

Transcript | A Beginners Guide to Systems Thinking

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Really beautiful day. As you're all aware today, we're going to be covering a really, really useful skill and mindset in government, which is systems thinking.

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This is an approach that has many positives from helping you to be more predictive and strategic in your work.

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To being a catalyst who's breaking down silos between teams and departments.

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That we know can make your work really frustrating in government. So it's a really important skill to have and it's great that you're here with us today to learn about it. For those of you that might be joining us for the first time, welcome to apolitical. We are the world's largest community for government used by over a quarter of a million public servants and policymakers from more than 170 countries.

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And our mission is a pretty simple one. We want to help make governments smarter. And we do this by putting the best knowledge and skills at the fingertips of public servants just like you.

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So thank you for joining us today. Let's see who we have with us. Jeremy, thanks for joining. Simon.

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Scott, Daisy. Ottawa, Liverpool, Nova Scotia Hi, Carl, senior user researcher at Edmonton in Alberta.

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Ipswich... Excellent. Oxford.

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Amazing. Berlin, very jealous. Montreal, Sheffield, everyone, keep sharing, keep joining as you're joining. Great to have you all with us.

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We're really thrilled to extend an invitation to today's speakers and your peers in the public service from around the world in the systems thinking community. I'm sure many of you are already members where there's over 5,000 members in that community, but if you haven't heard of it.

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It's definitely the place to be, whether you work in policy, project management, data, or any other role across government.

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This forum is a place for you to share resources, ask questions.

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And gain collective wisdom from your peers in the global public service on the application of systems approaches. So if you're not already a member, I'd really, really recommend joining. My colleague Doug will share a link in the chat.

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And you can follow that and join the community. I'll get a few quick technical notes out of the way before we get into today's conversation. This event is being recorded for on-demand viewing.

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On a political website. So we'd ask you very kindly not to record it for yourself But we'll be sharing a recording straight after. If you hear a police siren in the background, don't worry, it's just East London.

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Contact details for privacy concerns are in the apical homepage footer and closed captions are available throughout the event.

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And you can toggle these on or off in your screen settings.

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Excellent. That's all out of the way. So before we introduce our really excellent speakers, we're just going to get a few, run through a few poll questions just to get a sense of where everyone is coming to today's discussion from. You'll see these pop up. Just answer them naturally and we can kind of talk about how people Feed about them. So the first question is, how familiar are you with systems thinking?

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Let's see where we go. I tell you right now, it's pretty evenly spread between somewhat and slightly Maybe just edging ahead for slightly familiar. Very, very few people are extremely familiar or very familiar, which is good because obviously this is a great place to learn.

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Excellent. Please do keep sharing. You can see the results. Yeah, so a nice sort of like 70% of you in the kind of slightly and somewhat familiar Yeah, so really great. This is a definite audience I guess will be here to learn and share their experiences.

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Excellent. We'll do one more question. This one, yeah, so which policy area or problem do you think is the most complex and difficult to address?

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Which policy area or problem do you think is the most complex and difficult to address? Of course, if it's your own area and it's not listed here, please do share it in the chat and I'd be just as interested to hear from you.

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Climate change racing ahead. Healthcare and public health systems, economic inequality and poverty interesting that education and workforce development isn't making much of a move.

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I'd be interested to hear if anyone has any other thoughts that they would like to share in the chat.

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Criminal justice and policing, says andrew yeah Yeah, I'm sure all of these, I guess that systems thinking, isn't it they all intersect climate justice interesting okay so we can see so climate change, I think, is the winner. And then economic inequality and poverty

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Followed by healthcare and public health systems yeah Dawn says I work in the workforce realm and in rural areas and have limited resources. Yeah, that can be incredibly complex.

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Travel and transport says, excellent. Please do keep sharing those and we can bring them into the conversation at the end with our speakers. Speaking of speakers, really, really happy to introduce two excellent experts that are with us today. Anne-marie Eisler and Dr. Andrea Basi.

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Who are joining us today. Anne Marie is a senior program and policy advisor at the UN World Food Program.

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And it's currently based in Johannesburg in South Africa. And Dr. Andrea Basi is senior associate at the International Institute for Sustainable Development and founder and CEO of Knowledge.

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Consulting company exploring socioeconomic and environmental complexity to inform decision making on sustainability. So to expertly placed speakers to share their reflections on systems thinking and we're really, really grateful to have them with us. You can see more of their bios in the resources section

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Of the Zoom panel in front of you. Great. So before we load into today's masterclass, I thought we could start with a quick icebreaker. So this is a question for all of you, but also for our two speakers.

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So you feel free to answer the question in the community or in the chat, which my colleague Doug is sharing.

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So the question is, if you had to explain systems thinking to a five-year-old.

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What analogy would you use? So if you had to explain systems thinking to a five-year-old.

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What analogy would you use? I'm going to put our two speakers on the spot and I'll ask Henri, you first, any analogies that come to mind?

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Yeah, the analogy that comes to mind right now with all the changes going on in the UN But thinking as a five-year-old, explain it to a five-year-old for me is a seesaw.

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If one child jumps off, the other one drops or goes flying. So really, when you think about systems thinking, you notice that the seesaw is connected underneath, right?

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So if one moves, the other one shifts. So you can't fix just one without thinking about the whole rest of the puzzle. So I would say seesaw.

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For a variety of reasons. Back over to you, Jesse. Thanks.

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No, that's so wonderfully simple, but captures the complexity. Andrea, one for you, maybe?

