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REPUBLIC OF NIGER  
MINISTRY OF RURAL DEVELOPMENT  
NIGER RANGE AND LIVESTOCK PROJECT

USAID/Niger

NGAYNAKA

HERDING ACCORDING TO THE WODAABE

Rapport Préliminaire - Discussion Paper

Number 2

Angelo B. Maliki  
November 1981

Niger Range and Livestock  
Project  
Tahoua, Niger

## The Niger Range and Livestock Project

Since 1979, the Niger Range and Livestock Project, jointly administered by the Government of Niger, the Ministry of Rural Development, and USAID, has conducted extensive research in the pastoral zone of Central Niger. The project's final report of research findings will be published in December 1982.

### Discussion Paper Series

The discussion paper series presents preliminary research results, consultants reports, and selected chapters of the final report. These papers represent their authors' perspectives and do not necessarily reflect the position of the Government of Niger or USAID. It is hoped that the circulation of these discussion papers will generate commentary and dialogue.

1. Health and Nutrition in a Group of WoDaaBe (Bororo) Herders in Central Niger
2. Ngaynaaka: Herding According to the WoDaaBe
3. Introduction to the History of the WoDaaBe
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Niger Range and Livestock Project  
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## FOREWORD

For every boDaado, the word ngayaaka has a tremendous evocative power. It denotes not only an activity--pastoral herding-- but also a way of life; not just techniques and methods, but a kind of wisdom and philosophy.

This text is intended to be a simple introduction to the type of livestock-raising that every boDaaDo gaynaako (herder) practices in Niger. The aim of this study is not to systematize or interpret, but to describe and demonstrate.

The first part of the study deals with certain basic information on boDaaDo herding: this includes a general overview of herd composition and management, basic techniques related to the gestation and birth of a calf and finally, an introduction to woDaaBe general knowledge of forage crops and animal diseases.

The second part gives a more detailed analysis of certain magical, economic and social implications of woDaaBe animal husbandry.

Finally, the last part of the study, taking an objective view of the available data, introduces some themes on which the woDaaBe themselves reflect, based on their experience.

The practices and methods described in the text are those of the woDaaBe living within the Niger Range and Livestock project area of Central Niger between Agadez, Tahua and Tanut. As often as possible, regional differences in practices, customs or language have been recorded.

Notes: Lacing appropriate typewriter characters, the three capitals "B, D and Y" have been used to represent the three so-called implosive or glotalised consonants. The "n" represents the velar "n". The consonant "c" is always pronounced "sh" by the woDaaBe.

Numbers refer to chapters and paragraphs.

boDaaDo is the singular of woDaaBe. All Fulfulde (the language of the woDaaBe) words are underlined.

## INTRODUCTION

### THE NOMADIC YEAR

To understand the life and herding practices of the woDaaBe, one must first have a general picture of the seasonal cycle.

Every season has its particular characteristics: its way of life, its pace, its problems, its strategies, its techniques, its tasks. It is impossible to have a deep insight into the lives of the woDaaBe without constantly bearing in mind their heavy dependence on the changing seasons.

This short introduction gives a simple and schematic description of the eight seasons which make up the boDaaDo year.

#### FIRST SEASON: Kokkobe

(Late May to late June)

The woDaaBe use several words to describe this season:

-kokkobe (or Kokke) from the word hokkere, meaning long intervals between rains.

-guluwe, from the word wula-wuli, torrid heat experienced during the season of hot winds (keni gulDi).

-balDe keB-keB: from the verb heBa, to get. This is the period during which it is possible to get a few things which however do not last long; one day you get, the next day you do not.

After the tornados, the woDaaBe leave the water points (wells, boreholes) and start to "follow the clouds"<sup>1</sup>. As soon as word spreads that it has rained somewhere, the woDaaBe start to move their camps.

Families begin to regroup: these are not yet the gatherings of the rainy season, but simple meetings. The woDaaBe meet at the same places, all in search of the same thing, pasture and water. They do what they call seeda-fotta: they part company to meet again further on.

The Baartol, the long journey which involves a complete change of grazing area, is characteristic of this season. This is a period of extreme mobility; it is impossible to stay in one place.

The first rains are limited to a small number of places and vegetation grows again in a manner which varies from place to place. It is for this reason that the herders move so much:

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<sup>1</sup>Tokka duule

they leave areas where the vegetation is still dormant for areas freshly covered with pasture.

Exhausted by a long dry season, during which a constant attempt had to be made to achieve the difficult balance between the search for new grazing and the need for proximity to water, the BoDaaDo herder will go anywhere he thinks he will find a change, grazing his animals near the first ponds to be formed.

The woDaaBe leave the areas where they spent the dry season and begin the new year. They make fun of themselves, saying that they behave like the ostrich (ndaw), which, on hearing the first peals of thunder, moves to places where the clouds have begun to cross the sky.

Substantial animal weight loss is another feature typical of this season. This is not ordinary weight loss (known as foyre); special words are used to describe this: nalbel or ulfel, that is, emaciation.<sup>1</sup> When the first rains fall, the cows actually "smell" the new season--they feel humidity. They need fresh grass and refuse hay which wet by the rain is no longer palatable. Although the animals can drink all they want, they do not gain weight and are constantly hungry. For sheep this time is particularly hard: their emaciation is serious and often fatal (they are susceptible to severe attacks of pneumonia). However, after a few days, these same sheep are allowed to graze on the first scattered tufts of new grass (keccum).

Next it is the young calves' turn and finally, the adult cows are allowed to graze, not intensively, but just enough to subsist. A special word is used to describe this grazing technique: happina or noppina.<sup>2</sup> In the long run, its effects can be observed: at the end of kokkobe, animal conditions improve. They have not yet eaten enough to appease their hunger, but they are no longer in a state of famine. They are said to have "spat out hunger"<sup>3</sup> and their bellies "to be henceforth black," because their excrement is bulkier and darker.<sup>4</sup>

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<sup>1</sup> Ulfel denotes a real state of famine, even if the overall appearance of the animals is good. Ulfel has one characteristic sign: the animals always have watery eyes. Animals which have no choice but to graze on sorkere, small tufts of fresh grass mixed with old hay, are particularly prone to ulfel.

<sup>2</sup> Happina or noppina, is the verb while the noun is kappol or noppol.

<sup>3</sup> Tutta weelo

<sup>4</sup> DeeDi Balwii, literally, the bellies have become black. The end of kokkobe is called seeto, meaning the end of the dry season (CeeDu). In several regions of Niger, the woDaaBe as well as the FulBe wrongly use the term seeto to designate the whole of the season.

During the kokkobe season there is a disease called pukka (which also affects the animals during the Yaawol season, after the rains, cf. VII).

There are severe strains on the family economy during this season. Cows yield almost no milk. In order to eat, the woDaaBe have to buy large quantities of cereals (at a time of year when prices are very high). As a result, they must sell an appreciable part of their stock. This is the peak period of animal sales.

In terms of human health, this is a trying time for the woDaaBe who are weak and lose a lot of weight. Children are particularly affected.

Psychologically, however, the kokkobe is a time of great excitement: a new rainy season is beginning, bringing new hope with it.

### SECOND SEASON: Korsol

(Late June to late July)

After the long and arduous dry season and the suffering during kokkobe, the korsol season is the epitome of happiness.

Grass cover springs up throughout the bush. This generates an atmosphere of calm in which the animals graze peacefully. By mid-morning the animals are already full and ruminate in the shade.

During this season, the woDaaBe know that the constellation, the Pleiades (Daccuki), can be seen at dawn in the east; if it is a good year this constellation appears at the time when the herds are no longer hungry.

At this time, milk production is considerable. Generally, it is said that it is even greater than in the rainy season because the cows' udders do not yet have that "layer of flesh" (teewu) which prevents perfect lactation.

During this season, the cows have a pressing need for salt. They do not consume much, but still need some for their balance. A good herder will continue to give his animals salt right up to the Yaawol season, after the rains, and even during the cold season he will give them small amounts (cf. II.3).

The grass (woggo) which grows during the korsol season, is ideal; it is thin blades of grass which have not yet formed nodes,<sup>1</sup> in contrast to

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<sup>1</sup>The woDaaBe are familiar with several kinds of toxic grass which grow among newly sprouted grass. Among them are the *Gisekia pharnaciodes*, the *Zornia glochidata*, the *Peristrophe bicalciculata* and the *Tribulus terrestris*. These give the animals painful stomach cramps (Bohilol).

the tall noded grass (jokko) which is typical of the latter part of the rainy season. For the woDaabe, it would be ideal to feed the livestock on this soft grass all the time; they make long and arduous journeys during the humid season, just to obtain this grass. It is found more to the north, where the rainy season begins later than in the southern regions.

An illness which is typical of this season is the rukkungo. Certain kinds of grass (follere, nyaanyaatare) give the animals bad cases of gas which can sometimes be fatal (cf. VIII).

In sharp contrast to the instability and mobility of the previous season, the korsol is spent in peace and tranquillity. No long journeys (baarti) are made, only short trips within the same general area.<sup>1</sup>

During this time, animals have plenty to eat, and milk is abundant. This is when the woDaaBe's favourite season begins. This season is a symbol of blessing: the ndunngu. The end of the korsol is called the holo-ndunngu.

During the korsol season, markets are a great attraction. At evening gatherings (hiirde), members of the group are asked to "wait a while" and not start their long journeys until everyone has had a chance to go to the market.

For several months during this season, the woDaaBe diet is based almost exclusively on milk. All milk production is for individual consumption; barter is not practiced at all.

### THIRD SEASON: Ndunngu

(August to September)

The season which the woDaaBe call ndunngu (or the middle of the rainy season) is characterized by long journeys. A course is not charted per se, but an itinerary is selected. This itinerary varies by region and the habits of the different groups. Pastures become green and, even from a distance, the woDaaBe are able to assess the intensity and significance of the dark green colour of the hills and valleys (miinawol).

The scout (swetoo, garsoo) of the group now has a very important task to perform. He has to scout around regularly and may even be away from the camp for several days. When he returns the whole community gathers and forms a council (kinnal) in which the scout plays a key role. During these council meetings (held in the mornings and evenings) everyone has the right to speak. Journeys are determined on

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<sup>1</sup> Short journeys are called dehenol, goncol or cottol, cf. X.1

the basis of the quality of pasturage, the abundance of water and the presence of other groups, etc.<sup>1</sup>

On the whole, rainfall is quite regular during this season. However, the hokkere (any substantial break between rains) is dreaded. There is often a long hokkere during the month of August (15-20 days). This period is greatly feared because it upsets the growth pattern of the vegetation and adversely affects animal health. Water may suddenly become scarce: small ponds may dry up and large ones become grey, muddy and stagnant.

The ndunngu is also the season during which the ground is covered with dew (cammam, naaBri) which is good for the cattle. The wodaabe say that a cow that has spent all night in a pasture covered with dew wakes up the next morning with a supple and tender body.

In contrast, dew is of no benefit to camels. Female camels' milk production is low during this season.<sup>2</sup>

From this season onwards and throughout the rainy season, the different family units (gure), composed of one or more cuudi<sup>3</sup> (sing. suudu meaning the enclosure of one wife) tend to group into larger and more densely populated camps (koDolle). During this season, the clan or lineage group (taarde) is concentrated in a smaller number of koDolle, each containing many families. The area within which the family moves is relatively limited.

Every hoDorde (or camp; sing. of koDolle) is actually a coherent residential unit since members share the same meals (cf. XII.1). The most common types of residential units are those made up of the families of a father and son, the families of brothers or the families of brothers and parallel cousins.

The end of the ndunngu is called ndunngu holo Haawol: the rainy season has "grown old"<sup>4</sup>, because the season is drawing to a close. There are no longer intermittent showers of rain, which at the beginning of the ndunngu could last for an entire day. Sporadic

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<sup>1</sup>In general, every lineage group (duDal) has its own garsoo.

<sup>2</sup>According to the wodaabe who raise camels, the camel's lactating cycle is the opposite of that of a cow; the camel's milk production reaches its peak during the hot season when the cows yield almost no milk at all.

<sup>3</sup>Depending on whether the family is monogamous or polygamous.

<sup>4</sup>Ndunngu na'anii.

<sup>5</sup>Called maatka

violent storms break out at increasingly longer intervals. Numerous large clouds<sup>1</sup> cross the sky, swept by the wind.

Toward mid-September, camps are found on the outer edge of the nomadic zone. Camps are generally close to the salt-licks (bagoriije) which vary in size and are scattered throughout the region (cf. II.3). There are several ways of giving the salted earth to the animals: either by directly allowing the animals to lick the earth after a hole is dug in the ground, or indirectly, by taking earth back to the camp on donkeys or camels.

In terms of social life, the holo Yaawol is the period during which most customary gatherings are held. Each clan (taarde) assembles for its annual meeting (worso or renndo). For three or four days, everyone stays in the same place and conducts traditional ceremonies (marriages, naming ceremonies, etc.). Other clan gatherings may be organized to perform the ceremony of the unirki (the ritual marking the transition of a man from youth into adulthood). Inter-clan gatherings may be arranged by young people either in the form of three-day meetings<sup>2</sup> or more structured and extended seven-day gatherings.

#### FOURTH SEASON: Yaawol

The Yaawol is the end of the rainy season. Ponds are still full, but vegetation begins to dry up (yo'ora). Herds no longer graze on fresh grass, but eat hay. Thus, they have been able to eat grass only over a period of three months. Vegetation dries up rapidly. Between October and November, the forage crops dry up, leaving only the hebbere, the reYYere and the noobol, which still have a few green leaves (cf VI).

A special name is given to the sun during the Yaawol season: heemarye. It is said to be very hot and dangerous both for human beings and livestock. Camels used for riding can barely endure long journeys.

At this time, herders make a preliminary assessment of the humid season that has just ended. The season is appraised on the basis of three main criteria: animal weight gain (fayre), the quantity of milk production (tottol) and the number of females in heat (koocol).

The densely concentrated camps begin to disperse. The groups stay together a while longer, if possible, but there are other constraints. A wind of separation scatters the groups. Everyone is eager to hear

<sup>1</sup>Called arre by the woDaaBe

<sup>2</sup>Meetings called follere

<sup>3</sup>Meetings called ngaanyke or bakaawal

news of grazing conditions. Slowly, the groups return to the area where they spend the dry season.

Cows' milk production has now considerably decreased. The animals deeply feel the change of season and pasturage; they cannot feed their families. At the end of Yaawol, some of the woDaaBe begin to move to the markets of the sedentary zone to get millet (it is harvest time) and change their diet somewhat. In some regions, it is possible to find wild melons (gunaaji) which ripen at this time. The woDaaBe gather them to make a kind of stew with hot pepper and salt. The animals are fond<sup>2</sup> of this stew too and the whole fruit, including the stem and leaves,<sup>2</sup> is considered excellent forage for the season.

The herds follow the path leading to the large ponds, staying away from the dry season wells for as long as possible. At this time, the animals can still drink during the day.

#### FIFTH SEASON: Coorol

(November)

The Coorol is an intermediate<sup>3</sup> season. Nights begin to get cooler, though the days are still hot.<sup>3</sup>

The coorol is a short period of tranquility following the long journeys of the Yaawol; during this season, woDaaBe groups split up and gradually return to their dry season water points. At this point, it is possible to make an overall assessment of the rainy season's effect<sup>4</sup> on particular grazing areas. One can see where "the bush has grown"<sup>4</sup> or where the vegetation has not grown well. The latter areas are called malalaji, or the large strips of land which remain completely bare.

The jujubes ripen and the children spend entire days collecting them.<sup>5</sup>

During the coorol, the woDaaBe return to the markets. Sheep, goats and domesticated cows are sold. The principal products purchased are

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<sup>1</sup>Called bete

<sup>2</sup>Called gunaaru

<sup>3</sup>Some woDaaBe make a distinction between several intermediate seasons: kapitel, huyoro, etc. The typical feature of this season is the light fog covering the countryside.

<sup>4</sup>Ladde fuDii

<sup>5</sup>Faggo = to gather

waterskins, blankets, shoes and, of course, millet. The woDaaBe do not consider the markets very lively during this season. There are very few buyers, prices are low and the herders do not sell their animals unless they are obliged to.

It is at this time that every herder lives in fear of a bush fire (ngulu ladde). The woDaaBe consider certain regions particularly exposed to this danger.<sup>1</sup> These bush fires cause serious damage not only to grazing land, but also to livestock and sometimes to human beings.

### SIXTH SEASON: Dabbunde

(December to January)

This is the cold season during which everyone stays at their base camp. The last herds leave the ponds and move to a permanent water point: a bore-hole (fanfi), deep well (woynndu) from which an animal draws water or shallow well (Bunndu). The type of water point varies a great deal from region to region. Some herders may linger at the ponds; however, except for very important reasons, herders prefer not to stay at the ponds since the cold water there is not good for the animals (especially the young calves).

It is thought that a good dabbol (way of spending the dabbunde) is of prime importance if the herd is to successfully face the problems of a hot, dry season.

The woDaaBe generally return to particular areas. Even with a nomadic lifestyle, with no foothold anywhere and a history of migrations behind him, every boDaado has a place to which he returns, a place to which he feels attached. This is his ngenndi (his homeland), his taaku (his base), his lesdi mbowaandi (the region he frequents). It is very important to understand that these return journeys are not made in an arbitrary or haphazard manner.

Every taarde (clan) has its own base, and sometimes a large clan may have several bases. The ngenndi is more than just a water-point (wasarde); it is an entire grazing area. The ngenndi determines the lifestyle of the community because of certain factors:

- eating habits (grain may be bought at the market, bartered fodder, etc.)
- economic factors (proximity or distance of markets, few options for barter, etc.)
- ecological factors (extent of local natural resources, more or less stable lifestyle, distance of the wells, etc.)

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<sup>1</sup>For example, the woodland north-west of In Tawila

It is rare to find only members of a single taarde in any given ngenndi. Usually, groups are composed of more than one taarde. This merging of migratory groups creates bonds of friendship as well as kinship. In addition, the woDaaBe are mixed with other peoples --Tuareg, FulBe and Arab as well as sedentary Hausa farmers.

Camping near a well and a peaceful and regular lifestyle cause cows' milk production to increase appreciably (at the end of Yaawol, milk production had substantially decreased) even though the herds drink only every other day. Women prepare large amounts of curds and butter, and if it is possible in their respective regions, they barter extensively.

During this season, many people migrate temporarily to the large cities in the south in order to earn money.

With regard to health, bronchitis, colds and coughs are very common during this period (at night, the temperature drops considerably).

#### SEVENTH SEASON: Sudditte

(February)

Sudditte is an intermediate season which starts during the cold season (dabbunde) and ends gradually in the hot, dry season (ceeDu). Sometimes, it lasts only a few days and goes by unnoticed.

The morning fog (suddi), typical of the cold season, is lifted (suddita). Although the nights are still relatively cool, there are no longer cold. During the day, the sun is relatively hot.

At this point woDaaBe camps are approximately 5 to 7 kilometers away from the water points. Camps are moved at least once every 10 days.

Animals are watered every two days. As the ceeDu approaches, cows' milk production decreases, but the camels begin to produce more milk (it is said that this due to the heat of the earth which, entering their bodies through their hooves, stimulates milk production.)

#### EIGHT SEASON: CeeDu

(Late March to late May)

In its broadest sense, the term ceeDu describes the entire dry season, that is, the period between the last rains at the end of September and

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<sup>1</sup>Watering day is called degol and the day of rest is called koorka

the first rains in May.<sup>1</sup> However, in its narrower sense ceDu refers to the season immediately following the cold season.<sup>2</sup>

The woDaaBe consider the ceeDu a time of great hardship. Caring for the herd requires a considerable effort from each member of the camp.

During this season, the clan divides into small camps (koDolle), generally made up of two or three cuDi. There is much less residence than during the rainy season, for ecological as well as psychological reasons.

The vast majority of woDaaBe camp near small wells (Bulon). A tremendous amount of effort is required to draw water from these wells.

After finding a suitable place at the bottom of a dried-up pond and delimiting the exact location of the well, digging (wasa) begins. This job is done by two persons: one is positioned at the bottom of the well and the other remains above. With a small bucket, the other removes the earth which has been dug up. A small hoe (jalo) is used for digging and a piece of rough cowhide is used to protect the digger's hands. After a few hours of hard work, the diggers reach water.

Wells dug in sandy areas have to be reinforced.<sup>4</sup> For this purpose, flexible branches and tall grass are gathered.<sup>5</sup>

The well belongs to the two woDaaBe who dug it (or who had it dug). They will take turns watering herds every other day. The well is usually watched by night to prevent others from using it. When water is abundant, the well is not guarded so other woDaaBe can come and water their herds. This system of watering one's livestock at someone else's well is called Buto; in most cases, Buto is determined by specific circumstances and lasts for a limited period of time.<sup>6</sup> Buto is based on custom and is directly linked to the rules governing hospitality.

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<sup>1</sup>In this sense it is in contrast to ndunngu which describes the whole rainy season.

<sup>2</sup>A word of Hausa origin is used to describe the very hot season: bajara

<sup>3</sup>Deep private wells are common in northern Dakoro

<sup>4</sup>HaBBa, literally, to fasten

<sup>5</sup>The most common of these grasses is the noobol, which, however, has disappeared from quite a few regions.

<sup>6</sup>Buto is practiced by a herd travelling to another region or which has just arrived at the water point and has no well of its own.

If water supply is insufficient, several wells have to be dug and used one after the other.

In the middle of the dry season (loodo ceeDu), a large number of wells cannot be used due to lack of water. Against their will the woDaaBe often have to leave excellent pastures for places near boreholes and deep wells, where there are several herds and pasturage is inferior. In particularly difficult years, herders have to camp as much as 70 kilometers away from the water points.

The woDaaBe who water their herds at shallow wells (goyli, pl. of woynndu) also have a difficult task to perform. Each herder (or couple of herders) fastens a wooden fork (tiggal) to the well. A pulley fixed on a mobile axis is attached to the end of the fork. The installation of this pitchfork signifies the appropriation and control of water and thus, indirectly, the appropriation and control of surrounding pastures.

The large bucket is pulled by a draught animal: a bull, a camel, a pair of donkeys or even one single donkey, trained for this purpose. This method of drawing water is called eelewa and involves two persons: one (usually a young boy) tends the animals during the lengthy trips to and from the well; the other (an adult) grabs the bucket at the lip of the well and takes it<sup>1</sup> to the watering place where the animals come and drink, one at a time.

During the ceeDu season, the camp moves every twenty or thirty days. However, these journeys are always short and are made around the same water point.

The cows produce little milk, and cereals form the basis of the woDaaBe's diet. Household heads are therefore obliged to go regularly (at least once a month) to the markets in the south to buy cereals. These journeys are difficult and tiresome, due to the long distances which have to be covered. Sometimes the household head has to leave the camp for almost an entire week; during this time, the herd is left in the care of a son, a brother or a friend, for whom this is a considerable additional task.

Markets in the nomadic zone begin to get active at the end of the cold season. Most of the woDaaBe's sales are made during this season (and during the kokkobe).

From late March onwards, the temperature is quite high; it may even rise to 45°C. People suffer from the heat (nguleenga), from the hot wind blowing from the north-east<sup>2</sup>, and specially from thirst. Water

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<sup>1</sup>This activity is called paltol. To water a herd of fifty heads of cattle, a herdsman needs to put in approximately four to six hours work (at a well roughly 40 m. deep).

<sup>2</sup>Literally, the verb kamsa means to suck (synonym of musina). Kamsotoonge is the wind which dries up all the dairy cows.

is carried from the well to the camp in waterskins tied to the underbellies of the donkeys. Children, starting at age seven or eight, are given this task. Every morning, they go to the well and usually do not return until well after sundown. The little water they carry back to the camp is used in food preparation and watering small calves and lambs which remain at the camp, etc. This means that a few hours after the children return with the skins, there is almost no water left at the camp. Throughout the following day, the people at the camp wait impatiently for the return of the skins. Therefore, a large number of skins are necessary, but they would in turn, require a large number of donkeys and many children to tend the donkeys.

When the southern wind (lowru) begins to blow, it is sign that the rains are on their way. According to the woDaaBe, this is the wind which brings the rainclouds, and when the first rains fall, the new year begins.

And the seasonal cycle starts all over again.

SUMMARY OF THE SEASONS

Month	Season	Weather	Social Life	Remarks
May- June	<u>kokkobe</u>	First rains. Animals drink at ponds every day. First fresh grass	Unstable groupings	Long journeys. General weight loss. Extensive live- stock sales and purchases of millet
July	<u>korsol</u>	Frequent rains. Sprouting of vegetation	Very active. Clans assemble.	Nomadic move- ment in a re- stricted area. Salt purchased. Calving period.
August- September	<u>ndunngu</u>	Storms. Morning dew.	Hectic. Clan & inter- clan gatherings	Very frequent journeys over long distances
October	<u>Yaawol</u>	End of rains. Bush dries up. Intensely hot sun.	Group begin to to scatter.	Return journeys to base. Low milk production
November	<u>coorol</u>	Cool nights. Cattle water every other day.	Small unstable groupings	Trips to the markets begins
December- January	<u>dabbunde</u>	Cold season.	Family units	Markets. Barter.
February	<u>sudditte</u>	Hot days.	Small camps	Decrease in milk production
March- May	<u>ceeDu</u>	Intense heat.	Family units	Large purchases of millet, ex- tensive sales. Watering

PART I

A. The herd

I. Herd Composition

II. Herd Management

B. Basic Techniques

III. Cow Gestation

IV. Calving

V. Care of the new-born calves

C. Knowledge

VI. Forage Crops

VII. Diseases affecting livestock

## A. THE HERD

### I. Herd Composition

#### I.1 The Herd

At night the young calves are tied to a rope (daangol), fastened to two posts (kopeeje) located to the west of the camp. The youngest calves (nyalbi kecci) are tied to the south and the eldest (Nyalbi Yaaki) to the north. These calves make up the koDorgol, that is "the herd of young calves" (also known as hoDande or lunhunande). During the day, they graze near the camp, far from their mothers. In the evening, after milking, they are tied up until the following morning. They suckle their mothers only twice a day, morning and evening.

Calves which have already been weaned make up what the woDaaBe call sohire: the sohire are not separated from the adult animals, but still require special care (eg. at the well, the sohire are watered before the other animals in the herd).

The term safre (pl. cefe) refers to the herd in general (it is often synonymous with darnde). For the woDaaBe, a safre comprises a minimum of 20 to 25 animals and a maximum of 60 to 70. A small herd of less than 20 to 25 animals is called fowtere. There is no specific term to describe a large herd. A person who has a very large herd is said to have "two herds" (cefe DiDi). A herd noted for the beauty of its animals is called cenngal.

