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# *From the Environment and Human Security to Sustainable Security and Development*

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**Abstract** This paper argues for a broader emphasis on sustainable security and sustainable development, and for examining both opportunities as well as threats to security. The authors note that many of the significant risks arising from human and natural interactions do not emerge at global or local levels, but at intermediate scales. They look at what different conceptual frameworks have to contribute to our understanding and review lessons from experience, illustrating where possible with work on water. The authors conclude by offering implications for an agenda of action, including interconnected frameworks, coalitions for change, interlocking institutional arrangements and disaggregated goals and indicators.

**Key words:** Environment, Sustainable Development, Human Development, Human Security, Water, Disaster, Sustainable Livelihoods

## Introduction

The relationships between the environment and human security are certainly close and complex. A great deal of human security is tied to peoples' access to natural resources and vulnerabilities to environmental change — and a great deal of environmental change is directly and indirectly affected by human activities and conflicts. In this paper, however, we argue for a broader emphasis on sustainable security and sustainable development. To the extent possible, we illustrate our arguments in the area of water.

On the 'environment' side, we argue that work in the field of 'sustainable development' has been fundamental in capturing the emergent scientific and social understandings of the intimate coupling of nature and society. Although controversies abound, the fundamental insights that launched the idea of 'sustainable development' two decades ago are even more firmly established today: efforts to protect nature will fail unless they simultaneously advance the cause of human betterment; efforts to better the lives of people will fail if they fail to conserve, if not enhance, essential resources and life support systems.

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More recently, it has become increasingly clear that much of the interaction between nature and society most significant for sustainable development occurs in what we call the 'missing middles'. Risks — threats to and opportunities for sustainable development — do not emerge primarily at global or local levels, but at intermediate scales, where both broader trends and the particularities of place come together. Similarly, sustainability is most often achieved by actions that address immediate challenges while focusing on longer-term goals through a series of intermediate range 'sustainability' transitions.

Human security offers much to this vibrant field of sustainable development. Most notably, human security — like human development — highlights the social dimension of sustainable development's 'three pillars' (environment, economy, society). Moreover, the high importance and urgency given to the elimination of destitution and deprivation over the short-term that is core to human security reminds proponents of sustainable development that intra-generational equity must not be sacrificed to the altar of inter-generational equity. Goals should be set, actions taken, and progress assessed at disaggregated levels commensurate with respect for the welfare and dignity, the needs and rights, of human beings.

But efforts to advance human security, as with human development, will do better to frame their activities based on an interdependent, place-based, and dynamic worldview analogous to that offered by sustainable development than by adopting a perspective that sees environment merely as a set of threats to human security. Thus, the field of security should be broadened to a more comprehensive notion of 'sustainable security'. Sustainable security is less anthropocentric because it values the environment in itself and not merely as a set of risks. This more expanded field facilitates critical integrations of state, human *and* environmental security, and parallels the three linked pillars of society, economy and nature central to the field of sustainable development.

The logic of our proposed reframing is depicted in Figure 1. We accept that there will be criticisms of lack of analytic precision and practical manageability with all attempts at broadening conceptual and practical fields such as that which we propose. We recognize such views as fair, particularly during early periods of work in emergent fields, but also believe that ostensibly simplistic frames do not capture real world complexities and possibilities. They thus fail to offer both a clear understanding of the array of challenges and opportunities to address them that exist.

Insights gained from the sustainable security-development nexus have important implications for practical action agendas. We offer four areas of focus later in this paper:

- Interconnected frameworks of praxis.
- Multiple champions and coalitions of change.
- Interlocking and mutually reinforcing governance arrangements
- Contextually disaggregated goals and indicators.

