Future Thinking for Sustainable Development

Alan AtKisson
Stockholm, SWEDEN (AlanAtKisson.com)

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Abstract

Clear, compelling "future thinking" – a term that refers to a large group of individual and organisational cognitive activities, including visioning, planning, scenario development, and many other forms – is a critical and often under-examined success factor for achieving sustainable development. How well actors in many regions, scales and disciplines can conceptualise the future, from a sustainability perspective, will determine whether (or not) the world effectively manages the multiple sustainability-related challenges and crises that continue to build momentum in our time. This keynote speech introduces the concept of "future thinking" in a sustainable development context. It provides a critique of current sustainable development visioning, more specifically, as being limited to concepts of damage reduction and institutional accomplishment, and considers this framing as inadequate to address current challenges. It introduces five hypotheses intended to stimulate new thinking on sustainable development visioning, and it proposes a possible research agenda for exploring possible improvements in the understanding of this central activity. In conclusion, it introduces a provocative new idea called the "Gaia Conjecture," which proposes that accumulating evidence and advancing scientific understanding is likely, in the future, to reaffirm a conceptualisation of planet Earth as a large living entity, and that testing this conceptualisation now could serve to inspire more compelling, long-lasting and robust visions for achieving sustainable development.

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Excellencies, distinguished professors and researchers, dear colleagues,

I hope you do not mind my calling all of you "dear", considering that I have only just met most of you. But everyone who has volunteered to serve in what I have called, in previous books, the "army of sustainability change agents" is automatically dear to me.

This is especially true now. As of January 1 of this year, I formally declared myself retired. It is an odd feeling: I have no board of directors or national government to report to, no management team to motivate and guide. For the first time in many years, I am speaking not as the representative of any organisation, company, government, or intergovernmental body, but simply as myself.

Also for the first time in many years, I discover that I have ample time to observe, think, and write. This freedom leads, however, to a certain conundrum. Like the famous American writer E.B. White, I notice more and more clearly that the world is simultaneously full of fantastic beauty and enormous problems. In one of my favourite quotes, White put it like this:

If the world were merely seductive, that would be easy. If it were merely challenging, that would be no problem. But I arise in the morning torn between a desire to improve the world and a desire to enjoy the world. This makes it hard to plan the day.1

But at this conference here in beautiful and historic Gdansk, we are gathered from many countries and disciplines with the clear purpose of improving the world. And we are using a specific lens, a special way of

doing what I will start referring to now as "future thinking", something we call "sustainable development". And as you will see in my conclusion, I believe that through sustainable development, these two things can come together: improving the world, and enjoying its beauty.

My intention in this address

Of course, as the opening keynote speaker, I hope to find some sources of inspiration for you in these difficult times. I also need to be a bit provocative. And of course, I was very impressed when reading through the program for this event. There is so much knowledge and expertise in this room and online. In fact, as soon as I had accepted the invitation from Professor and Vice-Rector Arnold Bernaciak, I became worried. What could I possibly offer to such a distinguished group?

It took some head-scratching, but here is what I have to offer. Not my detailed expertise on sustainability, because that is frankly a bit dusty, as I will explain in a minute.

What I have to offer is a certain perspective. A way to think about sustainable development — a way of sustaining our own hope and optimism — that involves looking farther back in time, and farther forward, than we usually do.

I will also offer you a few ideas that I am currently writing about for my next book. These ideas are not yet fully cooked. I am testing them here, and I invite you to corner me at the coffee break and tell me how to improve them.

Let me give you some background

I've been active in sustainable development a long time, and I've been involved in many different chapters of its evolution, serving in many different roles. After first getting infected with sustainability-related ideas such as systems thinking at university in the late 1970s, and then doing many different jobs in the 1980s, I began my professional career in sustainability as a journalist, editing a magazine devoted to the subject, starting in 1988.

That editing job introduced me to many experts, mentors, and friends, and soon I was eager to do something about sustainability, not just write about it.

My first initiative was an all-volunteer project called Sustainable Seattle, which several friends and I started in 1991.2 That project turned out to be the world's first initiative to produce an integrated system of sustainability indicators for a city. It used a methodology very similar to what this conference is calling the "Triple Helix" model, where different sectors come together to collaborate. And it got a lot of national and international attention at the time. I am happy to say that the organisation still exists, 35 years later.

After that came many years of consulting, developing tools and methods, leading other organisations, advising leaders and decision-makers, and creating various initiatives, until I ultimately found myself in a senior decision-making role, working for and representing the Swedish Government as Assistant Director-General for the Swedish International Development Cooperation Agency, Sida.