The herd which a boDaaDo manages never exactly corresponds to the herd which he owns. The person in charge of a herd (gaynaako) may be the legitimate owner (jomirawo) of some of the animals, or he may be the herder (gayloo) or manager (duroo) of animals belonging to other people. This means that the person who manages the herd exercises full rights of ownership over part of the herd, exercising only partial rights of usage on the other part.

Table A on the following page shows the structure of a herd in relation to ownership and usage:

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<sup>1</sup>Several woDaaBe groups attribute a sacred value to the daangol and the two kopeeje; a whole system of beliefs and rules has been developed around them (eg. it is forbidden to step over a rope used to tie calves, or to use it for other purposes, etc.)

<sup>2</sup>Sogolooji refers to the herd made up essentially of oxen; cenngal denotes the herd of milk cows (cf. X.5).

Table A

Traditional Term	Ownership	Usage
<u>Alhalji</u> <sup>1</sup>	Animal belonging to the herder himself	Absolute rights
<u>darnaaji</u> ( <u>senndereeji</u> <u>yeyirrijo</u> )	Animals allotted to the wife during marriage ceremonies	Exclusive rights reserved for the wife and her children
<u>senndereeji BiBBe</u>	Animals which are pre-inherited by the children	Exclusive rights reserved for the children
<u>haBBanaaji</u> <sup>2</sup>	Female animals on temporary loan from other herders	Rights of usage over milk produced
<u>diilaaji</u> (or <u>hawwaruuji</u> )	Milk cows on temporary loan	Rights of usage over milk produced
<u>jokkereeji</u> (or <u>canoonooji</u> ) <sup>3</sup>	Animals kept for owner of other ethnic groups (Hausa, Tuareg or Arabs)	Rights of usage over milk produced. No compensation or salary is provided
<u>dennaaji</u>	Animals belonging to relatives or friends, for a more or less extended period	Rights of usage on milk produced
<u>puDDiri</u>	Animal(s) received as dowry for the marriage of a daughter	Absolute rights

<sup>1</sup>Among the alhalji, a distinction must be made between animals born of the herd (dimaaDi) and the animals which have been recently acquired.

<sup>2</sup>This category does not include animals loaned to other woDaaBe.

<sup>3</sup>From the Hausa sha, to drink; noono, milk. These animals are used solely for milk production.

These different types of animals make up the boDaaDo herd in varying proportions. Among some woDaaBe groups, the proportion of alhalji can be quite low (20-30% of the entire herd), while the jokkereeji can reach very high proportions.<sup>1</sup>

## 1.2 Females in the Herd

The woDaaBe make the following distinctions with regard to females (debbi) in the herd:

- nyalohol DiDiwol (pl. nyalbi DiDiiji) - young heifer which has been through one rainy season.
- nyalohol DiDiwol (pl. nyalbi DiDiiji) - young heifer which has lived through two rainy seasons. The nyalbi duunquuji and Didiiji are part of the daangol, that is, animals tied to the calf rope (cf. I.1).
- wige tatiye (pl. bijji tatiiji) - heifer which has lived through three rainy seasons.
- wiige dikke (pl. bijji dikki) - young female which has already calved once.
- haange (pl. kaabi) - female which has calved 2 or 3 times.
- nagee (pl. na'i) - adult cow. The nagge yeernge has calved<sup>2,4</sup> or 6 times; the nagge wujumae has calved more than 7 times.

Female cattle are granted a place of priority within the woDaaBe herding system as all their activities revolve around reproduction and milk production. The herder's paramount desire is the birth of a female (he conducts a number of ceremonies to this end - cf. VIII.1). The woDaaBe say that females make up the bonjereewal (literally, the main pillar of a house) as they are responsible for the increase in herd size. The females give their names to their descendants, be they male or female; thus a bull or a cow is called by his mother's name or by the name of a maternal ancestor. In contrast to the system of lineage applied to people, the woDaaBe follow a matrilineal system with regard to livestock.

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<sup>1</sup>For example, the Jijjiiru Hambooru woDaaBe and the Njapto'en in the Ader.

<sup>2</sup>After its seventh or eight calving, it is said that the animal has reached its naggangaaku: this is an abstract word which refers to the age of maturity of a cow (nagge) or the fact that a cow has reached the peak of its existence. However, this peak is considered less a state of full development than a point of no return. Thus, strictly speaking, the term "nagge" describes the adult cow or bull; there is also the verb naggida, which means "to become an adult."

A particularly valued animal is the female bull, or nagge ngaarye. This is a cow whose body is developed like a bull's and which remains sterile. The WoDaaBe are specially proud to have a ngaarye in their herd as she is beautiful, docile, huge and stands out among the other animals. She always leads the herd.

### I.3 Milk Cows

The females of the herd are divided into the following groups:

Bireteedi: milk cows (from the verb Bira, to milk) also called saafeteedi or konndooji.

Njo'orDi: "dry" cows which produce no milk (from the verb yo'ora to dry) also called gori.

Milk cows are the real wealth of the herd: they not only lend prestige to the herd but are also a source of food. Milk cows' lactation depends heavily on the seasonal cycle, the quality of pasturage and water availability. Milk production decreases<sup>2</sup> considerably during Yaawol (end of the rainy season) and at the end of the dry season (ceedu). It increases<sup>3</sup> during the cold season (dabbunde) and especially during the period between the korsol season and the ndunngu season when rainfall is abundant and the grass is green.

Cows are milked twice a day, once in the morning and again in the evening. Before a cow is milked, its hindlegs, and sometimes its forelegs, are fettered. First the calf is untied and allowed to suck for a while to stimulate the cow's milk flow (totta). As soon as the milk comes, the calf is retied to the rope or tied to the mother's foreleg.<sup>4</sup> It can also be simply guided away from the cow's udders

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<sup>1</sup>The chants sung by young girls are often in praise of the ngaarye arDotoonge, ngaarye hooree (the female bull which leads the herd). The woDaaBe prefer to keep the female bull until it is an adult; usually they refuse to sell it and would prefer to give it away as charity (sakko).

<sup>2</sup>Nya'ata refers to the decrease of a cow's milk production.

<sup>3</sup>To increase milk production: sonsa.

<sup>4</sup>A cow which butts (hawoe or ridotoonge - the blows thus given) is restrained during milking time by tying a long rope (jomorgol) around its horns. There are however, other techniques to tame a hard-to-control cow. The BaaDol, a rope, is tied tightly to the lower part of the legs so as to prevent the cow from kicking; other methods to restrain the cow involve the use of the ken-ken, a rope tied around the horns and the ears; the loosol, a piece of wood fastened to a long rope and which is tied to one of the animal's hooves; the daangol, which is a long cord placed for some time on the animal's hoof; and finally, the korfol, which entails crossing and tying the animal's hindlegs during milking.

with the aid of a stick; this depends on the habits of the individual cow. The person milking the cow crouches down near the animal, holding a calabash (birdude) between his knees. After milking, the calf is once again released so that it can drink its fill of the remaining milk. However, care is taken that a heifer gets more milk than a young bull (it is said that<sup>1</sup> the male is more resistant and stronger, thus requiring less milk).

#### I.4 The Males in the Herd

The woDaaBe make the following distinctions:

- ngaari ndunnguuri (pl. ga'i dunnguujj), young bull which has been through one rainy season.
- ngaari DiDiiri (pl. ga'i DiDiiji), young bull which has been through two rainy seasons.
- ngaari tatiiri (pl. ga'i tatiiji), young bull which has lived through three rainy seasons.
- ngaari nayiiri (pl. ga'i nayiiji), bull which has lived through four rainy seasons.
- kortoori (pl. kortouji), four or five-year old bull, already capable of siring.
- kalhaldi (pl. kalali) adult sire, between 6 and 9 years old. The kalhaldi gujumaari is older than 9 or 10.

Oxen are usually castrated when they are 2 or 3 years old.

TABLE B

Traditional Categories of Cattle According to Age, Sex and Number of Calvings

<u>Males</u>	<u>Age</u> (in years)	<u>Females</u>	<u>Number of Calvings</u>
<u>ngaari nduungguuri</u>	0-1	<u>nyalohol ndunnguwool</u>	-
<u>nggaari DiDiiri</u>	1-2	<u>nyalohol DiDiwool</u>	-
<u>ngaari tatiiri</u>	2-3	<u>wigge tatiye</u>	-
<u>ngaari nayiiri</u>	3-4	<u>wigge dikke</u>	1
<u>kotoori</u>	5-7	<u>haange</u>	2-3
<u>kalhaldi</u>	7-9	<u>nagge</u>	4-6
<u>kal gujummari</u>	9	<u>nagge wujjumae</u>	more than 7

<sup>1</sup> This is not a hard and fast rule. For several herders, every calf, male or female, is of great value.

### I.5 The Sire

When choosing a bull for breeding certain criteria are considered, regarding purity of race, the beauty of the animal, its ancestry, etc. The following are the main qualities of a good sire:

- it must be of "bororo" stock (ngaari mboDeeri);
- it must have a dark, even coat; the ideal is the kooraari bull which is rusty black in colour; the saeri oolditeyndi or brown bull which tends to become light is rejected;
- it must have a long pendulous navel (siibiiru); the kamiindi bull, which has a short navel, is rejected;
- it must have a slender head, like a cow's (such a bull is called ngaari naggeeri);
- it must have light-coloured hairs at the end of its tail;
- it must have a big, long dewlap (Bohowoqol); the Belbaandi bull, which has a small dewlap, is rejected;
- it must have large horns which are long and widely spaced. Preference is given to the tutumiiji bulls since they have large, widely spaced horns, and to the yimbere bulls which have wide foreheads. In contrast, the kippiri bull is rejected since its horns are bent rearwards.
- it must have reputed milk qualities (i.e. it must be capable of siring good milk cows).

These qualities and others (such as the shape of the head and the muzzle, the length of the hooves, etc.) make a good gabasaari (thoroughbred) an excellent sire.

The woDaaBe consider these qualities to be hereditary. Paternal heritage is a very important criterion in the choice of a sire; a good sire is said to "have a father" (baaba ndi woodi). In traditional genetics, four major qualities can be inherited: the colour of the coat (leeBre), the build of the body (Banndu), the character (jikku) and the milking ability (kosam).

An adult bull which has begun to mount its own daughters (rimitandeeri) is separated from the herd (cf. X.5).

### I.6 Oxen

All bulls which have not been reserved for reproduction are castrated

(tappa).<sup>1</sup> Usually, bulls are castrated between 2 and 3 years of age.

For the WoDaaBe, the number and beauty of the oxen are a sign of the beauty and prestige of the entire herd (cf. XIV.2).

The woDaaBe are particularly fond of having oxen of the same age (waalde wo'ore) which have long legs (darniiDi), large horns and a dark coat.

According to the woDaaBe, oxen are the "outstanding feature" (haynaare) of a herd, by far its most striking animals. The possession of oxen (tappaaDi) is considered a definite sign of wealth, living capital. A large oxen herd facilitates the herders work; since they are generally very docile and obey the herders command, they lead the rest of the herd.

Oxen are mainly intended for sale.

Some of them are chosen to become googaaji, pack oxen, which transport household items (including kaakol and eletel luggage).<sup>2</sup> They are also used at the deep wells (goyli) to raise the heavy water bucket for the rest of the herd.

A ngoogaari is trained (elta) when it is very young; young boys are entrusted with this task. A hole is made on the inside of the bull's nose through which a short cord is strung; a longer cord (kineewol) is tied to this to draw the bull.

A certain number of factors determine the choice of a ngoogaari: its docility, its sturdiness (it must be strong and have a back able to bear loads), its patience, etc. Preference is given to bulls with long horns. After such bulls, bulls with short horns are chosen (those with horns of medium length are likely to hurt those who try to mount them).

#### I.7 "Bororo" or "Azawak" Cows

The WoDaaBe are extremely fond of animals of "Bororo" stock (na'i BoDeeji, literally, red cattle). This is due to emotional, cultural, aesthetic, economic and technical factors.

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<sup>1</sup> Traditionally, the bull's ligaments (DaDi) are held between two sticks and crushed with the handle of an axe. But there is also another method whereby the bull's testicles are crushed by tying a cord tightly around them.

<sup>2</sup> ngoogaari ndimdiri, or pack ox.

<sup>3</sup> ngoogaaei eelnundi, or draught ox.

The woDaaBe say that the principal qualities of a Bororo animal are:

- woDDe, beauty
- ndimaaky, finesse and breed
- leeBre wo'ore, evenness of coat
- haynaare, it must stand out in the herd
- alkawal, fidelity or attachment to people or to camp<sup>1</sup>

With respect to sires, the woDaaBe do not hesitate to select a "Bororo" bull. However, as far as cows are concerned, the ndellee (Azawak) is noted for certain important qualities: its remarkable resistance during the dry season, its ability to adapt to any kind of fodder (for example, trampled hay or hay of inferior quality found in the south...). The woDee (bororo) cow is much more sensitive to seasonal changes and much more demanding with regard to pasturage quality. In general, the "Azawak" cow has a longer life span. However, the woDaaBe who own mixed herds unanimously agree that Bororo milk cows have a much higher level of milk production<sup>2</sup> than Azawak cows: an Azawak cow cannot adequately feed a Bororo calf.

Especially since the 1973 drought, the woDaaBe herds have been largely made up of Azawak cows. This does not indicate a change in preference at all, but rather a necessity. Furthermore, with good Bororo sires, they obtain a crossbreed (susanee) which is a highly valued cow, since it has the chief characteristics of both the woDee and the ndellee cows; by the third or fourth generation, a susanee becomes a woDee.

Emotionally, every boDaaDo is very attached to the Bororo animal.<sup>3</sup>

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<sup>1</sup>The Bororo animals are called kiilniiDi (literally, animals which are attached to people and to the camp, while the Azawak animals are called duudooji (these animals display no particular attachment to anyone or anything). A thief, the woDaaBe say, can steal a herd of Azawaks, but never a herd of Bororos).

<sup>2</sup>An Azawak cow is barely able to feed a calf born of crossbreeding with a Bororo.

<sup>3</sup>The woDaaBe songs of praise are full of admiration for the boDeeji animals. The following is a short poem in honour of a mboDeeri sire among the Degereeji Cahidooji:

To ndi wurtake	When he appeared on the horizon,
lu'e mayri kama nyaale	His horns resembled oxen's goads.
Raa ndi, Saja!	There you are Saja, at last,
Dey-dey ngon-Daa!	You perfect creature!
Umma, ndaroDaa,	Arise, stand tall,
konndugel pamarel	You, whose mouth is as small as
kama konndugel BiDDo debbo!	a young girl's/
Wanaa yi'go ndi saDii	The difficulty is not in seeing him,
heBgo Biiri saDi	But in achieving his breed.
A leelaaki, a wuuraaki	You are neither bent nor crooked,
Gite e mbojji	Your eyes are red.
BoDDum raargo ...!	You are a marvel to behold ...!

For him, it is a way of reasserting his own boDaaDo identity: it is his ndonu, his heritage, and is as important as his traditions.

### 1.8 Sheep Raising

Sheep (baali) are the main small ruminants raised by the woDaaBe. They are generally reserved for sale, not milk production. The woDaaBe raise 4 breeds of sheep:

- a. The agoraaji or "Tuareg sheep"
- b. The pul-puli, or "Fulani sheep" which have white fleece and large ears.
- c. The Daakuuji, also called uudaaaji, sheep whose fleece is a mixture of black and white.
- d. the konndooji, or wool sheep (uncommon and not highly prized).

The pul-puli are the most prized for their market value. In a very short space of time they mature and increase in value. They can be profitably sold after their first year of life. However, their value decreases equally rapidly. The castrated agoraaji, though, attain a very high commercial value from the third or fourth year of life.

With regard to traditional categories based on sex and age, the woDaaBe make the following distinctions:

TABLE C

Sheep: Traditional Categories Based on Age  
and Number of Calvings (for females)

<u>Name</u>	<u>Age</u>	<u>Number of Calvings</u>
<u>bortel</u>	0-4 months	-
<u>mbortu</u>	5-10 months	-
<u>kaabu</u>	1 year	1-2
<u>cakaw (mbaalu)</u>	2-3 years	3-5
<u>gusumaw (mbaalu)</u>	4-5 years	6-7

TABLE D

Sheep: Traditional Categories based on  
Age (males)

<u>Name</u>	<u>Age</u>
<u>Jawgel</u>	0-4 months
<u>njawdiri</u>	5 months - 1 year
<u>nj. caka-cakaari</u>	1-3 years
<u>nj. gusummari</u>	3-5 years and over

In general, the woDaaBe graze their sheep separately from the cattle (sefre). In the course of the long journeys back and forth between the camp and water points, sheep do not move as quickly as cows and get tired trying to keep pace. For a boDaaDo herder the separation of these two herds requires attention and vigilance on his part, especially at the end of the dry season. However, it is not always possible to separate the two herds because this entails the services of a large work force. Especially in the case of flocks which are not too large, an attempt is made to get the sheep to keep up with the cattle.<sup>1</sup>

Very often, sheep give birth to twins (siwtere), though no particular significance is given to this event.<sup>2</sup>

Sheep<sup>3</sup> raising is particularly widespread among groups living in the south<sup>4</sup> or to the east.

The woDaaBe try to control sheep reproduction (cf. notes I, III.1)

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<sup>1</sup>In order to do so, herders resort to certain "magical" practices. The sheep are given dried cow-ticks (kooti) which are pounded and mixed with salt (these ticks are the ones found on arDottoDi cows, that is, cows which always lead the herd).

<sup>2</sup>It is thought that the tongue of a kind of ground snake (Fr. varan de terre) can help a ewe to produce twins.

<sup>3</sup>For example, among the Gojanko'en and Gawwanko'en groups and the Bii Korony'en to the north-west of In Tawila.

<sup>4</sup>Especially in the Damergu.

### I.9 Other Animals

Goat raising (be'i) seems to be less widespread than that of sheep. Goat's milk, unlike sheep's milk, is bartered and mixed with cow's milk (cf. sippal, XI.2).<sup>1</sup>

In this century, the woDaaBe have been forced to diversify their herds. This is true not only as regards the partial adoption of another breed of cattle (Azawak), but also with respect to the rearing of other animals: camels and donkeys.

Camel raising (geelooDi) is not widely practiced by the WoDaaBe. Male camels are found almost everywhere and are used to transport loads during journeys. In contrast, the rearing of female camels is restricted to a few geographical areas and to certain groups.<sup>2</sup>

For matters related to camel rising, the woDaaBe depend heavily on the Tuargg to care for them, to train them for milking, to bleed them, etc.

The majority of woDaaBe do not like and cannot properly digest camel's milk. However, those who do raise camels greatly appreciate their milk production especially during the dry season. According to the woDaaBe, their lactating cycle does not correspond to that of the cow's (cf. 0.7). The female camels give birth mainly during two periods of the year: the korsol season (late July) and the dabbunde season (the cold season between December and January). Their matings correspond to the "heats of the stallion camels" which take place between May and July and in October (the female camel's gestation period lasts 12 months).<sup>4</sup>

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<sup>1</sup> Among the WoDaaBe groups living in the region west of In Tawila.

<sup>2</sup> In particular the Cahidooji to the west of Tchin Tabaraden

<sup>3</sup> Increasingly, the young woDaaBe train the male camels themselves (for riding).

<sup>4</sup> In fact, the woDaaBe say 13-14 months, as their method of counting time differs from ours.

TABLE E

Traditional Categories of Camels According to  
Sex, Age and Number of Calvings

<u>Males</u>	<u>Age</u>	<u>Females</u>	<u>Calvings</u>
<u>molel gorel</u>	0-1 year	<u>molel dewel</u>	-
<u>mola ngora</u>	2-3 years	<u>mola ndewa</u>	-
<u>asakaawa</u>	3-5 years	<u>ndikka</u>	1
<u>amaleeri</u>	6-9 years	<u>kaaba</u>	2-3
<u>amal caka-cakaari</u>	9-12 years	<u>ngelooba gusumawa</u>	4-6
<u>am gujumaari</u>	+ 12 years	<u>ngelooba gusumawa</u>	+ 6 calvings

Donkey-raising has only been recently adopted by the woDaaBe. For journeys and for carrying water, they have progressively replaced draught oxen. The majority of males (binngijji) are castrated rather early. Females become pregnant between 3 and 12 years of age.

## II. HERD MANAGEMENT

### II.1 During the Rainy Season

During the rainy season, that is during the period when the range (ladde) is covered with green grass (huDo) and the ponds are full of water, the major concern of the boDaaDo herder is to vary the kind of pasturage given to his herd. The high mobility of the camps thus becomes a strategy of paramount importance, due to the difference in quality and quantity of pasturage from one area to another. (cf. X.1 and XIV.1).

A good herder constantly changes grazing areas; there is continuous movement to and from the sandy soils of the hills (joole) where several kinds of grasses grow (huDo, rimo, ndiiriiri, etc.) and the clay soils of the plains where nutritious plants like follere, nyaanytaare and the majority of forage crops grow.<sup>1</sup>

During the first part of the rainy season, the boDaaDo herder tends to choose the clay soils of the plains. The pasturage there is palatable and nutritious and water is in abundance. The animals can drink small amounts of water throughout the day. Ierba is the name given to this method of drinking while grazing; the woDaaBe herdsmen believe that it is extremely beneficial to animals' health (it is said that it increases the volume of water in the animals' bloodstream). However, this strategy varies immensely from one region to another; a constraining factor is<sup>2</sup> the lack of basins (dewelle) in which rain water can be collected.

At the beginning of the new rainy season, the woDaaBe move very frequently in search of short, soft grass (huDo woggo) which is considered very nourishing for the animals. The search for this grass explains to a large extent the long journeys (Baarti) to the northern regions where the rainy season begins earlier than in the south. In the south, the grass grows (sewto) quickly and loses, according to the herders, its taste and nutritional value.

During the rainy season, the herders want to make optimum use of the abundance of water by making the animals drink every day and, if possible, several times a day. In the morning, they are allowed to drink once,<sup>3</sup> at midday they are made to drink again,<sup>4</sup> and finally,

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<sup>1</sup>For plants (cf. VI)

<sup>2</sup>The lack of these basins is considered a real problem in several regions.

<sup>3</sup>To water in the morning: wottina

<sup>4</sup>To water a herd in general: yarna

they are sometimes "shown to the water"<sup>1</sup> a third time in the late afternoon.

All of this care causes the lactation of milk cows to increase: their milk is abundant (kosam DuDDam), "very liquid" (selbumDam) and does not yield much butter.

During this period, some cows can be milked up to three times a day (especially cows which have recently calved).<sup>2</sup> In fact, in the evening, the same animal can be milked twice consecutively. The ndoppitam, that is,<sup>3</sup> the milk from this additional milking, is very rich and nutritious.

## II.2 During the Dry Season

At the end of the rainy season, especially when the animals settle near the wells, the herder's work changes significantly.

A boDaaDo herder's choice of camp is determined by three main criteria:

- habit (mboopka) and familiarity (anndal) with a given region. He considers it his ngenndi (his base), his lesdi (his country), his usual settling point (cf. 0.6 and XIII.1);
- the abundance and quality of pastures. Areas are chosen where the dry hay is not too high and where the twigs are supple. The woDaaBe tend to avoid the nyomre, that is, the pastures which have grown considerably, but where the grass is too high: they also move away from the malala, areas where the grass has practically not grown at all.
- the abundance and quality of water. The woDaaBe pay special attention to the "capacities" (mbaw) of the water in the ponds, wells or bore holes.<sup>4</sup> They know that particular water qualities

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<sup>1</sup>Literally, hollita

<sup>2</sup>These cows are called na'i BesDi. However, generally speaking, a cow nursing a heifer is not milked excessively.

<sup>3</sup>The ndoppitam can be "poured" (lutta) and mixed with ordinary milk for immediate consumption; however, as a rule, the woDaaBe prefer to keep it for making curds.

<sup>4</sup>The term farnaka is commonly used to describe the quality of pasturage.

<sup>5</sup>The bitter water of certain ponds and wells is said to be "capable". The same term is applied to forage, which, once dried, is not wet by rain (bowte).

can stimulate or prevent normal lactation. It is also said that water directly affects<sup>1</sup> the fertility of the animals and their weight gains (Bellere).

These criteria are of critical importance from the Yaawol season until right after the cold season. However, with the arrival of ceeDu (around February-March) and the difficulty of finding abundant water and pasturage, the herder knows that he must adapt his three main requirements to the new circumstances and that it is up to each individual to judge which aspect should be stressed. Some prefer to remain in their region, near the wells, even if the pastures are not good; others choose good pasture near an abundant source of water. It is especially at this time of year that the herd is divided (cf.X.5).<sup>2</sup>

At the end of the dry season (towards the end of April), it is very common to see the woDaaBe return to the nyomre or malala which had been left untouched at the beginning of the season. During the dry season, when the herds settle near the wells, the animals are watered every two days, alternating the watering day (degol) with the day the herd remains in the pastures (boorka).

### II.3 The Need for Salt

Animals experience an urgent need for salt (hurfaare is the name given to the salt reserved for cattle and other livestock, while the word lamDam describes salt in general).

The woDaaBe use different words to describe this craving for salt: laami, yomore, soummu, Domu, etc. This craving is quite intense particularly from the korsol season until the cold season, dabbunde: that is, throughout the time of year when pasturage is abundant and the herd has a more nutritious diet. At the beginning of the rainy season, the woDaaBe look for salt markets for their livestock. There

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<sup>1</sup>The woDaaBe who own wells (goyli) are in a special situation, particularly in the region of North Dakoro (woDaaBe Bii Hamma'en, Kasawsawa and Bii Korony'en Njeanje). Generally speaking, it is thought that a season which is characterized by regular rainfall at fairly long intervals is more beneficial than a season with rainfall at short spaced intervals, which gives the pasture "a chance to dry up"; this promotes regular growth of plants and improves the quality of pasturage.

<sup>2</sup>The WeDDinDe woDaaBe (of Bii Korony'en Koron) have quite a typical strategy; they never spend two dry seasons in one place. Although they stay in the same region (settling in the interior of the In Gall, Ichin Tabaraden, In Waggar region), they continually move from sector to sector.

are different grades of salt whose value and price vary from region to region. The most common type is the coarse cooking salt (bought in small sacks of 20 kg. each) purchased not for its nutritional value, but for its relatively low price.

From karsol until dabbunde animals are given salt in regular doses.<sup>2</sup> They are given salt near a pond so that, as soon as the animals eat it, they can go and drink large amounts of water (however, despite these precautions, there are often accidents, which are sometimes fatal).

