

May 2024

**JUDGE OF THE SIXTH CONSTITUTIONAL COURT
OF THE SUPERIOR COURT OF THE JUSTICE OF LIMA**

Amicus Curiae Brief

ANIMAL AGRICULTURE AND THE ENVIRONMENT

for File Record:

Tacuri and Andrade

vs.

Universidad Nacional Mayor de San Marcos (UNMSM)

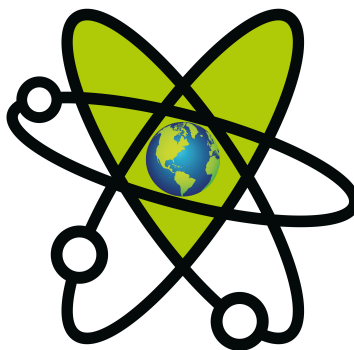
by

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I. Preliminary Declarations

1. I declare to this honorable Court that:
 - a. I am not a party to the proceedings;
 - b. I have a recognized competence and suitability on the subject matter being discussed;
 - c. My opinion is not an appeal or means of challenge.

2. My intervention is based on the general interest in the protection of the fundamental right to freedom of conscience established in articles 2 and 3 of the Peruvian Constitution.

3. Climate Healers is a non-profit dedicated towards healing the Earth's climate, leveraging decades of systems engineering expertise in order to devise practical solutions. Climate Healers primarily focuses on the main driver of climate change that is more powerful than all other drivers combined: **animal agriculture**. Conveniently, it is by far the easiest, quickest and least expensive climate driver to address. People everywhere could just eat plant-based foods, making it possible to get climate change under control through the rewilding of the land currently used by animal agriculture. This necessitates transforming our socio-economic system into one organized around restoring the biodiversity of the planet, while creating a more peaceful and just world.

4. Sailesh Rao is the Founder and Executive Director of Climate Healers. He is an environmentalist by occupation and a systems engineer by profession, with a Ph. D. from the Information Systems Laboratory (ISL), Stanford University, Stanford, CA, USA in 1986. He invented the protocol for transforming early analog internet connections into more robust digital connections, while accelerating their speed ten-fold. Still today, any data accessed on the internet likely passed through a device implementing this protocol. Dr. Rao's curriculum vitae is here:
<https://climatehealers.org/wp-content/uploads/2023/12/Sailesh-Rao-Updated-CV.pdf>.

II. Summary of the Brief

5. This brief shows that recovering and reforesting the land currently used by animal agriculture will get climate change under control and would go a long way towards solving all of our global environmental crises, while greatly facilitating the meeting of the United Nations (UN) Sustainable Development Goals (SDGs).

6. This "**Lifestyle Medicine for the Planet**" solution would lay the foundation for an effective response to all three major global environmental problems identified at the UN "Earth Summit" in Rio de Janeiro, Brazil in 1992 - biodiversity loss, ecosystem collapse and climate change, while mitigating all six planetary boundary transgressions identified by the Stockholm Resilience Center in 2023 – biosphere integrity, novel entities, biogeochemical flows, climate change, land system change and fresh water change.

7. The brief argues that this solution is being ignored in the mainstream discourse, which is centered around profit-making technological “solutions” such as solar panels, electric cars and Carbon Dioxide Removal (CDR) technologies that might, at best, mitigate one symptom of our planetary ailments - the fever that is global warming - without tackling the root cause.

8. When we address our environmental problems honestly and with integrity, the plaintiffs’ demand for plant-based meals at an educational institution can be seen as an educated response to the urgent environmental crises that we are facing today.

III. Introduction

9. In December 2023, over 200 health journals called on the United Nations (UN), political leaders and health professionals to recognize that the myriad environmental crises we face today are truly one indivisible crisis and must be tackled together to preserve health and avoid catastrophe. This overall environmental crisis is now so severe as to be a global health emergency ^[1].

10. Global warming has also accelerated to the point where every month since June 2023 has broken the temperature record for that month. June 2023 was the hottest June ever, July 2023 was the hottest July ever, August 2023 was the hottest August ever and so on, month after month, until April 2024 was the hottest April ever in recorded history ^[2].