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My side, I would say that the need to use their eyes to actually open their mind and trigger thinking, meaning if they look at the sea and they want to understand what's going on, they need to look under the water and see the ecosystem that is going on there.

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If you look at the forest, you need to understand the trees, the species, and how they interact with one another.

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In the same way as they look at a government building, a prime minister's office, there's a lot of complexity in there in between the departments and offices. And to understand how that works, I need to figure out these relationships.

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Yeah, that's really, really great. I love both of those. There's some really great ones in the chat. Sarah says a Rubik's Cube.

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Eric talks about a sausage making machine. Wim says a pond, Jessica talks about little parts that make the big parts move, a clock's gears.

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The body, says Emmanuel. Yeah, great. The board game Jenga. Excellent. Yeah. Amazing. We'll keep sharing those In the meantime, really, really pleased to introduce Andrea, who will be speaking for the next 10, 15 minutes about systems thinking. So Andrea, over to you.

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Yes, thank you, Jesse. So I'll start sharing my screen now. And I want to take all the participants through a bit of a journey to explain what systems thinking is because it takes different perspectives to understand really what the methodology offers.

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And I'll start, of course, with the definition so that we have it clear what this methodology can offer.

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And what it targets in terms of the analysis that you can perform with it.

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And system thinking is really a discipline for seeing holes, for seeing how the system behaves in relation to its components. And so it's really about understanding the interactions that are taking place within a system not only from a personal point of view, but trying to understand also the point of views of the other participants in the system

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And the mechanism is in which there is interaction within the system.

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Now, why do we need this nowadays? Because if you look at history, we are generating way more information now that we did in the past.

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There is a lot more interdependency thinking about the global economy to mention one, or geopolitical security at the global level as well. And we have a capability now to accelerate change faster than we have ever seen in the past.

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So change is happening at a faster rate, generating bigger changes over time, bigger impacts over time and globally.

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So that's why we really need to understand systems and how they work.

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Now, systems thinking is a methodology created to make sure that we can analyze the events that are taking place. So the information we get on the news every day.

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But also trying to understand why these events emerge. And what are the underlying rules, rules of behavior in a way that make sure that there are structures that give rise to such events.

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So the underlying theory here is that unless you understand what is happening in the system and the underlying structure that makes that happen.

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We will not be able to identify what are the entry points for intervention.

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And the leverage points as well, how to make the best out of our limited time, money, resources, more in general.

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So we often use this representation, the iceberg, where we see that the events are what is transparent, available, measurable And it's above water.

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So this is exactly what just happened. We have information on something that takes place. We can measure it.

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But then what is really interesting that we try to figure out with systems thinking is why that has been happening.

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And we looked at that before? Have you had that similar experience before? And what are the forces at play that contributes to the emergence of certain patterns that then result in events taking place?

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And then ultimately, why are we allowing this to happen? What are the rules? What is our thinking, our beliefs that make sure that we created structures that generate patterns and trends that generate events?

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So it's really an in-depth exploration of why change happens. Again, not from an individual's point of view, but from a systemic point of view.

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To understand the change happens At times, simply because we don't have the same perspectives and we don't have the same underlying knowledge about systems and so I want to look at then what we can do well in terms of complexity, because I saw complexity was mentioned earlier together with chaos theory in the chat.

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And what we cannot handle very well. So we normally distinguish in the field between detailed and dynamic complexity.

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Detailed complexity is what you see here. It's basically a production chain we see Iron and steel manufacturing. We see the assembly line of vehicles. And this is where we may actually have a thousand different steps in an assembly chain or in a manufacturing chain. But each step is

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Implemented after the previous one. So if something goes wrong in an assembly line.

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There would be a flashing light, a red light going off telling us, here is the problem, come and fix it.

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And as soon as we fix it, we can start again with that chain. We can handle that very well. We do that with engineering. We have studies, we have knowledge to work very effectively in this domain.

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On the other hand, dynamic complexity is where we struggle a bit more. And so this is where we have maybe just a few interconnected components in the system, but it's the interconnection that makes the system difficult to understand. And so this is where the dynamic element comes up. In chaos theory, we just need nine variables, have it interconnected with one another.

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To generate systems that we cannot forecast. So think about in this case, GDP being affected by population in relation to labor force and then affecting employment. And employment can be allocated into agriculture, industries and services, tourism as being part of services.

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But then as we perform our economic activities, agriculture, for instance, we're going to affect forest land.

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We have an impact on water quality. We want to affect biodiversity, all things considered, which goes on to affect tourism again. So we create a feedback dynamic, a circle relationship.

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Which goes on to affect employment and GDP. So this is where these dynamics become a bit tricky and we can forecast them. We can analyze them.

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But what becomes a bit tricky is to understand whether our actions are generating positive outcomes only in one part of the system And that positive outcome is coming up at the expense of other components of the system.

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And so balancing the system, I saw the analogy that was mentioned in the chat earlier by one of the attendees was a soccer team, a football team.

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If you play as a team, you perform better than having a star or two stars in the team, but then playing a disjointed way.

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So systems thinking applied to policymaking just one specific example is really about understanding how to get the best performance out of the system taking into account social, economic and environmental outcomes that may emerge from the implementation of our actions.

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Now, to explain how to use systems thinking I want to take you through four different journeys. And again, it's difficult to package everything in such a short session, but I want to start with personal reflections because understanding systems starts from understanding our own perspective on how the system works and why it behaves in a certain way.

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And so when it comes to personal reflections, what we normally use is this image on the left.

