FODDER CROPS

FEEDING FACTORY FARMS

Is industrial livestock production really an efficient way to produce meat and milk? The fodder needed to feed confined animals must be imported – and the manure has to go somewhere.

We are often told that by cramming huge numbers of animals into crowded sheds, industrial livestock production saves land. This ignores the huge areas of land needed to grow the cereals and soy that are used to feed industrially produced animals. About 33% of global croplands are used to produce feed for livestock: in the European Union the figure is even higher, with 60% of EU cereals being used to feed animals.

Feeding cereals to animals is inefficient. For every 100 calories that we feed to animals in the form of human-edible crops, we receive on average just 17–30 calories in the form of meat. Using arable land to produce feed crops for animals is wasteful; more people can be fed from a given area of arable land if it is used to grow crops for direct human consumption.

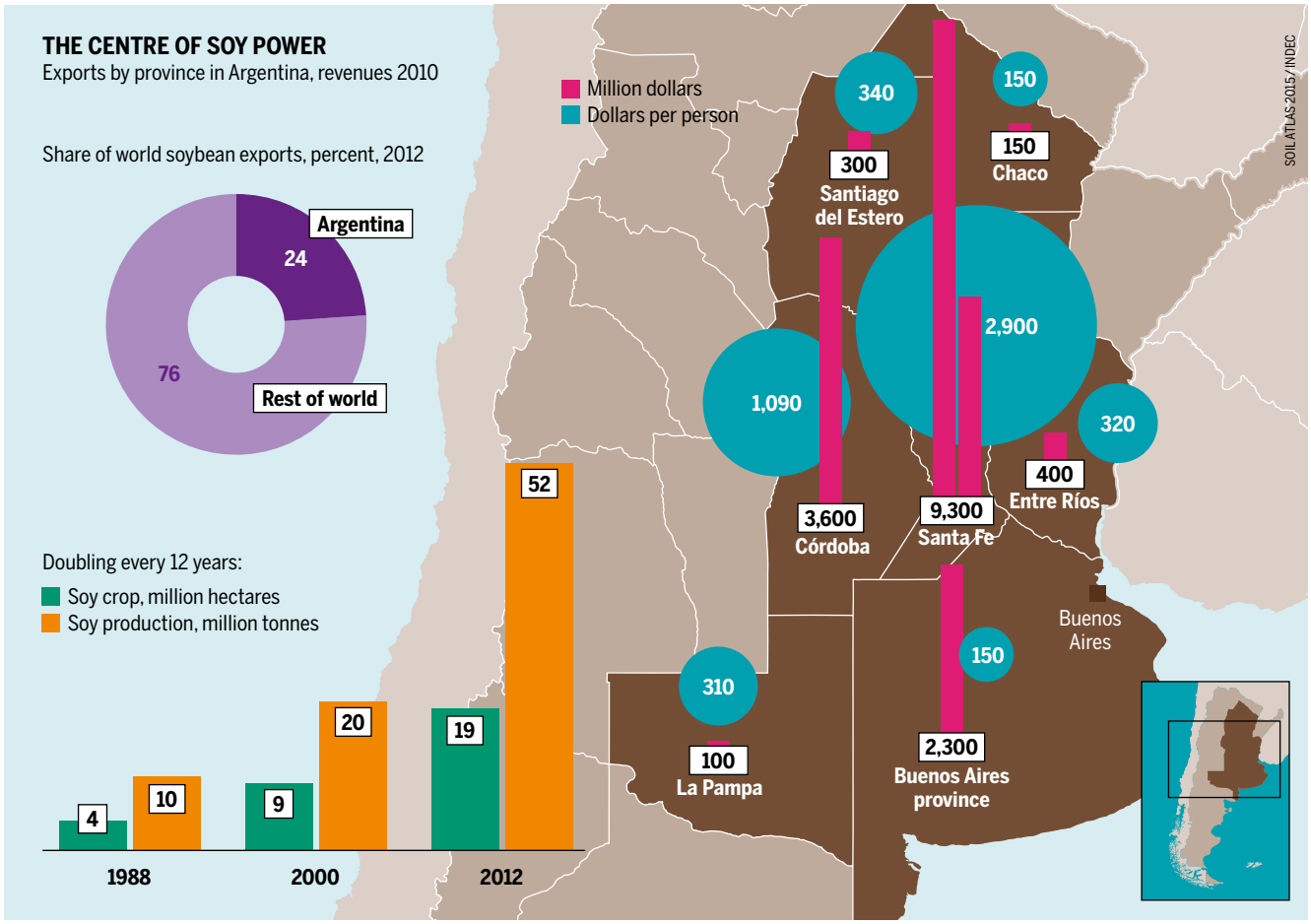
In contrast to this, animals make efficient use of land when they are raised:

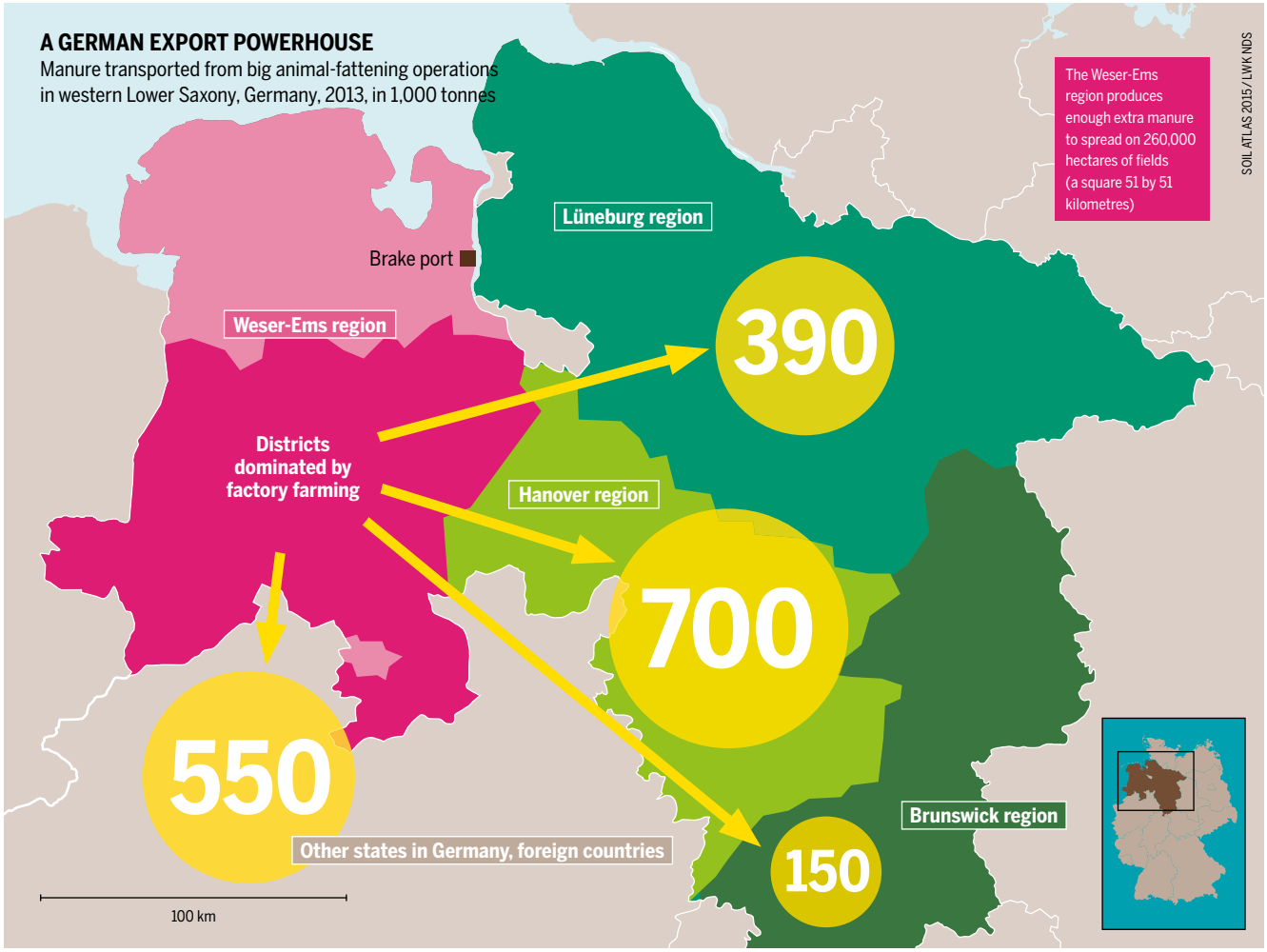
- On pastures, where they convert grass into food that we can eat and use land that is generally not suitable for other forms of food production.
- In integrated crop/livestock systems, where they are fed on crop residues – i.e., the part of the crop that people cannot eat.