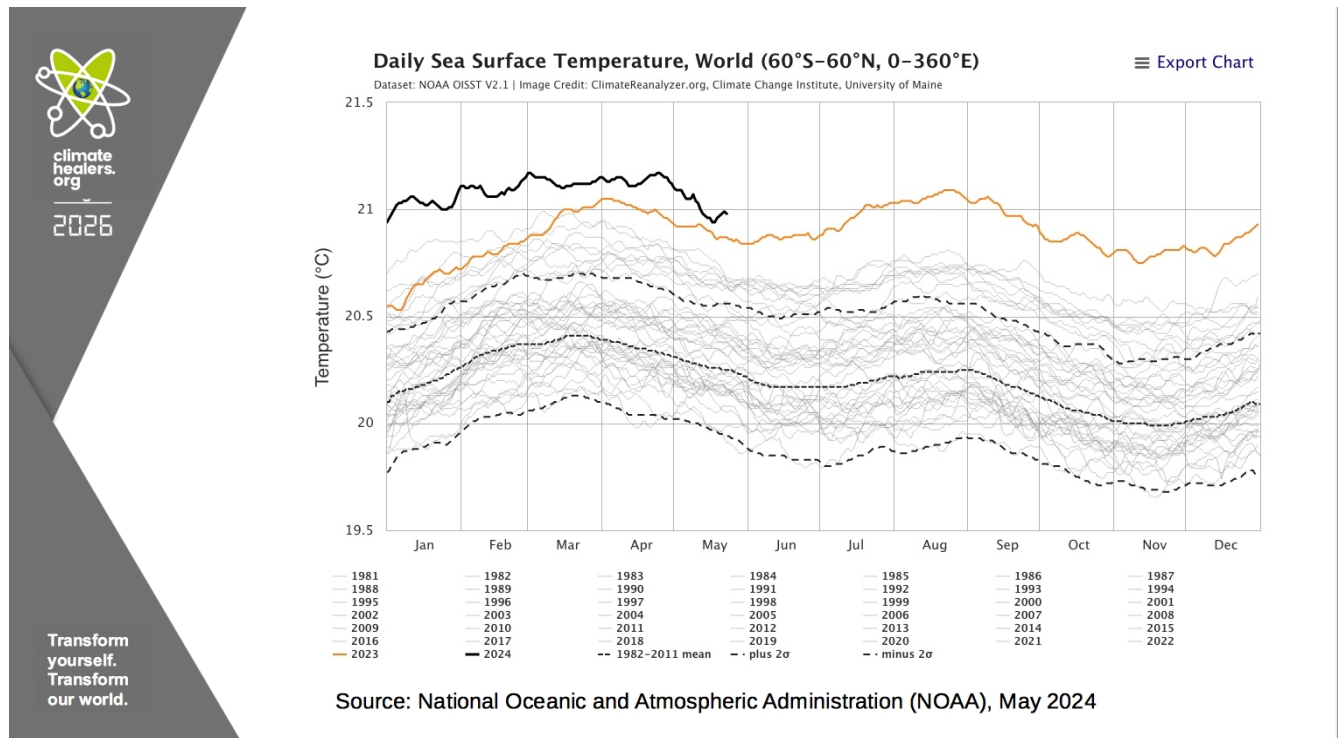


Fig. 1. Recent global warming acceleration is attributed to higher than expected rise in sea surface temperatures.

11. In order to understand why the world has reached this global health emergency, it is instructive to note that in a British Broadcasting Corporation (BBC) Radio 4 program on Shared Planet: Religion and Nature in 2013^[3], Dr. James Gustave Speth, a doyen of the modern American environmental movement, a co-founder of the Natural Resources Defense Council (NRDC) and a former Dean of the Yale School of Forestry and Environmental Studies at Yale University, New Haven, Connecticut, was quoted as follows,

"I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that with 30 years of good science we could address these problems.

I was wrong.

The top environmental problems are selfishness, greed and apathy, and to deal with these, we need a spiritual and cultural transformation, and we scientists don't know how to do that."



Fig. 2. Group photo of world leaders meeting at the 'Earth Summit' in Rio de Janeiro, Brazil, 13 June 1992. Source: UN Photo/Michos Tzovaras.

12. Two decades before this program on BBC Radio 4, the United Nations Conference on Environment and Development (UNCED), also known as the 'Earth Summit', was held in Rio de Janeiro, Brazil, from 3-14 June 1992. The 'Earth Summit' concluded that the concept of sustainable development was an attainable goal for all the people of the world, regardless of whether they were at the local, national, regional or international level^[4]. It also recognized that integrating and balancing economic, social and environmental concerns in meeting our needs is vital for sustaining human life on the planet and that such an integrated approach is possible.

13. During the 'Earth Summit', the UN identified three major global environmental problems: biodiversity loss, ecosystem collapse and climate change. Biodiversity loss occurs when plant or



animal species disappear entirely from the Earth (extinction) or when there is a decrease or disappearance of species in a given area leading to a loss or reduction in that area. Ecosystem collapse is the loss in the defining characteristics of the original ecosystem in a given area, making its revival slow and difficult. Climate change is the ongoing increase in global average temperatures and the resulting change in normal weather patterns causing the disappearance or migration of plant and animal species.