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Kinesis triangle. And the question I normally ask the people I talk to, whether these are trainees or professionals that work in different fields and want to apply this methodology.

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Is how many triangles can you count in this image? And I normally give around 30 seconds to a minute for people to start counting the triangles and they will see a big white triangle here in the middle, they see one in the background this

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Black one here, those that are about my age in between 40 and 50, they will recognize the little Pac-Mans on the side.

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And so they said, well, that can be a small triangle. That other one can be a small triangle. And they start counting seven, eight, nine, more than 10.

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But in reality, there is actually no triangle drawn on this image.

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We infer from the shapes that we have in this image that there are triangles there.

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But normally I get answers that range from six to 15 triangles.

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And so this is important to show that we see something and we may perceive something different. And based on our background, education, interest, experience in life.

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We may experience and interpret the same information in a very different way.

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And so that is always important to take into account. Case in point, different economies may have very different views on the economy. And of course, they would have a different view on anything pretty much when compared to engineers, when compared to environmental scientists and so forth.

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Now, there are other examples I use and you will find it in the systems thinking playbook, in the climate change playbook that are all focused on using system thinking exercises to get people to understand what the methodology can offer.

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One of them, one, two, three goal is an exercise to understand leadership And to figure out that we tend to follow the leader as opposed to think with our mind and decide what's best for us and for the system.

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And another one, thumb wrestling, is about understanding that we tend to be always in competition with others.

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Not to collaborate and try to figure out how to come together to make the system work in favor for both of us or for the multiple parties involved in the system.

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Happy to share more about this later. What really counts, though, in the context of system thinking is a personal process is that there are feedbacks in the system. There are feedback loops Those circular regulations where if we take a decision and we

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Push the problem away, that problem may well come back. And if it comes back in the context of policymaking, the person sitting here at the center It's normally not the same one that pushed the problem away And so we don't have memory of history of what was done and why it was done and so on and so forth.

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And so different decisions are normally being taken that can backfire.

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And so very important to think what others people think, what is their perspective, and then what is the rationale for implementing certain solutions that to them.

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Are effective solutions, but to us or to a person that takes more of a systemic view may actually backfire.

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The risk is non-linearity, a key feature together with feedback loops and delays in system thinking, because small actions can lead to very large consequences or very large investments can lead to no consequences.

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And so this is all about understanding how a system reacts to our actions.

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Our work could be myself as an individual or we'll see it later on could be a government, could be an investor.

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But if you understand how the system works. We can try and prioritize those actions or implement a small change and generate a massive leverage factor that gives us a very large positive impact for the system itself.

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So from a personal perspective, understanding our view our interpretation for how the system works, taking into account also the perspectives of others And always keeping an eye on feedback loops and nonlinear dynamics.

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Now, how do we apply this to problem solving? Second journey. So we take our personal reflection, we go through using the methodology for problem solving.

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And here, there is a book I actually co-authored called Tackling Complexity that goes over the issues that we have created for ourselves over time by using primarily linear thinking.

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And these are presented in a series of different steps that you see in this slide and the following ones, where we go through the decision-making cycle.

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We normally start from the identification of the problem. We identify what is causing the problem in the second step.

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We formulate a strategy and assess it. We go ahead and implement it through decision making. And then we do monitoring and evaluation.

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So for each step of the decision-making cycle. There are issues we created for ourselves.

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At first, with problem identification, we tend to think that if we have a lot of data.

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We can find the ultimate optimal solution for the system and predict with absolute certainty its behavior. We can optimize everything That being said, if the problem is dynamic and there are multiple causes and multiple effects.

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From the problem, emerging from the problem, we cannot just use any data we want. We need to find the relevant data. We need to identify causes and effects.

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To identify how to use this information. And with big data and AI, we know that a lot of information can be generated But not all of it is relevant.

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When we move towards system characterization. We tend to think that every problem is a direct consequence of a single cause.

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Meaning once we find the cause, we stop. But if we take a systemic approach, we need to figure out that there are multiple causes to the same problem. It may just happen that in the past, one cause was dominant.

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And then in the future, that cause may become dormant and another one may emerge.

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So we really need to take a systemic approach to figure out what are the dynamics at play and how dominance in the system will change.

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Extending on that, we normally tend to think that if we find the solution.

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That solution will just solve the problem and the problem will forever go away.

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And so this is where we bring back that concept of feedback loop.

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We need to realize that systems that we interact with they respond to our input, to our shocks in a way, right? When we implement intervention options.

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And so when a tax gets implemented. There would be a shift in investments to areas that would be more economically viable.

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Or what I see very often when I work on emission reduction and climate mitigation strategies. If I implement energy efficiency and support families reducing costs, let's say in developing countries.

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What they will use that avoided cost for. If they buy a bigger TV, if they move into a bigger apartment.

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Then there is no net reduction in emissions and energy use.

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So the system responds as we respond also to changes in the system.

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And then when we move to decision making and implementation, we normally tend to think that we can optimize the system.

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And if we find the optimal solution, that solution will be optimal for everyone.

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But here we get into the issue of inequality, for instance. We get into the issues of winners and losers.

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We don't normally get one single intervention option that solves problems for everyone and just generates benefits. And so we need to figure out using different perspectives, what are the pros and cons of each intervention and build on top of it.

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Add complementary intervention options, again, using a systemic perspective to avoid the drawbacks but maintain the benefits.

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And then finally, with monitoring and evaluation, we normally tend to think that it would not affect the decision-making cycle because if we find the optimal solution.

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Why would we even bother monitoring the performance of the system? It's optimal, so it's time wasted.

