Half a century after Garrett Hardin published “The Tragedy of the Commons”, calling for “lifeboat ethics,” many of the central tenets of his papers are still being debated and debunked. He addresses the population problem; the self-maximizing behavior of people in the commons—whether it is in terms of extracting resources or polluting the commons—raises the issue of how to “legislate for temperance,” postulates that “freedom to breed is intolerable” and calls for “mutual coercion mutually agreed upon.” He suggests that enclosing the commons can help, but argues forcefully for the need to abandon the “freedom to breed.” In “Living on a Lifeboat” he argues against aid, against redistribution, and against immigration and implicitly emphasizes a hegemonic strategy for the United States, stating, “We are all the descendants of thieves, and the world’s resources are inequitably distributed, but we must begin the journey to tomorrow from the point where we are today.” I have used his text to inspire the writing of this article, in which I choose to differ from Hardin’s viewpoints. I focus mainly on the global commons, highlighting the role of inequality, then dwell on population growth, and finally argue for legislating for temperance through mutual coercion mutually agreed upon.

The Wealth/Tragedy of the Global Commons

After first discussing the value and cost of the global commons, I discuss the challenge of “limits” (but not scarcity) facing them. I end this section with an investigation of the key causes or drivers of such “limits.”

The Value and Cost of Nature’s Contributions to Humans

Nature makes invaluable contributions to humans or what was previously referred to as the ecosystem services of nature—include its supporting (e.g., nutrient circulation), regulating (e.g.,...
flood regulation), provisioning (e.g., water, fruits), and cultural (e.g., health/aesthetic/spiritual) services. Such invaluable contributions have nevertheless been calculated at US $125 trillion annually, at a time when global income is calculated at US $75.4 trillion and global wealth at US $280 trillion. Since all economic returns are based on using resources and other ecosystem services, these services leverage an economic return of US $75.4 trillion to the global economy. Admittedly, these are in the form of heroic estimates and carry the danger of artificially placing a form of market value on a thoroughly nonmarket set of roles for planetary habitability.

These “economic returns” possibly only really benefit the top 1%, who own as much as the remaining 99% while inequality is increasing (see Figure 1) (“the rich have their channels in the bedrooms of the poor”—Leonard Cohen), as well as nonmonetized returns to the well-being of all humans, but that which is especially important for the poorest.

There are three ways to look at these facts:

- First would be that people, including the poorest worldwide, are able to enjoy US $125 trillion dollars’ worth of nature's contributions for free; they can enjoy the fact that the pollinators make their plants productive, that the rains make their lands lush, and that the mangroves protect them from coastal flooding. These services are the wealth of all but especially the poor because of their exclusive reliance on these services. This is the wealth of the global commons for all to enjoy in harmony with nature.

- Second, we can look at the global commons from the perspective that everyone, every multinational, and every nation wants to maximize its own welfare and wants the metaphorical cow to graze, burp methane, and shit on these commons. This could lead to the tragedy of the global commons à la Hardin.

- Third, we can look at the global commons from the perspective of an investor in the era of globalization—the more the investor
can enclose and commodify anywhere in the world, the more the investor can monopolize these services, and the more revenues it can create for the investor. This implies that whoever controls access to the ecosystem and nature’s contributions to humans can, if so inclined and if the rules permit, convert these contributions into valuable assets in the market—this could also potentially lead to the tragedy of inequality in the commons—a point that Hardin argues against because he looks at how Americans can enjoy the commons without having to share it with other countries and migrants and is unconcerned about the damage caused to others.

Distinguishing Between “Limits” and “Scarcity” of Nature’s Contributions: We Are Not on a Lifeboat!