14. In order to address the three major environmental problems, biodiversity loss, ecosystem collapse and climate change, the UN formed three Conventions, the Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD) and the UN Framework Convention on Climate Change (UNFCCC), respectively.

15. All member nations of the UN have signed all three Conventions with the notable exception of the United States of America (USA), which has signed all three Conventions but has not yet ratified the CBD. Of the non-member nations of the UN, the Holy See (Vatican) has not yet signed the CBD or the UNCCD^[5]. The non-participation of the USA in a crucial part of the UN process has likely provided a key cultural impediment and the non-participation of the Vatican in two crucial parts of the UN process has likely provided a key spiritual impediment for the necessary spiritual and cultural transformation that Dr. Speth alluded to in the 2013 BBC Radio 4 program.

16. During the 'Earth Summit,' President George H. W. Bush of USA declared that "the American Way of Life is not negotiable^[6]," and this caused the UN to only consider "green growth" approaches for sustainable development and for addressing the environmental problems. President Bush's declaration specifically avoided the impact of animal agriculture on the environment since the "American Way of Life" is strongly linked to consumerism, especially inexpensive burgers and other fast foods based on meat, dairy, fish and eggs.

17. Starting in 1994, the Conferences of the Parties (COP) to each of the three UN Conventions, CBD, UNCCD and UNFCCC began meeting roughly once a year. Since 2001, the COPs for CBD and UNCCD have been meeting once every 2 years, while the COP for UNFCCC, the climate change COP, has continued to meet every year. Therefore, the 16th Conference Of the Parties, COP16 for CBD will be held in Cali, Colombia on Oct 21 – Nov 1, 2024; the 16th Conference Of the Parties, COP16 for UNCCD will be held in Riyadh, Saudi Arabia on Dec 2-13, 2024; while the 29th Conference Of the Parties, COP29 for UNFCCC will be held in Baku, Azerbaijan on Nov 11-22, 2024.

IV. Animal Agriculture is the Top Environmental Problem

18. Animal agriculture is the leading cause of all three major environmental problems identified by the UN – biodiversity loss, ecosystem collapse and climate change – because animal agriculture uses 43% of the ice-free land area of the planet in order to produce just 12% of the food we eat, in terms of dry weight^[7].

19. In terms of dry weight, 85% of the food we eat, as well as 82% of the calories and 63% of the protein^[8] we consume already comes from plant sources. Plant foods for direct human consumption is being grown on just 7% of the ice-free land area of the planet.

20. Animal agriculture is so inefficient that animals have to be fed, on average, 39 kgs of plant foods in order to produce just 1 Kg of food for human consumption, in terms of dry weight.

21. Just 3% of the food we eat comes from the ocean in terms of dry weight, for which we have been bottom trawling an area the size of South America every year through industrial fishing in order to catch the last remaining fish in the ocean^[9].