During the rainy season (ndunngu) herders try to lead the herds to the salt-licks (bagoriije). They are found in all regions with varying

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<sup>1</sup>It is nevertheless thought that this salt is highly dangerous, because it is very strong (nyaDDam), "hot" (gulDam), because it "burns the animals and "penetrates their bones". It is also said that it might be a cause of danndami or night blindness (cf. VII)

<sup>2</sup>To give salt to animals hurfina

<sup>3</sup>According to one boDaaDo of the Cahidoojj to the west of Tchin Tabaraden, the cows need salt primarily at the beginning of the rainy season (from the time the animals begin to eat enough new grass) and the cold season. He thinks that 4 kg. per cow per year is adequate salt intake. In his view, this amount should be given as follows:

- the first dose in mid-July when the livestock has already started to eat fresh grass;
- the second two weeks afterwards;
- the third 20 days later;
- the fourth dose immediately after the last rains, when the pastures have begun to dry up
- the fifth and last dose at the beginning of the cold season (mid-December)

Cattle are not given salt during the dry season. According to the same source, who also raises camels, the quantity of salt reserved for camels is much greater than that provided for cattle. Roughly 10 kg of salt are needed per year to sustain a camel; this salt is given throughout the year.

grades of salt. The best and most sought after are far away in the north and the herds cannot always reach them.<sup>1</sup>

Animals "who crave for salt" (jomaaDi, susmaaDi) are very nervous; they do not graze very much, but wander about, often near the camp, closely watching the movement of their herder, waiting to be given salt. They graze little and lose a great deal of weight. Sometimes, motivated by this intense craving, they eat large quantities of slightly salted earth (earth from ant-hills, suriire) or the bitter earth of certain banco plains (Boto-Bottole or kaD-KaDle), which often causes fatal accidents (obstruction of the bowels, etc.).<sup>2</sup>

#### II.4 Methods fo Enhance the Fertility of the Herd

In contrast to the fuDngo (cf. VIII.1), the rewo, which is more than a magical practice, may be considered as an authentic traditional technique to increase the fertility of the herd.

Every boDaaDo herder gives his animals salt mixed with certain ingredients (wheat, grains, date seeds, pits from the fruit of the BoBoore tree, Lawsonia inermis). These grains and pits have a common external characteristis: they represent the external form of the female sexual organ. The name of this technique, rewo, is derived from the root rew, which describes the condition of being female. The aim of rewo is to increase the number of cattle and other animals in the herd through frequent calvings. Rewo, however, is reserved above all for the kalhaldi (sire); it is served apart from the others and is allowed to eat as much as it wants (it is, however, accompanied by a cow because it is not considered good for a kalhaldi to eat alone!). When the kalhaldi is satisfied, the rest of the rewo is given to the females.

Wheter considered a pastoral technique, a magical practice or simply a pleasant and symbolic fertility rite, the rewo is nonetheless one of the major concerns of every boDaaDo herder in terms of the fertility and the health of his herd.

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<sup>1</sup>Before the 1973 drought, groups of woDaaBe Yaamanko'en and Bii Korony'en from the Ichin Tabaraden, In Waggar, Tamaya sector, would go as far as the salt areas to the north of In Gall. However, today they no longer go there saying that there is very little rainfall and good pastures are scarce. Some groups of Bii Nga'en and Bii Korony'en who spend the dry season in In Gall itself still take their herds to these salt-licks.

<sup>2</sup>According to the WoDaaBe, the layel and the follere (cf.VI) are "salty" plants which can meet the animals salt needs. This is a highly valued grass, but it has almost disappeared from the grazing area now occupied by the woDaaBe.

## II.5 A Day in the Life of a Herder and His Herd

A good herder (duroo) spends a considerable part of his day and sometimes part of the night grazing and watering his animals.

In the morning, after milking, (Birki)<sup>1</sup>, the herdsman leads the entire herd, including the luhunande of young calves,<sup>2</sup> to the pasture.

When he returns to the camp, he separates the young calves from their mothers (it is said that he "makes the calves camp", hoDa nyalbi or luhuna nyalbi) and grazes the adult animals far from the camp.

In the later part of the morning, when it is very hot, the herder lets his animals rest in the shade, if possible, near a copse (luggere); this is the hour of rest, a "return to the shade": wakkasi iftol.

At the beginning of the afternoon, the herder once again leads his animals to the pasture, where they graze until late afternoon.<sup>5</sup>

They return to the camp before sundown.<sup>6</sup> The calves, which had been tied to the rope before their mothers' arrival, are now released one by one, so that they can suckle their mothers. Afterwards, the calves are once again tied to the rope (daangol) and remain there all night. The cows stay in their place in front of the camp (duDal); during the night they can get up to go off alone and graze.

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<sup>1</sup>WoDaaBe women milk the cows as much as the men do (it should be noted that in general, FulBe women do not milk the cows at all).

<sup>2</sup>The term dura means to graze in general (it is used to describe the herd's action of grazing and the herder's action of making them graze.) The terms oora and ma'ajo refer more to the time of day at which the animals graze: the first part of the day.

<sup>3</sup>Toward the end of the dry season, the herder may lead his animals as much as 10 km. away from the camp.

<sup>4</sup>Wakkasi iftol means late morning (between 11 o'clock and noon). Looking after the herd determines precisely how the WoDaaBe spend their time.

<sup>5</sup>To graze at the end of the afternoon: (hiirta)

<sup>6</sup>Return of the herd in the evening: Ya'o.

<sup>7</sup>To graze at night: soggo.

On watering day (nyannde degol) this pattern is broken: after the calves have been separated from the rest of the herd in the morning, the herd goes to the well (rego). The herder waters them upon arrival and then once again before they return (nabba) to the camp towards sundown (shortly before or after, depending on the juurol, or distance between the camp and the water point). On watering day, the herd grazes mostly at night. But this pattern varies according to the region and the herders; often, those who do not have private wells are obliged to water their herds at night.

The daily activities described above are typical of a day when the camp does not move (faBBere). The day the group moves (dehenere), the calves are immediately settled in at the new location, and the rest of the camp (the women and the baggage) follows some time during the day, after the cows have left for the pastures.<sup>1</sup>

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<sup>1</sup>The movement of the woDaaBe during the dry season is relatively limited. The following is a sample of the number of moves made by a few groups of woDaaBe from the time the herds begin to drink at the wells to the beginning of the rainy season:

- a family of Bii Korony'en WeDDinde: 12 moves  
(region south of In Gall)
- a family of Bii Korony'en Dasassu: 9 moves  
(region to the north-east of Abalak)
- a family of Yaamanko'en Sompo'el: 6 moves  
(Tamaya region)

## B. BASIC TECHNIQUES

### III. COW GESTATION

#### III. Estrus and Coverings

When a cow is in heat (caame) for a whole week, the sire does nothing but follow it about (tuffa). After one week, if the cow consents,<sup>1</sup> covering takes place,<sup>3</sup> (suraangal or gaynol). If the cow refuses,<sup>2</sup> there is no covering.

If a cow's heats (tonnaki) are separated by short intervals, it is called uurngae or hooeiloe (some intervals are as short as one or two weeks). On the other hand, a cow with a widely spaced estrus cycle is called haccunge or suggeree (there are cows which the woDaaBe say go as long as two years without go into into heat. However, the average estrus cycle, according to the woDaaBe is two to three weeks long (20 days).

If a cow does not show signs of being in heat thirty days after a calving it is said to "hold" (nagge jogake). It is also said that "the cow's belly is growing" (nge waDii reedu), that it is with calf (nge soomi). If, however, the cow is not pregnant, it is said that it has "yielded" (nge wartirii) or that it "has changed again" (nge waylitii).

A cow which, despite a regular estrus cycle and previous normal calvings, does not become pregnant, is called tonnotoonge or waylitoe. The boDaaDo herder finds this phenomenon (tonnol) very disturbing. It is feared that as time goes by, the tonnotoonge cow will end up not having estrus at all.

A cow which displays tonnol for one or two years is considered sterile (rimare) and is removed from the herd (cf.X.4). Upon observing the first signs of tonnol, the herdsman tries conducting magical practices such as piBol (cf. VIII.4), which involves attaching a cord with many knots to the animal's head or tail. Other techniques are also tried, for example, giving the cow sorghum (bayeeri) to eat.

What a herder expects most of a cow is fertility. It is for this reason that the uurngae cow is highly valued. When it is in heat,

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<sup>1</sup>Literally "if it stops" (darno) or "if it waits" (heedo).

<sup>2</sup>Literally "if it cools down" (fewta).

<sup>3</sup>A cow which follows another cow in heat and which even imitates the covering of a bull is called fanngoe or tullotoonge.

<sup>4</sup>To stop having estrus: jo'otto.

covering is never presented (even if the cow is nursing a young calf).<sup>1</sup> As soon as it is sure that the cow is pregnant, the calf is "released behind her," that is, the cow is no longer milked and the calf is given all the available milk, until the supply completely dries up.

In fact, what a boDaaDo herder fears most is having a sterile cow (rimare).

For the woDaaBe, there are several causes of sterility in cows. It may be due to nature (taggodi); the animal is simply sterile just as another one has long horns or an even coat, etc. But it is believed that the DemnDe are often the cause of sterility; therefore, these little nerves on the tongue are removed, even if the cow regularly goes into heat. The woDaaBe believe that these DemnDe prevent the animal from grazing normally. In removing them, though, care must be taken that none of them are swallowed by the cow, otherwise it will be sterile forever. A cow may also become sterile after one or more abortions (cf.IV.2).

It is generally said that a heifer which is the twin of a bull may become sterile if its twin leaves the herd (it might be sold or lost).

Finally, the female bull is also sterile (cf. I.2).

In general, the woDaaBe try to prevent mating between parents and their offspring (heifer with its father and a bull with its mother). This type of union is called rimtitaande, the same word used to describe incest in human society. The reasons given against this union are technical: weak cows are likely to be produced (geeciDi). In contrast, the most preferred union is that between brothers and sisters even if they share the same father (baaba-go'ooji) or mother (inn-go'ooji). This type of union is seen to reinforce the line and improve the breed.

### III.2 Accidents During Gestation

Several accidents, varying in seriousness, may occur during the gestation period.

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<sup>1</sup>The woDaaBe do not control cattle reproduction though they do try to limit the number of sheep born at the beginning of the rainy season. Until February, rams are lligated with a cord which causes deviation of the erect penis and prevents intromission. With cattle, however, it is thought that dropping at the end of the rainy season would make the cow lose a considerable amount of weight during the following dry season (cf.IV.3)

The most serious accident is the wuftere or abortion. The woDaaBe make a distinction between the wuftere and the simple pallangel (death of the embryo when the fetus is less than one month old.<sup>1</sup>

The wuftere may be caused by several factors. When it seems that one of his cows is likely to miscarry the first reflex of a boDaaDo is to think that a taboo of the family or clan has not been observed and that misfortune is a logical consequence (cf. IX.1). However, the wuftere may also be due to accidents such as sudden falls, gorings, etc.

The woDaaBe do not link miscarriage with specific illnesses. When direct intervention is judged useful a herder will give a mixture of salt and pounded fruits from the rima-jogohi tree to the animal which has aborted or which is likely to abort.<sup>2</sup> A cow which has had several consecutive abortions is called wonnoe. Usually, after 3 or 4 consecutive abortions, the wonnoe is removed from the herd (cf. X.4) and sold. However, it is thought that one or two consecutive abortions do not prevent a cow to reach the full term of a subsequent gestation.

The wuftere is considered to be an actual calving, even if the fetus is only two or three months old. In the traditional system of lending cows (haBBanae - Cf. XII.5) wuftere is included among the three calvings prescribed, while pallangel is not considered.

After an abortion, some cows remain ill, running a high temperature. Before dropping, the aborted fetus becomes black. The woDaaBe give the animal a drink made with pounded branches of the siifahi tree.

Another less serious accident which occurs during gestation, is what the woDaaBe call Baawo (or foynngo, saare) or uterine prolapse, when part of the womb slips out of place. In this case, the woDaaBe prepare a remedy using the sudda-esahi and hot pepper. This remedy is mixed with water, then forced into the animal's rectum.

After a cow prone to Baawo calves, the herder closely monitors the return of the uterus to its normal position after the placenta (gorol) has been expelled.

For a cow at an advanced stage of gestation, another accident which frequently occurs is congestion of the udder (felwere or pelwol). In the woDaaBe's opinion, however, the felwere is not a major accident; it should not be considered as an illness (nyaw) but as a simple physiological condition of the animal about to calve. Moreover, the felwere can also occur under other circumstances: a cow which is with

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<sup>1</sup>Pallangel: literally, little lizard

<sup>2</sup>From the berve wonna, to spoil. The rima-jogohi is the *croton tiglium*.

calf or lactating may develop this condition if it moves to pastures richer than the ones to which it is accustomed or if it is given a larger dose of salt after a long period of going without.

In some cases this swelling or oedema of the udder may reach the limbs. Normally, the felwere affects the entire udder, but sometimes there is congestion in only one part (felwere holo wo'oto).

The woDaaBe know how to treat cases of felwere: they rub the congested udder with a mixture of cream (kettungol) and yomru ashes (a kind of bird's nest made of a cotton-like substance).

At a very advanced stage of gestation, another complication may arise. The yawdinngge cow or the "cow which is in a hurry" drops the calf (waDa Heddere) long before calving is due (its days are not yet full: balDe keeway). Premature birth is feared, as this inevitably means the calf's death.<sup>1</sup>

Upon the first signs of an accident, the woDaaBe conduct magical practices: they tie amulets made of hairs from the camel's tail and pieces of dried crusts of millet porridge to the hawdiinge cow's head, using an old camel's fetter.

### III.3 Signs that the Cow is with Calf

For a heifer (wiige) gestating for the first time,<sup>2</sup> the woDaaBe can identify a sure sign of gestation towards the fifth month: the entindirde. During a short space of time (ranging from a few days up to one month) the heifer's udder (enndu) slightly increases in size. This condition is observed again just before calving.

For an adult cow (nagee), it is not until the seventh month that pregnancy can be confirmed: the sign observed at this stage is the Yullere. A projection indicating the presence of a calf can be noticed around the abdominal area. The Yullere can be observed at different places.

Very often from the fifth or sixth month of gestation, the pregnant cow forcibly weans its suckling calf.

In contrast to what is done for ewes and female goats, the woDaaBe do not palpate the abdomen of the gestating cow.<sup>3</sup>

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<sup>1</sup>This is actually an abortion (probably of a brucellic type)

<sup>2</sup>Literally, first belly: reedu dikkuru

<sup>3</sup>A sharp decrease in milk production can also be an indirect sign of gestation. According to the woDaaBe, this holds true especially after the third month for cows which had shown signs of being in heat. Very often from the fifth or sixth month of gestation, the pregnant cow forcibly weans its suckling calf.

### III.4 Care of the Cow During Gestation

Only the heifer gestating for the first time (wogge dikke') receives special care during the gestation period. Throughout the last month before calving, its udders are washed and massaged regularly. It is said that this makes the heifer get used to being touched and prevents refusal to nurse the calf after dropping.

### III. Drying up the Cow's Milk Supply Before Calving

Special attention is paid to the looYornge cow, that is, the cow about to calve which is still nursing another calf. In extreme cases, there are cows whose milk has not dried up completely within two months of the new calving.

In order to preserve the cow's strength for the next calving, the woDaaBe dry up the milk (hoDDa). The most common method involves separating the calf from its mother by taking it to another herd.<sup>1</sup>

Another method entails piercing the nostrils of the calf and inserting the toonYe (small pointed stick); when the calf gets close to its mother, it pricks its udders with the stick and the mother responds by kicking it away violently.<sup>2</sup>

One can also rub excrement on the teats of the udders every day; this is enough to cut the calf's appetite.

## IV. Calving

### IV.I Pre-Calving Signs

Changes in the udder's appearance are the surest way for the woDaaBe to know that the cow is about to calve. It is said at that time that the cow "is making an udder" (nagge waDii heddere) or that it has released its udder (nge yoofii heddere). The cow is then referred to as dunynge. It is also said that it "is developing an udder (nge entirni)"; this phenomenon is called entirirde (cf. III.3)

Other more accurate physiological signs are also observed: the vulva (yawo) of the cow sweals, becomes visible, soft and wrinkled and starts to hang (dimbo). The animal stretches continually, raising its tail as if to urinate and its whole body moves involuntarily.

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<sup>1</sup>To lead a calf to another herd in order to wean it: Huro.

<sup>2</sup>The toonYe is also applied to any wafotoonge, that is, any animal which has developed the habit of suckling another cow (wafo) which is not its own mother.

The woDaaBe say that on the eve of calving, the ligaments (looli) which hold the sacrum and the tail together "break" (looli taYii): they become very supple and move. This is another unmistakable sign that calving is imminent.

Another sign is the luuwe. The animal becomes fretful and anxious. It constantly tries to leave the herd, to go off alone into the range: it is "doing the luuwe" as the woDaaBe say.

It is generally said that the luuwe of a cow which is going to drop a male calf is much stronger and more violent than that of a cow which is going to have a heifer. The cow feels a pressing need to leave the herd. Therefore, the herder has to pay twice as much attention as he normally would to prevent the cow from leaving the herd (it could get lost and its calf eaten by wild animals).

The most definite physiological sign of calving is the appearance of the amniotic sack (fowYere).

When the fowYere bursts (or when the herder breaks it) and the amniotic fluid (ndiyam) gushes to the ground, another water sack appears with the feet of the calf.

Very often the animal lies on the ground. It has contractions (eemo) until the whole body of the calf comes out. This is called nagge rimii, the dropping of the calf.

#### IV.2 Birth Complications

Apart from the wuftere (cf. III.2), the most dangerous birth complication<sup>2</sup> is the abnormal position of the calf, or dystocia (Biloreego).<sup>2</sup> Normally, the head is inclined backwards and does not follow the movement of the descending hooves.

The WoDaaBe know that if they do not wish to lose the calf, they have to intervene rapidly and remove it (Bilta). They try to grasp the calf's jaw (kabael), attaching a cord to it and pulling it (foDa) gently. Throughout the entire operation, the cow remains lying down.

But there can also be dystocia of the hind legs or the limbs. the woDaaBe know that dystocia of the hind legs is particularly dangerous for the calf.

If the calf dies in utero, nagge yartini is said to have taken place.

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<sup>1</sup>The luuwe is typical of the period prior to calving. It should not be confused with the santo, which is a constant habit which some animals have of leaving the herd to graze alone.

<sup>2</sup>Literally. "to remain attached."

After a difficult delivery, some cows become sterile; this is especially the case with cows whose calves die in utero and are not immediately expelled (this kind of sterility is due to metritis).

At calving time, sometimes, the neck of the womb (dande yawo) is too narrow and does not allow for the passage of the calf. If the vagina is not torn under the pressure of contractions, the herder himself cuts the cervix with a razor blade. In general, the woDaaBe say that this kind of complication has no adverse consequences.

Generally speaking, the difficult and painful expulsion of the calf may cause discomfort: the cow may lose a considerable amount of blood mixed with pus, and its vulva may become black (funna). However, herders do not consider these complications serious.

Another possible mishap is the birth of a "monstrosity" (raaBre), that is a calf with major physical deformities (of the neck, mouth, limbs, etc.). The cause of a raaBre birth is unknown. Generally speaking, it is said that it could result from a dreadful fright which the cow might have had during gestation.

RaaBre with sizeable deformities are simply abandoned (eg, the calf which is unable to stand up or remain standing). An attempt is made to keep the others until they are weaned in order to benefit from the presence of an additional lactating cow in the herd (unless the cow can be made to adopt another calf) (cf. V.4).

The adult raaBre is slaughtered and eaten: but only men and old women dare eat this meat. Women who are still at child-bearing age (the romooBe including young girls) do not touch it for fear of giving birth to a monster themselves.

Finally, after calving, another complication may arise: that is, non-expulsion of the afterbirth (gaynol, jorol). The woDaaBe apply a certain technique: they give the cow a drink made of pounded fruits from the siifah tree. They may conduct another magical practice (Boosoore), which involves tying a special amulet around the neck of the cow until the afterbirth is completely expelled.

#### IV. The Calving Period

The majority of births take place during the rainy season, particularly during the month of July. According to the woDaaBe, this is by far the most preferable period because the new-born will be able to benefit from a time of year when the mothers' milk production is particularly abundant and regular.

Births occurring during the latter part of the dry season (May) are also considered favorably because the "good" season is near.

In contrast, the births occurring during Yaawol (October-November) are not well received. Mothers lose a great deal of weight throughout the

following dry season, and since calves do not benefit from normal lactation, they do not grow normally. However, it is thought that under favorable circumstances (abundant pastures, proximity of water, etc.) births at the end of the rainy season promote a rapid increase in the herd's number; cows which drop during Yaawol have a very good chance of becoming pregnant again during the next rainy season.

TABLE A

Distribution of 93 calf births by month and by season across one year and for one woDaaBe group

Season	Kok-Korsol	ndunngu	Yaawol	dabbunde	ceeDu
Month	June-July	Aug.-Sept.	Oct.-Nov.	Dec.-Jan	Feb.-May
Number of births	35	7	22	4	25
Percent of total	37.6	7.5	23.6	4.3	26.8

GRAPH

Distribution of calf births across one year

## V. CARE OF THE NEW BORN

### V.1 Primary Care

As soon as the calf is born, it must be picked up by its hind legs so that the fragments of the afterbirth (powye - Poraali, poofDe) can be expelled from the nostrils.

If the calf begins to struggle violently (pap-papta) and drag itself about on the ground (tar-tarta) or shake its ears, this is an indication that it will begin to breathe normally.

Very often the woDaaBe also blow into the nostrils to help evacuate the respiratory tract.

### V.2 The Cow Licks its Calf

The woDaaBe attach great importance to the fact that the cow licks (taha) its calf immediately after birth. The cow should lick until the calf is completely dry. This is absolutely necessary to psychologically prepare the cow for suckling.

If the cow refuses to lick its calf, the woDaaBe resort to "magical" practices (Boosoore). An expert is called in; this is a person who knows the magical words required by particular circumstances. While uttering these sayings, he blows and spits into the cow's ears, nostrils, mouth and anus.

If the Boosoore is ineffective, the woDaaBe resort to the kitifiire, that is, the cow is abused. Severe physical pain is inflicted on the cow to overcome its stubbornness and refusal to lick its calf. Rolled-up rags and leaves from the amzahi or the haaDya are inserted into the cow's vulva. The animal becomes insane with pain and eventually calms down and agrees to lick the calf.

### V.3 The Cow Refuses its Calf

Ciccol is the name given by the woDaaBe to the cow's obstinate reluctance to accept its calf (even if it has already licked and cleaned it). It does not take care of the calf or allow it to suckle. It is said to stubbornly refuse the calf: sicci.

In such case, the woDaaBe practice uppol: after raising the cow's tail, the herder begins to blow into its vagina. The aim of uppol is to change the cow's attitude by inflicting pain on it (uppol is also practiced to stimulate the milk flow of a cow after the death of its calf, cf.V.4).

If the cow finally accepts its calf,<sup>1</sup> the herder helps the new-born to stand up (lappa) and holds it up to suckle its mother. The woDaaBe call this action kaltol.

If the cow still refuses its calf, an attempt is made to have it adopted by another cow<sup>2</sup> which is still lactating. Usually, the cow which is chosen is a good milker and is docile and calm. Even so, sometimes at the beginning its horns have to be held while the calf is suckling, in order for it to get accustomed to the calf. If the new-born is a heifer, the woDaaBe always try to make another cow adopt it. If the calf is male, it is left to die or it is slaughtered reluctantly.

The cow which refuses its calf is called wanye (literally: the one which hated). There are animals which, at every new calving, refuse their calves. In general, when this happens two or three times, such an animal is sold.

#### V.4 The Calf Dies

If the new-born dies, the woDaaBe practice njaBngu, which makes it possible to keep an additional milker in the herd.

NjaBngu<sup>3</sup> involves getting the mother of the dead calf used to being suckled by another calf. In order to do so, the woDaaBe conduct the njuggugu, whereby another calf is made to wear the skin of the dead calf. The mother smells the skin of its own calf and allows it to suckle. The cow's milk flow is stimulated, the calf is removed and the herder extracts the milk.

In cases when the cow resists, uppol is practiced to stimulate the milk flow. (cf. V.3).

If the cow is very docile and can be milked directly, njaBngu is not necessary. Howdotoonge (or kaapoe) is the name given to the cow which allows itself to be milked after its udder has been simply massaged.

In general, the woDaaBe try to continue milking the cow after the birth of its calf. It is thought that if the cow is not milked it could become ill or lose weight (homambo).

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<sup>1</sup>To accept a calf: honndina

<sup>2</sup>This cow is called jaBoe, literally: the one which accepts, which agrees.

<sup>3</sup>From the verb jaBa: to accept.

## V.5 Colostrum

The woDaaBe consider it very important for a young calf to drink its mother's colostrum (kanndi) from the first day of life. The colostrum is thick, heavy milk (tekkuDam) which is brownish in colour.

The calf is allowed to suckle when it wants. During the first weeks of life, the calf usually suffers from diarrhea, called kalaw. This diarrhea is not considered harmful; rather it is seen as a sign that the animal is satisfied and is in good health.

Young calves kaltuDi which have been well-fed by their mothers' colostrum<sup>1</sup> are valued for their beauty.

If the calf does not have kalaw, it is usually thought that the mother is not a good milker or that its milk is not good.

When the calf is full, the remaining colostrum is milked from the cow and cooked with butter and salt: this is called dagacci and is a real treat for children. The kanndi can also be mixed with ordinary milk to make a kind of brownish butter which is also well liked.

The woDaaBe begin to milk cows one week after calving. A heifer which has calved for the first time may be milked four days after calving.

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<sup>1</sup>The kalaw has a very heavy consistency: it splashes out and sticks to the calf's hind legs; it then dries up forming crusts, which, when removed, actually leave sores.

## C. KNOWLEDGE OF FORAGE CROPS

### VI. The Main Forage Crops

Every boDaaDo herder has a profound knowledge of the grazing value as well as the pharmacopeial and magical value of plants.

The woDaaBe distinguish between several stages in plant development; at each stage the plant has different characteristics. Furthermore, animals respond differently to each plant at each stage of its vegetative cycle.

The animals do not derive much benefit from grazing on newly sprouted plants (called fuDaalo) at the very beginning of the rainy season. All the animals are well-nourished during the following stage (sanaalo) when the plants begin to grow; this stage corresponds to the korso season. Animals derive even greater nutritive value from the plant when it reaches the wiigaalo stage, when it begins to bear fruit (wiigaalo refers to the plant in full bloom). There are several phases of wogaalo based on the growth of the plant and, especially, the animals' response to it: the phases include the haaraande, during which the animals can eat until they are full,<sup>1</sup> the diifadaro (or nyaama-haara),<sup>2</sup> and the doppa-daro,<sup>3</sup> during which the animals derive maximum benefit.

The final stage of the vegetative cycle is that of the ramification or the "subdivision" (peccitaaki) of the plant which has reached maturity (huDo nyaako).