The need to produce huge quantities of fodder has led to intensification of crop production. If demand for fodder crops were reduced, arable land could be farmed less intensively, with fewer monocultures, chemical fertilizers and pesticides. This would allow soil quality to be restored through use of rotations, legumes (plants that can take nitrogen from the air and add it to the soil), fallow periods and manure. This is a pressing challenge: 45% of European soils face problems of soil quality, as shown by low levels of organic matter.

Globally, if demand for crops to feed industrially farmed animals continues to rise, cropland will either have to expand, or it will be farmed more intensively, or both. Expan-

In Argentina, fodder crops are replacing grazing land and forests – and pushing out pastoralists, livestock farmers and indigenous people





The port of Brake on the River Weser was built to handle soy imports. Factory farmers in Lower Saxony get their fodder there

sion of cropland is likely to be at the expense of grasslands and forests. Among the detrimental effects would be:

- Release of stored carbon into the atmosphere as land is cleared for cropland
- Loss of biodiversity
- Desertification as pastoralists are pushed into more marginal lands
- Erosion of indigenous livelihoods that accompanies deforestation.

In some parts of the world, in particular in sub-Saharan Africa, crop yields could be improved. In many areas, however, further intensification would probably be damaging as it could undermine biodiversity and increase pesticide use. Heavy machinery would compact the soil, impeding plant growth. Intensification could also mean more irrigation, which in the medium term leads to salinization and reduces soil fertility. Expansion and intensification of crop production can best be avoided by reducing the use of human-edible crops as animal feed, and instead feeding animals on pasture and crop residues.

Enormous quantities of soy are used in industrial livestock production. Over 90% of the world's soymeal is destined for industrial livestock. Soy cultivation has been a major driver of deforestation in South America. In Argentina the spraying of the soy plantations with pesticides and herbicides is associated with increased rates of respiratory problems, birth defects and miscarriages. Argentina used to be famed for its cattle roaming over vast plains. These plains are increasingly being ploughed up for soy production, and the cattle are crammed into barren feedlots where they are fattened on cereal-based diets.

Huge volumes of water are used in industrial livestock production, not as drinking water but to grow fodder crops. Industrially produced meat, milk and eggs generally require, and pollute, more water than the same products from grazing or mixed systems.

Although nutrient inputs are needed to grow crops, nutrient loss is a major source of pollution. Excess reactive nitrogen in the environment damages the soil, water and air. The largest use of reactive nitrogen in Europe is to make fertilizers used to grow fodder crops for animals. When the fertilizers are applied to a field, much of the nitrogen is not actually taken up by the crop roots. And when the fodder is fed to livestock, the animals do not assimilate all of the nitrogen it contains; they excrete it in their urine and dung. Spreading the manure on fields adds yet more nitrogen to the soil.

The unabsorbed nitrogen pollutes the environment; it is washed into rivers and leaches from the soil into groundwater, contaminating sources of drinking water. Across the world, in China, the Gulf of Mexico, Brittany and Chesapeake Bay, industrial pig and poultry farming is damaging aquatic and marine ecosystems.