

# Some Socio-economic Factors Affecting the Conservation and Utilization of Farm Animal Genetic Resources in Malawi

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## Table of Contents

---

[Abstract](#)

[Geographical background](#)

[Domestication in myth](#)

[The introduction of cattle](#)

[The N'goni: invaders and \*pastoralists\*](#)

[Matrilineal descent patterns](#)

[Background to the keeping of poultry and pigs in Malawi](#)

[Background To The Keeping Of Goats And Sheep In Malawi](#)

[Cattle ownership : an older man's undertaking](#)

[A moral order based on communal, and not individual, rights](#)

[Measuring and recording](#)

[Exotics and indigenous](#)

[Historical arguments for and against local cattle breeds](#)

[Attempts to improve size, growth rates and fecundity](#)

[The constraints of disease during the past century](#)

[Colonial efforts to combat disease](#)

[Nationalism and non-compliance](#)

[Malawi government policy towards livestock](#)

[An agricultural policy of 'corn' not 'horn'](#)

[The inadequacies of cattle dipping and extension programmes](#)

[Donor support to the livestock sector](#)

[Conclusion](#)

[References](#)

# ABSTRACT

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[Geographical background](#)

[Domestication in myth](#)

[The introduction of cattle](#)

[The N'goni: invaders and pastoralists](#)

[Matrilineal descent patterns](#)

[Background to the keeping of poultry and pigs in Malawi](#)

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After more than half a century of exhortation, effort and expenditure, the domesticated livestock sector in Malawi would appear to have made little progress. This brief socio-economic survey begins with the assumption that the infusion of supposedly superior western breeding stock and management practices may not work - and perhaps never really did.

It is suggested that matrilineal descent patterns in the majority of Malawi's tribes and, more generally, a lack of interest in measuring and recording have contributed substantially to a disinterest in developing local or indigenous breeds. Efforts to improve breeding stock have generally been driven by outside forces - initially colonists, but later the donor community and experts who were perhaps more familiar with the laboratory than the field, and certainly more familiar with the breeds of their native countries than their domiciled one.

Disease is the greatest constraint on the oldest percentage game in the world. An open Pandora's box of mortal afflictions has periodically devastated livestock populations and severely reduced the smallholders' capacity to achieve some financial security. It is postulated that non-compliance with official British livestock policy during the late 1950s and early 1960s was successful in helping to achieve national self-determination but it left a legacy of problems for the livestock sector. The new Republic concentrated on agricultural production from 'gardens' to provide food security for one of Africa's heaviest demographic concentrations. Maize production, in particular, became the focus of agricultural endeavour (even to the detriment of finger millet and sorghum). In this command economy, any semblance of a national livestock policy seemed increasingly to be an ad hoc response to specific donor proposals.

This gloomy historical assessment does suggest, however, that finding and cataloguing the genetic resources of those surviving farm animal strains in this part of Africa, could be beneficial for the development of the livestock industry in the tropics. Food security would be improved by the livestock sector's contributions of meat, milk products, eggs, fibre, fertiliser for crops, manure for fuel and draft power. Understanding and using agrobiodiversity could substantially reduce the farmers' exposure to risk from diseases and parasites, as well as other limiting factors such as the wide variation in food and water quality. Finally, the maintenance of traditional lifestyles associated with rearing livestock is a counterweight to creeping urban and western values which undermine indigenous cultures.

**Geographical background**

Malawi is substantially defined by the Rift Valley. A geographical feature that stretches from Syria in the Middle East to the Malagasy Republic in the Indian Ocean, Malawi occupies 840 km. of this great distance between the latitudes of 9° 65' S and 17° 10'S. Its submerged parts constitute Lake Malawi, the third largest in Africa, with the Shire River as its outflow, while the raised parts constitute magnificent highlands which include the highest point in Central Africa. Height above sea level (a.s.l.) is the main determinant of temperature: from the oppressive heat of the Lower Shire Valley (as low as 37m. a.s.l.) to the temperate climates of the Northern Region, Nyika (2,000-2,400 m. a.s.l.) and Viphya (1,500-1,800 m. a.s.l.), the Dedza Mountain and Kirk Range area (1,600 - 2,000 m. a.s.l.) of the Central Region, and the Zomba Plateau (1,600-2,000 m. a.s.l.) and Mulanje Massif (2,000-3,000 m. a.s.l.) in the south. (Lancaster 1979). One-fifth of Malawi's surface area is made up by the Lake with the remaining four-fifths - much of it potentially fertile agricultural land - backing up to the Lake's western and southern shores.

Typically, the rainy season runs from November to April. Rainfall ranges from some 750 mm. per annum (p.a.) in areas such as those SE of Balaka and NW of Kasungu, to over 2,000 mm. p.a. in Mulanje, Thyolo, Nkhata Bay and Karonga. The rains are not entirely predictable and there was famine in the country after the 1922, 1949, 1980, 1991 and 1995 harvests. The seasons of 1970 and 1978 were excessively wet as was 1956 with the late rains of tropical cyclone Edith; in 1968 the rains were short and disrupted, in 1969 they were 'too early' and in 1999 they were 'too late'. Indeed, an 'ideal' year, such as 1952, seems to be comparatively unusual (British Colonial Office 1947-60; Malawi, Government of 1967-80). May to August is broadly characterised as the cool dry season and September to November as the hot dry season. Recent research into central and southern African weather patterns has attributed these to the El Niño Southern Oscillation (Scoones 1995).

## Domestication in myth

There would appear to be little reference to domesticated animals in the mythology of Malawi which instead features chameleons, lizards, snakes, lions leopards and hyenas. There is, however, a Tumbuka legend that describes how the cock became domesticated and perhaps this is apposite given that the cock is a national symbol of Malawi and that poultry are the most ubiquitous of farm animals (Schoffeleers and Roscoe 1985).

It is not known when the domesticated fowl (*gallus gallus*) was introduced to the central regions of the African continent, but man's interest in it began with its role in ritual - cock-fighting, religious sacrifice, soothsaying, traditional medicine - before its value as a meat and egg provider was exploited (Crawford 1984). Domestication was comparatively easy because the preferred habitat of fowl is cultivated farmland. This preference extends to Africa's quintessential fowl, the guinea fowl (*numidae*), and two of the four species have been domesticated (Payne 1990). In the Tumbuka legend, the cock came to man for protection and, from time immemorial, predators (including reptilian ones ranging from snakes to the mighty monitor lizard and avian ones which include more than fifty species of eagle, falcon, crow and vulture) have probably played a far greater role than disease in limiting numbers.

The silence of the chroniclers is evidence that domestic fowl were nowhere considered a mark of conspicuous wealth and this contrasts strongly with the ownership of cattle. As Payne (1990) observed, "*The nomad would as soon deplete his breeding herd as the family man in Europe or America would his bank account*".

## The introduction of cattle

Cattle (*Bos indicus*, *Bos taurus*) initially came into central Africa down the Rift Valley. Cattle remains, which have been dated to the thirteenth century, have been found at Ivuna between

Lakes Tanganyika and Malawi (Pachai 1972). Cattle and their pastoralist owners tended to move in comparatively tsetse-free 'corridors' which were away from *mopane* woodland, a preferred habitat of the tsetse fly which causes trypanosomiasis. The insect therefore had a considerable influence on human and bovine movement and settlement (Pachai 1972). Payne (1964); Payne 1990) suggested that these were Hamitic Longhorn-, Shorthorn- and zebu-type cattle which were cross-bred at different times and in different ways to create the breeds referred to as Sanga. Payne (1970) added that all neck-humped (cervico-thoracic) zebu (as opposed to thoracic or chest-humped) should be designated as 'Sanga'.

Hamitic Longhorn were the first breed to be introduced into the region and Payne (1990) suggests that a remnant may be the dwarf variety known as Binga which is found in northwestern Zimbabwe. Shorthorn cattle followed and, like their Longhorn predecessors, appear to have acquired some tolerance to disease. These cattle seem to have been introduced to the central African region from islands of the east coast - Pemba (north of Zanzibar), Mafia (off the Tanzanian coast) and Madagascar (Dechambre 1951; Payne 1970). Although these cattle seem no longer to exist, Payne (1990) stated that similar cattle are still herded by the Quarra of Oman.

Arab and Swahili traders from the east coast introduced cattle that in all probability were Zebu and these may be more tolerant to Rinderpest (the Biblical 'murrain of cattle') than the humpless or Sanga cattle, as well as being better able to survive in arid conditions. Arab trade with Central Africa is considered to be flourishing by 600 A.D. though biblical references from the time of King Solomon could hint at a much earlier date (Rangeley 1964). Some zebu may have come overland from the east coast, those from Zanzibar probably rounding the northern end of Lake Malawi and those from Kilwa, on the Indian Ocean, perhaps following the route taken by the first Portuguese traveller, Boccardo (Rangeley, 1954; Hamilton, 1954).

