

7

Characteristics of Smallholder More Specialized Livestock Keeping

Learning Objectives: Understanding

- The characteristics of more specialized livestock-keeping strategy
- The challenges and potential of this livestock-keeping strategy
- The positive factors and cautions of moving from low-input strategies into more specialized systems

In smallholder more specialized livestock keeping, the livestock-keeping family has selected one animal species on which to focus in terms of labour and inputs, with the expectation of receiving greater monetary return. The focus is on a few animals that have advantageous market characteristics and that require some intensity of capital and labour. As explained in Chapters 5 and 6, this family may have diversified crop and livestock production as well as more specialized productive animals of one selected animal species.

More specialized smallholder livestock keeping is based on the logic of investing in some of the animals to achieve higher per-animal production, with a stronger focus on selling animals and by-products in the market. This also implies the need for increased care and a greater risk of loss when things go wrong. In these more specialized systems, several families often band together to raise the same animal species in an improved way and capture

economies of scale in shared husbandry practices, production of feedstuffs and other resources, as well as group marketing for better returns.

The following are the major characteristics of this more specialized livestock-keeping strategy (van't Hooft, 2004).

Labour from the Whole Family

The men of the family usually play a more important role in more specialized livestock keeping (Fig. 7.1) than in low-input diversified livestock keeping. He is usually supported by his wife(s) and children. These men may have a day-labour job in the community that may not meet the minimum survival requirements of the family. Occasionally, women without young children have enough time to dedicate themselves to this type of animal husbandry, or it can be accomplished with paid workers when capital is available from other activities.

The Logic of Investing to Obtain Higher Earnings

Dedicated and sometimes significant amounts of money and time are needed when a single species or breed of livestock is chosen for more specialized keeping. Many times, the family counts on other sources of income to make this possible, for example from marketing livestock, running a small café, providing transportation, construction, food processing or other farm trades. The investment is used to improve animal nutrition along with other forms of sufficient general care. This is expected to reduce mortality and improve production of traditional products, such as traction, milk, meat, fibre/wool, eggs and marketable

offspring. The monetary return to the family can be significant to pay debts, provide family needs and improve the home and farm infrastructure. Generally, several years of adaptation are needed in order to fully benefit from the specific conditions and challenges of this new and more specialized form of animal husbandry.

Possibilities for Avoiding Migration

Specialized animal husbandry is one of the possibilities for increasing family income in such a way that migration by one of the family member wage earners becomes less necessary (Box 7.1). In this way, social disintegration of families can



Fig. 7.1. In this more specialized smallholder zero-grazing dairy system in Tanzania, men as well as women are employed and earning an income.

Box 7.1. Avoiding migration through micro-credits and animal production.

Helen and Golly Lagnas with their five children live in the rice paddies on the island of Mindanao in the Philippines and are emerging out of the poverty that grips families of this region. As members of a Heifer International Project community group, they received a micro-credit loan and purchased some pullets and roosters to rear on their small plot.

Since Golly works for day wages in town, Helen and the children manage the growing chicken flock. The family now consumes about 20 eggs per week and eats poultry meat at least twice. In addition, they sell eggs and surplus hens in the market and have passed on pullets to other families in the community. These neighbours are also now eating more protein and receive income from selling eggs.

Micro-credit loans live on through the ability of the family to use money from the sale of produce to scale up their farms. Helen and Golly later purchased some doeling goats and now raise goats for sale. Their next venture into farming will be with the purchase of a young female pig and then a calf. When asked about the change in their livelihood, Helen said that their children are now healthy and the older ones are now going to school. The chickens and goats pay for all of this (Wollen, 2011, personal communication).

be avoided by the out-migration of core wage earners of the rural population. This has impact on the individual family as well as the broader community. At the same time, income from migration is also used to get started. Some families first generate money from migrant or seasonal work abroad, to prepare themselves for more specialized livestock keeping at home.

Greater Uniformity in Husbandry Practices

When moving into specialized livestock keeping, there is more uniformity in the equipment, feeds and husbandry practices used than in the case of low-input diversified animal husbandry. The variations are based on the characteristics and opportunities in the area and the experience of each individual family. In this process, innovative combinations of local and modern practices are found (Fig. 7.2).

Use of Specialized Breeds, or Crosses with Local Breeds

To start off this more specialized system and accomplish 'quick wins' in terms of productivity, specialized or 'exotic' breeds that originate outside the region are often introduced. This does carry certain risks that must be well understood before putting in

the effort, equipment and other needs, and related extra costs. Each individual animal of the exotic breed represents a high value and its husbandry requires special care. If adequate nourishment during the dry season and control of parasites and other diseases is not guaranteed, the fertility problems and mortality among these animals are often far higher than with local breeds. Therefore, the outcome and economic results of this type of husbandry depends greatly on the quality of management (FAO, 2007).

Greater Risks and Less Flexibility

The animal species selected for specialization has to produce sufficient income to cover the greater costs of inputs for the animal as well as the family needs. The chosen animals must maintain a certain level of production to stay ahead of the expenses incurred. The risk involved is greater than in the case of low-input diversified husbandry, because more specialized livestock keeping depends more heavily on external conditions, such as markets, that are not under the direct influence of the family. The risk tends to be especially large in the first few years when facilities and equipment need to be purchased and new sources of feed need to be grown (Fig. 7.3).