Perhaps the most important practical implication that emerges in our view

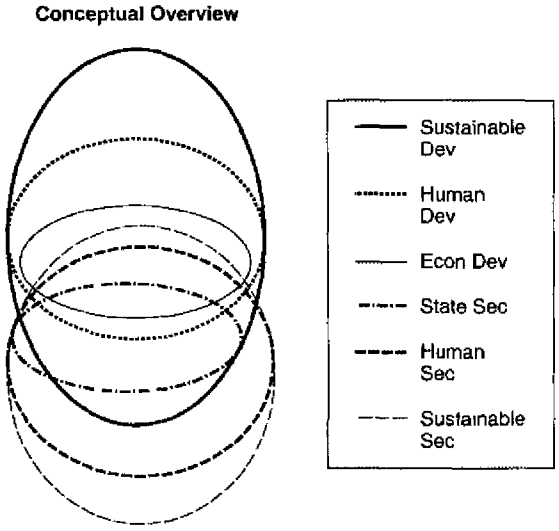


FIGURE 1 Expanding security and development

is the great potential for powerful learning/action networks and political/policy coalitions to be built between those concerned with making security and development more human-centered and sustainable.

## Expanding and improving the links between security and development

In this section, we first establish key aspects of human security in relation to the more conventional state security field.[1] Second, we review the 'environmental security'lit erature, which focuses predominantly on environmental threats to state and human security. A still better view adds nature as posing risks (threats *and* opportunities) to state and human security. We argue that human generated risks to the natural environment are also central to environmental security

We then offer an overview of the field of sustainable development that is centered on the interconnectivities among societies, economies, and natural environments. Attending to one of these at the expense of the others is bound to lead to unsustainable dynamics and outcomes. We identify some emerging lessons from accumulating knowledge on sustainability and infer important implications for security and development.

### *From state security to human security*

Four key elements distinguish human from state security for our purposes. The first is clearly a shift in the focus on what or who is to be secured —

from political-administrative units that are territorially bounded to human beings no matter where they may be at any point in time.[2] The second is an expansion of what security means, from a focus solely on survival (of states) to both survival and dignity (of human beings). The third essential contrast involves the claim that the survival and dignity of human beings requires 'freedom from fear' and 'freedom from want', not just the 'freedom from fear' that is associated with the security of states. Fourth, the protection and promotion of human rights trump state's rights (i.e. territorial sovereignty).

The threats to human security (understood as the survival and dignity of human beings through freedom from fear and freedom from want) are clearly far more numerous, diverse in type, and complex than the (albeit growing) threats to state security. Even those 'novel' threats to state security, such as transnational crime or infectious disease, are understood differently from a human security lens. The achievement of state security in certain cases, such as when a state is ruled by a repressive authoritarian government or when one state secures its own survival by capturing the resources of human populations outside its territory, can be the very cause of human insecurities. Different, although sometimes overlapping, sets of actions and responses flow from a human security approach compared with a state security framework.

Human security focuses on ensuring the survival and dignity of human beings through freedom from fear and freedom from want. Human development is understood as the continuing expansion of human freedom/human flourishing beyond these 'freedom froms'. Human development shifted and 'pluralized' the macro-growth emphasis of traditional economic development to the opportunities and capabilities of people just as human security shifts and pluralizes conventional state security.

## *Environmental security*

Two other fields — environmental security and sustainable development — emerged and grew during roughly the same time period as human security and human development. Of course, the clear link between the internally diverse perspectives and communities focusing on environmental security and sustainable development is a much greater emphasis on nature. The relative lack of exchange and high level of misunderstanding among the former and latter fields remains highly problematic in our view.[3]

*Environmental threats, violent conflict and state security.* Different conceptions of environmental security emerged over the past two decades.[4] The first used environmental security as a rhetorical device.[5] The environment was couched in the language of security to imbue a sense of urgency and priority to nature. Greater political importance and larger resource allocations were to be generated for environmental issues and concerns.

A second approach mostly focused on the relationship between environmental change (with particular emphasis on resource scarcity) and violent conflict. This type of analysis is only a partial broadening of the security

agenda — or what has been called one of a few 'novel categories' added 'to the conflict agenda' (Bloomfield, 1991). While the input side of the equation (i.e. the source of insecurity or the threats) was broadened to include environmental factors, the output side (i.e. what is to be secured) remained predominantly the survival of the state.

Major issues examined through this lens include water wars, access to energy (which became an issue of state security in the aftermath of the oil crises), environmental migration and violent conflict (see Gleick, 1993; Homer-Dixon, 1999). However, evidence to support this perspective remains quite weak. Looking at water scarcity, for example, of over 400 cases of inter-state conflicts between 1918 and 1994 where there was an occurrence or threat of armed violence, only seven were found to involve water. On the other hand, between 1814 and 2000, states have entered into 300 treaties addressing non-navigational issues of water (Wolf and Hammer, 2000). While the notion of water wars is not completely outlandish, conflicts over water are more likely to be intra-state rather than inter-state and to not involve military violence.