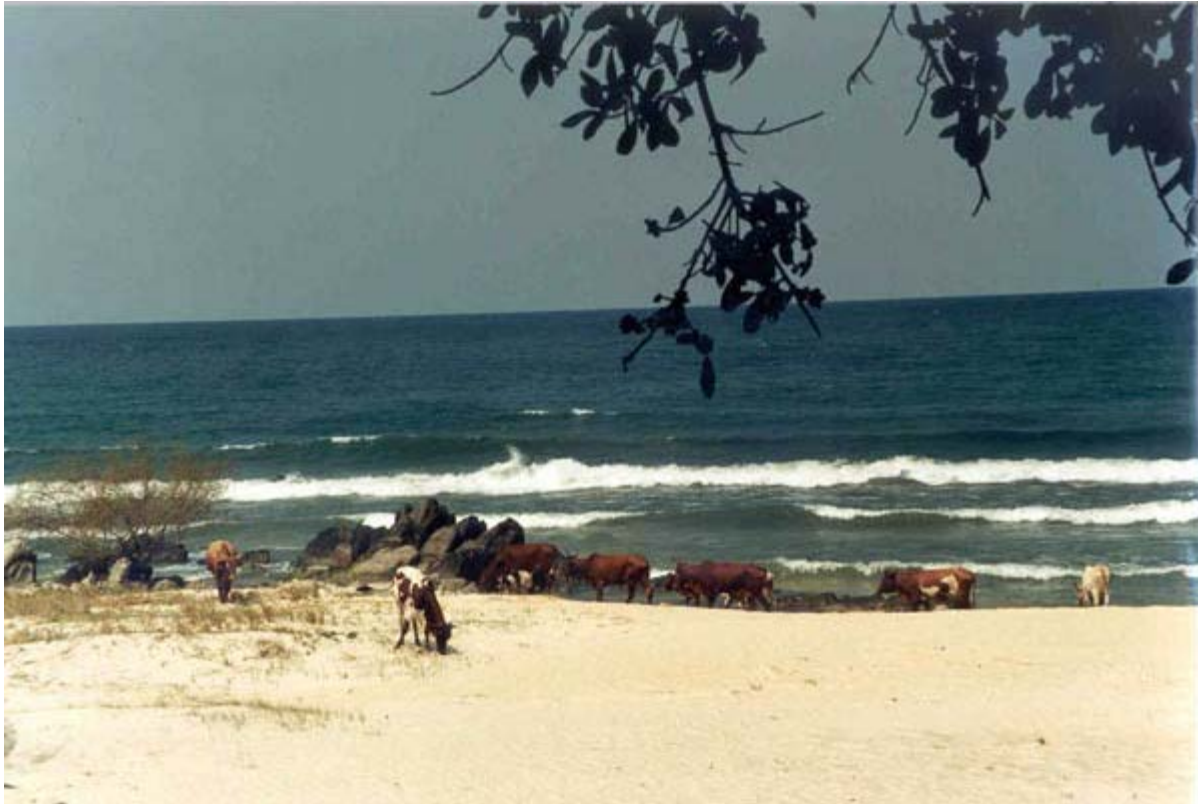
Perhaps Portuguese-introduced cattle came up the Zambesi in the sixteenth century, along with maize, tobacco and some of the other staples of Malawian agriculture (Terry 1961). It has been claimed that the Alentejo breed from Portugal, cross-bred with the original Hottentot-owned Hamitic Longhorn breed, is the origin of the Afrikander breed developed by early Dutch settlers in South Africa after 1652.

In 1571 a detachment of 700 Portuguese troops occupied and fortified Sena (in the extreme south of modern-day Malawi) and cattle from the surrounding area were bought to feed the garrison of São Marçal. Rangeley records that the Portuguese used trained and yoked oxen to transport stone for the fortification but when these imported draught oxen began dying, almost certainly from the ravages of the tsetse fly, the priest accompanying the expedition blamed the deaths on poisoning by the local Moslems. When the expedition's horses also began dying, the Portuguese hunted down and killed all the Moslems in the region, those unfortunate enough to be captured alive being dispatched with all the grisly refinements of the Inquisition (RANGELEY, 1964: 49).

From Gasparo Boccardo's overland journey from Sena to Kilwa in 1616, there is a dearth of written records until de Lacerda who in the 1790s refers to black cattle in Meravi (Malawi) country. Early Portuguese explorers referred always to 'black cattle' rather than merely cattle, and unfailingly praised the quality of beef from these animals.

Livingstone (1866) referred to the cattle of Chief Mponda as being grotesquely fat and with humps of up to a hundred pounds in weight and Rangeley (1964), in reporting this, added that it was now (1960s) in an area infested with tsetse fly. The hardiness and beef-raising qualities of these indigenous cattle were also recognised by the early European settlers in the area of Fort Jameson (Chipata) from where large herds were driven down to Southern Rhodesia in the early 1900s to form the basis of many breeding herds there.

Nevertheless, the indigenous population of seventeenth century Malawi do not generally appear to have been pastoralists. The N'gonde in the extreme north of the territory had a high reputation as herdsmen and kept cattle for milk, as work oxen, and for social purposes such as ceremonial slaughter (Nelson n.d.). Vail (1982) mentioned Ungonde as a relatively small and restricted area in the far north of the country which was inhabited by cattle-keepers but suffered from inadequate pasturage so men were forced to emigrate to earn money which began to function as a substitute for cattle in bride-wealth payments. Read (1992) referred to "*the Konde(N'gonde) of northern Nyasaland with their milk and banana diet*". In the Chulu and Mwasa areas of the northern region, cattle appear to have been kept as insurance against famine during the seventeenth century (Pachai 1973).



A mixed herd of Malawi cattle watering by the lakeside at Chinteche, in the Northern Region.

Photo:Author

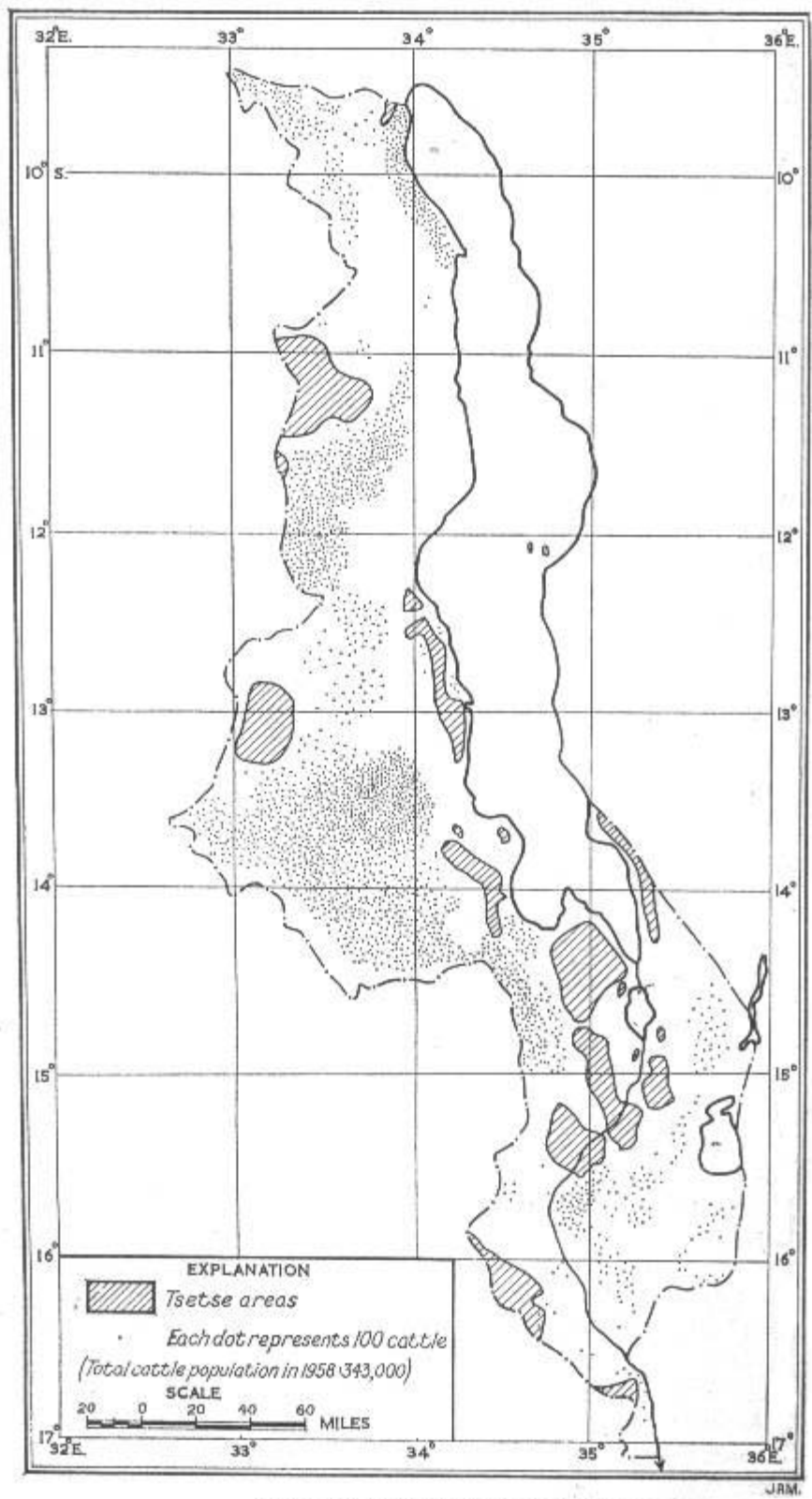
### **The N'goni: invaders and *pastoralists***

In the nineteenth century, two new tribes, the N'goni and the Yao, swept into the old Meravi kingdom. According to Nicholl (1894) who was posted to the new Protectorate of Nyasaland in the early 1890s, the Yao were not much interested in agriculture, preferring to hire labourers to do the work for them, while the N'goni who lived on the Kirk Range were most successful agriculturalists. Nicholl attributed this to their Meravian bondsmen.

The N'goni invaders had been pushed out of their own tribal lands during the *mfecane* in the early nineteenth century. Their forty-year trek northwards from Natal took them to the shores of Lake Victoria before they turned southward again to settle in the high plateau-land west of Lake Malawi which was so reminiscent of the homeland and had pasture for their cattle. With their Zulu-Swazi origins, their ox-hide shields to which some of their military success has been attributed, and their diet, with its preference for meat, cooked blood and milk in the form of curds or *amasi*, they were originally wandering cattle herders and not sedentary cultivating people (NELSON n.d.; READ 1992).

The N'goni diet was much changed as a result of their new surroundings though the N'goni continued to refer disparagingly to the Chewa, whom they largely displaced in the Mzimba and Dedza-Ncheu areas of central Malawi, as 'dirty eaters' because they ate mice and rats (READ,1992). The Chewa may have been subjugated militarily but N'goni society and culture was much modified as a result. Read (1959) described the care of cattle, along with hunting and some crafts, as being the main activities of the N'goni male who, from an early age, received an extensive apprenticeship in cattle-herding. This included discussions between the boy-herders and the cattle-owners each evening on the day's problems, especially disease and injuries, while every boy aspired to the clinical skills of a 'one-stab' man in killing a beast, as well as dexterity in flaying and butchering (which itself gave practical experience in cattle anatomy). The N'goni classified cattle according to age, sex, colouring, size and shape of horns, and whether castrated or not (Read 1959). The N'goni were a patrilineal society and paid cattle as bride wealth.

The correlation between the areas of N'goni settlement and the cattle rearing areas of Malawi can be clearly noted from two figures which are reproduced from Pike and Trimmingham's (1965) standard introduction to the geography of Malawi. Furthermore, the indication of tsetse fly areas *circa* 1960 is of interest with reference to subsequent comments on the struggle to control insect-borne diseases.



The distribution of cattle in Malawi.

Tribal distributions in Malawi. The distribution of cattle in Malawi

Source: Pike and Trimmingham (1965).