I want to tell you about one of the last initiatives I was personally involved in starting, while at Sida, because it was very different in scale from the first one, in Seattle. At Sida, we helped to start the Global Investors for Sustainable Development, GISD, a UN-hosted global alliance convened by the UN Secretary-General in 2019. GISD includes the heads of many of the world's largest investment firms, representing about USD 16 trillion in assets. I need to stress that the idea for GISD came from, and the launch-related work was done by, people at the UN Secretariat and on my staff at Sida. The UN was interested in essentially copying, at the global level, a similar national-level network called Swedish Investors for Sustainable Development, SISD. I had the privilege of encouraging my colleagues to pursue this scaled-up initiative, green-lighting it, and facilitating some aspects of its formation, from my position in Sida's leadership.

The distance between those two initiatives – the first one a pioneering local program run by volunteers in 1990s, the last one a UN-led global alliance of giant investment firms in 2019 – says a lot about how far

sustainable development itself had advanced during those years. I tell this story because remembering just how far this movement has come, its long-term progress, is one of the things can sustain our optimism when times get tough in the short-term, as they have now.

What sustainable development has become

My own career has followed along with sustainable development's continuous process of mainstreaming, and this explains something about why I come to you with a perspective, rather than up-to-date expertise. About a decade ago, I changed roles. I moved from being a consultant – that is, a strategist, advisor, and an acknowledged expert in the field of sustainability and sustainable development – to being a senior government official and executive leader.

As many people in this room know, when you move into these formal and relatively high-level leadership positions, you have less time for going deep into specific subject matter. Your expertise quickly becomes outdated. You tend to start giving what are called high-level talks, as well. In the academic world, to call a talk "high-level" is not a compliment. It means the talk was very general, maybe a bit fluffy, and probably lacking in substantive academic content.

So when I was preparing this speech, and I was concerned about the level of content in this talk, I turned to ChatGPT, the AI system I use most often. And I asked it this: suppose a person has been somewhat absent from the substantive work in sustainable development for the past decade. What advances in the profession, during the last ten years, would that person need to get familiar with, in order to work professionally and credibly in the field of sustainability today?

ChatGPT produced an annotated list of the most important new policies, regulations, reporting standards, investment processes, leadership models, multi-stakeholder initiatives, action plans, mechanisms, taxonomies, and other key topics that it felt I should know about.

There were 61 of them.

A lot of things on that list had acronyms. I am sure the real experts in the room would recognize all of them, too. TCFD, SBTI, CSRD, ESRS, CBAM, TNFD ...

I was vaguely familiar with maybe two-thirds of the items on that list of 61, enough to know that they were all very rich, sophisticated, and complex topics in themselves. Many have entire institutions built around them. Things had obviously advanced quickly, and after years focused on institutional leadership and government or inter-governmental service, I could no longer call myself an expert on any of those substantive topics.

At that point I also realized that back in the early 1990s, I had made a successful prophecy. Back then, when I was co-leading that pioneering volunteer initiative in the city of Seattle in the United States, I remember saying something like the following, in a speech at some conference on sustainability: "We are trying to build a movement here, using things like sustainability indicators and management systems as our major tools. We are trying to mainstream sustainability, to get it broadly accepted and used as a matter of course. You know what that means? It means that if we succeed, sustainability is going to become a bureaucracy."

That is where we are today, in the global movement for sustainable development. The "army of sustainability change agents" I alluded to earlier has become an enormous bureaucracy. That is not a criticism. That is an indicator of success. Key ideas that were once considered radical, marginal, improbable, etc. have now become policies, regulations, initiatives and follow-up mechanisms, sometimes formal and government-based, sometimes "soft" and driven by the UN, NGOs, or business associations, as voluntary agreements. All of that bureaucratic work is fed by high-quality research, academic publication, and popularized management literature, which is itself, of course, a kind of bureaucracy.

But it is very difficult to motivate people to fight for bureaucracy; they are usually more motivated to fight against it. And as we have seen in a number of corners of our world, sustainability and sustainable development are experiencing a growing resistance, retrenchment, and sometimes attack.