*State security, violent conflict and the environment.* Efforts to examine the environmental effects of war and violent conflict, as well as the impact of conflict refugees on the environment, reversed the causal arrows of explanation. Cases investigated included the misuse of natural resources, migration to and over-use of fragile lands, and other adverse environmental effects that occur as a result of violent conflict and militarization. Also, investigations to determine the environmental impact of military organizations and activities fall under this category, including the role of the military in non-combative roles, such as environmental clean-up (Butts, 1994).

Many scholars and practitioners questioned the value of deploying the military to protect the environment, citing the hierarchical, rigid and technocratic nature of the military as reasons why it is not suited for environmental missions (Deudney, 1990). On the other hand, cases of the negative impacts of military activities and warfare on the environment are abundant. For example, the Gulf War decimated Iraq's infrastructure and virtually overnight, millions of people no longer had access to safe drinking water. By 1996 35% of water was contaminated, as opposed to 5% in 1989 before the war and the economic sanctions that followed (International Committee of the Red Cross, 1999). Three years later, "at least twice as many children were being admitted to hospitals with gastro-enteritis as before the war". In this case, military violence generated water-related human insecurities.

*Environmental threats to human security.* A fourth conception of environmental security, which has been adopted widely over the past decade, is one in which the environment is connected to human security. In this case, the inputs and outputs of the equation are broadened.[6] Environmental threats are linked to their overall impact on human survival, well-being and productivity — in other words, aspects of human security. Human beings and social

relationships become the objects, or preferably subjects, that are to be secured from environmental threats — not states.

Environmental change can have direct and immediate effects on well-being and livelihoods. For example, water scarcity may not cause war but still engender insecurity by contributing to dehydration-related death, reducing food production, and undermining livelihood opportunities. The environment impacts human survival, well-being and dignity — all aspects of human security. But this is only one of five pathways by which the environment impacts people. The other four are multi-impact, multi-subject, multi-scale, and multi-temporal effects.

Environmental change can have a variety of impacts ranging from health to economic productivity to political instability, and so on. Environmental threats can also affect a diversity of subjects ranging from individuals, families, communities, social organizations, various identity groups (women, children, ethnic, etc.), diasporas not geographically concentrated, governments and biological species of various kinds. Fourth, a single environmental threat can potentially have adverse effects at multiple scales from the household to the planetary. While many environmental problems are localized, others are widespread and trans-scale in nature (i.e. climate change). Finally, All these types of impacts also have a temporal dimension. Environmental change can have a significant impact on the lives of people today. These changes may also extend into the future to impact the lives of generations to come.

Water resources, again, provide an illustrative example of these different types of effects and their complex interactions. Over two billion people live in water-stressed river basins and that figure is likely to rise to 3.5 billion, or one-half of the world's population, by 2025. Water scarcities have multi-scale effects, for example when river basins are trans-boundary, multi-subject effects (from families without access to safe drinking water to corporations who must pay higher costs for water use), and multiple impacts (such as by undermining sectoral production in agriculture and industry, as well as contributing to desertification in vast ecological areas). Moreover, these various effects combine and relate in complex and non-linear ways. It would thus be a grave mistake to focus on solely the direct effects of water scarcity on human security.

*Environmental opportunities for human security.* Focusing only on threats overlooks the environmentally related opportunities available to improve human security. Protecting and enhancing the environment can have very positive consequences for people's livelihoods, well-being and opportunities for fulfillment. While environmental degradation increases the potential for deprivation, displacement and disempowerment, ecosystem integrity is likely to reduce vulnerabilities. The environment cannot be viewed as a luxury only to be afforded at the back end of some environmental Kuznet's curve; it is directly relevant to the lives and well-being of all people, especially the most destitute, in developed and developing countries alike.

