

Village Poultry Production in Mozambique: Farming Systems and Ethnoveterinary Knowledge in Angonia and Tsangano Districts, Tete Province

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Abstract

A participatory questionnaire was used to study small stock farming systems and ethnoveterinary knowledge in two districts in the centre of Mozambique where many farmers were returning to their land after the end of the civil war. Eighty nine per cent of farmers kept village chickens with an average flock size of 14 birds. The majority of farmers provided housing and supplementary feed for their chickens. Reproduction was highest in the period from April to July. Constraints to village chicken production included Newcastle disease (ND), cold weather, lice, fleas and fowl pox. Traditional remedies for ND are presented.

A PARTICIPATORY questionnaire was used to collect information on farming systems and traditional methods of small stock production in the districts of Angonia and Tsangano in Tete Province in May, 1996 (Harun and Massango 1996). These districts are situated in the north of the province, adjacent to the border with Malawi, at an altitude of more than 1000 metres. December, January and February are the wettest months of the year. In 1996, the human population of Angonia District was approximately 300 000 and 100 000 in Tsangano District.

The civil war, which ended in October 1992, had a negative impact on numbers of farmers and animals, and on disease prevalence in this region. About 98% of farmers left their villages and 90% took refuge in neighbouring countries.

Ownership patterns and flock sizes

Eighty nine per cent of the farmers owned chickens (Table 1) and chickens were considered by farmers as their most important livestock species. Small stock ownership was greater in female-headed households (Table 2). Household flock size varied from 11 to 17

birds (average 14). Village flock composition is shown in Table 3. Traditional restocking is a common practice. This helps to reduce risk due to disease, and assists others to build up their flocks. Although there are small variations in the way it is carried out, the most common procedure is as follows: the owner (or donor) hands over a pair of chickens to the beneficiary (or recipient). The beneficiary is obliged to take care of the birds for two successive hatchings. The beneficiary then returns all chicks to the donor as 'payment' for the pair. In general, women take care of the chickens.

Housing

Most farmers provide housing for their chickens. Houses are built to protect the birds from predation (by winged or four and sometimes two legged creatures), to control egg production and to keep the birds away from the fields during the planting season. Chickens are released from their houses during the day and allowed to scavenge, and are enclosed at night.

Basically, there are three types of housing. Houses at ground level are usually made from mud, rocks or baked bricks, with a roof made of straw. They may be situated in the backyard of the family house or attached to the verandah of the house. The entrance to these houses is only large enough to permit the

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Table 1. Ownership patterns of the various livestock raised in each of the four villages in the study area.

Type of animal	Name of village								Total	
	Dzimeza		Ligoe		Matewere		Mbemba		No.	%
	No.*	%	No.	%	No.	%	No.	%		
Ducks	3	10%	3	10%	6	17%	5	14%	17	13%
Rabbits	2	6%	1	3%	5	14%	5	14%	13	10%
Goats	16	52%	8	28%	9	26%	14	40%	47	36%
Pigs	19	61%	6	21%	13	37%	19	54%	57	44%
Guinea pigs	1	3%	1	3%	1	3%	1	3%	4	3%
Cattle	8	26%	6	21%	6	17%	1	3%	21	16%
Pigeons	8	26%	3	10%	4	11%	4	11%	19	15%
Total	31		29		35		35		130	

* Number of respondents.

entry of chickens and prevents the entry of many predators, especially dogs and hyenas. However, the interior is generally small and dark, making access for cleaning difficult. Houses of this type do conserve heat, which is especially important in the colder seasons.

Table 2. Gender disaggregated ownership patterns of livestock in the study area.

Type of animal	Gender of head of household				Total	
	Female		Male		No.	%
	No.*	%	No.	%		
Chickens	15	94%	101	89%	116	89%
Ducks	3	19%	14	12%	17	13%
Rabbits	1	6%	12	10%	13	10%
Goats	5	31%	42	37%	47	36%
Pigs	3	19%	54	47%	57	44%
Guinea pigs	2	12%	2	2%	4	3%
Cattle	2	12%	19	17%	21	16%
Pigeons	1	6%	18	16%	19	15%
Total	16		114		130	

* Number of respondents.

Elevated houses may be made of bamboo, reeds and straw. They are usually raised about one metre above the ground and a small ladder or simple pole is provided to allow birds access. Houses of this type are easy to clean and provide good protection from predators (except snakes). However, this type of house is unsuitable for hens with chicks.

Enclosures are sometimes made for chickens under maize granaries. These protect the birds from predators. Rocks or baked bricks are laid around the perimeter of the granary, leaving a small opening to the interior.