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We don't need it. But in reality. As the systems we deal with are dynamic.

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We need to assess the effectiveness of the implementation of our interventions because they may result in side effects.

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They may even result in synergies and having more positive impacts than we thought.

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And so we want to leverage these and make sure that we take that into account in future decision making processes.

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Now, these may all sound quite abstract, but we have tools that can help us visualize connections in the system.

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And one of these is causal loop diagrams, systems mapping. I'm sure many of you have heard of this.

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And it's qualitative. It doesn't include it in numbers or equations, but it just allows us to put on paper or on the screen key variables in the system and show how they're interconnected with one another.

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Now, this forces us to think in terms of cause and effect.

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To take into account feedback relationships and to then see how we can amplify change in the system.

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And I want to show you a very simple example. Just to make you understand why these are useful.

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Let's take an example here that has to do with road congestion.

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The more population we have in a system, could be a city, could be a municipality and so on.

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The more is the vehicle stock. The more the vehicles will get on the road generating congestion.

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And if you have congestion, we waste time. We generate more emissions and air pollution. So overall, we lose productivity. For those that deliver products and goods and services as well for human health.

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And if that happens, we tend to reduce the potential for the economy to expand.

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Because we have constraints that we create in the system. And so that goes on to reduce the potential for employment growth. It constrains population because some people will say there is too much congestion. I don't want to live in a city that is like that.

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And so what do we do? Normally we find a solution in this case. That is, we go on and build more roads.

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Because if there is congestion, we build more roads, takes a bit of time, but then we increase road capacity.

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And if we increase road capacity, we reduce congestion. And so what happens when we reduce congestion? We increase productivity because you get faster to the place where we have to be.

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We increase GDP, we increase employment, we increase population and income, and with that.

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We get even more cars. So what happens then? We end up with more road congestion. Unless we keep building more roads.

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We get more congestion. So we end up with a problem that is exactly the same of the one we had in the beginning.

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But now we have a bigger problem because we have even more cars on the road.

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So if earlier we had a 20 minute delay, now maybe we are stuck in traffic for an hour.

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Until we get to the Los Angeles, the LA situation with nine different lines on the highway. And when we get stuck, we properly get stuck.

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So this is just to highlight that if we model the system, if you understand how the system works, we can see how we impact the system And if you're actually creating a lasting solution.

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What if that solution will backfire? And we need to be ready to do more or do something different.

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Now, these underlying drivers of change are these reinforcing feedback loops represented as the R sign.

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Or the balance in feedback loops. Reinforcing stimulates change in the system. So we want to trigger this feedback loop once we want to create change. We want to take the system out of impasse. But if something is happening that we want to limit in strength.

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Then we want to stimulate a balancing loop. In reality, if you look at the planet.

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There is no dominating reinforcing loop. There may be a temporary reinforcing loop that dominates, but in nature.

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We are dominated by balancing factors. But we as humans, we want growth. We want change. We want more and more and more. And so we tend to stimulate the reinforcing loops.

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Just a quick, maybe one minute notice on the presentation.

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Yep, thank you. Then on the third journey, let's extend that to learning organizations, meaning that we can look at how dynamics change within companies building, in this case, a more complex causal loop diagram. And there is, of course, a paper, there are reports and materials on this specific case. I will go quickly through this one, but you'll see some possibly

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Familiar indicators and variable names. When we look at companies, we need to invest to make sure that we have innovation capabilities, but we need to attract people talents as employers. At the same time, we need to make sure that there is brand value that is recognizable, that is affected by the capacity to innovate and the talents that we have in the company.

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And the more reputation and brand value we have. Together with stuff, the more we can generate revenues and gain market share and have profits to make sure that we keep reinvesting into innovation and so on and so forth.

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Then we can see based on this initial starting point. How intervention options can come in to try and improve, in this case, sustainability from a social point of view.

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How we can expand and have a more accommodating scenario, more than a reactive scenario, to add more, again, on the potential to create value for employees, and then how we can have a proactive strategy to make the whole set of operations in the company more sustainable from a social, economic and environmental perspective or within the business sector, mostly called ESG.

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So environmental, social, and governance related And here you can see the thematic areas. So here we are expanding the application of that causal loop diagonal system map to look at the financial performance, how that goes on to affect innovation. It triggers brand value, allows to develop human capital.

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These three components give us more projects and potentially more productivity so we can keep an eye on costs.

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And improve our financial performance. If you're effective, we reduce risks and we have a strategy that is effective in leading to these more say systemic successes.

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Now, final step. Jesse, sorry, I need to go on for another 30 seconds.

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Just wrap up, that'd be much appreciated.

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A simple Yep, yep. Another extension to this. We've seen the basic methodology and application on the personal level, the problem solving, problem solving to companies, but then broader sustainability as well.

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If you look at the sustainable development goals that we have here on the right side, we know very well that sustainability does not come from just looking at the place and measuring its performance, but it comes from the interaction of the different indicators that give rise to sustainability. In this case, the SDGs. We cannot say a place is sustainable, period. Here we have some dynamics in these two images, more environment related.

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Here we have other dynamics, more infrastructure related But we know that it is with the dynamics that are at play access to infrastructure, to services, quality of services, access to natural resources and quality resources.

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That determines sustainability. And that applies to the global, to local.

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The interaction between the environment and infrastructure, so people and businesses and so on and so forth.

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And so there is a natural extension to your system thinking for sustainability.

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And now in closing, last slide, when to use system thinking?