Since Malthus, Hardin, the Club of Rome, the Intergovernmental Panel on Climate Change, the Intergovernmental Platform on Biodiversity and Ecosystem Services, the Global Environmental Outlook, and now the discussion of the planetary boundaries remind us that there are limits to nature’s contributions and that we are crossing planetary to local boundaries and passing tipping points. In other words, there are limits to these services and these services are getting damaged on a daily basis, but once we pass these tipping points, the damage becomes irreversible. Thus, there are limits to abiotic resources in human time scales (e.g., zinc, rare earths, nitrogen, phosphorus), there are absolute limits to land and fresh water, and there are limits to the sinks or carrying capacity (e.g., the ability of ecosystems to deal with our pollution). These limits can be referred to as ecospace—environmental utilization space. Clearly, there are limits to nature’s contributions, and ecosystem wealth can evaporate if the self-maximizing behavior of the individual in the commons and the investor in enclosures is unregulated.

However, limits do not imply scarcity. To paraphrase Mahatma Gandhi, there is enough for everyone’s need, but maybe not enough for everyone’s greed; this is true even in today’s world and in the coming decades. Let us take the case of food—we will have to feed 3 to 4 billion more people in the coming century. If we could eliminate the current food wastage of one-third of food produced; reduce overconsumption; reduce milk and meat consumption, which requires 70% of current global agricultural land use; and reduce and forgo tobacco and sugar production for health reasons, we could meet the needs of the rising population, while addressing other challenges such as greenhouse gas emissions and water pollution from the animal husbandry industry and health costs from obesity and diabetes. But this may require us to rethink our dietary patterns and redistribute nature’s contributions. Furthermore, the language of limits does not imply a translation into scarcity and an existential debate that justifies the securitization of nature’s contribution. For example, Hardin uses the “lifeboat” metaphor to demonstrate the existential challenge that population growth poses to people in the lifeboat. Many authors warn of the tendency to securitize nature’s contributions, as this can lead to the suspension of the rule of law (implied in Hardin’s paper, which states that “freedom to breed is intolerable,” and that “injustice is preferable to total ruin”—see later discussion) and the use of military force to gain access to, or prevent access to, resources like energy, water, and so on. We are not living on a lifeboat!!

Legislating for Temperance: Addressing the Causes

The literature points to two major underlying causes of damage to nature’s contributions: population growth and economic growth, including the role of technologies and consumption.

“Freedom to Breed Is Intolerable” Versus “Reproductive Rights”

Population growth, first highlighted as a challenge by Malthus, has inspired many to dwell on this challenge, including Hardin and a generation
of neo-Malthusians. It is seen as a key driver of ecological challenges by successive Global Environmental Outlook Reports. Furthermore, the population growth discussion in the North–South context often leads to the Global North pointing to the population growth rates of the South, while the Global South points to the growing consumption in the North.

Population growth is an indisputable fact: The global population is expected to grow from 7.6 billion in 2017 to 11.184 billion in 2100. But the key points here are (a) whether it is the additional population or the privileged population that has a major impact on nature (see Figure 1), (b) whether the problem is population growth or the combination of poverty, poor access to health services, and lack of education (i.e., inequality) that leads to population growth, and (c) whether growing externalization of ecological impacts and income inequality may further exacerbate the population challenge.

There is considerable evidence that those who can consume more (the privileged) have significantly larger impacts on the environment than those who consume less (the underprivileged). For example, the footprint of high-income countries (HICs) is six times their biocapacity, while that of low-income countries (LICs) is half their biocapacity. Every day we have two new billionaires and the top 1% owns as much as the bottom 99%, while the poorest 3.7 billion people have seen no increase in their wealth in recent years. Wealth can be translated into direct damage: For example, in terms of greenhouse gas emissions (GHGs), the richest 10% emit 50% of the emissions, and 100 corporations emit 71% of the global emissions. But concentration of wealth can also translate into indirect damage: For example, Organization for Economic Cooperation and Development (OECD) pension funds are worth US $25 trillion, one-third of global gross domestic product (GDP), and are continuously used to invest in the very same production and consumption systems that lead to greater pollution. The poorest have the least ability to access resources, to contribute to total global pollution, and to adapt to the changing ecosystem services of nature. Figure 2 shows that the privileged have a higher direct and indirect impact on nature’s contributions; the underprivileged have a higher birth rate but are also more vulnerable to the negative impacts on nature’s contributions. HIC, high-income country; LIC, low-income country; GHG, greenhouse gases.
impact on the environment through direct pressures and indirect or underly-
ing drivers than the underprivileged; however, in general, the privileged have a lower birth rate. Thus, the impacts on the environment and the ecosystem services of nature are then not just a factor of the number of human beings, but a factor of the ability of human beings to extract resources and pollute the commons. Ironically, it is the underprivileged who are more exposed to the impacts of environmental damage and climate change. Hardin\textsuperscript{26} acknowledges the inherent selfishness that underlies the focus on the population growth argument as he states:

\textit{It is fair to say that most people who anguish over the population problem are trying to find a way to avoid the evils of overpopulation, without relinquishing any of the privileges they now enjoy.}

And clearly he did not apply the argument of reducing growth to himself and his family—as he had four children and four grandchildren.

Second, the problem with pointing to population growth as a driver is that it calls for reducing this growth as a solution. This leads Hardin to argue that “To couple the concept of freedom to breed with the belief that everyone born has an equal right to the commons is to lock the world into a tragic course of action” and therefore “freedom to breed is intolerable” and we will have to relinquish “the freedom to breed.” Such beliefs have led to drastic and undemocratic policies such as China’s one child policy and the campaign that led to the sterilization of 6.2 million poor men during Indira Gandhi’s Emergency in India. Making population growth the problem thus often leads to unwise and undemocratic choices.

After much debate and dialogue globally, it has been recognized that reproductive rights embrace certain human rights that are already recognized in national laws, international human rights documents and other relevant United Nations consensus documents. These rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. It also includes the right of all to make decisions concerning reproduction free of discrimination, coercion and violence as expressed in human rights documents. In the exercise of this right, they should take into account the needs of their living and future children and their responsibilities towards the community.\textsuperscript{25}

Ultimately, what are the driving forces that cause population growth? There is evidence that the stable decline in children’s mortality, gender equality, better education for families, and a stable income enable people to make the choice to reduce the number of their children. Where these factors do not exist—such as in the least industrialized countries—the birth rate is higher.\textsuperscript{23} Thus, if the policy focus is on reducing inequality, enhancing income generation for the poor, and making free or affordable access to better health services, water and sanitation services, and education, there is a greater chance that people will choose for fewer children,\textsuperscript{24} and such a strategy is more consistent with a democratic approach that emphasizes human rights. Having said that, a lower birth rate per family is, in itself, inadequate for reducing population growth. That will depend, as World Population Reports emphasize, on how large the child-bearing population is within a specific population (which depends on the shape of the population pyramid of societies) and how quickly the death rate declines. Hardin doesn’t agree with this implicit need for policy addressing inequality—he argues against food or other forms of aid, stating that “It is essential that those in power resist the temptation to convert extra food into extra babies.”\textsuperscript{25}

This brings me to my third point. Although inequality between states may be decreasing, inequality between people has been increasing. This inequality has three dimensions:

- Economic inequality refers to the relative and absolute levels of poverty and stagnation of incomes of the poorest through a governance system that enables the concentration of power, wealth, and control within states and internationally.
- Ecological inequality refers to the reduced access of the poorest to nature’s contributions and the inability of the poorest to cope with the changes in the ecosystem services of nature—climate change, loss of biodiversity, polluted water.
- Social inequality refers to the increasing disenfranchisement of the poorest, through reduced taxing of the richest and hence reduced expenditures on public and merit goods (e.g., education, health, water services) by states.

Such growing economic, ecological and social disenfranchisement leads to greater poverty and destitution and rising birth rates. It seems as if Hardin’s argument is coming back to haunt him!