Nutrition

In contrast to the common perception that village chickens subsist on what they can catch and on their luck, the chickens of these districts are fed once or twice a day. The supplementary feed supplied is usually maize waste or meal. This ration is a source of energy. The protein and vitamin requirements of the birds must be met by scavenging.

Reproduction

The harvest season from April to July is the time of highest production. This is shown by peak egg

Table 3. Numbers of village chickens by category raised in each of the four villages in the study area.

	No. of chickens		Cocks		Hens		Chicks	
	No.*	Number	No.	Number	No.	Number	No.	Number
	Dzimeza	26	436	18	43	26	160	21
Ligoe	28	474	21	35	27	235	20	205
Matewere	33	383	22	40	33	181	24	162
Mbemba	29	378	16	27	29	135	21	212
Total	116	1671	77	145	115	711	86	822

*Number of respondents.

production (mean 11 eggs), high hatchability (78%, with about 8–9 chicks hatched) and high chick survival rate (66%, about 5 chicks alive in February to June). The survival rate is influenced by the colour of the chick and the extent of vegetation cover, which is dependent on the rainfall.

Lowest production occurs from July to December. During this period, there is low hatchability, low chick survival rate (due to winds in July and August, and rain in November and December), predation (natural protection provided by vegetation is absent), and ND (September and October). Consequently, flock size is small (December and January); there is low egg production due to ND and shortage of feed. Consequently, there is an increased demand for and price of chickens and their products.

Constraints to Production

In these districts, the principal diseases in order of importance to the farmers are:

- *Dzowe* or *Chitopa* (Newcastle disease; ND), which traditionally occurred twice per year (March/April and September/October). More recently, farmers report that the disease occurs all year round, sometimes causing mortality of up to 100%.
- *Mphopo* (Cold), which is associated with the windy months of July and August. This disease causes high mortality in chicks hatched during this season.
- *Chidelu* which causes sudden deaths in chickens. No clinical signs are observed.
- *Utibili* – lice infestation of chicks.
- *Madzedze* – infestation with fleas. Fleas affect mainly the unfeathered areas of the bird behind the eye. Farmers control fleas with an application of kerosene (paraffin oil).
- *Chikwirikwiti* (Fowl Pox) is manifest by the appearance of lesions on all parts of the head, especially on the unfeathered areas, and swelling of the head and eyes.

Losses due to predators are also significant and markedly reduce village chicken production. Predators include dogs, rats, owls and eagles, hyenas, wild cats, squirrels and thieves. Farmers prefer dark coloured or black birds to reduce losses due to predators. Many farmers know that diseases and parasitic problems are associated with poor hygiene and cleaning.

Indigenous Knowledge

Ethnoveterinary or indigenous knowledge includes local traditional methods for caring for, healing, and managing livestock and includes social practices and ways in which livestock are incorporated into

farming systems. It is based on community knowledge (experience) and is relevant for developing countries due to its low cost and the availability of traditional healers, who live locally. In addition, the poor can afford to pay in kind. However, the effectiveness of many treatments and practices is yet to be validated and the scientific background of such treatments and practices is not fully understood.

Some farmers have used various traditional medicines to treat ND, but the results are unsatisfactory. Table 4 shows some of the traditional remedies used to treat ND in various areas of Mozambique.

Table 4. Traditional knowledge of ND control.

Province	ND local names	ND local treatments
Tete (Angónia e Tsangano District)	<i>Dzowe</i> <i>Chitopa</i>	<i>M'pinjipinji</i> (Root) <i>Chitedze</i> (Root) <i>Muyimbi</i> (Bark) <i>Mkhunga</i> — <i>Mata-peixe</i> (Tuber) <i>Khonje</i> — Aloe — Leaf <i>M'chemani</i> — (Bark) <i>M'gundanjonvu</i> — <i>Mata-peixe</i> (Root) <i>M'valankhunda</i> (Root) <i>Matitidza</i> (Root) <i>Chikumasi</i> (Root) <i>Chizuzu</i> — <i>Mata-peixe</i> (Tuber)
Manica	<i>Chigubo</i> – <i>Gubo</i>	<i>Uepa</i> (Bark)*
Maputo Inhambane	<i>Muzungu</i> <i>Mbendeni</i> and <i>Quitjuku</i>	<i>Intxikile</i> (Root)* <i>Kulikwa</i> (Fruit)* Chillies and garlic*

* From Alders et al. 1999.

Conclusions

Farmers want to increase their flock size and are aware that traditional treatments for ND are not 100% effective. However, they do not have sufficient knowledge and confidence in the use of vaccines against ND. They are willing to pay the cost of the ND vaccine.

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