

The Corona virus is not our biggest problem

Our biggest problem is event-driven leadership. Climate change is now taking a backseat to the Corona virus, while there is a dangerous silence about underlying causes, connections and operational, holistic solutions.

Our biggest problem is not the Corona pandemic or the climate. Nor is it the extinction of species, toxic substances in the environment, poverty or the spread of antibiotics in nature. Rather, it is an event-driven public debate and leadership that reacts to symptoms without understanding how they are connected to the fundamental design of our organisations and societies. The result is a panorama of impacts in social and ecological systems that has grown so strong that it is impossible to treat every symptom separately. Instead, they must be addressed at their roots using a system-oriented approach. Our societies are not, in fact, very good at managing complex systems. We are organized vertically, in silos, and few people have responsibility for, or an understanding of, the whole.

We have built a technocratic system and subordinated nature to it, without thinking about how this affects the functioning of natural world. The result is an ecological impoverishment that has been described in many ways, for example with the concept of Planetary Boundaries (Rockström et al 2009). This model describes boundaries beyond which nature's ability to support civilisation is seriously compromised, for example, concentration of carbon dioxide in the atmosphere, extinction rates of species and flows of nitrogen into the world's oceans. We have already overstepped some boundaries and are on a path to overstep others. Additional boundaries are as yet unidentified or unquantifiable, for example, all of the thousands of chemicals that are currently accumulating in nature. One example that posed a threat to our civilisation is freon. When it was introduced, its supporters claimed that it was both non-toxic and did not accumulate in biological tissue. In reality, things almost ended very badly that time.

It seems obvious that research on injuries, prognoses and emergency responses must include an analysis of primary causes. Today's focus on symptoms rather than causes is like treating the symptoms of increasing obesity – liver damage, vascular disease, diabetes, heart failure, angina pectoris – *instead of* the underlying problem that the body is getting more energy than it uses. If serious symptoms have already arisen, it is necessary to address both.

The good news is that cutting-edge research in systems theory and design science shows how the myriad of sustainability-related problems are actually interrelated because they are caused by our violation of a few general and concrete boundary conditions for sustainability – just as in the example of obesity. This creates new and much better conditions for achieving sustainable development. The logical conclusions follow almost automatically. That is, it becomes possible to do multi-sector strategic planning in which sectors are modelled to meet the framework principles together. This, in turn, makes it possible to pursue economically rational, stepwise progress and to use a variety of instruments to support decision-making, measurement and communication, including, for example, the United Nation's sustainability goals, which we will return to below.

A good example of how breakthroughs in research can change the conditions for action is cancer. Before the root causes were known, doctors treated the symptoms without understanding how they were interrelated. On the surface, patients sank deeper and deeper into a "funnel" of ever-

worsening anaemia, pain, exhaustion, failing organs, emaciation and lumps. If the illness spread, the patient always died. And then it was discovered that cancer is a monoclonal disease, that is, a single cancer stem cell arises, transforms and spreads. Once the root cause, upstream in the chain of cause and effect, was known, we suddenly had a framework for curing cancer. Different healthcare specialists such as cell pathologists, radiologists, pharmacologists, surgeons, immunologists, nurses, and counsellors could develop knowledge grounded in their respective “silos” and work together to achieve the two universal boundary conditions for curing cancer: i.) Kill the last cancer cell so that it cannot re-trigger the illness, ii.) without killing the patient. Today, many more than 50% of patients are cured, and treatment results are constantly improving.

Today, we find ourselves in a situation in which the patient is society, and its condition is gradually worsening due to the fatal disease of unsustainability. And just like the period before we discovered the boundary conditions for curing cancer, we are treating only the symptoms while allowing the root causes to worsen the disease. Our actions are focused downstream in the chain of cause and effect, but we only act when symptoms have become sufficiently painful and costly. *“Whoops! Who could guess that freon would destroy the ozone layer, tsunamis can cause nuclear power accidents, production growth with linear material and energy flows can threaten vital ecosystems and the climate, or that biased power structures can drive population growth, rising economic inequality, unsanitary living conditions and pandemics?”*

