

## DRYLANDS

# KEEPING LIVESTOCK ON THE MOVE

Until recently, drylands were thought to be fragile and unproductive, and the pastoralists who live there were criticized for harming the environment. But these views are changing.

**D**rylands cover about 41 percent of the Earth’s land surface, and are home to about a third of its population. They encompass hyper-arid, arid, semi-arid and sub-humid ecosystems and vary from savannah woodlands to grassland, deserts and high mountains. Mostly located in developing countries, these areas are often hot, and the sparse vegetation offers scant shelter against the wind. Meagre amounts of rain tend to fall in heavy storms during the short wet seasons.

Most drylands are rangeland covered by grass and shrubs. During the long dry periods, the grass dries out, leaving nutritious standing hay. It does not decay unless it is eaten by livestock or termites. So dryland soils are generally low in organic matter; they cannot absorb much water and dry out quickly. When raindrops hit the exposed soil, they compact the soil surface, forming crusts. Little water sinks in, and most of it evaporates or runs off, taking with it valuable carbon and minerals. To prevent erosion and fertility loss, any agricultural use needs to enhance the soil organic matter, and maintain or improve the vegetation cover.

In arid and semi-arid areas, livestock provide the best way of looking after the land. However, they can be a blessing or a curse, depending on how they are managed. For hundreds of thousands of years, African – and to a lesser

degree also Asian and American – drylands supported vast herds of wildlife, followed by packs of predators. Pastoralists also herd their animals here, moving from place to place in search of grass and water.

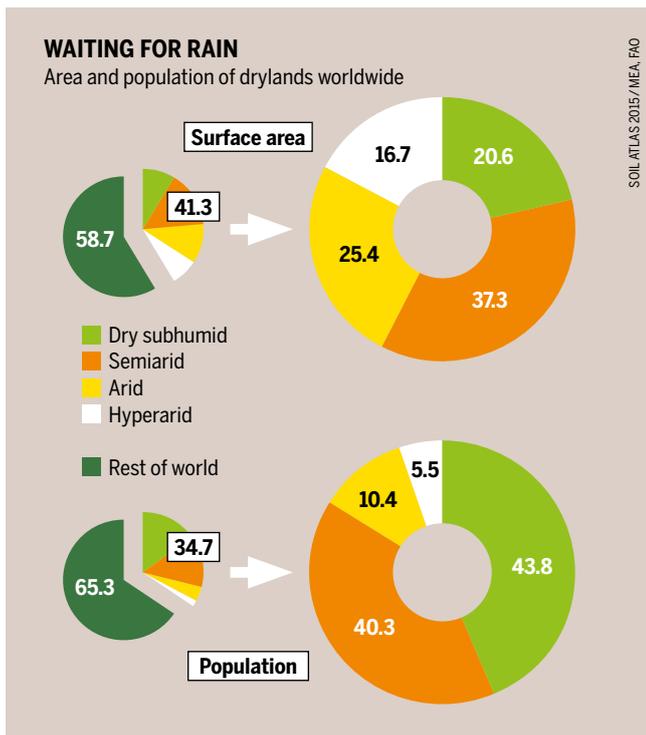
Cattle, sheep, goats, camels and other herbivores have stomach microbes that enable them to digest fibre-rich vegetation. Their dung contains plant residues and is rich in minerals. Therefore, livestock keep the decay process going during long dry seasons, which is critical to the soil and a healthy ecosystem. Their hooves break up the crusts on the soil surface, allowing water to seep in and restoring a healthy growth of grass.

But these advantages can be realized only if the livestock is properly managed. Key to the sustainable use of drylands is herd mobility and communal management, as practised by many pastoral groups. The Borana in Ethiopia and northern Kenya, for example, have a complex network of institutions that regulate access to water and pasture, organize herd movements and coordinate with other pastoral groups. Their herds stay in one place for a short time, giving the vegetation a chance to regrow. Different animal species graze on different plants, maintaining diverse grassland and controlling the growth of bush.

Modern trends disrupt these traditional systems. An increase in human populations, new technologies, education and policies are changing the drylands. Growing settlements and expanded cropping curb animal movements and fuel conflicts between settled farmers and pastoralists. Instead of concentrated herds of wildlife or livestock that move across the terrain without spending too much time in one place or returning to the same place too soon, grazing is now less coordinated. In many areas, smaller numbers of animals wander free-range on what is left of the commons around settlements. This leads to a downward spiral of overgrazing, bare soil, runoff, silted rivers and impoverished land and people.

But there is hope. Governments, researchers and development specialists have started to recognize the importance of drylands as a carbon store, and as one of the last places where food production can be enhanced. They increasingly acknowledge that pastoral livestock production can be more productive per hectare than ranching. In West Africa, for example, governments have started supporting pastoralists and re-establishing migration corridors. Farmers manage reception areas where they grow fodder on harvested fields to sell to migrating pastoralists. In many areas, farmers traditionally allow pastoralists to graze their livestock on their harvested fields, thus fertilizing the soil.