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Well, first, when we are dealing with complex problems that involve many actors and supporting many actors to coordinate their actions to see the big picture.

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And understand how one actor impacts the others. And now that same actor is impacted by others.

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Then when there are recurring problems, that is a sign, that is a feedback dynamic within the system that brings a problem back.

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And then when there are issues where the actions are affecting and are affected by the surrounding environment.

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It's always easy to blame something outside of the organization, but we need to look at the interactions within the organization and what is happening outside.

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Be it natural environment or competition. And then those problems where the solutions are not that obvious, where you tried many strategies, but the solution is not evident.

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That is it from my side happy to exchange mode with the Q&A. Jesse, over to you.

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Thanks, Satre. Much appreciated. And really, really interesting presentation. I'm sure if there's any questions, please do add them in our Q&A feature and then we can pick them up at the end of the conversation.

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Anne-marie, over to you. Love to hear from you.

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Okay, thank you so much. And thank you so much, Andrea.

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It's actually thanks to Andrea that this study that I'll present in a minute and this whole collaboration And the opening up and the thinking around systems thinking really helped guide us here in the Southern Africa region.

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So Andrea has explained systems thinking. So I'll focus more on how it can be applied inside organizations And what it helped us shift inside WFP in the region that I'm in. So Rural Food Program, like many of you attending this webinar, we work on complex problems, right? Food in security.

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Climate shocks. I'm thinking back to the poll that was presented earlier in the webinar.

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Fragile governance, fractured supply chains, etc. And for years, you know, we address these problems through traditional planning.

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Technical assessments, stakeholder consultations, logical frameworks. And more. But we started asking ourselves, what if the problem isn't just poor outcomes But it's actually sometimes fragmented thinking.

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So we introduced systems thinking and systems dynamics during the inception phase of our country's strategic plans. So for us in the World Food Program, country strategic plans are what every single country has to design over a four to five year period that is the guiding light of what we will do in partnership with all of our donors, partners.

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And most importantly, national governance. So we used the system thinking approach in Madagascar, Lesotho, Zambia, Malawi, Tanzania, and the Democratic Republic of Congo.

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It wasn't necessarily to replace our tools per se, but to rethink how we frame problems, identify solutions.

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And build long-term government-owned strategies. So just to quickly recap.

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For one moment, what we learned from Andrea, right? System thinking or systems thinking helps us understand how people, policies, infrastructure, and incentives interact.

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Identifying relationships delays and feedback loops, and systems dynamic goes further, right? Using models to stimulate how the system evolves over time and what happens if one part of the system shifts.

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So we applied this approach because while we had strong activities.

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And programs, they didn't always add up to long-term change. And governments were asking us for strategies that were more integrated.

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And more resilient and more aligned with national policies. Let me take the example of Madagascar to kick start us off.

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Interventions like school feeding, for example, smallholder farmer support, nutrition, they were all in place.

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But they were disconnected. So systems mapping showed us where and what the policy gaps were and where they were.

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Where the infrastructure breakdowns were and where the fragmented delivery were acting as system-wide bottlenecks.

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So this led to three, well, there's more than three, but I'll choose to highlight three major shifts. So from silos to convergence. Reframing nutrition as an outcome of coordinated services or actions across sectors.

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From short-term outputs to feedback loops. Such as rural roads that connected producers to markets, improving both income and affordability.

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And then thirdly, from activity delivery to resilience building. Designing systems that could absorb future shocks and not just respond to the present.

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And in the case of Madagascar, actually, we further partnered with Andrea to actually look at GIS and geospatial mapping to see the yearly stressors that come, how could we match this up with systems thinking?

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So this reframing directly shaped our country's strategic plan in Madagascar and shifted how government engaged with us as well.

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Because it reflected their priorities, supported long-term goals, and built a foundation for shared diagnostics and real alignment.

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In Lesotho, moving to another country, systems thinking revealed how food insecurity was tied to youth unemployment and out migration. And this led us to integrate school-based skills training and job creation into the resilience strategy, not just as add-ons, but as essential components of it

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In Zambia, systems thinking or system dynamic modeling, I should say, showed that investing in post-harvest handling and storage has a much greater long-term impact than scaling up food assistance. That changed how we allocated resources and gave the government's strong evidence base to push for food systems investment.

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But more importantly, or just as importantly, and I know this was mentioned at the beginning of the webinar.

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It changed how our teams worked. And this is important right At first there was a hesitation.

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And Andrea was there with us throughout the journey. And we often heard really another mapping tool, Anne-Marie. But once they saw the full system, the loops, the delays.

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The misconceptions, something shifted People started asking better questions and that was really key. Connecting across units and designing strategies that were more coherent, creative, and grounded.

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And we've captured this in the report, as you can see in the slide, which we wrote with Andrea called Unlocking Sustainable Solutions Through Systems Thinking. And it's really case studies from our country's strategic plans in Southern Africa.

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It documents sort of the methods, the outcomes and how systems thinking helped us move not only our strategy but teams from activity lists to real strategic design.

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So what are the key takeaways? It didn't replace our tools. It actually made them better.

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It gave us space to reflect before rushing to act. Surface leverage points and link short-term delivery to long-term goals.

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It changed our internal collaboration, which is really key. Teams move beyond their technical silos, connecting, for example, school feeding to market development or climate finance to food systems infrastructure.

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It strengthened government ownership. Co-creating system maps allowed national actors to lead strategy development and not just implementation. And perhaps most importantly, it reminded us that strategy isn't just about what we do, it's about how we understand the problem in the first place.

