

Animal production is in the bad books of many people concerned with global development. Animals compete with humans for food. Roughly 38% of the grain produced in the world is consumed by animals - in the USA as much as 70% and in the former Soviet Union over 50% (Durning & Brough 1991). Producing grain for animals also takes up land. If the land area needed to grow the feed imported for Dutch livestock were counted as part of the agricultural area of the Netherlands, this would be substantially larger than the whole country. So why should livestock-keeping be promoted in the "Two-Thirds World", where grain shortages are common and land is often scarce?



Photo: Ann Waters-Bayer

Livestock sustaining livelihoods

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In most parts of the Two-Thirds World, domestic animals compete very little with humans for food or for land to grow it. In India and sub-Saharan Africa only 2% of the grain consumed goes to animals. Instead, they complement cropping by using non-arable land to produce food. Animals are also an insurance against low yields and crop failure, when they can be eaten or sold to buy food. Livestock are particularly important for human use of the drylands.

Managing drylands

Several articles in this issue emphasise that, over centuries, people living in the harsh and unpredictable drylands have developed ecologically appropriate ways of using the available resources. However, the political, economic and social conditions may force them to adopt unsustainable practices. Grell indicates that most past "development" efforts were to the disadvantage of pastoralists - people who rely mainly on grazing animals for their livelihoods. He calls for a new understanding of the rationale of pastoral land-use and for a change in policies, not only by the national governments but also by donor and project-implementing agencies.

Mearns shows how pastoralists in Mongolia are diversifying their livestock holdings again and finding security in ancient land-use institutions, thought to have been eroded by several decades of centralised planning. Koochecki reports on Iranian pastoralists' low-input techniques of caring for their land, not only resting it but even reseeding it, wherever their land-use rights are secure.

In indigenous systems, access to pasture is often regulated by access to water, as reported by Pangare from India (see Niamir, mentioned in Top 5, for more examples). When the water supply is exhausted, the herds have to move on, and the pasture is rested. Where wells or boreholes were drilled to "develop" rangeland, the balance between carrying capacity of the water and of the pasture was often upset, leading to overgrazing around waterpoints.

Where water does not limit grazing, pastoralists must monitor the vegetation to decide when it is time to move on. How a modern pastoralist does this in Namibia is described by Lühl. Many elements of the Holistic Resource Management (HRM) practices of the Lühl farm may also reinforce or improve the land management of traditional herders. HRM, like traditional pastoralism, allows more animals to be kept per unit area than by conforming with the carrying capacity calculations of Western range management.

How many are too many?

The difficulties in assessing carrying capacity are not discussed in detail in the articles, but are the subject of several publications mentioned as sources. Variation in vegetation yield of the range is influenced much more by variation in rainfall than by intensity of grazing. Behnke & Scoones (1991) summarise recent scientific findings and call for a rethinking of range ecology.

In fact, it is difficult to imagine that purely grazing animals can cause long-term damage to the vegetation. Before they can do so, they will be dead. The situation changes, however, when supplements can be fed, as these can keep animals alive to pick the last blade of grass. But grazing by heavily supplemented animals is rarely the only cause of environmental degradation. Expansion of cropping into poorly-suited land and cutting of trees and shrubs for fuel contribute at least as much (Warren & Khogali 1992).

Manure for cropping

A second series of articles looks at how animal husbandry can support cropping. People living in the drylands subsist on crop products, but they could not do so without animals. Farmers often trade fodder for manure to maintain soil fertility (Cincotta & Pangare, Mukherjee).

Ikpe and Powell provide evidence of how efficiently traditional manuring prac-

We should not turn our back to the role of women in animal husbandry. A Nigerian woman taking out her goats to tether them on fallow land for grazing.

lices recycle the nutrients in crop residues. Here, the strong interdependency of cropping and livestock-keeping becomes apparent. A drop in animal numbers, eg after drought, means less manure and lower crop yields. The seasonal movements of transhumant herders are welcomed by many crop farmers. During the growing season, when risk of crop damage is high, the herds are grazed outside the cropping zone. During the dry season, the herds can move in, feed on stover and produce manure. Thus, wet-season pastures in the arid zone are important not only to produce meat but also as holding grounds for the manure producers.

