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RESEARCH ARTICLE

SOCIO-ECONOMIC PROFILE OF INDIGENOUS CATTLE BREEDERS IN SOUTH-WEST BURKINA FASO AND BREEDING PRODUCTION CONSTRAINTS

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Abstract

Burkina Faso has highly diversified domestic animal genetic resources that are well adapted to physical, climatic, and pathological environments. This study analyzes the socio-economic status of livestock farmers in southwest Burkina Faso and the constraints on livestock farming. A well-structured questionnaire was used to interview 90 farmers. Descriptive methods were used to analyse the collected data. The distribution of farmers shows that they are all male. In 85.19 cases, farmers purchased livestock, and 82.5% of farmers used family labour. Baoule taurin is associated with the rearing of other species of animals. The Taurin Baoule farming system is traditional and extensive, with animals on natural pasture. The major constraints faced by farmers in performing their activities are social conflicts between farmers and herders (41%). Other production-related difficulties were noted, including feeding problems (22%), animal diseases (15%), access to water during the dry season, availability of veterinary products, health care and monitoring, and unfavourable prices offered by buyers.

Introduction: -

In Burkina Faso, live stock farming is the second most important primary sector activity after agriculture. The agricultural sector accounts for nearly 35% of GDP and employs approximately 80% of the total population (MRA et al., 2007). It contributes 12% of GDP and 26% of total exports, makingit the second-largest provider of export

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earnings after cotton (MAHRH BF, 2011). Significant numbers of animals of various species are exploited. However, lives tock production is struggling to meet the ever-growing population'sneeds.

Livestock production is the second most important resource in Burkina Faso's primary sector, accounting for an average of 27.2% of value added (Berger and Traore, 2006). On the one hand, by the existence of a large and diversified herd and a predominantly extensive farming system that is well adapted to the seasonal and inter-annual variability of pastoral resources (MRABF, 2004). Burkina Faso's cattle population is the second-largest in the West African Economic and Monetary Union (WAEMU), behind Mali. Exports have not progressed significantly (Berger and Traore, 2006).

Livestock farming is the primary source of household income in rural areas. It also provides for children's care and education (MRA BF, 2010). The poor use of the genetic potential of local breeds limits their performance due to a lack of effective genetic improvement programs for local breeds that are well adapted to their environment. No technical or regulatory framework exists for the introduction of exotic genes. This poses a threat to the preservation of genetic resources in zoos and farms' profitability (MRA BF, 2010).

The conservation and development of this breed requires an effective policy. The involvement of breeders in defining this policy's objectives is a condition for its success. Therefore, it is important to have information on the sociological organization and the financial and social constraints faced by breeders in carrying out their activities. This study aims to contribute to the development of Baule taurine in Burkina Faso.

Material and Methods: -

Study site:

The study area was the southwest of Burkina Faso, comprising four departments (Gaoua, Kampti, Djigoue, and Batie) in Poni and Noumbiel provinces (Figure 1).

