The Role of Humans in the Global Sustainability Crisis

We must take a more integrated look at why and how we humans are destroying our habitat so that we can design restorative reactions that will more effectively transition us to a sustainable society.

The Struggle. The lovely satellite pictures of the earth laced with clouds swirling over the land and the sea have inspired pride in our technical prowess and our unique position in the universe, a vision that belies the draconian struggle occurring on the surface. It is a struggle to save the planet for human habitation, in which humans are both perpetrators and victims. The key protagonists are the human constructs of our economy, our governance, and our conflicting world views. Our economy is driving natural-resource exhaustion and intolerable social inequalities. Our governance is corrupted by corporate interests and weakened by the lack of public awareness. The victims are, or will be, all humans and all the ecosystems that support them with goods and services.

The History. Since the industrial revolution, humanity has increasingly expanded its dependence on the planet’s natural systems and, while neglecting its inherent codependence on them, has reached a point of mutual destabilization: society destabilizes nature, nature destabilizes society. To the inhabitants of a rich nation, this situation can seem so preposterous that they can discount it, mostly because they assume they can simply acquire resources cheaply from the poor nations, without consequences. In addition, those of us who are rich and who have the potential to change have invented ways to hide the consequences from ourselves—not just the plundering and polluting of natural systems, but also the marginalization of the other half of the human population. In contrast, the inhabitants of poor nations are too vulnerable and powerless to effectively confront the tide of devastation. Hence the Human Predicament, wherein the rich can’t find the will and the poor can’t find the means to reverse the collapse of their habitats. The tragic irony is that while all individuals hope for a better life for themselves and their progeny, the poorer hope their children will have the opportunity for it and the richer hope they can purchase it. Paradoxically, they are both adding to the cause of the predicament: the rich by increasing their resource consumption and the poor through their population growth.

The Misconceptions. In our attitude toward the looming crisis, we are suffering from a number of perilous misperceptions. First, the assumption that the earth’s capacity to sustain humanity is without limits has tempted us to exploit the earth’s resources to very near the point of no return without recognizing or addressing our error. Second, the assumption that we can ‘fix’ environmental and social problems with money or
technology has morphed our economy’s goal from that of generating prosperity for all to that of wealth for a few. Third, the assumption that our economy is self-regulating and should be the governing mechanism in solving these environmental and social problems is fundamentally wrong, because our economic system ignores the costs in the accounting of those very environmental and social problems that it would presumably solve. Fourth, the assumption that financial growth (GDP) is correlated with the well-being of a nation’s population has provided ideological cover for the growth of plutocracy and the obsessive pursuit of individual wealth to the detriment of the social and natural environments. In fact, multinational studies show that in every nation studied there is an initial positive correlation between a nation’s increasing GDP and the happiness level of citizens up to a modest income level, after which happiness ceases to increase, levels off, or even decreases with continued GDP growth.

Since the industrial revolution, the growing human presence has accelerated from being a harmonious component of the earth’s natural systems to an invasive, gigantic competitor within the biosphere. The impacts of our this disruptive presence (Global Change) is evident in the numerous trends that are rapidly destabilizing environmental systems and decreasing the earth’s biocapacity that supports human societies. These trends such as climate change, decreasing clean-water, depleting fossil-fuels and minerals, deforestation, desertification, damaging agricultural practices, increasing destruction and pollution of fresh-water habitats, rising sea level, ocean acidification and shrinking marine production, and globally diminishing biodiversity. Interrelated with these environmental trends are the destabilizing social trends that are causing negative societal impacts and that inhibit proper societal function, including food and water shortages, poverty, poor health, fragile or failed states, corruption, social unrest, ethnic marginalization, mass emigrations, terrorism, and armed conflicts. Both environmental and social trends are manifest over a wide range of geopolitical scales. Finally, the unconscionable assumption that we have time to reverse these trends has put global stability at great risks.