Providers of energy

In many countries, draught animals make cropping easier. The major obstacles to their wider use seem to be that farmers need to learn how to handle the animals, and site-appropriate equipment needs to be developed. Makitwange & Beijer describe how these obstacles are being surmounted in Tanzania.

Not only can animals plough the fields; they can also transport water and fuel to the home, goods to and from markets, fertiliser to the fields, and crops to the granary. Fielding & Pearson draw attention to an animal which has received little attention in development work: the donkey. This beast of burden can be used for both transport and draught, is relatively easy to handle and may therefore be particularly suited to reduce women's workload.

Women often keep smaller animals such as poultry, goats and sheep (Zoungrana & Slenders, Perezgrovas et al), but their interest in larger stock such as cattle or donkeys should not be ignored. In general - and also in most of the articles contributed for this issue - the importance of livestock in helping women meet their own and their family's needs has received too little attention.

Banking on animals

Animals serve as a savings account and ready source of cash. Poultry are often the "coins", sheep and goats the "small bills", and large animals - if available - are sold to meet large expenditures, such as building a house. Where there is no efficient banking system and the rate of inflation is high, this is very rational.

In some countries the "animal bank" is increasingly used by outsiders and, in parts of West Africa, more than half of the large stock is now owned by merchants, public servants and rich farmers. Pastoralists have become contract herders (Toulmin).

How this shift in ownership affects productivity depends on the contract. Payment in milk encourages strong milking to the detriment of calves, and owners may restrict herd movements because they want keep an eye on the herders. New types of herding contracts will have to be evolved to minimise their negative impacts, and alternative investment possibilities will have to be created.

Combining animals for more

A striking trait of indigenous livestock-keeping is the variety of species kept in combination. This not only facilitates the handling of the "animal bank" but it also spreads risk in case of animal disease. Furthermore, letting goats or camels graze together with sheep or cattle permits a more balanced use of the vegetation.

There are also some less recognised benefits of "mixing" livestock, include small species. Chickens in a cattle kraal can pick up ticks, sometimes even directly off the cattle. A number of poultry species also eat insects. It has been found, for example, that muscovy ducks can control flies more effectively and cheaply than with chemicals (BOSTID 1991).

Moreover, most livestock-keepers in the tropics are not specialised purely in animals. Their livelihoods depend also on cropping, food processing and off-farm activities - all of which may benefit from livestock as manurers, exploiters of wastes, devourers of insect pests, sources of power, forms of investment, risk cushions, transporters and sources of raw materials such as milk, hides and skins, and much more. Furthermore, livestock play an important role in the cultural identity of many peoples (McCorkle 1992) - like in the West. What would the USA be without cowboys?

Why transfer the troubles?

Only romantic academics would argue that everything is perfect in the traditional

systems. But many of the existing linkages between animal husbandry and other ways of "making a living" already offer keys to sustainable development. There is great danger that supposed "improvements" in livestock-keeping will weaken these links, and simply transfer the troubles of large-scale factory-style systems of animal production.

We hope that this Newsletter will draw greater attention to the strengths of indigenous livestock-keeping systems in the drylands, which are sustaining the livelihoods of a far larger number of people than many modern, specialised systems could.

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Crop farmers cash in on animals

In the village of Abet in subhumid central Nigeria, by far the most important animals - in terms of total liveweight of the animals - are cattle, kept almost exclusively by Fulani herders. However, the Fulani make up less than 10% of the population.

The vast majority of rural people are so-called "arable farmers" who grow crops for subsistence and, to a lesser extent, for sale. These crop farmers keep only small flocks of goats (5 per household on average) and some chickens (10-20). A few people keep ducks, guinea fowl and sheep, and many households fatten a pig or two now and then.

Since these farmers keep so few animals, it was assumed that livestock-keeping was not very important to them. However, a study of household income and expenditure showed quite a different picture. Indeed, crops provide the basis for subsistence. But as far as cash income is concerned, 56% of this came from livestock sales. And 2/3 of the cash income from animals came from the sale of fattened pigs.

This shows how important the income from livestock can be for farmers who are viewed as "non-livestock-keepers". And this importance is increasing with the growing need of rural people for cash to buy foods and goods they cannot produce themselves.

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