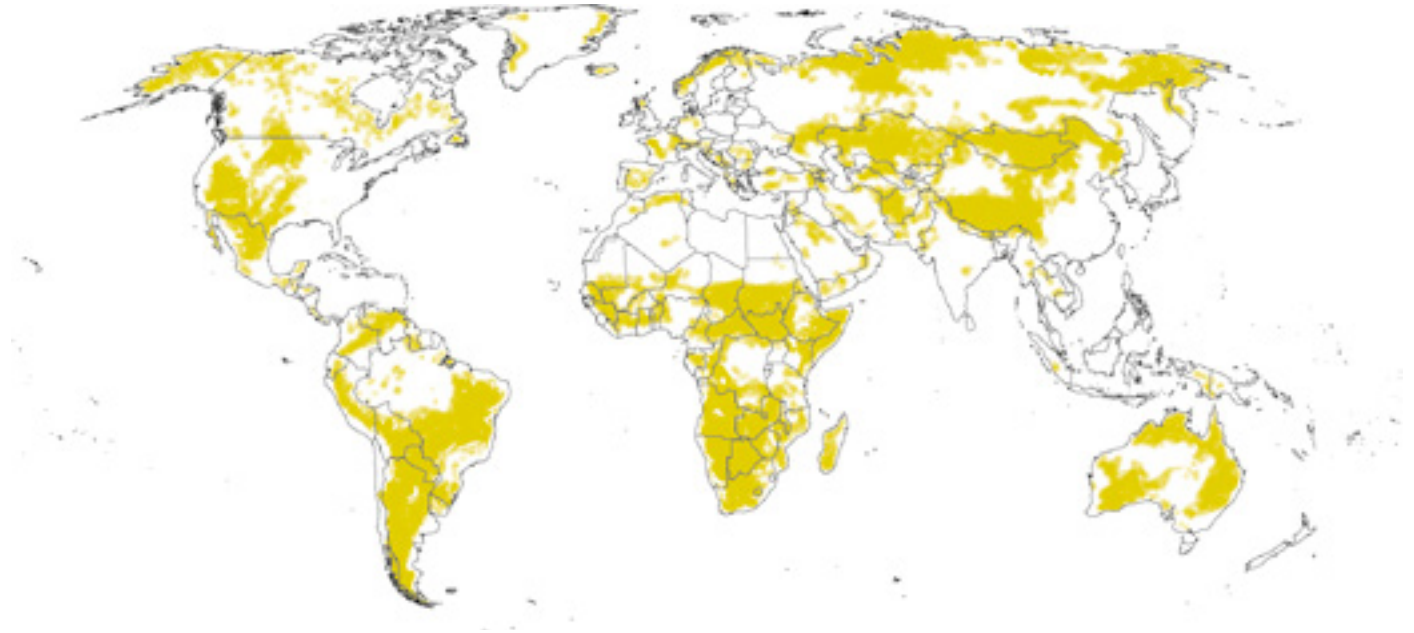
Livestock and climate change:

the benefits of a systems approach

Extensive livestock production makes use of over half of the world's land surface, using highly variable, marginal rangelands for the production of meat, milk and other animal products. Such production supports many millions of livelihoods, including many poor and marginalised people.

The global distribution of pastoralism

Source: IUCN/UNEP 2015

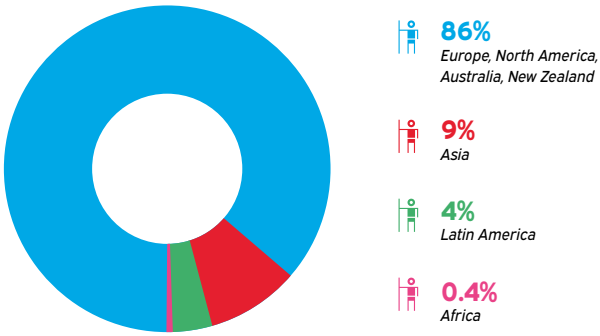


Understanding the way livestock-keepers make use of environments is essential, but remains poorly understood. Too often, inappropriate development interventions undermine mobile, extensive pastoralism in particular. A better understanding of how extensive livestock-keepers make use of rangelands and the impacts this has on greenhouse gas emissions is essential.

Most assessments of emissions from livestock come from industrialised settings, largely in the global North. In a review of multiple life-cycle assessments of food products, only 0.4% came from Africa, for example. In discussions of the climate impacts of livestock this creates huge distortions and many misunderstandings.

