Article

When Should We Care About Sustainability? Applying Human Security as the Decisive Criterion

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Abstract: It seems intuitively clear that not all human endeavours warrant equal concern over the extent of their sustainability. This raises the question about what criteria might best serve for their prioritisation. We refute, on empirical and theoretical grounds, the counterclaim that sustainability should be of no concern regardless of the circumstances. Human security can serve as a source of criteria that are both widely shared and can be assessed in a reasonably objective manner. Using established classifications, we explore how four forms of sustainability (environmental, economic, social, and cultural) relate to the four pillars of human security (environmental, economic, sociopolitical, and health-related). Our findings, based on probable correlations, suggest that the criteria of human security allow for a reliable discrimination between relatively trivial incidences of unsustainable behavior and those that warrant widely shared serious concern. They also confirm that certain sources of human insecurity, such as poverty or violent conflict, tend to perpetuate unsustainable behavior, a useful consideration for the design of development initiatives. Considering that human security enjoys wide and increasing political support among the international community, it is to be hoped that by publicizing the close correlation between human security and sustainability greater attention will be paid to the latter and to its careful definition.

Keywords: human security; assessing sustainability; human ecology; overshoot

1. Introduction

The title question has two aspects. How long can we afford to continue a particular practice before we risk serious undesirable consequences? And what kinds of practices warrant our concern regarding their sustainability? Behind these issues lies the need for prioritizing our various concerns for sustainability. Considering the multitude of issues and practices, we need to reserve our attention and efforts for the most urgent concerns. Diverse and opposing views and interests make it difficult to gather the necessary political consensus, which makes it even more imperative to establish convincing criteria for prioritization.

Differences in opinions also tend to arise from different definitions of sustainability and sustainable development. Within the ecological context definitions by Wackernagel and Rees ("living off the income generated by the remaining natural capital stocks") [1] and Bartlett ("sustainable development is development that does not compromise the ability of future generations to meet their own needs") [2] seem preferable over the rather vague but widely popularized Brundtland definition [3]. However, where the economic, cultural, and social dimensions of sustainability do not depend on systemic limits, the Brundtland definition serves passably. The diversity of contexts also manifests in a diversity of time frames. While no condition can last indefinitely, reasonable expectations vary between millions of years for the average lifetime of a species (e.g., *Homo sapiens*), millennia or centuries for the lifetimes of ecosystems and cultures, and decades for policies and regimes. The "Seven Generations" standard [4] represents a popular compromise for ecological sustainability although its universal applicability appears questionable in view of regional differences in the fragility and health of local ecosystems.

The concept of human security, first mentioned in the UN's Human Development Report in 1994 [5] has attracted increasing attention over the past two decades among theorists, policymakers, and, to a limited extent (as in Canada during the 1990s), voters. The UNDP's Human Security Framework [6] and a report for the UN Centre for Regional Development [7] summarise the influence of human security on UN policy. In 2003 the UN Commission on Human Security, chaired by Sadako Ogata and Amartya Sen, reported that the world needed "a new security framework that centers directly on people" [8]. Conceptual reviews of human security have been contributed, e.g., by Alkire [9], Hampson et al [10], and Kaldor [11]. The Human Security Network, founded in 1998, includes thirteen developed and developing countries worldwide (plus one observer), who contributed to the UNDP's human security framework. In the UN Secretary General's Millennium Report the UN's human security agenda are summarised as "freedom from fear", and their development agenda as "freedom from want" [12]. One reason for this attraction lies in the fact that the value priorities that inform its diverse components are shared widely, priorities that focus on the continued security and well-being of human individuals. Human security has been conceptualized as consisting of four pillars: the traditional area of military/strategic security of the state; economic security, particularly its conceptualization through heterodox models of sustainable economies; the area of population health as described by epidemiology and the complex determinants of community health and health care priorities; and environmental security that is primarily determined by the complex interactions between human populations and the source and sink functions of their host ecosystems [13]. The four pillars include diverse sources of threats, covering the same ground as the "seven dimensions" of the 1994 Human Development Report [5] (economic, food, health, environmental, personal, community, and

