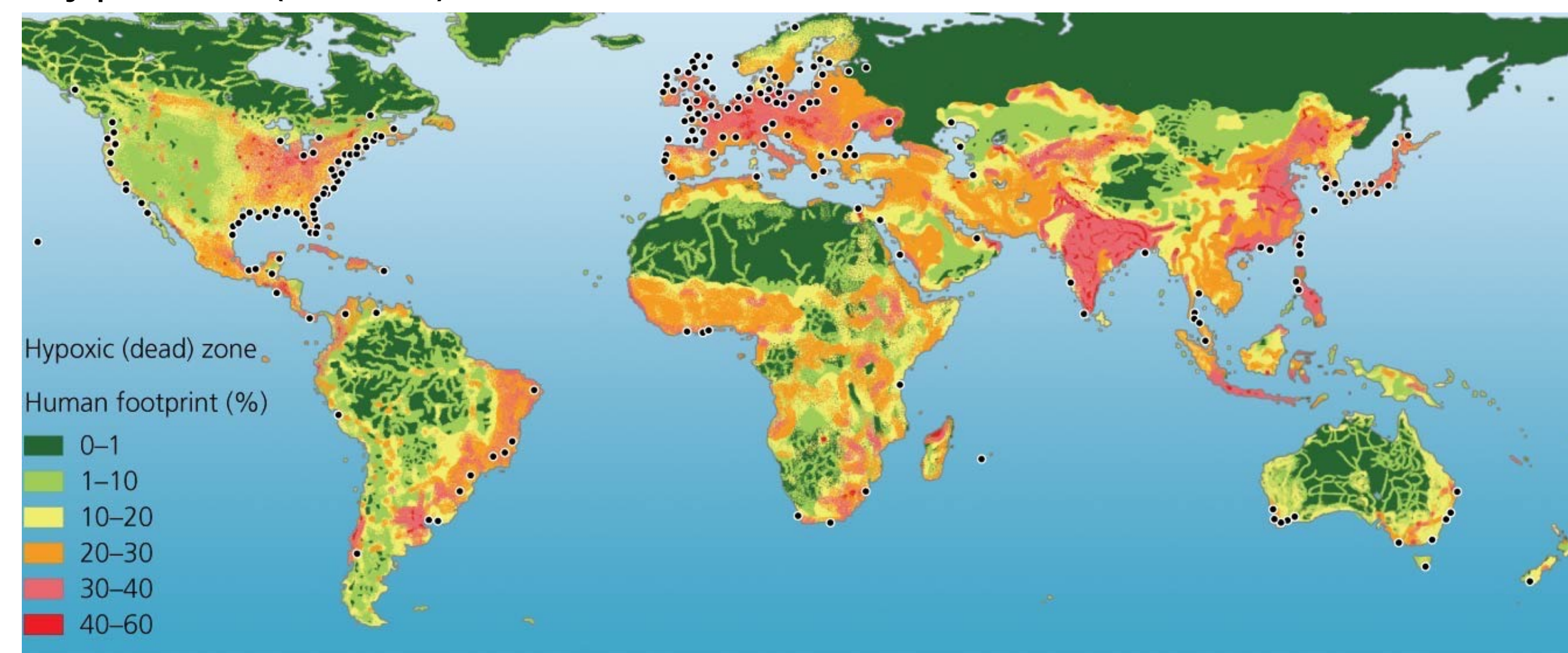
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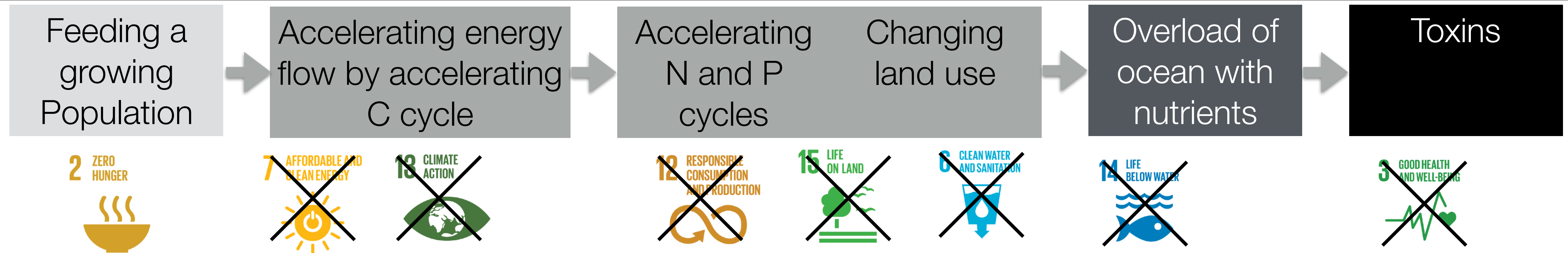