After the plant reaches maturity, it dries up. This is called the huyoro which corresponds to the Yaawol season. The plant dries up with the progressive loss of humidity in the soil. After huyoro comes the Dasalduko (pr Dayluko) and the yoorko. At this point, reference is no longer made to huDo (grass), but to geenal (hay).

Every plant has its own vegetative cycle which varies in length.

At every stage in its development, each forage crop has its own characteristics, its own properties (mbaaw). According to the woDaaBe, these properties have a direct effect on the quality and quantity of the herd's milk production and also on the ease with which

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<sup>1</sup>Haara: to eat till one is full.

<sup>2</sup>Diifa-daro: literally, to pull and stop (grazing).  
Nyaama-haara: literally, to eat and be full right away.

<sup>3</sup>Doppa-daro: literally, to start grazing intensely and stop soon afterwards.

the animals gain weight (Bellere). In the words of woDaaBe herders, a good forage plant directly increases the strength of an animal because it increases the wijore, that is, the quantity and improves the quality of the marrow (busam) in which the sturdiness and the robustness of an animal lie.

Plants are categorized according to the type of soil in which they grow and in which they are best able to flourish. For example, grasses such as the sabeeri, the layel or the follere grow mainly in the karal, a clay soil characterized by swampy basins (fasaaji), small ponds (coofi) and large ponds (beeli) in which several kinds of aquatic plants can be found, i.e. gaandowol type. The soils on the plains (kollaaDe) and the high plateaux (pelle) support plants like the dengeere, geene or lay-laydol and numerous trees which make excellent browse.

Finally, there are the sandy soils of the dunes (jole) where hebbere and geenal predominate (trees and shrubs are rarely found here, with the exception of a few tanni or jigahi).

With regard to plants' taste and the nutritive value, the woDaaBe consider the ndiiriiri and the raYYere the most tasty forage for cattle (followed by the layel, the follere, the korom, the gunaaru, etc.). For camels, preference is given to the dibeehi, to the fillal, the yaaDya, etc. Small ruminants prefer gillal, dibeehi, etc.

According to the woDaaBe, variable rainfall can cause changes in species mix in a given region from one year to the next. This can be clearly seen with regard to the alternation of two major species: the kebbe and the geene Diime. The latter need regular rainfall at long intervals and are unable to withstand long periods without rainfall. In contrast, the kebbe are much more resistant and tend to grow more during years of scanty rainfall.

REMARKS: The following list of plants has been drawn up using the Fulfulde alphabet. In Annex 1, these plants are listed in Roman alphabetical order. For this classification, we made extensive use of "Lexique des Plantes du Niger" by B. Peyre de Fabregues. For every species a summary is given of the comments made by a group of woDaaBe.

LIST OF PLANTS

1. baDaaDi: (*Commiphora africana*, Burseraceae). Tree of average grazing value, of which the leaves are particularly liked by camels. Its leaves are also widely used in traditional pharmacopeia.
2. bamambi: (*Calotropis procera*, Asclepiadaceae). Shrub commonly found on inferior soils. Small ruminants graze on its leaves. Its latex is used to make a kind of pomade used on cracked skin.
3. barkahi: (*Pilostigma reticulatu*, Caesalpinaceae). Tree which has almost entirely disappeared from the northern Sahelian zone. It is very good forage for camels. The sotoore (cf. b ) a parasitic plant growing on the barkahi, is very much in demand; it is also used with other ingredients to make the fuDngo na'i (cf. VIII.1). The barkahi is extensively used in pharmacopeis and plays a very important symbolic role in any ceremony.
4. buluhi: (*Eragrosti tenella*, Graminaceae). This grass grows in ravines and in areas around the base of hills. Cattle do not find it particularly palatable. According to the woDaaBe, it is practically extinct in the northern Sahelian zone.
5. buruugel baali: (*Dactyloctenium aegyptium*, Graminaceae). Of the same family as the nguDe-nguDeeri (cf. ), it is much less liked by the cattle; they eat only the upper part of the plant, leaving the lower part intact.
6. mbuDe-mbuDeeri: (cf. hguDe-nguDeeri).
7. caaski: (*Acacia albida*, Mimosaceae). Tall tree (called gao by the Hausa). Its leaves and fruits make excellent forage for camels and small ruminants. However, it is practically extinct in the northern Sahelian zone.
8. cenceni: (*Maerwa crassipholia*, Capparidiaceae). Also called jigahi in the west. This tree is considered excellent forage for all kinds of livestock. The animal graze on it year-round, but especially during the ceeDu season when there is little good vegetation. Its leaves make a good remedy for infected animal wounds.
9. cilluki: (*Acacia raddiana*, Mimosaceae). Widely distributed tree which makes excellent forage for camels and goats. Its leaves sprout in the middle of the hot, dry season.
10. ciiBooli: (*Grewia tenex*, Tiliaceae). Forage for all kinds of livestock. There is a great demand for this trees leaves.
11. damaygihi: cf. nduusur

12. dengeere: (*Zornia glochidiata*, Papilionacea). This grass makes good pasturage between the korsol season and the middle of ndunngu (July-August).. It grows mainly on the high plateaus (pelle), particularly among sabaraagi trees. It does not grow very tall, but its upper part spreads out widely. The herders dread it at the beginning of the korsol season because it causes rukkungo (cf. VII).
13. dibeehi: (*Acacia laeta*, Mimosacea). This is one of the most important and useful trees in the opinion of the woDaaBe. It is the camels' favourite browse. Of all the sotooje (cf. above), the dibeehi is the most sought after. Its roots, bark and resin are used for multiple purposes.
14. Dooki: (*Combretum glutinosum*, Combretacea). Tree which is gradually disappearing from the northern Sahelian zone. Its leaves are not very palatable; the woDaaBe say that the animals do not graze on them, but "pull on them while passing." It is eaten in greater quantities when the young, supple leaves are just sprouting (these leaves are called wilirre) after the first leaves have fallen. The plant is used for medicinal purposes.
15. ndaYon daaDi: (*Cyperus conglomeratus*, Cyperacea). cf. Hurdu-dumboore.
16. ndiriiri: (*Sporobolus festivus*, Graminacea). This grass, which grows mainly on sandy soils, is well liked by all kinds of livestock throughout the year. It increases milk production and makes the milk tasty. cf. ngarziiri.
17. nduusur: (*Chrozophora brocchiana*, Euphorbiacea). Shrub which grows on hills; also called damaygihi. Sought after mainly by goats and, at certain times of the year, by cattle.
18. follere: (Could be *triumfetta pentandra*, Tiliacea). Grass which grows on the plains. The herders try their best to find this grass because it greatly increases milk production more than any other forage plant. Like the layel, it is said that the follere can meet the cattle's salt requirements. At the beginning of the rainy season pastures abundant in follere are avoided because the plant can cause rukkungo. Despite the illness which can be caused by this grass, it is still considered to be one of the best forage plants for cattle.
19. gabaraari: (*Sorghum aethiopicum*, Graminacea). Tall grass which grows mainly on clay soils. The cattle are quite fond of it. It is said that small quantities of this grass can adequately satisfy an animal. Its nutritive value is very high, according to the woDaaBe.

20. gaccungolhi: (*Indigophera dyphilla*, Papilionacea). Pasturage in great demand particularly during the korsol season and Yawol (before the heavy rains). During ndunngu the animals do not graze much on this plant since they can choose other species. Like the massahi and the nduusur, this is one of the rare shrubs (baafe) of which the cattle are very fond.
21. gadaggiire: (*Alysicarpus ovalifolius*, Papilionacea). This grass grows mainly at the bottom of hillsides. During the rainy season, all kinds of animals search for it.
22. gajjali: (*Cymbopogon giganteus*, Gramineae). Tall grass which the animals do not particularly like. It grows on hillsides.
23. gajalol: (*Panicum turgidum*, Gramineae). Tall grass. There is not a great demand for this on the part of the cattle. It gives a bad taste to the milk; milk cows which have spent scarcely two to three days in a gajalol pasture yield a "foul-smelling" milk.
24. gawari: (*Acacia militica*, Mimosaceae). This tree is annual forage for camels, which are extremely fond of it. cf. gonnaki.
25. gaandowol: (*Nymphaea*, Nymphaeaceae). Also called gaandi. Water lily which grows in ponds and in shallow water. Along with the nyerYaare, it is the only type of aquatic forage plant which the cattle eat. If eaten in large amounts, this grass is likely to cause rukkungo (cf. VII).
26. gaasaya: (*Cynandropsis Gynandra*, Capparidiaceae). Grass belonging to the same family as the lanjere, but it is more bitter. This grass is very well liked by the camels, especially when it is flowering (late July). Its stem is very nutritious and produces thick, abundant milk.
27. gelooki: (*Guiera senegalensis*, Combretaceae). cf. sabaraahi.
28. geenal: (cf. huDo rimo).
29. gillal: (*Blepharis linariifolia*, Acanthaceae). There is great demand for this forage on the part of the woDaaBe, but it is becoming increasingly rare: according to some herders, it has practically disappeared from the northern Sahelian region. This forage plant encourages rapid animal weight gain. It is also said that the plant's pleasant odour is transmitted to the milk.
30. gonaaki: (*Acacia Nilotica*, Mimosaceae). cf. gawari.
31. goDaaru: cf. pottalhi
32. gulun jaaBi: (*Ziziphus mucronata*, Thamnaceae). Tree of little grazing value: its bitter fruits are eaten by the small ruminants and its leaves by the camels (in small amounts).

33. gumuumi: (Combretum micranthum, Combretacea). Of average grazing value, mainly beneficial to camels. Used in pharmacopeia.
34. gunaaru: (Citrullus lanatus, Cucurbitacea). Wild melon which grows mainly on the sandy soils of the hills. Also called deeni. In great demand because of its stem and its fruit. The stem has two major properties: it increases the amount of fat (Beilere) in the animals' bodies, and also gives their coats a dark colour which is a definite sign of good health in the opinion of the woDaaBe. The gunaaru and its stem make perfect forage and are the subject of some proverbs. It is also bitter; cf. habardu.
35. gunaaru lelli: (Literally the melon of antelopes). cf. habardu.
36. qursumuuhi: (Grewia flavascens, Tiliacea). The leaves of this tree are very good pasturage for camels.
37. ngarziiri: (Sporobolus helvolus, Graminacea). The same properties and characteristics as ndiriiri.
38. nguDe-nguDeeri: (Dactyloctenium aegyptium, Graminacea). Pasturage during the rainy season. It is found in abundance everywhere. The cattle never leave an area covered with this grass; they do what the woDaaBe call sayannde (graze on the same grass until they are full without looking for another kind of forage plant.) This grass produces a thick, rich milk. It is also called mbuDe-mbuDeeri or nguYe-nguYeeri.
39. habardu: (Citrullus colocynthis, Cucurbitacea). Also called gunaaru lelli or tagallas (word of Tuareg origin.); animals do not touch it.
40. hebbere: (Cenchrus biflorus, Graminacea). Thorny grass. Widespread in all regions, especially on sandy soils. It is also called gerengyare. It tends to replace all the other species which are becoming extinct. The animals like grazing on it especially when it has just begun to sprout, during the korsol season. At this time, it is small and its stem is short and soft. In contrast, the tall thorny grasses do not have much nutritive value; in the eyes of the WoDaaBe, it only fills the animals' stomachs, frequently causes diarrhea and "makes the animals' hair stand on end" (Sign of poor health). In general, the hebbere does not promote lactation, while it causes a disproportionate increase in the animals' blood volume; the arteries beneath the eyes are visibly swollen and the animal suffers from severe palpitations all over its body. It is also said that the hebbere is the cause of a characteristic muffled cough. Nevertheless, in several regions the thorny grasses constitute the only available fodder during the entire dry season.

41. huDo rimo: (*Schoenefeldia gracilis*, Graminacea). This grass makes excellent forage for cattle. During the rainy season, much of it is consumed, especially if it is not too tall and if its stem remains soft. After the last rains, it dries up rather quickly and is then called geenal. (it must be noted that the terms huDo and geenal generally designate any fresh grass and any dried hay, respectively).
42. hurdu-dumboore: (*Cymbopogon proximus*, Graminacea). Grass called nduYon daaDi as well. This pasturage lasts all year round. It grows especially in the hills and at the foot of the hillside. It survives lack of humidity and does not completely dry up until after the cold season. The animals graze on it mainly after the rains. Used in traditional pharmacopeia.
43. jaaBi: (*Ziziphus mauritina*, Thamnacea). The leaves and the fruit of the jujube tree are sought by camels and small ruminants.
44. jigahi: (*Boscia senegalensis*, Cappariaceae). Called amzahi in the west. Shrub found in several areas; of average nutritive value, grazed on mainly during times of drought and in difficult years.
45. kacacee: (*Salvadora persica*, Salvadoraceae). All kinds of livestock look for this tree, especially during the dry season. The woDaaBe say that it constitutes an excellent DaatorDum, or surplus food, especially for cattle at the most critical times of the year. It is said that cows which graze in areas abounding in kacacee enjoy better health than cows which are unable to eat from this tree.
46. kelli: (*Grewia bicolor*, Tiliaceae). The leaves and the fruits of this tree make good forage (the fruits ripen in the middle of the dry season). The sotoore (cf. below) which grow on the kelli is well liked. (The wood is highly valued and is used to make herders's rods, among other things).
47. korom: (*Aristida funiculata*, Graminacea). Grass which grows on the plains, in the valleys and in small patches on the hillside. The woDaaBe search for it, especially after the rainy season. This grass does not do well in heavy rainfall. The excrement of cows which have grazed on korom for an extended period has a characteristic brown colour.
48. lanjere: (*Gynandropsis gynandra*, Cappariaceae). Grows in the plains and valleys. It is not particularly liked by the animals. When dried, it has no value whatsoever.
49. lay-laydu: (*Ipomoea involucrata*, Convolvulaceae). Forage plant of which all kinds of livestock animals are extremely fond. It grows in the midst of copses. Pasturage during the Yaawol season. Long, creeping stems.

50. layel: (*Ipomoea acanthocarpa*, Convolvulacea). Also called yanndi. It grows on clay soils. In great demand because it promotes good lactation. But it does not withstand the lack of humidity very well. Like the follere, the layel is able to meet the cattle's salt requirements ("salty" plants). It is becoming increasingly rare.
51. laalowol: (*Digitaria horizontalis*, Graminacea). Grass which grows in shallow or stagnant water. It is grazed on primarily after the rainy season. It does not withstand the lack of humidity very well and dries up rather quickly.
52. massahi: (*Tephrosia purpurea*, Papilionacea). Herbaceous, ligneous plant which stands up very well to the lack of humidity and the dryness. During Haawol it is excellent pasturage for the cattle.
53. nammaari: (*Bahunia rufescens*, Caesalpinacea). Good pasture for camels.
54. noobol: (*Cymbopogon schoenanthus*, Graminacea). Tall grass which grows in valleys and ravines. The cattle graze on it from time to time but have no particular liking for it. It gives the milk a bad odour. It is practically extinct (in the past it was used to reinforce wells).
55. nyaanyataare: (*Peristrophe bicalyculata*, Acanthacea). Grass which grows in plains and valleys (though there is a grass of this type which grows on the hillsides). There is great demand for it as it promotes the production of thick, tasty milk. If large amounts of this plant are eaten, it can be dangerous since it is likely to cause rukkungo (cf. VII).
56. nyerYaare: (*Echinochloa colona*, Graminacea). Tall grass which grows in shallow, stagnant water. Also called nyereeje. With the gaandowol, it is the only type of aquatic pasturage grazed on by the cattle.
57. pottalhi: (*Crotolaria podocarpa*, Papilionacea). This shrub (also called gooDaaru) begins to bloom right after the rainy season. It is not highly valued by the herders because its leaves give the cows' milk a foul odour.
58. raYYere: (*Andropogon gayanus*, Graminacea). Tall grass grazed on by cattle (especially after the korsol and the ndunngu). Along with the gajalol and the sooBre, this plant is used by the sedentary populations to make mats.
59. sabaraahi: (*Guire senegalensis*, Combretacea). This shrub makes very good pasturage for camels.
60. sapeeri: (*Panicum laetum*, Graminacea). Wild fodder which grows in shallow water and is sought after by the cattle.

61. saraho: (*Aristida gracilis*, *Eragrostis tremula*, Gramineae). Grass which grows in the valleys. All kinds of animals look for it. It produces a rich, "heavy" milk.
62. sel-sende: (*Hyparrheina dissoluta*, Gramineae). Pasturage typical of the season following the rains (Yaawol). Cattle display a great liking for it, although camels do not graze on it at all.
63. sotoore: (*Tapinanthus globiferus*, Loranthaceae). Parasitic plant which clings to other plants. The sotoore which grows on the dibeehi is particularly well liked. Camels are fond of all types of sotoore (kelli, yaaDya, barkehi, etc.).
64. sooBre: (*Andropogon gayanus*, Gramineae) cf. raYYere.
65. surungeewol: (*Aristida sisberana*, Gramineae). Tall grass which sprouts in the very middle of the dry, hot season. Pasturage of average grazing value.
66. takkal ciilal: (*Gisekia pharnacioides*, Mollucinageae). Plant hardly grazed on by the animals. It has the disadvantage of causing severe diarrhea. It grows mainly on the sandy soils of hillsides.
67. tamas: (*Acacia ehrebergiana*, Mimosaceae). Also known as cilluki (cf. ). Highly valued pasturage for camels.
68. tanni: (*Balanites aegyptiaca*, Zygophyllaceae). Also known as adduahi. It is one of the most commonly found trees. It is quite resistant to the lack of humidity and dryness. Its leaves and fruits are very much sought after by camels and small ruminants.
69. tuppere: (*Tribulus terrestris*, Zygophyllaceae). This is one of the plants which are the earliest to sprout. Its buds can be grazed on few days after the first rains. At this stage, cows graze on it. After that, it is not consumed very much since it has the disadvantage of causing severe diarrhea in animals and causes the cows' milk production to decrease sharply. It produces a "liquid" low-fat milk which is not particularly liked. It is said that if the cows are made to graze on tuppere for a long time, their milk will completely dry up. It also causes rukkuṅgo (cf. VIII).
70. yanndi: cf. layel
71. YaaDya: (*Leptadenia hastata*, Asclepiadaceae). Plant which wraps itself around the middle of trees. Perfect forage for camels; together with the sotoore, the gunaaru and the lay-laydu, it is considered the best pasturage for camels.

## VII. Main Diseases Affecting Livestock

The woDaaBe identify and diagnose a large number of diseases affecting their livestock. Among the diseases (nyawuuji, jukkooju, appeeji), there are serious and fatal ones (such as the azawa, the tuurna, etc.) dangerous ones (like the rukkungo, the betu, etc.) and simple illnesses (such as the Baawo, the mamre, etc.).

Every disease has a cause. However, a real disease, unlike all kinds of "ills" (transgression of a taboo, witchcraft, etc.) has no real explanation. It is quite simply a disease!

The woDaaBe treat a certain number of diseases with techniques which are more of a pharmaceutical than a "magical" nature (although there is a thin line between these two spheres for the boDaaDo).

One of the most frequently conducted operations involves the use of fire (suma, to brand with fire). Other forms of treatment include scarring, bleeding (Yara), incisions (sela) or the use of ointments (moolma) with powders and pomades made from roots, barks or fruits.

As with human diseases, the diseases affecting livestock are divided into two groups: "hot" diseases (gulDi) and "cold" diseases (peewDi). The former are the most dangerous and usually the most serious: the animal stops grazing entirely, their bodies are "on fire" and they die very quickly. If the animal begins to graze again, it will recover. "Cold" diseases do not prevent the animal from grazing, but they derive no benefit from their food and lose weight. Contagious diseases (nyawuuji, dabooji) such as the tuurna and the azawa, etc. are placed in a separate category. The sick animal is removed from the herd and placed in a pen where it is given water and fodder until it has completely recovered.

The woDaaBe do not make any specific connection between the diseases and the seasons. Only the pukka, the rukkungo and calves' diarrhea are linked to the season. The other diseases may afflict the animals at any time of the year.

REMARKS: The following diseases are listed in Fulfulde alphabetical order. At the end of the list they are classified according to type.

LIST OF DISEASES

1. Azawa: This is the most dreaded disease. Its symptoms suggest that it is symptomatic anthrax (also called malignant pustule). This disease is also known as kDaw, gelooDe, garsa, meemol. There are other names used to designate it allusively (generally, the woDaaBe do not like to call the things which they fear by their names): kena (literally, the mighty wind) or henndu (the wind), alluding to the fact that its origin is unknown and like the wind, blows everything away; cettal (literally, the point or the arrow) or labba (the long lance) which is said to be the weapon with which the bush spirit (jinnol ladde) strikes the animals; loosol (literally, rod) which deals painful blows; this name is mainly given to anthrax affecting the small ruminants.

The clinical description which the woDaaBe give of the azawa is quite precise: the illness strikes (fiDa) the animal's entire body. Sometimes sores break out (jonnde), but most often, the disease manifests itself in carbuncles or tumors (BuhuDi) on the legs, the udders, the neck, the head, etc. The woDaaBe think that the azawa is firmly implanted in the muscles and the flesh of the sick animal.

The azawa is a terrible disease from which very few animals recover. The number of losses of livestock which the woDaaBe attribute to the azawa is very high: 80% of animal losses. The range is ridden with decaying carcasses of animals laid low by the azawa. The herders fear that their animals will smell these carcasses (they know that azawa is contagious), but take no precautions in burying them or destroying them.

Before the disease reaches an advanced stage, the woDaaBe apply remedy whose main ingredients are tobacco, kaolin, and the upper bits of the noobol (cymbopogon, cf. VI.). These ingredients are pounded together and can then be administered in several ways: by smoking the animal,<sup>1</sup> by<sup>2</sup> rubbing the mixture on it<sup>2</sup> or by giving it the mixture orally<sup>3</sup> in the form of a drink.

2. bakkitel: Muscular pains and pain in the leg bones. The animal limps. In order to relieve it, the woDaaBe hit the bone with a pestle; a mortar is pressed to the bone, and the inner part of the mortar is struck with the pestle.

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<sup>1</sup>To smoke: ura

<sup>2</sup>To annoint: moolma

<sup>3</sup>To administer orally: hoYa

3. balaaje: Pain in the upper part of the humerous. The animal has difficulty walking (YuBBa, to walk with difficulty). This is due probably to a sprained joint. The woDaaBe cauterize the front and the back of the humerous.
4. betu: cf. guttel
5. bussiyare: Itching of the tongue which prevents the animal from grazing properly. The animal also suffers from acute diarrhea and its excrement is bloody. The woDaaBe prick the nerves on the tongue with a needle to let the blood come out; this blood is said to be "black." Then a mixture of cow's urine and earth is applied to the area which was pricked and the whole surface of the tongue is scraped.
6. buto: cf. Baawo.
7. Baawo: Also called foynngo, saare and buto. In this case, a part of the uterus slips through the anus (uterine prolapse). This complication arises usually in a cow about to calve or which has recently calved. The Baawo is especially dangerous for cows which are lean and weak. The woDaaBe are able to treat this illness by inserting leaves from the suddaesahi which have been pounded and mixed with hot pepper into the rectum.
8. BiDDara: Constipation, painful and difficult evacuation of faeces. There is no known remedy for this ailment.
9. Bilore: Dyscokia or abnormal position of foetus at calving time. (cf. IV.2).
10. Boola: Also called garsa. This is probably bacterial anthrax (anthrasic fever). Illness very similar to azawa. However, the Boola has no particular external symptoms with the occasional exception of acute diarrhea. This illness is almost always fatal, though there is a benign form called coodowa.
11. mbaartu: Skin disease (could be a kind of streptococcus). The afflicted animal's body is covered with dried sores (putte) and its skin is full of cuts (pe''i). Often the animal stays in this state for some time before recovering. The mbaartu is most prevalent during the humid and cold seasons.
12. mboru: cf. safa
13. caarol: Diarrhea, which can be due to several factors. The most common type is humid season diarrhea: after eating fresh grass and water, the animals begin to gallop and get diarrhea. But there is also bussiyare, a kind of diarrhea which affects only small calves, like that which accompanies Boola, etc. The woDaaBe brand the sick animal near the bone above the tail (called kunkuturuwal or Bokkorgowal). Cf. also kalaw, V.5.

14. cettal: Cf. azawa.
15. ciibaw: Also known as ciimaw. Chronic state of weakness. The animal seems to graze normally, but it derives no nutritive value from the pasturage. The milk cows' udders seem to be full but they yield no milk. The animal's excrement is in small pellets (like camel's dung). In general, an animal with this condition has a difficult time recovering from it.
16. coodowa: Very similar to Boola, but a benign form of the illness. The animal suffers from severe aches and pains in its joints and can hardly walk. The coodowa can be fatal.
17. cuuru: Disease of the hooves (peDeeli). They become inflamed and painful and can prevent the animal from walking normally (this illness could be interdigital whitlow). Very often the animal stricken by cuuru remains handicapped for the rest of its life (it is then called suurnunge) and is sold (cf. X.4). To treat cuuru the woDaaBe scar the base of the hooves, brand the ankle and then they pierce the base of the hoof with a red-hot iron (to let out all the pus).
18. dannumi: Hemeralopia or night blindness. After sundown, the animal stricken with dannumi can no longer see; its eyes are "shrouded." Serious injury can occur if the animal bumps into a tree, falls into a hole or well, etc. The woDaaBe think that the sun is the main cause of this disease; when the sun's rays are very intense, a kind of haze (suddi) blocks vision. According to the herders this illness shows up when visibility is poor (at night). Dannumi occurs during the hot, dry season (between February and June). It is also thought that dannumi develops where grass is short and thin and browse ("bitter trees" like the jibahi and the cenceni) is lacking. Dannumi is observed especially after poor rainy seasons. Coarse cooking salt given to animals is another alleged cause of dannumi. The woDaaBe think that there is no real remedy for this illness other than waiting for the first rains. At that time, they say, the animal's head will be cleared and dannumi will disappear suddenly.

According to the woDaaBe, dannumi can develop in stages. At first, the animal starts to froth at the mouth. Then it is no longer able to see, even in broad daylight. Eventually its dannumi becomes total blindness (bumDam). This is particularly serious for pregnant females, which, if stricken with dannumi, give birth to blind, weak calves.

The woDaaBe say that a map showing the geographical distribution of dannumi can be easily drawn. Roughly speaking, it is particularly widespread to the north of the line linking Tchin Tabaraden to Aderbissinat, passing through In Waggar and Tamaya.

19. DaDol: Severe pains in the leg muscles. Several folds are made in the skin covering the leg which are cut or branded with fire.

