



# FOOD SECURITY AND FARM ANIMAL WELFARE

## A BETTER WAY TO FEED THE WORLD

An increasing share of the world's cereals and other crops are used to feed intensively reared livestock, primarily to produce meat to feed people who have more food than they need. In a world where nearly one billion people experience hunger, this is an inefficient system, so why is further intensification of food and farming being proposed?

### KEY FINDINGS

**Food Security tends to be put at risk by,**

- intensifying livestock farming,
- low crop productivity, and
- high meat consumption.

**Extensive livestock farming is better all round:**

- it often improves food security,
- it provides fuel, fibre and fertiliser,
- and is better for farm animal welfare.

### FOOD SECURITY RESEARCH

Compassion in World Farming commissioned new independent research to find out what types of livestock systems would be best suited to feeding the world population in 2050. The study led by Professor Erb shows that continuing to intensify the farming of livestock is likely to increase pressure on food security in all regions, particularly in those where food security is already problematic, such as Africa and Asia.

**Extensive livestock farming often creates better food security than intensive farming**

Extensive farming helps reduce competition between people and farm animals for high quality grains and high-grade arable land. Intensive farming tends to lead to a greater amount of grain being used for animal feeds. This places animals in more, and direct, competition with people for scarce resources such as land, water and energy. Vast quantities of resources are used in livestock farming, including around one third of the world's cereal harvest (two thirds in the EU), reducing the resource base available for people.



Livestock grazing as part of crop rotation.



## FACTORS AFFECTING FOOD SECURITY

The study uses modelling to test the possibility of feeding 9 billion people in 2050 under a range of scenarios. The scenarios have different farming systems, human diets and crop yields.

### Extensive livestock farming improves food security

Across the varying yields and diets, extensive livestock farming is likely to provide food security in more cases than intensive farming. This is most notable in scenarios with high meat diets.

### High meat consumption limits food security

It is not possible to feed the world in 2050 with a western-style diet through intensive livestock farming, even with unrealistically high crop yields. Unless yields rise significantly, even the most frugal global diet scenarios are not feasible with intensive, grain-fed livestock farming. A healthy diet across the world, which has moderate amounts of meat available for all people, is probably achievable by 2050 with extensive farming in all yield scenarios.

### Crop yields are important to food security

The study finds that if global average yields rise only slightly from today, intensive livestock farming cannot achieve food security in 2050 in any of the diet scenarios, but when relying on extensively raised livestock, food security can probably be achieved in two diet scenarios. With higher yields, extensive livestock farming is still more likely to provide food security than intensive farming with grain-based animal feed.



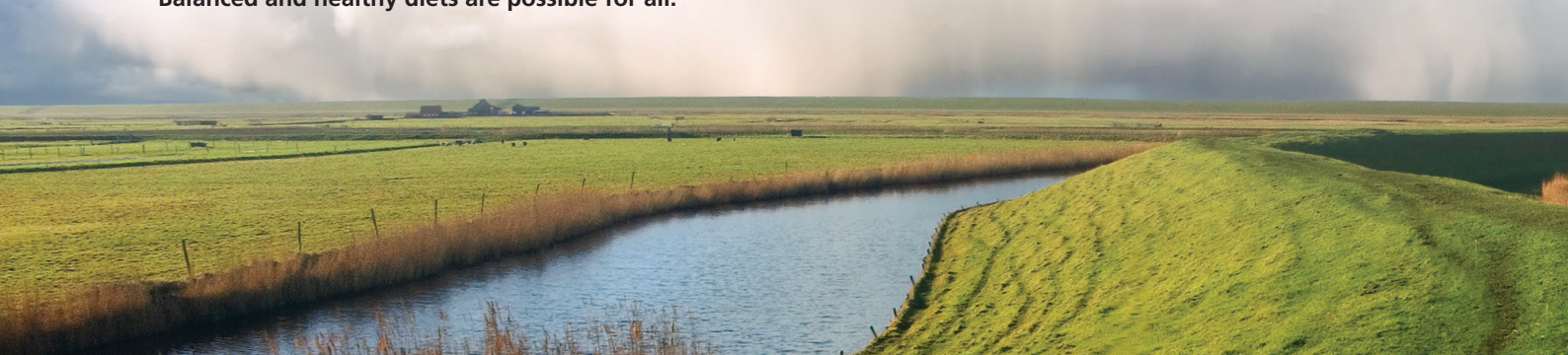
Balanced and healthy diets are possible for all.