When looking at the local or micro-scale, examples abound of how a better environment provides opportunities for human security — improved

chances for survival, realization of basic rights, and increasing human capabilities. For example, there is a vast potential for improving water management and access to sanitation through community-led, decentralized, and low-cost technologies and institutional arrangements. These include revitalized traditional water harvesting systems, low and no-water sanitation technologies, and demand-side management (Agarwal and Narain, 1997; Appleton and Chatterjee, 2001).

There are numerous interconnections among people (social systems) plants and animals (natural systems), and livelihood opportunities (economic systems) that frequently are linked to political empowerment. Forests and trees provide a number of environmental services, including the regulation of the flow of water between soils and the atmosphere, the prevention of soil erosion and the provision of habitat to "the largest collection of biodiversity of any ecosystem on the planet" (Worldwatch Institute, 2002, p. 9). In 1998 alone, "forest clearing was blamed ... for worsening flooding in China that killed 3,000 and caused $20 billion in damage", a significant price to pay in human and financial terms (Worldwatch Institute, 2002). These costs were larger than the benefits of logging and the latter were distributed extremely unequally.

Such interconnections are also visible in society-nature interactions among individuals and groups, particularly political and economic power relations. Two processes, 'resource capture'a nd 'ecological marginalization', have in particular been identified (Homer-Dixon, 1999, pp. 73–80). While these are only two of the possible patterns of social and natural interactions, they illustrate that protection and responsible management of natural resources could have an important role in preventing a noticeably skewed pattern of resource distribution, which may lead to the restriction of economic and political opportunities for people, particularly those that are marginalized and disadvantaged.

Resource capture occurs when the supply of a resource decreases due to either depletion or degradation and/or demand increases (due to population and/or economic growth). This encourages the more powerful groups in a society to exercise more control and even ownership of the scare resource, thereby enhancing their wealth and power. Ecological marginalization entails the long-term migration of disadvantaged populations to ecologically fragile areas such as steep sloping lands, tropical rain forests, areas threatened by desertification and so on. The fragility of the natural environment, coupled with increased population densities, lack of context-appropriate knowledge, low levels of capital, and weak institutional arrangements usually result in severe ecological damage.

Environmental issues, regarded by many governments as politically safe, provide an entry point for individuals and communities to participate in decisions about their own security and development, even in the most restrictive political regimes (Jancar, 1993). Environmental issues often provide the neutral 'non-threatening' ground on which poor individuals and communities build their voice and participate effectively in project planning, design and implementation.

A similar environmental 'open space' provides, in many cases, further opportunities for dialogue and co-operation within and among societies, including at the international level, which may be difficult on the more official, political levels. In some cases, such co-operation may provide a way out of conflict or may even offer new ideas for innovative institutional and governance mechanisms. Again the record here is mixed; but there are important examples of success that may hold invaluable insights (Homer-Dixon, 1999, p. 26).

The links between people, nature and economies are inescapable when looking at environmental security and environmental risks as they relate to human security. Aspirations for security and development must go beyond efforts to protect individuals from environmental threats. They must also be based on practical steps to seize upon the opportunities presented by the environment, in recognition of its inherent value, and its deep connections to human beings, societies and economies.

### *Sustainable development*

The idea of sustainable development can be traced back through the 1980 World Conservation Strategy and the 1972 Stockholm Conference on the Human Environment to origins in the early days of the international conservation movement (Adams, 1990). The contemporary field of sustainable development that transformed previous environment and development debates, however, is barely old enough to vote, having taken most prominent form only in the 1987 Brundtland Commission report *Our Common Future*. The idea of sustainable development articulated in the report was given early support by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, was nurtured over the subsequent decade by thousands of 'Local Agenda 21' activities around the world, and celebrated its coming-of-age at the 2002 World Summit on Sustainable Development in Johannesburg.[7]

The genius of 'sustainability' lies in its ability to provide 'space' for serious attempts to grapple with the real, dynamic and complex relationships among societies, economies and natural environments, as well as between past, present and the future. The Brundtland Commission was aware of the value of providing such space for debate and deliberation, experimentation and learning, and defined sustainable development broadly as the ability of humanity "... to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" World Commission on Environment and Development, 1987, p. 8).

Within this broad space, a range of perspectives that differ on what is to be sustained, what is to be developed, the linkage between such differing views, and the extent of the future envisioned have emerged (see Table 1).

