Food and Agriculture Organization of the United Nations


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THE IMPACT OF LIVESTOCK ON BIODIVERSITY

SUMMARY OF THE PRINCIPLES FOR ASSESSMENT

OVERVIEW

The last report of the Intergovernmental Science-Policy Panel on Biodiversity and Ecosystem Services (IPBES) states that the current rate of species extinction is unprecedented in human history and is threatening human well-being as biodiversity is the basis for essential ecosystem services such as biomass production, crop pollination, water purification or climate regulation. Reversing species decline will require mainstreaming biodiversity across sectors and landscapes. Livestock is among the sectors with highest impacts on biodiversity. As a direct impact, around 30% of land on Earth are used for pastures and feed crops, which results in modifications of biodiversity habitats. In addition, livestock production has indirect impacts on biodiversity through its contribution to climate change and pollution (e.g. nutrients, ecotoxic substances). However, an important specificity of the livestock sector is that its impacts on biodiversity can also be positive. For instance, extensive livestock production can be the only way to maintain semi-natural grassland habitats hosting a unique pool of wild species and providing key ecosystem services.

CHALLENGES AND SOLUTIONS

Livestock contributes directly or indirectly to the five main drivers of biodiversity loss on the global scale (depicted as green circles in Figure 1). For each driver, specific categories of pressures are relevant to livestock systems (black text), but the impacts of livestock on biodiversity can also be positive (green text). Solutions for mitigating pressures and enhancing benefits must be based on sustainable management practices that will be different across production systems.

For instance, in intensive systems based on external feed, the best strategy may be to reduce negative externalities (pollution, greenhouse gas (GHG) emissions) while increasing efficiency to achieve high output levels and sparing land for nature. On the contrary, extensive systems may have the opportunity to maximize benefits to and from biodiversity; sustainable management practices could result in higher levels of biodiversity that could also boost biomass production.


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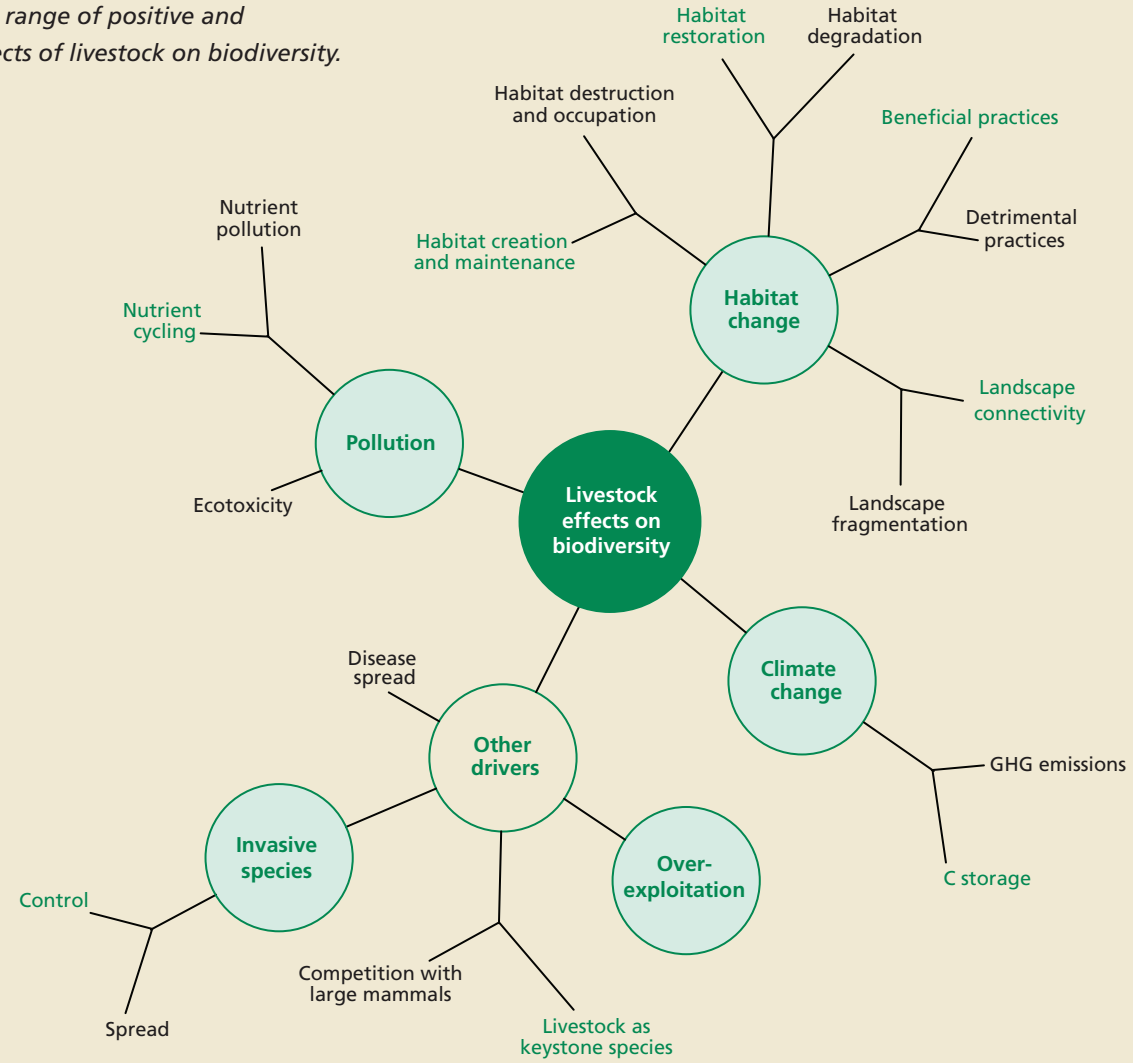
SUMMARY OF THE MAIN PRINCIPLES

The document covers various approaches, methods and indicators, but the following principles are overarching by nature and apply to any assessment of livestock impacts on biodiversity.

- Biodiversity is complex and multivariate by nature. The assessment of biodiversity is complicated by the lack of a common "currency" for biodiversity (like CO_2-eq for climate change), and by it being extremely context-dependent.
- The conservation value of different species and habitat depends on societal value judgement, which complicates decision-making about conservation objectives and priorities. Thus, stakeholder engagement is crucial at all steps of a biodiversity assessment.
- For all geographical areas within the system boundary, assessments of livestock systems should identify and recognize designation frameworks for biodiversity at both habitat level (e.g. protected habitats) and species level (e.g. protected species, International Union for Conservation of Nature red list, and equivalent frameworks at national and subnational scales).
- Livestock systems can have both negative and positive impacts on biodiversity. To increase the relevance of assessment methodologies to the livestock sector methods need to be capable of reflecting the range of beneficial as well as detrimental impacts due to livestock systems.
- As a priority issue, processes such as feed production, especially off-farm feed production, should be included in the system boundaries of livestock systems. This is due to its substantial and increasing contribution to overall impacts on biodiversity.

The Livestock Environmental Assessment and Performance (LEAP) Partnership biodiversity principles document contains ten case studies. They show concrete examples of biodiversity assessment in the context of livestock and illustrate how the principles can be applied. They cover a wide range of livestock systems, geographical areas and assessment methods.

Figure 1. *The range of positive and negative effects of livestock on biodiversity.*



LIVESTOCK ENVIRONMENTAL ASSESSMENT AND PERFORMANCE (LEAP) PARTNERSHIP

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