

How to set ambitious goals for sustainable agriculture

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Food production in the Netherlands is an economic success but has led to many environmental issues, including nitrogen pollution. Recently, the policy to allow economic growth while reducing nitrogen losses was

disapproved by the highest court in the Netherlands, casting the country into a nitrogen crisis. In a new article in the sustainability science journal *One Earth*, Jan Willem Erisman proposes more integrated policies for global future sustainable food production.

Ambitious goals for the commons

"Although many players in the global food chain have a responsibility to make agriculture more sustainable, there is a special task for governments," writes Erisman. "In my view, the government in the Netherlands, as well as in other nations, should paint an inspiring picture of the future for [sustainable agriculture](#) and food chains. The government can make its vision of circular agriculture more concrete by introducing principles such as soil health as the basis for sustainable agriculture and spatial planning as a tool to produce food with less impact on nature, biodiversity, and the climate: our shared commons."

Targets and indicators

Erisman believes the government should set clear legal (environmental) targets within which farmers (and other entrepreneurs) are free to operate. In instances where targets are not met, the government should then intervene. These targets should be concrete, science-based goals based on the UN Sustainable Development Goals and recognize the vital roles of our commons: healthy soil, air, and water; a stable climate; the conservation of biodiversity; and the protection of nature, our landscapes, and animal welfare. "Instruments such as [key performance indicators](#) (KPIs), commonly used in the business domain, can be used to integrally steer indicators toward targets."

In instances where performance—or success—can be measured unambiguously, it is possible to reward farmers, Erisman explains. "For

example, through interest rebates on loans, a higher price through customers, or lower taxes. This stacking of rewards provides additional incentives to farmers to score well on KPIs."

The abbreviation KPI stands for Key Performance Indicator. KPIs are variables or measures used to analyze the performance of a company or organization, for example. A KPI is quantitative and measures the extent to which the organization achieves a target. For example, a company can measure the loyalty of its customers by looking at the number of followers on social media.

KPIs for farmers

In the case of farming, we can use KPIs to steer towards sustainable agriculture. For example, the [nitrogen](#) efficiency of a farm could be an important KPI: the ratio between the nitrogen in the products that leave the farm and the input of nitrogen in concentrate, fertilizer and other fertilizers. Another KPI could be the net CO₂ emission of a farm per hectare, including the compensation by carbon sequestration in e.g. soil or vegetation.

Global sustainable food production

Erisman predicts that the nitrogen challenge in the Netherlands will certainly be followed in other areas in the world. "Current food policies encourage farmers to produce as much food as possible against the lowest costs in a global food market with low prices. A KPI system can stimulate them to produce [food](#) sustainably provided that clear environmental targets are set. Governments can balance farmers in environmental sensitive areas by using the KPIs to reward the preservation and protection of ecosystems and the services they provide, such as carbon sequestration, biodiversity, and landscape resilience.

Without such measures, the nitrogen crisis will continue and worsen."

More information: Jan Willem Erisman. Setting ambitious goals for agriculture to meet environmental targets, *One Earth* (2021). [DOI: 10.1016/j.oneear.2020.12.007](https://doi.org/10.1016/j.oneear.2020.12.007)

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