**Matrilineal descent patterns**

Apart from the N'goni, almost all the tribes of the area adhered to matrilineal descent patterns and raised crops as the mainstay of economic life (Pachai 1967). Very few households kept cattle and those that did keep farm livestock of any kind, did so as a supplementary activity to cultivation. Without sufficient pasture lands, there were insufficient numbers of livestock (British Colonial Office 1955). Without animal manure, villagers used shifting cultivation to maintain soil fertility (Alufandika 1978). Kettlewell (1965) observed that livestock numbers in Nyasaland were few by comparison with many African territories and were regarded simply as wealth. He identified the main constraint to livestock husbandry as the husband moving to wife's village "*for so long as the marriage lasted*" which gave little incentive for the man to invest effort and money in a holding on which he had a weak, transitory tenure and no prospect of handing over to his son.

Mangisoni (1989) similarly observed that in a matriarchal society men must feel secure in order to develop any business but access to land in the 'marriage-village' was threatened by the fear of divorce which tended to be easy and common in matrilineal society. McLoughlin (1972); Vail (1982) noted that land inheritance passed to the man's wife's brother's son, not to his own son (1982; 1972). Some three-quarters of the population followed matrilineal descent and uxori-local residence. The landholdings were also fragmented. British colonial administrators noted an aversion to long-term investment and only the European estate owners grew crops like tea and tung which needed more than a season to mature (BRITISH COLONIAL OFFICE, 1949 :.31).

Phiri (1982) argued that too much importance has been ascribed to matrilineality which was anyway under pressure to adapt to changing times. Perhaps the point was that those changing times were held back by the philosophy of Malawi's first Head of State, Kamuzu Banda, who was himself a Chewa and based much of the appeal of his thirty year rule on reverence for tradition. As will be discussed in more detail later, it is possible to interpret Malawi's recent agricultural history almost exclusively in terms of the will and vision of the country's first Head of State who also held the portfolio of Minister of Agriculture and Natural Resources.

## **Background to the keeping of poultry and pigs in Malawi**

Poultry fitted well into a time-honoured arable-based subsistence agriculture because it had a short investment period, the products - eggs and meat - were generally affordable for people with low purchasing power, it needed little space and could be reared on land which was unsuitable for crops, and the husbandry practices were not as involving as other types of livestock. Chickens were a big delicacy, as were pigeons (*mabunda*). However, traditionally eggs were only accepted as food for children in Malawi and pregnant women were not allowed to eat eggs in case their baby was born without hair or after a difficult labour (Chitukuko Cha Amayi M'Malawi 1992).

Although in some respects competitive with man, pigs (*sus scrofa* and subspecies) also have traditionally been utilisers of the wastes and by-products of human food and this perhaps explains why they have been domesticated since neolithic times (Clutton-Brock 1981; Epstein and Bichard 1984; Payne, 1990).

In the fifteenth and sixteenth centuries, the Portuguese introduced pigs from China and South East Asia to Europe and South America and their staging and supply ports on the East African coast would have been stocked early on, with ownership quickly spreading to the local peoples. Pachai (1967) noted that Dos Santos had recorded in 1609 that the abundant food supply of the Sena in the Lower Shire included both pigs and poultry. Cooper (1971), however, characterised the local pigs in Malawi as probably from the "*so-called Bantu pigs of South Africa and Rhodesia*" which could be misleading, given that the epicentre of introduction would have been the shoreline and its river estuaries opposite Mozambique Island . A factor

limiting the spread of pig-rearing in Eastern Africa was the influence of Islam. The Moslem Yao people, who entered the southern parts of the country from east of Lake Malawi in the nineteenth century, upheld the taboos of their faith with their insistence on hallaal butchery and avoidance of pig meat.

# Background To The Keeping Of Goats And Sheep In Malawi

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[Cattle ownership : an older man's undertaking](#)

[A moral order based on communal, and not individual, rights](#)

[Measuring and recording](#)

[Exotics and indigenous](#)

[Historical arguments for and against local cattle breeds](#)

[Attempts to improve size, growth rates and fecundity](#)

[The constraints of disease during the past century](#)

[Colonial efforts to combat disease](#)

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The domestication of goats (*caprae*) is thought to have occurred even earlier than that of pigs. Perhaps because goats have traditionally been far more important in the developing than the developed world (Payne (1990) estimated the respective populations at 432.7 million in the developing and 26.9 million in the developed world), their history has been scarcely documented. There are thought to be approximately 300 breeds and types of goat worldwide and at least 70 of these are indigenous to Africa (Epstein 1971). Gall (1996) listed the principal indigenous breeds of goat in sub-Saharan Africa (SSA) as the Small East African, the Bunndi and Mubende (in Uganda), the Bantu (in Zimbabwe), the Swazi and the Boer.

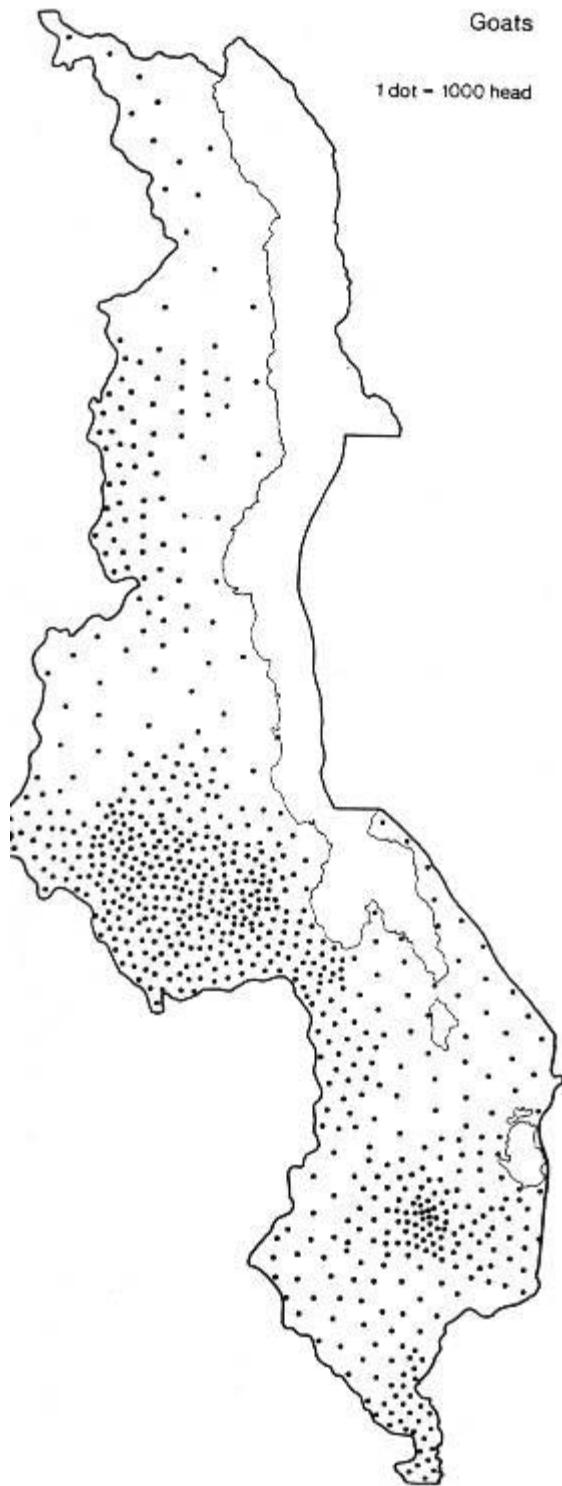
Sheep (*ovis aries*) were domesticated at about the same time as goats and before crop agriculture had fully developed but no wild sheep were domesticated in the African continent (Zeuner 1963). Payne (1990) noted that there were four indigenous African breeds of sheep: the thin-tailed hairy sheep, the thin-tailed coarse-wooled sheep, the fat-tailed coarse-wooled sheep and the fat-rumped sheep. The first of these was perhaps introduced into Africa about 7,000 years ago at the same time and by the same peoples who introduced the Longhorn Hamitic cattle. The fat-tailed coarse woolled sheep may have been introduced 3,000 years later from the Middle East while the fat-rumped breeds may have arrived in Africa by the same route or, according to Epstein (1971), may have evolved in East Africa and been exported back to Arabia .

Whatever their origin, fat-rumped sheep of Somali-Arabian origin were introduced into South Africa's Cape Province in the nineteenth century and were rapidly improved to form the Blackhead Persian breed and it has been extensively used for cross-breeding purposes in the sheep flocks of southern and central Africa. Payne (1990) observed that sheep, perhaps more than any other farm animal, are particularly sensitive to environmental change and have particular difficulty in adapting to changes in diet and exposure to new diseases.



*Local goats and sheep in Malawi 2000*

*Photo: Derek Spiers*



Goat population in Malawi,

Source: Malawi, Government of (1983)

Sheep and goat's milk was very rarely used and where cow's milk was used, it was as sour milk (*lukama*). Generally, breeds for milk have not been of much importance to Africans and there is no tradition of cheese- or butter-making. 'Meat' in Malawi meant beef, while mutton and pork were claimed to be introductions by the early missionaries (presumably the sixteenth century ones) while people using traditional medicine, *chizimba*, were advised not to eat meat

from four-legged animals *“and a little meat goes a long way for most healthy people”* (Chitukuko Cha Amayi M'Malawi 1992).

## Cattle ownership : an older man's undertaking

Cattle were an alternative to a bank account. In a lyrical evocation of daily life in Northern Malawi in the early twentieth century, the Rev. T. Cullen Young (1954) wrote that *“Cattle and Counsellors alone meet the day in quiet; the community's wealth and wisdom. All else is movement”*.

In his research into the sociological aspects of cattle husbandry, Murmann (1973) concluded that the reasons for cattle ownership were:

1. as a security fund to be drawn on in times of hardship, such as food shortages due to crop (that is, maize, failure) and also used to pay fines that might be determined by the traditional court, for instance in cases of adultery or wife-taking.
2. as a means of paying for other expenditures, for instance, tax demands or buying clothing.
3. for the use of livestock products that is, meat, milk, manure and traction. In the survey, manure was considered an important reason for keeping cattle by 43% but milk and meat by only about 25%.
4. As well as being raised for consumption at social events, especially funerals or remembrance feasts (37%) and as a bride price.

