

A future the planet can accommodate

Respecting the limits of the earth is a prerequisite for the well-being of humanity. The circular economy, low carbon emissions, and securing biodiversity move society in a sustainable direction.

Accelerating the change requires quick political decisions also in Finland. Consumption and production in Finland are not at a sustainable level. This has negative effects on the well-being of the entire planet, which ultimately comes back and impacts Finland.



Making sustainable well-being the direction of Finnish policy

- The state has a significant role in making the structures and economy of the welfare state sustainable. A low-carbon society and upgrading the energy systems cannot be left to the market alone. Alongside GDP we need indicators that measure environmental impact and human well-being. Researchers have a key role in evaluating the long-term sustainability of decisions made for society.
- Municipalities need to move rapidly toward carbon neutrality and to support the environmental actions of local residents, such as the sustainable use of vegetarian and locally grown food, active transport and energy-efficient construction. These measures help rein in climate change and biodiversity loss while at the same time promoting well-being and health.
- The consumption of natural resources starts already in production. Companies can direct their own activities and those of their cooperative partners in a sustainable direction through measures such as requiring their subcontractors to use recycled materials.

Planetary boundaries are already partly overstepped

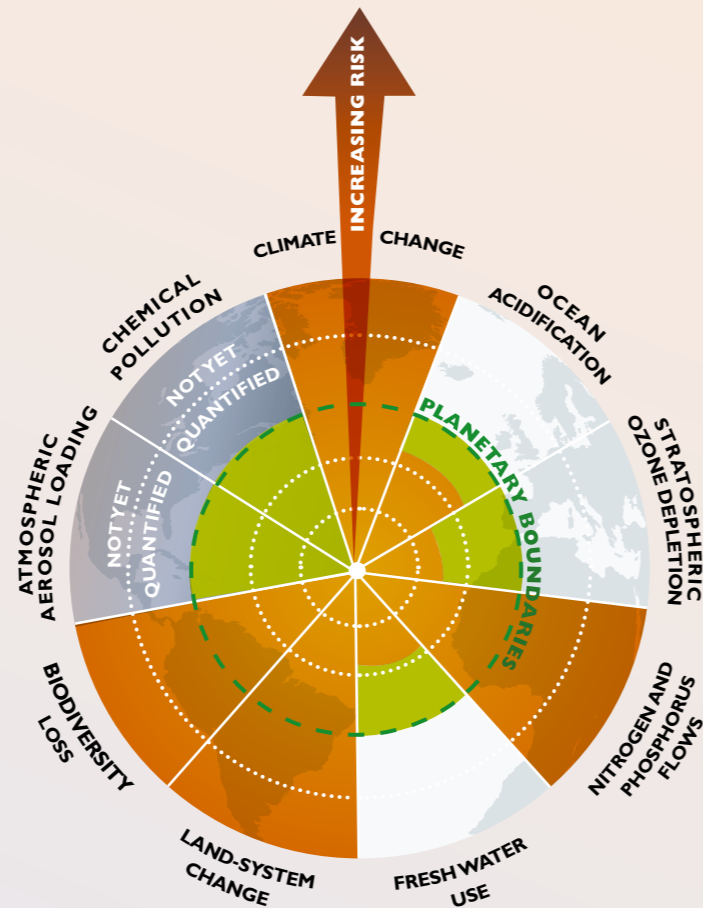
In an urbanised lifestyle based on a high level of consumption it is easy to forget that the well-being of society is completely dependent on functioning ecosystems. People need photosynthesis from plants, pollination by insects, and climate regulation provided by ecosystems. However, human activity is threatening many of the important planetary processes that keep ecosystems functioning.

According to the most recent analysis of the planetary boundaries¹ the precautionary limits for climate change, biodiversity loss, flows of nitrogen and phosphorus, and the use of land areas by humans have already been overstepped. Transgressing the boundaries adds to the risk that living conditions on the earth could become irreversibly unfavourable for human well-being and current societies.

All processes of the earth system are interlinked. For example, clearing forests for agriculture both weakens biodiversity and accelerates climate change. Climate change is speeded up through the reduction of vegetation that binds carbon dioxide. In addition, more carbon dioxide is released through the decaying process of organic material from agricultural land than from forests. Clearing forests also affects rainfall and fresh water availability due to changes in water vapour transfer into the atmosphere, affecting both local but also places that are distant from the cleared areas.

The interconnectedness of the earth system processes needs to be considered when looking for a solution to the problems. Otherwise there is a danger that negative effects might actually be reinforced, or that local problems would simply move away to a different location. One example of a solution with a conflicting impact is the strong increase in the use of biofuels as a way of mitigating climate change. The use of biofuels often increases the need for agricultural land, causing deforestation, reducing biodiversity, and increasing the use of water for irrigation.