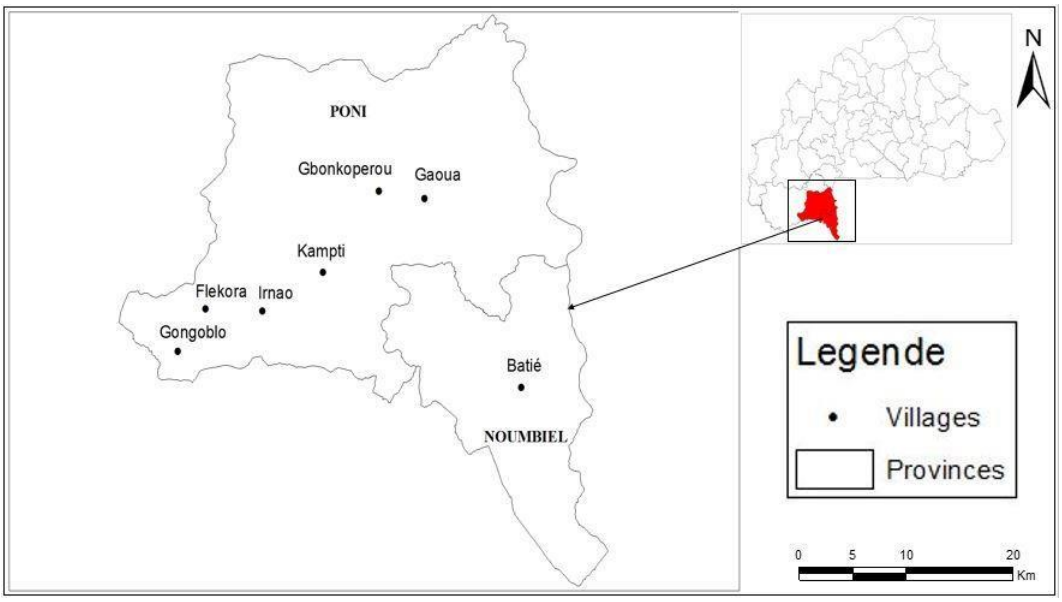

Figure 1. Study site

Methodology: -

Sampling of livestock farmers:

Surveys were conducted in four villages in southwest Faso. The distribution of farmers is shown in Table 1. The size of the various herds was obtained from the farmers. The inclusion criteria for farmers were essentially membership of the local community, and from each herd, 1-10 animals were selected according to the number of animals in the herd.

Table2: Respondent farmers in south-west Burkina Faso

Districts Administrative	Contact details Geographical	Number of Respondents
Gaoua	10°19'N/3°10'W	36
Kampti	10°9'N/3°27'W	16
Djigoue	10°3'N/3°49'W	18
Batie	9°52'N/2°55'W	20
		90

Data Collection: -

A semi-open questionnaire was administered to the farmers to obtain information on the farmers and the practices of the farming system. The questionnaire included information on farmers' social status, farm identification, herd structure, live stock product marketing, and production and marketing constraints.

Statistic alanalysis:

Qualitative data from the field survey were analysed to produce descriptive statistics. Frequencies of the qualitative variables related to socio-economic issues (e.g., farmer's social situation, herd structure and size, and livestock production and marketing) The various graphs weredrawnusing Microsoft Excel.

Results: -

Social status of farm managers:

The distribution of herders in the southwest of Burkina Faso indicates that they are all male (100%). They are 69% Birifor and 31% Lobi (Figure 2). Only 18.52% of the farmers were aged between 30 and 45 years, while 81.48% were aged over 45 years. No farmers under the age of 30 years were interviewed. All the farmers were illiterate, and the majority were polygamous (88.89% of those interviewed). In 81.25% of the cases, the respondents lived in rural areas. Only 18.75% in urban areas. All livestock farmers in this region of Burkina Faso were interviewed about this practice. Baoule breed are reared in this region to meet socio-cultural requirements. In addition, it is a source of income and a means of saving in 86.67% of cases. However, in the Djigoue and Batie departments, 33.34% and 20% of farm managers listed other reasons, namely trade or ploughing, respectively (Table 2).

