



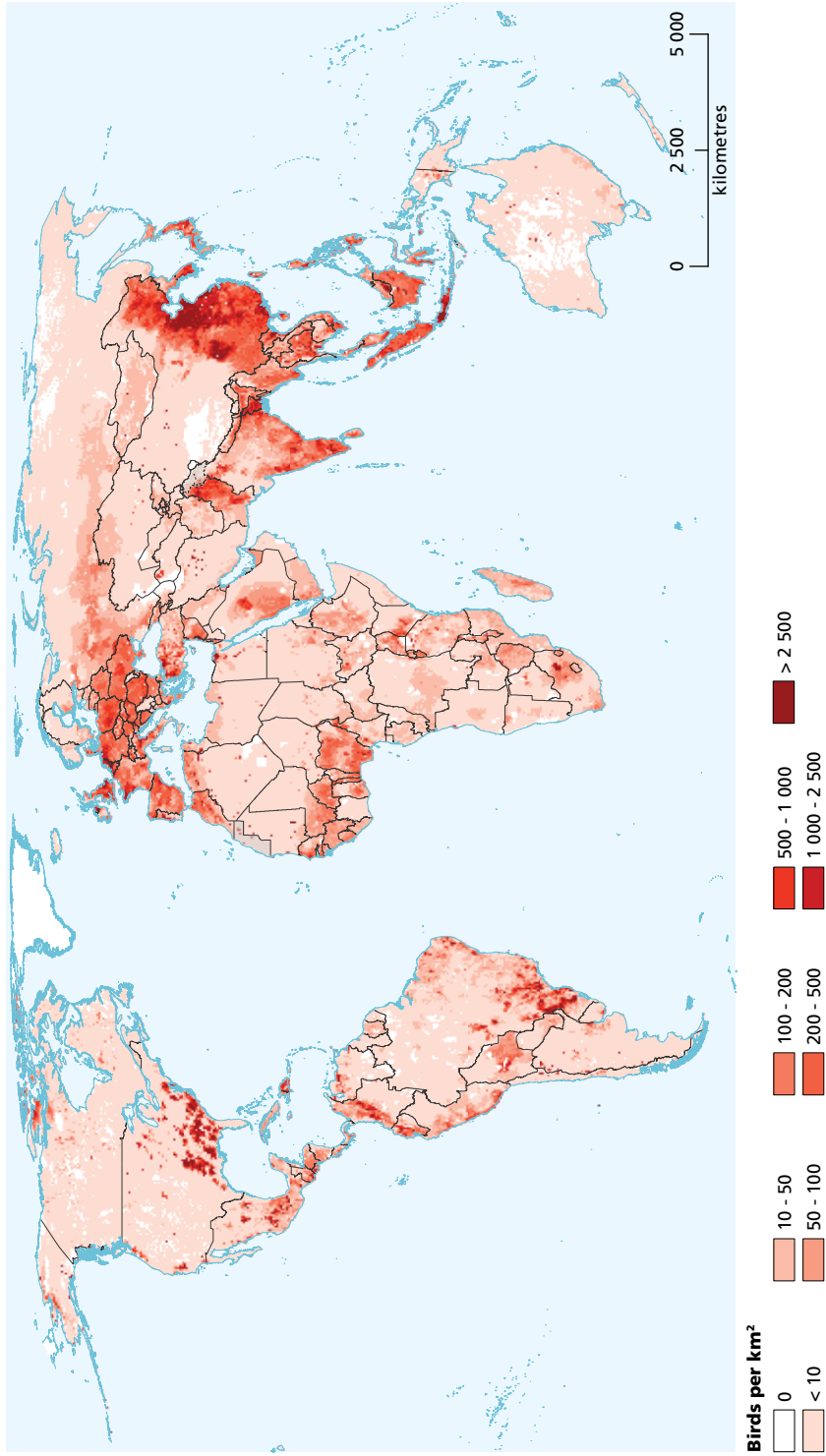
Livestock densities and distributions

From 1980 to 2010, the world's standing population of chickens increased by 272 percent, from 7.21 to 19.60 billion head, while the number of chickens slaughtered rose by 305 percent, from 18.43 to 56.20 billion. The overall broiler productivity level increased very significantly. Over the same period, the world's small ruminant population increased by 28 percent, from 1.56 to 1.99 billion head, while the number of slaughtered animals increased by 74 percent, from 540 to 939 million, suggesting a less dramatic increase in productivity. Together, expansion and intensification processes in the livestock sector determine the number of animals kept. Livestock numbers and densities are key variables in epidemiology; this section assesses the main characteristics of the global distributions of the main livestock species.