\textit{Revisiting “Growth”}

Economic growth is the aspiration of all governments. The World Economic Forum argues in favor of continuing growth. But the logic of economic growth lies in the exponential conversion of nature’s contributions into commodities for sale and profit, encouraging a profligate culture of consumerism, waste, externalization of pollution, and the destruction of ecosystem services. Global consumption is expected to grow with the rising global GDP, which may be around US $200 trillion in 2100. Herman Daly\textsuperscript{26} presents 11 arguments why the pursuit of “growth” is a real problem (e.g., there are substitution limits to decoupling resources from GDP and traditional “growth” excludes environmental impacts). He argues that the rich have “figured out how to keep the dwindling extra benefits for themselves, while
‘sharing’ the exploding extra costs with the poor, the future, and other species.”²⁷

Let me explain with an example. Let us assume you have free rainfall. With climate change, rainfall decreases and you are forced to irrigate your lands through water transferred by irrigation. Technically, this contributes to GDP growth, but there is no net gain. However, someone now makes money from the process of building the infrastructure and providing you the water, and you are a net economic loser as you have to pay for the water and because you probably will on the receiving end of the greenhouse gas and other emissions emitted while building the infrastructure. So when nature’s contributions are damaged, these have to be substituted by costly services that not only affect the rich but disproportionately affect the poor. For example, a changing hydrological cycle may force local people into dependence on irrigation systems, the extinction of pollinators may raise the price of food, and the rising temperatures and sea level may force them out of their lands. All this calls for revisiting the content of the concept of “growth”—possibly “regenerative growth”²⁸ focused more on changing the content of growth is more appropriate.


This brings us to a discussion of morality and limits. Hardin argues that the “morality of an act is a function of the state of the system at the time it is performed.”²⁹ He argues that as long as the demand and impacts are low there is no need to change the morality of behavior toward the commons. But once demands and impacts change, such morality has to change. He then argues for lifeboat ethics, against redistribution, and legislating for temperance taking a U.S.-centric perspective.

I have argued that there are limits to nature’s contributions and that the global community is approaching such limits. The perceived limits of the ecosystem’s contributions in relation to growing human demand can lead to four different responses:

- A neo-liberal capitalist response that calls for enclosures, privatization, markets, and pricing to address the challenge.
- A hegemonic response where states go back to the rhetoric of “my country first,” explicit in Hardin’s perspectives and articulated in U.S. President Trump’s slogan of “America first.”
- A sustainable development governance approach that aims to legislate for temperance.³⁰
- A radical response that proposes a fundamental redirection away from continued growth, as proposed by the Club of Rome or green radicalism.³¹

The Tragedy of Capitalist Appropriation of the Commons: Exacerbating Inequality and Injustice

I am convinced that the first two approaches will exacerbate the tragedy of the commons. The neo-liberal focus on small government, freedom for the markets, and the commodification of not just the provisioning services of nature but also the regulating and possibly supporting services of nature will enable these contributions to be seen as a commons that can be grabbed and occupied by those who have the resources to control them. Increasingly, we are witnessing global events of land, water, mineral, coastal, and green grabbing,³² and more. To paraphrase from Hardin: “The rational” multinational “concludes that the only sensible course for him to pursue is to add another” resource “to his” stock. “And another; and another…. But this is the conclusion reached by each and every rational” multinational “sharing a commons. Therein is the tragedy.”³³

And they are not only adding resources, they are externalizing the impacts globally and treating the sinks even on private land as global commons. Let us take the case of the Lago Agrio oil field in Sucumbios, Ecuador. Texaco’s oil excavations led to damage on the property of 30,000 local people, who initiated legal proceedings in 1993 and were granted US $8 billion in compensation by the Ecuador Supreme Court 20 years later. Chevron, the current owner of Texaco, sees the judgment as “illegitimate” and has moved the case to the United States, where the Ecuadorian compensation verdict was seen as reflecting misconduct. A 2018 visit of the University of Amsterdam and IUCN to an indigenous person’s land in the Lago Agrio oil fields revealed the long-lasting impacts of oil extraction (by large multinationals followed by state run enterprises) on their lives—where once there were luscious forests, arable land, and fresh waters, there are polluted water and dying forests and the landscape is polluted by gas flames (see photos on the following pages). The power of large companies to subvert justice processes makes them arrogant about the damage they cause in other parts of the world.