*What is to be sustained?* The most common answer to this question is 'life support systems', where the life to be supported is first and foremost *human* life. The initial form of this answer emphasized the need for sustainable use

TABLE 1. The field of sustainable development

| What is to be sustained? | | What is to be developed? |
|---|---|---|
| *Life support systems.* Resources, environment, ecosystem services | In what relation? Or, and, but, with ... | *Economies.* Production, consumption,wealth, distribution |
| *Natural environments.* Species, biodiversity, ecosystems, earth | For how long? Years, decades, centuries, forever | *Societies.* Capacity building, organizations, institutions |
| *Communities.* Traditions, values, ethnic groups, cultures, places | At what scale? Localities, states, regions, planet | *People.* Longevity, education, capabilities, choices |

of 'natural resources' — resources found in nature and useful for people. More recently, the focus on natural resources has expanded to include the need to sustain a healthy environment for people. A recent variant of this anthropocentric, utilitarian thinking has emphasized the need to protect essential 'ecosystem services' — functions of natural environments such as water purification.

A less anthropocentric view emphasizes sustaining nature because of its inherent value and our consequent obligations to respect it. Species, biodiversity in general, ecosystems or the Earth itself are to be sustained. These views on what is to be sustained often invoke notions of 'stewardship', together with an implicit acceptance of the primacy of humans. More transformative versions articulate 'natural rights' in which earth and all its living things have equal claims for existence and sustenance.

Finally, there is a thread in the sustainability debate that sees not only biological species as endangered, but cultural species as well. Thus, the concept of communities to be sustained includes distinctive cultures, particular groups of people, and specific places. These communities also have a claim to existence and sustenance, it is argued, with cultural diversity seen as a complement to biological diversity.

*What is to be developed?* More often than not, when development is discussed in the context of sustainability, the economy is prioritized. Growth in production is seen as providing opportunities for employment and consumption. Wealth provides the incentives and the means for investment in further production, as well as funds for environmental maintenance and restoration. Debates about the distribution of growth and wealth have been central, with strands ranging from basic needs and poverty alleviation to growth with equity.

Others adopt a broader focus on societies, where the emphasis is on collective institutions and organizations. The development of institutions and organizations for participation and deliberation, negotiation and conflict resolution, policy formulation and implementation, and so on, at a variety of governance levels, are emphasized. Critical are long-standing concerns for capacity building, and more recent upsurge in interest on increasing social capital.

Yet another answer to the 'what is to be developed' question has been people. This human-centered development focuses on both the quantity as

well as quality of human life disaggregated to the level of individuals. It focuses on improving the capabilities and expanding the choices available to individuals. Human development highlights the survival of children, increased life expectancy, literacy and numeracy, the expansion of political empowerment and, increasingly, access to natural resources and a healthy environment.

*What are the links between?* Essentially all visions of sustainable development are characterized by the *joint* consideration of what is to be sustained *and* what is to be developed. Much of the planning for the 2002 World Summit, for example, invoked the 'three pillars' of sustainability: economic, environmental, and social. These goals were seen as equal in importance and linked together. Indeed, the social dimension was to be given priority attention, given that the 1992 Rio Conference on Environment and Development, at least symbolically if not in practice, undervalued this pillar.

But such equal treatment is only one of a number of ways of linking what is to be sustained and what is to be developed. At one extreme, some conceptual statements, while paying homage to sustainable development, actually appear to be saying 'sustain only' *or* 'develop mostly'. Others, while clearly favoring either what is to be sustained or developed, subject that choice to a conditional constraint (implying a conjunction of *but*).[8] Still others prefer only to offer trade-offs, leaving to some set of publics or decision-makers the choices of what is to be sustained *or* what is to be developed.

*For how long?* An essential element of sustainable development is its intertemporal focus — the "*now and in the future*" of the 1992 Rio Conference. The time horizons invoked in discussions of sustainable development, however, range from several years, to a single generation, to several generations or a century (as in the Intergovernmental Panel on Climate Change assessments that extend until 2100), to an implicit forever.

These time periods present very different prospects for sustainable development. Over the space of a single decade, almost any development appears sustainable. Over an infinite forever almost none do, as even the smallest growth in numbers, resource use, or economy extended indefinitely creates situations that seem surely unsustainable. Over the century time horizon encompassed in many energy/environment assessments (e.g. those of the Intergovernmental Panel on Climate Change), the large and the long future is both remote and uncertain.