I will just share the most recent example of this trend to come across my desk. I am quoting directly here – without political comment – from an official US Government statement made as a press release from its Permanent Mission to the United Nations, in connection with a review of UNICEF's planning process. The document is entitled, "US position on 2030 Agenda and the SDGs," and it includes the following two sentences, which I find very clarifying:

"The United States also reiterates that the 2030 Agenda and the Sustainable Development Goals are inconsistent with U.S. national sovereignty and national responsibility for development. We will not reaffirm its use as a matter of course, including in strategic planning documents."4

That brings us up to today. But remembering the decades-long history of sustainable development, its many advances as well as its current challenges, provides a bridge to the key ideas that I actually want to bring to your attention today, in connection with the book I am now writing.

This is the third book in a trilogy that has taken me 30 years to write

My first book, Believing Cassandra (published 1999, updated 2010), told the story of how we arrived at this problematic global moment, and of the scientists who tried to warn us about what was coming.5 I focused on the classic 1972 book The Limits to Growth, whose authors were criticised for being "Cassandras" – that is, doomsayers. Now, this was deeply ironic, because Cassandra, in Greek mythology, is a prophet whose prophecies always come true. She could see, for example, that there were soldiers hidden in the famous Trojan Horse. But she had been cursed by the gods so that no one would ever believe her prophecies, even though they were correct.

Believing Cassandra introduced the term "sustainable", which I first encountered in The Limits to Growth back in 1979, to a contemporary audience.6 The second book in the trilogy, The Sustainability Transformation, offered ideas, tools and methods for working with the concept practically and strategically. It was mostly directed to professionals and students.7 In my mind, the trilogy I was writing also had the structure "past-present-future". Believing Cassandra was about the prophets of the past, The Sustainability Transformation was about creating training programs, strategies and plans in the present.

So this final book is about the future, and how we think about it, from a sustainability perspective. It is called Gaia's Dreams, drawing on the rich imagery of Greek mythology about Gaia, which is a name for the Earth-as-goddess; but also on the so-called "Gaia Hypothesis", a scientific theory put forward years ago by James Lovelock and Lynn Margulis, about how the Earth's systems seem to work together to sustain the conditions for life. The Gaia Hypothesis was sharply criticized and is still under debate, a point to which I will return later.8

The other word in that title is "dreams", and here I am invoking all the ways we think about the future, from vision statements, to strategic plans, to scenarios, daydreams, hopes and fears. "Future thinking" is a vast topic, so I am grateful for the fact that during the time I was just thinking about this book, another author published an excellent summary treatment of "future thinking" from a scientific, philosophical, sociological, and big-history perspective. If you are interested in this topic, I warmly recommend that you read David Christian's Future Stories (2022).9

This is what I would like to invite you to think about

Periodically, we need to raise our game in the sustainability movement, refresh it and renew it. This is one of those times, and that is one of the motivators for both writing this book and for starting to talk about it now, before I have even completed it. I believe that people working in sustainability and sustainable development need to get a whole lot better at future thinking, and we need to do it quickly. Let me zoom in on just one issue: vision. Just what is our vision of success? At the moment, we have two answers to the question.

One vision of success involves stopping the world from breaking things, or even just slowing it down a bit. At its best, this vision also involves trying to repair things that are broken. The concept of going "Nature Positive" is a good example of recent initiatives that reflect that "stop breaking things" vision.10

The other vision of success involves fulfilling our bureaucratic obligations: establishing appropriate policies and laws, developing adequate strategies to follow those policies, and hitting our quantitative targets. The 2030 Agenda and the SDGs are a good example of that, even if the Agenda is treated as voluntary.11

I believe these two visions are no longer adequate. Visions of "not being so bad" or "being dutiful bureaucrats" will not sustain the energy of the sustainable development movement for much longer. I believe that we need to get a whole lot better both at visioning, and at describing our visions in compelling and attractive ways, and we need to do it quickly. The same goes for how we describe our strategies, plans, even our hopes and dreams for a sustainable future.

In the final section of this talk, I am going to present a list of five theses, or rather hypotheses. I cannot prove them to you. But I believe they are worthy of your consideration, and potentially, of your professional attention, as a researcher, teacher, advisor or leader. And I will be very open to your feedback.

Five hypotheses to start us thinking differently

Hypothesis #1: Future thinking is far more pervasive, and far more important, than we have previously understood.

The first thing to know about future thinking is that it is not limited to human beings. The science is well-established here: future thinking is a form of information processing that virtually all life-forms do, at widely varying levels of consciousness and sophistication.12 We humans appear to be extremely good at it. We are especially good at conscious visioning: dreaming up preferred futures, and realizing those dreams. The university where we are meeting now, the WSB Merito campus in Gansk, is a great example: started by a handful of friends 30 years ago, WSB Merito is now the largest private university system in Poland, with over 100,000 students in 12 cities.