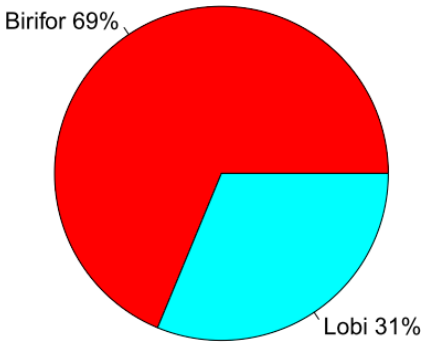

Figure 2. Ethnicity of the livestock farmers in the study area

Table 2: Social characteristics of livestock farmers in south-west Burkina Faso

Characteristics		Proportion of breeders (%)				Total
		Gaoua (n=36)	Kampti (n=16)	Djigoué (n=18)	Batié (n=20)	
Age of owner	< 30 years old	0	0	0	0	0
	30 ≤ age < 45	8.33	25	33.33	20	18.52
	45 and over	91.67	75	66.67	80	81.48
Gender	Male	100	100	100	100	100
	Female	0	0	0	0	0
Level of education	Illiterate	100	100	100	100	100
	Primary	0	0	0	0	0
	Secondary	0	0	0	0	0
Marital status	Monogamous	8.33	25	16.67	0	11.11
	Polygamous	91.67	75	83.33	100	88.89
	Widow	0	0	0	0	0
Main activities	Breeding	0	0	0	0	0
	Farming+Livestock	100	100	100	100	100
	Other	0	0	0	0	0
Place of residence	Camp	0	0	0	0	0
	Village	100	100	100	0	81.25
	City	0	0	0	100	18.75
Purpose of cattle breeding	Cultural+Savings	100	100	66.66	80	86.67
	Other	0	0	33.34	20	13.33

Herd formation and pasture management

The survey revealed that inheritance was the primary farm acquisition method for all farm managers. Farmers in Burkina Faso purchased 85.19 cattle (Table 3). The most common means of acquiring cattle included inheritance, gifts, and trusts. In southwestern Burkina Faso, livestock farmers in Gaoua use family labour. On the other hand, 50% and 20% in Djigoue and Batie respectively use hired labour in addition to family labour (Table 3).

Table 3: Distribution of livestock farmers by department (%) according to pasture management in southwest Burkina Faso

Characteristics		Proportion of farmers (%)				Total
		Gaoua (n=36)	Kampti (n=16)	Djigoué (n=18)	Batié (n=20)	
Method of acquisition of farm	Purchase	0	0	0	0	0
	Heritage	100	100	100	100	100
	Donation	0	0	0	0	0
	Rental	0	0	0	0	0
Method of acquisition of animals	Purchase	75	100	100	80	85.19
	Heritage	25	0	0	0	11,11
	Gift and entrustment	0	0	0	20	3.7
Supervision of Animals	Family labour	100	100	50	80	82.5
	Salaried labour	0	0	50	20	17,5
Grazing area	National area	100	100	83.33	80	90.84
	Over the border	0	0	16.67	20	9.16
Basic feed	Natural pasture	100	100	100	100	100
	Artificial pasture	0	0	0	0	0
Watering source	Dam	58.33	25	83.33	60	56.67
	River/Backwater	16.67	0	0	0	4.16
	Other	25	75	16.67	40	39.17
Source position Watering	Near	90	16.67	61.11	60	56.94
	Remote	10	83.33	38.89	40	43.06

Destination of livestock products:

In southwestern Burkina Faso, 90.83% of livestock farmers indicated that their income comes mainly from the sale of live animals. In 98.61% of cases, livestock products, particularly meat and milk, are not consumed. Most farmers (67.91% of those interviewed) made a profit from cattle sales. However, 18.75% of the farmers had no preference for a particular type of cattle. In 77.78% of cases, cattle were sold on farms, with direct marketers and butchers being the main buyers (Table 4).

Table 4: Distribution of livestock farmers by department (%) according to the destination of livestock products in southwest of Burkina Faso

