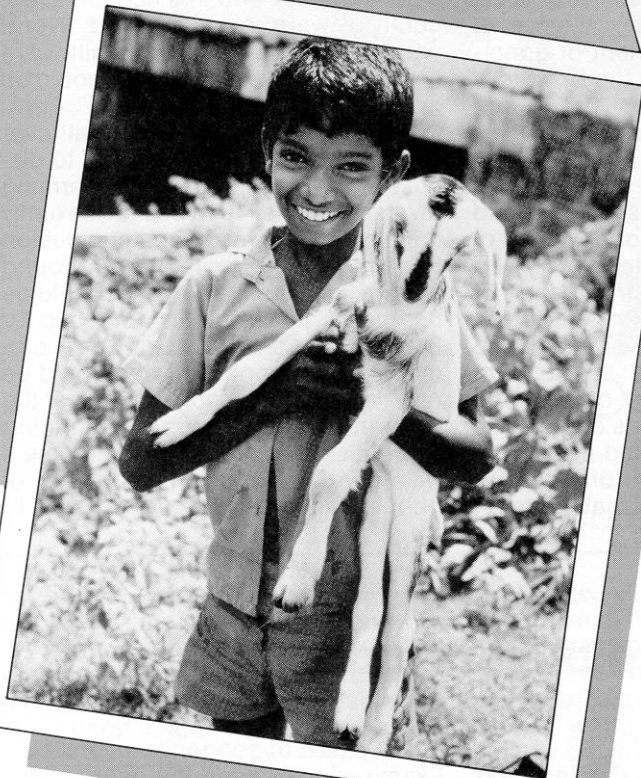




SHEEP AND GOATS

SMALL RUMINANTS WITH LARGE POTENTIAL

ZULF M. KHALFAN

Often called "the poor man's cow," sheep and goats are generally neglected in the food production systems of many developing countries. Their economic importance to agricultural development is often overlooked by researchers, scientists and governments. Usually, they are brushed aside as environmental degraders — a situation that, more often than not, is due to lack of proper human management. As well, products from these animals tend to be consumed by the producing family, and therefore never reach the marketplace.*

But these small ruminants produce vital food and generate income for some of the world's poorest people. And, if properly produced, they could prove very beneficial to developing countries, as they have several practical advantages over larger ruminants such as cattle. Like other ruminants, sheep and goats can convert low-quality fibrous feeds to high quality products. However, they have a higher biological efficiency than cattle in converting that fodder into meat or milk,

and they derive most of their diet from products unusable by humans.

Though they are generally owned by poor farmers (96 percent of the world's goats and 56 percent of its sheep are located in developing countries), sheep and goats are the world's main domesticated small ruminants in terms of total numbers, food production and fibre yield.

Sheep and goats have a number of characteristics that offer considerable potential for increasing production of meat and milk, as well as the incomes of smallholders in developing countries.

Their small size generally makes sheep and goats easier to handle, especially by women and children. Shelters and pens are simple to construct and less costly to build than those needed for other livestock.

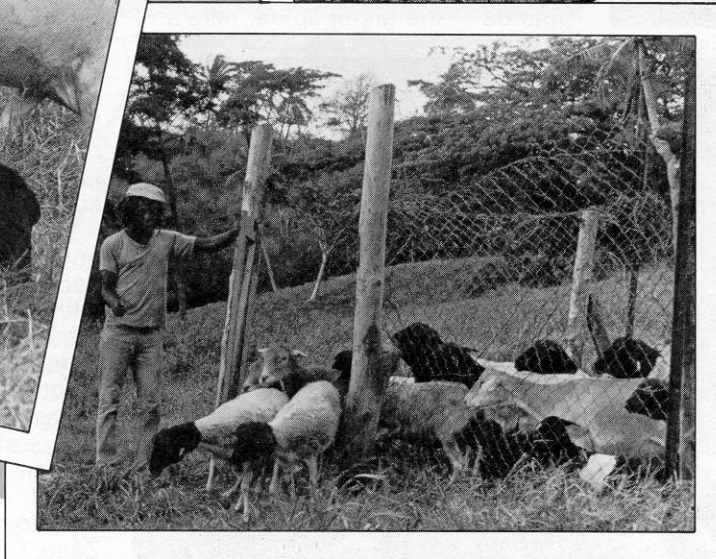
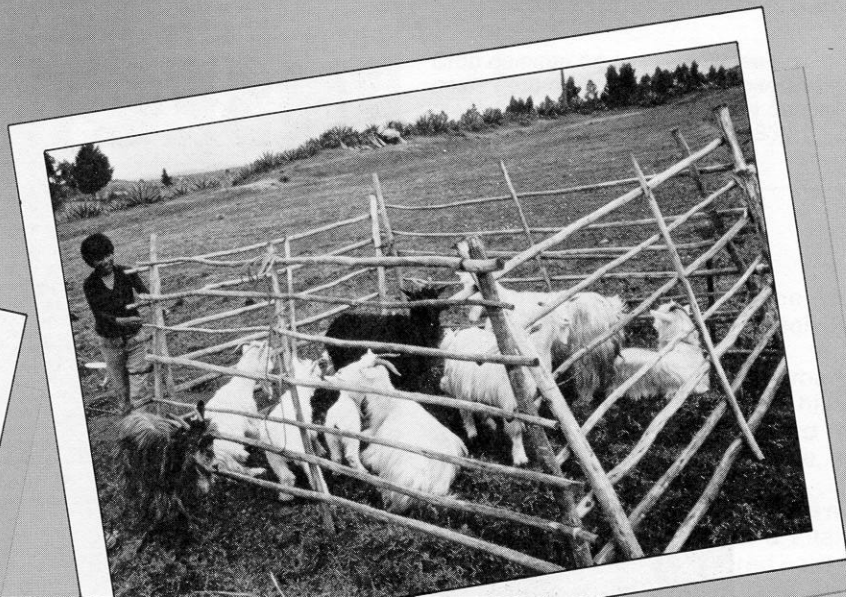
The smaller size of the ruminants is associated with lesser yields of meat per head slaughtered and milk per lactating female. Yet these small quantities are often enough to meet the