Poultry and pig distributions normally reflect local demand for poultry and pig products, ex-

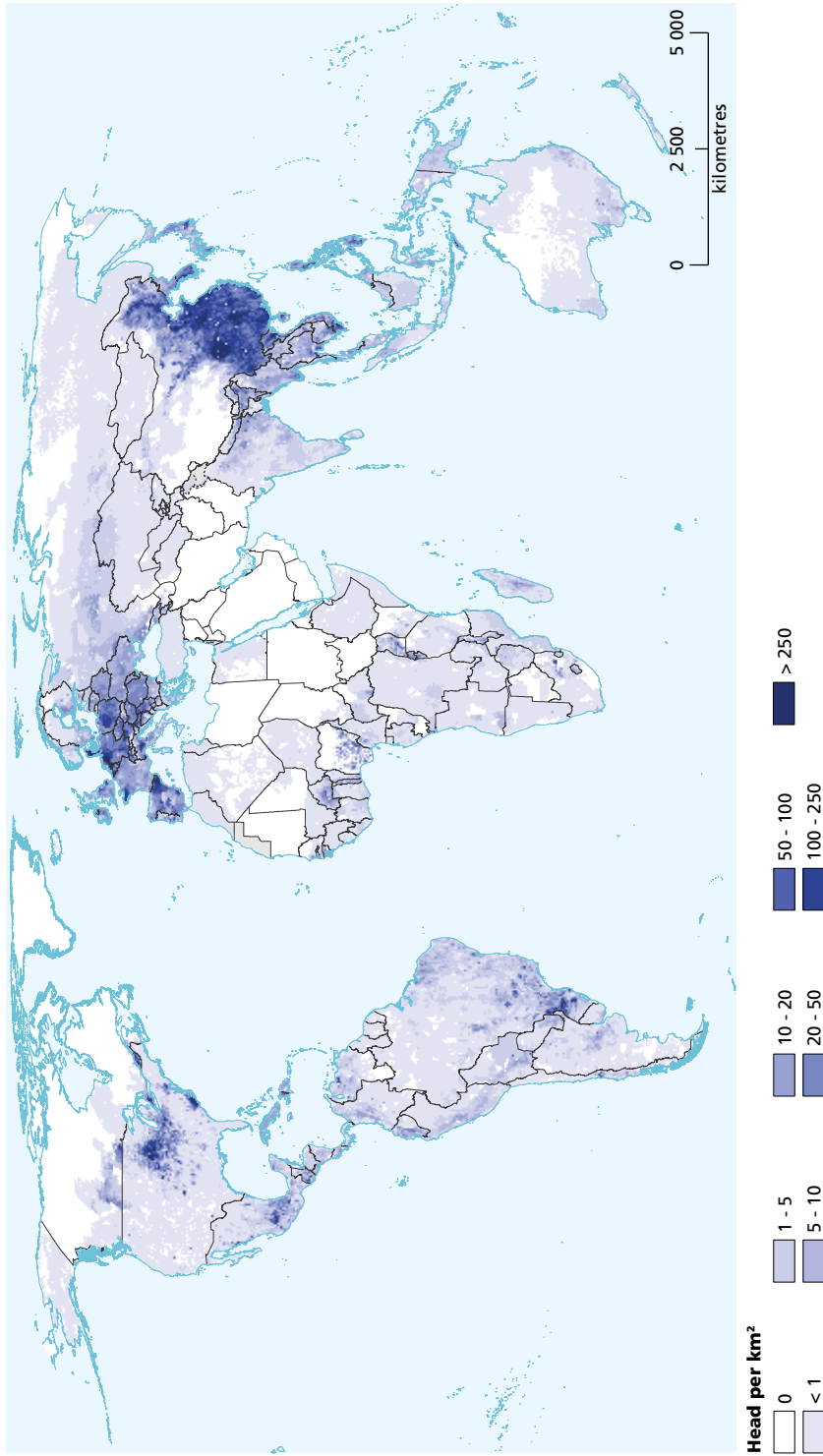
cept for in the surplus-producing areas of Brazil and the United States of America (Figures 13 and 14). Poultry distributions, particularly of broiler chickens and layer hens, are far wider than pig distributions, reflecting cultural and religious influences. As monogastric animal species, poultry and pigs cannot digest cellulose as efficiently as ruminants can, and rely on backyard scavenging, food scraps or concentrate feeds. Concentrate feeds are expensive, so the intensification of poultry and pig production requires high feed conversion rates. There are still abundant smallholder pig producers in China, Eastern Europe and Central America, where pigs feed on household food scraps, agricultural by-products and/or scavenging. In sub-Saharan Africa, most pigs scavenge in and around villages, even where commercial production is starting to emerge. Scavenging village poultry is common in developing countries, and is usually kept separate from intensive systems. Scavenging poultry may also be found in developed countries, a survivor of the rich agrobiodiversity that was available in the past. In China, nearly half the poultry population remains in the traditional, extensive sector, with relatively large numbers of egg-laying

