



**Food and Agricultural Organization of the
United Nations in collaboration with
Economic Community of West African States**



The cross-border transhumance in West Africa Proposal for Action Plan



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EXECUTIVE SUMMARY

Transhumance is a very important livestock production strategy in the Sahel where it is practiced for very long time. Many studies have been devoted to its better understanding. Similarly, numerous meetings were held to solve problems it causes and faces as well as many regulations have been adopted in this regard. Transhumance among West African countries is regarded as an integrating factor by promoting mixing of populations of the North with those in the South. Mainly, it supplies increasingly important urban centres that developed in these countries particularly those in the south with animal products.

The objective of this study is to identify, recent changes (ecological and socio-economic) and new developments of cross-border transhumance in West Africa. To this end, it will explore the challenges facing the implementation of regulations of the Economic Community of West African States (ECOWAS) on transhumance. It responds at the same time to the needs of the Strategic Action Plan for livestock development and transformation in the ECOWAS region, stimulate the political dialogue and finally allow the formulation of a strategy and action plan for transhumance in West Africa.

The analysis of cross-border transhumance suggests that the challenges it faces are primarily its ability to adapt to climate change and environmental degradation, among others. In this regard, the following challenges were identified: reduction in available forage, changes in the composition of grass species with occasional appearance of non-consumable species, a reduction of surface water resources and quality, reduced grazing areas mainly because of population growth, less complementarities between crop farmers and livestock producers. In addition, there is an increased incursion into protected areas, a development of agro-pastoralism, a change in the epidemiological map with the onset of diseases and increased activities of mining leading to reduced grazing areas.

Another challenge related to the cross-border transhumance is the land tenure of pastoral areas. In almost all states of ECOWAS, the tenure of pastoral land has been assured or reassured, particularly in line with the rural land and pastoral land tenure systems. Although livestock contributes significantly to the economy of the sub-region, it is evident that priority is given to crop production. Despite the fact that the stocking rate in West Africa, has increased from 19ha/TLU in 1961 to 5 ha/TLU in 2009, land is increasingly occupied by crops, ignoring requirements for the development of Transhumance.

Innovative local initiatives exist in many parts of West Africa to facilitate and protect livestock mobility. The traditional transhumance routes and corridors are being renegotiated and defined.

The third challenge is related to lack of better support to the cross-border transhumance in developing policies, legislation and regulation. Indeed, some public policies in ECOWAS region in recent years focus on the "modernisation" of pastoralism or the settlement of transhumance. Similarly, it was found that development policies couldn't ensure the provision of services

expected from the state (education, health care, security, trade, etc.) because of difficulties associated to remoteness of pastoral areas. However, institutions dealing with pastoralism and thus transhumance are in place at national level. In addition to these measures introduced by governments, civil society groups or international development partners are involved. In order to support the pastoralists and the cross-border transhumance, various laws and regulations (e.g. Pastoral Code, pastoral charter, the Rural Code, Agro-pastoral acts, etc.) were introduced.

Most sub-regional and regional institutions (i.e. ECOWAS, WAEMU, CILSS, AU) also consider that cross-border transhumance is useful in preserving and increasing the production of livestock and various arrangements were made for better production and better utilization of pastoral resources.

Finally, the last challenge cross-border transhumance faces is the greater role expected from it in contributing to the provision of food of animal origin (milk, red meat, white meat, eggs, etc.) to ever increasing urban population, currently met through imports.

The proposed action plan for cross-border transhumance is built around three main thrusts to help meet the short and medium term challenges. The first thrust is to sustainably reduce the impact of production losses of transhumance due to climate change and various forms of land degradation in pastoral areas. The second is expected to strengthen attention given to transhumance in national and sub-regional development policies. Finally, the third thrust focuses on improving the contribution of cross-border transhumance to supply animal products to urban centres.

ACRONYMS AND ABBREVIATIONS

ABN	Niger Basin Authority
AGRHYMET	Regional Agro-Hydro-Meteorology
ALG	Liptako Gourma Authority
APESS	Association for the Promotion of Livestock in the Sahel and Savannah
ARECOPA	Network Communication Support on Pastoralism
AREN	Association for the Revival of Livestock in Niger
ASF	African swine fever
ASPEB	Association for the Protection and Promotion of Livestock
BSE	Bovine Spongiform Encephalitis
CAADP	Comprehensive Africa Agriculture Development in Africa
CAPAN	Cell Analysis for Development Policy of the National Assembly
CAPES	Analysis Centre of economic and social policies
CARDER	Regional Action Centre for Rural Development
CBPP	Contagious Bovine Pleuropneumonia
CbT	Cross-border Transhumance
CET	Common External Tariff
CILSS	Permanent Inter-State fight against drought in the Sahel
CIRAD	Centre for International Cooperation in Agronomic Research for Development
CIRDES	International Centre for Research and Development on Livestock in the sub-humid
COFO	Land Commission
CORAF	West and Central African Council for Agricultural Research and Development
CRUS	Regional Committee of Unions producers of the Sahel
CSCR	Strategic Framework for Growth and Poverty Reduction.
CSD	Benefits cultures
CVGT	Village Committees for Soil Management)
DIREL	Directorate of Livestock
ECOPAS	Ecosystems protected in Sudano-Sahelian
ECOWAP	Economic Community of West African States Agricultural Policy
ECOWAS	Economic Community of West African States
ESCWA	Centre for Economic and Social Studies in West Africa
EU	European Union
F CFA	African Financial Community Franc
FAO	Food and Agriculture Organization of United Nations
FEB	Herders Federation of Burkina Faso
GDP	Gross Domestic Product
GIE	Economic Interest Group
GNP	Gross National Product
GRAF	Group Research and Action on Land
GTZ	German Technical Cooperation
IFDC	International Centre for Soil Fertility and Agricultural Development
ILRI	International Livestock Research Institute