Usually a farmer bought only one heifer or cow and eventually built up a herd from the offspring of that sole animal (Murmann 1973). This implied that the purchase of the foundation animal was unusually critical for the enterprise's future and that one of the principles of livestock improvement programmes - culling - was completely ignored. Because numbers in individual ownership were so small, a cattle owner joined in a *khola* (a small stockade, generally not roofed) owned and operated by a close relative or trustworthy friend. the majority of participants were brothers or nephews of the *khola* manager but disagreements were common (Murmann 1973). Read (1959) had also dwelt on the sources of disagreement in cattle ownership, based on her research into N'goni society during the 1930s. Sometimes this was as a result of cattle ownership by former slaves who then found their erstwhile masters also claiming the same animals. Moreover, with the Chewa *“when a man wanted to start a herd and had money to buy cattle, he was expected to give the money to his mbumba who then bought the cattle and took charge of them and regarded them as his own.”*

Read (1970) also remarked that the Chewa matrilineal *mbumba*, as a cattle-owning group under a senior man, had not the continuity of the N'goni 'house' for a *mbumba* was said to be 'finished' when a woman and all her daughters had died and the land was either inherited by the senior daughter's eldest son or else divided amongst the sons of different daughters.

Mankhokwa and Oblitas (1973) carried out a cattle survey in the same year as Murmann, but in the Lower Shire of the Southern Region as opposed to the environs of Lilongwe in the Central Region. It was remarkably similar in its findings. It noted that only 5% of *khola* managers gave the animal's stage of development as the main reason for determining the time of sale. For 84% of the interviewees, cattle were only sold when money was needed, as opposed to 5% who cited the animal's correct stage of development as the correct time to sell. A further 9% (virtually the balance in the survey) sold through a fear of possible disease.

The Chewa believed that if cattle were to survive and increase, they had to be owned and cared for by the village elders. With the N'goni, too, there was a concept of collective

ownership as a sort of heirloom and on occasions the cattle were still described as the property of some man who was long dead (Read 1970). Group decisions were made by the senior men and sometimes cattle were boarded out to neighbouring villages which, during British colonial rule had the merit of evading cattle tax but also was an act of trust which was used in building up good relationships.

Cattle keeping was unlikely to be a young man's enterprise which could have had unhelpful consequences for cattle breeding as the older generation would have been expected to be less innovative, less energetic and more conservative. To the problem of aging and conservative cattle owners, there was added a lack of experience as cattle keeping was a recent activity for most of the *khola* managers: 80% had owned cattle for less than ten years and 50% for less than five years Mankhokwa and Oblitas (1973). In the same year, Murmann (1973) reported that only 37% of the cattle owners in his Greater Lilongwe area survey were milking their cattle at all. Of that 37%, almost half had only started milking in the last couple of years while a further quarter had been milking in the previous decade and only the remaining quarter had been milking for longer than ten years.

## **A moral order based on communal, and not individual, rights**

Grazing lands were held in common and the reports of the Activities of the Malawi-Danish Cattle Survey were recording in 1972 that there was still no serious land shortage in the survey areas around Lilongwe (a very changed situation twenty-five years later). It was also a traditional landholding system that was at odds with production and marketing arrangements. Individual smallholders encountered great difficulty in securing finance from commercial lenders who generally wanted collateral for loans in the form of a charge on the land (Nzima 1985). However, customary law insisted on the inalienability of the land.

Nor was ownership of livestock attractive security from the lending bank's point of view because the Bills of Sales Act of 1967, (which replaced two British Parliament Acts of 1878 and 1882 that were received into the Nyasaland Protectorate in 1902) was designed to give protection to the borrower against an unscrupulous lender and therefore, by implication, reduced the lender's protection against default. Since the Warren Committee of 1936, the desirability of a Land and Agricultural Bank had been explored but loan and subsidy schemes for Nyasaland do not seem to have become established until the mid-1950s (British Colonial Office 1936; British Colonial Office 1955b to 1960b).

Read (1970) stated that among the N'goni there was not the same concept of individual ownership as generally held by Europeans which, in the British sense, involved the legal right of individual disposal, the individual possession of profits from such disposal and the individual's responsibility for complying with any regulations concerning his livestock, such as dipping, vaccination, movement of livestock restrictions or slaughter as a result of testing positive for diseases such as Foot and Mouth. More generally, Price (1949) had noted that *"Difference in outlook becomes apparent when persons conversing find that they do not use equivalent expressions for the same fact or experience"*, emphasising differences in colour and pattern, music and rhythm to illustrate fundamentally different perceptions between European and African.

## **Measuring and recording**

The long gestation period of cattle, the large feed intake required to maintain them in places of erratic or scarce rainfall, an open Pandora's box full of lethal parasites, the high access costs which included both the purchase of breeding stock and the construction of fencing and shelter, as well as vulnerability to predators like lions, leopards, hyenas, and besides, theft and malicious damage by people, made the keeping of cattle an economically hazardous

pursuit. Illustrating these latter problems, the British colonial authorities introduced subsidies in 1955 for constructing cattle *kholas* which was a response to a reluctance to roof cattle *kholas* through fear of malicious burning, the British Colonial Office's Official Report for Nyasaland noting in 1952 that *"it is hoped that the end of the old type of khola, belly deep in mud in which calves have been known to drown, is now in sight."*



*Cattle khola at Bunda College students' farm, early in the rainy season 1998/99.*

Photo: Author.

The very high unit costs of cattle lend themselves to the value of exhaustive research and careful documentation. As the Ghanaian philosopher, Kwasi Wiredo, has argued, African societies have traditionally been little interested in measuring and recording. The Boer-bred Afrikaner is one of the few indigenous African cattle breeds with its own breed society (founded in 1919) and a Herd Book (closed in 1936). By contrast, there is often some doubt as to whether an animal is a Malawi Angoni, a Malawi Zebu (also called a Nyasa Shorthorned Zebu or a Nyasa Zebu), or indeed a Tanzania Zebu (also called an Iringa Red, a Maasai Grey, a Mkalama Dun, a Sinhida White, a Mbulu or a Wachagga). To most African cattlemen, the point is probably arcane, semantic and irrelevant.

What Wiredo (1980) described as "the unanalytical, unscientific attitude of mind, probably the most basic and pervasive anachronism afflicting our society" is exceptionally difficult to change because it is founded on "habits of thought, hardened for us into customs by the long-standing practice of our forefathers". He goes on to add that the principal agent for change is education but so far it has tended to develop only a "veneer of enlightenment" which too readily peels off "at the onset of any misfortune that does not easily yield to explanation. Superstition quickly comes into its own". As a result, the development of expensive breeds of livestock, where outcomes are always uncertain, may not be an appropriate expectation in a Malawian context. Moreover, many celebrated cattle and sheep breeders have followed Robert Bakewell (1725 - 1795) down the same hard road to bankruptcy.

If these problems of measurement and recording seemed so acute in cattle, it was perhaps only because the disparity between First and Third World practice was so marked. In the 'developed' world, a farmer's failure to measure and record carried with it severe statutory penalties which were capable of stripping his occupation from him. In Malawian society, even the authorities were disinterested in making accurate records. For example, Nyirongo's (1973) study for the Malawi-Danish Cattle Survey reported that during 1969 -70 there were frequent changes of personnel and as a result of these, and the lack of professional supervision, the maintenance of proper records suffered to a very considerable extent.

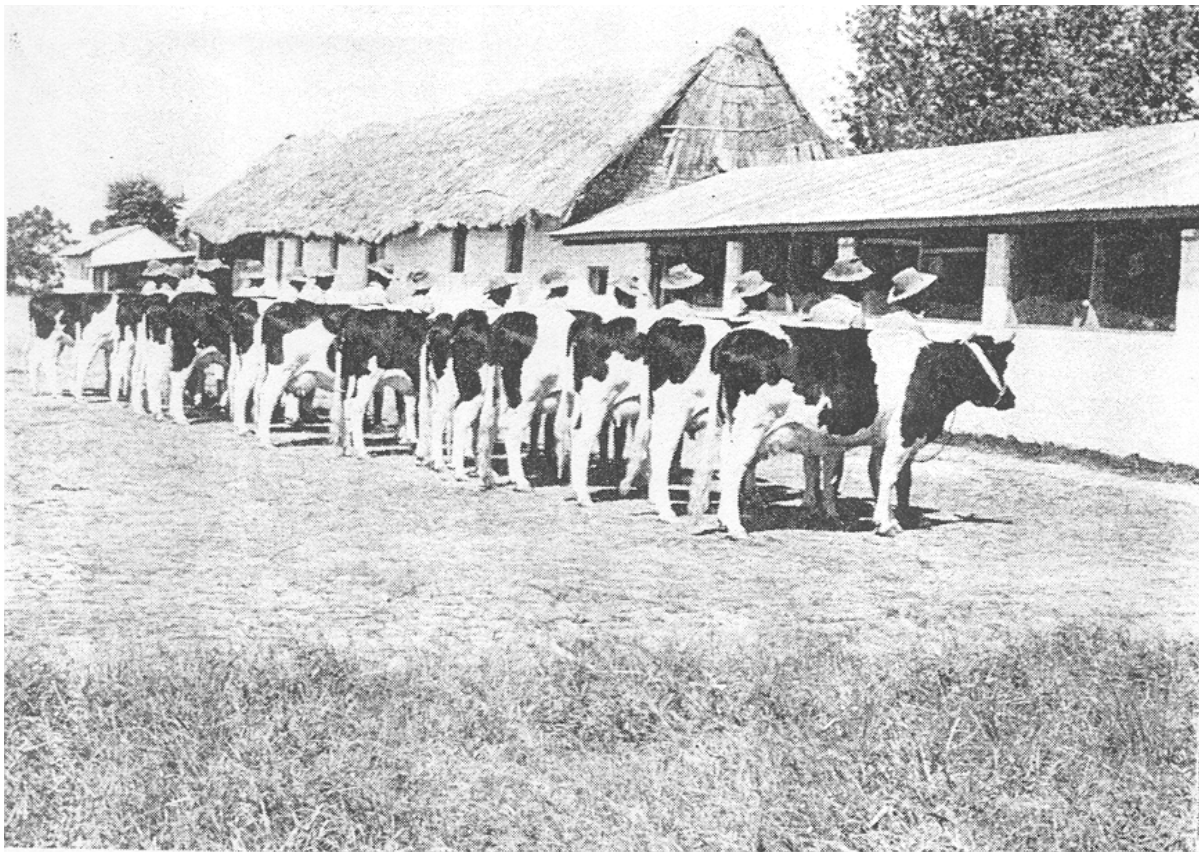
The undertaking or completing of a task is unimportant when compared to maintaining harmony and preserving face amongst, and between, people (Samu 1999). There is a further cultural difference between the developed and the developing worlds, for, in the affluent West, animals are elevated to a level that surprises and perplexes subsistence farmers in Africa. The purpose of a dog is to guard personal property and not to provide human companionship; while setting up charitable foundations for the cats of Venice or the donkeys of Cairo is, from an African perspective, a sign of mental disorder.