13 WORLD CHICKEN DENSITIES (2006)



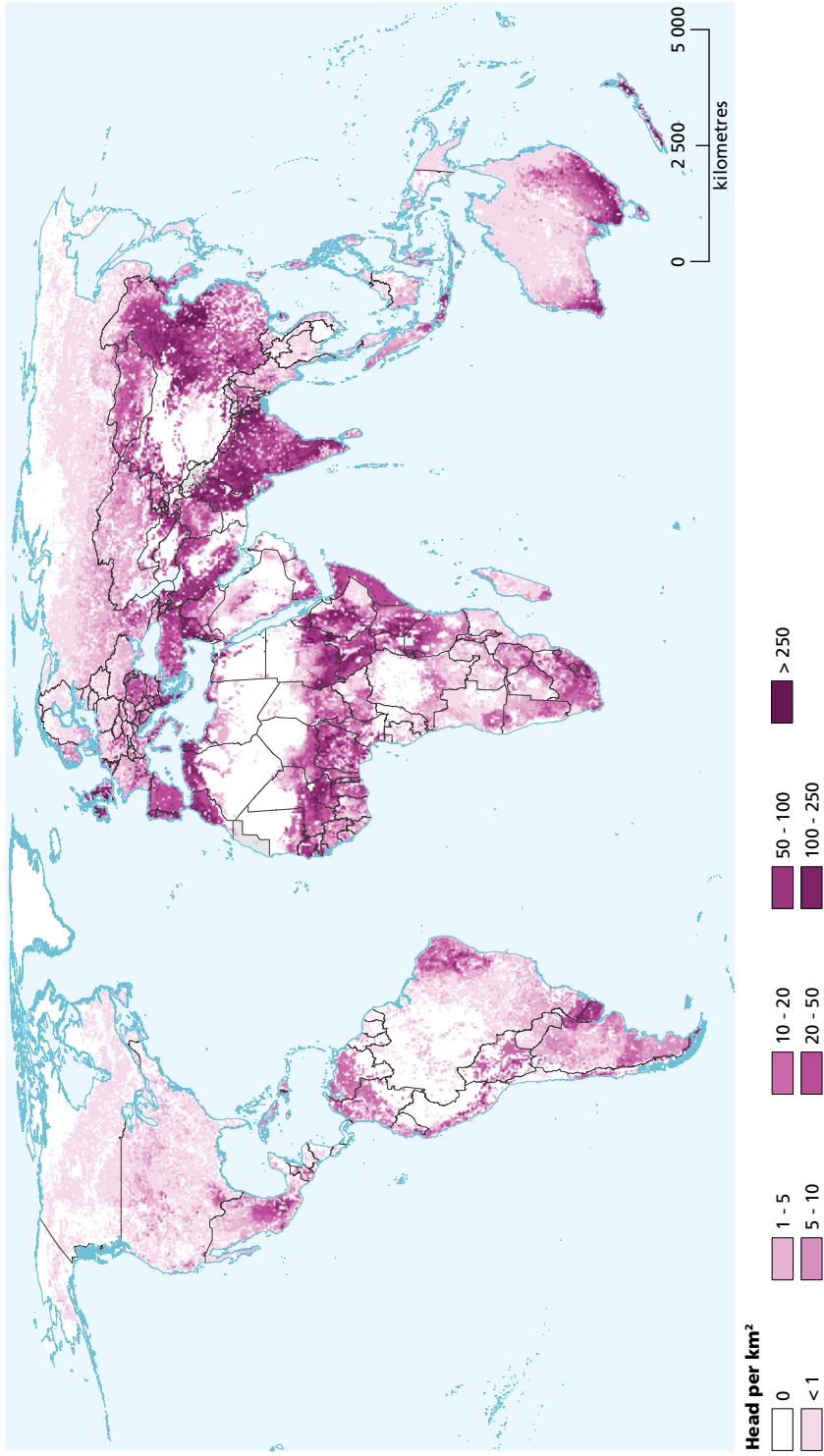
Source: FAO and ILRI, 2011.