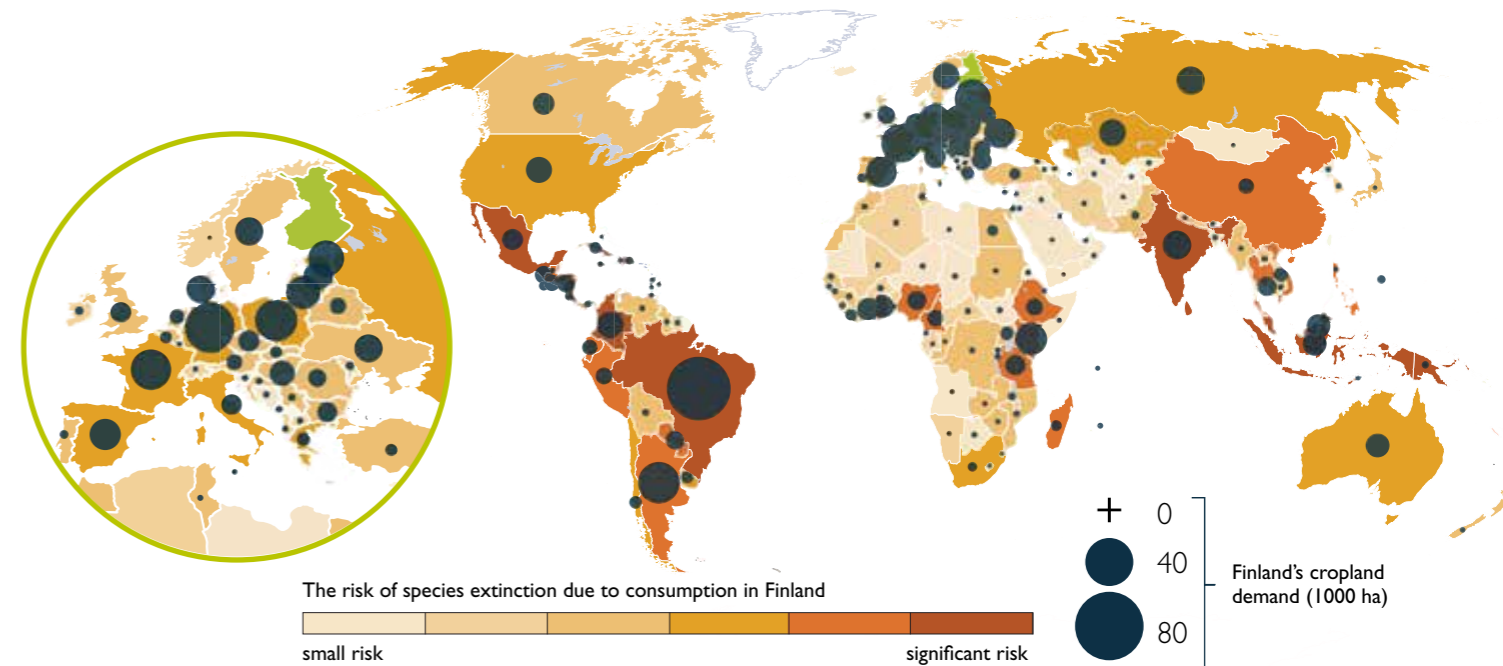
Overstepping planetary boundaries also leads to societal problems, including migrations of refugees and the deepening of inequality and poverty. These tend to feed extremist thinking, conflicts, and wars.



Graph 1. The planetary boundaries (green line) have already been overstepped in climate change, biodiversity loss, flows of nitrogen and phosphorus, and land use change. Planetary boundary processes are interlinked.

Source: Steffen et al. 2015¹, © SYKE & SITRA

Finland has outsourced some of its environmental impact



Graph 4. Cropland area required around the world by Finnish food consumption. Clearing forest for agricultural use leads to the risk of global species loss especially in tropical countries. For example, areas where coffee and cocoa are grown have many endemic species that are susceptible to extinction. Source: Sandström et al. 2017², © SYKE & SITRA

European countries have achieved a high level of well-being, but at the same time ecologically sustainable limits have been crossed. This comes out in a recent study² combining measures of planetary boundaries and ecological sustainability with indicators of social sustainability.

Finland is very successful when measured against several indicators of well-being^{3,4}. Long life expectancy, a high level of education, and satisfaction with life have been achieved through all-inclusive social policy and economic growth. However, the

success story comes at a price. It endangers the natural system which supports good human life while eroding the foundation of well-being and the economy. Consumption in Finland has exceeded the level that is globally just and sustainable. In Finland, as at the European Union level⁵, consumption exceeds all of the limits for ecological sustainability with the exception of fresh water use.