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And just one quick example, when we were actually in Madagascar, we saw, or was it Malawi? It was definitely one of those countries who saw a beautiful synergy at one of our formulation workshops with government partners and our own staff.

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When Andrea was taking us through the exercise and presenting it.

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And the resident coordinator taking us through the the the UNC team's work And then when the government was presenting their priorities, we saw a natural organic synergy. And that's really where you want to land when you do these type of exercises.

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But we also saw where systems thinking has limits. And I saw someone type in silver bullet. And I really want to say it's not a silver bullet. It doesn't remove politics.

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Or eliminate resource constraints. And for those of us sitting in the humanitarian sector today on May 13th, we know all too well what those mean.

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But it gives us a clear map and a more coherent way to navigate that uncertainty.

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But let's bear in mind, systems thinking is a long-term investment In institutional learning, incoherence, and in strategies that are owned, feasible, and ultimately more effective.

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If you're starting out. And some of the exercises that we did with our colleagues. So if you're starting out, choose a clear issue, right? Malnutrition, seasonal food insecurity, youth migration.

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Sketch the system out. Drivers, bottlenecks, feedback loops, involve diverse voices in this exercise.

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Government partners community and look where small shifts could really unlock those broader systemic changes.

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I think ultimately systems thinking gave us a way to turn reflection into redesign.

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And in a sector, especially our sector, where urgency often overwhelms strategy. We think it's a shift well worth making.

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So I'll stop there and thank you so much. Back over to you.

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Thank you so much, Henri. I love that idea of reflection into redesign. Really cool concept. I know there's been lots of questions shared and we'll definitely get through.

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As many as we can within 20 minutes. Just to refresh my thanks again to Anne-Marie and to Andrea for their really, really brilliant presentations. So we're going to head into the Q&A.

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And we'll give you all a minute or two just to type your questions and share them in the chat.

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While you're doing that, just a quick reminder that we do have our systems thinking community of practice on the apical platform.

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Some of you may already be members, but for those that aren't, this is the online community. It's a space where you share resources and practical advice.

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And case studies just like the one Anne-Marie's been talking through. There are over 5,000 members there, so feel free to kind of join and sort speak to your colleagues from around the world. My colleague Doug will be sharing a link in the chat again. But this is

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The perfect time to sort of dive into questions. Lots that have been shared in the Q&A and I'll kind of work through them, Anne-Marie, Andrea, I'll share them with you and kind of ask for your reflections.

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And if you have in the audience, if you have follow-ups, you can sort of type them in the chat as well.

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There's a really interesting one that someone posted here as a sort of like a foundational starter. They say, what's the difference between systems thinking and design thinking?

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Anne-marie, I'll come to you for that one

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Okay, I think I'm going to pass that first to Andrea and then I'll because it's just a natural, yeah.

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Absolutely. Dave, would you like to share a thought?

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Okay.

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Yeah, yeah. So the way I see it is that systems thinking allows us to understand how the system works to then identify what are the main entry points for action.

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It's not only policy oriented, but design thinking is more oriented towards that design, towards that formulation of intervention options. So they're very similar as that system thinking probably is a bit broader as a concept, but then the second component of the policy analysis is quite aligned with design thinking.

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Then there are probably different methods and tools to implement it, but the underlying concept is very similar.

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I mean, I think you'd, I don't know.

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No, I would just add on that when sometimes when you're designing policies, like we have nutrition policies, resilience, climate policies.

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The design thinking can be quite useful, but we found, and this is our personal experience, that when you're designing quite broad strategies that have a lot of technical entry points that really need to be risk informed and integrated systems thinking was

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Was a little bit more effective for that. Yeah.

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And just another sort of foundational question here, this one shared by sebastian And they're asking, can we solve problems or should we rather understand problem problem situations, underlining that there is no silver bullet. I think, Anne-Marie, you spoke to this a little bit, but just

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Is the aim of this to try and solve the problems or is it just is it more of a process of understanding? Anne-marie, back to you.

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So before I answer, I just want to mention one thing before you even get to designing the causal loops. You saw some examples that Andrea put. There's a whole background work And then today can also speak to this. So we call it the evidence curation phase right

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Where we study, and Andrea did this hand in hand with us every policy that we can get our hands on, all of the data that is available, all of the evaluations.

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That have taken place for a country, right? Whether it be a strategy evaluation or a more thematic evaluation and all the government policies So before you even start building that system dynamic.

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Tool, you are coming to the table with all of this. And we actually asked our staff, our activity managers, our country directors.

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To also have that body of knowledge there before we even set foot in the room to do these co-created exercises As a team, right? So I just want to say that there's a whole backstage area to the systems thinking before you start even

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Designing what the sort of causal loop looks like and then how those pieces may help you rethink the way that you want to approach different thematics in your in your designing of your strategies.

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Yeah, really helpful. And it's a really interesting question I think that follows on to that from Jerry, who's talking about do you different methodologies that you might be using depending on the issue you're trying to understand. So sort of still sitting in that realm of problem understanding rather than problem solving, are there different methodologies that you can use? Andrea, maybe you can pick that up.

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Yes, yes. So we need to understand the system to identify what are the best intervention options, right? The actions that will lead to a lasting solution.

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And different methodologies are used in different fields. For system thinking, we use systems mapping or these causal diagrams. In other areas, three diagrams are being developed to explore cause and effect.

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There are other methodologies, including neural networks, which are very similar, but they attempt to quantify what the connections are in terms of strength between the different elements of the system. But all things considered, we're looking at causality.

