

DOWN TO EARTH

CHARTER FOR A CARING FOOD POLICY

THAT NOURISHES OUR HEALTH, THE ENVIRONMENT
AND ANIMAL WELFARE

BRIEFING NOTES

Compassion in World Farming 2014



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WHY WE NEED TO MOVE FROM INDUSTRIAL LIVESTOCK PRODUCTION TO MORE SUSTAINABLE FORMS OF ANIMAL HUSBANDRY

These notes detail the thinking that informs Compassion in World Farming's Charter for a Caring Food Policy.

HEALTH

Across the world almost 870 million people suffer from hunger.¹ At the same time 1.4 billion people are overweight, of whom 500 million are obese.² In the EU, the proportion of overweight and obese people in the adult population varies between the Member States ranging from 37% to 69%.³

The high levels of meat consumption that have been made possible by industrial farming are having an adverse impact on human health. The European Commission points out that overconsumption of animal protein can lead to obesity, diabetes, heart diseases and certain cancers.⁴

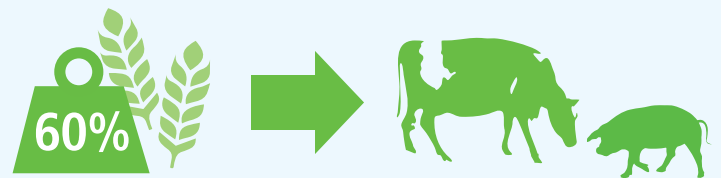
Nutritional quality

The UN Food and Agriculture Organization points out that the modern western diet lacks nutrient quality and highlights the need to integrate the dimension of nutritional quality into food policy.⁵ Modern western diets tend to contain too much fat. In addition, they are often deficient in the beneficial omega-3 fatty acids and have excessive amounts of omega-6 fatty acids relative to omega-3.

Research shows that free-range animals – who consume fresh forage and have higher activity levels – often provide meat of higher nutritional quality than animals that are reared industrially. For example, meat from free-range chickens contains substantially less fat and generally a higher proportion of the beneficial omega-3 fatty acids than meat from chickens reared industrially.⁶ Similarly, pasture-fed beef has less fat and higher proportions of omega-3 fatty acids than grain-fed beef.

INDUSTRIAL LIVESTOCK PRODUCTION - RESOURCE INEFFICIENT

At the heart of many of the problems stemming from industrial production is its need to feed animals on cereals that would provide much more nutrition if eaten directly by humans.



60% of EU cereal production is used as animal feed.⁷ Globally 33%-40% of the world's cereal harvest is used to feed animals. Feeding cereals to animals is inefficient as much of their food value is lost during conversion from plant to animal matter. One study shows that for every 100 calories that we feed to animals in the form of crops, we receive on average just 30 calories in the form of meat and milk.⁸ A report by the UN Environment Programme goes further concluding that a kilo of cereals provides six times as many calories if eaten directly by people than if it is fed to livestock.⁹ The UN Food and Agriculture Organization (FAO) reports that grain-fed animals consume more human-edible protein than they provide while extensively reared ruminants add to the supply of protein.¹⁰

Using cereals as animal feed is a wasteful use not just of these crops but of the scarce land, water and energy used to grow them.

As a recent FAO report put it¹¹:

“When livestock are raised in intensive systems, they convert carbohydrates and protein that might otherwise be eaten directly by humans and use them to produce a smaller quantity of energy and protein. In these situations, livestock can be said to reduce the food balance.”



Free-range Label Rouge chickens with access to trees allowing natural perching behaviour.

Industrial livestock production is perhaps the most inefficient way of feeding people ever devised. We pour sufficient food into animals to feed 100 people and get back just enough to feed 30 or less. In a world that prizes resource efficiency and faces the challenge of feeding over nine billion people by 2050, this is a deeply flawed approach.

Use of soy as animal feed

The EU imports around 30 million tonnes of soy from South America per year.¹² Almost all is used for animal feed. Globally, 97% of the world's soymeal is used to feed animals. The production of soy for animal feed is a key factor driving deforestation in South America; this entails massive biodiversity loss and greenhouse gas emissions.¹³ EU industrial animal production is a major contributor to these problems due to its substantial imports of soy for animal feed.