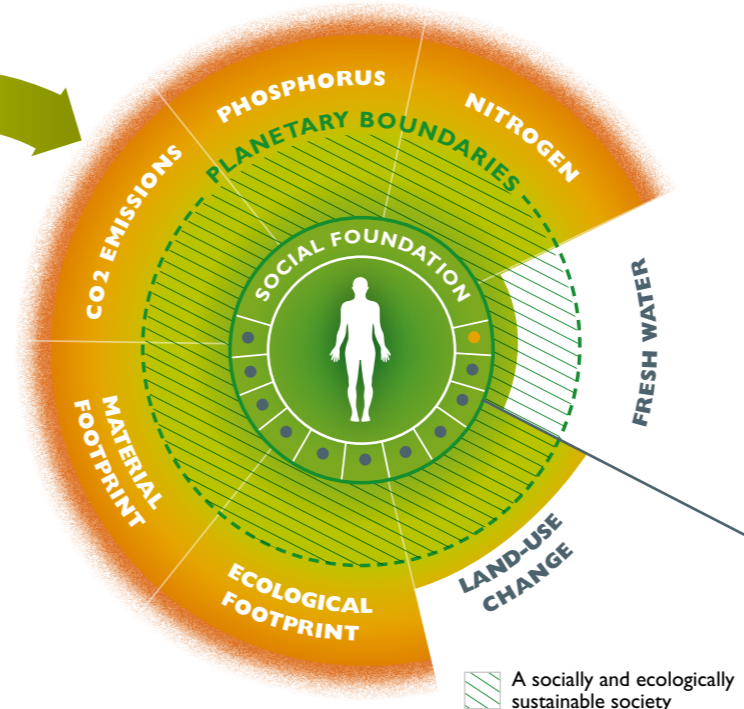
Finland's weakest link in achieving sustainable development is consumption and production practises. Through international trade Finland has outsourced a large portion of its production and related environmental impacts to other countries. About 40 percent of agricultural land needed for the production of agricultural products consumed by Finns is outside of Finland, primarily in other parts of Europe and in South America⁶. This includes, for example, imported coffee, wheat, rapeseed, and soybeans.

The outsourced environmental effects nevertheless eventually come back to Finland. Biodiversity in Finland will be affected by climate change, which impacts agriculture and forestry, for example.

Graph 3. Social goals that have been achieved by Finland and how they relate to the limits of the planet. Finland has achieved the social goals in all areas except employment. However, Finnish consumption is not sustainable; the environmental impact of per capita consumption exceeds the fair level.

Source: O'Neill et al. 2018², © SYKE & SITRA

WHICH PLANETARY BOUNDARIES DOES FINLAND OVERSTEP?



- Social foundation:**
- Life satisfaction
 - Healthy life expectation
 - Access to energy
 - Sanitation
 - Income
 - Nutrition
 - Education
 - Social support
 - Democratic quality
 - Equality
 - Employment

Not a single country has achieved a high level of well-being in an ecologically sustainable way

Graph 2. The social and ecological sustainability level of the countries of the world. Not a single country has achieved a high level of human well-being in an ecologically sustainable manner. It would be the most sustainable and fair for a country to achieve well-being without exceeding the planetary boundaries (lower right on the picture).

The position of the country data points is approximative.

Source: O'Neill et al. 2018²
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What changes are needed?

A rapid change of direction is required if the UN Sustainable Development Goals are to be achieved. The most serious sustainability deficit for the Finnish welfare state is ecological debt. Decisions made by Finland at the national level can affect Finland's production and consumption structure, and through that, global sustainability.

The transformation is already under way in Finland. For instance, several municipalities are rapidly reducing their greenhouse gas emissions and vegetarian food and transport solutions favouring sharing are becoming increasingly popular in the country. However, targeted and controlled change needs to become the core of the entire policy framework.

- All economic activity should be based on the circular economy. Products and their further use is designed in such a way that materials are used efficiently at the end of a product's life cycle. This requires changes in waste legislation, for example. However, what is most important is to significantly reduce unnecessary material consumption.
- State and municipal goals for reducing emissions must be made more stringent, and their implementation needs to be followed. The use of energy should be reduced through taxation policy decisions and investments in energy conservation. Public investments need to be aimed at carbon neutral solutions for housing and transport.
- The state and municipalities would do well to invest in a sufficient level of basic security, education, and participation. These make it both possible to adapt to changes and to foster transformation. Social innovations are also necessary for achieving sustainable well-being.
- Each Finnish company needs to work to ensure that its operations are responsible and transparent and also that the activities are reported on in a transparent fashion. Enterprises need to actively build global rules and to wield influence through their example.



Sources:

¹Steffen, W. et al. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science* 347, 1259855.

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⁵Häyhä, T. et al. (2018). Operationalizing the Concept of a Safe Operating Space at the EU Level. Stockholm Resilience Centre Technical Report. See also Discussion Brief: <https://www.sei-international.org/publications?pid=3128>.

⁶Sandström, V. et al. (2017). Linking country level food supply to global land and water use and biodiversity impacts: The case of Finland. *Science of Total Environment* 575, 33-40.

More about the topic:

Häyhä, T. et al. (2016). From Planetary Boundaries to national fair shares of the global safe operating space — How can the scales be bridged? *Global Environmental Change* 40, 60–72.

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