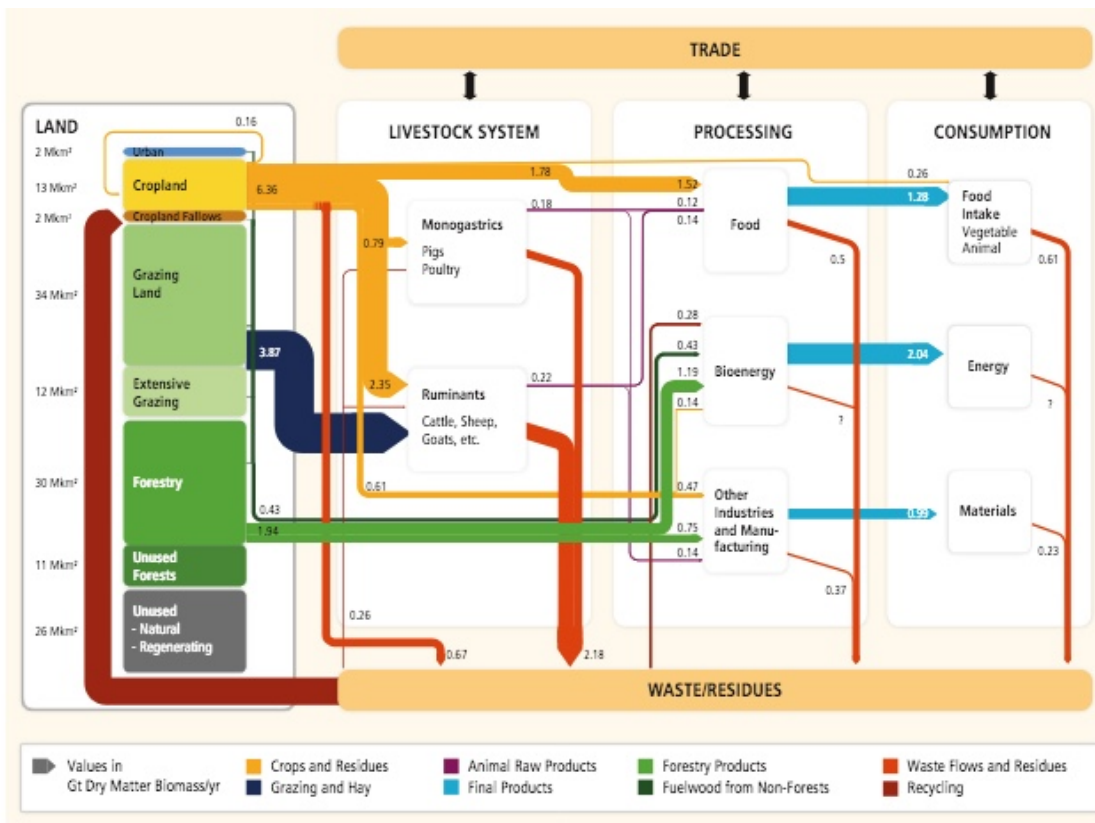


Fig. 3. The Food System block diagram from the fifth Assessment Report (AR5) of the UN Intergovernmental Panel on Climate Change showing that animals have to be fed 39 Kgs of food in order to produce 1 Kg of food intake for human consumption.

22. Animal agriculture is also the only major human activity in which we cut down trees and replace them not with other trees for timber or paper, but with grass, which drastically reduces the diversity of life that the land can support. It is mainly because of animal agriculture that humans have eliminated half the trees on the planet over the past 10000 years. There used to be SIX trillion trees on planet Earth 10,000 years ago and now there are only THREE trillion trees left^[10].



23. The remaining THREE trillion trees and the soil that they live on are storing twice as much carbon as in the entire atmosphere and four times as much carbon as in all the fossil fuels that we have burned to date^[11]. Consequently, if we restore the native ecosystems on the grazing lands currently being used for animal agriculture and replenish the missing THREE trillion trees, we can reverse climate change, since climate change is primarily caused by the excess carbon in the atmosphere in the form of Carbon Dioxide (CO₂) and methane (CH₄).

24. At present, original forests are to be found on only 9% of the ice-free land area of the planet. 37% of the ice-free land area of the planet is used for grazing farmed animals, 12% is used for growing crops, 22% is used for managed forests, mono-cultured for timber and paper, etc., 1% is built-land and 19% is barren land, mostly deserts^[12]. Deforestation continues to occur even today, mainly to create more grazing lands for farmed animals or to grow crops to feed them. Industrial fishing continues to decimate wildlife in the ocean for a mere 3% of the food we eat. Consequently, animal agriculture is the leading cause of biodiversity loss^[13].

25. When grazing lands cease to regenerate, desertification occurs leading to a complete collapse of the ecosystem. Therefore, animal agriculture is the leading cause of ecosystem collapse as well. Consequently, the EAT-Lancet Commission found that global food production is the single largest driver of environmental degradation^[14].

V. The Deception of CO₂ Emissions Accounting

26. It is well-established that animal agriculture is the leading cause of biodiversity loss and ecosystem collapse. This likely led to the de-emphasis of the work of the CBD and the UNCCD starting in 2001 at the UN. In contrast, the UN Intergovernmental Panel on Climate Change (IPCC) has framed fossil fuel burning as the leading cause of climate change and this allowed the UN to continue pursuing 'green growth' paradigms for addressing climate change by transitioning the global energy infrastructure from fossil fuels to renewable sources such as solar or wind. This likely accounts for the continued emphasis on the work of the UNFCCC even after 2001, which has been largely ignoring the role of animal agriculture.

27. The UN IPCC uses a three-tiered deceptive accounting convention for CO₂ emissions from human sources^[15]. This convention amplifies the contribution of fossil fuels on climate change and diminishes the contribution of the animal agriculture industry. In this accounting convention, 1) CO₂ emissions from fossil fuel sources are accounted for completely with gross accounting, 2) CO₂ emissions from land use changes are discounted by about 70% through net accounting^[16], and 3) CO₂ emissions from animal respiration, pasture maintenance fires, biomass burning and other human sources are discounted by 100%, i.e., not counted at all. With this deceptive accounting convention, the UN IPCC reports that humans are emitting 11 Billion tons of carbon annually, with only 5.1 Billion tons remaining airborne, 3.4 Billion tons sequestered on land and 2.5 Billion tons sequestered in the ocean. The 'airborne fraction' of CO₂ is then calculated to be $5.1/11 = 46\%$. The fossil fuel contribution to CO₂ emissions is calculated to be $9.4/11 = 85\%$.