But I am not aware of rigorous studies examining just how essential clear and comprehensive future thinking is to the realisation of a sustainable world. There lies a possible recommendation for new research.

Hypothesis #2: When it comes to creating a very compelling and attractive vision of a sustainable future, and embedding the future thinking associated with that vision into mainstream processes and systems, we are still not very far along.

We need only consider the current trends in areas like climate change, biodiversity, peace, equality, and human rights to see that whatever we are currently doing in the arena of collective future thinking, it is still not adequate to lead us to sustainable outcomes. Despite 30 years of great progress, including a global Agenda and set of global Sustainable Development Goals, we still seem to be imagining, planning, and realising a world that is very far from sustainable in the long term. Future thinking for sustainability has still not been integrated deeply enough into the daily decisions, collective mid-term plans, or the long-term guiding visions that are actually shaping our world.

Hypothesis #3: Future thinking for sustainability is a skill and a culture, and we can get better at it.

Again, I am not aware of any studies focused on just this point. But one way to get better at future thinking, and especially visioning, is to study successful examples. And one of the current successful examples we can study is, unfortunately, populism. Many populist leaders are very good at both framing and promoting a vision of the future that, regretfully, tends to turn societies away from sustainable development.

What can we learn from their methods, and from what appears, at this historic moment anyway, to be working? This leads me to the next hypothesis.

Hypothesis #4: One way to strengthen future thinking towards sustainability is by identifying and then promoting a simple, common, big-picture, long-term, guiding perspective.

This is appears to be one of the secrets of populism's current advance: rallying people around a big, clearly-framed, compelling idea. One can point to many other development processes from the past century that have also practiced this approach with success. Having a relatively simple, commonly understood,

widely shared, long-term picture of where we should be heading sets a frame for all the other future thinking that needs to occur, if we are to make rapid and lasting progress.

As I noted above, I believe we are lacking that, today, in the global movement for sustainable development. "Sustainability" itself, as a concept, has always motivated me, but it is not compelling for most. Implicit vision statements like "Try not to be bad" and "Achieve our bureaucratic goals" are widely accepted approaches, especially here in Europe, but they are not adequate as overall, guiding perspectives. We need something better, and it will take some effort to find it. The next hypothesis underscores the urgency around doing so.

Hypothesis #5: If we can identify and frame a new, simple, common, big-picture, long-term, guiding perspective for sustainable development, we can reverse its current retrenchment and make faster and longer-lasting progress.

This last hypothesis is by far the most difficult to prove. Nonetheless, I am strongly urging that we test it. And in my forthcoming book, I will be presenting one possible candidate for that perspective, based on something I call the "Gaia Conjecture".

Now, I mentioned the Gaia Hypothesis earlier, and that it was still being debated. One of the things that made it controversial was that the Hypothesis seemed to imply that the Earth was a kind of giant, living entity. That perspective was very harshly criticized by scientists, and that aspect of the Hypothesis has slowly faded over time.

The Gaia Hypothesis has, however, been enormously influential, especially in fields like geochemistry and climate modelling. This idea that the systems of the Earth are deeply interconnected, that they influence each other at large scales and over long time periods, is now widely accepted and continues to inspire a great deal of new research.

However, I admit to still being very attracted to the original idea that the Earth should be considered as a giant, living organism, of which we are a small part. We humans could then be seen that part of the organism that is particularly gifted at this broad set of cognitive processes we have been calling "future thinking."

So I have been asking myself this question: what would happen to our future thinking if we came to the shared conclusion that the Earth was, in fact, alive? How would that idea, or that knowledge (if we eventually treat the idea as such), affect the way we create our long-term visions, our strategic plans? And to follow that thread a step further, if we think the impact of that knowledge might be positive, or perhaps even transformative, should we wait to find out whether future scientists will finally come to that conclusion?

Introducing the "Gaia Conjecture"

I personally believe – or rather, my conjecture is – that science's understanding of what constitutes "life" will continue to evolve, and that ultimately, science will come to a conclusion about the Earth that is more similar to to what the original Gaia Hypothesis implied: that we should consider the entire Earth as a "superorganism", something alive in its own way.