political security). Thus, another strength of the human security approach is its comprehensive coverage of interdependent sources of insecurity that were traditionally considered under the purview of different academic specialties and were (and still are) thus studied largely in isolation from each other. The strength of the comprehensive approach lies in its capacity to detect and characterize synergistic effects and multifactorial causation. Moreover, the comprehensive conceptual models of human security have allowed analysts to develop methods for assessing and verifying diverse aspects of human security [14]. Notwithstanding those strengths, the concept of human security represents an intellectual construct, informed by various idiosyncratic notions of well-being, and only in a small part is it informed by objective truths [15]. While it essentially focuses on the present, the priorities and timeframes of the different pillars sometimes differ or even clash. The purpose of this paper is to examine to what extent the precepts of human security could be used as criteria to prioritise among challenges to sustainability. We will differentiate in this analysis between the four pillars of human security and various aspects of sustainability.

2. The Importance of Timeliness and Selectivity

Many day-to-day activities are unsustainable in principle but are never intended to extend over long enough time frames to warrant any concern over their sustainability. Others, such as traveling short distances by motor car, may develop into routines but their eventual demise does not cause us any great concern either. In contrast, concern seems warranted when the activity is planned to continue over the long term, and when its interruption would harm us or others. This is particularly true for practices that affect the welfare of many, such as the now infamous examples of fossil fuel combustion or the hyperconsumption of luxury products [2,16].

Some critics [17] claim that sustainability does not deserve serious concern under any circumstances, for lack of convincing reasons or obligations. Those claims tend to become particularly vocal in cases where possible concerns would threaten the short-term interests or hidden agenda of powerful groups. Restricting our attention to claims made in good faith, several reasons have been invoked in support of such claims. One is the exclusive concern with the welfare of humans that are presently in existence; this has been referred to as the strong and narrow form of anthropocentrism [18,19]. It is often accompanied by a particularly pecuniary approach toward commodifying nature, the view that life forms and ecosystems only carry value if they can serve human ends and if their utility can be expressed in terms of monetary figures [20]. Elsewhere [19] we have argued that anthropocentrism in its various forms lacks conceptual consistency in that its end values are shallow and ill-defined, and that it informs behavior that results in unintended and undesirable outcomes, even from the view of the anthropocentrist her/himself. Consequently, anthropocentrism cannot adequately support such an optimistic neglect for sustainability.

Assuming good faith, neglect for sustainability could also be informed by the honest belief that sustainability simply does not matter because human ingenuity will always find ways out of tight spots when it really matters. This is often based on the assumption that the growth of economies and populations can proceed without physical limits, referred to as cornucopianism [21]. Unfortunately the historical evidence that might support this belief has proven equivocal at best. For every culture that succeeded in meeting sustainability challenges (such as Icelanders or Tikopians), another one can be

found that failed under similar circumstances and paid the ultimate price [22]. Some economists continue to invoke variants of the Theory of Infinite Substitutability [23,24] claiming that for every scarce resource a suitable substitute will eventually be found once the demand reaches a certain threshold. Leaving aside its questionable moral implications, the logical fallacy in that claim lies in its universality. In addition to the contradictory historical evidence there is the First Law of Thermodynamics that sanctions not only the conservation of energy and matter but their physical limits in supporting growth [25,26,2].

Cornucopianism represents one of the greatest conceptual obstacles towards a transition to sustainable living because it makes sustainability appear unimportant. Thus it represents not merely just another conceptual red herring but an extremely harmful ideology. Its dangers stem from the widespread support it still enjoys, much of it implicit, from the damage it causes through the overtaxing of environmental support structures, and from the powerful ways in which it tempts the wishful thinking of many, which is continuously reinforced by certain sectors of the media, advertising industry, and many political groups [27]. A scientific examination of the term "sustainable growth" reveals it as nonsensical unless applied (disingenuously?) to very short time frames, and "sustainable development" in a qualitative meaning only [2]. Bartlett [2] analysed the threat of cornucopianism and associated media strategies in terms of their impediment to attaining sustainability.