Regions covered by 164 Life Cycle Analyses

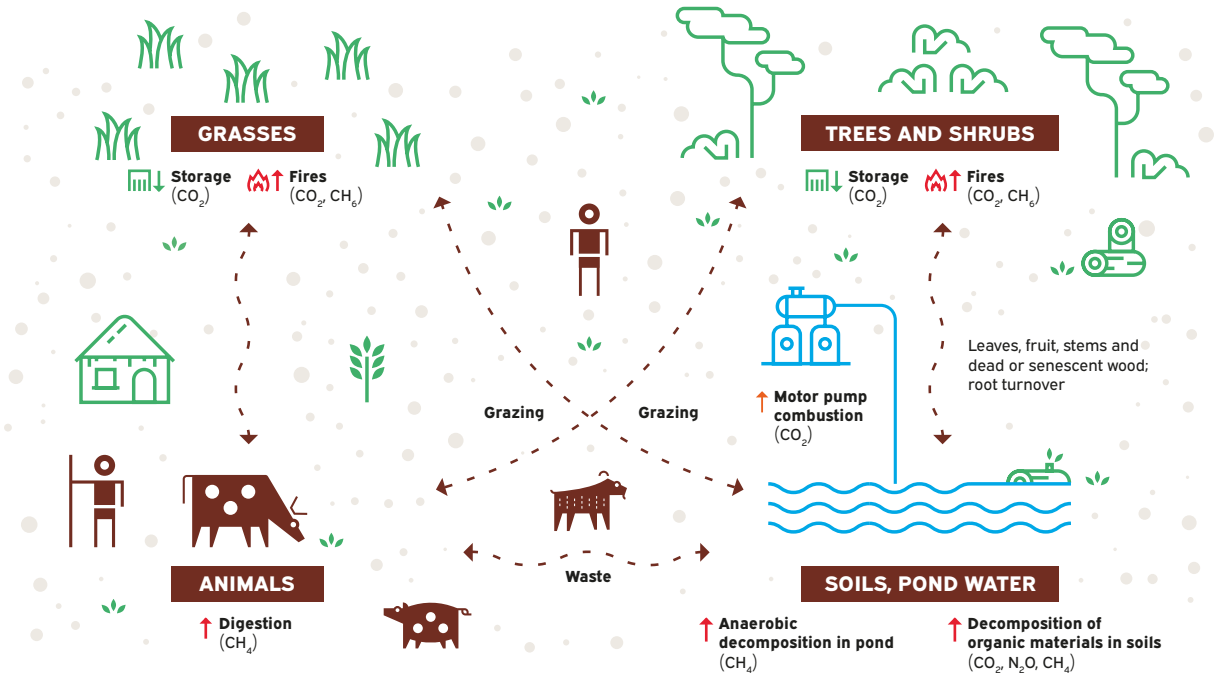
Source: Clark and Tilman (2017)



Studies of extensive livestock production show that such systems can be in carbon balance. Research in northern Senegal shows how mobile management of pastoral herds can result in low net greenhouse gas emissions if the potentials for carbon sequestration in rangelands are taken into account.

A simplified systems diagram of GHG emissions and carbon storage in a pastoral ecosystem in Senegal

Source: Assouma et al. 2019



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	Carbon sinks	↑	Greenhouse gas emissions	↓	Carbon from the atmosphere stored by plants	⇢	Recycling of carbon and nitrogen in plants and faeces

This study took a wider systems approach, looking broadly at the multiple benefits of livestock production for both people and environments. Benefits include contributions to carbon sequestration, as well as to biodiversity, landscapes, livelihoods and cultural values.

Livestock-keepers' practices can contribute to tackling climate change. Light grazing by pastoralists' mobile herds can result in increased sequestration, while dispersed deposition of manure reduces emissions. Careful herding, animal training and breeding, can result in higher quality feed intake and so reduced methane emissions. Local knowledge of rangeland environments offers many opportunities for climate mitigation when geared to local conditions.

The global narrative that often suggests that all livestock are bad for the environment must be qualified. Conventional assessments are biased towards industrialised systems and rarely reflect pastoral contexts. To make sure that policies effectively address climate change, improved data and a wider systems approach are needed in order to reflect the conditions of pastoralism in large parts of the world.

Sources

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Find out more

This briefing is a summary of key points in the report, *Are livestock always bad for the planet? Rethinking the protein transition and climate change debate.* The report is produced by the PASTRES research programme, together with a number of partners.

To download the full report and for details of partners, a list of references and information sheets, visit www.pastres.org/livestock-report

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