## Exotics and indigenous

As Wollny (1997) has recently noted, knowledge about the adaptive value of indigenous livestock and its competitiveness comparative to exotic breeds is still very limited. However, this may be because the pioneer settlers never recorded their experiments and the knowledge died with them. During the late nineteenth century, European, and especially British, breeds were introduced into Malawi. These were the animals with which they were familiar from their homeland. As Bruce Chatwin's fictional Brigadier declaims *circa* 1920, "*Now I have seen Hereford Cattle in every part of the globe. Indeed, wherever you will find the white man, there too you will find the white-faced breed*"(Chatwin 1981). Colonial administrators, settlers and planters were people of superior standing in their African territories and naturally the domestic breeds which they brought with them were considered similarly superior to the local breeds. The connection between prestige and pedigree was close: blue-blooded aristocrats and their thoroughbred animals (Ritvo 1987).

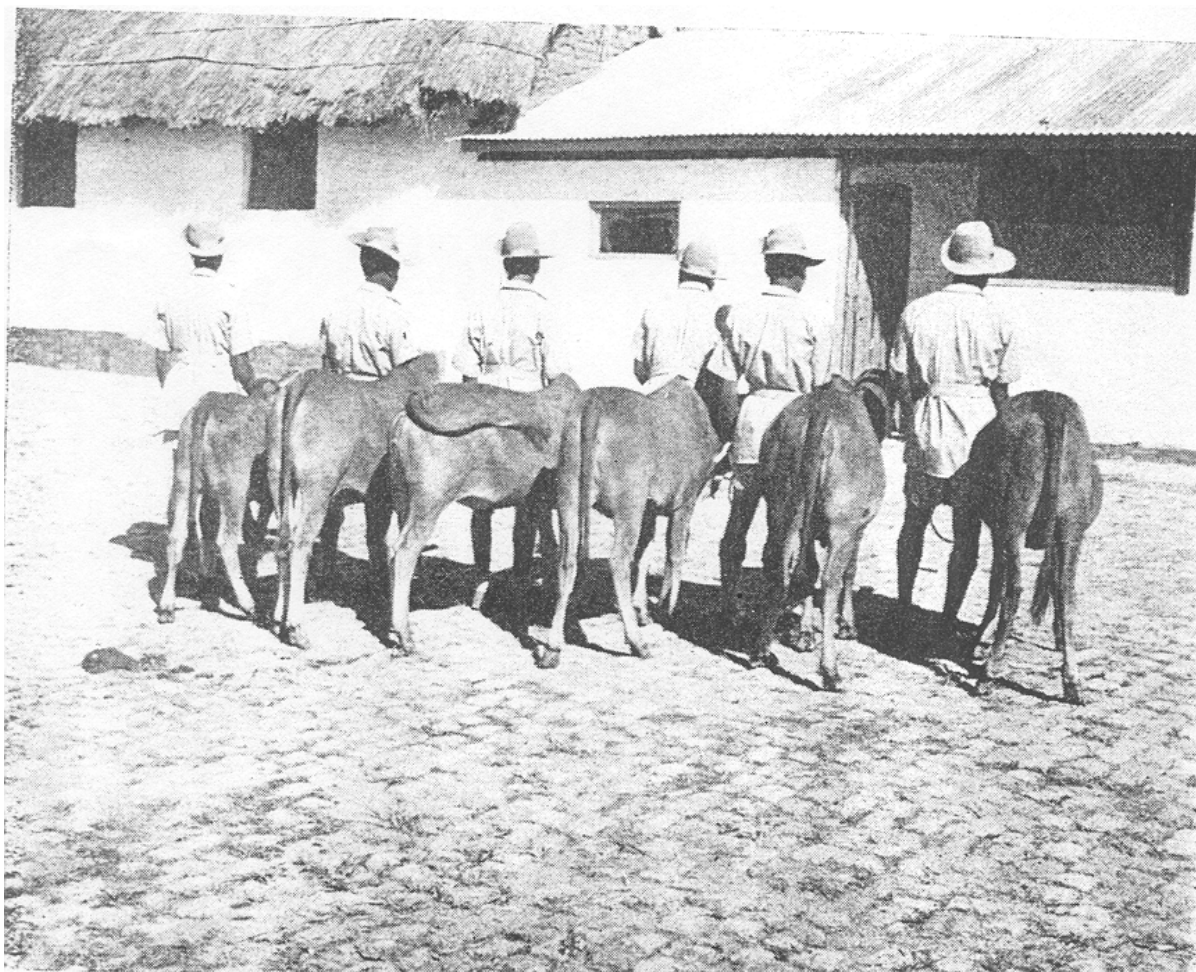
Since the area was a British protectorate and the majority of white settlers of British extraction (as were the Rhodesias, South Africa and, after 1918, Tanganyika), some British breeds had an excellent opportunity to become popular in SSA. These included the Dorset breed of sheep and the Sussex breed of cattle, a dual purpose animal that had also been used for draft purposes since medieval times. The Sussex was more successful than the Hereford and the Angus on the semi-arid grazing lands of southern Africa and had a better tolerance to heat but, in the country of its origin, the Sussex became a rare breed.

Invariably, exotic breeds, especially those from temperate climates, faced major difficulties in adapting to a Malawian climate: levels of longevity, fitness and overall lifetime productivity were all adversely affected. The exotics were accustomed to an abundance of forage with high crude protein levels and their tolerance to disease was low. Also low was the imported temperate breeds' tolerance to heat and this adversely affected reproduction, pregnancy and lactation. The result was that the exotic was possibly no more efficient or productive than the local breeds which, at considerable expense, it had been brought in to replace (Swanepoel and Setshwaelo 1995; Hoogenboezem and Swanepoel 1995).



*The Friesian milking herd at the Veterinary Department's Mikolongwe Livestock Improvement Centre which during 1959 averaged 4722.5 kg. Of milk in 315 days at 3.52% butterfat with a calving interval of 396 days.*

Source: British Colonial Office (1960)



*Group of Angoni heifers at the Veterinary Department's Livestock Improvement Centre, Mikolongwe*

Source: British Colonial Office (1960).

## **Historical arguments for and against local cattle breeds**

All the indigenous breeds of the tropics tended to be smaller than those of temperate zones. These included the East African Zebu, the small, hardy, multicoloured local strain of *bos indicus*. The Malawi zebu calf at birth weighs 20 kg., and is 150 kg. at one year., 215 kg. at two years old, 290 kg. at three years, 397 kg. at six years and 442 kg. at ten years, with males being heavier than females. Slaughter weight was given as 386 kg. (with a daily liveweight gain of from 0.95kg. to 1.18 kg.) and a killing out percentage of 53%. Heifers were ready for service at 27 months (Anon. 1966). Zimba (1991) reported that when selection was done at the Government Livestock centres between 1953 to 1965, the average birthweight increased from 18 kg. to 21 kg., at one year old from 127 to 154 kg., from 155 to 224 at two years, and from 228 to 300 kg. at three years old. The average daily gain was 0.85 kg. (0.36 to 1.18 kg). First calvings in heifers were from three to four years and cows had calving intervals averaging 16 months (Munthali 1991).

Smaller cattle were better suited to grazing on the *dambos* of the Lilongwe Plain; (these hydromorphic soils which are waterlogged in the rainy season, play an important role in dry season grazing of the local cattle). However, overgrazing of these *dambos*, a condition aggravated by the rapidly increasing population pressure on land use for cultivation, presented serious problems because it led to soil compaction, sward deterioration, bush encroachment and gully formation (British Colonial Office 1947; British Colonial Office 1956).

In 1952 three new livestock management and Animal Industry centres had been set up; at Mbawa in the Northern Province the herd of local Angoni cattle was increased and foundation stock were sent to start a second herd at Mikolongwe in the Southern Province and in 1956 it was reported that both herds were “*doing well*” (British Colonial Office 1956). In 1960 it was reported that Angoni cattle were being developed as a dual purpose breed and that the peak milk yield recorded from an Angoni cow was 1,545.5kg. in 281 days (British Colonial Office 1960). The Nyasa Zebu, however, was considered to be a beef breed. A trial conducted in 1960 with six grass-fed Nyasa steers sent from Chitedze to the Cold Storage Commission had graded Super (1), Choice (4) and Prime (1) (British Colonial Office 1960).



*Zebu stock bull and herd going out to pasture at Bunda main farm (1998).*

Photo: Author.



*Zebu cow and her bull-calf in the yard at Bunda main farm (1998).*

Photo: Author.

## **Attempts to improve size, growth rates and fecundity**

The first Principal of Bunda College of Agriculture, Theodore Pinney, set up a programme of cross-breeding based on population genetics and the increasing understanding of animal adaptation with a disregard of breeds and an emphasis on production testing of populations. In 1970 Bunda College had 300 cattle of which 80 were a Zebu breeding herd, survivors of a rigorous selection policy based almost entirely on fertility and low return-to service rates (Pinney 1970). Despite a firm belief that the basis of any improvement of beef production in Malawi must be the national herd of East African Zebu, Pinney bemoaned the slowness of growth of the East African Zebu which was only 51.5% of the daily liveweight gain of the average cross-bred. While the returns on cross-bred animals had the potential to be greater than on local zebus, this could only be achieved under improved management, without which the indigenous *“Zebu will outperform any Bos taurus x Zebu cross-bred under traditional village levels of management”* (Pinney 1970; Pinney and Moss 1971). Munthali *et al.* (1988) quoted Ministry figures of 95% of all livestock in Malawi being kept under traditional village levels of management, while Zimba (1991) estimated 97% of the national herd was owned by smallholders.

At Bunda in 1970 there were also 125 sheep divided into four closed flocks: Flock 1 being indigenous sheep purchased locally and van Rooyen ewes in-lamb purchased from Mikolongwe Livestock Centre for cross breeding with Flock 2, Suffolk imports; the result of this new flock was to be crossed with the results of the crossing of Flocks 3 and 4 which originated from Dorper and Wiltiper imports. The livestock breeding projects at Bunda, however, quickly lost direction and fell into abeyance after the Principal abruptly had his contract terminated in 1975 by the Head of State who was also Chancellor of the University, of which Bunda was a constituent college.