To meet the many challenges that face us, the nations of the world have committed themselves to the United Nation’s sustainable development goals, well-written stories about sustainability in 17 important areas. This is a step in the right direction, but a systems approach is missing. That is, the root causes of the problems are not articulated and explained. This makes it impossible for organisations to integrate all the UN goals into their own operational ones. Organisations therefore ignore the goals or “chose” some of them that seem most relevant to their own operations. This is a lost opportunity, because the goals are intended to gather the world around a common whole for the future. The organisations that learn to prioritize using stepwise processes have an easier time acting. They can read their strategic structures “crosswise” across all the UN goals, in order to see if their own goals, challenges, opportunities or priorities are missing anything. In this case, the UN goals help the organisation participate in the global movement.

The challenge for research about strategic sustainability is the same as cancer research, to find a meta-level of boundary conditions to cure the “unsustainable” that can unite politicians, researchers, business and the public in a common effort to compile relevant knowledge from their respective “silos.” To achieve this, just as with curing cancer, we need boundary conditions that attack the root causes of problems, are scientifically robust, concretely connected to daily operations and expressed in a shared taxonomy that everyone can understand.

In recent years, international collaboration among researchers and decision makers has led to increasing understanding of complex systems and the boundary conditions – listed below – that must guide our efforts to create a sustainable society. The image that emerges is constructive and positive. It instils hope.

1. It is possible. An attractive world that fulfils the boundary conditions for sustainability is technically and culturally possible. That is, we can have a world in which damage does not increase systematically because leaders – both political leaders on the right and left and business leaders – allow an understanding of root causes to drown in ideologically-driven debates about symptoms.

2. It is easier. Building a sustainable world is easier when done in creative cooperation across political party lines and businesses' value chains. Doing so requires applying robust boundary conditions that, upstream, are designed to protect fundamental social and economic prerequisites. Experience shows that even polarized dreams, values and cultural expressions are creatively sustainable if they are compatible with the boundary conditions. However, those that rest on fundamental misunderstandings, are not.
3. Act stepwise. Before making decisions about investments, particularly ones that tie up significant resources for many years, it is necessary to ask the right questions in relation to the boundary conditions. *Can this work economically and technically for the sectors in the region or the actors in the value chain, like a tuft they can jump off, in the direction of the fundamental boundary conditions?"* This question should also be posed when solving acute problems, because doing so improves the preconditions for action down the road.
4. Boundary conditions. Through cooperation with researchers, hundreds of businesses and local governments throughout the world have learned both the boundary conditions and strategic planning based on goals compatible with them. They have also provided empirical evidence that system solutions laid out as smart, stepwise investments, can reduce unexpected setbacks and improve economic performance. These businesses and local governments have accepted the challenge of fundamentally reworking their organisational goals, so that when they achieve them, they will fulfil the boundary conditions for sustainability. That is to say, they will no longer contribute to:
 - (i) Systematic increases in the environment of concentrations of substances from the earth's crust (for example, fossil carbon in the atmosphere, heavy metals in the soil and our bodies, phosphorus in seas and oceans). This design flaw contributes to climate change, which leads to a decline in inhabitable territory over time and increased population density. Crowding people together, in turn, undermines the capacity of food and water systems to meet peoples' needs, which primarily affects the world's poor. Of course, this development makes it more difficult to respond to the pandemic we are now experiencing and to prevent new ones that can occur because pathogens learn to jump from animals to humans. Today there is concern within the EU that efforts to save the climate will fade in the face of the Corona pandemic. Of course, the opposite should happen.
 - (ii) Systematic increases in the environment of substances produced by society (for example freons in the atmosphere, dioxins and endocrine disrupters in our soils and food, nitrogen oxides in seas and oceans). Endocrine disrupters influence the immune system negatively, which is clearly disadvantageous in a pandemic. Even levels of antibiotics are increasing on land and in bodies of water, which leads to an increase in antibiotic-resistant bacteria, and, again, increases the risk of more dangerous pandemics in the future.
 - (iii) *Systematic increases in the physical degradation of the environment* (for example deforestation, continued paving over of arable land, overfishing and poor land-use planning). Brutal forestry and agricultural practices also contribute to physical degradation. All of this exacerbate climate change and further reduce resilience (resistance), including resilience in the face of coming pandemics.
 - (iv) *Power structures that degrade trust.* The fundamental prerequisite for strong social systems is a feeling of general trust among people and trust in social institutions. Research shows that trust is undermined when people believe that those with power are abusing it. This is particularly true when power structures create hindrances in five areas that are crucial for creating trust: health, influence, competence, impartiality