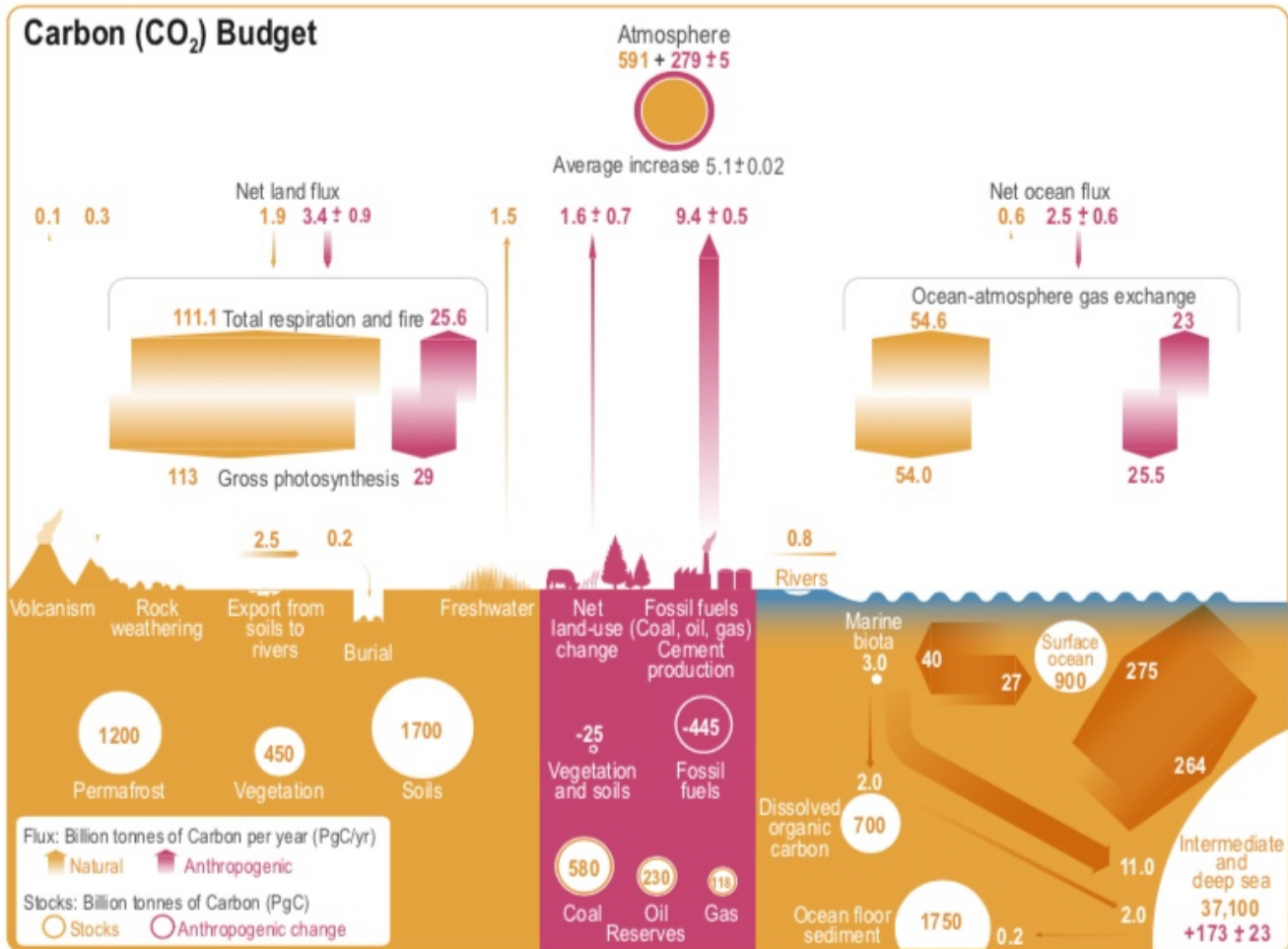


Fig 4. The Carbon Cycle block diagram from the UN IPCC Sixth Assessment Report (AR6) showing the components of human caused carbon emissions

28. In Nature, every molecule of CO₂ that humans emit into the atmosphere behaves exactly the same as every other molecule since CO₂ is a well-mixed gas in the atmosphere. Consequently, every molecule of CO₂ emitted from human sources has to be accounted for equally from a systems engineering perspective, if we are serious about solving climate change. When we do that, humans are actually emitting a total of 59.6 Billion tons of carbon annually, while Nature is sequestering 54.5 Billion tons of that carbon in the ocean and on land, leaving just 5.1 Billion tons airborne. Now, the airborne fraction is calculated to be $5.1/59.6 = 9\%$. The fossil fuel contribution is only $9.4/59.6 = 16\%$. Also, if Nature is already sequestering 91% of human emissions, then it is not so hard to imagine how we could increase that to over 100% and start reversing climate change.