The problems that seemed to make local livestock breeds so much less productive than the exotics - such as slow growth rates, delayed reproductivity and small size - applied across farm animal species. The average Malawian goat was smaller than its European counterpart, being from 51-53 cm. high, 59 -63 cm. long and having a girth of 70 -81 cm. The weights ranged from 18 to 24 kg. (Ayode 1982). According to Zimba (1991), birthweights of the indigenous Malawi goat were 2.1 kg.; the weight had increased to 8.2 kg. at twelve weeks, 11.9 kg. at twenty-four weeks and 24 kg. at one year old. Females reached maturity size at 3-4 years. Efforts to improve daily liveweight gain had been notably unsuccessful and although the indigenous breeds were well-known for their high resistance to disease, there was also far too high an incidence of inbreeding as a result of poor segregation of bucks or failure to castrate.

On goat production and utilisation in Malawi, there had traditionally been little information with the result that figures could only be guessed at. Devendra and Burns (1970) had reported that in Nigeria 30% of the annual population was slaughtered for meat each year and Reynolds (1979) suggested that if the percentage was the same for Malawi this would amount to almost 250,000 carcasses with a dressed weight approaching 2,000 tonnes.

There is a rare reference to sheep from the South African Dorper breed being imported in 1974 but in relative terms, sheep declined sharply in importance (Malawi, Government of 1975). Zimba (1991) recorded that local sheep seemed to be doing better than the Indigenous x van Rooyen and that weights for Hampshire x local, van Rooyen x local, and local were 37, 30 and 31 kg. respectively.

According to Cooper (1970), the pig industry in Malawi was virtually non-existent, being based almost entirely on 'village' pigs kept under extensive conditions. The major disease problems were identified as African Swine fever and 'measles' which caused large numbers of carcasses at official abattoirs to be rejected as unfit for human consumption. The Ministry of Agriculture recommended that farmers did not keep pigs as their sole or main enterprise because of the potentially devastating effects of African Swine fever. Zimba (1991) reported that very little work had been done to evaluate the performance of locals compared to exotics. Most of the exotics were kept on estates or at Government Livestock Centres though a few were infiltrating the rural areas. Nyrenda and Makhambera (1987) observed that feed efficiency depended more on the quality of feed than the breed type. Also, of course, pigs were direct competitors for scarce supplies of carbohydrates in concentrated form. In addition, pigs were taking 15 months to reach maturity and therefore were not financially very profitable. Management was the key to the survival and good growth rates of all breeds of pig but applied especially to the exotics - Landrace, Large White and their crosses. In 1969 about 5,000 pigs out of a total of 150,000 in Malawi had been estimated to be exotics (Anon 1969).

In the 1950s the Mikolongwe Poultry Improvement Centre (MPIC) had improved local poultry through cross-breeding with the Black Australorp. The centre delivered 6-week old chicks to farmers in villages but supply was never able to meet demand. This policy was continued by the Government of Malawi, through the Smallholder Poultry Improvement Programme which distributed hybrids to small-scale farmers (Gondwe *et al.* 1999). However, as with the replacement dairy cow programme, demand was generally far in excess of supply; for instance, in 1988 only 250,501 pullets were distributed to farmers in the whole country (Malawi, Government of 1989).

Small body sizes and slow growth rates have been generally considered the main drawbacks of indigenous poultry. Safaloah (n.d.) added that other limitations for indigenous poultry included low egg production (less than 50 eggs p.a.) and low hatchability (as low as 18%) and this, no doubt, accorded with reduced fertility in other breeds; (for instance, multiple births in sheep and goats are rare in the tropics.) Safaloah added, however, that virtually no research had been done to assess performance of local chickens under improved conditions.

Husbandry practices were intensive for exotics like Tokai, Hyline and Indian River but this was not the case for indigenous poultry which were well adapted to village conditions but were very slow growing (Mjojo 1983). Gondwe *et al.* (1999) has reported that the poultry population in Malawi is composed of 83% indigenous chickens, 15% pigeons and 2% ducks with insignificant percentages of turkeys and guinea fowl. He remarked that the chicken phenotypes locally known as *kameta*, *kambwara*, *kansilanga* and the pigeon variety, *chimwendo-mphako*, have high production traits.

## The constraints of disease during the past century

The greatest constraint to domestic livestock production is the wide variety of insect- and tick-borne diseases, the indigenous, local or adapted breeds surviving better than the imports (British Colonial Office 1958). For example, Chinombo *et al.* (1989) reported that exotic and cross-bred cattle were much more vulnerable to *chigodola* or East Coast fever (ECF) (Theileriosis) than the indigenous breeds. ECF was reported as being a major problem in 1948 though, in the disastrous famine year of 1949 when the crops withered, there was a major decrease in this and other livestock diseases. Tick-borne and fungal diseases tended to increase during the rains and in the immediate aftermath of the rainy season. The prolonged wet weather of 1956, for instance, encouraged a severe build-up of pests and diseases of which ECF, endemic in the central and northern parts of the country, was the most serious. Knudsen (1971) reported that two-thirds of each year's calf crop from indigenous breeds died before they were two-year-olds and the majority of these deaths were attributed to ECF. The 1974 Annual Report of the Department of Animal Health and Industry reported that tick-borne diseases continued to plague the livestock industry with more cases reported than ever before and it attributed this increase to the larger number of cross-bred cattle being available to farmers.

Heartwater was reported to be a big problem after the 1952 rainy season that had been so good for tillage (British Colonial Office 1952). The British Colonial Office Report of 1956 attributed the major cause of livestock losses that year in the Southern Province to Heartwater. This disease (Cowdriosis - an African, infectious, virulent, inoculable but non-contagious disease) was first diagnosed in South Africa and studied for many years there before other parts of SSA largely because that was where the highly susceptible, pure-bred, exotic cattle and sheep were most numerous (Camus *et al.* 1996).

Although surveys in Malawi have relegated Bovine Trypanosomiasis to a relatively minor problem (Price Waterhouse 1995), until the last half-century this disease was considered the principal constraint to the introduction new breeds of cattle. According to the 1959 British Colonial Office Report, 12% of the land area was still infested by tsetse fly, the vector for *nagana* (Bovine Trypanosomiasis, also human sleeping sickness) that had, since the arrival of the white man into the territory, been accorded the highest livestock disease profile.

From the early years of the twentieth century, the spread of the tsetse fly threatened Central Africa with an ecological disaster. Changing settlement patterns, the drain of labour (especially from the Northern Region) to the mines of the Rand and Katanga and the estates of South Africa and Rhodesia, the impact of the Rinderpest epidemic of 1893, the effect of government game policies, all contributed to an advance that averaged seven miles a year (McCracken 1982). In 1900 there had apparently been no tsetse in the Kasungu area but by 1914 it had spread across the Dwangwa River almost to the Lingadzi. Cattle were kept in various locations around Salima until they were eliminated by 1907, while cattle disappeared from Liwonde in 1902 and from Fort Johnston (Mangochi) in 1915. By 1927 the Northern cattle producing areas were cut off from the rest of the country by a tsetse-fly belt which stretched across the country from Fort Manning (Mchinji) almost to Lilongwe, engulfing Dowa (where an early victim was the Area Health Officer), and across to Nkhotakota and Salima.

The frantic and ineffectual efforts against the tsetse fly during the 1920s were masterminded by the British government entomologist Dr. W.A.Lamborn and credit for its defeat should, according to McCracken (1982) be given to the settler, A.F.Barron. Barron encouraged the expansion of African tobacco growing on his estates in the Central Region which proved so popular that the bush was cut back, increasing amounts of land were put under cultivation which were served by new roads and business enterprises and, by 1937, 83,600 ha. of previously infested land had been cleared of tsetse. The strong natural alkaloid poisons of the tobacco plant also perhaps contributed. Even so, trypanosomiasis did continue to be a major problem, at least in the minds of administrators (McCracken 1982).

Both Tuberculosis in cattle and Brucellosis (with a particularly serious outbreak in the Central Region in 1958) were endemic (British Colonial Office 1952 –60). In the early 1980s, a study of cattle on the college farm of Bunda College of Agriculture found that 30 of 266 cattle (over 11%) tested positive for Brucellosis but that this was a better percentage than in previous years: 107 out of 530 (20.2%) had tested positive in 1979 and 168 out of 498 (34.4%) had been positive reactors in 1978 (Chimwaza and Kaminjoko 1982).

Foot and Mouth disease (FMD), the scourge of farmers in Britain during the 1950s and 1960s, also became a most serious problem in Malawi. In 1958 there was an outbreak in the north and national movement-of-cattle restrictions were not lifted until 1960. Again, during 1974 to 1976, a severe outbreak of FMD swept from north to south and back again and the officials did not claim an abatement of the disease until 1978 (British Colonial Office 1958,1960; MALAWI, Government of 1974,1976,1978).



*Students at the Makwapala Agricultural Training Centre receive instruction in animal husbandry*

Source: British Colonial Office (1951)

## **Colonial efforts to combat disease**

When the Department of Agriculture in the Nyasaland Protectorate began taking active measures in the early 1950s against livestock diseases, it invested substantially in both materials and expertise. Figures for expenditure recoverable from the Colonial Development and Welfare funds in 1950 reveal that just over 50% of the total figure for healthcare (£55,457) was spent on livestock disease and tsetse fly infestation surveys and on stock improvement studies. These surveys themselves accounted for almost 28% of the agricultural development budget (British Colonial Office 1950). In 1952 a Veterinary Department was established, staffed with 27 Europeans and 245 Africans, and three Livestock Health Centres were created: for the north Mbawa; for the centre Chitedze; for the south Mikolongwe (British Colonial Office 1952).

For the Malawian livestock farmer, diseases came, not as single spies but in whole battalions. To combat them required increased input costs, far higher than subsistence farmers could reasonably afford. Reference has already been made to subsidies for *kholas* and also in the late 1950s there was a programme to set up pre-fabricated steel dipping tanks throughout the country. This policy was continued after independence and the during the 1970s the official government annual reports suggested that 15 cattle dipping tanks were being constructed each year though in 1974, for instance, only 8 were completed (Malawi, Government of 1974). Set against the need for spraying, dipping and fencing, farmers kept inputs to a minimum and one result was skimping on the insecticide solutions. This, no doubt, engendered a feeling of false security as well as undermining credibility in 'the white man's medicine'.