The Tragedy of Hegemony in the Commons

At the global level, international relations are characterized by anarchy. Within this anarchy, states can behave as they choose; they may opt into or out of international agreements to regulate behavior. The hegemonic approach in international relations is evident when governments think that the only way they can further develop is by acquiring resources from elsewhere. Substitute for the word “multinational” in the previous quote the word “country”: “...the rational” country “concludes that the only sensible course for him to pursue is to add another” resource “to his” stock. “And another; and another ... But this is the conclusion reached by each and every rational” country “sharing a commons. Therein is the tragedy.”³⁴

The extent to which countries will go to acquire and colonize resources is evident by the 2015 U.S. Commercial Space Launch Competitiveness Act, which enables the United States to capture resources in space based on a first-
Both neo-liberal and hegemonic approaches are based on acquiring resources and ignoring nature’s contributions to others and are likely to make the drama of the commons a tragedy of inequality and injustice. When these two approaches are combined, as when large multinationals of the rich countries can act as an extended arm of their governments when interests merge, this leads to greater injustice. And while Hardin argues that “Injustice is preferable to total ruin,” the question is total ruin and injustice for whom? Such approaches divide winners from losers.

The Possibility of “Mutual Agreement, Mutually Agreed Upon”

Hardin argues that one way to address the issue of the commons is through enclosure—privatizing the commons or regulating access. He suggests that access could be based on a first-comer basis, auctioning, lottery, or wealth, and that all these choices have challenges, but a decision has to be made. He separates the commons from private property, but does not look at a third option of keeping the commons in public trust with rules to govern access to, and disposal in, the commons. Mutual agreement, mutually agreed upon, requires discussion with other countries and parties at a global level. Clearly this has to be based upon community-, provincial-, and national-level discussions.

One could argue that the Paris Agreement on Climate Change and the Sustainable Development Goals adopted by member states of the United Nations in 2015 and the current negotiations on the Global Pact on the Environment are an effort to develop “mutual coercion, mutually agreed upon.” I would maintain that despite its enormous weaknesses, the Paris Agreement has elaborated on the long-term objective of the climate negotiations. This long-term objective sets indirect limits to how long we can use fossil fuels. And yet the United States has walked out of the Paris Agreement. In the period 1990–2020, the United States has not accepted any formal targets and timetables regarding its emissions of greenhouse gases, nor has it accepted, thus far, targets for the period until 2030. No matter how weak the targets of other countries may be, the United States leads in climate procrastination at least on the global stage, treating a stable climate as a commons that can be externalized. The next set of documents—Agenda 2030 and the Sustainable Development Goals—
emphasizes the need to recognize and support social, ecological, and economic goals. These are very important steps in the process of managing the global commons sustainably. The final document is the Global Pact for the Environment, which is currently being negotiated under the auspices of the UN. It recognizes that “Every person has the right to live in an ecologically sound environment adequate for their health, well-being, dignity, culture and fulfilment,” that if their rights are violated, there should be access to justice, that all polluters must bear the costs of cleanup, and the principle of nonregression: “The Parties and their sub-national entities refrain from allowing activities or adopting norms that have the effect of reducing the global level of environmental protection guaranteed by current law.” Although this document is still being negotiated, it has key principles about how the global to local commons should be regulated.