Scientists in Zimbabwe have developed a holistic method called “planned grazing” that mimics wildlife and pasto-

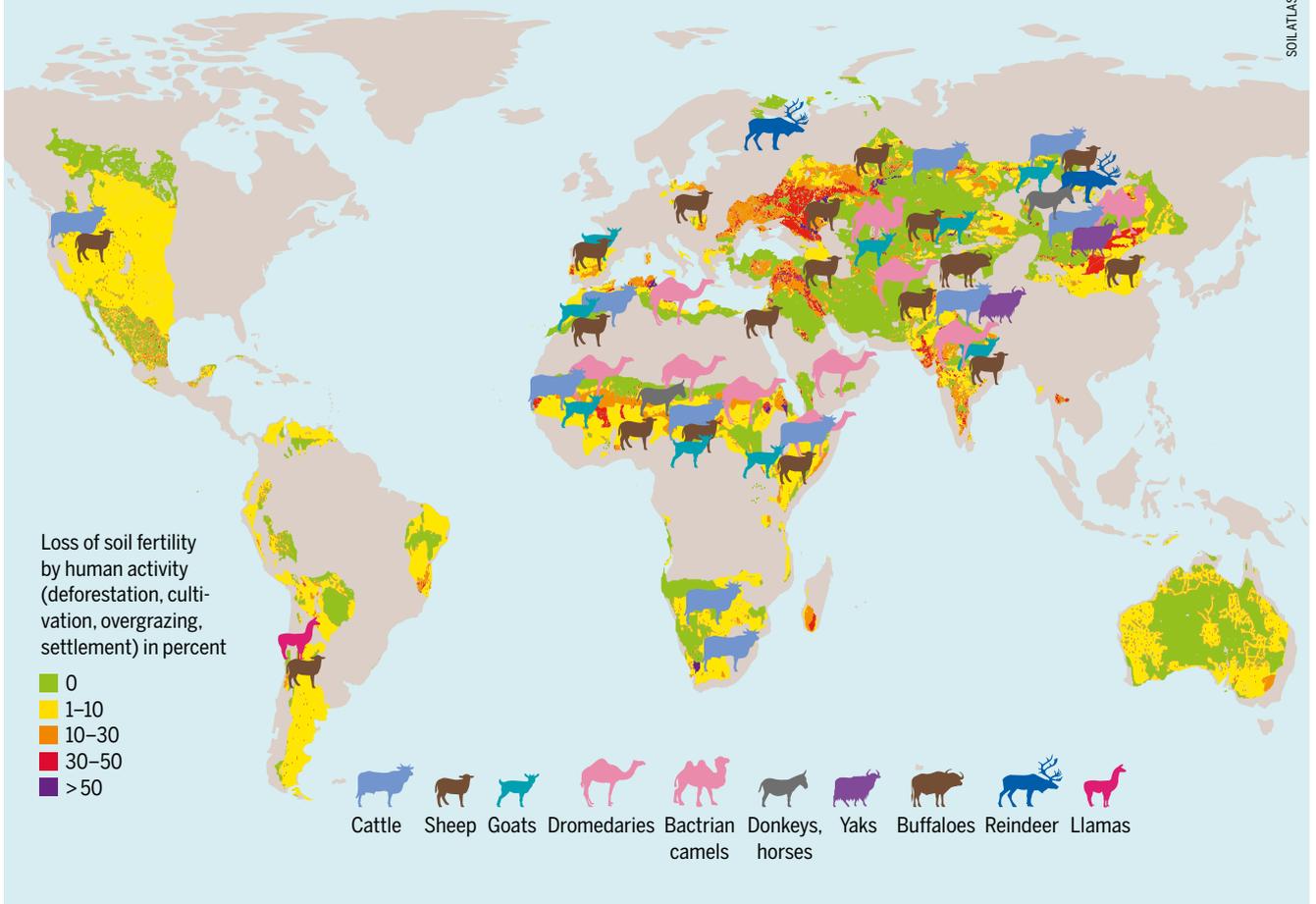


*One-third of the global population lives in the drylands, 16 percent of them on arid or hyperarid land*

### MOBILE HERDS ARE NOT THE PROBLEM

Soil degradation in drylands and mobile animal husbandry, by major species, selected

SOIL ATLAS 2015 / FAO, UNEP



ral herds. Local people combine their animals into one large herd, which grazes one area at a time. This avoids overgrazing, restores soil fertility and stimulates new growth. The approach has spread to neighbouring Namibia, where many communities have started using it. The government and civil society there are working together on a national community-based grazing management policy.

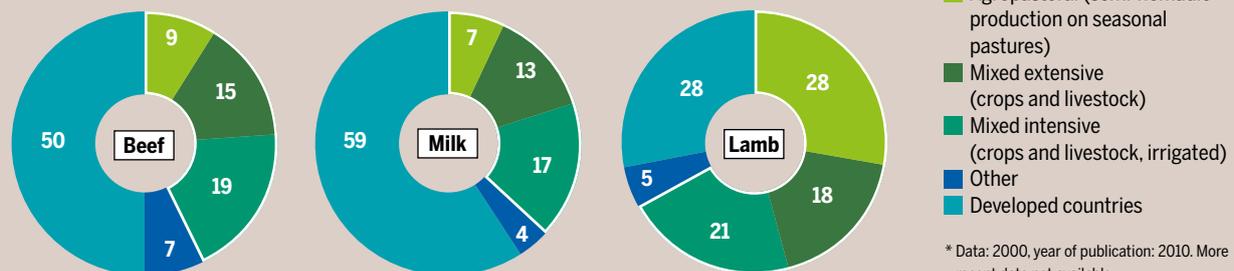
A related method is to use moveable kraals. The animals are penned in these enclosures each night, leaving their dung and urine behind. The kraal is moved each week, allowing a fresh area to be fertilized.

*A lot of damage occurs without seasonal grazing, and many seasonal pastures are not damaged*

These approaches work with nature – not against it. They have huge potential: they can reverse the downward spiral of land degradation and improve livelihoods in the drylands. They rely on mobilizing the local livestock-keeping communities, developing strong local leadership, a clear understanding of how the land is managed, and a commitment to improving it. ●

### MEAT AND MILK FROM SEASONAL PASTURES

World share, percent, 2000/2010\*



SOIL ATLAS 2015 / ILRI