Characteristics		Proportion of breeders (%)				Total
		Gaoua (n=36)	Kampti (n=16)	Djigoué (n=18)	Batié (n=16)	
Type of production	Live stock	100	100	83.33	80	90,83
	Live animals and milk	0	0	16.67	0	4.17
	Live animals and meat	0	0	0	20	5
Main breeds sold	Baoule	83.33	75	33.33	80	67.91
	Zebu	0	0	0	20	5
	Méré	0	0	0	0	0
	Baoule and Méré	0	0	16.67	0	4.17
	Zebu and Méré	0	0	16.67	0	4.17
	No preference	16.67	25	33.33	0	18.75
Products for Own consumption	None	100	100	94.44	100	98.61
	Milk	0	0	0	0	0
	Meat	0	0	5.55	0	1.39
Main buyers of livestock products	Butchers	8.33	0	0	20	7,08
	Direct marketers	58.33	25	0	0	20.84
	Canvassers and butchers	33.33	75	100	80	72.08
Place of sale livestock products	Farm	100	100	83.33	100	95.83
	Livestock market	0	0	16.67	0	4.16

Photo 1: Dam view (left) and open terracotta enclosure (right) in southwestern Burkina Faso

Major constraints on cattlefarming:

In 41% of cases, the major constraints faced by livestock farmers in performing their activities were social conflicts between farmers and livestock farmers. In southwestern Burkina Faso, 22% and 15% of the farmers interviewed mentioned problems with feed and animal diseases, respectively (Figure 3). Table 5 shows the diseases encountered and treatments administered. In Burkina Faso, 22% of the farmers interviewed identified other problems, particularly access to water during the dry season, veterinary products and health care availability, and monitoring (Figure 3).

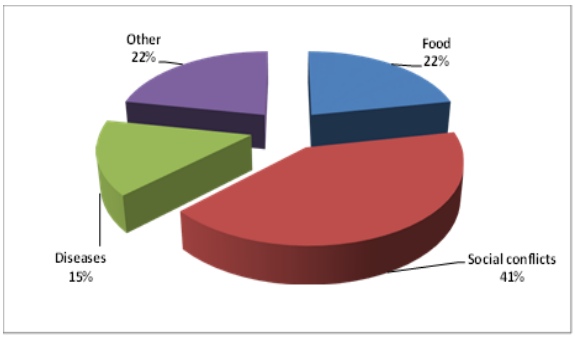

Figure 3. Major constraints on livestock farming activities

Table 5: Diseases encountered and treatments administered

Diseases or symptoms	Prevalence (%)	Farmers who applied treatment (%)	Treatment providers	Products used
Dermatoses	19.05	25	Breeding agents	None
Trypanosomiasis (TAA)	61.9	76,92	Breeding agents	Diminazene+Isomeamidium: VitB12: Diminazene
Diarrhoea	14.29	0	None	None
Ticks	57.14	25	Livestock farmers and agents	Cotton insecticide + herbicide

Regarding marketing constraints, 74.45% of farmers complained about the unfavourable prices offered by buyers for their livestock products, particularly Baoule bullocks. They also noted low product sales (Figure 4)

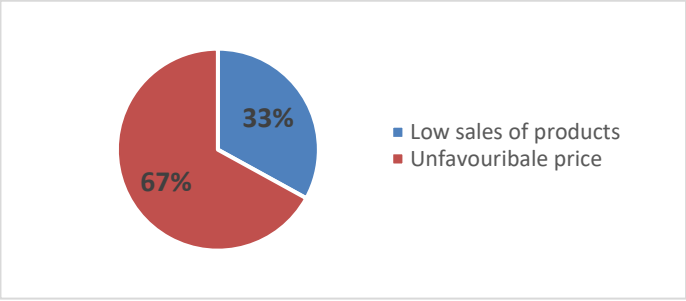

Figure 4. Major constraints related to marketing livestock products

Discussion: -

The southwest of Burkina Faso is a mosaic of people with homogenous civilisations and cultures (Pere, 1982). It is essentially made up of the oldest ethnic groups, the Lobi, Birifor, Dagara, and Gan, who have been pushed out by the others (Bassinga et al., 1996; Maillard et al., 1992). Our study showed that the breeders of Baoule bulls wereBirifor (69%) and Lobi (31%) ethnic groups. This could be explained by the past invasion of these two ethnic groups over the others (Bassinga et al., 1996). The herds were essentially made up of Baoule bulls. On the other hand, the Dagara practised live stock rearing as a complement to agriculture, with little perceptible effort in livestock rearing. The same study found that the yowned 38% of the herds.