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That is the common thread. We're looking at cause and effect, and now impacts is propagated in the system.

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To identify potential synergies and trade-offs. That is a common element that I would find in the vast majority of the tools that are used in these different fields.

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And speaking of specific tools, I think someone asked earlier, like, are there like practical software or sort of like things that you're using to help you do this analysis?

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Yeah, there are several ones in the context of mostly system dynamics, which is the system methodology where you quantify some of these linkages and the causal diagrams I presented in my presentation are built with the software called Densim.

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There is a free version available for download, testing, personal use, and so on and so forth.

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That I find to be very useful. It doesn't come with a barrier to entry, which is an expensive license or anything like that. And it can be tested. It can be piloted.

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There is Stella, a different software application that runs on tablets and iPads and allows to share online the diagrams very easily. So very happy to provide more information on these. But I see they're already popping up. Links are popping up in the chat as well.

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Absolutely. If anyone has those links, please do share them in the chat. I'm sure folks would love to pick that up and use them.

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And Anne-Marie, you talked about obviously the context you're working in right now where you said you sort of understand the reality of resource constraints.

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Laura's asked, how can we apply systems thinking in government when they're also similarly faced by department?

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Departmental budgets and limitations. Any reflections to share?

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Yeah, for sure. You know, as the changes that we're in now have already been brewing for well over a year. I'm sure we can all agree to that right So when we were working on sort of the design of this all right, and then of course the work with them today as one of the great tools helped us

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Think we were asked to design less ambitious and more focused country strategic plans, right?

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So this really helped us in the sense of demonstrating to our directors and their staff This is the plan that you've pulled together, right? This is the integrated plan and this is what it looks like.

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How are you going to resource this, right? Benchmarked against projections So we added that as a layer sometimes to, well, not sometimes, we added that as a layer to what we were looking at And then in some cases, our country directors would step back and say.

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Okay, I ideally want to do X, Y, Z, and the government wants us to do X, Y, Z. But in reality, we can do ABC really well within our mandate and do it in a very focused manner.

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And then also work with government or more traditional donors and also as they go through their changes, right, make sure that they are we are all in line with these focused mandate applicable strategies that we want to design. And it's getting more and more focused as we move forward.

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So these methodologies really help us see, okay, this is the implore of the problem we want to address.

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Our role is this. How can we make that role most effective with our partners and other agencies in the best way possible?

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And that'll get even tougher as we move forward.

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Yeah, Andrea, I can see what you had. I just coming back to you, but with a follow-up question that someone else has asked.

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And they've talked about managing the dependencies across change portfolios, or I suspect maybe across different maybe departmental jurisdictions. So they say it's very, someone says it's very common for dependencies to be identified but not actively managed or well-defined. So how do you sort of manage that when you're at the kind of limits of your authority, I guess, within a system?

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Well, there is one aspect I think is very relevant in the context of sustainability and planning for sustainable development in that the use of a systemic approach allows us to quantify, if we go to quantification.

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Impacts on the so-called intangible indicators and externalities. So we're able to see what is the societal role of different departments in affecting, for instance, food and nutrition in relation to labor productivity, income creation potential, innovation, entrepreneurship. So we're able to extend the analysis to make sure that we give the proper

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Evidence to the importance of different intervention options. And so with that, we are able to level the playing field.

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If you look at governments, normally we work with the Ministry of Finance being at the center stage in defining planning and investments. But then we are able to highlight the relevance in improving economic performance overall via social and environmental impacts that comes from other areas of work that comes from nutrition, from infrastructure, from a number of other areas.

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And what I wanted to add to what Anne-Marie said is that part of the analysis we performed was an integrated or systemic cost benefit analysis where you can quantify and provide information on the value for money that you get out of these investments. If you get \$10 in return for each dollar invested.

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Accounting for externalities, it's a pretty good performance. But maybe the financial component of that is just \$2 to \$1.

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And so there is a lot that can be gained that is intangible, that is important for society, but it's somewhat invisible.

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Right to the investor or to the minister of finance. So it's important to counterbalance these more tangible and intangible impacts to see what is the actual societal value of what we do and not only the financial value of what we do.

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And just a very, very quick follow-up one. Jason's asked a really interesting and very practical question. They talk about practical tips for sort of doing their own sort of causal loops doing development planning. Anne-marie, I'll come back to you as well.

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But any practical tips on just sort of like even just creating those diagrams and finding a starting point and sort of knowing how to produce that kind of analysis.

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Yeah, this can be a long, long conversation, but normally I plan for a two to three hour session with an external moderator. The external moderator, when it's me, I would prepare and do my own causal diagram based on my review of the literature, papers, reports, and statistics and so on.

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And then we start from a blank screen. Very, very important that me, myself as a facilitator, I don't bring in my own views and ideas, especially early in the process. But I let these emerge from the participants.

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Which makes so that it's very, very important to have a very diverse set of participants.

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That have different backgrounds, different goals, roles and responsibilities in the organization, and let this diversity build a very systemic and comprehensive diagram. So it's a step-by-step process. You start from a blank screen, but you do your preparatory research.

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Plan for a good two to three hours. And in my experience online, 15, 20 people in person, 30 to 40 maximum, but give room for everyone to contribute.

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And they're very important to understand the dynamics in the room and the characters of the people involved, both in terms of hierarchy, potentially within a government, but also in terms of how open they are to share their own views and ideas or whether they come with a political agenda to the meeting.

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But again, this could be a long conversation, lots of tips to share beyond these initial thoughts.

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Anne-marie, anything from you?