Livestock are vital for draught in many farms.

## ANIMALS ARE MORE THAN FOOD

Livestock play a number of vital roles in food security, through the provision of food, providing around 16% of global calorie intake. However, they also provide a range of important goods and services to society, especially in small-scale, mixed farming, where livelihoods are marginal and food security is most at risk. In these vulnerable communities, farm animal manure is a key resource and is used as fuel for cooking, as a building material and critically, as fertiliser for crops. Animals also provide power for ploughing and water harvesting. Animals are important culturally and also act as financial collateral. Taking animals off the land and putting them into intensive monocultures removes these functions of livestock which are vital for subsistence farmers and communities.







Caged hens rely on high-grade grains, whereas extensive hens can eat wastes and forage to supplement their diets.

## OUR ANALYSIS

In many parts of the world, productivity in livestock farming has increased per animal, which has been achieved through a number of mechanisms. Breed selection for high yield has led to increases in meat, milk and egg productivity and is largely dependent on the use of high-grade, grain-based animal feeds. While individual farm productivity may have risen through grain-based animal feeds, this does not equate to efficiency from a food system or from a food security perspective.

Food insecurity is particularly acute for smallholders and subsistence farmers. Global agendas are aimed at increasing efficiency and productivity of these farmers through intensification. Intensification in industrialised countries has been achieved through industrial-scale intensive agriculture, typified by thousands of animals being confined in very small spaces and fed high-energy feeds. For subsistence farmers, however, the use of high-productivity but highly grain-dependent breeds is of little value because they rely on more robust animal breeds that are able to thrive on crop residues and waste. Equally, high reliance of grain in livestock diets requires high inputs of artificial fertilisers, that require energy which is costly and phosphorous, which is in limited supply. Food systems which are more dependent upon costly and finite resources are more vulnerable.

Animals reared for food production around the world can be farmed in many different ways. The EU's Lisbon Treaty recognises that animals are sentient beings and their physiological, psychological and behavioural needs should be met. Intensification of production has moved animals away from an environment that meets their needs and into confined farm systems that fail to fulfill many of the animals' basic physical and behavioural needs.

The majority of the world's laying hens are now kept in cages, often with insufficient space to move and stretch their wings properly and no way to escape injurious pecking. Hens have strong instincts to nest and to feel safe when they lay their eggs and these basic needs are denied in barren caged systems. Outdoor systems have much better welfare potential, providing room to move freely, forage and lay their eggs in nests.

Pig farming is also heavily industrialised, often without sufficient space for sows to walk even a few steps, turn round, or properly tend their young. Pigs often have parts of their teeth and tails cut off, without anesthetic, to fit the animal to the system, rather than providing a farm system which meets the needs of the animal. Outdoor reared pigs benefit from far more enriched environments, bringing many welfare benefits.



## OUR CONCLUSIONS

Extensive livestock farming and balanced healthy diets are better for food security and animal welfare. Intensification of livestock farming in western countries has led to unsustainable farming and unhealthy diets, and is associated with low farm animal welfare. Exporting current intensive food and farming systems to low-income nations is damaging. It is time to de-intensify livestock systems and develop humane sustainable farming systems which are fit for purpose and fit for the future.

The current focus on increasing productivity and intensifying livestock farming is not the solution. All aspects of food security and nutrition must be addressed, including reducing food losses and food waste. We must also move away from a western-style diet, not only because it is damaging the planet and animals, but also because it is linked to some cancers and the biggest causes of death globally, heart disease.

## POLICY RECOMMENDATIONS

- ✓ Develop humane sustainable food security strategies, including farm animal welfare in future food security assessments and policies.
- ✓ Reverse the intensification of livestock farming and seek optimal farming.
- ✓ Reduce the quantity of arable crops, especially cereals, fed to livestock.
- ✓ Promote sustainable, lower meat diets and address food losses and waste.

## ACKNOWLEDGEMENTS

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