29. The quickest and simplest way to reverse climate change is to abandon the notion that the “American Way of Life is not negotiable,” and embrace the “Go Vegan and Reforest the Planet” “**Lifestyle Medicine for the Planet**” solution to address all three major environmental problems identified at the UN ‘Earth Summit’ in 1992. When the world goes Vegan, we can restore native



ecosystems on about 40% of the ice-free land area of the planet as well as the entire ocean and reduce the airborne fraction from 9% down to negative values and begin reversing climate change.

VI. The Deceptive Mainstream Discourse

30. The mainstream scientific discourse had adopted the UN IPCC's deceptive greenhouse gas accounting conventions with its three-tiered treatment of CO₂ emissions from human sources. However, in 2005, Alan Calverd, an independent physicist, calculated that the amount of CO₂ emitted from the respiration of farmed animals alone was 8.8 Billion tons of CO₂^[17], which was 21% of the total from all sources according to the UN IPCC's conventions. This led to scrutiny on what was not being counted in the Tier 3 segment of CO₂ emissions in the UN IPCC's conventions.

31. The UN Food and Agriculture Organization (FAO) published the "Livestock's Long Shadow" (LLS) report in 2006^[18] calculating the lifecycle greenhouse gas emissions from the animal agriculture sector to be 7.5 Billion tons of CO₂ annually, less than the contribution from animal respiration alone. The UN FAO's calculations omitted CO₂ emissions from animal respiration, pasture maintenance fires, etc., in accordance with the UN IPCC's three-tiered deceptive accounting conventions.

32. In 2009, Goodland and Anhang, two Environmental Assessment (EA) specialists with the World Bank, published a WorldWatch report^[19] entitled, "Livestock and Climate Change: What if the key actors in climate change are cows, pigs and chickens?" which corrected some errors in the LLS report from the UN FAO. They calculated the lifecycle emissions from the animal agriculture sector to be 32.6 Billion tons of CO₂ annually or 51% of the total. Goodland and Anhang included some of the Tier 3 uncounted emissions from the animal agriculture sector in their calculations, especially the animal respiration component.

33. In 2011, the authors of the UN FAO's LLS report published a critique of Goodland and Anhang's report in the Animal Feed Science and Technology (AFST) journal^[20]. In 2012, Goodland and Anhang published a refutation of that critique and reiterated their calculations in the same journal^[21]. Then, the editor of the AFST journal invited the authors of the UN FAO's LLS report to continue the debate and they declined to continue the debate.

34. In 2013, the UN FAO publicly partnered with the International Meat Secretariat (IMS), the International Dairy Federation (IDF), the International Egg Commission (IEC) and the International Poultry Council (IPC) to form the Livestock Environmental Assessment and Performance (LEAP) partnership^[22]. It then published a revision to the LLS report, calculating the lifecycle emissions of the animal agriculture sector to be 7.1 Billion tons of CO₂^[23] or 14.5% of the total. This calculation used the UN IPCC's deceptive emissions accounting conventions, without addressing any of the errors pointed out in the Worldwatch report or in the ensuing peer-reviewed debate in the AFST journal.

35. The "Lifestyle Carbon Dividend: Assessment of the Carbon Sequestration Potential of Grasslands and Pasturelands Reverted to Native Forests" paper was published at the American Geophysical Union Fall meeting in 2015, showing that just 41% of grazing lands, when reverted to native forests

that used to exist on those lands in 1800, can sequester more carbon than what has been added to the atmosphere by human activities between 1750 and 2015. It showed that a global change to a Vegan lifestyle had the potential to completely reverse climate change [24].

36. The position paper, “Animal Agriculture is the Leading Cause of Climate Change” was published in the Journal of Ecological Society in 2021, showing that animal agriculture is responsible for at least 87% of greenhouse gas emissions annually, when we factor in the potential carbon absorption of the forest land cleared for animal agriculture [25].