INDUSTRIAL LIVESTOCK PRODUCTION'S ADVERSE IMPACT ON ENVIRONMENT

As we have seen, considerably more crops are needed to provide a given amount of nutrition if they are fed to industrially farmed animals rather than consumed directly by humans. As a result, much more arable land, water and energy are needed to provide a unit of nutrition from industrially produced

meat than from meat derived from animals that are fed little human-edible crops. The latter includes grazing animals or animals fed on crop residues (the part of the crop that is inedible for people) in integrated crop-livestock farms.

The European Commission recognises that consuming animal products has much higher impacts on resource use than a similar nutritional level of plant based products.¹⁴

Water: overuse and pollution

Industrial livestock production generally uses much more water than other forms of animal farming. This is due not to the water drunk by the animals but to the water used to grow the crops needed to feed the animals.

Industrial production is also a major polluter of water. The synthetic fertilisers used to grow feed crops contain high levels of nitrogen. Plants, however, only absorb about 30-60% of the nitrogen fertiliser applied to them.¹⁵

The concentrate feed given to industrially reared animals also contains high levels of nitrogen. Pigs assimilate just 30% and broiler chickens 45% of the nitrogen in their feed; the rest is excreted in their manure.¹⁶ The unabsorbed nitrogen is washed into rivers and lakes and leaches from the soil into groundwater, contaminating sources of drinking water and damaging aquatic and marine ecosystems.

The UN World economic and social survey 2011 states that:

“Intensive livestock production is probably the largest sector-specific source of water pollution.”

A study comparing various diets states that a decrease in meat intake would contribute most to a reduction of the EU's food-related water footprint.¹⁷ However, it is particularly a reduction in the consumption of industrially-produced meat that would be most beneficial in reducing the use and pollution of water. A major study concludes that *"Animal products from industrial systems generally consume and pollute more ground- and surface-water resources than animal products from grazing or mixed systems."*¹⁸ The authors make it clear that:

- The larger water footprints for animal products obtained from industrial systems are due to the greater dependence on cereal-based feed in industrial systems;
- The water footprint of any animal product is larger than the water footprint of crop products with equivalent nutritional value.

Excess nitrogen in the environment

Writing in *Nature* the authors of the *European Nitrogen Assessment* (ENA) describe the huge increase in reactive nitrogen (N_r) put into the environment as *"one of the major environmental challenges of the 21st Century"*.¹⁹ The ENA identifies five key threats associated with excess N_r in the environment: damage to water, soil (acidification of agricultural soils), air (and hence human health), the greenhouse balance, and ecosystems and biodiversity.

This study concludes that 75% of industrial production of N_r in Europe is used for fertiliser. It stresses that the primary use of N_r in crops is not directly to feed people but to feed livestock.

The ENA states that *"Human use of livestock in Europe, and the consequent need for large amounts of animal feed, is therefore the dominant human driver altering the nitrogen cycle in Europe"*.

Land: degradation and overuse

Worldwide the increasing demand for feed crops is leading to intensification of crop production. This has led to soil degradation as farmers abandon traditional, sustainable methods of ensuring soil quality such as grain-legume rotations, fallow periods and animal manure. The Commission points out that *"45% of European soils face problems of soil quality,*

evidenced by low levels of organic matter".²⁰

In some countries, irrigation is increasingly being used to boost feed crop yields. However, in the medium term irrigation leads to salinisation and hence to reduced soil fertility.

The Commission states that to produce one kilogram of protein from cereals requires the use of 20m² of land; for poultry meat and milk this is 35m² and for pork 60m².²¹

Biodiversity loss

The European Environment Agency has concluded that *"Biodiversity in agro-ecosystems is under considerable pressure as a result of intensified farming"*.²² Intensive agriculture has played a major role in the decline in farmland birds, grassland butterflies and pollinators such as bees.²³

The European Commission states that the livestock sector may be the leading player in the reduction of global biodiversity through its demand on land.²⁴ The contribution of livestock farming to the present global loss of biodiversity is estimated by a Dutch study to be around 30%.²⁵

Climate change

Meat and dairy products are generally responsible for a higher level of greenhouse gas (GHG) emissions per unit of nutrition produced than non-animal foods.²⁶ However, debate continues as to whether industrial or extensive animal production is less damaging for climate change.

The clearing of forests or savannah to grow animal feed or for cattle rearing releases huge amounts of stored carbon into the atmosphere, thereby contributing to climate change.

