

Responsibility for climate - responsibility for nature

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For twelve years, I was the messenger of science, sharing information about climate change and climate policy to political decision-makers in Finland. I was listened to. As the climate crisis worsened, Finland's climate policy became clearer after the adoption of the carbon neutrality target and the increased ambition of the EU's climate policy.

Today, the concern that researchers have been expressing about the state of the planet has turned into an SOS message. A recent review of the state of climate change published in the *Bioscience* journal states that all forms of natural diversity are endangered and humanity is in a climate emergency. The climate crisis is moving to an unpredictable stage where the climate will no longer provide favourable living conditions for humans. Elimination of fossil fuels in energy use has been too slow, tropical deforestation has continued, and global temperature rise accelerates. Notwithstanding this, a rapid reduction in fossil fuels would provide quick help to reduce temperatures. There is hope yet.

The UN Climate Change Conference in Dubai recommended reducing greenhouse gas emissions by 20 Gt over this decade, i.e. by more than 40%. Fossil energy must be replaced by renewables, methane emissions decreased and tropical deforestation stopped. Success requires national policies and creativity from companies. States need adopt ambitious climate and biodiversity conservation goals and tailor policies accordingly. Companies should commit to science-based climate and nature goals and invest in clean solutions and innovations that produce them. These are at the heart of the green transition.

The green transition aims to create a sustainable society with zero emissions in a single investment cycle. In order to achieve this, companies and other actors need a clear path forward, therefore climate, energy and industrial policy must be developed in cooperation. There is also a need for infrastructure that enables change, responsibility

and ensuring that funding flows into the correct places. This will create competitiveness through innovation and winning business. The main means of change include wind and solar power, hydrogen economy, capturing biogenic carbon and storing it permanently below ground, as well as utilizing it in products replacing fossil fuels, energy efficiency and the emerging circular economy. They enable the elimination of up to 90–95% of fossil emissions.

As green transition should take place fast, it is crucial to avoid mistakes. The most important thing is that our efforts do not fall into greenwashing or that the green transition is not carried out at the expense of nature. This is why it is necessary to comply with the principle of “no significant harm” in climate work. The EU has been wise to approve the biodiversity strategy and the Nature Restoration Law alongside the Green Deal. The protection of old-growth forests and most restoration measures also support climate work.

Although I live in Helsinki, I am originally from Lapland and keenly follow the events and discussions in my home region. The green transition seems to cause conflicting feelings. Some expect it to bring new prosperity to Lapland, while others curse the transition as a destroyer of sensitive nature and water quality. It is challenging to determine how the green transition, sustainability and responsibility can be combined when many opinions are affected by the experience of injustice in Lapland: the dams on the River Kemijoki, taking natural resources to the south and trampling the rights of the Sámi.

Besides, the green transition is not progressing without a hitch in Finland. For example, forests have been cleared for wind or solar power in violation of the no significant harm principle, which weakens sinks and biodiversity. This must not be tolerated, either in the south or in Lapland. The green transition creates demand for critical materials and Lapland has plenty of mineral deposits. Mining promises revenue, but the concern about the environmental impacts of mines is great, like the nationally traumatic experience with Talvivaara showed. Sakatti's challenges are well known. There is also concern that in several mining plans, wastewater would be led to the Kemijoki river basin. The environmental permit procedure in Finland is plant-specific and does not consider the combined impact of multiple projects. This is a threat to the sustainability of the green transition. Furthermore, the rights of the indigenous Sámi people must be

safeguarded, and at the same time adaptation to climate change is urgent in the Sápmi. The promises of the green transition are attractive, but the risks are so many that all actors in Lapland should consider together with the government how the risks related to the green transition could be prevented and sustainability safeguarded in Lapland.

The higher education institutions in Lapland have their own responsibility for promoting responsibility in the green transition. They must educate competent experts that can usher in the transition. In-depth understanding and interpretation of Arctic change and policy is also needed. Lapland urgently needs experts to help with adaptation. And on top of all that, the special challenges of the Sápmi are significant and cannot be overstated.