Levers for mainstreaming biodiversity conservation into the food sector

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Abstract

The Strategic Plan for Biodiversity 2010-2020 contains the Biodiversity Vision of halting biodiversity loss globally by 2050. The mid-term evaluation of the Plan shows that if current trends continue, pressures on biodiversity will increase in the coming decade. The crop and livestock production sector caused almost 60% of the biodiversity loss until 2010. At the same time they benefit from ecosystem services, even in high input systems. As more food is needed by 2050 their impact is expected to increase depending on future diets. Mainstreaming biodiversity concerns into downstream parts of the food chain like food processing industries and retail could provide a lever to more biodiversity-friendly decisions in the primary sector.
Objective of this study is to show how biodiversity loss can be halted while simultaneously eradicating hunger and poverty and reaching UN targets like limiting climate change. Therefore we explore three pathways:

- Increase of productivity by technological changes (Global Technology (GT))

- A mixture of productivity increase and more nature based solutions (Decentralised Solutions (DS))

- Dietary changes and reducing food losses (Consumption Change (CC))

Calculations were carried out with PBL's IMAGE and GLOBIO models. Biodiversity is expressed as 'Mean Species Abundance' (MSA). MSA is an indicator of the naturalness of an ecosystem.

Our results show that largest contribution in GT to reduce biodiversity loss comes from productivity increases in regions with large yield gaps (sustainable intensification) and from efficiency improvements in the livestock sector. The pathway of DS also mainly relies on productivity increases which in regions with high inputs and monocultures is combined with less emissions (nutrients, pesticides and GHG) and with(agro)biodiversity stimulation within and around the fields. In the CC pathway still 50% of the biodiversity gains (compared to BAU) come from increased productivity, followed by dietary changes and reduction of food waste.
Despite the direct impact on biodiversity of producers other actors in the food chain like the processing industries and retail hold key positions to influence producers (e.g. by setting standards) and consumers (e.g. choice editing). Mainstreaming biodiversity into these steps of the food chain could offer substantial gains.

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