20. Daasu: The animal's body becomes covered with oedemas (Bolle), particularly on the area around the ears. The woDaaBe brand the animal from its legs to its ears.
21. doorde: Disease caused by the presence in the body of one or more boils covered with hairs. The sick animal loses a considerable amount of weight and often has a muffled cough. An animal suffering from doorde must be slaughtered; the boils are then found in its stomach (these could be aegagrophilia).
22. felwere: Also known as pelwol: congestion of one or more teats of the udder (cf. III.2).
23. fhoire: Inflammation of the heel (teppere). Treatment involves branding the inflamed area. The upper and lower parts of the heel can also be tied with short cords and the skin cut to let out a slimy liquid. This could be a case of synovia.
24. foynngo: Cf. Baawo.
25. garsa: Cf. azawa, Boola.
26. gawuuje: Abscess of the back teeth (gagitte). The animal practically stops grazing. To cure this disease, the animal's jaw is branded.
27. gelooDe: Cf. azawa.
28. goptol: Inflammation or sprain of the knee (cf. honcere, wakkande).
29. guttel: Also called betu. The animal suffers immensely from bloating; its stomach is distended, though it has not grazed at all. Guttel can easily be fatal. To treat this condition, the animal's paunch is branded and pierced with a small, sharp instrument in the region of the ribs (between the iliac bone, aaral, and the lowest rib, ngonngal; the cut is made from front to back).
30. ngooja Baleewa: Cf. woyre
31. hitaande: Cf. nyiiro
32. honcere: Cf. goptol, wakkande.
33. kaDaw: Cf. azawa.
34. kena: Cf. azawa.
35. kippol: Generalized mastitis. The teats (holo) atrophy (waata), until the udder no longer functions. The hippungue cow must then be sold (cf. X.4).

36. kooBal: also called la'e. This is a kind of abscess on the ears or in the throat (it is probably an abscess of the salivary glands). The abscess is left to ripen. Then it is burst (fusa), cleaned and covered with a mixture of hot earth (noorngal) and fresh butter. (For information on abscesses in general, cf. lowre).
37. kulbol: Muffled cough, typical of nyiiro.
38. labba: Cf. azawa.
39. lawdajje: Pain in the neck muscles: the animal is unable to raise its head. The woDaaBe make tiny incisions on the folded skin of the neck until blood oozes out. The area is then branded and anointed with fresh butter.
40. la'e: Cf. kooBal.
41. lowre: Abscess. It may develop on any part of the body (for information on the abscess of the ear and throat, cf. kooBal). The abscess is left to ripen, then it is opened, cleaned and dressed with a mixture of hot earth and fresh butter.
42. loosol. Cf. azawa
43. mabugaare: Disease of the nervous system. The animal has strange symptoms. It suffers from fits which make it fall lifeless to the ground. It foams at the mouth, shaking its head and ears violently. The woDaaBe bleed the animal's ears. Even with treatment, this disease can very often be fatal. Mabugaare may be tetanus.
44. mamre: Inflammation of the legs. The hooves break, causing the soles of the feet to fill with blood and become cracked and bruised. Mamre is always caused by long journeys on stony ground or on very hard soil (for example, in the high plateaux (pelle)). This condition can be adequately treated by letting the animal rest for a few days.
45. nyiro: Contagious pleuro-pneumonia of cattle which the woDaaBe also call as hitannde (literally: the year).

The seat of the disease, according to the woDaaBe is the lung (wunsunnde). The symptoms of the illness is a terrible, muffled cough called kulbol. It is also said that this cough affects the whole Bernnde area, that is, the thoracic cavity, the stomach muscles, the chest and even the heart.

For the woDaaBe, the nyiiro is a very serious disease for which they have no remedy. Nevertheless, they know that it is contagious (nyaw ndaabeteengu) and that they have to vaccinate animals which have not yet had the disease. In order to do so, they remove fragments of the lung of an animal which died from nyiiro they then bury the fragments ("so as to prevent the wind

from blowing on them") and let them decay completely. Then tiny cuts are made on the nose of the animal which is to be vaccinated and the decayed fragments are applied to the cuts. This vaccine can also be applied to the area over the coccix (kuruwal). It is then said that the animal has been given nyiiro, or more precisely, that it has been given the anti-nyiiro (nyirrta).

When the vaccine has taken effect (the wound becomes infected and swollen), the skin is cut to remove the rotting flesh and impurities, and the area is branded.

46. paDDe: Epilepsy. The animal suffers from convulsions, trembles violently and falls to the ground. The woDaaBe brand such an animal on the forehead and neck.
47. pecca: Deep cracks. Disease typical of the cold season. Animals which spend the whole day in cold mud get deep cracks on the soles of their feet. The woDaaBe rub these cracks with a mixture of pounded millet and water or with millet porridge which is a day old.
48. pelwol: Cf. felwere.
49. pi'tu: Sores break out on the animal's entire body. The body becomes covered with tiny pustules following severe itching.
50. pose. Swollen ankles (especially the hind legs). The animal can hardly walk. To treat this condition, incisions are made on the ankles and then they are branded.
51. pukka: Cattle disease typical of the rainy season (at the beginning and the end of the season). According to the woDaaBe the animal has a fever (yontere) similar to malaria. The sick animal is sprayed generously with water to bring down its body temperature. The disease lasts generally two to four days, and the animal usually completely recovers. During the illness, the animal does not have diarrhea, but its body is very hot, while its ears are very cold. Sometimes the animal becomes extremely weak and can hardly stand up; force has to be used to make the animal get up, either by branding it or by biting its tail. The herders also support the animal with planks, keeping it standing with a kind of support made from stakes, called dangalle.
52. rukkungo: Formation of gases which distend the animal's belly especially during the korsol and ndunngu seasons, between August and September). This is caused by the fermentation of certain plants in the animal's stomach (these plants include the follere, deengeere, gaandowol, nyaanyataare, etc.). These gases can be fatal for the animal if its stomach bursts. Rukkungo caused by night grazing is particularly dreaded (because of the dew). The woDaaBe give the sick animal large amounts of curds mixed with fresh butter.

53. safa: Hoof and mouth disease, also called mboru. The animal has a fever (Yontere), foams at the mouth, and has cracks on its legs. Milk cows yield almost no milk. The animal no longer has the strength to go to the pastures or to drink, and the herder has to bring it fodder and water. It is said that the stricken animal is afraid of the sun. However, in general, this is not a dangerous disease in the woDaaBe's opinion, except in the case of small calves. The woDaaBe say that if a young calf drinks the first milk (colostrum) produced by a cow suffering from safa, it will die. Safa is particularly dreaded in the middle of the dry, hot season. Safa can be terrible for some animals. The cow called surullae displays certain pathological symptoms which are a direct consequence of safa: its hairs fall out, it can no longer stand sunlight, grazes only at night and always wants to remain by the water. If it drops a calf, the woDaaBe say that the latter will die instantly, since the cow's colostrum is not good. The surullae is sold (Cf. X.4).
54. saare: Cf. Baawo.
55. se'ere: Pustules at the base of the tongue. The animal foams at the mouth and it practically stops grazing. The ganglions below the jaw (called lonkoYYe) become swollen and painful. The woDaaBe smear the front of the mouth with a kind of pomade made from "soumbala" (an ingredient called douwdowa in Hausa, used in sauces which is found at all local markets).
56. silBere: Sprain, without fracture. Butter is applied to the sprained area after it has been thoroughly washed with water.
57. so'onnyu: Skin disease. This is probably scabies. The animal suffering from the disease has cutaneous lesions (pe''i) covering its body and has severe itching. Its hairs fall out (especially those on the tail), and it suffers from acute diarrhea.
58. tolki: Infection of a broken horn. The woDaaBe prepare several medicines which must be applied to the inside of the horn; for example, a mixture of nyanngal buubi (cassia nigricans), leaves from the jigahi tree (boscia angustifolia) and cow's urine.
59. tuurna: Rinderpest; also known as zaagaw. According to the woDaaBe, this disease used to be very widespread but has now almost completely disappeared. Of all the symptoms of tuurna, the one which receives particular attention from the woDaaBe is the eye infection; the animal's watery, inflamed eyes are lowered (tuurna). Its nostrils are also irritated. The animal stricken with tuurna suffers from acute diarrhea and its excrement is of "black blood."
60. wakkande: Cf. goptol. Swollen joints.

61. woyre: This is probably rickettsiosis. The animal becomes abnormally restless, as if it were going insane. Its gait is unsteady, and it often falls to the ground. While lying on the ground, the animal moves as if it were galloping, kicking into the air. In the opinion of the woDaaBe, this is a very common and serious illness. They treat it by branding the animal from the navel up to the iliac bone. In addition, they think that they give the animal some relief by splashing it with the urine of uncircumcised boys. The ngooja Baleewa is the malignant form of woyre.
62. wuftere: Abortion. A distinction is made between wuftere and pallangel, death of the embryo or the foetus. (Cf. III.2).
63. yewre: Fracture of a limb. The broken limb must be stretched in order to properly reset the broken bone. Small planks of bamabi (*calotropis procera*) are tied together with strips of old rags to form a splint. The splints are left on until the bones are set (jokka). The animal remains in one place and fodder and water are brought to it.
- If there are successive fractures within the same herd, the woDaaBe immediately attribute it to a disorder (transgression of a taboo, for example); an attempt to correct this disorder is rapidly made (cf. VIII.1).
64. Yowru: Cough. The woDaaBe have no remedy for this ailment.
65. zaaqaw: Cf. tuurna.

## CLASSIFICATIONS OF THE DISEASES

General diseases (affecting the entire body and the majority of which are serious):

Nos: 1, 10, 12, 14, 15, 16, 18, 20, 25, 30, 31, 33, 34, 38, 42, 43, 45, 46, 49, 51, 53, 59, 61.

Diseases affecting limbs and organs (legs, mouth, udders, etc.):

Nos: 2, 3, 5, 16, 17, 18, 19, 22, 23, 26, 28, 32, 35, 36, 37, 39, 40, 41, 44, 47, 48, 50, 55, 58, 60.

Intestinal diseases:

Nos: 4, 8, 13, 21, 29, 52.

Skin diseases:

Nos: 11, 47, 49, 57.

Illnesses in gestation:

Nos: 6, 7, 9, 24, 54.

PART II

A. Magical Beliefs and Herding

VIII. Magical Practices

IX. The Herd and its Problems

B. Traditional Herding Strategies

X. Traditional Strategies

XI. Utilization of the Herd

C. Herding and Social Life

XII. Livestock and Social Life

## A. MAGICAL BELIEFS AND HERDING

### VIII. MAGICAL PRACTICES AND HERDING

#### VIII.1 For the Fertility of the Herd

The most important "magical" practice conducted by the woDaaBe is undoubtedly the fuDngo. The aim of the fuDngo (like that of rewo, cf. V.4) is to increase the fertility of the herd so that the cows will drop heifers (the term fuDngo is derived from fuDa, to grow, and is mainly used in reference to plants).

Unlike the rewo, the fuDngo is practiced during a ceremony which evokes not only the symbolic aspect of the herd's fertility but also the social bond which unites all woDaaBe herders.

During a worso or renndo (annual gathering of the clan, taarde) a boDaaDo who collected different kinds of roots, fruits, leaves<sup>1</sup> and barks of trees during his long journeys in the southern regions, may decide to conduct his fuDngo publicly, with great attention to form.

On Sunday--a lucky day for the herd--the herder gets a young girl (BiDDo debbo) or a woman who has had at least two daughters to pound all his plants. When thoroughly ground, these ingredients are placed into a large milk gourd called Yogirde. Previously he had looked for an old bellow similar to the ones used by blacksmiths to keep their fires burning: laral zuga-zugiiru. In this skin he arranges and sews (huulna) his ingredients to make amulets with them (layaaji).

The herder carefully stores these layaaji in a pouch. They constitute his FuDngo for the increase of his herd. A fair portion of the fuDngo will be shared with all the woDaaBe present, so that they can all benefit from the same source of fertility.

Several plants and trees are used as the ingredients for the fuDngo. They are mostly plants found in the south and which do not exist in the northern regions where the woDaaBe live today. Among them are the nammaari (*bahunia rufescens*), the ibbi (wild fig tree), the lebreehi (*polygala erioptera*) etc. The woDaaBe also look for "toad's necklaces" (koDi paaBi), that is, toad's eggs and a sow's placenta (dimirgol) and bones.

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<sup>1</sup>The instrument which is used to poke the fire and increase the intensity of the flame (yiite) increases the strength and fertility of the cow (nagge). There is a very powerful symbolic bond between nagge and yiite, which are moreover, linguistically related, since they are part of the group of rare words which constitute the nominal category, -nge. If the herder cannot find the bellow, the skin from the forehead of an animal slaughtered on the day a new-born (tokoori) was named can be used in its place.

While fertility of the herd can be increased by this "magical" practice, it can also be decreased by the non-observance of some clan taboos (cf. IX.1). It is said that when "something has broken the fuDngo" (goDDum helli fuDngo), misfortune will befall the herd.

#### VIII.2 To Find Lost Animals

Another very common magical practice conducted by the woDaaBe is the fiBtere, which enables them to find their lost animals.

To carry out the practice of fiBtere, a specialist (piBtoo) is called in. He wraps knotted (fiBa) fibres from a palm tree (bali) around his head while uttering magical words. Then, he scatters the fibres, and the positions in which they fall indicate the direction in which the search for the animal must be conducted.

The piBtoo can give other indications as well; for example, how far away the animal has strayed, its health condition, etc.

The piBtoo's work must always be remunerated, at least symbolically.

#### VIII.3 To Protect the Herd

The filtinoore is a less common practice to protect the herd against possible dangers in the range, in particular against wild animals.

There are several types of filtinoore, depending on the type of wild animal. But today, few people know how to conduct this practice, perhaps because of a decline in the number of wild animals in the bush.

Those who do know how to practice filtinoore utter magical phrases while facing the range. At that time it is said that "the whole range is spell bound" (lade fu haBbaama), and nothing more need be feared for oneself or for the herd.

#### VIII.4 To Cure Specific Illnesses

There are several magical practices which treat specific illnesses. Often these practices are conducted in conjunction with the use of direct techniques.

One of these practices is the Boosoore, or recitation of magical sayings (ayaare); the person conducting the Boosoore spits frequently on the ground. Another of these practices is the piBol, tiny knotted cords (fiBa: to make knots) are tied to the sick animal. The Boosoore and the piBol are also practiced on sick people.

Only a relatively small group of people know how to conduct these practices. In addition, these people have specializations: a Boosoo or a piBoo cannot treat all kinds of illnesses and their power is strictly limited to specific situations (for details, cf. VII).

## IX THE HERD AND ITS PROBLEMS

### XI. The Transgression of Taboos

There are several types of problems (bone) which may befall a herd. The BoDaaDo has an explanation for every misfortune and also knows how to remedy the situation.

However, what the BoDaaDo fears most is the problems brought on as a result of the transgression of a taboo (mboDaa). There are several taboos: every clan (Lenyol), every lineage group (taarde), every household (suudu) has its own taboos.

The transgression of a taboo brings misfortune to the one who did not observe it, to his family and to his group. This is the unforeseen and unforeseeable ill which almost always strikes the herd or herds.

There is a particular kind of ill associated with every taboo: an animal which strays (halkere), an animal which breaks a leg (yewre), an abortion (wuftere), a herd of young cows which never attain adulthood (moro), the atrophy of the milk cows' udders (kippol), etc.

The woDaaBe have countless taboos. The term woDaaBe itself is derived from the word for taboo mboDa, and means "the people of taboos."

Among the most dreaded taboos is the taboo of "hairs" (qaasa) Tufts of hair must never be left to the west of the camp, near the duDal (corral), where the animals are kept, or the cows' udders will atrophy. Another common taboo is that of the "bad day" (nyalngal); one cannot move camp arbitrarily or the herd will be smitten by many ills (cf. Annex 3).

Every boDaaDo must strictly observe these taboos. The observance of the taboo corresponds to the fear of the problems which transgression would engender.

Once the ill has "entered" (naata) the herd, a number of practices must be conducted to re-establish order.

Thus, for example, if several animals have broken legs in a relatively short space of time, the cause is attributed to the transgression of a taboo, in this case, the more or less deliberate infringement of the nyalngal. The roots and barks of certain plants have to be gathered and pounded. One portion is given to the herd, another is placed in the duDal fire and a third is mixed with water and the owner of the herd sprays his body with this liquid several times.

#### IX.2 Problems Which are Brought on by the Enemy

Another thing that is feared by the woDaaBe is the uwre. Enemies may come and bury (uwa) roots and barks of "evil" plants (kalluDe) in the

duDal (corral) among the animals. As a result, the uwre will bring on a whole series of problems.

The herder, petrified by the damage done, immediately seeks out a jiimaajo (kind of healer) so that he will be able to remove the curse from the herd (it must be noted that, according to the conception of the woDaaBe, the uwre always follows the herd even if it is buried in a given place; it always remains "hidden" amongst the animals at every new camp).

The jiimaajo carries out a whole magical ritual before he finds the uwre which was buried in the duDal. When he finds it, he shows it to every one and all rejoice that the ill has been taken away. The jiimaajo usually receives a fair compensation for his action.

### IX.3 The Cow Which Brings Bad Luck

The WoDaaBe fear the presence in the herd of an animal which brings bad luck: this animal is called noontaange (or wolwaange).

A noontaange animal can be recognized by the colour of its coat.<sup>1</sup> There are some animals which are more dangerous than others. The most feared of these animals is the one with three black legs and one white leg. It is said that this white leg is like a halmeere (kind of hoe) which digs holes around its owner until the herd is destroyed and "eats" him (nyaama) completely. The noongaange is thus the bewitching animal.

In general, the young noontandi bull is slaughtered right after its birth, for fear of misfortune.

If one does not have the heart to kill a noontaange heifer, it can be given (symbolically) to a Hausa (kaaDo). It will remain in the herd but it will always be said that the heifer "belongs to the Hausa" and that it really does not belong in the herd. This is done until the heifer is weaned and then it is immediately sold.

There are animals which are born noontandi, but eventually their colour changes relatively noticeably. They can then be kept without risk or fear, though most people do continue to fear them. In contrast, other animals which are normal at birth can gradually assume the external features of the noontandi.

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<sup>1</sup>Noontoo is the one who recognizes an animal which brings bad luck in the herd. But his role is not appreciated, and it is often said that "it is his word" which brought on the ill (the animal in question is therefore called wolwaange). Koondoo is the name given to the one who brings on misfortune; if he makes a remark on the quality or the number of animals in a herd, evil forces are attracted.

To have a noontaange animal in one's herd is a real misfortune and there is no solution other than to remove it from the herd. However, there are also animals which bring good luck: this is the case with a bull with an even, black coat (ngaari Baleeri) and whose urine can get rid of an evil spell.

#### IX.4 The Prediction of Misfortune

The woDaaBe think that animals can foretell or predict (wufna) events. Therefore, they pay special attention to the gestures, attitudes and sounds of their animals.

Usually the prediction is one of imminent danger. Three major signs indicate the imminence of misfortune:

- o The woDoore: one or more animals begin to behave strangely; they sniff the earth and moan in an unusual way, trying to dig up the earth with their horns, etc. The woDaaBe say that this behaviour is contagious and very soon the whole herd does the same thing (the cow which began is the one which "beat the drum" (nge fi'ii mbaggu);
- o the bi'inol: very early in the morning, a cow sits in the middle of the duDal (corral) with its head tipped backwards and its tongue hanging out, and it moos in an unusual manner;
- o the fayre: at dawn, an animal sits among the others, with its hind legs straight (instead of bent).

The herder who observes these features becomes understandably nervous and expects great misfortune. To avoid the consequences of fayre, he has to leave the place and camp elsewhere.

As far as woDoore and bi'inol are concerned, "something has got to be done" to cast out the evil. The herder in question may slaughter an animal and distribute the meat to all the neighbours or give away a great deal of his possessions as charity (sokko). He may also prepare a large meal for the whole group.

Among the problems which may be expected are:

- a snake bite (mboodi), which is often fatal;
- an animal may fall into a well, a boring or a deep hole;
- a stroke of lightning (falmaango) amidst the herd;
- the inexplicable loss of a whole group of young calves (moro), etc.

## IX.5 The Herd and Different Days

For a boDaaDo, no two days are alike and there are special chores and activities which correspond to each day.

Thus in any given lunar (lewar) month, there are five particularly bad days for the herd. During these days, the camp must not move, regardless of the season, as this could bring about accidents and misfortune. These are the three days of the wattammaare (the first, the seventh and the seventeenth days of the month), the sari day (the fourteenth) and the nyalnnga (the twenty-sixth). There are seven more dangerous days: the third, the tenth, the eleventh, the nineteenth, the twenty-first, the twenty-fourth and the twenty-eighth.

Of all the days of the week Sunday (alad) is in every sense a day of rest. It is the cattle's day: they are loaned out, cared for, taken from one herd to the next, etc. Tuesday (ralaata), Thursday (miisa) and Friday (teddunde) are good days or, for some woDaaBe, they are considered only as less dangerous. Under certain circumstances, it is possible, for example, to brand sick animals or lead animals from one herd to another. However, Monday (altine), Wednesday (alarba) and Saturday (asawe) are considered as particularly bad days, during which the herd should be left in peace. These are the days of the wattammaare: an accident never occurs by itself but always in two's.<sup>1</sup>

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<sup>1</sup>During these days, however, it is possible to slaughter an animal for a traditional ceremony. Monday is considered a lucky day for the small ruminants.

## B. HERDING STRATEGIES

### X. TRADITIONAL STRATEGIES

#### X.1 Mobility

WoDaaBe herders manage their herds according to a highly rational system of herding strategies--prediction, defence, protection and change. This system is the result of generations of experience and also of the interaction of several factors, such as ecological constraints, social organization and technical requirements of livestock raising.

Within this traditional strategy, a place of particular importance is given to mobility.

Faced with climatic variability, the boDaaDo herder adapts rationally to the Sahelian environment by extreme mobility. He can thus make optimum use of the natural resources (water, pastures, minerals) of a vast area.

Mobility allows him to choose the different "types" of forage of which his animals are particularly fond at different times of the year. It also enables him to graze his animals on kinds of forage "at the precise point in time" when their nutritive value is highest (cf. 0.2; II.1).

Moreover, mobility provides real freedom of choice between resources spread out in time and space. It is said that "a BoDaaDo has nowhere to settle" (BoDaaDo walaa). For the good of his herd, he must be always ready to change.<sup>1</sup>

If one studies the language used by the WoDaaBe, one can see the different possibilities of movement as well as their strategic significance:<sup>2</sup>

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<sup>1</sup>Cf. XIV, interview with herders on the subject of mobility.

<sup>2</sup>In this analysis of the vocabulary of movement used by the woDaaBe we did not use the same approach as D.J. Stenning in his article "Transhumance, Migratory Drift, Migration: Patterns of Pastoral Fulani Nomadism" (J. Roy. Anthr. Inst., 1957). In his analysis, he distinguishes between three characteristic patterns of movement: (1) "transhumance" which he defines as "a regular seasonal movement," (2) "the migratory drift," defined as "a gradual displacement of transhumance orbits;" and (3) "migration" defined as "the assumption of new transhumance orbits by sudden and often lengthy movement." Stenning's approach is valid especially to understand the movement of semi-nomads, but it seems to us to be an inadequate explanation of the complexity of the phenomenon among the WoDaaBe.

- o duumol, transhumant departure, and kottol, transhumant return: these are the two major movements which are made, before and after the rains. The point of reference as regards departure is the ngenndi (or ceDille), that is, the lineage group's dry season base.<sup>1</sup> When the first rains fall, by following the duumrugol (path of transhumance), the households move north in small groups.<sup>2</sup> Following their itinerary, which remains more or less the same every year, the camps alternate a day of lengthy movement (Baarti) with a day of rest (FaBBere) or of short journeys (dehenere, woncere, sottol, rimdere);
  
- o at the end of the rainy<sup>3</sup> season, the kottol takes all the groups to their ngenndi.<sup>3</sup> The ngenndi is not just a water point (wasarde); it is an entire region (lesdi) with several water points, where one lineage group usually spends the dry season--the region to which one is accustomed (lesdi mboowandi), the place where the dry season is spent (seeDirde).<sup>4</sup> Within each ngenndi, each family unit makes short journeys (cf. II.5 note 3);
  
- o in the middle of the dry season, the Baartol (or more precisely, the Baartol ceeduwol, the long journey of the dry season --cf. 01-- as opposed to the Baartol ndunnguwo of the rainy season) can take a herder from his own ngenndi to another settling point; in this case, he moves to an entirely new region. Only a specific reason prompts a move like this; in some years, especially at the end of the dry season (towards the month of March), the lack of water or pastures forces some herders to move to relatively distant regions. The length and direction of Baartol movement depends on the nature of a given region (distances range between 100 and 150 km, depending on the region). When the rains fall, the path

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<sup>1</sup>This base is also called lesdi (country) or by a word of Hausa origin, gari.

<sup>2</sup>Transhumance movement is not always in a south-north direction, even if the majority of herders move as such. In some regions, certain groups move from west to east (for example, the groups of woDaaBe JiiJiiru who live in Damergou). Others follow north-south routes (for example, the groups of woDaaBe Bii Nga'en in the In Gall region), etc.

<sup>3</sup>Hotta, tiima: return to one's base at the end of the rainy season.

<sup>4</sup>For certain groups, the dry season base increasingly coincides with the transhumance area (especially since the last drought in 1973).

of transhumance returns to normal. The following year all efforts will be made to return to the ngenndi;<sup>1</sup>

- o in contrast the perol is migration which takes the herders out of the usual transhumance orbits and the limits of the ngenndi. The perol may either be temporary or permanent.<sup>2</sup> Permanent perol is rare and requires serious reasons. The perol may be made in a relatively short space of time (a few weeks) or progressively, by making short journeys from one year to the next, according to the vicissitudes and choices of nomadic life.

This mobility signifies many things for the woDaaBe. First of all, it implies free access to all pastures: the relatively limited resources of the environment oblige the herders and their herds to adopt this system of constant mobility. This is an essential factor for the woDaaBe. Newcomers in the region occupied at the present time,<sup>3</sup> they have no methods of organizing the space or control of pastures. Historically, however, this mobility was of profound political and cultural significance: it is through this migration that the woDaaBe groups have kept their traditions and cultural identity.

This mobility nevertheless does not mean "instability": it is in no way the result of irrational psychology, whereby departure is considered an absolute need, there is no link between the herders and different places. The woDaaBe are not nomadic in principle: they are nomads in order to adapt best to the environment and to make better use of resources which are extremely scattered and irregular.<sup>4</sup>

This mobility has ultimately had a tremendous influence on the social structures and the mentality of the woDaaBe: the simplicity of their

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<sup>1</sup>For example, a group of woDaaBe Bii Korony'an koron of the weDDinde lineage group used this strategy five times during the 1970's. From their ngenndi (region between In Waggar, and Ichin Tabaraden) they moved down to the south of Dogon Douchi, to the north or Dakoro, to the west of Tillia and into the region of Aderbissinat.