The feed crops needed for industrial livestock are often grown intensively with the aid of synthetic nitrogen fertiliser. The manufacture of these fertilisers uses considerable amounts of fossil fuel which results in sizeable CO₂ emissions.²⁷ In addition, the application of nitrogen fertiliser leads to substantial emissions of nitrous oxide, the most aggressive GHG.

Cattle and sheep emit methane. However, research shows that the carbon sequestering (storing) benefits of cattle kept on grassland can balance or even outweigh their methane emissions.²⁸



Do we really need to increase food production by 60-70% to feed the world population of 9.6 billion anticipated by 2050?

Some argue that, in order to feed the anticipated world population in 2050 of 9.6 billion, food production is going to have to increase by 60%-70% or even by 100%. And on the basis of these figures, we are told that further intensification of agricultural production is essential.

But do we really need to produce so much extra food? Could we perhaps feed a proportion of the expected increased population by (i) using the food that we produce more efficiently and (ii) reducing food waste?

As we have seen, when human-edible cereals are fed to animals much more food energy and protein are put into the animal than are returned as meat. The UN Environment Programme calculates that the cereals which, on a business-as-usual basis, are expected to be fed to livestock by 2050, could, if they were instead

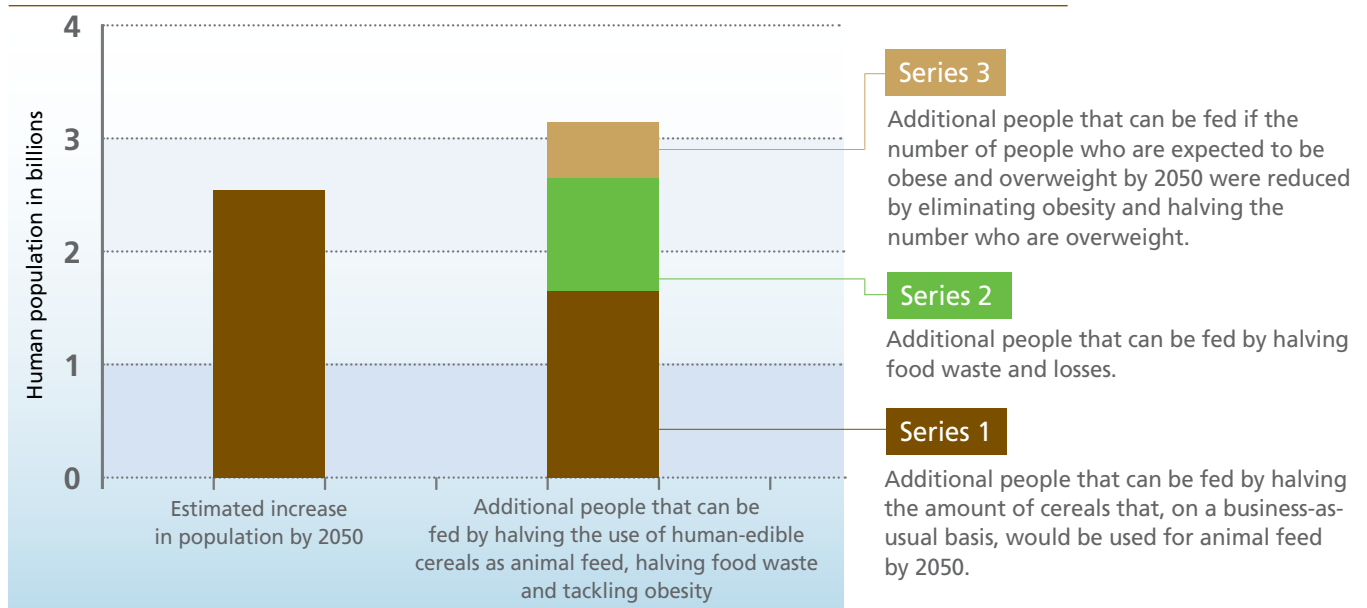
used to feed people directly, provide the necessary food energy for over 3.5 billion people.²⁹

If a target were adopted of halving the amount of cereals that, on a business-as-usual basis, would be used for feed by 2050, an extra 1.75 billion people could be fed.

An interim report by the World Resources Institute (WRI) states that worldwide 24% of food calories are lost or wasted.³⁰ If loss and waste could be halved an extra one billion people could be fed.