daily needs of subsistence families with limited ability to preserve surplus food products.

As well, the lower cost of nutrient requirements per head could mean that sheep and goats may fit the limited resources of small farms or marginal grazing lands that cannot sustain larger ruminants throughout the production cycle. Moreover, lower capital costs per head give rise to potentially more rapid cash flow, making sheep and goats less risky investments and more affordable by small farmers. Consequently, the economic impact of losses is less for sheep and goats than for cattle.

Sheep and goats are also adaptable to various environments. Their different grazing habits often complement each other and cattle. Sheep and goats are more selective feeders than cattle, tending to select the better portion of plants. Because goats are browsers — whereas sheep and cattle are grazers — they can feed upon a larger range of plant species. This is

*Winrock International, "Sheep and Goats in Developing Countries: Their Present and Potential Role," A World Bank Technical Paper, 1983, Washington, D.C., U.S.A.



Goats and sheep have many advantages for the small and subsistence farmer in developing countries. Their small size means they can be managed by children, and their feed and housing requirements are simpler and less costly

especially advantageous under dry range conditions in which the surviving vegetation tends to be deep-rooted shrubs and bushes.

Sheep and especially goats are more agile, allowing them to feed over much rougher terrain than cattle. They can also travel further without water. As a result, their feeding range is widened, as compared to other ruminants.

It is a popular misconception that sheep and goats alone are to blame for land degradation. On the contrary, when properly managed, these small ruminants are capable of stabilizing or regenerating land subject to erosion. Goats have been used to rehabilitate rangeland affected by noxious shrubs, while goats resistant to trypanosomiasis (sleeping sickness) have been used to clear the low brush habitat favoured by the tsetse fly that spreads the disease in Africa.

Sheep and goats are also more profitable under drought conditions, as they show a higher survival rate than cattle. Moreover, because of higher reproduction rates, their numbers can be restored rapidly after a drought. In arid areas of the West African Sahel, cattle and goats are often raised in mixed herds. After years in which cattle have been reduced due to severe droughts, herders use goats to rebuild

their capital stock, eventually converting goats to cattle.

In some breeds, the short reproductive cycle and multiple births are also advantageous. Females may conceive in one period of good feed and lactate in the next. Their 8-to-9-month birth intervals often fit the seasonal rainfall patterns in many regions better than the 14-to-16-month intervals of cattle and buffalo. Prolific breeds can produce twins, triplets, or quadruplets.

However, sheep and goats are not without characteristic disadvantages. Their proliferation is hindered by their susceptibility to predators because of their small size. They are easy targets for theft, have low individual commercial value relative to input and labour costs, and are potential environmental degraders when left to graze uncontrolled. And although they are less susceptible to hoof and mouth disease and trypanosomiasis than cattle, they are also more susceptible to certain respiratory diseases and internal parasites, especially when kept in large flocks and herds.

Small ruminant production and productivity can be improved by modifying feeding, management and health practices. IDRC is currently involved in a goat production project in Peru, as well as one involving goats and sheep

in Zimbabwe. The general aim of these projects is to develop improved techniques for sheep and goat rearing that are suitable to the ecological and socioeconomic conditions in both areas. This includes nutritional, breeding and health components, as well as management and marketing strategies.

Most small ruminant producers identify the lack of available cultivated forages, water, and feed supplements as the main obstacles to better production. Efforts are also needed to improve animal breeds.

The result of the projects, and the improving of production, will not only help the small farmers who derive income from the production of sheep and goats, but the urban population whose traditional diet consists of goat milk and cheese. Those using leather and wool will also benefit.

The future for sheep and goats could be bright. A re-evaluation and systems approach will enable sheep and goats to gain their due recognition as important contributors to small-scale farms in poor regions, where they can then act as a lever to improve the economic state of those relatively poor who depend on them as a way of life. □

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