37. Despite this efficacy of the “**Lifestyle Medicine for the Planet**” solution to the three major environmental problems: biodiversity loss, ecosystem collapse and climate change, the mainstream discourse is still mainly focused on electric cars, solar panels and Carbon Dioxide Removal (CDR) technologies. However, electric cars, solar panels and CDR technologies can, at best, reduce global warming, but they cannot restore wildlife habitats, reverse biodiversity loss or halt ecosystem collapse. Only the cessation of animal agriculture can result in healthy oceans, healthy forests and healthy soils, harnessing Nature’s immense power for the benefit of all life.

VII. Veganism and the Planetary Boundaries

38. Scientists at the Stockholm Resilience Center have identified nine planetary boundaries that we must stay within for the sustainability of life on Earth. At the moment, we have transgressed six of them [26] and any one of these transgressions is sufficient to end life as we know it. The good news is that when we eliminate the consumption of all animal products, we can help resolve all six of them.

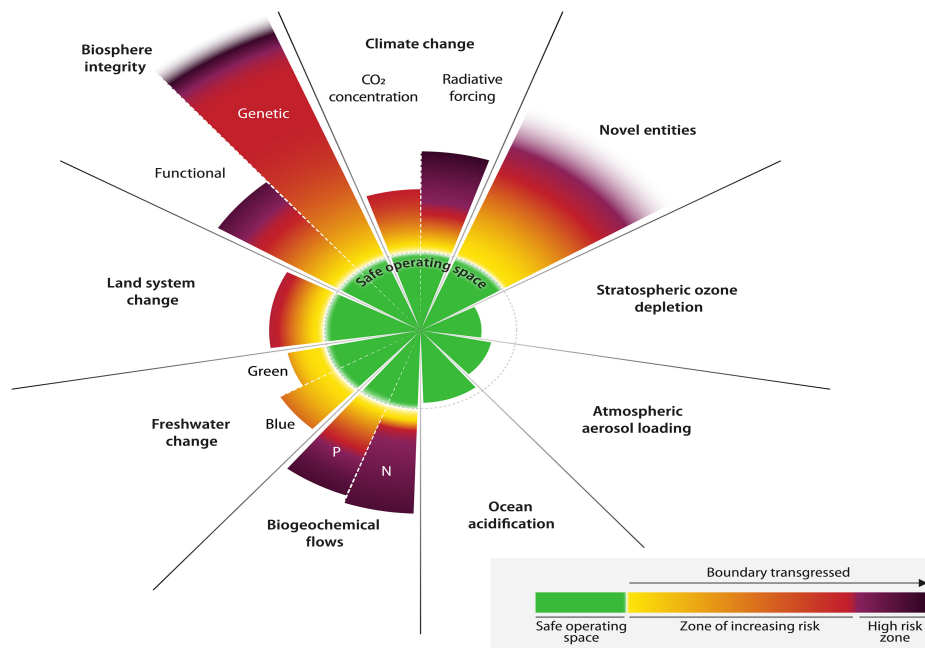


Fig. 5. Current status of the nine planetary boundaries. Six of them have been transgressed.



39. The least violated transgression is freshwater change. Rewilding the land that is currently used for grazing animals will restore the freshwater cycles of the planet.
40. The next is land-system change. Going Vegan will allow us to return about 40% of the ice-free land area of the planet back to Nature, resolving this planetary-boundary transgression.
41. The next worst transgression is climate change, which can be resolved when the excess carbon in the atmosphere is absorbed in the trees and soil that we can restore to the ecosystems of the planet.
42. The next worst transgression is biogeochemical flows, or nitrogen and phosphorus loading, mainly through our overuse of synthetic fertilizers for crops. Since over half the crop outputs are fed to farmed animals, going Vegan will resolve this transgression as well.
43. The next is novel entities or chemical pollution, which would be safely stored away in regenerating forests when we go Vegan. Eating animal foods currently delivers concentrated doses of this chemical pollution into our bodies through bioaccumulation. Therefore, going Vegan addresses chemical pollution for both the Earth and ourselves.
44. All of these transgressions impact wildlife, and biosphere integrity is the worst of the six planetary-boundary transgressions. Indeed, the New York Times has reported that wild animals have run out of places to live^[27]. By restoring habitats for wild animals and allowing them to live freely in the ocean, we will resolve this transgression as well. If instead, we let wild animals die off, we also die off.