<sup>2</sup>Temporary, like the perol of a group of Njaptp'en and Jiijiiru who left Ader for Damergou during 1975-76 (today they have almost all come back.)

<sup>3</sup>The first group of woDaaBe arrived in these regions only 60-65 years ago.

<sup>4</sup>The woDaaBe are aware that before the beginning of this century they were considerably more nomadic than they are today. This change in lifestyle was the result of certain social, political and environmental factors.

living conditions, their eating habits, even<sup>1</sup> family bonds are characterized by the adaptability and flexibility.

## X.2 The Circulation of Cattle

In woDaaBe society, more than in any other pastoral community, livestock move extensively from one herd to another, through complex systems of temporary loan, donations and caretaking.

This widespread circulation of animals has a very important social significance: the transmission of animals from father to son (inheritance ante mortem) allows for the formation of new households which are economically independent. Furthermore, with the allocation of animals to wives (the dowry given to the father of the wife), animals given as a token of friendship (haBBanae, diilae) and animals entrusted to other herders or their kin etc. (cf. XII), this circulation aids the reproduction of the society itself.

From an economic point of view, this practice is of primary importance because it solves the problem of "surplus" livestock.

"Surplus" in the traditional boDaaDo economic system is not reflected in an accumulation of wealth but is regarded as an enhancement of a person's prestige by extending his relations. "Surplus" is a prestige symbol: the rich man does not use it to trample on others, or to accumulate as many animals and as much capital as possible. On the contrary, "surplus" has a completely different meaning: it is "an expression of social life." "Economic surplus" in WoDaaBe society is thus a "surplus" of prestige, of influence and power. By circulating animals within his clan, the rich boDaaDo does not invest his interests in the herd as captial per se;<sup>2</sup> rather it is a means by which his status in society will be enhanced.

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<sup>1</sup>For psychological and cultural reasons, the woDaaBe like to repeat that their lives as nomadic herders is a ndonu (a heritage, a tradition, a custom). It distinguishes them from all the other ethnic groups.

<sup>2</sup>It is simple logic expressed by a proverb: hokku to teptataa: "Give where there is a possibility of your getting returns". This is not a matter of individual egoism; rather it is an expression of the vital interdependence which exists among individuals: those who I can help today will help me tomorrow. This system of distributing one's animals to others as loans and gifts is a sine qua non for the functioning of the pastoral economy as a whole.

In short, livestock creates and consolidates social relations, family ties, bonds of cooperation, etc.<sup>1</sup> Thus, class divisions in boDaaDo society are expressed in<sup>2</sup> terms of social prestige and not on the basis of capital accumulation.

### X.3 Increase in the Herd's Number

Every boDaaDo herder is preoccupied with increasing the size of his herd. This desire is not due to an irrational type of economy, based on culture and mentality, whereby everything is centered on and impeded by a quest for prestige. On the contrary, the desire to increase the herd's number corresponds to a vital need and expresses a critically important strategic choice, in relation to all the hazards and constraints of nomadic life in the Sahel.<sup>3</sup>

By constantly trying to increase his herd, a BoDaaDo seeks to find "security"<sup>4</sup> for himself and his household. The herd, then, is security itself.

Milk constitutes the basis of the WoDaaBe diet.<sup>5</sup> At the same time, it is an important exchange commodity which enables them to enrich and

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<sup>1</sup>It could be said that livestock create the bonds of kinship and alliance in woDaaBe society: by circulating the animals among the different groups, continuity and the cohesion of these very groups is ensured. Linguistically, this fact is expressed in the word duDal; its original meaning--place where the animals are kept to the west of the camp--has been extended to the herd itself and also the social and family bond which unite persons having access to the same herd. Thus, reference is made to duDal baaba to designate all paternal ancestry and duDal inna to designate all maternal ancestry.

<sup>2</sup>There are no other bases on which class distinctions are made in traditional boDaado society. The material wealth generated by a herd is very relative and in fact entails very little change in the lifestyle of the owner.

<sup>3</sup>This obviously does not justify the tendency of some herders to accumulate large herds: this is not the norm and such herders are harshly criticized by the WoDaaBe themselves. Furthermore, since the 1973 drought, there are almost no more extremely large herds.

<sup>4</sup>This is expressed by the saying: only one thing is sure and that is the cow! All else is a lie (nagge tan no farilla, ko hori fu no fewre).

<sup>5</sup>During the dry season, milk makes up 20% of a boDaaDo family's diet and more than 70% during the rainy season.

vary their food intake (through barter, cf. XI.2). However, milk production is heavily dependent on the size and composition of the herd: it varies from year to year, fluctuating greatly from one season to another. This production cannot be kept at a minimal level without a specific strategy, which involves keeping a relatively large number of milk cows in the herd (cows which are already producing milk and cows with milking potential; cf. Annex 4.)

In woDaaBe herding practice, the number of animals is of paramount strategic importance, while a simple increase in labour expenditure is not translated "ipso facto" into an increase in production. The number of milk cows in his herd gives the boDaaDo herder a certain degree of freedom with regard to all economic constraints beyond his control (laws governing trade, fluctuations in livestock prices, variation in the relation between livestock and cereal prices, etc.).

Furthermore, the possibility of drought and animal disease constitutes the framework within which boDaaDo (and Sahelian) herding is practiced. In this atmosphere of uncertainty, every herder has constant fears about the health of his animals and attempts to keep the herd intact; he feels that his animals are continuously threatened. A herd grows slowly in number,<sup>1</sup> but it can be wiped out in the space of a few days. This is why every boDaaDo herder attaches great importance to the number of animals in his herd. The "number becomes a "margin of security": a large herd allows the herder to protect himself against the vicissitudes of the environment.

There is a direct relationship between herd size and family size: a large family, in order to survive, must have a large herd.

Finally, in the woDaaBe's conception of society, the individual is not isolated; with his family, he belongs to a whole network of relations determined by kinship and friendship. Every individual is a member of a family, a lineage group, a clan. Every boDaaDo seeks security in the increase of his herd which will enable him to become more bound to others in real solidarity and interdependence. Thus, a certain number of animals are taken from the productive circuit and placed in the "social circuit" (cf. X.2). In this way, increase in herd size becomes a social imperative.

For every boDaaDo, the herd is a means of production as well as a commercial commodity, his source of employment and prestige. In short, their increase in herd size means the increase in his welfare and security.

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<sup>1</sup>According to the calculations made by Dahl-Hjort ("Having Herds" 1976), a herd of cattle, under Sahelian conditions, can double in size in a period of 21.5 years.

#### X.4 Selection

With regard to decisions about the size and composition of his herd, the boDaaDo herder must adopt an important strategy: selection.

A BoDaaDo bases the selection of his animals on three main criteria:

- fertility (dimgol)
- physical resistance (Yiira)
- milk production (kosam)

An animal is judged useful or useless according to these criteria.<sup>1</sup>

With respect to fertility, that is, the ability of an animal (male or female) to reproduce and contribute to the increase of the herd, the woDaaBe sell any cow unable to be impregnated (such a cow is called tonnotoonge, cf. III.1). This is done to any animal which continually aborts (an animal is called wonnoe if it has had three or four consecutive abortions, III.2). All sterile animals (rimare) are considered useless. As far as males are concerned, any bull which does not meet the physical requirements of a good sire (kalhaldi) is removed from the herd (it is castrated at about 2-3 years of age and sold). The rimtitandeeeri (cf. III.1) is also removed from the herd.

Physical resistance is a vital prerequisite, because the boDaaDo herder knows only too well the difficult conditions in which the animals have to live: inferior pastures, long journeys, long distances from the camp to the water points in the dry season, etc. CeeDnuDi animals (i.e. those which have difficulties withstanding the ceDu, or dry season) are removed from the herd at the first opportunity. The same applies to balamijji animals which do not have good physical resistance (Yiira) and which grow weaker every season (they are also called yuku-yukumbaaji). Handicapped animals are also considered useless: "monstrosities" (daaBe, cf. IV.2) and animals maimed by a serious illness (like the curulaaji following an attack of safa; or the cuurnuDi, maimed by cuuru, cf. VII). The hippunge cow is also removed from the herd (this is a cow which has had generalized mastitic or any cow which is considered old (over 8-10 years of age).

Finally, any animal which is considered Daakale, having insufficient lactation or none at all and which cannot manage to feed its own calf, is rejected. The same applies to the wanyoe cow which, although it is normal, refuses to feed its calf or to be milked (cf. V.3) and the hippunge whose udders have become atrophied and can no longer yield milk. This criterion of "milk" is also used in the selection of bulls. The woDaaBe say that there are "milk" bulls (ga'i Di kosam) and bulls "without milk". This refers to bulls which will engender heifers which will be good milk cows and bulls which will produce

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<sup>1</sup>The love which a boDaaDo has for his animals is not a sentimental bond. He loves his animals because of what they represent for him: food, security, means of production, work, etc.

heifers which will be poor milkers. Unlike Western genetics, traditional boDaaDo genetics attribute milking characteristics to the father and not to the mother.

All of these animals removed from the herd are sold at the markets when the herder considers it timely and necessary. They can also be exchanged for other animals (cf. XI.2) and used for traditional ceremonies (like marriages, naming ceremonies, etc.).

Thus, according to this strategy, the herd is constantly renewed based on criteria such as utility and productivity.

#### X. Other Strategies

The management and utilization of the boDaaDo's herd are based on other strategies which vary in importance. Among them are the following:

- o Renewal of the herd: every herder is obsessed with the aging of his animals and with the desire to replace them with younger ones which are more resistant to the harsh conditions of the Sahelian environment. The constant renewal of the herd is imperative for its survival and the woDaaBe are very much aware of this fact.<sup>1</sup>
- o Diversification of livestock: the boDaaDo herder is becoming increasingly aware of the need to diversify the kinds of animals he raises, in order to better withstand crisis periods (droughts, epidemics, etc.) and meet his needs. He knows that he must always choose the animal which is best able to cope with the environment. The gradual introduction of camels into woDaaBe herds, for example, enables the herders to have an additional supply of milk at the very time when the cows' milk production is decreasing (in the middle of the dry season). Small ruminant raising is increasingly being adopted, sheep and goats are raised specifically for sale to meet countless minor cash needs without having to touch the cattle-capital. Finally only recently introduced into woDaaBe herding practices, donkeys constitute a considerable auxiliary work force (transport, journeys, traction) and require very little care.

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<sup>1</sup>It has often been written of the woDaaBe that old cows are not sold, but are kept in the herds even after the end of their reproductive cycle: it is said that they are particularly well immunized against epidemics and in case of a catastrophe, could form the nucleus of a new herd. This opinion does not seem to be accurate, nor does it seem to be in keeping with what the woDaaBe think and do. Quite apart from the fact that this immunity would only be effective against a limited number of contagious diseases, the woDaaBe know very well that old animals do not easily withstand dry season stresses.

- o Division of the herd: during difficult years, the division of the herd (cenndol na'i) is also a defense strategy. The herd is divided in two: the first group is made up of the palkaaje which consists of bulls, "dry" cows, young animals; they stay in a distant area, which is rich in pasturage (far away from the markets, with easy access to water points). The second group is the curalji, composed mainly of milk cows. These cows follow most of the family's members who go down to regions near the sedentary zones in order to benefit from the proximity of markets, the possibility of barter and the facilities for transporting food, etc. This division of the herd is systematically applied in certain regions, especially since the last drought.<sup>1</sup>
  
- o Adaptation to the economies of other ethnic groups: every boDaaDo herder knows that his lifestyle is not an autonomous and independent way of life; contact with farming populations and other nomadic communities is of vital importance.<sup>2</sup> The woDaaBe economy, then, is linked with groups' economies, through barter of milk products with the sedentary groups (cf. XI.2), through the tobacco trade with the Tuareg (cf. XI.2) etc. All these economic activities have a tremendous influence on herding practices (in terms of protecting the cattle-capital, production decisions, the choice of residence, etc.) and constitute an important strategy.

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<sup>1</sup>It is very widely used for example, by the woDaaBe living in north Dakors and the In Tawila-Mayata region (most of the herd remains in the north).

<sup>2</sup>This is expressed by a proverb: beccelesi'ire, bec-beccel ladde: a little rib turned to the village and another to the bush.

## XI. ECONOMY AND UTILIZATION OF THE HERD

### X.1 Consumption of the Herd's Products

The woDaaBe's system of production is essentially linked to herd utilization.

Direct utilization of the herd's products is very important, above all, with regard to milk production. In the rainy season a large part of herd milk production is consumed by the family,<sup>1</sup> while in the<sup>2</sup> dry season the family consumes between 60% and 100% of its cow's milk.

Milk is mainly consumed fresh (kosam BiraaDam): but the woDaaBe also mix it with cooked millet in the form of gurtel, or with raw millet flour in the form of gaadaaji. Day-old milk (called Yeena) can be consumed alone or mixed with pounded millet in the form of gappal.

Butter is used in a wide variety of ways. Fresh butter is used to grease skins (cords, bags, gourds, shoes, etc.) or the hair. Cooked, it is preserved in bottles or other containers and used in the preparation of sauces.

The products of the living animal which play the most important role in the family's utilization of the herd. Livestock are not considered as a directly consumable commodity, since the woDaaBe rarely eat the meat of their animals. Animals are slaughtered only during rituals or traditional ceremonies (cf. XII), when a distinguished person comes to visit, or following serious illnesses or wounding. The leather and skins of the slaughtered animals are used to make cords, fetters, shoes, etc. The woDaaBe do not know how to tan the hides (they make them supple by beating on them for a long time).<sup>3</sup>

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<sup>1</sup>Milk is consumed by the household, but also by the members of the camp as a whole, since the men's share is pooled (cf. XII.1). In accordance with the Badal system, the milk is circulated among camps: a camp takes a part of its joint milk supply and gives it to a guest or a distinguished person in another camp, as a symbol of friendship and respect.

<sup>2</sup>This direct consumption varies greatly from one group to another and is related to the practice of barter.

<sup>3</sup>In connection with the direct utilization of the herd, mention must be made of the important work done by some animals in terms of transport, journeys, drawing water, etc. Pack bulls, donkeys and camels perform very important tasks which are very difficult to estimate.

## XI. Traditional Marketing

Traditionally, the boDaaDo herd is commercialized through two major systems of exchange:

- o The mbatta, or barter, is practiced on a wide scale. One animal is exchanged for another (in general an adult animal for a young one; the former is killed as soon as possible afterwards during traditional ceremonies or sold at the markets); sometimes an animal is exchanged for an object or a product (camel saddle, sword, festive clothing, cereals, etc.) or for services rendered by a blacksmith, healer, spritual leader, etc.<sup>1</sup> In these exchanges, one may give or receive a BesDaari, or bonus.

The entire traditional economy is centered on this kind of non-commercial production. In the mbatta (also called hollore), animals are simultaneously the object and the means of exchange. Not only is it circulated like merchandise, but it also can be exchanged for several types of merchandise.<sup>2</sup>

- o The sippal, exchange in the more limited commercial sense of the word, is practiced at certain times of the year by certain groups.<sup>3</sup> The sippal primarily concerns dairy products (curds, butter, cheese, etc.). It depends on a number of variables: the quantity of the family's milk production (primarily reserved for domestic consumption), the possibility of getting a product in exchange for one's goods (most often cereals from Tuareg camps or Hausa villages) and the material possibility for the women to handle all the work that sippal entails (preparation, trips, etc.).

The woDaaBe barter curds or butter.<sup>4</sup> In contrast, they do not barter fresh milk. They attribute this not to practical reasons (the camps distance from areas where bartering might take place, the fact taht fresh milk curdles rapidly becuase of the heat, etc.), rather they give "cultural" reasons: it is not good to sell or barter fresh milk because this is not in accordance with custom, which rules that fresh milk should be offered as a gift (njammu) to a guest or a friend...

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<sup>1</sup>The dowry (puDDirdi) could also be considered as a particular form of exchange.

<sup>2</sup>The barter system is increassingly being transformed into a commercial transaction: the women give milk or butter and receive money in return. This is true especially in Hausa villages (as millet has become a rare commodity).

<sup>3</sup>Mainly between November and April.

<sup>4</sup>Some woDaaBe also barter the cuku or dried cheese (the BiBBe Denke of Damergou for example). Others barter cows' milk mixed with goat's milk (the Bii Korony'en in the In Tawila region, for example)

During the cold season, when milk becomes scarce, two measures of curds are exchanged for one measure of millet (though the conditions of barter vary greatly from one region to another, depending on supply and demand).<sup>1</sup>

The tobacco trade is placed by the woDaaBe in the sippal (barter) category and not in the category of commerce (tintilaaka). It is very widely practiced in certain regions.<sup>2</sup> The woDaaBe buy large quantities of tobacco on the market even if they do not smoke or chew it. They exchange tobacco with the Tuareg in the northern zone for large quantities of cereals (millet and especially in the past, wild fodder). The woDaaBe know that the Tuareg consume tobacco in large quantities and always need it.

The advantages of this kind of sippal are enormous. Economically, the profit margin is high; a small portion of tobacco purchased at 500 CFA can be exchanged for an amount of cereal worth 2,500-3,000 CFA. Practically, tobacco is a convenient form of exchange: instead of transporting huge quantities of cereals for long distances by camels or donkeys, only a small pouch of tobacco leaves has to be carried.

### XI.3 Modern Marketing

The traditional economy of the woDaaBe was not oriented towards the market. Modern life has brought about major changes and new requirements; the payment of taxes, changes in consumption patterns, increases in cost of living, etc. The woDaaBe have, therefore, been obliged to gradually reorient a part of their herding strategy toward the market economy in which livestock is simply a means of making money. Thus, regular trips to the market (there are many in the pastoral zones) are now regarded as a necessity.

The woDaaBe sell their livestock for several reasons: the need for cash to buy basic items (cereals, clothing, waterskins, salt for the cattle), but also the need for money to cover "exceptional" expenses which strain the family budget. (cf. Annex 2).

Mainly non-productive animals which the woDaaBe want to get rid of are reserved for sale (corrol). After that, mostly males are sold: castrated bulls between 4 and 6 years of age. Young bulls which have scarcely been weaned are kept in the herd after being castrated so that their commercial value will increase as they mature. As far as females are concerned, cows which have already reached the end of their productive cycle are sold.

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<sup>1</sup>It must be said that certain groups of woDaaBe rarely practise sippal (e.g. the BiiHamma'en in north Dakoro).

<sup>2</sup>For example, the Gojanko'en in the Tchin Tabaraden region. The soppal to obtain wild fodder (sabeeri) is practiced mainly by the woDaaBe to the west of Tillia.

TABLE A

Bulls Sold by a woDaaBe Group\* Between  
December 1980 and June 1981

(100 Bulls Sold Only at the Markets)

<u>Age</u>	<u>Percentage</u> (%)
1-2 years	3
2-3 years	16
3-4 years	43
4-5 years	20
5-6 years	9
6-7 years	7
7-8 years	-
8-9 years	-
+ 10 years	2

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\*Remarks:

- 62% of these sales were considered "necessary sales" by the woDaaBe.
  - 20% of the sales were made under circumstances which were not considered ideal.
  - Only 18% of these sales were made in conditions which were considered good: this applies primarily to oxen.
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The number and type of animals sold vary greatly from year to year and depend on factors which often present a problem for the herder (size and structure of the herd, seasons, requests, etc.) for those who maintain a diversified species mix, it is possible to protect the cattle-capital by selling small ruminants.

The period of peak livestock sales is between the cold season (dabbunde) and the beginning of the rainy season, that is, between the beginning of December and the end of June. The woDaaBe know that prices begin to rise in March and hit their "ceiling" at the end of

April and beginning of May.<sup>1</sup>

#### XI. 4 Other Productive Activities

Under normal circumstances, managing the herd is the sole economic activity of the woDaaBe. But in some cases (families with small herds, difficult years, etc.) other activities may be undertaken.

- o Agriculture (demal). It is rare for the woDaaBe to till the soil. But for certain groups and certain families this has become a traditional practice.
- o Migrant wage labour (tigu). During the dry season, especially between December and May, many people leave their camps, their herds and their families for the large cities in the south (Niamey, and to a lesser extent Dakar, Abidjan, Lagos, etc.) to earn money. This practice has taken on enormous proportions especially since the 1973 drought. Before that, only adult women used to leave the camp (in

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<sup>1</sup>The animal's health and weight play a decisive role in determining its commercial value. The woDaaBe have several categories for judging an animal's health and thereby estimating its commercial value. The following distinctions are made:

- a. The faynge cow: the fat cow which is ideally robust.
- b. The harnge cow: the cow which is "full".
- c. The foYnge cow: the lean cow, whose body weight has decreased (foyre) and which is run-down.
- d. The woffinge cow: the cow which is exhausted, extremely thin and weak.

To classify an animal the woDaaBe use a number of criteria. Some parts of the animal's body are good indicators of its state of health. The dango, the thighs of the two hind legs and the becce, the ribs: when the animal is healthy, these parts are covered with a layer of fatty tissue. The roundness of the hump (YuuBre) is also a good indicator. This is also true of the yilo-yillonde, or bone at the base of the tail: if the animal is in good health, this bone is not visible; it is said that it is possible to place a calabash full of milk on the area around the yilo-yillonde bone of a very fat cow without it falling (the fat supports it). However, young people of about thirty years of age say that they have heard old people say this and that they themselves have never seen proof of this; this is a sign that today times are harder than in the past.

particular women from certain clans<sup>2</sup>), but now all categories of woDaaBe leave, including many boys and girls.

A seemingly endless variety of activities are undertaken to earn money: the woDaaBe sell medicines (plants and roots), filters, amulets, etc. They guard houses at night, braid women's hair (moorol) and perhaps engage in prostitution. The tigu does not represent a stable source of income because it is unforeseeable and variable. One has to contend with all the hazards of a long journey, with the difficulties involved in crossing borders, the threat of thieves, diseases, etc.<sup>3</sup>

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For example, the woDaaBe Njapto'en Yaakubalde to the north-west of Kao; or the few Bii Hamma'en to the south of Chakabal (north-east of Dakoro).

<sup>2</sup>In particular the Bii Hamma'en.

<sup>3</sup>Two types of tigu can be distinguished: the one conducted nearby, which takes the women into nearby towns or villages (Tanout, Dakoro, Tahoua or Niamey) and the one carried on far away, which takes people to the towns of coastal countries. The first kind is carried on by the BiBBe Denke, the Njapto'en or the Cahidooji from the west. The second type is more widely practiced by the groups in Central Niger (Bii Hamma'en, Nasawasawa, Yaamanko'en, etc.).

## C. ANIMAL HUSBANDRY AND SOCIAL LIFE

### XII. HERDING AND WODAABE SOCIAL LIFE

#### XII.1 Life in Society

Generally speaking, it can be said that livestock and herding practices condition all aspects of woDaaBe social life at all levels, quite apart from the whole set of rites and ceremonies in which livestock play a central role.

Let us first examine the household: wuro. This is the basic social unit, where the head of the group (jom wuro) is responsible for his wives (or for his wife, depending on whether the family is polygamous or monogamous) and their cuuDi or family enclosures. The jom wuro is also the jom iyaalu, that is, the one responsible for all the members of his household: the members of his family, his children (BiBBe, sukaaBe) and possibly older relatives (father or mother), younger unmarried brothers, children of a dead brother or "adopted" children (agolaaaji, children belonging to the wife) and also, more rarely hired herders (fulBe).

A young man may become a jom wuro rather quickly; with the system of inheritance ante mortem, he can quickly constitute his own herd and become independent of paternal authority. Very often, at the beginning of married life, he has no "work force" (as he does not have any children who are old enough to work); he therefore enlists the services of his own unmarried younger brothers. When his first son reaches working age (after 7-8 years of age) he will have greater autonomy.

All the household's life is governed by factors related to the herd: these include the distribution of work according to age and sex, an extremely mobile lifestyle in any season, and particular kind of living conditions, reflecting the temporary and untable way of life, where personal and household effects are reduced to a bare minimum. This does not mean that domestic life is led only for the welfare of the herd: rather, it is organized to attain a harmonious balance, an interdependence between livestock and men. The mobility of the group enables livestock to benefit from pastures which are unevenly distributed in time and in space; furthermore the good health and general conditions of the herd is profitable to everyone concerned, since it means increased lactation (more food for the whole group) and an increase in market value (social function). The flexibility of group life enables animals and men alike to benefit from external conditions. The group has a great deal of autonomy and independence which gives rise to a flexible kind of social organisation, which is well adapted to Sahelian ecological conditions. The group can also enjoy considerable economic independence.

Pastoral life is what brings together or disperses the more structured social unit, the camp or hoDorde. This unit reflects the woDaaBe flexible conception of the organization of society, according to which dependence on the herd and the environment is a central factor.

At the camp there is no community work: the herds are separated and each wuro has to count on its own work force. But the hoDorde, or residential community, shares pastures and quite often communally owns a water point.<sup>1</sup>

But when the focus of the social dimension of the hoDorde is the two community meal times: in the morning (for the njewaari-kooYe) and in the evening (for the kirtaari). Food is distributed not only at household level but at community level (hoDorde) as well. The nyiiri (prepared millet) and the kosam (milk) are pooled; the women of each suudu (family enclosure) take them to the daDDo, a kind of small enclosure made with branches which delimits an area to the west of the camp where the men meet twice a day.

The community meal is the primary expression of the residential community. The individual's "work" (basically, the milk of his herd, consumed directly or used to procure cereals) is mixed with the "work" of other members of the community to form a common product, which has no individual owner. A guest (koDo) is never the guest of a given family but of the camp;<sup>2</sup> he stays in the daDDo and is fed by the work of the camp as a whole.

The redistribution of dishes and calabashes brought by the women is supervised by a sort of deacon who permanently assumes this role. The men eat in groups (joole) based on age and kinship. Strict and precise observances govern the groups's seating arrangement (young men to the north, older men to the south) as well as the order in which the members of each group are served.

Finally, herding plays a fundamental role at the most structured level of society, that of the lineage group, the taarde (also called wumre or wuro) or clan. The clan forms the basic migratory group which generally shares the same pastures, the same water points and follows the same transhumant routes (dumruDi).

During the rainy season, the arDo (chief) and his scout(s) lead the taarde to specific, well-known regions. He comes into contact with other taadre or even with the entire lenyol (which is made up of roughly 4-5 taadre on the average). Thus, on the basis of common interests related to herding, associations are formed in nomadic life, which in time give rise to other lineage groups which are more

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<sup>1</sup>The boDaaDo camp is preferably made up of the gure (pl. wuro) of two brothers, or of a father and son.

<sup>2</sup>Even the women have a meal time community, which, however, is much less organized than the men's.

complex. This communal life in the same pastures with a common concern for herding is what underlines the bonds of kinship.

After the rains, the taarde returns to its base(s) (ngenndi) where it disperses into smaller groups of koDolle (camps). There are fewer family units (gure) per camp since the head of each family tends to settle independently until the next rainy season.