The Consequences. Presently humans are consuming more than 150% of the annual amount of goods and services biologically produced. This total potential biocapacity is likened to a bank account of earth’s natural resources (natural capital). Instead of living just on the interest, we have drawn-down another 40% of the initial capital. Every year the day on which we overshoot, the annual production recedes by about four days. Overshoot. As of this writing, the global Overshoot Day was 2 August 2017. Obviously, as the natural capital decreases, the amount of annual production also decreases. Meanwhile, the annual growth in world population is increasing at circa 77 million (the population of Iran). As a result, the ratio of resource wealth to population has been decreasing exponentially, with a half-life of about two decades. The ratio has
decreased from 0.34 hectares per capita (by which resource wealth is measured) in 1961 to 0.07 per capita in 2012. Likewise, the global trends in social conditions are downward, as indicated by such relative measures as increasing economic inequality: for example, as of 2014, 0.01% of wage-earning males adults owned 44% of all household wealth. These inequalities contribute to the instabilities in poorer societies. The number of fragile states has increased from 28 in 2006 to 38 in 2015. In developed nations, meanwhile, the rich can influence their governments toward plutocratic protectionism. For both situations, the inequalities are self-perpetuating and worsen the potential for international stability. For the poorer two-thirds of households, the combination of environmental and social trends generates an increasing lack of arable land, water, education, and health care. All these growing deficits further aggravate starvation, epidemics, helplessness, and the chances of civil unrest, mass migrations, terrorism and armed conflicts. For the richer third, the combination of these trends spurs efforts to squeeze out more natural resources to convert into money with which to purchase convenience and isolation from the problems of the rest of the world.

The Disbelief. This ominous analysis is by no means new, nor has it been proven wrong; it is simply too often not understood or simply dismissed. This is more than four decades since the struggle became public with the Club of Rome’s Report that modelled the trajectories of population and resources to a Malthusian collapse early in this century. Since then, these results have been aggressively discounted and became a little-noticed symbolic contest between Cassandras and the Pollyannas, or more specifically, between ecologists and economists. With much more data, we have now confirmed that the human habitat in the 1970s was surpassing its carrying capacity—the point at which the annual production of natural goods and services equals the annual demand. From then to now, we know that the trends in environmental degradation and social inequalities have reached intolerable levels, and that we have lost good opportunities to redress them by ignoring scientific evidence and by favoring economic concerns or choosing disbelief instead. We also know that the Club of Rome’s projections into this century have been validated with recent observations\(^1\) that indicate a global collapse initiating beginning around 2016. Meanwhile, a parallel time lag in public belief has accompanied the intensification of climate-change phenomena, which hopefully may be at an inflection point and accelerating (see Ch. 2).

The Sustainability Crisis. Despite the attempts to discredit the Club of Rome’s projection, it gave rise to increasing recognition of the problem of global stability. Up until now, due to the lack of effective governmental response, we are facing unprecedented environmental and social debts, the integrated sum of which is creating

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a global instability capable of triggering the cascade collapse of our civilization. We cannot redress these debts with wars, oppression, money, tokenism, besetting prayers, or our even via our present system of governance, which at best designs policies guided by the past lessons and shies away from validated scientific prognoses of the future. Hence, we find ourselves in a treacherous quandary between the urgency imposed by decreasing resources and increasing population on the one hand and on the other hand by our inability to understand the connections between these realities and their connections to these damaging the issues, act quickly because, in addition, our governments take shelter in a wait-and-see attitude. Yes, we are locked in a crisis-management conundrum. During the last half a century many scientists have been concerned and have foreseen this terrifying juncture. While we have failed to educate sufficiently the public and our policy-makers. Fortunately, a Cassandra counter-movement has grown alongside the disbelief and inaction, and it is waiting in the wings for its turn on the world stage. Until now this counter-movement has not yet grown enough in political weight, but has grown steadily in numbers (made visible in the memberships of climate-change advocacy and protest groups and in mass demonstrations worldwide), in science (hard and soft), in technological potential, and in respect for human rights, such that we now have the capacity to design a management system that is humane, efficient, and sustainable. We know that: we have lost opportunities in the past, that the reversal process will now be a longer one, and that we cannot miss our chance to put sustainable development. We know that: we have lost opportunities in the past, that the reversal process will now be a longer one, and that we cannot miss our chance to put both sustainable development and climate change at the center of the world stage. The UN, which has long been a major protagonist of sustainable development, has recently successfully conducted is conducting three high-level international meetings late in 2015 “to chart a new era of sustainable development” and national commitments to address climate change.