Based on figures in the WRI interim report, we calculate that an extra 310 million people could be fed if the number of people who are expected to be obese and overweight by 2050 were reduced by eliminating obesity and halving the number who are overweight.

Feeding the estimated extra 2.6 billion population expected by 2050



IN SUMMARY

The world population will reach 9.6 billion by 2050, an increase of 2.6 billion on today's figure. Feeding the extra 2.6 billion people does not necessarily require a 60%-70% increase in food production.

The extra food needed could be made available by:

- Halving the amount of cereals that, on a business-as-usual basis, would be used for animal feed by 2050; this would enable an extra 1.75 billion people to be fed;
- Halving food losses and waste; this would allow an extra one billion people to be fed.

- Tackling over-eating: if the number of people who are expected to be obese and overweight by 2050 were reduced by eliminating obesity and halving the number who are overweight, an extra 310 million people could be fed.

The challenge of feeding nine billion does not primarily centre around increasing food production but on restructuring the way in which we use the food that we produce.

THE NEED TO DEVELOP A NEW FOOD AND AGRICULTURE MODEL

Referring to the need to feed over 9 billion people by 2050, the UN Environment Programme (UNEP) stresses that *“simply cranking up the fertilizer and pesticide-led production methods of the 20th Century is unlikely to address the challenge”* as it will increasingly undermine the critical natural inputs on which agriculture depends.³¹

We need to develop an agricultural model that uses resources more efficiently and that rather than damaging the environment, enhances soil quality, uses water sparingly without polluting it and restores biodiversity and ecosystems.

We should avoid the excessive use of cereals in animal feed and instead put more emphasis on:

Raising animals on species-rich extensive pastures:

These can support biodiversity; they provide a diverse environment, rich in plants and invertebrates and beneficial to a variety of birds. In addition, they store carbon and can reduce the use of nitrogen fertilisers by the incorporation into pasture of legumes (e.g. clover) which fix atmospheric nitrogen in the soil. The great strength of extensively reared cattle and sheep is that they convert grass into food that we can eat and are able to use land that is generally not suitable for other forms of food production.

Integrated crop/livestock production:

The link between animals and the land should be restored through integrated crop-livestock systems where animals are fed on crop residues and their manure, rather than being a pollutant, fertilises the land.



Reducing food waste:

The Commission points out that in the EU we waste 90 million tonnes of food every year.³² This inevitably also means that huge amounts of the resources used in food production are used in vain. Reducing food waste would enable many more people to be fed.

Pigs and poultry are nature's great foragers and recyclers. They should, subject to stringent safeguards, be fed on the food waste that cannot be avoided and kept outdoors so enabling them to forage. This could replace much of the cereal- and soy-based feed currently used.



The new model should be based on the following ecological principles and actions:

- The fostering of healthy ecosystems and beneficial ecosystem services such as carbon sequestration and crop pollination;
- The development of improved biodiversity at ecosystem, farm, seed and soil levels;
- Improving soil fertility and quality by methods based on natural processes such as the use of rotations, legumes, green manure and animal manure (though in some regions fertility may be so poor that the use of synthetic fertilisers is needed to aid the process of building fertility);
- The use of practices that conserve water and are drought-resistant e.g. techniques for improving water retention in the soil;
- Using the principles of integrated pest management to control insects, plant pathogens and weeds;
- The encouragement of localised and seasonal food systems;
- The development of resilience to climate shocks and price volatility.

Support for smallholders in the developing world

Industrial livestock agriculture is having injurious impacts on the environment in the developing world. It is facilitating the adoption of excessively meat-based diets associated with increased levels of obesity and heart disease. It tends to out-compete small-scale farmers, generating little employment for local people.

Smallholder farmers are among the poorest in developing countries. Olivier de Schutter, the UN Special Rapporteur on the Right to Food, points out that hunger today is not so much a consequence of global supplies being unable to meet demand; rather it is due to poverty³³. He stresses that *“increasing the incomes of the poorest is therefore the best way to combat hunger”*.

EU policy should focus on support for smallholders as this contributes to employment creation and local food security. Assistance should be given with the development of infrastructure including roads, information and communications technology and storage to reduce post-harvest losses. This will improve rural livelihoods and smallholders' purchasing power, making them better able to buy the food that they do not produce themselves and to have money available for other essentials such as education and medicine.



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