Having safely and unequivocally dismissed any false hopes for infinite growth, and with them any claims that sustainability deserves no concern under any circumstances, we move on to the possible reasons and criteria for such concern. Public debates about sustainability inevitably revolve about differences in concern, and it is that diversity of views that turns the prioritization of problems into a challenge. The extent of our concern is influenced by the temporal and physical distance between us and the affected persons, by our idiosyncratic assessment of possible risks and harms, and by different preferences for alternative solutions. Those differences reflect the diversity of analytical approaches and the diverse relationships we might have with potential victims. As those factors refer primarily to the objects of our concern we might summarise them as object-related.

Often the different concerns are also informed by differences in value orientations and ideological dispositions, attributes that are subject-related. For example, a deep green argument for protecting an ecosystem will differ from a shallow green argument in its assumptions, its reasoning, its goals, and its solutions to the problems [20]. The real stumbling blocks towards a consensus invariably combine object-related and subject-related factors and the differences in people's world views, in their convictions about moral standing, in their conceptualisations of what constitutes progress, and their diverse ideals and values that inform those notions. Yet, the *Tragedy of the Commons* [28,29] appears unavoidable unless decision makers share certain minimal moral concerns and perspectives. Solutions depend on the extent of agreement on which unsustainable practices should be considered most dangerous on the basis of their adverse potential impact, and should therefore receive the highest priority for urgent countermeasures. Thompson [15] identified four forms of social solidarity (individualism, hierarchy, egalitarianism, fatalism) through which solutions to the spectre of the Tragedy have been implemented in some communities. We will now turn to how that challenge might be addressed.

3. Reasons Why Human Security Can Provide the Decisive Standards for Sustainability

During most of the past century, the field of security was dominated by experts in strategic studies, political science, and law enforcement. Concepts of security were also discussed separately within the areas of health care, economics, anthropology, environmental science, and in other disciplines. Consequently, many of the proposed solutions to security challenges suffered from the fact that their design was based on models from one or two disciplines only, models that could not address the complex interrelationships between the various sources of human insecurity. To this day, billions are spent annually on development aid projects that focus solely on either economic security, or health security, or strategic state security, or any other single aspect of security, with predictably poor results. Fortunately, an increasing number of prominent projects and programs are being based on the more comprehensive conceptual models of human security, the best known among them, although arguably not the best in design, being the UN's Millennium Development Goals [30].

Notwithstanding some critics who accuse human security as being too inclusive or ill-defined [31], the concept of human security has been widely accepted as the basis for international cooperation, for numerous national development plans, and for development projects under the UN and its affiliate agencies as was summarised earlier (in fact, a net gain in human security has been recognised as a necessary, though not sufficient, condition for development [32]. This has been used by critics such as Thompson [15] as a criterion to distinguish between incidents of false "development" and innovations that truly deserve the name. We would suggest as another condition the fact whether an innovation addresses population growth and ecological limits; unless it does it should not be referred to as development). The reasons for this acceptance probably include the expanding theoretical basis, the humanitarian focus on the potential individual victims of insecurity, and the increasing evidence for interconnectedness among the various sources of insecurity. Human security models also provided multidimensional assessment criteria in reliable and testable form [14,33]. It is for those reasons that we suggest that human security can serve as an effective standard in the prioritization of sustainability challenges. We offer some additional reasons in the following paragraphs.

In the past years as environmental security increasingly moved into the spotlight of security debates, the discourse has shifted away from the primarily rights based argumentations—exemplified by the UN's "freedom from want & fear" agenda [34]—towards a more balanced discourse including also duties and obligations. This brings it in line with the discourse on sustainability, which arguably also demands such a balance. The two interests have conflated under the imperatives arising out of the situation of global ecological overshoot [35], of humanity as a whole consuming more than planetary resources can sustainably deliver [36,37]. Under the condition of overshoot, hard ecological limits inform the do's and don'ts in human security as well as in sustainability. Any innovation that does not take into account population growth and overshoot is unlikely to contribute much to human security, nor to sustainability. We will revisit the issue of overshoot in more detail in the next section.