Hypoxic (dead) zones

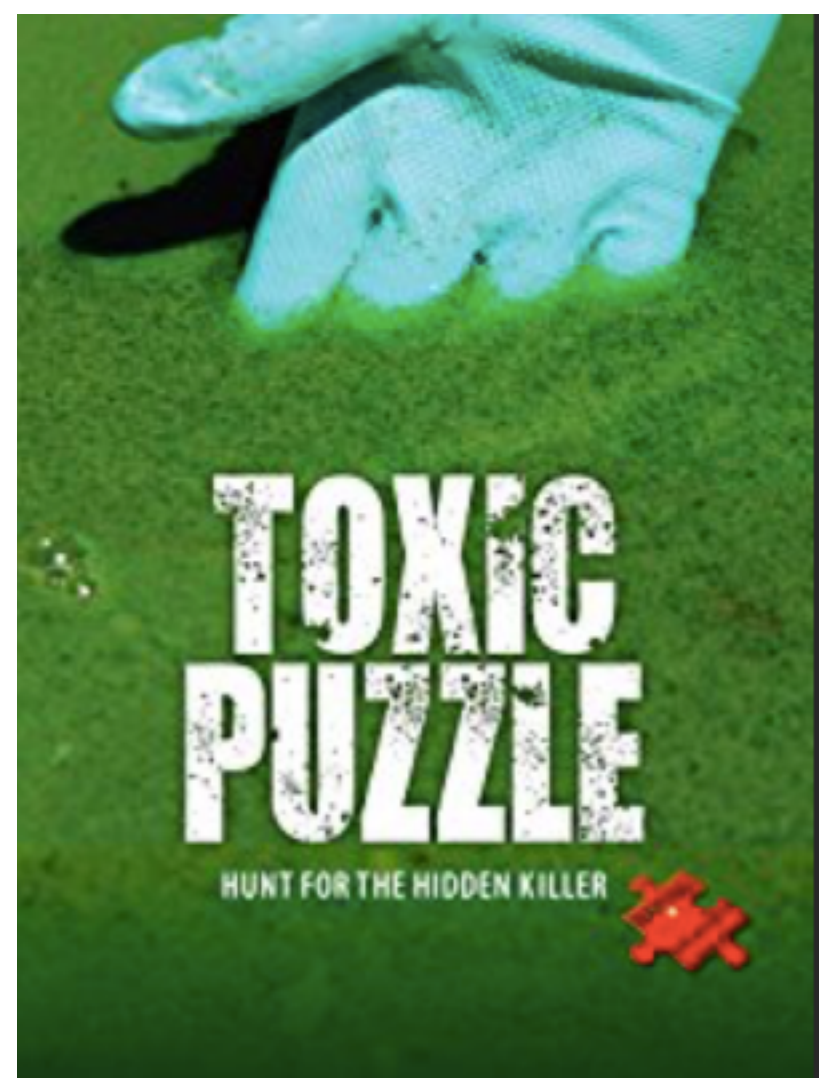


Plag and Jules-Plag, 2019

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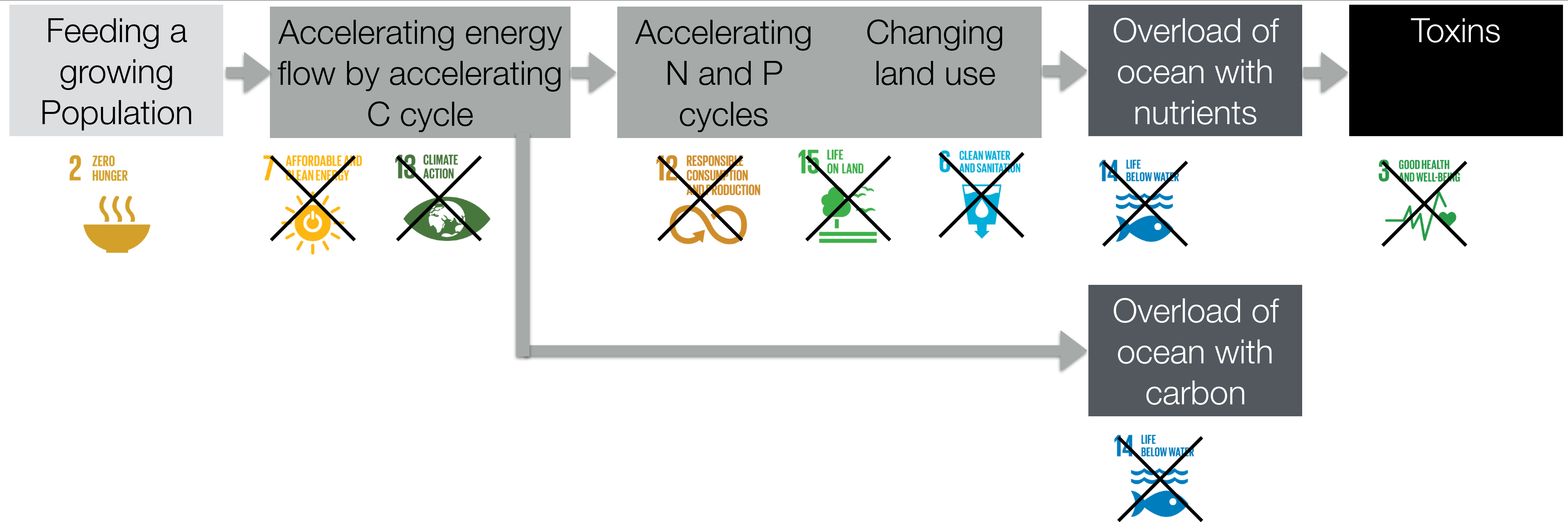
On their quest to learn more about toxic substances produced by cyanobacteria, Dr. Paul Cox and his team discover a link between cyanobacteria and ALS, Alzheimer's, and Parkinson's.



