Session 5: STI for sustainable terrestrial ecosystems (SDG 15)

Inger Elisabeth Måren, University of Bergen (7 min statement)

SDG15 (**Life on Land**) is fundamental and connects to most of the other SDGs, in particular 2, 3, 6, 12, 13 and 14, because it represents the very fabric of most life on the planet. In fact, a new study by Bar-On et al. shows us that 86% of all biomass on the planet is found on land. We, the human race, only constitute 0,01% of this, but we completely dominate many global scale processes and trends in biodiversity. We are, in other words, utterly dominant and simultaneously insignificant for life on Earth.

I will guide my statement by asking three rather rhetorical questions:
Firstly; Why have we modified earth? We all know this, of course: Mainly for the sake of food production - the need to feed our families, and ourselves. And we are very successful at that; we've modified approximately 40% of the Earth's land areas, primarily for the sake of food production. We now have a population of 7,6 billion people and we make up 36% of the biomass of all mammals on earth (Bar-on et al. 2018). And we are just one species out of thousands. So much of the discourse around "life on land" is interconnected with aspects of our food systems – land use change, biodiversity loss, deforestation, erosion, eutrophication, pollution and fresh water shortage. I strongly believe our food systems deserve much more attention from science, technology and innovation, and hence more resources allocated to this very important topic.

Secondly; Who feeds the world today? Most of the calories consumed today are still produced by small-scale farming systems and their surrounding matrix landscapes. These landscapes also conserve biodiversity. It's a misconception (mostly in the global north) that the world is fed by large agribusiness. This is not the case. We have much to learn from the past and the global south about low-input/high output/low footprint agriculture. Knowledge accumulated over millennia in these small-scale systems are highly understudied. Our fascination for exciting new technologies and innovations has side-lined the immense capital of local and indigenous knowledge – which is also part of our intangible cultural heritage. We need to invest in enhancing trans-disciplinary knowledge generated in these keystone systems to build sustainable food systems for feeding future generations. We know quite a lot about the trade-offs in the domestication of animal and plant species, but there is still a large knowledge-gap on trade-offs in "domesticated" ecosystems, or "agro-ecological systems".

Thirdly; What threatens biodiversity – the living fabric of our planet? The loss of biodiversity is alarming and the recent IPBES regional reports show us that land-use is the major direct driver and not climate change at this point in time. This links back to my point 1 - to food production systems. We need more biodiversity-friendly food-production and we need a concerted effort among a multitude of stakeholders to make this happen. Hoping for the elusive potential of future agribusiness to "fix" this is rather naïve and we don't have the time to wait and see. Industrial agricultural production tries to optimize production, so most $ are generated per area/work hour. But this ignores, or even subsidises, the consumption of fossil fuels and natural resources. We need to make the distinction between land-use and land-abuse much clearer, both in land management and in policymaking.

Concluding remarks: Food connects all of us – 3,5 billion might be connected over the internet, but 7,6 billion people need to eat – every day! Making our food systems more sustainable presents us with a multitude of research, technology and innovation challenges. It's naïve to think we can continue eating and producing our food like we do today. We need a new focus where impacts on biodiversity, climate and the environment are incorporated in the equation. Externalities need to be included by price setting and new regulations. This will result in the emergence of new technologies and innovations, making our food system more sustainable, and hence life on land more sustainable as well. In this process, we need to engage everyone – by emphasising the holistic approach of multi-stakeholder involvement. We also urgently need innovation in our education system to properly solve real-world-problems, this implying international cooperation and capacity-building across disciplines and geographic space. Innovation also includes innovation in social sciences to meet new challenges. I strongly believe if people are the problem, then people are also the solution. We need "business as unusual" as we have no planet B.