*At what scale?* Initially less explicit but progressively more clear is the question of scale in the field of sustainable development. Should emphasis be placed at the household or local level? Is it political-administrative or ecological units that matter? Does focusing on sustainable development of countries make any sense given globalization? The Bruntland framework for analysis and action moved up and down scales, and thus implied that all mattered.

To complicate the issue, there are three different but interacting ways in which scales matter. Normatively, the question is which scale or scales should be developed sustainably? Analytically, at what scale or scales are dynamics of sustainable development best examined? Practically, at what scale or scales should actions be prioritized to promote sustainable development? Different positions on sustainable development offer markedly different answers to this complex and value-laden issue of scale.

*Lessons from experience.* The normative, analytic and practical space in which the questions of 'what is to be sustained' and 'what is to be developed' are debated is actually the essence of the field of sustainable development. There is no consensus in the field on a narrow or precise definition of sustainable development but the debate certainly has moved beyond a global aggregate balancing of the world economy and the global environment. Aggregated versions such as development of economies or sustaining life-support systems are still quite prevalent. Yet alternative framings in terms of disaggregated interests — developing individuals and communities, sustaining particular species and places — are growing in strength.

Many, however, are left uncomfortable with this open field and have sought more precise definitions of sustainable development. One interpretation, for example, focuses on how the next generation must have "whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly".[9] Not only is this a departure from the Brundtland Commission's notion of sustainable development, it is only one of many other interpretations.[10] While such precision may be of some use in some specific instances, it remains the case that there is absolutely no consensus in the field on any single interpretation of the sustainable development paradigm. Sustainable development is a flexible and pluralistic field that enables diverse framings and discussions.

Nonetheless, experience and knowledge that has emerged over the past two decades offers much for advancing sustainable development. For example, the U.S. National Research Council has recently proposed a more dynamic answer to the 'how long' question, speaking of a *transitions* toward very long-term sustainability through a series of shorter-term but linked over time activities and initiatives.

Similarly, it is by now progressively better understood that analysis of sustainable development requires understanding of complex trans-scale linkages and relationships. But it does seem that crucial threats and vulnerabilities to sustainable development converge at meso-scales in critical regions, often ecologically defined (Kasperson *et al.*, 1999). It is probable that relatively too much activity is directed at local and global levels to the neglect of these inter-mediate and inter-mediating geographical scales.

The use of indicators is another example of a subject that more is known about today. The evidence indicates that macro-indicator systems, such as those that exist for aggregate economies, environments and societies, are somewhat useful for informing broader policy controversies. However, there is increasing consensus that more subtle dis-aggregated indices are

needed to reflect key realities on the ground, and that macro-indicators do not necessarily reflect the status or priorities of communities located at various scales or in different contexts.

At least as important are the political dimensions of sustainable development: Who is it for? Who gets to decide and how? Much of the debate on improving people's well being has moved beyond the technocratic notion of 'we know what is best for you' and is now embedded in the promotion of power-equalizing mechanisms for decision-making, such as promoting accountability through transparency and effective public participation. Unless people and communities have the opportunity to articulate their own understandings and priorities, the means by which to express them, and the capabilities to be effectively involved in their realization, they are unlikely to want to partake in any action agenda.

### *What does human security offer sustainable development?*

Human security offers much to the field of sustainable development, some that reinforces and some that adds to the contributions of human development.

1. Highly aggregated economies and environments have received significant attention in academic debates, policy agendas and action programs. Human security and human development, by emphasizing people, strengthen the social pillar of sustainable development, and may have important implications for future sustainable development goals, priorities and action plans.
2. In addition to emphasizing the social pillar, human security and human development disaggregate it, moving to the 'inescapably pluralistic'. This encourages the sustainable development field away from a "standard of living" towards a "sustainable livelihoods" approach that prioritizes certain freedoms, the absence of which may not result in an "identifiable diminution in the overall standard of living" (Sen, 2002, p. 8).
3. Human security and human development move the sustainable development field from a primarily needs-based focus to a rights-based focus in the quest of improving opportunities and capabilities. The practical implication of this broadening is that civil and political rights along with economic, social and cultural rights become an integral component of the social pillar of sustainable development. It therefore provides a most basic, practical tool for individual empowerment through universally set-out entitlements and obligations.
4. Human security more than human development prioritizes achieving freedom from want and freedom from fear *urgently*. Sustainable development corrected the insufficient attention paid to inter-generational equity in the past, but some versions forgot intra-generational equity altogether. Even the more human development-centered versions of sustainability focused on promoting 'freedom tos' and thus underplayed the protections that are necessary to ensure 'freedom froms'.