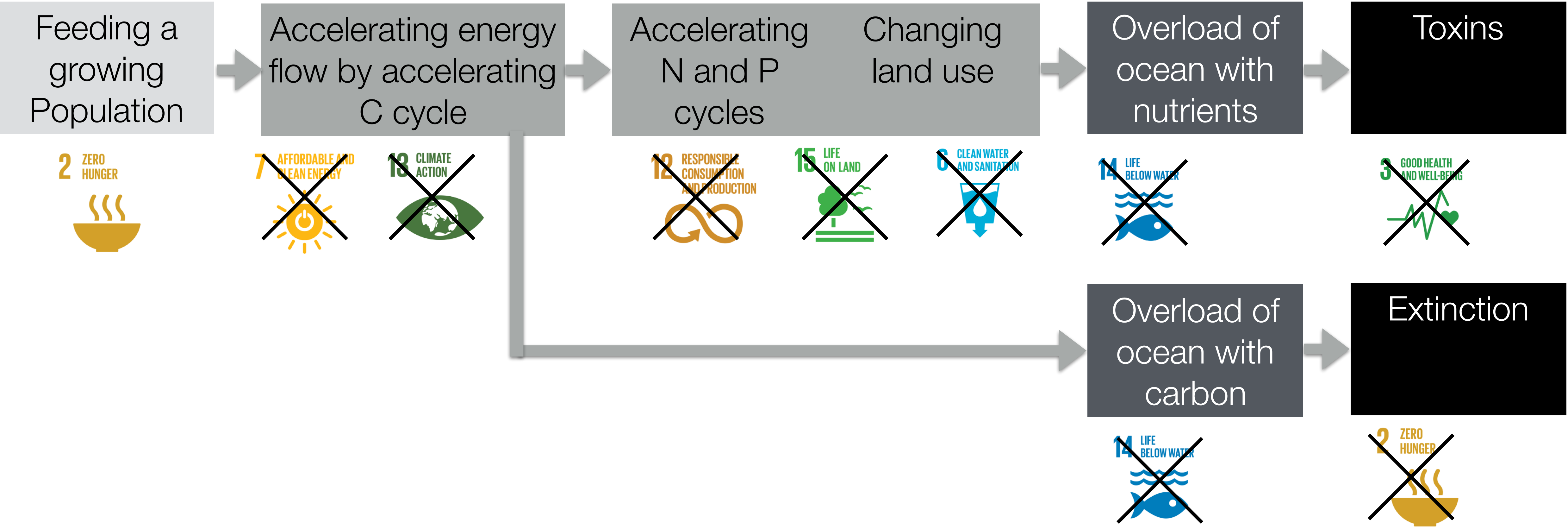
Director: Bo Landlin, 2017

Plag and Jules-Plag, 2019

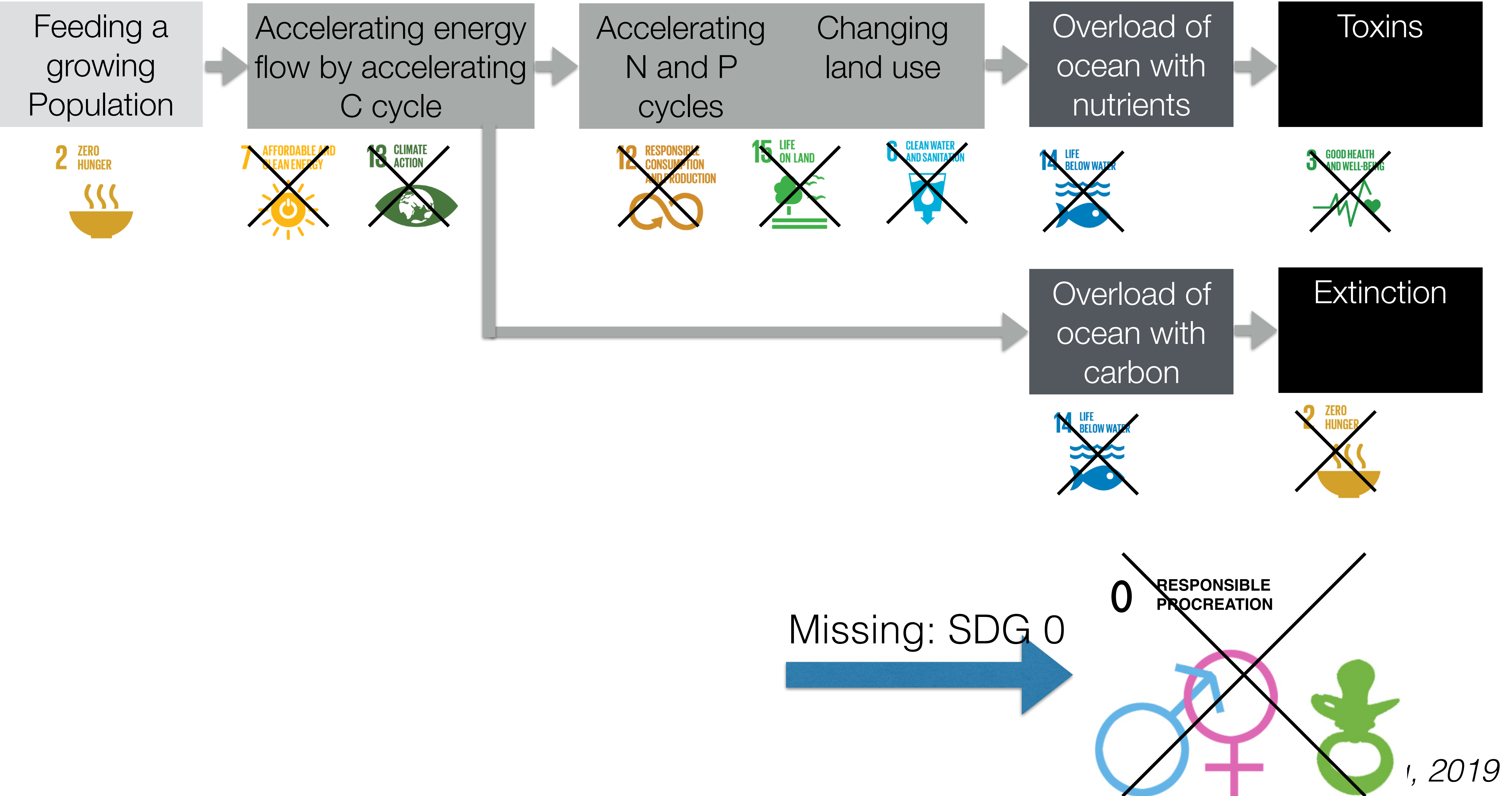
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WHAT IS NEXT?

Dare to declare capitalism dead – before it takes us all down with it

George Monbiot



The economic system is incompatible with the survival of life on Earth. It is time to design a new one



▲ Refugees at the Greek-Macedonian border in 2016. 'In the 21st century rising resource consumption has matched or exceeded the rate of economic growth.' Photograph: Dimitar Dilkoff/AFP/Getty Images

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Only rebellion will prevent an ecological apocalypse

George Monbiot



No one is coming to save us. Mass civil disobedience is essential to force a political response



▲ 'Catastrophe afflicts people now and, unlike those in the rich world who can still afford to wallow in despair, they are forced to respond in practical ways.' Photograph: Guillem Sartorio/AFP/Getty Images