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Changes and Inertias: Environmental Prospects in Times Of the Anthropocene

Sometimes I forget that I'm one of the billions of organisms that are a part of the millions of species on the planet. I'm trained to perceive and recognize nature and other elements of my environmental and social surroundings, but I find it difficult to step outside of the role of main character of this work that is my brief life. Just as individual consciousness blurs my scale and relations of interdependence, the same seems to occur to other people and numerous societies. Individuality brings with it a myopia whose grand total and synergy have transformed the Earth.

The Age of Wicked Problems

The Holocene, the last 10,000 years on Earth, has been a relatively stable period, conducive to the development of human civilizations. Nevertheless, the most recent period of this era has been marked by changes in several of the parameters of the Earth's system beyond the natural spectrum of Holocene variability. Although many people refute the idea that these changes are the result of human activity, the scientific consensus points in the opposite direction and to the fact that we are headed to a world that is different from the one that has existed for all of modern history. This new era, which some scientists call the Anthropocene, is defined by the role of the human species as a driving force of the evolution of the Earth's system.

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It is also called that because of the existence and synergy of a broad gamut of environmental problems derived from population growth, changes in habits and levels of consumption, our energy choices, and the changes in the use of the soil and transportation of organisms, among other factors.

We are very familiar with some of the environmental problems, although their solutions are still pending: for example, over-fishing, the reduction of available water, and the loss of biodiversity. Others are emerging: that is, the scientific community is in the process of recognizing them or has only recently recognized them as important, but the public is not yet aware of them, such as the increase in dead areas in the ocean. All these problems are produced and manifest themselves to differing degrees and affecting different areas. Some, like the contamination of aquifers, have relatively specific causes and consequences. Others, like climate change, develop and show their effects over the course of many years and may have global implications. In the latter case, not all societies contribute equally to the problems, but we all experience —or will experience— its consequences one way or another. The aftermath of complex problems does not distinguish between who contributes to them or take into consideration issues of equity and justice.

The common denominator of many of these problems is their complexity. They are difficult to define with precision; they are socially complex, and many parts and factors contribute to their development. They are also multi-generational: they do not have a point where they end or a clear solution. These kinds of problems are often called "wicked problems." Their complexity increases due to the

21 Issues for the 21st Century

Cross-cutting issues	Aligning governance to the challenges of global sustainability
	Transforming human capabilities for the twenty-first century: meeting global environmental challenges and moving toward a green economy
	Broken bridges: reconnecting science and policy
	Social tipping points? Catalyzing rapid and transformative changes in human behavior toward the environment
	New concepts for coping with creeping changes and imminent thresholds
	Coping with migration caused by new aspects of environmental change
Food, biodiversity, and land issues	New challenges for ensuring food safety and food security for nine billion people
	Beyond conservation: integrating biodiversity across the environmental and economic agendas
	Boosting urban sustainability and resilience
	The new rush for land: responding to new national and international pressures
Freshwater and marine issues	New insights on water-land interactions: shift in the management paradigm?
	Shortcutting the degradation of inland waters in developing countries
	Potential collapse of oceanic systems requires integrated ocean governance
	Coastal ecosystems addressing increasing pressures with adaptive governance
Climate change issues	New challenges for climate change mitigation and adaptation: managing the unintended consequences
	Acting on the signal of climate change in the changing frequency of extreme events
	Managing the impacts of glacier retreat
Energy, technology, and waste issues	Accelerating the implementation of environmentally-friendly renewable energy systems
	Greater risk than necessary? The need for a new approach for minimizing risks of novel technology and chemicals
	Changing the face of waste: solving the impending scarcity of strategic minerals and avoiding electronic waste
	The environmental consequences of decommissioning nuclear reactors

Source: The United Nations Environment Programme (UNEP), "21 Issues for the 21st Century: Results of the UNEP Foresight Process on Emerging Environmental Issues," 2012.

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fact that they also emerge at the intersection of economic, demographic, and social problems. The perception and recognition of environmental issues and problems is not a simple matter either. Causes and effects are oversimplified, ignored, polarized, twisted, dissimulated, and postponed in our minds as well as in society as a whole, and in economic and political systems. Not coming to agreements about what causes them and what these issues imply favors inaction and resorting to partial solutions that do not measure up to their true dimension and importance.