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Yeah, no, we've actually had Andrea do this with us and he's trained us all, well, a few of us on how to do this effectively.

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But I think what Andrea mentioned is really key. You want to have a mixture of different characters in the room and you want to have your sort of, for us, I'm speaking sort of in our experience, you want to have your nutrition, your supply chain, your resilience, your climate.

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You want to have them all in the room at different levels, right? This cannot be a, depending on what you're using it for, but if you really want to build a strategy and make sure, especially when you have very small country offices.

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Like Lesotho, even Zambia, these are small teams that you want to keep them focused so you want to have that mixture in the room. And as Andrea said, you want them all speaking and it can take a little bit of time in the beginning when people first start seeing this and they start looking at

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Causal loops. There are mixed reactions, but once they understand what is going on and how it will be used, that there's a certain openness and an interest, especially from our colleagues who are more on the the vulnerability assessment mapping, the data folks, the M&E folks, they really tend to embrace this wholeheartedly.

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Yeah. Andrea, no conversation will be complete without an AI conversation. And there's an interesting reflection here is wondering whether or not AI or tools like ChatGPT can be helpful in producing systems thinking maps or whether or not they're not yet enough developed to produce that kind of complex analysis.

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So my experience, and I've been playing around with this for a little while, is that they're better suited to react to an existing initial causal diagram to document it, to develop the narrative around it, and so on and so forth, based on a given country context with a series of reports that you submit.

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To the AI LLM. I find it a bit difficult and not so accurate to ask the AI to generate the diagram.

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Because there is a lot of information, especially the soft information, the contextual information that is missing.

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And if you just use information that is published and numbers, you end up with correlation instead of causality.

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And so you end up with identifying relationships that were valid in the past based on statistics without understanding the true underlying dynamics that made so that this could happen. Remember the iceberg? AI works with events. It doesn't work with the underlying knowledge that leads up to the event or the statistics that we use.

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But certainly it can be used to identify as a quick search what are the main drivers of change? What contributes to a problem? And then you may get a list of 10 or 15 different items, some of

which we may be aware of while some others may be new and innovative that we would not consider.

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So certainly useful in setting up the process, but I would not rely on it too much for the creation of diagrams at this stage.

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Absolutely. Very helpful and practical. And coming back to you both with a very sort of almost reiterating a similar question, but just I think it's a really important encapsulating the practical things that folks are working with. Andrew asks, I have a complex system. I want to understand it.

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But it is difficult and I don't know where to begin.

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Any hints and tips to that for that ubiquitous question, where to start? And I think that's an interesting way for both of you to some of your I'm really first.

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We all have complex systems. We want to understand. And some governments we want to understand better. But I would say You know, I think I was mentioning this earlier, just choose a really clear issue to start with, right?

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I know I keep coming back to this, but it's so important. Do the groundwork, do the evidence create curation work. It's very time consuming, but it's so important to piece that all out And then I think, yeah, really start with a clear issue. Start with a piece of it.

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If it's too complex and then work your way work your way through the different pieces back over to you.

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Andrea, where to start?

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Yep, I agree. Define the problem. Mostly because we always say model the problem, don't model the system. If you try and model the whole system, you go crazy very, very soon because we're dealing with very, very complicated systems. But once you identify the problem on a more practical aspect.

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Identify the indicator that you use to measure the problem. And that is the first variable you type on the screen or you write down on your sheet of paper, right?

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Start from what you can measure. Second advice, look for the causes. First, don't look for the effects.

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Causes are more confined. There is more linear train of thought to identifying multiple causes and expand the analysis. If you go to effects, you go into social, economic, environmental, governance, related interventions.

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And consequences of your interventions. And again, you go crazy. It's never ending.

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But if you look at causes and the cause of the cause and you keep looking at what is causing what.

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Ultimately you will close the loop. You will find out that some of the indicators that you have added to your diagram create this feedback loop, these serial correlations. And also very, very important.

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Your models should be able to show where the problem is coming from.

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Common mistake is to develop a model for the solution. Then people look at it and say.

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It looks like you're a bit biased in your analysis because your model always points to the same solution.

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So the model is to show the problem first, and then it also has to show how your proposed solutions generates change that is desirable in the system.

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Amazing. Excellent. Well, thank you so much to Andrea and to Anne-Marie for their really, really excellent reflections.

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For the last hour. Really, really appreciate your time. My colleague Doug is going to share a quick question that should come up on your screen just now. And it says on a scale of 1 to 10, Frankly agree with this statement. This event was a valuable use of my time. One is completely disagreed. Ten has completely agreed. This is just for our own internal

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Reporting processes. But before we let everyone go, I would love to have a quick sort of traditional input school of doing one word takeaways. I'd love for folks to share theirs in the chat, but maybe Andrea and Marie, a one word takeaway of something that just stuck with you.

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An idea, a metaphor, a word, just something that stuck with you from today. Andrea, first.

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Yeah, I would just say systems are very, very basic. Walk around and try to see where change is coming from from what you see.

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That is what I would challenge everyone to do.

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Amazing. Anne-marie, one word takeaway.

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Challenge your teams to think in an integrated manner, in a systems manner.

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Even if you're in a large bureaucratic organization

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Amazing. Excellent. Well, we have a particular resource that's been shared, an interview, a more in-depth interview with Anne-Marie And Andrea, that can be accessed through our systems thinking community of practice So if you follow the link that my colleague has just shared in the chat, you can comment on one of the threads that I posted there and you can get access to the interview, which includes more practical tips and advice from two really, really brilliant speakers.

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