The precautionary principle has played a prominent role in justifying policies aimed at promoting sustainability. It invokes our limited knowledge about the stability and the functioning of ecological systems and advises us to err on the side of caution when estimating environmental impacts and risks. According to the precautionary principle we are obliged to choose among alternative analyses in ways that minimize unacceptable though unlikely risks [38]. A community of individuals who share a

concern about sustainability might strive to agree on a shared commitment to precautionary solutions, provided that the risks clearly include risks to its members. However, the link between risks to nonhuman populations, species, and ecosystems on the one hand and human interests on the other has in the past been less than clear. Human security, especially recent work done on the significance of ecological integrity for environmental security [39], can contribute helpful information there because it links definitive human security interests with ecological preconditions. Because of our limited understanding of those preconditions, human security arguments for sustainability continue to rely on the precautionary principle. The benefit of human security arguments comes from a shift in end goals, from the goal of ecological integrity (which is often perceived as ecocentric and thus of little significance to anthropocentrists) towards the universally accepted goal of human welfare. However, this potential benefit of human security as an extension to the precautionary principle still depends on a concern for the future and on a sufficient degree of solidarity in Thompson's [15] sense.

The practice of discounting future harms or losses in the course of cost-benefit analyses has often hampered the development of just and effective sustainability regimes. Despite its clear violation of the intergenerational justice principle [40] the practice has endured, particularly in cost-benefit considerations informing economic policies. Arguments based on human security considerations can help dissuade people from discounting future harms because they take into account all four pillars instead of overstating the economic argument. Moreover, a goal framed in terms of security needs trumps any objections based on accounting preferences or short term profits, in the contexts of both public opinion and legislative weight. It thus helps render a focus on the future relevant for today's security concerns, albeit not necessarily in the proper time frame [41]. This project of "securitising" environmental problems has met with some objections on grounds of environmental justice from human security proponents [42].

Linking plans to promote sustainability with goals that are formulated according to human security agenda also promises a tactical benefit. Many cultures, especially in Asia, seem to show less concern about sustainability than is evident in "Western" countries in Europe and North America. This is indicated, for instance, by the difference in the numbers of sustainability-oriented NGOs registered in those countries, respectively. Conversely, human security agenda have been adopted globally in a more cross-cultural manner; obviously their potential benefits were clear to people and a need for them was perceived, in spite of diverse definitions and cultural contexts. By linking sustainability with human security as an indispensable condition, the attention of those societies could be better directed towards sustainability challenges—which, given our increasing global interdependence on environmental security, would benefit all.

4. Making it Work: How Can the Human Security Concept Strengthen Sustainability?

From a human security perspective there are two reasons for communities at all levels to strive for sustainability. By making a practice sustainable they can prevent harm to themselves and their immediate families and interests; they can also prevent harm to future generations and to non-human entities regardless whether their direct utility for human interests is understood. Those reasons have been summarized under the term "enlightened self interest" [43], because in either case they promise to avert the consequences of excessive ecological overshoot [35,37]. In the past they relied to a

considerable extent on ethical arguments of moral considerability. Without subtracting from those more altruistic arguments, the human security perspective can add weight to them by attracting those whose motivations are dominated by more immediate self interest. Much of this attraction relies on semantic differences in the way people interpret sustainability and security; the word "sustainability" seems value neutral, somewhat abstract and removed into the future, compared to the term "human security" which invokes images of families leading lives unencumbered by threats to their health, livelihood, liberty, and peace.

That difference depends of course entirely on the images and ideas that people subconsciously associate with those words. For that reason alone it seems desirable to create closer connections between sustainability and human security by linking them together in people's minds through common discourse—a strategy that has been used to great effect by the advertising industry in areas such as investment options for 'financial security'. In reality, the two concepts are already closely linked through common cause-effect relationships. The proposition that unsustainable behavior can proceed without at some point endangering someone's security seems dubious. Yet, to state this in the form of a universal truth seems equally wrong, as we asserted at the onset. The question, then, becomes one of specifics: Which dimensions of sustainability tend to support, or at least correlate with, most strongly which pillars of human security? Or, even more to the point, which dimensions of unsustainable behavior constitute the greatest threats to which pillars of human security? By devising and implementing timely countermeasures to protect humans from those security threats, and by garnering adequate public support for our efforts through appropriate advertising as suggested above, we can hope to ease the transition of global and regional societies toward sustainable living. We will attend to these questions after discussing the biggest common threat to both sustainability and human security.