14 WORLD PIG DENSITIES (2006)



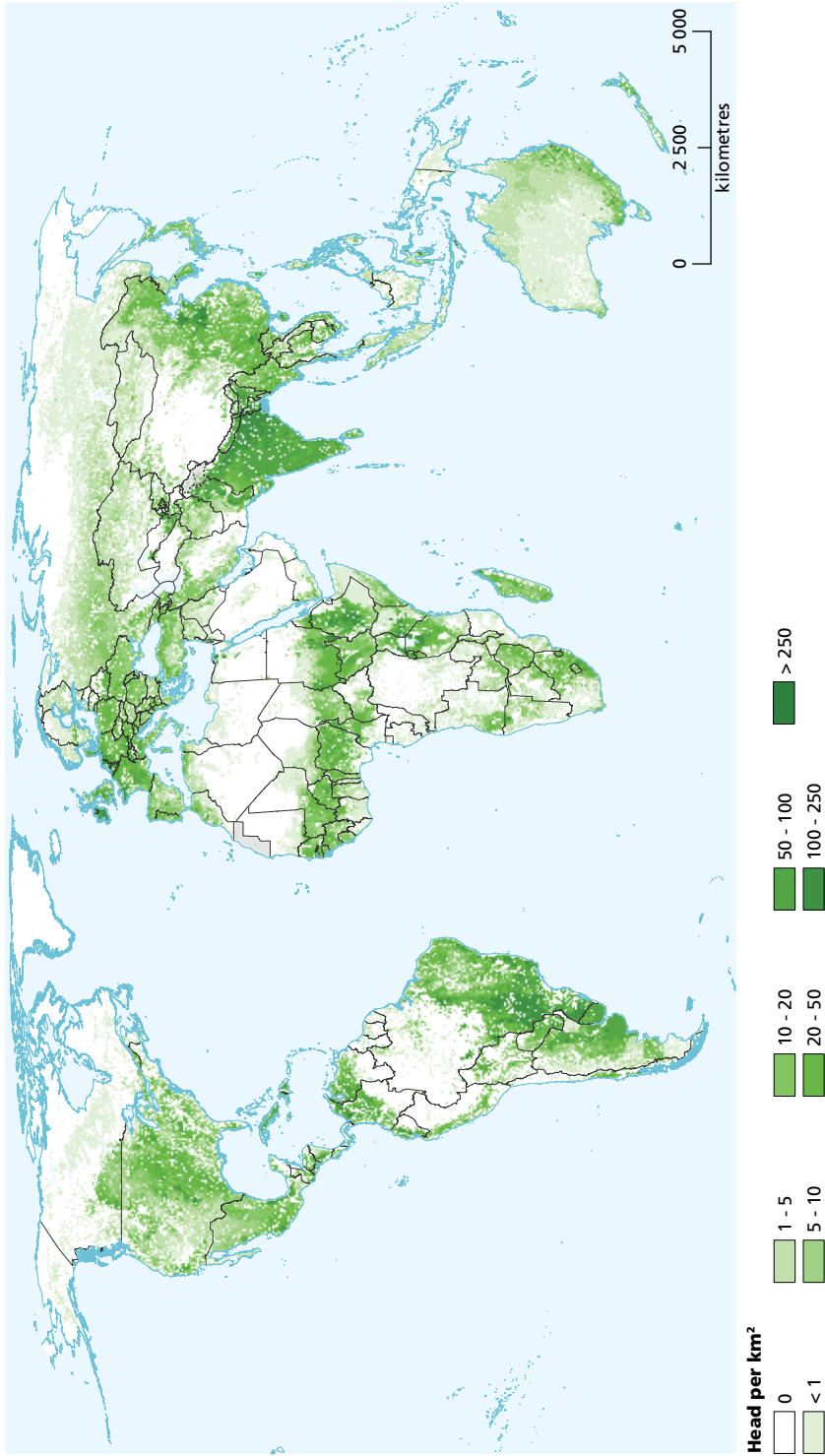
Source: FAO and ILRI, 2011.