Our ideas about what constitutes life are still very young and under development. I make the comparison to our ideas about animal consciousness. Until very recently, science generally treated all non-human animals as machines or robots, with no consciousness, no feelings of the kind that we feel. That view has proven, in recently decades, quite wrong. In my view, this updated understanding of animals as having feelings and some form of conscious experience was an obvious and expected outcome of scientific progress. Almost any owner of a dog, cat, or other pet would have had a difficult time accepting the previous, scientific consensus, this insistence that other relatively advanced animals did not have any consciousness, that they did not "think" or "feel" in some meaning of those terms. In the same way, I have a hard time looking at those stunning pictures of the Earth taken from space, knowing what I know about the life that is here, and knowing a bit about all the long-term, large-scale, complex processes that sustain that life, and not

believing that we should consider the whole Earth as, in some meaning of this term, alive. Not conscious, not thinking "big Gaia thoughts", but alive all the same.

This leads me to the Gaia Conjecture. A conjecture is a kind of qualified guess about how things are likely to turn out. It is a supposition that is not yet supported by all the evidence, but for which there is enough evidence that one can decide it is time to take action on it.

The Gaia Conjecture is this: Our definitions and theories about what constitutes life, and how life originates, will continue to evolve. The evidence about our planet's complex systems and their interactions will continue to accrue. Eventually, science will come to the conclusion that we humans are, in fact, part of a giant living entity we call Earth. That knowledge is likely to have a great impact on how we see our planet, and to accelerate our efforts to achieve sustainable development. For this reason, and given the negative trends we see in many systems that are necessary to sustain life, it makes sense to start thinking this way now, even before the evidence actually bears it out.

I am partly inspired to make this Conjecture by Pascal's famous "Wager", or bet. Pascal was one of the minds that developed the basis for the modern science of statistics, and he did that partly because the art of gambling was such a big part of that period's social life. But he was also living in an age when many intellectuals wrestled with religious doubt. Pascal noted that if God existed, the rewards for believing in God were great, and the consequences for not believing were very harsh. If God did not exist, however, then the consequences of both belief and disbelief were essentially nil. Therefore, he found it more rational to place his bet on the existence of God.13

The point I am trying to make with the Gaia Conjecture is the farthest thing from a religious one. My point is scientific and philosophical, but the logic is similar. If the Gaia Hypothesis proves to be true, and if our future thinking and visioning about achieving sustainability could be significantly strengthened by thinking of the Earth as a large living thing, then there is good reason to start working with this idea now, or at least experimenting with it. If the Gaia Conjecture proves wrong, and future science reconfirms that the Earth – while enormously complex and full of life – is not itself "alive" in any meaningful way, then our Gaia-inspired visions might seem a bit fanciful. But no harm will have been done.

In sum, there is no reason to wait for scientists to arrive at the ultimate answer. We could start exploring the Gaia Conjecture today. We could at least begin researching whether thinking of the Earth as a living entity, really embracing that idea, might make a positive difference in how people create vision statements, write strategic plans, shape new policies, and do other forms of collective future thinking. Whether it might make those examples of future thinking more attractive and compelling in the short term, and more robust in the long term. Whether future thinking formulated on this premise can add to our sense of commitment, optimism, and hope.

Entranced by the beauty of the planet

Obviously, I think it might. But I confess that I am quite entranced by the beauty of this planet. That has been the case ever since the first images of it floating in space were brought back by astronauts in the late 1960s. There are many people and experiences that I credit with guiding me into a career in sustainability, but I wonder now if the seed was planted very early, by those images. In my youth, I also wanted to be an astronaut, mostly so I could gaze at the Earth from space. I simply loved it, and to this day I love reflecting on the fact that when I look at Earth in this way, I am in fact looking at everyone and everything that is alive. To be honest, I have trouble believing that the whole Earth, Gaia if you like, is not alive in some meaning of that term.

And that leads me, finally, to a provocative question. I have promoted the idea, framed as the Gaia Conjecture, that we begin seriously to consider the possibility that the Earth is alive, because I believe that we will ultimately recognize it as such. I have not been proposing that Gaia, the Earth, is a conscious entity. That would be a very big stretch, both for researchers and for management professionals.

But it is no stretch at all for the artistic imagination. So I will conclude this speech by engaging in a bit of purely poetic speculation.

If Gaia were a conscious being, with its own capacity for future thinking, and its own dreams of a positive future, what would Gaia's dreams be? And is it just possible – given that we appear to be the most conscious species on this planet, and the Earth's most sophisticated future thinkers – is it just possible that we are, or at least we must become, Gaia's dreamers?

Thank you again for the invitation, and for you attention. I look forward to continuing the conversation.

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