In addition, it takes time to acquire the necessary new knowledge and experience related to this type of animal husbandry,



Fig. 7.2. Many families with more specialized livestock keeping effectively combine this with management practices of low-input systems (Vietnam).



Fig. 7.3. The risk involved in more specialized animal keeping is greater than in the case of low-input diversified husbandry, because of the high value of the individual animal as well as the inputs used.

disease protection and marketing. One cannot react quickly to situations of external change, because each animal has a high monetary value and interventions may require costs that are not easily covered. For this reason, families usually have other species as additional sources of income. When unexpected needs arise, these additional animals present a more ready asset that can be turned into cash.

Proximity to Roads, Towns and Markets

More specialized livestock production requires a close relationship between families, the market and technical services in order to be able to procure the necessary inputs for husbandry and for the sale of products. For this reason, family farms and livestock holding facilities are often located

close to roads and in the proximity of processors as well as markets.

Less Interdependence between Crops and Raising Animals

As husbandry practices are changed to accommodate more high-yielding animals, the relationship between animal husbandry and crop agriculture production changes. It is possible that more of the feed will need to be purchased from the market since certain types of feedstuffs cannot be grown or provided from the farm. This increases the need for improved animal production to cover the cost of outside inputs and, therefore, the risks on the entire farm. With some types of animals, such as high-yielding breeds of pigs, layer hens or broiler chickens (Fig. 7.4), close to 100% of the feed derives from the market in order to meet complete feed requirements.

Formal Attention

For animal health care providers, such as private or government veterinarians, it is easier to work with specialized husbandry systems than with a diversified low-input livestock keeping system. The logic of more specialized type of husbandry coincides with the content of their training, while the technician can work with men, and in this way avoid the need for learning the local language. In addition, medications and other products whose quantity and quality is adapted to this type of husbandry can be obtained.

Importance of Farmer Associations and Cooperatives

More specialized livestock keeping will often result in a greater abundance of livestock products. A trade union or organization of affiliated families is often promoted by projects to facilitate training, marketing, getting through difficult times and other



Fig. 7.4. Interdependence between crops and livestock is reduced in the case of more specialized pig and chicken production. In the case of producing broilers in Nepal, for example, most feeds are purchased from the markets and not produced on the farm.



Fig. 7.5. Association of Fulani pastoralists in Cameroon. Credit: Ellen Geerlings.

external factors. Being part of an organized group of farmers can reduce risks and can help in market negotiations (Fig. 7.5). When difficulties in the community arise because of the differences between the conditions of affiliated families and those that are not affiliated, the association can help to find win-win solutions.

Environmental and Human Health Impacts

More specialized systems often require more technical and chemical inputs and this requires special awareness of their environmental impacts. Environmental problems associated with the abuse of more specialized (and especially the large scale)

livestock production are too common, though different from the environmental problems resulting from low-input systems. It is often the process of concentration of large number of animals that results in difficulty (FAO, 2009).

- A greater concentration of animals in smaller holding areas results in dust, odours, insects and rodents.
- More specialized animal keeping often requires crop chemicals to control disease and insect pests in special feed crops. These chemicals may run off into adjacent fields or into streams and rivers.
- The use of chemical fertilizers puts pressure on soil nutrients, over time resulting in lower soil fertility.

- More specialized crop and animal production requires more water. When irrigation from deep wells is used, the water can leave excessive minerals on the soil surface that eventually leads to salinization and soil erosion.
- The wastewater from slaughter and processing plants can pollute water streams.
- The indiscriminate and inadequate use of antibiotics for treatment of disease and hormones as growth promoters can lead to residues in milk, eggs and meat. Besides low quality of these products, this can lead to multi-resistant strains of microbes and viruses. This results in serious human and animal health problems.

Zoonotic Diseases

Diseases that are transmitted between animals and humans are called zoonotic diseases and include serious maladies, such as rabies and tuberculosis. Although less frequent than in low-input diversified systems, zoonotic diseases can persist in more specialized systems too.

At the same time, the contamination of products such as milk, meat and eggs with the residuals of medications, especially antibiotics, is especially common in more specialized livestock keeping, because of the indiscriminate and inadequate use of the chemical inputs. There is still a lack of knowledge and control in this respect (WHO, 2005).

References and Further Reading

- FAO (2007) *The State of the World's Animal Genetic Resources for Food and Agriculture*. FAO, Rome.
- FAO (2009) *The State of Food and Agriculture – Livestock in the Balance*. FAO, Rome.
- Hooft, K. van't (2004) *Gracias a los Animales Crianza Pecuaria Familiar en America Latina, con casos de los Valles y el Altiplano de Bolivia (Thanks to the Animals – Family Level Livestock Keeping in Latin America with Case Studies from the Bolivian Valleys and Highlands)*. Plural Publishers, La Paz, Bolivia.
- WHO (2005) *The control of neglected zoonotic diseases – a route to poverty alleviation*. Report of a Joint WHO/DFID-AHP Meeting. WHO, Geneva.