It is clear that the global community of nations is legislating some degree of temperance. A tribute to Hardin and his focus on the United States calls for a greater focus on the role of the United States in legislating for temperance. The question is whether the United States will do its share in implementing the Paris Agreement and the Sustainable Development Goals and in accepting the Global Pact. In the arena of human rights and environmental agreements, the United States is becoming isolated. It is one of a handful of countries that has not ratified human rights agreements with respect to women, children, and disabled peoples; it has not ratified the Law of the Sea, the Biodiversity Convention, and the Kyoto and Paris Agreements; and it is becoming a pariah in civilized society. Trump has only exposed more explicitly the underbelly of U.S. politics: It does not agree to mutually agreed mutual coercion. The United States likes to dictate, but it does not like to be dictated to. The United States seems to be floating in the lifeboat, alone in the global commons, and exposed not just to increasing global irritation, but to the “planetary anger” of Katrina, Sandy, Andrew, and Florence!

Conclusion: The Puzzle of Sustaining the Global Commons

Hardin’s focus has been on protecting the rights of the United States and maintaining U.S. standards of living for the United States. Hence, if there are
limits to global ecospace, these limits—in his view—require drastic population control measures, stopping food and other forms of aid, and throwing everyone out of his metaphorical lifeboat. He argues that “The fundamental error of the sharing ethics is that it leads to the tragedy of the commons,” but what he is really afraid of is the impending tragedy for the first-comers, for the super-rich, if those in the rest of the world also maximize their self-interest.

The tragedy of the commons occurs when there are no rules for accessing the commons that are consistent with the rule of law and human rights protection, which clearly calls for legislating temperance, which requires “mutual coercion, mutually agreed upon by the majority.”

We are told that there are two levels at which states play games—there is therefore a national negotiation prior to an international negotiation. My recent extensive travels in the United States show how polarized the discussion in the United States is—people who watch Fox don’t watch CNN and vice versa, and many people don’t watch the classic news senders but only look at social media. People have stopped listening to each other; the educational system is unable to create a citizenry that is aware of global issues and understands ecological challenges. In pleasing provincial Middle America, there is limited room for engaging in adult strategies of negotiations at the global arena. In the meantime, Europe is unable to take over the leadership role in global politics in the wake of the vacuum of U.S. leadership; we are facing leadership crises in global politics.

Hardin explains the term “tragedy” by referring to Whitehead’s definition of “remorseless working” or “inevitability of destiny.” It suggests something that cannot be solved. Choosing the term “tragedy” itself may have a negative self-fulfilling logic to it. Perhaps it can be better referred to as the puzzle of the commons. Solving this puzzle requires us to break the chains of the existing logic within which we are locked. While multinationals claim that they can provide the Trillion Dollar Shift, I don’t think we can solve the problem of the neo-liberal tragedy through neo-liberal innovation. Hegemonic thinking is unlikely to be anything but counterin-
tutive—unless the hegemon is committed to global stability through social and ecological inclusiveness, which requires revisiting the division of power between countries. This is, however, unlikely. In my view this means that we need to find a way to develop the concept of constitutionalism from local to global level—so that no one actor or country can block the process of mutual agreement, mutually agreed upon.

However, a Constitution itself needs mutual agreement. Four categories of potential agents could perhaps demand such change: a leader such as Pope Francis who has adopted a Declaration on the Human Right to Water and Sanitation and has published his “Encyclical on Climate Change and Inequality: On Care for Our Common Home”; the environmental, indigenous, and development nongovernmental organizations (NGOs) and social movements that demand change; the epistemic communities that could potentially provide alternative approaches to managing the global commons; and the courts that are increasingly adjudicating on cases of ecological and social injustice brought to them by social movements and epistemic communities. Together they may be able to solve the puzzle of the global commons by demanding a set of principles and rights that could be core to the proposed global Constitution. In such an approach, I clearly diverge from Hardin’s position that “Injustice is preferable to total ruin.” It is possible to aim for social and ecological justice—but we need a coalition of different agents to demand that the tragedy of inequality in the global commons is curbed and reversed!

**NOTES**

21. Based on data from WWF, note 17, 79; OXFAM, note 17; OXFAM, note 18; Griffin, note 19.
27. Daly, note 27, p. 23.
33. Hardin, note 2, p. 1244.