BoDaaDo social life is thus profoundly and directly influenced at all levels by herding.

## XII.2 Naming a Child

In order for a boDaaDo child to be given a name, his or her father must slaughter an animal from his herd. Without this "shedding of blood" the child remains nameless: it is nothing. Thus it is the sacrifice of an animal which allows a man to live. From the moment of his birth, the man-animal relationship is a relationship of life and death.

For the eldest child (afo), whether boy or girl, the father slaughters a bull (or a cow): this is the toko animal (toko is the act of naming) or tokoori. For the other children, he slaughters a ram or ewe.

For the first-born, the toko ceremony is much more solemn and public than the others. It is celebrated when the entire clan gathers during the rainy season, in the course of a renndo (also called worso). For the other children the toko may be conducted anywhere and at any time. According to the woDaaBe, the first-born is what assures a man of his manhood, and his value should be openly expressed by ritual and by conduct.

The tokoori of the first-born is always a beautiful animal: even the most beautiful of the herd, it is said because it is chosen directly by the members of the wife's family. In woDaaBe society, the young wife returns to her father's household to have her first child. It is there that the husband's kin go to see her a few months after the child is born, to conduct the rites prior to her return to her husband's house.

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<sup>1</sup>In fact, the sacrifice (humto) of the animal is done by the brothers of the father (i.e. the paternal uncles of the newborn). The father does not even participate in the festivities; in fact, he even goes away. His attitude is one of pulaaku, restraint, modesty which governs the behaviour of every boDaaDo during the most important moments of his life.

The tokoori is slaughtered and the meat and skin are ritually shared. Adult males meet in the cuura, an enclosure made of thorns situated to the west of the camp which is on the east side (in contrast to the usual daDDo). Here they eat the meat together.

Attending someone's toko and eating the meat of the tokoori gives one a kind of priority: the rights of the firstborn and the eldest.

### XIII.3 Marriage

A man enters into a marriage contract with a woman by slaughtering and giving away his animals. There can be no marriage without livestock. A man who owns no animals can never marry and remains alone.

The strength of the herd gives a man strength because it is through marriage that a man obtains descendants, that he increases, that he multiplies.

In woDaaBe society there are three types of marriage: koobgal, or marriage arranged by the man's parents when the spouses-to-be are small children; te'gal (also called Deere) or marriage contracted between two adults by mutual consent and finally, ba'atal, or marriage of a woman and the brother of her deceased husband.

In order to contract a koobgal marriage, three bulls must be slaughtered consecutively: they are simply called ga'i koobgal (the bulls of a koobgal marriage). These bulls make it possible to "tie" the marriage (haBBa). The third is the most important: the final marriage ceremonies (Yamtol, puDDol, almaaki) cannot be conducted without previously slaughtering the third bull. The koobgal marriage, whose different phases last several years, should be publicly and solemnly celebrated, in the presence of the entire clan gathered at a worso (which on this occasion is called worso ga'i or gathering of bulls). The meat and skin of the slaughtered animal are ritually shared.

To contract a te'gal marriage, only one bull need be slaughtered (this act is alluded to as o hirsii: he has slaughtered, referring to the fact that someone has married a woman according to the te'gal). When the bride arrives at the groom's camp, a bull is hurriedly slaughtered (sometimes a ram). The meat of the te'gal bull is not ritually shared, but is the subject of a noisy dispute among the young people; they fight for it, tearing it into small pieces, while laughing and teasing each other. The te'gal can be celebrated at any time of year.

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<sup>1</sup>Every te'gal is in fact an "abduction": the woman is abducted, with her consent, from her legitimate husband. The te'gal is normally an exogamous marriage, (contracted with women of another Tenyol) while the koobgal is endogamous (contracted with a woman who is one's close relation).

The third type of marriage (ba'atal) does not require a special ceremony. A ram is simply slaughtered.

For a marriage to be referred to as koobgal, the bride's father must be given a dowry of one or occasionally two heads of cattle: a heifer, which is called puDDirdi by the woDaaBe. The puDDirdi animal belongs to the wife's father: he may dispose of it as he likes. There is no puDDirdi accompanying the te'gal marriage, but it is not rare to observe a te'gal marriage transformed into a koobgal marriage by the gift of puDDirdi animals. The obvious reason for doing this is that the koobgal marriage confers on the husband a certain number of rights over his wife (the real wife is the koowaaDo, say the woDaaBe) while the te'gal marriage is contracted with a woman who will not necessarily remain with the husband, as she may leave or be retrieved by her family or her legitimate husband at any time, without the husband's having any rights over her.

In these two types of marriage, there is also the gift of animals (called sendereeji); they are allotted by the husband to the wife. They will remain in the husband's herd, but belong to the wife and to the children which she will bear. According to the tradition, four animals are thus allotted: two adult cows, one heifer and one ox. For the koobgal marriage, these animals are "shown" to the wife (that is, her family) during the ceremonies preceding the slaughtering of the third and last bull required for the marriage. As regards the te'gal marriage, the animals are shown directly to the wife, at the time she comes to her husband or when she has been with him for some time and has shown her desire to stay.

#### XII.4 The Death of an Old person

The death of an old person is symbolized by the death of the most beautiful milk cow in the herd. When an old man dies, the most beautiful cow is chosen from his herd and slaughtered. The woDaaBe call this animal saadaka.

The saadaka cow is separated from the herd and a strange ritual is conducted. It is taken out as if it were going to be milked; the calf is there, close to its mother, as are the fetters to bind the legs before milking and the calabash in which the milk is poured. This is to express symbolically the fact that the milk cow is going to follow its owner into the afterlife, the lalhira, and that it will stay by his side, so that he will always be able to milk it and drink its milk.

The calf of the slaughtered animal is given away as alms (sakko).

The meat of the saadaka is eaten by the grandsons (taaniraaBe) of the deceased and by his "social" cousins (demmodorraBe) that is, those with whom he used to have fun. The sons, nephews and the wife (or wives) of the deceased do not touch this meat.

## XII. Animals as Tokens of Friendship

It is through livestock that the woDaaBe express their bonds of friendship, solidarity and kinship.

The nagge amaana or ultimate token of friendship is the haBBanae cow (literally, the cow which is tied for, or on behalf of). It is loaned temporarily: a lender (called arDo or laamu) gives an animal to a friend. He "ties" it to him (haBB ana) until the cow has dropped three times; the three calves will belong to the friend and the cow will go back to its original herd. Thus the loan enables the recipient to benefit from the offspring of the cow belonging to his friend.

The haBBanae cow is also called nannganae (literally: seizure for), or hawtarae (literally: the cow which is co-owned). It is not given for the purposes of making a profit but as a simple token of friendship. By this gesture and by the duties which will henceforth bind the two persons (and their families) together, the woDaaBe express the conception of relations which unite individuals. When the habbanae cow is returned to its owner, the former recipient can become in turn the lender, by "tying" another cow to his former creditor: this cow is called the "tail" cow (Bokkorde). Thus, there is no end to friendship.

A particular kind of haBBanae cow is the soggarae cow, that is the cow that a "social" cousin (denndiraawo) takes on his own initiative and keeps for as long as he wishes (usually for two or three calvings). The soggarae cow is thus used to represent quite a particular type of kinship: the denndiraaku (it must be noted that the one from whom the cow was taken could do the same one day).

The feewnaange cow may also be considered a haBBanae cow: however, this cow is given under very special circumstances. Someone who has lost a cow (as a result of an illness, accident, etc.) is given another one to console him (feewna, literally: to refresh or to console). This animal is given as a token of solidarity and compassion in times of distress. Sometimes for one cow lost, five or more are given as a consolation (peewnol) by kinsmen and friends.

The diilae is also an animal of friendship; it is a milk cow which is loaned for a time (usually for a season) to someone whose camp is temporarily without milk. The recipient is allowed to milk the cow, but the diilae and its calf still belong to their legitimate owner.

Finally, the temporary loan of a sire (kalhaldi) is also a sign of friendship. This form of loan is based on reciprocity; at the end of the loan period, the bull is taken back to its owner along with a

heifer (wiige) given as a token of appreciation in keeping with the tradition of the haBBanae loan.<sup>1</sup>

## XII. Prestige Animals

In woDaaBe society, livestock are for the benefit of man, for the prestige and status which they confer on him and for the respect and admiration which they give him.

This is true first of all for everyday life. The ordinary or distinguished person who wishes to have or to keep influence and prestige within his clan is obliged to show his generosity (yehere) quite often. For his guests (hoDBe), young people who come to celebrate with him and people who he has personally invited to spend a day with him (nyalannde), he slaughters a bull or a ram and meat is then eaten. The bull is called ndi yeboore (literally: the bull of esteem). By offering this bull, one enhances one's standing, one's reputation and one's glory. Word of one's generosity will spread rapidly and one's prestige and reputation will be ensured. Everywhere, people will sing the praises of the one who knows how to entertain his guests, who has the virtue of njowraaku. It will be said that that man is a gorko (literally: a man), a tagu mo fufulde (a person who has fufulde. This word refers more to a way of life and of being than to the language).

Livestock also play a very important role in particular instances, for example, when certain individuals assume a social function.

The leader of the young people (iaamiDo kal'en) slaughters a bull immediately after this honour has been bestowed on him. The bull he slaughters must be large and is called laamordi (the bull of authority). Its meat is eaten by the young people, who will extol the generosity of their new leader. By this act, the laamiDo kae'en can assume his duties: preparing and organizing all youth meetings, arrange the dances and chants at these meetings, remind his peers of their duties and responsibilities according to tradition, etc.

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<sup>1</sup>The haBBanae cow is given as a token of appreciation to the person who watered one's animals for a certain time, the one who made a gift of a bucket or a calf cord, or the one who looked for one's stray animals.

<sup>2</sup>This is the daDDo, a festival which lasts three days, organized by young people from another group.

## XII. The Herd and Games

The woDaaBe also use their herds in an important community game: the kokkol daande (literally: the act of giving or presenting the neck).

On a worso day, when all the camps and the herds are gathered together, the herders have fun with their herds (fijjira) to test the degree of attachment which exists between the animals and their masters.

A herder runs away from his herd, and calls the animals to make them gallop behind him passing through the crowds of people and other herds. The ma'andiDi animals (those which obey their master's voice), the kalluDi animals (those with a fierce temper) are not impeded by the presence of other herds and herders; they go right through the crowd, keeping their eyes fixed on their herder. It is then said, na'i kokkii daande: the cows have given, presented their necks! The crowd roars and praises the herder because of his cows. In contrast, lazy animals (wuundeeji) or animals without character (mbeemDi) are distracted by the crowd and other animals, lose sight of their master, and stop in their tracks, to the great shame of the herder.

### XII.8 The Bakaawal Bull

The bull sacrificed at the end of bakaawal (inter-clan meeting also called ngaanyka which lasts seven days) is the animal which in the woDaaBe's view best symbolises the bond between man and livestock.

On the last day of bakaawal, the distinguished person (dohinaaDo) at whose home the festival was celebrated brings the bakaawal bull to be slaughtered and eaten by all presents.

This bull is slaughtered in a special way: it is slaughtered but left intact, that is, its legs not are cut off, nor are its entrails scattered or its skin divided. It is left in this condition on the ground; its nostrils are pierced and a small, plaited cord is strung through them (this cord is called the ba'ajol and is made from the twigs of the barkehi tree). Everyone comes to admire the cord, exclaiming here is a fulfulde ba'ajol, this is the cord which unites all the woDaaBe, which makes them what they are!

In the opinion of the woDaaBe, this bull epitomizes all the mboDangaaku, all the traditions, all the customs, all the attitudes which have been "inherited" (ndonu woDaaBe). Nothing is missing: everything has been fulfilled and observed during the bakaawal meeting. The social ties have been strengthened and customs renewed. This slaughtered bull symbolises all of the boDaaDo's aspirations, his entire experience: it therefore, has a "sacred" value. From this moment on whenever he refers to the ba'ajol fulfulde, he utters a word with a powerful meaning, to which no boDaaDo can remain indifferent.

PART III

XIII. Livestock and Herding  
In Proverbs

XIV. Herding and Tradition:  
Interviews with boDaaBe herders

### XIII.1 LIVESTOCK AND HERDING IN PROVERBS

#### XIII.1 Livestock: Wealth, Power and Prestige

In woDaaBe culture, livestock (jawdi) is the leitmotif of a large number of proverbs (balnDi).

The term jawdi refers primarily to livestock, but it is also synonymous with "property, riches, possessions" (in certain Fulani dialects the original meaning of the word has completely slipped into disuse).

A very simple and explicit saying summarizes the whole woDaaBe philosophy with regard to the wealthy and wealth in general, "he who has is worth more than he who has not" (jogiiDo e Burii mo jogaaki). The saying is followed by an explanatory sentence: "it is better to have cattle than to have none at all, just as it is better to be well than to be ill." Anything that signifies an "increase" (BesDaari) for a man is worth more than whatever implies a "decrease" (ustaari) or a lack (dullere).

This praise of wealth is expressed again in a particularly concise proverb: jom waawi, "he who has possessions is able" (iom waawi). He who has nothing just follows the advice of others" (tokka): no one listens to him and he is not able to impose his will. The context referred to here is the kinnal, the nomadic council which meets during the rainy season (cf. XII.6). During the council's sessions, everyone has the right to voice his opinions, even those who do not possess cattle. However, the opinion of the latter has little impact ("all he can do is talk" o wolwey tan), while the opinion of the owner of a large herd carries much weight. Thus, the possession of cattle confers a veritable social "status" on a person.

For the herder, livestock is a source of two kinds of power: power over other people, ("influence, sway") and power over his own life, ("freedom and decision-making power").

According to another proverb, a man who has little is like one whose eyes are so small that he is virtually blind. He cannot look at the things he wants to see; he can only look up and not down. This is what the proverb says: "small eyes easily go blind:" (gite pamare mbumloyta). As to the rich man, he has "large eyes" (gite mawDe); he sees everything, he can look everywhere, his head is held high, he is self-sufficient (o heYYii hoore mum).

This same idea is indirectly expressed in another proverb, in which the main character is a poor man: here, he is not compared to a "blind man" but to a slave (gayloo). Whatever the slave does is never good, regardless of what he does, he is never right (gayloo ko waDii eptaay). If one evening he brings the herd home before sundown, he is told that he has brought the animals home too early and is criticized for not grazing them for a longer time; if he brings the herd home after sundown, he is told that it is too late and is

criticized for taking risks, as he could have encountered wild animals on the way.

The possession of livestock means independence, autonomy. The person who owns a herd has to answer to no one. On the other hand, not owning cattle implies dependence, humiliation.

The possession of livestock also means abundance and comfort. Milk is never in short supply at a rich man's camp, another saying goes, and that is the main thing. So what if the milk has not turned to curds? That is neither here nor there. What matters is that it is not bad (kosam heppataa wuro, say Dam Dulla Daanago). Thus, having cattle means that one can satisfy one's needs.

Finally, another idea which is highlighted in several proverbs is that the owner of a herd, a wealthy man, is a man who is sought after, a man who everyone wants to meet and befriend. He is the hand which has grasped food and which is licked, while the other hand, the poor man, is not even considered as worthy of being licked (melingo mustete). Another proverb states that the rich man is dear to everyone's hearts: he is held in high esteem and feared by all, while the poor man is considered only by his own father and mother, (geeto mo koowa, jamDo mo inna e baaba).<sup>1</sup>

The rich man is referred to as "everyone's kin" (diskuDo no banndu koowa). This is a major and demanding responsibility, but he should be proud of it because not just anyone could assume such a responsibility. Another proverb says his role is to be everyone's "dustbin" (jibjoore) since everyone comes to him to unload their problems and worries ("impurities") with the more or less explicit intention of obtaining his help and protection (mawDo no jibjoore).

### XIII.2 The Possession of Livestock: A Tremendous Responsibility

It is true that the rich man is "everyone's kin". However, his allegiance lies primarily with members of his own family. He must not, under any circumstances, forget the bonds uniting himself and his kin; otherwise his wealth loses its significance and becomes a source of shame (semteende). This is what one proverb reminds us: livestock is like a pen containing shame (jawdi no hoggo semteende).

The wealthy owner cannot meet all the requests of his kin; admittedly, he owns livestock, but he cannot distribute his wealth to all his relatives who come to him for aid. If he were to do so his livestock would diminish quite rapidly. Yet, if he does not give away his stock, he is criticized by everyone and "shame will be upon him."

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<sup>1</sup>This rich/poor dichotomy is developed in allusion to the dichotomy between good and bad.

The wealthy man's situation is not an easy one: his responsibility is tremendous. His wealth puts him in an ambiguous position, since it brings him closer to yet, at the same time, farther away from, other people. His social relations are often characterized simultaneously by a spirit of giving and shame.

The rich man is bound to fulfill certain duties to his sons,<sup>1</sup> to his nephews<sup>2</sup> and his kin. He cannot shirk these responsibilities; rather, he must assume them without hypocrisy and with integrity. According to one proverb, when making a gift of a cow, the rich man must not give away the horn and keep the tail (hokka lu'al joga Bokkorde). Another proverb states that family ties (ennDam) are not like a shirt that one can take off as one likes (enDam wanaa no toggoore). A kinsman<sup>4</sup> is a person with whom one travels in both good times and in bad ones.

There is no doubt that wealth represents happiness, but the rich man's situation is often a difficult and uncomfortable one.

### XIII.3 The Herder's Life: Hardship and Suffering

The teaching of the proverbs is very clear: to have cattle is a source of happiness (belDum) and this particular source of happiness should be given a place of priority among the things that can generate happiness in man. One proverb states this in a concise and enigmatic way: ta'faggo arito fagguDum! Translated freely, this means that a woman should never come before the herd! In other words, one should never put the cart before the horse, because the constitution of a herd should take priority over the quest for a wife. If you get married before constituting a herd, the marriage is doomed to fail because your wife will not stay with you. What is she going to live on? However, if you have a herd, then you will make a good marriage. There is a time for everything, the woDaaBe say and there are certain priorities which have to be taken into account, even in one's search for happiness.

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<sup>1</sup>BiDDo walaa, say no sinnga: lit; no child without a jewel. You brought a child into the world and therefore must be prepared to meet all his needs.

<sup>2</sup>Kaawu mo hokkay, jaBi mbelki e Burii Dum: a delicious jujube tree is worth more than an uncle (a maternal uncle) who has never given one anything.

<sup>3</sup>Daangol banndu doorete: to repair the calf-rope of a kinsman.

<sup>4</sup>Baandiraawo no lelo-leloode: a kinsman is someone with whom one goes through times of crisis.

However, no human being's happiness is absolute. In the words of one proverb, happiness can never be found at any one place or at any one time (helDe keddataa). Life is made up of happiness and sadness, of joy and suffering (belDum e tokka naamwDum) and suffering goes hand-in-hand with happiness (naawDum e tokka belDum).

Happiness and suffering are inextricably linked, even though they are completely different, indeed, antithetical. According to one proverb notable for the way it contrasts ideas and plays on words, kasu nanndaa e kosam, that is, prison is not like milk!

More often than not, happiness is accompanied by suffering. Every man knows that there are the two sides of a coin. This strange and disturbing alliance is at the heart of every event, every aspect of life. Both are experienced at the same time: the delicious gushes of milk which splash all over one's body at milking time (and which are a symbol of happiness) and burning sparks (image of suffering) when a fire is being kindled. No, says the proverb, the "gushes of milk have nothing to do with the sparks of fire" (pilam howtaa e fe'etere).

In life's experiences, one must display a certain degree of resignation and patience (munyal) since it is impossible to have everything. "Where there are jujubes, there is no water," says one proverb, and "where there is water, there are no jujubes" (to jaaBi ngonii ndiyam waaiaa).

The herder is very much aware of the fact that happiness and suffering are travelling companions. One cannot say that a herd does not represent happiness for a man, but neither can it be denied that it brings with it immeasurable hardship, suffering and weariness. This idea is expressed in another proverb which is drawn from the inexhaustible images of pastoral life: gulDi feewa ndiyamji, which literally means to cool down hot waters. To explain this, reference is made to the fact that grazing animals is a strenuous task (oorngol jawdi no naawDum) but this suffering is compensated for by the happiness that these same animals bring (for example, the milk that they provide). Happiness comes with suffering and it is impossible to escape the suffering which accompanies every happy experience.

Thus, herding involves great suffering, toil and hardship which are constantly being referred to in proverbs which use a plethora of images.

In one proverb, it is said that the cow is like a large "gourd" (jollooru); in order to fill it at the pond, one must push it under the water with all one's might because otherwise it will remain empty. The same principle applies to the cow: feeding it adequately and keeping it in good health requires a tremendous effort (nagge no jollooru).

According to another proverb, herding is like "a hair in one's nostril" (ngaynaaka no leeBol foraandu); everything related to herding presents difficulties and worries. Herding problems affect the herder

at the very core of his existence; for example, when an animal is ill or dies, the herder suffers a profound emotional wound (caka yonki), as if a hair were pulled out of his nostril, because he knows what the loss of the animal represents.

It is also said that livestock is like the antimony (pinaari) used as make-up for the eyes. This black substance embellishes the eyes, making them a sight for people to admire. But this is only a facade. They do not know, perhaps, that antimony burns the eyes. Similarly, livestock seems like a glorious possession, especially to those who have never spent their days and nights among animals, in the dust and the heat, experiencing hunger and thirst. But the woDaaBe know all of that only too well!

A myriad of images for a harsh and cruel reality. A herder's life means struggle and hardship.

#### XIII.4 Livestock: Fleeting Happiness

Raising a herd involves a rough and relentless struggle on a daily basis. The woDaaBe point out that sedentary farmers have entire seasons in which to recuperate from their toil. They also have houses to protect them from the sun and the rain. But the herder has none of these things.

The well-being of the herd is of primary importance. The individual does not matter; he has to adapt to the needs of the herd. There are no seasons of rest (pooftiri) and the woDaaBe have no dwellings as such (wuro), but simply an enclosure of branches (licce). All activities are geared toward herding which is why the woDaaBe good-naturedly say, "a herder is only a cow-tick" (gaynaako no kootu nagee).

Having a herd is not a stable investment free from danger. On the contrary, it is property which is only temporarily and transitorily owned and which can disappear at any given time.

In the words of another proverb, livestock is like "foam," (nguufu) which rises and falls without our ever knowing why! Vigilance must be exercised at all times to protect one's herd (jawdi no nguufu). A wealthy owner may wake up one morning to find all his livestock gone.

The tone of the proverbs is quite pessimistic, and is in sharp contrast to the horizons of power and prestige which wealth seemed to open up for man. The teachings of the proverbs even appear to be contradictory. But this only signifies that life is multifaceted and full of paradoxes and contrasts. All experiences are partial and subjective. They always reflect a few aspects of a much more complex reality. The proverbs do not contradict but rather complement each other.

Everything changes. Everything is transformed. Nothing seems to be lasting or durable. "The calabashes which were full yesterday are now empty today" (tummuDe baranooDe ngaylanaama) another proverb says. The wealthy man of yesterday has become poor today and all his wealth is lost (risku mum halkii). This is the realism of experience.

Everything is limited and finite. "Everything that is long has an end" (kojuuti fu e woodi keerol). One never knows what may follow a period of wealth and prestige. Everything is finite; the rich man has constantly got to bear this in mind and must never forget it. Nothing lasts; like everyone else, "he does not know what lies in store for him tomorrow" (koowa anndaa ko jahango wardata).

Fleeting and transitory, the happiness brought by wealth is fraught with risks because a catastrophe may occur. According to the woDaaBe, a man who has always been accustomed to a life of plenty will never be able to adjust easily to a distressing situation: poverty will be a terrible experience for him. He will be even poorer than someone who is accustomed to poverty, because the latter has always been poor. The man who was formerly rich will be at a total loss if faced with poverty. And it is his wealth which will thrust him into the abyss of poverty from which he may never be able to emerge. This is what one proverb reminds us: the son of a rich owner of herds died of want (Bi attajiriijo, keppal warii Dum).

#### XIV. Herding and Tradition

(In the following two interviews, the woDaaBe herders directly express their views. The first interview deals with the value of mobility in traditional herding strategy and the second with the woDaaBe marketing strategy).

##### XIV.1 First interview: Movement

(Mobility is by far the most important strategic element in traditional woDaaBe herding. It allows the herder to make optimum use of all the available natural resources which are spread out in time and space. cf. X.1)

"We woDaaBe say that herding gives us no time to rest, no respite. A real herder can never stay quietly in one place."

During the rainy season, we are always on the move in search of humid places. In our rangelands, there are places where rainfall is

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<sup>1</sup>These interviews were held with a group of woDaaBe Degereeji living at the west of Tchin Tabaraden.

abundant; other places where it is insufficient and others where it does not rain at all. In real terms, this means that there are places where grass grows well, others where some grass grows, and places where there is no grass at all.

A good herder always asks for news on the condition of pastures. He does not wait for this information to come to him from out<sub>1</sub> of the blue...! One cannot practice herding on the basis of hearsay!<sup>1</sup>

There are scouts<sup>2</sup> in every group whose duty is to look for water and pastures for the whole group. But in fact every herder must concern himself with this task. We have a precise aim: to give our animals the best possible pasturage in the best possible condition.

We are always looking for what is best for our animals: the only thing that worries us is our animals' welfare: their good health represents wealth.

During the rainy season, we keep going farther and farther in order to permit our animals to make the best use of pastures, which are not in the same region, but are scattered all over the place.

When we arrive at a point, we do not over-graze; we simply take what our animals need. We stay only a few days and leave most of the pasturages behind. In this way, we do not damage. We stay in one area for just the right amount of time: not too long, so as not to spoil the pastures in which we ourselves or other herders are going to spend the dry season; but we stay in one place long enough so as to avoid setting up too many camps (every area where the camp settles becomes infested with flies afterwards).

We keep going, we are always on the move because we have to. We look for the softest, shortest grass which has no nodes, the grass which has the greatest nutritive value for our animals.

We are always looking for the best rangeland, where the water and pastures promote the best lactation of our milk cows and normal fertility of the females.

During the rainy season, we have to move away from cultivated areas. For a number of years now, fields of millet have been moving in on us and the farmer's hoe has become our enemy. The boundaries of cultivated areas have been extending northwards.

Also, we have to avoid areas with too large a concentration of herds (especially foreign herds from the south which stay only during the

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<sup>1</sup>Reference is made here to a proverb: Nanii - ngaaraa.

<sup>2</sup>These are the warsooBe or swetooBe, those who are really in charge of the group's pastoral life.

humid season). When there are too many animals in a given area, the herds graze badly and there is a greater risk of losing animals.