The Purpose. The purpose of this document is to raise public awareness by presenting an integrated perspective on why our global human society is caught in a sustainability crisis and how we must employ our scientific knowledge and cooperative instincts to extricate ourselves from our precarious situation. It is not complete but designed to inspire discussion to refine our approach to Sustainable Development.

Un-sustainability Arguments:
1. Human civilization is imminently susceptible to a cascade collapse as a result of a suite of interrelated impacts that are collectively destroying the planet’s resilience and our capacity to confront this situation.
2. Overconsumption by the rich and overpopulation by the poor are the root causes of these impacts.
3. The economy must be restructured to be self-regulating and to account objectively for all capitals: Financial, Environmental, and Social.

4. Climate change is aggravating these impacts, by causing irreparable damages and incalculable costs to the marine and terrestrial systems, and to the infrastructures and habitability of human societies.

5. Our governments have insufficiently heeded scientific evidence in developing policies for the necessary remedial actions and to secure the collective agreements needed for resolution of the crisis.

6. Most important is to gain public recognition that our present "business-as-usual" approach is leading us in the wrong direction, and that our present practices are intensifying the urgency for the sustainable solutions we should be implementing.

7. The transition should be integrated on all societal levels and take guidance from the natural phenomena of self-organization and the formation of human attitudes of social responsibility, justice, and cooperation.

8. The transition to sustainability will require the restructuring of social attitudes, economic valuations, governance strategies, and cultural paradigms.

9. A sustainable configuration of the both the production and the just distribution of goods and services is the only viable alternative resource management structure for our civilization.

10. The knowledge, technology, and methodology for this transition all exist and are available whenever public and policy-makers find the will to cooperate and implement them.

11. It is both suicidal and immoral that the present civilization exhausts the planet’s organic and mineral resources for the sake of individual financial wealth.

12. Peace is fundamental element to the strength of sustainability and will emerge as an integral result of the sustainable development process.

**Necessary Complementary Changes**

1. The economy must be restructured to be self-regulating and account objectively for all capital: financial, environmental, and social.

13. Birth rates must be lowered by humane means, like encouraging longer generation times by improving women’s education, health care, and occupational income, all of which delay the mother’s age of first child.

14. Governments must ensure compete voter representation, restrict and excessive funding of candidates, and prohibit the propagation of misinformation concerning what is claimed about or by candidates.

15. Policy-makers must be unfettered from corporate and other special interests.

16. Public awareness of the urgency, scope of global problems, and of sustainability science must be incorporated into formal and informal education curricula.
17. Governing bodies at all levels must be cognizant of sustainability science, its implementation, and the solutions appropriate to their electorates.

18. Regardless of intent or funding, the preventive solutions of most global problems will not be achieved without concurrent sustainable transformations of the economies and governments of the rich nations whose actions are central to creating and worsening these problems.

19. Cooperative international relations must make their highest priority resolving conflicts and building regional space-free networks designed to share resources, decrease financial inequalities, and increase employment to tolerable levels.

20. Climate-change resolution is impossible without an accompanying transition to renewable energy sources and its infrastructure, which means that fossil fossil-fuel combustion, must be held to sustainable limits and land-absorption levels of CO₂ must be restored.

21. Implementing sustainable development will require an integrated use of our knowledge and wisdom for reorganizing our social attitudes, economic valuations, and governance practices.

22. The methods needed for these changes are already being developed in many separate experiments, but the knowledge they have collectively gained needs to become the foundation of an integrated and coordinated National Strategy for Sustainable Development.

23. The societal paradigms must shift toward a spiritual vision of our purpose on earth: that is, to transition from a society that favors the well-being of a few to a society to that is self-regulating, that places equal emphasis on the well-being and justice for all humans, and recognizes a goal of a peaceful existence in harmony with nature.