



# More Fuel for the Food/Feed Debate

FAO Study indicates that livestock primarily consume foods not fit for human consumption and meat production requires less cereals than generally reported



Animal source foods make a vital contribution to global nutrition and are an excellent source of macro- and micronutrients. Livestock products make up 18% of global calories, 34% of global protein consumption and provides essential micro-nutrients, such as vitamin B12, iron, zinc and calcium. Keeping livestock provides a secure source of income for over 500 million poor people.

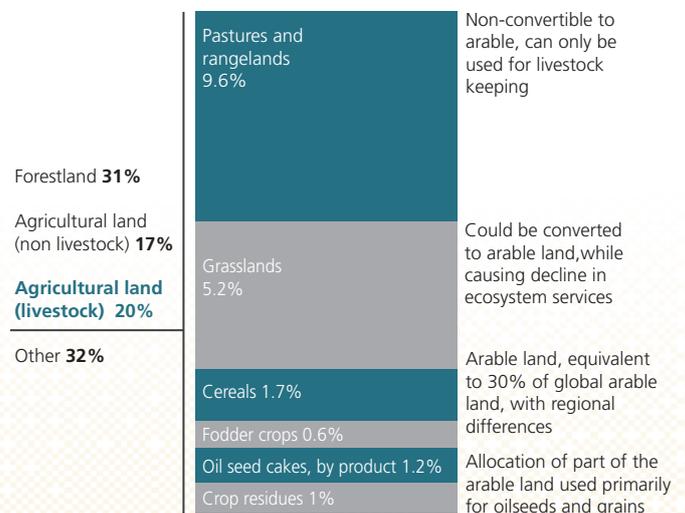
In 2050, the world will count 9.6 billion people, 70% living in cities with an average income almost twice as high as today. As a result, global demand for animal products will continue to grow and play a critical role in global food security and nutrition. But livestock use a large share of agricultural land and are often considered a resource drain. Particularly criticized is the low efficiency of livestock to convert feed into human edible protein and the competition for the use of cereals as livestock feed or for direct human food.

A study by FAO and published in *Global Food Security* found that livestock rely primarily on forages, crop residues and by-products that are not edible to humans. The study also showed that some production systems contribute directly to global food security and nutrition, as they produce more highly valuable nutrients for humans, such as proteins, than they consume.

This study also aims to correct some information often found about livestock and the environment, especially about how much feed is used in the sector and what it is. There is currently no official and complete international database on what livestock eat. This study contributes to fill this gap and to provide peer-reviewed evidence to better inform policy makers and the public.

This study estimate **that 86% of livestock feed is not suitable for human consumption**. If not consumed by livestock, part of crop re- sidues and by-products, in particular, could be wasted as human population grows and consumes more and more processed food.

Animals also consume feed that can be eaten by people. Grains account for 13% of the global livestock dry matter intake. These grains represent about one third of global cereal consumption. Contrary to high estimates commonly found in the press, this study found that an average of **only 3 kg of cereals are needed to**



Source: Mottet, A., de Haan, C., Falcucci, A., Tempio, G., Opio, C. and Gerber, P., 2017. Livestock: On our plates or eating at our table? A new analysis of the feed/food debate. *Global Food Security*, 14, pp.1-8.