One consequence of large scale unsustainable behavior that directly endangers the lives and welfare of future generations and which should require no further substantiation is subsumed under the concept of global overshoot. Overshoot occurs when the environmental impact of a population (*i.e.*, its demands for resources, for waste processing, and for other ecosystem services) exceeds the capacity of the supporting ecosystems. In practice this situation is always short lived as the population either expands the range of resources it can use or it is reduced through biological mechanisms of population control. Those mechanisms generally include infectious disease, predators, malnutrition, aggressive territorial behavior, and infertility. All but the last mechanism increase mortality to the effect that the population shrinks until its impact once more measures below the system's carrying capacity (which may have decreased in the meantime).

Overshoot directly threatens human security through the possibility of those biological control mechanisms, although the time lag can be deceptively long [44]. A further expansion of resource use seems unlikely in view of our present global appropriation of over forty percent of the planet's net primary photosynthetic productivity [45]. In the case of the human species the major threats are epidemics, malnutrition, and violent conflict. To varying extents those threats will be triggered by essential resources becoming scarce and eventually disappearing [46,47], and by the deterioration of key ecosystems [48].

Studies of regional precedents also indicated that, as a secondary consequence of overshoot, the ecological carrying capacity gradually decreases because of irreversible damage to ecological support

structures [35]. This lends particular urgency to the imperative to reduce the extent of global overshoot. Other secondary effects, such as the erosion of the rule of law and of civil society [49], as well as the threat of more widespread armed conflict over diminishing resources [46], add to that urgency. Those consequences tend to compromise human security across a broad range of aspects, extending over all four pillars of sociopolitical, health-related, economic, and environmental security.

At the global level overshoot is caused by the combined demands for resources and ecological services by seven billion plus individuals. These demands, when represented as humanity's global ecological footprint [1], exceed the planet's total bioproductive area by over forty percent [50]. The fact that the majority consumes only small per capita amounts while a minority consumes an obscenely excessive amount at their expense has no bearing on the basic fact that collectively we live "beyond our means" [37,51]. The most worrying aspect of the problem is that all current trends still indicate that the overshoot is worsening, while elected officials everywhere remain obliged, at pain to their careers, to call for more "economic growth".

The challenge of global overshoot represents a clear conflation of imperatives, where the urgent need to improve human security directly informs an equally urgent need for restraint, mitigation, adaptation, and gains in efficiency [52]. Effective action in those directions begins at the local or regional levels. However, achieving local sustainability does not guarantee that other regions achieve likewise, and so an element of global coordination and cooperation seems indispensible, informed by considerations of global environmental justice. This is where the UN's Millennium Development Goals Initiative carries much promise but is sadly lacking in results [53]. In contrast, numerous examples exist of local efforts successfully moving communities towards sustainable practices [54]. Those efforts are dominated by questions about the priority, relative potential, relevant time frame, and efficacy of alternative strategies—questions where human security considerations can help.

Local initiatives towards sustainability are informed by the environmental, economic, cultural, and social dimensions of sustainability as they apply to the local context. They invoke diverse ideals and values and they require diverse approaches. Resource limitations often require that priorities among them be clarified. As well, popular opinion and diverse cultural contexts may well reflect different priorities than does an academic cost-benefit analysis. A widespread example is the conflict between environmental conservation programs and local goals for economic "development". Although the two are by no means mutually exclusive in principle, they are often portrayed as such by interested parties, and to some extent their expectations and aspirations clash [55].