At the end of the rainy season when the grass starts to dry up, we turn around and return to the areas in which we usually spend the dry season. We return to the region in which we are accustomed to live. Some of us spend as much as two or three months in the same place. But every good herder knows that when his animals no longer graze at night around the camp site as all the grass has been grazed on, then it is time to move the camp elsewhere. We then make short trips around the same water point. It is very important for our animals to be able to graze at night in areas nearby the camp; otherwise, adverse effects will be seen rather soon, the lactation of the milk cows will begin to decrease very quickly, and then all the animals will lose weight.

#### XIV.2 Second Interview: The woDaaBe and the Market Economy

(One of the criticisms most frequently levelled at the woDaaBe herders in general is the irrational accumulation of livestock solely for reasons of prestige. The woDaaBe herders are accused, for example, of not selling enough animals and of not managing their herds rationally, of being victims of an archaic mentality where number and quantity mean more than quality. Two detailed budgetary surveys show these accusations to be false and unfounded. But, quite apart from these facts, it must be understood that the woDaaBe herder has adopted an entire strategy in relation to the new market economy, and that the management of his herd is profoundly influenced by this strategy.

"A man who is starving does not think of putting food aside. A poor man does not think of keeping his barn full of millet. A poor herder cannot imagine putting aside oxen. A man whose family is hungry and whose wife and children have no clothes to wear cannot set aside a beautiful herd of oxen."

On the other hand, a man who does not know what it is to go hungry and whose family is deprived of nothing, can constitute a herd of oxen for future use, just as a rich farmer carefully keeps his millet in his barn.

The number and beauty of oxen in one's herd is for us a sure sign of wealth. It is wealth itself, because only a person who is well-off could afford to set aside oxen.

We say that a man who himself is "castrated" (that is, poor and indigent) cannot castrate bulls! He must come out of this state of indigence before he can dream of castrating bulls for future use.

For every herder, an ox is security, something to lean on. If he can put some aside, he is at peace. If he is unable to, his future will remain uncertain.

The fate of an ox is that it will one day be "transformed" into millet or a female. One day it will be strong and will either be sold or exchanged. It will thus provide millet for the camp or will be replaced by several young females.

If a farmer is poor, he does not have much millet and does not know what a reserve stock of millet is. He does not know what stale millet tastes like because he eats his as soon as he reaps it, depending on how hungry he is.

The poor man does not know what it is to stockpile food to stave off the unknown in the future.

For a herder, the ox is like a stock of millet or a reserve granary.

The woDaaBe herders love our oxen dearly because they are useful and become the guides of the herd. When we call the animals, the oxen are the ones which listen, which respond, which obey. They are the ones which go before the females and come first, going wherever we tell them to.

The oxen make the herder's work lighter, because of their character, their docility and their intelligence.

Anyone who is able to do so tries to castrate a whole generation of bulls. He castrates young bulls of the same age group and does not touch them until the day they are sold. He waits for them to reach the peak of their strength and maturity before he sells them.

An ox which is five or six years old should not be sold because it is still growing. Every day it grows some more and at that age, it has not yet attained its greatest value.

A good herder will wait until an ox is seven or eight years old before he sells it. At that time, it is strongest and most beautiful. That is the most favourable time to sell it and make a profit. A herder who is obliged to sell a young bull is really very poor, just as a herder who sells an old, weary bull is indeed stupid.

A sterile cow should be treated like an ox. Moreover, often it prefers the company of oxen. The sterile cow is itself "castrated".

A sterile cow should not be sold too soon. As is the case with oxen, one should wait for it to reach the peak of its growth and strength before selling it.

From its ninth or tenth year of life, a bull, whether it is castrated or not, stops growing. From this time onwards, it begins to decline:

its muscles and flesh become flaccid and diminish in size. This means that it is time to sell it before it is too late. One should not wait too long, otherwise it will grow old and its value will decrease.

This does not apply to a cow, however; a cow does not age as rapidly as a bull. It is the bull which starts to age first and then the cow.

A cow which continues to have normal pregnancies and whose gestations reach full term without too many complications cannot be termed "old" at the end of its tenth or eleventh year of life. Especially if it lives in a region where the pasturage is good and if it manages to escape the various illnesses affecting livestock. We say that a ten-year-old cow is not old, that it has not aged at all.

The fact that it has had several pregnancies does not make a cow old. On the contrary, a cow which has difficulty in becoming pregnant and whose estrus are widely spaced, ages much more rapidly than a cow which has had several calves. At ten years of age, it can already be considered as being old.

In order to judge the aging of a good cow, one must consider its chronological age rather than the number of calvings it has had.

A good herder never keeps useless animals in his herd. He knows when it is the right time to sell them, even if these are animals which he loves very much, animals which his father left him and which belong to an ancient and prestigious line of cows.

However, there is also a certain type of animal which some herders like to keep in their herds and not sell. It is neither because of their breed nor because of their fertility, but simply because the colour of their coats bring good luck to the whole herd.<sup>1</sup> These are usually cows whose coats are variegated: old people are the ones who know how to spot them in the midst of a herd and advise those who wish to listen to them to keep this kind of animal, solely in the hope that their presence in the herd will be of benefit to all the animals in it.

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<sup>1</sup>This animal which brings good luck is called wo'inaange. Literally: the one which brings benefit. The opposite of this is the animal which brings bad luck (noontaange) cf. IX.3

## CONCLUSION

The aim of this study was to give an introduction to the traditional herding practices of the woDaaBe. This introduction should, however, lead us to examine a certain number of current issues which are of major importance for boDaaDo pastoral society.

Let us first discuss the impact and practical implications that this wealth of knowledge, practices, conduct and strategies must have for the herder to achieve the harmonious development of traditional herding practices so that it does not remain a marvellous, but useless "fossil."

From the colonial period to the present time, with the gradual establishment of government technical services, there has been an increasingly wide gap between this traditional "experience" and the "techniques" of the services. This situation has given rise to a kind of conflict which cannot promote development.

On the other hand, the veterinary services complain that the herders refuse to cooperate with them (during vaccination campaigns, for example). The herders, on the other hand, find themselves in a situation of dependence, marginalization and subordination with regard to the employees of the Livestock Department, and do not always feel that the whole value of their experience is appreciated and taken into consideration. It is not easy to resolve this conflict. To a certain extent, the herders should accept that their traditional techniques be challenged, in order for them to develop and improve. Throughout the 20th century, woDaaBe herding has undergone radical changes and the woDaaBe have responded positively to this situation. Their arrival in the arid zone of the Sahel, which is quite different from the rich pastures of Borno or Sokoto where they previously lived, forced them to revise their pastoral system. Today, the woDaaBe are willing to receive technical help from outside, which in their view is prestigious. Training programmes for veterinary auxiliaries would be of great interest to them provided that they are conducted in close collaboration with those in traditional society who are experts in these matters and already play this role.

In another respect, technical authorities must be more sensitive to the importance of this "stock" of traditional knowledge. Herders' opinions and attitudes and the way in which they perceive problems should be taken into consideration, with a view to adjusting the imbalance brought about by technocracy, and with the desire to create new and more appropriate technology.

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Being a herder is part of the definition which the boDaaDo gives of himself. He cannot imagine himself without his sawru (shepherd's rod), which for him is the symbol of an entire way of life. Being a

cattle raiser is at the centre of all his activity, of his whole economy, his whole thinking, his whole conception of happiness, of life and of death...

There is an inextricable link between the boDaaDo and his livestock which has nothing to do with sentimentality or naturalism: this is an existential link. The herd is at the centre of his life, because it gives him food, employment, security, prestige, pleasure, fun...

For the BoDaaDo herder, the herd is productive and reproductive capital and his whole domestic economy depends on it. It is his means of production (for domestic consumption and marketing), his trading commodity which enables him to buy consumer goods and to provide for exceptional expenses. The herd is also a means of exchange and the object of loans: it is through the exchange of livestock that the herder can renew his herd, diversify his livestock, pay for services rendered by others, and obtain items and products.

But for the BoDaaDo, the herd is also social property. It is livestock which creates and consolidates all relations in society. In rites, the slaughtered animal validates marriage and births and the consumption of the meat consolidates the social bond. In the traditional system of lending and giving animals (inheritance, dowry, allocation), animals are circulated within the group, renewing ties of kinship and alliance and creating bonds of friendship and solidarity.

From another point of view, the herd is the very symbol of wealth, prestige and power; it constitutes the only way of accumulating wealth.

A work force (for journeys, transport, moves), a means of having fun (game of the herds and camel races), the herd is more profoundly cultural property: it is the ownership of herds which unites boDaaDo society. The herd also gives every individual a precise cultural identity, which is linked to work, techniques, philosophy and social life.

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Mbi'eteeka re'ataa, is a proverb which means "there are always stories to be told." Especially when they are about something dear to one's heart like herding livestock, etc.

When one talks about all these things with the woDaaBe, one has the impression that they are in love! The old boDaaDo knows this very well, the day he goes into the woodlands to catch a nyaalal (an animal which bites the cattle), removes its liver, roasts it, pounds it, mixes it with a tick, and then gives it to his grandson to eat: he says, with all his heart, "this child must be filled with the same love and the same passion for the herd as the nyaalal and the tick".

ANNEX No.1

ALPHABETICAL LIST OF PLANTS

(According to scientific nomenclature)

Acacia albida (mimosacea)	<u>caaski</u>
Acacia ehrebergiana (mimosacea)	<u>tamas</u>
Acacia laeta (mimosacea)	<u>dibeehi</u>
Acacia nilotica (mimosacea)	<u>gawari, gonnaki</u>
Acacia tortilis (mimosacea)	<u>cilluki</u>
Alysicarpus ovalifolius (papilionacea)	<u>gadaggiire</u>
Andropogon gayanus (graminacea)	<u>raYYere, sooBre</u>
Aristids funiculata (graminacea)	<u>korom</u>
Aristida gracilis (graminacea)	<u>saraho</u>
Aristida sieberana (graminacea)	<u>surungeewol</u>
Bahunia rufescens (caesalpinacea)	<u>nammaari</u>
Balanites aegyptiaca (zigophyllacea)	<u>tanni</u>
Blepharis linariifolia (acanthacea)	<u>gillal</u>
Boscia senegalensis (capparidiacea)	<u>jigahi</u>
Calotropis procera (asclepiadecea)	<u>bamambi</u>
Cassia nigricans (caesalpinacea)	<u>nyanngal buubi</u>
Cenchrus biflorus (graminacea)	<u>hebbere</u>
Chrozophora brocchiana (euphorbiacea)	<u>nduusur</u>
Citrullus colocynthis (cucurbitacea)	<u>habardu</u>
Citrillus lanatus (cucurbitacea)	<u>gunaaru</u>
Combretum micranthum (combretacea)	<u>gumuumi</u>
Combretum glutinosum (combretacea)	<u>Dooki</u>
Commiphora africana (burseracea)	<u>baDaaDi</u>
Crotalaria podocarpa (papilionacea)	<u>pottalhi</u>
Cymbopogon giganteus (graminacea)	<u>gajaali</u>
Cymbopogon proximus (graminacea)	<u>hurdu-dumboore</u>
Cymbopogon schenanthus (graminacea)	<u>noobol</u>
Cyperus conglomeratus (cyperacea)	<u>ndaYon daaDi</u>
Dactyloctenium aegyptium (graminacea)	<u>nguDe-nguDeeri</u>

<i>Digitaria horizontalis</i> (graminacea)	<u>laalowol</u>
<i>Echinochloa colona</i> (graminacea)	<u>nyerYaare</u>
<i>Eragrostis tenella</i> (graminacea)	<u>buluuhi</u>
<i>Gisekia phainacioides</i> (molluginacea)	<u>takkal ciilal</u>
<i>Grewia bicolor</i> (tiliaceae)	<u>kelli</u>
<i>Grewia flavescens</i> (tiliaceae)	<u>gursumuhi</u>
<i>Grewia tenax</i> (tiliaceae)	<u>ciiBooli</u>
<i>Gynandropsis gynandra</i> (capparidiaceae)	<u>lanjere, gaasaya</u>
<i>Guiera senegalensis</i> (combretaceae)	<u>sabaraahi</u>
<i>Hyparrheina dissoluta</i> (graminacea)	<u>sel-selnnde</u>
<i>Indigophera dyphilla</i> (papilionaceae)	<u>gaccungolhi</u>
<i>Ipomea acanthocarpa</i> (convolvulaceae)	<u>layel</u>
<i>Ipomea involucrata</i> (convolvulaceae)	<u>lay-laydu</u>
<i>Leptadenia hastata</i> (asclepiadaceae)	<u>haaDya</u>
<i>Maerwa craccifolia</i> (capparidiaceae)	<u>cenceni</u>
<i>Nymphaea</i> (nymphaeaceae)	<u>gaandowol</u>
<i>Panicum laetum</i> (graminacea)	<u>sabeeri</u>
<i>Panicum turgidum</i> (graminacea)	<u>gajalol</u>
<i>Periatrophe bicalcyculata</i> (acanthaceae)	<u>nyaanyataare</u>
<i>Piliostigma reticulatum</i> (caesalpinaceae)	<u>barkehi</u>
<i>Salvadora persica</i> (salvadoraceae)	<u>kacacce</u>
<i>Schoenefeldia gracilis</i> (graminacea)	<u>huDo rimo</u>
<i>Sorghum asthiopicum</i> (graminacea)	<u>gabaraari</u>
<i>Sporobolus festivus</i> (graminacea)	<u>ndiriiri</u>
<i>Sporobolus helvolus</i> (graminacea)	<u>ngarziiri</u>
<i>Tapinanthus globiferus</i> (loranthaceae)	<u>sotoore</u>
<i>Theprosia purpurea</i> (papilionaceae)	<u>massahi</u>
<i>Triumfetta pentandre</i> (tiliaceae)	<u>follereTribulus</u>
<i>terrestris</i> (zygophyllaceae)	<u>tuppere</u>
<i>Ziziphus mauritiana</i> (rhamnaceae)	<u>jaaBi</u>
<i>Ziziphus mucronata</i> (rhamnaceae)	<u>gulun jaaBi</u>
<i>Zornia glachidiata</i> (papilionaceae)	<u>dengeere</u>

ANNEX No. 2

LIST OF EXCEPTIONAL EXPENSES

(In woDaaBe society expenses which are said to be exceptional are accorded great importance. Because of the number of these expenses and their value they are a considerable weight on the family economy)<sup>1</sup>

Expenses at the Birth of a Child

- o bull to be slaughtered at the birth of the first-born (comm. value 40,000 - 50,000 CFA).
- o Ram to be slaughtered at the birth of any newborn (comm. value: 7,000 - 10,000 CFA).

Expenses Related to the Marriage of a Son

- o koobgal: Three bulls slaughtered for the koobgal marriage contract (comm. value 130,000 - 150,000 CFA).
- o puDDirdi: Animal to be given to the wife's father (comm. value 50,000 CFA).
- o admorde: Clothes for the fiancée (comm. value 3,000 CFA).
- o yooborde: Gift to be given to the wife during her first pregnancy (boofnDam), when she stays at her father's house: 7 calabashes, millet, salt hot pepper, (comm. value: 15,000 - 20,000 CFA).
- o barka: Gift for the newborn and the mother after the first delivery (comm. value: 18,000 - 20,000 CFA).
- o Second almorde: A gift to the wife before she returns to her husband's house for good after the first child is born (comm. value: 3,000 CFA).

Expenses Related to the Marriage of a Daughter

- o liirtiirdi: Gift of millet to the husband's family, before the girl leaves for her husband's house. Comm value: 10,000 - 15,000 CFA.

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<sup>1</sup>The woDaaBe Degereeji Cahidooji to the west of Tchin Tabaradeen.

- o biikorde: Gift to the girl herself, before she leaves for her husband's house for the first time: 7 calabashes, shoes, clothes. (Comm. value 40,000 CFA).
- o doongal: Gifts to the girl of household items. Comm value: 50,000 CFA).

Expenses Related to the New Te'Gal Marriage

- o symbolic sum of money which every young person must pay to the youth leader to be able to enter the daDDo (10 CFA).
- o preparation of the unirki ceremony (rite of passage marking the transition from youth to manhood). Millet and ingredients for sauces. (Comm. value: 50,000 CFA).
- o milk cow to be slaughtered and calf to be given in alms at the death of an old man. (comm. value 70,000 CFA).

Expenses Related to Social Life

- o Costs of organizing a community gathering for one day. (comm. value 20,000 CFA).
- o bull to be slaughtered upon the assumption of social functions (laamiDo kae'en, etc.) (comm. value: 40,000 - 50,000 CFA).
- o entertainment costs (guests): sugar, tea, small livestock animals to be slaughtered. (comm. value in the year: 25,000 - 40,000 CFA).

In addition, extra travelling costs, purchase of medicine, etc.

ANNEX No.3

Quantitative Survey of Cattle and Sheep

This survey covers 444 births of cattle belonging to 154 cows used for reproduction purposes (both "Bororo" and "Azawak" breeds) between January 1975 and December 1980. It was conducted with one clan of woDaaBe Degereeji Cahidooji living in the vast region of the west of Tchín Tabaraden.

This survey deals with certain detailed aspects of herd dynamics: births, male/female ratio, mortality, utilization of the animals. For the distribution of births according to months and seasons, cf. Table A, IV.3. For the age of bulls sold, cf. Table A XI.3.

Of a total of 444 births, there were 270 females born compared to 174 males. Females made up 60.8% of total births while males constituted 39.1%.

Forty-eight animals were recorded dead (10.8%) and 75 sold (16.8%). 40 animals (9% of the total) were loaned according to the traditional lending system (haBBanae), and 10 animals (2.2% of the whole) were used for traditional ceremonies (especially for the celebration of marriages of the koobgal and te'gal types, and for naming ceremonies of first-born children, etc.).

TABLE A  
Survey of Cattle

<u>Category</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Total No.	174	270	444
Dead animals	20 (11,4%)	28 (10.3%)	48 (10.8%)
Animals sold	64 (36.7%)	11 (4%0	75 (16.8%)
Animals loaned	-	40 (14.8%)	40 (9%)
Animals used for ceremonies	10 (5.7%)	-	10 (2.2%)
Remaining animals	80 (45.9%)	191 (70%)	271 (61%)

These data can be combined with a complementary study conducted with sheep belonging to the same group of woDaaBe.

Of a total of 174 births, females accounted for 58.6% compared to 41.3% for the males. 25% of the females were loaned traditionally, while 16% of the males were used in traditional ceremonies (naming ceremonies, in honour of guests, etc.).

TABLE B  
SURVEY OF SHEEP  
(100% = 174)

<u>Category</u>	<u>Males</u> (%)	<u>Females</u> (%)	<u>Total</u> (%)
Total No.	41.3	58.6	100
Dead animals	22.2	25.4	24.1
Animals	55.5	1.9	24.0
Animals loaned	-	25.0	14.9
Animals used in ceremonies	16.0	-	6.8
Remaining animals	7.7	48.7	31.1

ANNEX No. 4

The Core of the Herd

(This is a theoretical calculation made with a group of woDaaBe to determine the size and composition of the basic minimum herd for a family of 5-6 persons)

Cattle

-5 milk cows: (with 5 calves)	Immediate milk production and reproduction
-5 adult cows:	future milk production and reproduction
-6 heifers (2-3 years old):	future milk production and reproduction
-2 oxen: (4-8 years old)	sale
-6 bulls:	future sale, social function
-1 sire:	reproduction
-1 ox:	Transport
TOTAL (cattle)	26 adults, 5 calves

Other Animals

-3 donkeys:	transport
-1 camel:	journeys, transport
-6 ewes:	sale, reproduction
-3 rams:	sale, reproduction

ANNEX No. 5

Origins of Herding

(Mythical Account)

There was a young Arab girl who, when she menstruated for the first time, went to the riverside to wash her robes and leave them to dry in the sun. She lay down and fell asleep. Then an angel came and lay with her and impregnated her.

When she became pregnant, her father, an Arab spiritual leader, did not stop praying, begging in God's name, for someone to show him the man who impregnated his daughter.

The angel went into the water and appeared to the father, and the two were able to talk together. Then the angel departed and the young girl gave birth to twin boys.

After the birth of the twins, the spiritual leader said to the angel: "Now you must give my daughter a dowry!" The angel gave her the dowry: a grey cow and a bull, which he took from the water.

The two boys grew up and became men. The cattle which they had been given would not go near people: they were afraid and frightened by people. This is why they went into the rangelands.

The cattle always kept moving farther and farther, and the mother and her two sons followed them. Every evening they lit a fire for the cattle and slept at that place. Then the following day, the cattle would leave and kept going farther and farther. The mother and the two children followed.

Of these two children, one is the ancestor of the woDaaBe and the other is the ancestor of the fulBe.

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(BiDDo debbo arabankeejo e jooDi, faa waDi lisal. To nde waDii lisal, daga no dillu, yehi dow maayo. O lohonu wudere mum, daga o liir nde. Dagea no waali, Daani.

Doohan malaykaawol ngoongol wari, kam waDani Dum reedu. To ngol waDanii mo reedu - baaba mum no moodibbo arabankeejo - baaba mum waDi ga Yamgo, e add' Allaa o hollu mo mbaDanDo Dum reedu.

Ndehan, malaykaawol wari nder ndiyam, ngol wannanii Dum, Be mbollidi. Nde o yehii, BiDDo debbo rimi: BiBBe DiDo o siwti, worBe.

Nde o siwti Be, ndehan moodibbo wi'i: "Biyam, say a hokkanii Dum

koowruDi." Malaykaawol hokkani Dum koowr uDi; ngol hokki mo nagge fure e ngaari. Nder ndiyam o itti Di fu.

Nden nde Be ndima, raBBe Be'worBe, faa kon YoB-YoBta, Na'i Din Di kokka, Di takkatako duuniya, Di kuley duuniya; suuda Di ngoodi: ko nattini e ladde.

Na'i Di ndilli, mbaDi yeeso, ndilli, mbaDi yeeso, inna Bikkon koohan e Bikkon mum e gaDa, daga no mbaDey ga yayinaago Di. Jemma fu to Di nduuDnade, Di mbaaloto tan. Nden nyalooma kaDima, Di ndilli, mbaDi yeeso; inna Bikkon koohan e Bikkon mum e gaDa.

Nder siwtaakon konnday, o'o to'oto fuDDi woDaaBe. o'o go'oto ma kam fuDDi fulBe.

Account by Juute and Tiindewoodi  
June 1979

ANNEX No. 6

Account of a Scout

The following is taken from a council meeting on questions concerning nomadic life (kinnal) during the rainy season, held to decide how a journey should be made. The scout (cewtoo, garsoo) stayed away from the camp all day. Upon his return in the evening all the men in the group gather round him to listen to his account and to be able to take decisions as a group. (Recording and notes made to the north-west of Tillia in November 1981).

- You've seen that I did not spend the day here. I left the camp at dawn and took a north-westerly direction. Not exactly north and not exactly west. I was looking for what we all want. And what we want has a name: pasturage. Water and pasturage.

Where I spent the day I was able to talk to a group of woDaaBe K. They gave me a few good tips and they didn't lie to me. But I decided that it was worth going personally to the area to evaluate the situation in order to be able to give you precise information.

I can tell you that I found grass and I found water. I have found what is of benefit to us and not what is unprofitable. These are the tips I am giving you whether you like them or not.

If you want to go, then I'm telling you to. If you do not want to go, I'm not the one who is telling you to stay; you are all witnesses to this. Understood?

I am speaking to all adults present at this evening gathering, especially those who are older than me. I am giving these pointers to every boDaaDo present here.

I saw good grass, very good grass, grass which was never deprived of rain: soft grass watered recently by the rain. Grass which is found on the plains rich in clay soils soaked with water, reddish plains.

You all know the areas of which I am speaking: between Innibini and Isalan, in the direction of the Chinbuka hill. I scouted around in these three areas. And that is where I saw what I liked very much:

Soft grass, well raised on the soil, the kind of grass which is very good for our herds. I'm only speaking of what I know very well.

The pasturage is not of the same quality in all three areas: the one which is furthest away and which I saw last is the one which I liked best of all. There is a lot of grass at the first pasture I saw this morning when I left the camp, but it has suffered from the lack of

humidity. There has been no rainfall in the region for several days. The grass at the second pasture which I visited is also very abundant, but it has started to toss. It has been badly affected by the sun these last few days and its upper stalks have started to bend. It is good quality grass but it has already started to fade. It is when I went further on that I found better grass. It is as green as onion leaves. A deep green which sparkles in the sunlight.

These are my pointers. Whether you agree or not, I've given my pointers; I have spoken of what my eyes have seen and not what my ears have heard.

I'm telling you quite frankly, as far I'm concerned, that's where I would head for tomorrow morning bright and early.

(Everyone listened in silence to the speech of the scout. In small groups they make comments on the news. Everyone seems to agree that it is absolutely necessary to move camp, because the water in the ponds is too polluted. Many say that they are satisfied with the news they have just heard, but they are worried about the fact that other woDaaBe have already found the place. The scout starts speaking again).

I told you that I saw people there. It is precisely because it is a very good area. There is no doubt that if we want good pasturage, that is where we can find it. As to the woDaaBe, they are only a small group, just a few herds. If there were a large herd, I myself would not have told you to go there. They are there but it is as if they were not. They have grazed, but it is as if they haven't grazed at all!

(Someone asks the scout about the quality of the pasturage he found)

I saw mostly green thorny grasses, tribulus, ipomea involucrata and hyparrheina dissoluta. These are the four main species which caught my attention.

(Someone expresses dissatisfaction with regard to the presence of tribulus: he says that during this season the animals are not very fond of it.)

Tribulus is a very good forage plant, if it is found in the midst of other species. The animals do not jump voraciously on it at first, but afterwards they begin to like it and it is very good supplementary forage.

(Some people come back to the point concerning the presence of other woDaaBe. It is a group of woDaaBe K. with whom they have recently had strained relations. Many fear that in moving close to them, the conflict will be stirred up again).

In my opinion, we have no choice. Sometimes necessary journeys have to be made and sometimes journeys are not necessary. Today we have no choice.

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(The following morning at dawn, the scout is the first to start out in the direction north-west of the camp. Almost everyone follows him, with the exception of ten herds from the C. lineage group; they prefer to move towards the north. They seem not to have followed the rest mainly for fear of moving close to the woDaaBe K.

## Niger Range and Livestock Project

Since 1979, the Niger Range and Livestock Project, jointly administered by the Government of Niger, the Ministry of Rural Development and USAID/Niger, has conducted extensive research in the pastoral zone of Central Niger. The project's final report of research findings will be published in December 1982.

### Discussion Papers

The discussion paper series presents preliminary research results, consultants' reports, and selected chapters of the final report.

These papers represent their authors' perspectives and do not necessarily reflect the position of the Government of Niger or USAID/Niger.

It is hoped that the circulation of these discussion papers will generate commentary and dialogue.

Niger Range and Livestock Project  
B.P. 85  
Tahoua  
Republic of Niger