Mopate et al. (2014) have shown that owning a herd exclusively of Baoule bulls, castrating other non-Baoule male cattle, making individual management decisions, and belonging to the Lobi ethnic group (here in the broadsensewith opposition between Lobi and migrant) are favourable to the conservation of Baoule cattle. Maillard et al. (1992) observedthat the Lobi strongly preserve their ancestral traditions and generally oppose anyforeignpenetration or innovation. The social structure of these populations is founded on a transmission system with bilinear characteristics. Land, housing, fetish, and crops are transmitted to the son from the father, whereas livestock, poultry, cash, and weapons are passed down through the maternal line (Bassinga et al., 1996; Landais, 1983).

In addition to the Baoule taurin, lives tock farmers kept other animal species, mainly zebu, poultry, cattle from zebu x Baoule crosses, goats, sheep, and pigs, to meet their daily needs. The primary function of livestock farming in this area is to build up the matrilineage's collective wealth, which is used for sacrifices and the payment of matrimonial compensation (Rouville, 1987). Revenues from the sale of small ruminants are primarily used to buy cattle (Barlet, 1993). Small ruminants and poultry can also be used for sacrifices and to cover what Rouville (1987) described as major expenses (taxes, purchase of millet during the lean season).

In our study, farmers keep Baoule taurine in their herds are: inheritance, tradition, and lack of financial means to acquire another breed of cattle (notably zebus) than taurine. They do not practise transhumance, and the majority of them use cross-breeding as a method of renewing the herd with a high taurin X taurin cross (95%) compared to the taurin X zebu cross (20%). Crosses are made by naturally breeding cows with bulls. These bulls are either from the herd or have been loaned to farmers in the same village or neighbouring villages. Our study has shown that farmers in Burkina Faso practice cross-breeding less than those in eastern Cote d'Ivoire, as reported by Soro et al. (2015). Thus, they are helping to preserve the breed although the trend is beginning to reverse around the major towns.

This may be linked to the strong presence of Fulani herders and herdsmen in northeastern Cote d'Ivoire and the development of markets around major towns. The diseases encountered and reported by farmers in their herds are mainly dermatitis, trypanosomiasis, diarrhoea and tick infestation. Feeding problems, particularly fodder availability and lack of technical support, must be addressed. The frequency of these diseases can be explained by the lack of health monitoring, inappropriate treatment, and, above all, the low income of livestock farmers, who also resort to traditional treatment (Mopate, 2003; Soro et al., 2025). Indigenous people are unable to protect the health of their livestock because of their system for passing on property, poor integration of agriculture and livestock farming, low levels of producer organisation and low purchasing power (Kienou et al., 1996).

Inter-seasonal variability reveals a rainy period with abundant biomass, followed by a dry season marked by a shortage of fodder resources. Rangelands and natural pastures have low-to-average productivity and are ravaged by bush fires (Kienou et al., 1996). This forces the animals to seek water in the forest galleries, where the density of glossy vegetation is high (Lankoande, 2002). Lack of technical support is due to a shortage of supervisory and logistics personnel (Kienou et al., 1996).

Conclusion: -

In southwestern Burkina Faso, cattle are reared according to a traditional extensive farming system, with indigenous populations feeding on natural pasture. Cattle rearing has a sociodemographic status that is dominated by adult men, who are uneducated and polygamous in the local communities. It is a secondary activity after agriculture. Livestock farming involves small herds in a traditional and extensive manner, with natural pasture as the primary feed source. Animals do not really benefit from any prophylaxis or veterinary care programmes. Management is generally family-based, and the children look after the herds, but sometimes by herdsmen from the Peule ethnic group.

Conflict of interests:

The authors have not declared any conflict of interests.

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