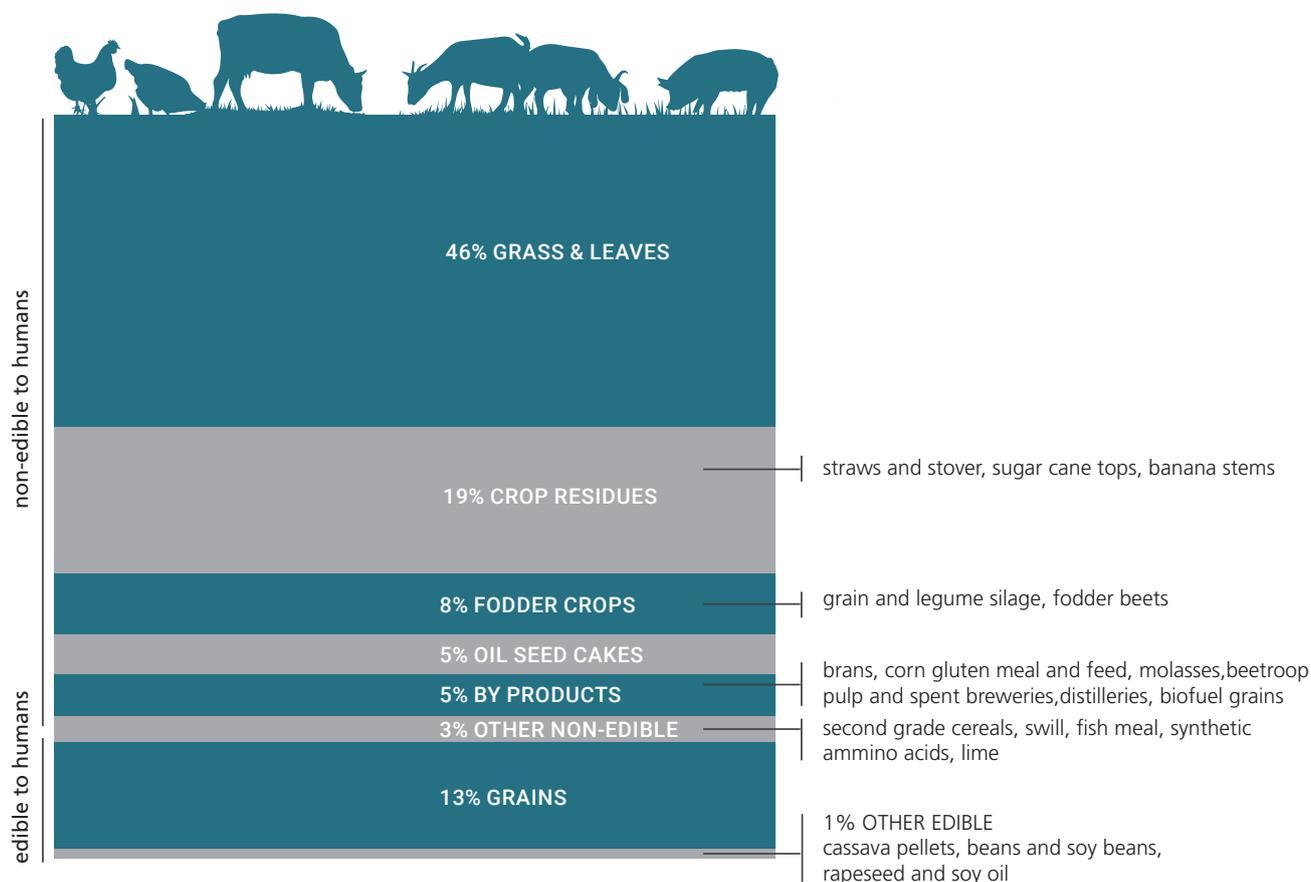
**produce 1 kg of meat at global level.** It also shows important differences between production systems and species. For example, because they rely on grass and forages, grazing cattle need only 0.6 kg of protein from edible feed to produce 1 kg of protein in milk and meat, which are of high nutritional quality. **These grazing systems contribute directly to net global protein availability.**

The study also investigates the type of land used to produce livestock feed. Results show that out of the 2.5 billion ha needed to feed livestock, 77% are grasslands and pastures, two thirds of which cannot be converted to croplands and can therefore only be used for grazing animals.

Livestock production is growing fast because demand for animal products is rising, particularly in low and middle income countries. Therefore, the area of land needed to raise animals will also increase if feed conversion ratios (FCR) are not further improved. This study showed that modest improvements in feed conversion ratios (between 5 and 15%) can prevent further expansion of arable land dedicated to feed production.

Steps have already been taken through feed formulation, animal breeding and better veterinary services to improve FCRs over the last 30 years. More efficient feed conversion will also reduce livestock's environmental footprint, but continued progress is needed to make the system more sustainable. In addition, it is essential to improve the recycling of food wastes and by-products into livestock feed as well as to increase feed crops yields.

**Animal production, in its many forms, plays an essential role in food systems,** making use of marginal lands, turning by-products into edible goods, contributing to crop productivity and turning edible crops into highly nutritious, protein-rich food. Quantifying the land and biomass resources engaged in livestock production and the food output they generate, but also improving our modelling capacity by including trends in consumer preferences, shifts in animal species, climate change impacts, and industrial processes to improve the human edibility of certain feed materials is arguably basic information needed as part of further research into the challenge of sustainably feeding 9.6 billion people by 2050.



Source: Mottet, A., de Haan, C., Falucci, A., Tempio, G., Opio, C. and Gerber, P., 2017. Livestock: On our plates or eating at our table? A new analysis of the feed/food debate. *Global Food Security*, 14, pp.1-8.

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[Livestock: On our plates or eating at our table? A new analysis of the feed/food debate.](#)

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[Global Livestock Environmental Assessment Model – interactive \(GLEAM-i\)](#)  
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