Human security can provide a new lens through which to adjudicate such questions and disputes. This leads to the question about dimensions and pillars. In our discussion so far we have treated sustainability as an implicit condition for human security. However, in some situations the reverse relationship seems equally plausible. Only a society that feels reasonably secure in the here-and-now will be in a position to implement effective initiatives towards sustainability. The fact remains that sustainability in its four dimensions is often more readily assessed than is human security in its complex four pillars. For example, regional overshoot can be assessed as a ratio of ecological footprint to available bioproductive area; this assessment is quite straightforward. In comparison, calculating the human security index [14] is based on more complex algorithms. To observers on the scene it can be quite clear whether a situation or practice is sustainable. In our effort to relate specific dimensions of sustainability to specific pillars of human security we therefore chose the matrix approach illustrated in

Table 1 where sustainability and human security are treated as independent and dependent variables, respectively. This does not necessarily mean to imply causality as we will explain below.

Table 1 lists the diverse effects of unsustainable practices on human security. Individual entries are informed by historic precedents and probable outcomes of example scenarios. The relationships indicated in the table are intended primarily as conceptual aid for future investigations of specific case scenarios. The first column shows that environmental sustainability exerts a strong influence on all pillars of human security, in line with Myers' [46] attribute of the "ultimate security". This indicates that environmental sustainability should receive priority in cases where it seems to compete with considerations of economic, cultural, or social sustainability. Because of the complex interrelationships between the variables the competition is probably superficial anyway. The second column indicates that unsustainable economic practices, as evident in the current global economic crisis, are likely to have broad impacts beyond economic security, compromising health, political stability, and eventually ecological integrity as impoverished masses attempt to carve out subsistence lives from already stressed bioregions. According to the third column, an absence of cultural sustainability, as exemplified by many disappearing indigenous languages and cultures, is unlikely to affect environmental security but can give rise to social tension and invariably affects the socioeconomic status and health of affected indigenous populations. Column four suggests that unsustainable social trends, such as increasing socioeconomic stratification, is likely to affect all aspects of human security through poverty, poor governance, and violent conflict. These interactions are borne out by comprehensive scenario studies such as the one by the Stockholm Environment Institute [56].

Table 1. The four dimensions of sustainability are likely to exert different effects on the four pillars of human security. Key explanatory concepts are added (*italicized*), some of which are expanded in the text.

	Probable Effects of the Absence of …			
	Environmental Sustainability	**Economic Sustainability**	**Cultural Sustainability**	**Social Sustainability**
Environmental Security	Declines *(erosion of ecol. capacity)*	Variably affected *(fate of colonialism)*	Little affected (e.g., *hunting practices)*	Variably affected
Economic Security	Declines *(poverty linked to ecol. deterioration)*	Declines	Declines eventually (e.g., *aboriginals)*	Declines eventually (e.g., *growing inequality)*
Health Security	Declines (e.g., *problems with waste, pathogens)*	Declines somewhat *(via poverty)*	Declines (e.g., *aboriginals)*	Declines eventually (e.g., *growing inequality)*
Sociopolitical Security	Declines eventually *(secondary effect)*	Declines *(via poverty)*	Variably affected	Declines

The decline of most of the pillars in response to the absence of sustainability is not unexpected. What the table does not reflect is their interrelations and occasional contradictions.

Table 1 can also be interpreted in terms of reciprocal relationships, indicating that situations exist in which sustainability suffers as a result of insecure conditions. For example, an overpopulated rural

region with malnourished populations where marginal areas increasingly come under agricultural use is likely to experience irreversible ecological damage, which makes it even more difficult to achieve any kind of sustainability in the future. War zones and post-conflict situations abounding with crime, exploitation, human rights abuses, and anarchy result in unsustainable political disorder. Somalia seems to qualify on both accounts, but other examples are provided by Chechnya, Tibet, and Kurdistan. Thus, certain sources of human insecurity tend to perpetuate unsustainable behavior, a useful consideration for development initiatives. This relates to our earlier assertion, much substantiated in the literature, that communities will only concern themselves with questions of sustainability when they feel secure enough in their present situations.

Linking specific domains of sustainability with specific pillars of human security also provides help for settling disagreements over the appropriate time frame of sustainability initiatives. By invoking the appropriate human security pillar and taking into account data on past changes [14] it is possible to identify priorities for intervention. For example, the horrifying rate of species extinctions in the Amazon, along with its irreversibility, should serve as a reason to prioritise the environmental security of Amazonians (*i.e.* the ecological integrity of the bioregion) over their economic, health-related, and sociopolitical security, which would not improve as quickly in any case.