15 WORLD SMALL RUMINANT DENSITIES (2006)



Source: FAO and ILRI, 2011.

16 WORLD CATTLE DENSITIES (2006)



Source: FAO and ILRI, 2011.

hens, ducks and geese. The distribution of extensive, traditional poultry systems can be shown to reflect the land-use and farming landscape mosaic: geese are relatively abundant in areas of single annual rice harvests, while ducks are concentrated in areas with two rice crops a year (Slingenbergh, Hogerwerf and de La Rocque, 2010). Poultry is kept in intensive systems near to the areas where there is demand for poultry products, such as on the perimeters of urban centres and around the coastal ports supplied by concentrate feeds. There is much overlap in the distributions of poultry, pigs and humans. China has the world's largest standing populations of chickens and waterfowl, and more than half of its standing population of pigs. Farming landscapes in China are believed to affect global influenza dynamics (Webster *et al.*, 1992).

The world's ruminant distributions reflect ecoclimatic conditions, particularly as expressed by the availability of grazing and water resources. Small ruminants are kept across all agro-ecosystems, including pastoral communities in the extreme dry lands of Africa and Asia (Figure 15). Sheep and goats are often kept together in the same flock. Goats are more prominent in remote dry lands and harsh mountainous environments, while sheep are common in moist and temperate climate zones. With few exceptions, small ruminant production in Africa and Asia is extensive, with animals kept in villages with communal grazing

areas or by (agro-)pastoral – often transhuman – communities. South Asia, especially the Indian subcontinent, is particularly rich in small ruminants. Historically, the eastern Mediterranean basin is the main area for sheep milk production. The sheep/mutton deficit in the Near East and North Africa has made this region an important trade focus for neighbouring countries in the Greater Horn of Africa and Central and South Asia. Commercial small ruminant production, in the form of extensive ranching, is prominent in Australia, New Zealand and Uruguay, all of which export live sheep to the Near East and North Africa. The disease risks associated with such trade are discussed in the next chapter.

The global distribution of cattle and buffaloes broadly resembles that of small ruminants, with the largest populations in South Asia (Figure 16). As mentioned in the first section of this chapter, smallholder dairy production is important in countries of the Indian subcontinent. Cattle kept by pastoral and agropastoral communities are common in the semi-arid and dry subhumid zones of Africa and Asia. The Near East and North Africa face a deficit in cattle (as well as sheep). The integration of crop and livestock production is common in moist, densely populated areas of Asia, and swamp buffaloes are abundant in rice-producing wetlands. India ranks first among the countries using cattle and buffaloes for draught power, although the number of animals used is decreasing because of the growing mechanization of agriculture. Draught oxen are also abundant in the highlands of East Africa and in cotton-growing areas of West Africa. Beef production is gaining in importance in southern Africa. Globally, India and countries in Latin America are the most significant exporters of cattle meat. The risk implications are discussed in the next chapter.



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