VIII. Veganism and the UN Sustainable Development Goals

45. The 2030 Agenda for Sustainable Development adopted by all United Nations Member States in 2015, is supposed to provide a shared blueprint for peace and prosperity for people and the planet, now and into the future^[28]. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries in a global partnership. However, these 17 SDGs contain a fatal flaw in the form of a redundant goal, SDG #8 (Economic Growth), that provides nations with an escape clause to cover their inability to meet any of the other goals in the current system.
46. With the exception of SDG #8 (Economic Growth), if we meet all the other goals among the 17 SDGs, No Poverty, Zero Hunger, Good Health and Well Being, etc., it would be immaterial whether the economy is growing or not. Therefore, SDG #8 (Economic Growth) is a redundant goal. Any robust implementation of a systems engineering project with 17 goals that need to be accomplished in a span of 15 years, would not contain such redundant goals and would involve intermediate milestones and plans to meet them so that progress can be tracked. For instance, the nations of the world could meet SDG #2 (Zero Hunger) and SDG #3 (Good Health and Well Being) quickly, say by 2026, so that the people of the world would feel energized to meet the remaining goals by 2030.



Fig. 6. The 17 Vegan Sustainable Development Goals, where UN SDG #8 is replaced with Beyond Cruelty's SDG #18.

47. While releasing the UN Sustainable Development Goals Report of 2023^[29], the UN Secretary-General, Antonio Gutierrez, lamented the existing gaps in the 2030 Agenda and urged the world to redouble its efforts, stating,

“Unless we act now, the 2030 Agenda will become an epitaph for a world that might have been.”

According to the report, the impacts of the climate crisis, the war in Ukraine, the weak global economy and the lingering effects of the COVID-19 pandemic had hindered progress towards meeting the goals. The report made no mention of the redundancy in SDG #8 (Economic Growth).

48. In 2018, the Beyond Cruelty Foundation introduced SDG #18 (Zero Animal Exploitation) which is a necessary goal to meet the overall objective of peace and prosperity for people and the planet in the 2030 Agenda for Sustainable Development^[30] adopted by the United Nations. The planet includes animals and there can be no peace for the planet if animals are being continuously exploited for human purposes. In conjunction with the need to drop the redundant SDG #8 (Economic Growth), Climate Healers has proposed that the UN drop SDG #8 and add SDG #18 so that the resulting Vegan SDGs form the core of an infrastructure upgrade project for our global civilization that can be implemented professionally, and with engineering integrity.



49. In order to implement all 17 Vegan SDGs with engineering integrity by 2030, Climate Healers proposes that SDG #2 (Zero Hunger) and SDG #3 (Good Health and Well Being) be prioritized and met by 2026 in a “Food Healers” initiative with healthy, whole-foods plant-based Vegan meals to be made freely available to every human being on the planet through a network of volunteers supervised by Vegan Grandmothers cooking culturally appropriate meals at churches, mosques, temples, synagogues, universities, schools and community centers throughout the world.

50. As we accelerate the implementation of this “**Lifestyle Medicine for the Planet**” solution to our environmental crises with a “Food Healers” initiative, we are meeting SDG #2 (Zero Hunger) and SDG #3 (Good Health and Well Being), while simultaneously going a long way towards meeting most of the remaining Vegan SDGs as well, specifically SDG #5 (Gender Equality), SDG #6 (Clean Water and Sanitation), SDG #10 (Reduced Inequalities), SDG #12 (Responsible Production and Consumption), SDG #13 (Climate Action), SDG #14 (Life Below Water), SDG #15 (Life On Land), SDG #16 (Peace, Justice and Strong Institutions), SDG #17 (Partnership for the Goals) and SDG #18 (Zero Animal Exploitation).

IX. The Role of Education

51. We humans built the world that we were educated to build. In addition to stating that the “American Way of Life is not negotiable,” at the UN ‘Earth Summit’ in 1992, President George H. W. Bush also said,

“Think of every problem, every challenge we face. The solution to each starts with education.”

Therefore, educational institutions must play a crucial role in solving the environmental crises and the global health emergency we face today, just as they have played a crucial role in fostering the current environmental crises and the global health emergency in the first place.

52. Educational institutions can help solve the environmental crises by exemplifying and instilling positive values in our youth. A sustainable civilization requires instilling values of **honesty** and **humility** in our relationships with each other, with the animals and with Nature in order to realize **health** and **happiness** for people and **harmony** with the planet. Nothing less can meet the UN 2030 agenda of peace and prosperity for people and the planet. If instead, institutions exemplify and instill the values of **deception** and **domination** in our relationships with each other, with the animals and with Nature, that leads to **death** for the animals, **diseases** for people and **destruction** of the planet.

53. The lack of availability of healthy, nutritious Vegan meals at an educational institution shows that the institution has failed to keep up with current research which clearly demonstrates the efficacy of a healthy, whole foods plant based Vegan diet in ensuring human and planetary well-being. In contrast, the plaintiffs’ demand for Vegan meals at their educational institution can be seen as an educated response to the urgent environmental crises and the global health emergency that we face today.



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