### *What does sustainable development offer human security?*

Conversely, the field of sustainable development offers much to human security.

1. Nature and society are interdependent: what happens within one affects the other in significant ways. This is not a normative statement, but rather an empirical finding about how the world works. Goals, policies, and activities based on this understanding are likely to be more successful that those that dis-embed people from nature.
2. The interdependencies of nature and society generate not only threats to both, but also opportunities for positive change. The potential for mutually destructive degradation and for mutually supportive nurture exists. Research and action that focus largely on threats posed by appropriately disaggregated nature and society to one another will miss important opportunities for joint improvement and mutual benefit.
3. Threats and opportunities (or risks) exist at all time and space scales, from the acute and local to the chronic and global. It is at intermediate regional spatial scales and decadal time scales that some of the most critical contemporary threats arise, and some of the best opportunities for helpful initiatives exist. Popular efforts to establish agreement at the global level on 'the' most important challenges for human security are therefore likely to be much less effective than suitably contextualized efforts. Likewise, an exclusive focus on either immediate or very long-term interactions is less likely to promote progress than a dynamic focus on intermediate temporal transitions.
4. Communities and people must be able to articulate their own aspirations, have the appropriate means to make their voices heard and to participate effectively in decision-making about their security and development. Top-down, technocratic efforts, regardless of how well planned or well intentioned, have little chance of durability or success.[11] Human security proponents would do well to empower people to identify what they see as the critical insecurities and best means for promoting security.
5. Finally, there is a strong case to see nature as valuable in its own right, in addition to its instrumental value for human beings. Taking this last principle, and following the broader model of integration and linkages offered by sustainable development, perhaps it is 'sustainable security'. Sustainable security offers a more open space for deliberation, analysis, and action could help connect analysts and practitioners of human and environmental security in common purpose to expand the narrow and problematic field of state security.

## Potential implications for an agenda for action

The preceding sections have been devoted to the development of conceptual frameworks for analysis. We focused on making a case for shifting the security field from the narrow frame of 'environmental threats to state

security' to the relatively broader frame of 'environmental threats to and opportunities for human security'. We also suggested that human security, while a positive step forward from state security, should be re-cast as sustainable security, in which the complex interactions between states, human beings and nature should be the focus, and the environment is valuable in itself to be secured in its own right.

Outlined below are some potential implications that could be elements of a 'sustainable security and development' agenda for action under the following categories: interconnected conceptual and practical frameworks; multiple champions and coalitions of change; interlocking and mutually reinforcing institutional arrangements; and contextually appropriate goals and indicators. These should be seen as initial forays into a terrain full of possibilities.

### *Inter-connected frameworks for praxis*

Conceptual and practical frameworks should virtually always link security and development. In practice this means that the communities concerned with each of these must be in deep dialogue and continual engagement — at much greater levels than has existed thus far in order to minimize misunderstanding and to maximize joint action. Emergent frameworks from 'rights' and 'risks' perspectives in the field of sustainable development offer the foundation for sustainable security and development.

Sustainability science focuses on linking the human imprint on the biosphere to the co-evolving human-environment condition, as it pertains to a transition towards sustainability. The link to security is the notion of vulnerability, which is defined as the degree to which a system, subsystem, or system component is likely to experience harm due to exposure to hazard. Linking the human security paradigm to sustainability science and a vulnerability analysis framework necessarily entails placing particular emphasis on the human condition, a component of the definition. Human security focuses the analysis on who is vulnerable, how does action by people in particular places and conditions affect vulnerability, and what actions could be taken to reduce or mitigate vulnerability (see Fig. 2).[12]

The second framework emerged out of the sustainable livelihoods approach. The poverty debates of the past decade have shifted poverty from a uni-dimensional and static concept to one that is multi-dimensional and dynamic (Chambers, 1992). The counterpart of vulnerability is resilience. This resilience, as identified in the literature, largely depends on "*assets* and *entitlements* that individuals, households and communities can mobilize and manage in the face of hardship" (Moser and Norton, 2001). By this definition, the link to sustainable security would be a relatively direct one: the more assets people have, the less vulnerable and more secure; and the greater the erosion of their assets, the greater their insecurity (see Fig. 3).