## Nationalism and non-compliance

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[Malawi government policy towards livestock](#)

[An agricultural policy of 'corn' not 'horn'](#)

[The inadequacies of cattle dipping and extension programmes](#)

[Donor support to the livestock sector](#)

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The 'Wars of the Cattle Tax' was the name given to the resistance by Central Province farmers in the 1930s to a one-shilling levy for dipping each cattle-beast (Read 1970). There never was agreement or acquiescence. A further rich source for discord between the colonial authorities and local small farmers was the former's attempts to change traditional farming practices. The government had become deeply concerned over soil erosion and degradation as a result of the collapse of the coffee plantations in 1927-28, while the spectre of the American 'dust bowl' of the 1930s seemed to confirm the authorities' view, held since the 1890s, that African farming methods led to rapid soil erosion (Vaughan 1978).

Throughout this period the head of the Protectorate's Department of Agriculture was R.W. Kettlewell. He was credited with inaugurating a determined campaign to conserve the country's natural resources and enjoyed the complete support of the Governor, Sir Geoffrey Colby, a man determined to raise living standards primarily through improved African agriculture (*Times Obituaries* 1994). The searing memories of the 1949 famine were probably a driving motive for both men but, after Colby's retirement, Kettlewell attracted grave unpopularity from African nationalists and he was retired by the British Government in 1962. Thereafter, the policy of promoting contour ridging and other soil conservation efforts were abandoned because the measures had aroused such hostility amongst the population. Kettlewell (1965) wrote: "*Opposition to agricultural legislation had become a powerful focus for African Nationalist sympathies. Everyone, being a cultivator, could be relied on to support it, and obstruction of agricultural government policy became one of the chief planks of nationalist campaigning in the late 1950s.*"

The agitation for self-determination in the Nyasaland Protectorate had been given increased momentum as a reaction to the British Government's plan for a Central African Federation comprising Southern Rhodesia (Zimbabwe), Northern Rhodesia (Zambia), and Nyasaland (Malawi). The colonial origins of the three countries, their relative stages of development and the cultures and ethnic groups within them were significantly different, hardly surprising when it is remembered that the total area is greater than Germany, France, United Kingdom and Ireland.

The 'troubles' loomed large in the British Colonial Office Report for 1960 which estimated the cattle population as static while the rest of the stock census had been unable to be counted accurately due to a lack of cooperation. Movement permits, which had been introduced by law in 1920s, were a further potential source of friction between livestock owners and the authorities. No increase in cattle numbers was ascribed to the boycotting of dip tanks with subsequent livestock losses due to tick-borne disease especially in Central Province where there was much politically inspired opposition to dipping (British Colonial Office 1960). There was also estimated to be a 39.5% fall in the number of pigs largely as a result of a very serious outbreak of Swine fever that virtually wiped out the Southern Region herd. Lack of

cooperation with the colonial authorities in one area in the south was blamed for the development of a very bad pocket of Trypanosomiasis. Agrarian agitation for independence through non-compliance and non-cooperation may have been entirely successful in achieving its aim but it came with a cost: the loss of those advances already made in the livestock health programme. Indeed, the livestock sector, which had always struggled to receive the same level of attention as the crops sector that made up almost all the country's exports, now began gradually to atrophy.

## **Malawi government policy towards livestock**

Dr H. Kamuzu Banda came to power in 1961 on a platform which included a vow to turn Malawi's colonial legacy of agricultural specialisation, underdeveloped though it was, into a sector that was to be the key to national development and would be carried out in such a way as would make Malawi's neighbours envious (Mhona 1987). To emphasise his seriousness, Banda personally held the portfolio of the Ministry of Agriculture and Natural Resources for almost all his thirty years in power. He took care to represent himself as a man of the land: for example, one of his favourite photo opportunities was amidst a fine stand of maize or tobacco.

The British Colonial Office had laid the foundations of a monopolistic economy dominated by foreign capital which could exert total control and exact the maximum surplus from the ordinary people (Minnis 1998). After independence, Malawi's first Head of State perfected it. Msiskya (1991) recalled that Banda frequently referred to Kettlewell's agricultural policies of the 1940s and 1950s with approval and as a basis for his own policies.

However, independent Malawi's first Development Plan was, in the view of Morton (1975) of the British Overseas Development Institute, scarcely a plan at all because there was no detailed presentation of its constituent projects, while little attempt had been made to show how the projects fitted together and none at all to indicate how or when they would be carried out. Furthermore, it was very ambitious, requiring double the pre-independence level of financing and, as far as livestock production went, this meant import substitution.

As well as continuing and expanding agricultural training initiatives and guaranteeing land tenure for the estates sector, Banda attempted to sweep away the old concept of cattle serving as the owners' bank and status symbol, writing that "*herds must be systematically culled and marketed at the right time like any other crop*" (Banda 1979). Nevertheless, Banda seemed increasingly to come to the view expressed by Kettlewell (1955) in his survey for the Governor-General in 1955 that the growing population pressure on land rendered the keeping of cattle virtually impossible. While Malawi's population is currently estimated to be eleven million, when Banda came to power it was some three million, and a century ago when the first European planters arrived, it was thought to be between a half and three-quarters of a million.

## **An agricultural policy of 'corn' not 'horn'**

In Banda's view, 'corn' not 'horn' was the way forward for Malawian agriculture (Banda 1972; Banda 1980). Surveying twenty-five years of his agricultural policies, he wrote: "*In this country, when we speak of agriculture, we mean the production of maize*" Maize and tobacco and groundnuts, not livestock, were the accepted measures of food security and well-being. The cornerstone of Banda's agricultural policy was an export-led development strategy based on tea, tobacco, cotton and groundnuts because his key concern was always with foreign exchange.

A textbook produced by the Government for agricultural extensionists in 1969 ([Agriculture in Malawi](#)) contained sections on beekeeping, fish-farming and quite detailed sections on growing vegetables such as okra, tomatoes and onions, but there was mention of livestock.

Arguably, this omission was remedied two years later with a separate extension book on Animal Husbandry in Malawi. However, in the 1969 and 1970 Malawi Yearbooks there was no mention of livestock and only vague references to livestock expansion in 1971 and again (with the same wording) in 1972. No figures were given other than a breakdown of exotic- and cross-breeds, presumably (since the numbers are small) at the parastatal farms (Malawi, Government of 1972). Two years later it was recorded that the Dzalanyama Ranch had now increased to over 5,500 head of cattle, with the intention of reaching 15,000, using Brahman, Sussex, Friesian and Afrikander breeds (Malawi, Government of 1974). There was no mention of other cattle enterprises, giving the impression that the government breeding farms were the only parts of the agricultural livestock sector worth mentioning, as well as being the only source of 'improved' breeds. The initial Report on the Lilongwe Land Development Programme had to recognise that the only major stockholding unit in the country, Dzalanyama Ranch, was located in its midst but it was a side issue because "*its direct significance to the Programme area is in providing feeders for final fattening by small farmers*" and more importantly, "*in making farmers realise the commercial value of their own herds which at present they treat as a status symbol primarily*" (Mercer 1972).

It was perhaps indicative of the overall lack of interest in the livestock sector that, of the eleven agricultural research projects described in the 1971 Malawi Yearbook, only two had a livestock element: the enquiry into ox-drawn and hand-operated machinery for the small farmer, and social problems affecting the adoption of improved animal husbandry practices. In 1972 nine research projects were listed but only two related to the livestock sector, namely the screening of pasture legumes and grasses and the clarification of overriding sociological problems relating to *dambo* improvement. In the 1980 edition there were some 24 pages referring to crop and horticulture production but only two pages to the livestock sector (Malawi, Government of 1980/1).

External commentators followed suit; for example, a publication from the University of Aberdeen's School of Agriculture, entitled Progress in African Agriculture: An Economic Study in Malawi, did not mention livestock anywhere (Catt 1970). A German study, Agricultural Development in Malawi, stated that "*A chapter on livestock production by tribesmen, which is usually part of every development essay, is not necessary in the case of Malawi*", but perhaps the writer was referring to pastoralism (Dequin 1969).



*The 'ideal' in the early 1970's according to government policy.*

FROM A Guide to Profitable Livestock Management, Extension Aids, (Ministry of Agriculture and Natural Resources, Zomba, September 1971)

**TABLE 1.**

**LIVESTOCK NUMBERS IN MALAWI: 1945 - 1991**

Sources: British Colonial Office; Malawi Ministry of Agriculture and Natural Resources.

Date	cattle	sheep	pigs	goats	horses	donkeys
1945	237,000	37,000	54,000	183,000		
1947 <sup>1</sup>	250,000	40,000	50,000	200,000		
1949 <sup>2</sup>	289,866	50,444	91,231	249,048	64	159
1950 <sup>3</sup>	264,000	38,765	52,549	259,858	65	143
1952	279,436	49,456	56,280	297,356	42	135 <sup>4</sup>
1959	355,000	62,500	104,000	335,000		
1960 <sup>5</sup>	356,667	69,098	72,470	443,622		
1965	432,293	71,337	123,773	464,548		
1966	450,128	88,820	142,666	626,121		
1968	479,916	90,280	180,234	616,961		
1969	491,459	81,136	149,972	699,393		
1970	491,979	121,949	146,344	639,078		

1971	540,865	179,489	172,441	629,901		
1972	572,905	88,516	172,333	565,580		
1973	626,001	79,200	174,500	677,100		
1974	628,500	79,200	186,600	693,300		
1975	700,500	87,821	189,100	739,072		
1977	744,000	86,000	205,000	794,438		
1978	789,533	78,747	174,316	810,550		
1979	790,000					
1983	907,859	155,607	211,704	631,071		
1984	948,519	149,854	186,031	738,547		
1985	1,019,959	85,722		799,084	57	1,786
1986	1,011,359	165,880		799,510	50	1,323
1987	838,471	75,952		799,060	31	1,463
1988	823,064	79,552	238,283	764,313		
1989	833,136	85,722	235,158	802,717	23	685
1990	835,552	85,167	233,108	863,324		
1991	807,613	101,796	254,394	848,716		

## The inadequacies of cattle dipping and extension programmes

Cattle owners were under compulsion to dip their animals once a week, paying a dip fee of 10 tambala before 1972 which doubled in 1973 (Murmans 1973). At that time the Malawian currency was still tied to the British pound sterling which gave an artificially high value, the new 1973 dipping fee translating to approximately 20 US cents. The Control and Diseases of Animals Act Dipping Rules (1969) were as draconian as any promulgated by the former colonial authorities (*"Any person who fails to comply with these rules or any notice or directive made hereunder shall be guilty of an offence and shall be liable to a fine of MK200 (US\$200) and to imprisonment for six months"*). Nevertheless, only 76% dipped their cattle (Nyirongo n.d.). Dipping was not always complied with because of funerals, disease, no time to do so, herdboy problems, garden activities and social events that were deemed more important than dipping (Murmans 1973). Thyangathyanga (1991) noted that Government veterinary charges had been static - at 50 tambala a head - for over a decade and that by 1987 those charges needed to be from twice to eight times as high (depending on acaricide) merely to meet chemical costs alone. Dipping was one of the two major services offered by the Department of Animal Health and Industry (DAHI) - the other being the provision of an effective marketing organization. By 1987 up to one quarter of all cattle ultimately slaughtered for retail beef sales were passing through the DAHI's marketing system but the users of the marketing scheme were making no contribution towards the costs of administering it (Thyangathyanga 1991).

