

Food for thought: Use more forages in livestock farming

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Brown Swiss cattle are shown in a silvo-pasture in the Ecuadorian Amazon.
Credit: Diana Burbano

Small-scale livestock farming in the tropics can become more intensive yet sustainable if more and better forage is used to feed the animals being reared. This could benefit farming endeavours in rural South Asia, sub-Saharan Africa, Central America and the Caribbean, and see a move away from the increased reliance on grain-based feeds, say scientists at CIAT (International Center for Tropical Agriculture) and Thomas Rudel of Rutgers University in the US, in Springer's journal *Ambio*.

The world's livestock population has over the past two decades shifted from ruminants (such as cattle, goats and sheep that digest their food in a

complex of stomachs) towards monogastric animals (such as pigs and poultry that have a single stomach). Whereas the former can quite easily digest pasture grasses, other forages and roughages, the latter cannot. In especially the developed world farmers increasingly use more grain and soybean-based concentrates to feed their animals. This has led to a rise in grain prices and has reduced the availability of food for human consumption.

Rudel and his associates at CIAT argue that the "LivestockPlus" program could be a way forward by increasing the use of forages to feed livestock, which is often reared on small farms, in the tropics. Its agricultural research and extension efforts help to intensify in sustainable ways the management of forage grasses and legumes, shrubs, trees, and animals.

"In addition to enhancing the food security of poor consumers by reducing global demand and prices for grains, forage-focused sustainable intensification would improve the productive capacity of poor producers who raise crops and livestock on small landholdings in rural South Asia, sub-Saharan Africa, and Central America.", says Rudel.

So far the adoption of new tropical forages has often been fitful with exception such as the large scale adoption of pasture grasses in Latin America, explains Rudel, as it often only occurs in specific locations and too slowly to produce noticeable changes in financial or environmental terms. It can be done better by introducing new and more nutritious forage varieties and animal management practices to specific farming areas, and by spreading the news about it from farmer to farmer by word of mouth. The tighter integration of forage production with other agricultural activities on a farm could also work well.

Success can also better be accomplished through coordinated efforts by farmers, agricultural extension workers, and scientists from national or

international organizations like CIAT. These efforts should explicitly take note of the ecological process at work in a specific agricultural production system, current farming practices, and what the capabilities are of those who are going to use the new innovations.

Outside interventions like LivestockPlus would be most helpful when they fit well into the array of other smallholder activities. To assess these possibilities, farmers need specific information about planting and management requirements for forages. Suitable maps could for instance inform outreach and smallholder efforts about when, where, and how to use new forages best.

More information: Rudel, T.K. et al (2015). LivestockPlus: Forages, sustainable intensification, and food, security in the tropics, *Ambio*. [DOI: 10.1007/s13280-015-0676-2](https://doi.org/10.1007/s13280-015-0676-2)

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