In 2012, the UN Environment Programme (UNEP) created a panel of experts to identify emerging environmental problems of the twenty-first century (see table). The twenty-one issues identified are the result of a survey among more than 400 of the world's scientists. Although not exhaustive, the list reflects the diversity of fronts that have to be opened to deal with the numerous environmental tensions that will characterize the coming years, as well as their socio-economic effects. Given that the analysis was carried out almost a decade ago, the report does not include the lessons and reflections we have been left with by COVID-19 and its intersection with the environment, health, and the economy. One of these, for example, is the interaction between the disease and bad air quality. The list also omits issues related to the impact of race and gender, as well as North-South inequalities with regard to environmental problems.

Changes of Perspective

We cannot say precisely what the coming era will be like, since the Earth's systems are complex, multi-factorial, and difficult to predict. What we can say is that the changes are accelerating and the levels and scales of connection among several of them are moving from local to global. The aforementioned UNEP document states that the points of inflection of the climate system and that of other planetary limits, as well as their interaction with environmental chain reactions imply a transition to a new state and a new way of being in the world. This transition requires more awareness and the development of new paradigms that guide recognition and our way of acting around environmental issues. The change in paradigms involves many shifts and new ways of thinking about problems, drivers, and solutions.

It will come as no surprise that the first of these changes involves reconciling human development, progress, and the Earth's systems' ability to sustain them. In contrast with the most optimistic, I do not believe that this reconciliation will take place through the massive, ubiquitous deceleration of economic growth. Parameters and interpretations of development exist that are quite difficult to reverse on a global scale. We will have to use science —not only environmental science, but also economics, politics, social, and cognitive sciences— as well as technology to ensure that human development takes place in a more just, egalitarian way without pressuring planetary systems more than is already occurring.

No wicked problem exists, including that of human development and environmental problems, that can be resolved with a silver bullet, by a single discipline, or a single actor, sector, or organization. What is needed is to deal with this taking into account the complexity, uncertainty, and conflicts of values linked to these problems through comprehensive, crosscutting, and systems-thinking approaches. Problems and issues we used to approach individually now must be dealt with as a whole, some on a global scale, taking into consideration their interconnections. This does not reduce the importance of continuing to work on issues familiar to us, such as making food systems more sustainable and fairer, creating better forms of governance for water, the land, and the sea, or multiplying the use of environmentally friendly energy uses.

The overall focus also implies, among other things, assuming that technology and science, even using transdisciplinary approaches, will not be enough to resolves the problems of the future. Other elements and conditions are needed, including the development of an ethical-social agenda for the environment and the resulting growth of a broad-based, diverse environmental constituency willing to act collaboratively.

We must recognize that environmental problems are also sociological. Their framing, including the question

of whether they constitute a public issue or crisis or not, is a social construction. As such, they are closely linked to political contexts and challenges. The narratives centered on priority issues, such as climate change, are the basis for values and institutions and have an impact on decisions and actions; therefore, they inhibit or speed up change. As such, these narratives are also at the root of future alternatives that we must imagine and build.

New Joint Routes

The world's health crisis has sensitized us to the effects of uncertainty in society and in mental health. The pandemic has also underlined individual fragility, as well as that of social and economic groups. It has been an alarm bell regarding our limitations for responding and adapting to large-scale impacts, like climate change, and the barriers we run up against when we try to do so. All this has happened at the same time that different regions are already facing climate disasters that, like COVID-19, remind us that the world is not prepared for slowing environmental problems like climate change or for living with them.

Up until now, it has not been possible to develop a feeling of true social urgency about global environmental problems. Voices have been raised, and regulations, institutions, and processes are underway. There have also been successes, but no sustained mobilization exists nor are there full-scale solutions that point to a less uncertain environmental future. The reasons for this are many, including inertia, resistance, and values and patterns associated with certain economic development models in the world. They also involve psychological and political resistance to responding to threats that we do not perceive as imminent or personal.

It's not a cliché. Expectations for the Earth, and therefore for individuals and societies, are complex. It is difficult not to sound alarmist when saying it, but saying the opposite would be to fall into the negationist trap. The environmental crisis is real, tangible, and already here. This does not necessarily imply images of total destruction, but it does involve changes that must be recognized, accepted, and dealt with. It is time to embrace and foster a new way of being in the world, to see ourselves closely linked to the environment and other human beings, to transcend sectoral approaches, innovate, collaborate, to create transformational narratives, and to correct routes whose end-points we already know. In the face of environmental change, we have to take off the blindfold and vaccinate ourselves against inertia. VM

Further Reading

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