The weak link between research and extension was one of the principal observations of the 1980 United States Agency for International Development (USAID) report on Malawi's agriculture and rural development (Fletcher and Merrill 1980). A cattle dipping KAP study dated 24<sup>th</sup> March 1983 revealed that the overwhelming majority of farmers were unaware how *nagana* (Bovine Trypanosomiasis) was spread while *chigodola* (ECF) was only mentioned by a few farmers in the nationwide survey of 333 interviews. The survey recorded that more than 90% of the farmers interviewed also grew crops and as a result many farmers were inclined to avoid dipping because of the extra work involved. Furthermore, some animals escaped the procedure as a result of poor livestock management or inadequate cattle-handling facilities (Kambuzi, 1983).

The accepted wisdom tended to point to the inadequacy of farmer-extensionist linkage. This was interpreted as a failure by the farmer to take or understand advice as well as the failure of the extension service to provide sufficient material infrastructure. There was a need for farm planning in the smallholder agricultural sector which in turn required agro-economic surveys to fill in the gaps in planners' knowledge of smallholder farming systems (Farrington 1975). Zimba (1991) also pointed out that there was a lack of information on the economic viability of many smallholder livestock and crop-based enterprises or farming systems.

A number of commentators suggested that the first constraint was that of smallholder farmers' illiteracy. For instance, according to Chirwa (1979), farm management problems were a direct result of the lack of a formal education. Nankumbe (1991) stated that the problem of illiteracy was more acute for farmers engaged in intensive livestock production techniques such as stall-feeding and dairying because they were "*managerially more complex*" than the use of improved seed and fertiliser in crops. However, these arguments might now be considered somewhat specious and better explanations might focus on the social attitudes of farmers towards livestock, the distortions created by government pricing policies, and also inadequate research and extension. There was, additionally, the possibility, little discussed, that the training of the trainers itself had deficiencies; while there might be an excellent technical education on offer to the extension service, there was too little practical experience.

## Donor support to the livestock sector

The Ten Year Plan, commissioned by the Office of the President and published in 1971, devoted five succinct paragraphs in Section 3 to livestock policy and concluded that foreign aid to the sector would be required (Malawi, Government of 1971b). The notion appealed to the western donor community which was keen to support newly independent Malawi as a bulwark against communism. Parastatal organisations and grand projects received generous financing from Western capitalist countries. There was, however, a vagueness - perhaps deliberate - about how Malawi Government policy statements should be implemented. This impelled senior Government officials towards a habit of conservative pragmatism such that any innovation often relied on the stimulus of outsiders such as specialists employed by international aid agencies (Thyangathyana 1991).

During the first decade of his rule, it had seemed that Banda was turning a hopeless situation for a non-oil or mineral-rich, landlocked, heavily populated third world country into a promising one but this unravelled quite rapidly in the decade which followed the quadrupling of oil prices in 1973. In the face of increasing external pressures, both economic and political, the Head of State's pronouncements became correspondingly more upbeat:

*"Malawi is one of the most prosperous countries in Africa. It is a star performer. The IMF and World Bank are full of praise. This makes me very happy. People are rich in Malawi, not the ministers but the ordinary people in the villages who are growing maize and tobacco and groundnuts..."* (Banda 1992).

Mhona (1987), following Christiansen and Kydd (1983), stated that, despite the populist rhetoric, there was no positive policy directed towards improving the welfare of the masses, but instead, the logic of the society's socio-economic and political structure demanded the exploitation of the population. With hindsight, it was clear that Malawi's economic performance was stagnant, *per capita* food production was declining, income inequality was increasing, currency rates were sliding, inflation was rising, unemployment was growing and the minimum monthly wage was only marginally in excess of the cost of a 100 kg. of maize, the staple food and 'staff of life' for every Malawian.

There is perception, which increases throughout the 1970s, that the official agricultural

livestock reports were becoming more sanitised, more massaged, always with a positive spin, and rather like a company annual report seeking its shareholders' approval.. This is understandable, given the adverse trade balance of the livestock sector. It was not an export crop and, anyway, cattle were too expensive for smallholding subsistence farmers. Furthermore, Maganya (1994) estimated that the smallholder farmer's contribution to exports had fallen from 58% in 1964 to 37% in 1976. However, perhaps because the Malawi of Dr Banda had become so adept at speaking the language of the corridors of financial power, some of the First World's experts were inclined to misinterpret their findings (Sofranko and Fliegel 1989). Not only were 'developed' world solutions uncritically offered, but also planning in Malawi increasingly displayed all the disadvantages of a command economy with a very narrow base

The position was already bad in 1985. The Blantyre and Lilongwe Milksheds, for instance, despite all the attention from the Malawi Government and the involvement of donors, had not realised their potential in terms of the amounts of milk and meat produced (Nzima 1985). The subsequent collapse of the livestock sector can largely be attributed to the Structural Adjustment Programmes (SAPs) and the withdrawal of much western financial support. The costly livestock development programmes which had been initiated by donors, such as the UNDP/FAO New Capital Farm Dairy Project, the UNDP/FAO Project of the Government of Malawi: Assistance to Livestock Development: Smallholder Milk Producers in the Lilongwe Milkshed, DANIDA's Malawian-Danish Cattle Survey, the World Bank-sponsored Lilongwe Land Development Programme, the Malawi German Livestock Development Programme, the Malawi-Canada Dairy Project, the Malawi-USAID Rural Development programmes for every Agricultural Development Division in the country, and others, quickly suffocated when foreign capital was choked off.

In 1992 Government Livestock Centres, which for forty years had been supplying exotic × local crosses to smallholder farmers, virtually collapsed. Even at Dzanlanyama, which had been trumpeted as Malawi's showplace ranch less than twenty years earlier, 8264 head of cattle fell to 1726 during 1992, while the sheep flock that had numbered 71 was whittled down to 2 rams, 5 ewes and 17 lambs. The Ministry of Agriculture's artificial insemination service (which only covered the Blantyre and Liwonde Agricultural Distribution Districts (ADDs) in the South, the Lilongwe and Kasungu ADDs in the Centre and Mzuzu ADD in the North) frequently lacked liquid nitrogen as a result of the credit and facilities closure due to non-settlement of bills. The service suffered frequent mechanical breakdowns while there was also a lack of equipment as well as staff shortages. The total number of calves produced in Malawi by A.I. in 1992 was 1569 (Malawi, Government of 1992)

A lack of medicine and veterinary treatment, a severe shortage of conserved fodder and animal concentrates, a paucity of funds to buy supplementary feed, unreliable transport, poor salaries and overstaffing, inadequate training and incompetent and demotivated management: all these conspired with natural misfortunes such as the unusually dry seasons in 1992 and 1995 to devastate the Malawian livestock industry which already appeared to be at the end of its tether.

1 *A "shortage of veterinary staff in the past few years has made the keeping of accurate statistics of the animal population impracticable"* but estimated.

2 Poultry (excluding the Karonga district for which no census was made) totalled 1.64 million. The heaviest concentration of cattle was in Central Province.

3 Very considerable drop due to the 1949 drought: poor reproduction rates and thin; then *"heavy mortality due to the prolonged rains of 1950 on debilitated stock of all ages"*.

4 In 1956 300 donkeys were imported from Southern Rhodesia, cheaper than oxen and "very

popular” with smallholders.

5 Cattle population static - ascribed to boycotting of dip tanks and subsequent livestock losses due to tick-borne disease “*especially in Central Province where there was much politically inspired opposition to dipping*” (British Colonial Office 1960) and numbers of sheep goats and pigs also unable to be counted accurately due to a lack of cooperation in the census. However, it was estimated that there was a 39.5% fall in the number of pigs and a very serious outbreak of swine fever which virtually wiped out the Southern Region herd.

# CONCLUSION

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All areas of livestock (especially cross-breeding trials) require years of investigation and observation before even tentative results can be reached and any predictions are inevitably coloured by the personal likes and dislikes of the breeder. Unfortunately a perennial problem of livestock breeding programmes in Malawi has been the optimistic hope that cross-breeding is an easy shortcut to livestock improvement. It was ingrained in the psyche of policy makers who had had the wrong type of education for the job - theoretical in the laboratory rather than practical in the field. To this has been added a sort of fatalism in which decreasing livestock productivity has been tentatively attributed as much to climatic changes as to poor management (Agyemang and Nkhonjera 1986). The ravages of disease and losses through mismanagement on the government farms have contributed their own chronicles of woe (Bwemba Station Reports 1987).

Forethought frequently seems to have been lacking in government planning, much of it dreamed up in Never-Never-Land. For instance, there is little evidence that any future development of livestock enterprises is tied to an available supply of crop residues and by-products. There has also generally been an aversion to long-term investment, with only crops which can be harvested in one season being favoured.

One conclusion that suggests itself is that the development of Angoni and Malawi Zebu breeds through a deliberate selection policy along the lines so auspiciously begun in the 1950s, would have been more effective than the extravagant donor interventions which replaced it. In addition, Gondwe *et al* (1999) has recently noted that there has never been any attempt to undertake a similar policy in the indigenous poultry populations. Given the extremely difficult conditions for the livestock sector in Malawi, it seems that, rather than grafting on an alien stock, we should be attempting to develop the local root. Knowing where to begin searching for that local root is where the agrarian historian can assist the animal geneticist. Moreover, if this account has seemed overly historical, it should be remembered that history is essentially the story of humanity in search of its daily bread (and meat and milk and draught power and ease and comfort).

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