and meaning. For example, a biased policy of redistribution leads to segregation and corruption and traps the poor in unsanitary living conditions, which creates great risks for illness and the spread of disease. The role of so-called “wet markets” in Asia as well as large, industrial animal processing plants throughout the world that produce chicken, turkey and pork play a significant role in the occurrence of epidemics and ought to be something everyone is talking about.

In short, the climate and Covid-19 are only a small part of all the growing concerns and impacts that will result from the fact that the very design of society violates the boundary conditions for social and environmental sustainability. That is, if, due to society’s design, concentrations of pollutants from mining industries and other societal production continue to increase in the environment, physical degradation is allowed to continue, and power structures that erode trust among people and trust in institutions become entrenched.

Our economic systems are a completely human construction. For almost 100 years, a prioritized political goal has been the maximization of the growth of goods and services, as measured by GDP. GDP is a political measurement of national success that highly values the flow of resources, regardless of whether they are linked to the degradation of nature or society. This was reasonable in the past, when poverty was widespread and just stimulating the development of economic activity was important. But this goal is obsolete in a time when the flows of some resources have become so large that they violate the boundary conditions for sustainability, overstep the planetary boundaries and risk harming the biosphere to the degree that it begins to lose its potential to support civilisation. It is therefore high time to develop more sophisticated economic systems that distinguish between destructive flows that must decline and flows that move in the direction of sustainability and must increase. In addition, to reduce the risk that we destroy the future, we must also abandon discount rates and bonus systems that punish long-term investment. It is also obvious that we need to revise laws governing joint-stock companies to ensure that paragraphs about their purpose go further than simply maximizing the short-term rate of return for stock owners.

It is sometimes said that it is more difficult to understand the root causes as described above, and act in relation to them, than to simply treat the symptoms as they arise. It is certainly not easy to get it right from the start, but without stable boundary conditions that serve as a guide within complex systems, it is impossible to achieve success. We can illustrate this with the example of chess. It is not easy to become a champion, but without an understanding of the principles of checkmate, it is not even possible to begin practicing. Empirical research also shows that it is possible to model various imaginable futures in which, together, all sectors fulfil the boundary conditions. Moreover, stepwise processes along the way reduce economic risks from the start and even increase the likelihood of resolving conflicts among goals by making it more likely that actors will find new and smarter ways forward. Uniting behind a cross-sectoral approach to developing possible future scenarios is not only possible with available technology, it has also proved to be easier and more cost-effective to work together than to try to solve problems one sector at a time. Differences in values and culture can actually increase innovativeness. It is suddenly exciting to engage in debate about goals and activities and paths towards them, equally exciting as the healthcare sector’s development of different scenarios to meet the boundary conditions for curing cancer and paths forward. This is light-years away from polarization rooted in a lack of knowledge and misunderstanding and situations in which actors forgo robust boundary conditions in favour of stories that lack definitions and measurable indicators .

The government's action in the face of the Corona pandemic includes measures to maintain liquidity and provide emergency support to ensure that society's basic functions continue to operate; these actions are necessary and correct. Even when the acute crisis is over, additional capital and support will be needed for a long time. Parallel with that, we must redefine society's long-term goals. We thus have an opportunity to allocate capital and support to innovative cooperation for a sustainable society, which we must do if we are to avoid future crises and catastrophes that are even worse. The incentive structure in the economy must be remade from the ground up, so that activities that are in harmony with sustainability goals and boundary conditions are prioritized. In addition, the organisation of research and education must be reformed in order to promote an understanding of systems, that is, how things are interrelated. Not least programs in economics must be substantially reformed.

To succeed we need a clear goal for a sustainable Sweden, concrete sub-goals and a systematic approach for allocating public support in a way that addresses the roots of today's evils. Without these, we risk focusing all our efforts on beating Covid-19, only to return to the same society about which – only a few weeks ago – we had so much “climate anxiety.”

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