In order to examine the extents of these relationships we should also try to identify areas where the correlation breaks down. Are there sustainable practices that nevertheless compromise human security? Colonialist exploitation of labour and resources can be environmentally sustainable for some time, though its eventual breakdown through social tensions and economic mismanagement seems inevitable. Similar scenarios are plausible for an environmentally responsible dictatorship, sustainable in the medium term while compromising the human security of many throughout its duration.

Are there secure situations that are nevertheless unsustainable? Economic growth, while allowing the illusion of perfect security, is only sustainable while the environmental impact remains below the carrying capacity of the supporting ecosystems. It is only through the prolonged influence of clever propaganda that many people have become convinced that "sustainable economic growth" is a reasonable idea. In fact, any form of physical growth is neither sustainable nor does it help human security once the sustainable limits have been breached. Any manifestation of physical growth violates Bartlett's First Law of Sustainability [2]. Nevertheless, the time lag between cause and effect as well as confusion over variables has induced researchers to refer as the "Environmentalist's Paradox" to the observation that ecological deterioration is not widely accompanied by a decline in human well-being [44]. In both directions it seems that the causality does not break down but may act with some delay; colonial exploitation and dictatorships can endure for considerable time; global collective overconsumption has endured for over two decades while the false sense of security it communicated is only just beginning to wane now.

Lastly, our findings suggest that the criteria of human security allow for a reliable discrimination between relatively trivial incidences of unsustainable behavior and those that warrant widely shared serious concern. This follows from the fact that some unsustainable practices are unlikely to affect any pillar of human security to any serious extent. Examples range from excessive jogging or other unsustainable lifestyle choices, made by the individual for him/herself, through professional activities and social fads. Conversely, our findings also reiterate the dangers to human security that arise from behavior that has been traditionally regarded as promoting sustainability and security in all their

manifestations but that is now turning out to do neither, contributing to the greatest challenge humankind has ever encountered: to restrain our own reproduction.

5. Conclusions

Given the urgency of the global environmental crisis, the transition to sustainability is proceeding much too slowly for comfort. Apart from a confusing diversity of definitions and a much too long list of do's and don'ts, a major hindrance comes from the widespread misperception that sustainability is a concept too academic, too abstract, and relating too far into the future to invest much personal initiative into. Human security, on the other hand has been gaining considerable recognition among the international community. It manifests people's concerns with their economic, health-related, sociopolitical, and environmental well-being, generally at the present time but involving differential time frames. In that sense, invoking human security will not solve all problems on the way towards sustainability; it rather provides a tactical advantage for clarifying trade-offs and for attracting greater interest and support for sustainability issues. In this paper we proposed to make use of people's concerns about human security to contribute some momentum towards sustainability.

This momentum comes from the realization that our failure to meet the most important sustainability targets will gravely compromise human security in its four pillars. More specifically, the lack of environmental sustainability is likely to jeopardise all of environmental, sociopolitical, health-related, and economic security in the immediate future. At the global level, the primary reason is the condition of overshoot that humanity entered in the mid-1980s [35,50] and the biological mechanisms of population control that are bound to bring an overshooting population back below the system's carrying capacity. In that sense the focus of this paper is entirely anthropocentric.

As far as concerns the big picture of humanity's ecological overshoot, human security is undoubtedly gravely compromised. We state this in full recognition of the fact that the world's major development initiatives appear to largely neglect the connection between overshoot and insecurity. Conceptual obstacles such as strong and narrow anthropocentrism and cornucopianism still prevent many people from drawing the right conclusions from the signs of crisis that emerge in many aspects of human security. Another obstacle lies in the political context of a global political system dominated by corporations, with their typical pattern of sociopathic behavior [57] and by a pathological dependence on "economic growth". Nevertheless, linking the lack of sustainability to key sources of human insecurity allows us to identify which aspects of sustainability should receive priority, and which sources of human insecurity are slowing the transition to sustainability.

Conflict of Interest

The authors declare no conflict of interest.

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