Ruminant Livestock
Timothy Robinson, William Wint, Giulia Conchedda, Guisepina Cinardi, and Marius Gilbert

WHAT ARE THESE MAPS TELLING US?
Ruminant livestock are raised across large parts of Africa where environmental conditions allow (Maps 1–4). Cattle, sheep, and goats are the most widespread, while camels are restricted to drier areas, particularly in the Horn of Africa and the arid parts of western Africa. These maps of ruminant distribution should, however, be used in conjunction with the livestock production systems map (p. 25) to better understand the systems and climate zones where ruminant livestock are found. The role of livestock varies greatly depending on the production system. The heavily forested areas and hyperarid deserts of Africa have very low densities of livestock. In arid and semiarid regions of Africa, where the potential for crop growth is limited, cattle, sheep, goats, and camels are raised in low productivity, pastoral (extensive livestock grazing) systems in which ambulatory stock can take advantage of seasonal, patchy vegetation growth. In these areas, raising livestock is the only viable form of agriculture. In the more settled humid, subhumid, and tropical highland areas, cattle and small ruminants largely live in the same areas as the human population. In these mixed crop-livestock farming systems, livestock can increase crop production by providing draft power and manure, and by enhancing labor productivity. At the same time, organic material not suited for human consumption can be converted into high-value food and nonfood products, such as traction, manure, leather, and bone.

WHY IS THIS IMPORTANT?
Poverty in Africa remains widespread (p. 77). One quarter of the world’s estimated 752 million poor livestock keepers live in Africa south of the Sahara (SSA), where more than 85 percent of them live in extreme poverty (Otte et al. 2012). Agricultural productivity gains and diversification into high-value products such as livestock are essential ways of raising rural incomes and improving food security in such areas. For three reasons—the large share of the rural poor who keep livestock, the important contributions livestock can make to sustainable rural development, and the fast-growing demand for livestock products—diversification into livestock and increased livestock productivity must play an integral role in strategies to reduce poverty and increase agricultural productivity. Progress in poverty reduction will require well-targeted interventions to promote economic growth that the poor can contribute to and from which they can benefit. Livestock maps such as these, along with other information such as poverty and production systems, can contribute significantly to better targeting.

WHAT ABOUT THE UNDERLYING DATA?
The Gridded Livestock of the World database (Wint and Robinson 2007) provided the first modelled livestock densities of the world, adjusted to match official national estimates for the reference year 2005 (FAO 2007), at a spatial resolution of 3 arc-minutes (about 25 km² at the equator). Recent methodological improvements have significantly enhanced these maps. More up-to-date and detailed subnational livestock statistics have been collected; a new, higher resolution set of predictor variables based on multi-temporal Moderate Resolution Imaging Spectroradiometer (MODIS) imagery is used; and the analytical procedure has been revised and extended to include a more systematic assessment of the model accuracy. While the observed, subnational statistics vary in date and resolution, the maps are standardized so that the national totals match the official estimates for 2006 (FAO 2013).

WHERE CAN I LEARN MORE?
Download the data from the Livestock-Geo-Wiki Project: http://livestock.geo-wiki.org
Wint and Robinson 2007.
Ruminant livestock distribution, 2006

MAP 1  Cattle

MAP 2  Sheep

MAP 3  Goats

MAP 4  Camels