Both these frameworks have much in common that could guide sustainable security and development. Both frameworks provide a distinct awareness of the systemic, multifaceted and diverse characteristics of human and

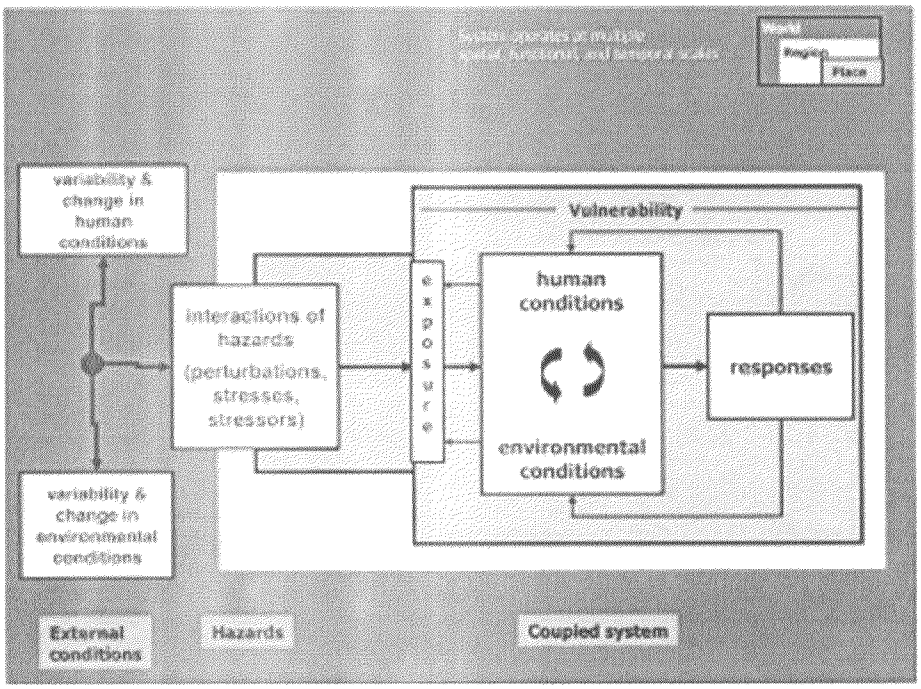


FIGURE 2. Sustainability science framework.

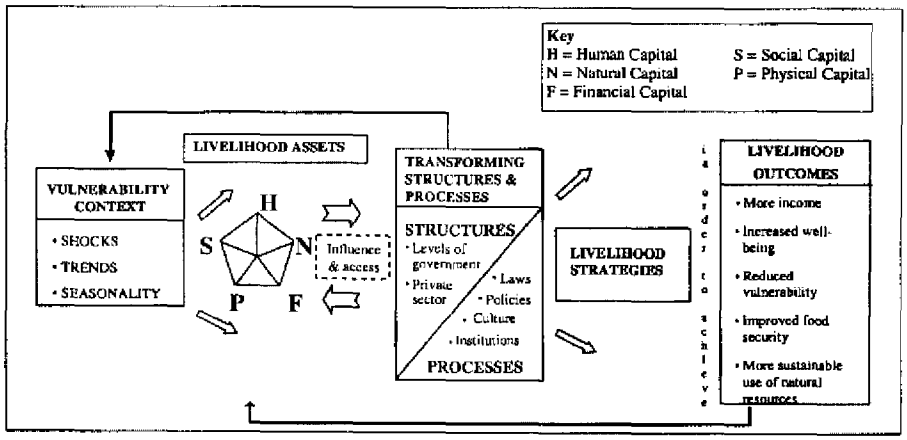


FIGURE 3. Sustainable livelihoods framework.