INSAH	Sahel Institute
IRAM	Research Institute for Application of Development Methods
ITC	International transhumance Certificate
IUCN	World Conservation Union
LEAD	Initiative for Livestock, Environment and Development
LOASP	Law regulating Agriculture, wildlife and Pastoralists
MAEP	Ministry of Agriculture, Livestock and Fisheries
ME	Ministry of Livestock (Senegal)
MEP	Pig farmers Association
MEP	Ministry of Livestock and Fisheries
MOFA	Ministry of Food and Agriculture, Ghana
MRA	Ministry of Animal Resources
NASP	National Food Security Programme
Nd	no date
NGO	Non Governmental Organization
NISDEL	New Initiative for Livestock Development
ODS	Sahel and West Africa
OECD	Organization for Economic Cooperation and Development
OECD	Organisation for Economic Co-operation and Development
OIE	World Organization for Animal Health
OP	Producers Organization
PAPISE	Action plan and investment program of the livestock sector
PAU	Agricultural Policy of the Union
PDAP	Development of peri-urban agriculture
PDES	Draft Economic and Social Development.
PNDE	National Plan of Livestock Development
PNPDL	National Dairy Development Pilot
PPLPF	Pro-poor Livestock Policy Facility
PPMED	Planning, monitoring and evaluation of agricultural policy
PPR	Peste des petits ruminants
PRSP	Strategy Paper Poverty Reduction
RAF	Agrarian and Land Reform
RBM	Billital Maroobé Network
RECAO	West African Network of Chambers of Agriculture
Recopa	Communication Network on Pastoralism
ROESAO	Network of Agro-food Operators in West Africa
ROPFA	Network of Peasant and Agricultural Producers of West Africa
SDDSR	Master Plan for Rural Sector Development.
SFW	FAO Sub-regional Office for West Africa
SNV	Netherlands Development Organization
SPAI	Sub-agro-industrial products
SWAC	Club du Sahel and West Africa
SWAC	Secretariat of the Sahel and West Africa

TLU	Tropical Livestock Unit
UDOPER	Provincial association of producers of ruminants
UF	Feed Unit
UNCED	United Nations Conference on Environment and Development.
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development
VSF	Veterinarians Without Borders.
WA	West Africa
WAEMU	West African Economic and Monetary Union

I. INTRODUCTION

In the strategies of livestock production in West Africa, the cross-border transhumance¹ (CBT) constitutes a very important aspect. Besides the fact that it can sustain Sahelian herds, it contributes to the sub-regional integration and the supply of livestock products to the increasingly important urban centres in the south. On the other hand, it raises problems because of the often bloody conflicts it causes. West African Sub-regional institutions (i.e. ECOWAS, UEMOA, CILSS², etc.), Non Governmental Organizations (i.e. SNV, IUCN, VSF, etc.) and Producer Organizations (RBM, APESS, etc.) among others have tried through various studies and meetings³, to establish the foundations for a more sustainable practice of this cross-border mobility.

It is within this context that the FAO sub-regional office for West Africa (SFW) has planned to conduct a study on the equitable utilization of natural resources by cross-border transhumance for increase livestock production in West Africa. The main objective of this study is to clarify, given recent changes (ecological and socio-economic) new issues of CBT in West Africa. To this end, it will explore the challenges facing the implementation of various regulations of ECOWAS on transhumance. It also responds to the strategic action plan of ECOWAS on livestock development and transformation, feed the political dialogue and finally allow the formulation of a strategy and action plan for CBT in West Africa.

The study was divided into two phases. The first phase, essentially a desk study, has conducted an inventory and description of the current state of cross-border transhumance in West Africa and identified key constraints it faces, namely:

- i. more pronounced climate change and environmental degradation ,
- ii. the persistence of a land policy without taking into account of pastoral mobility,
- iii. limited consideration of policies, institutions and legal and regulatory texts regarding pastoralism;
- iv. population growth and urbanization that requires a very high increase in the supply of animal products.

The second phase of the study, which included field studies in five representative countries of West Africa, allowed for further analysis and proposes strategies and action plans for better management of transhumance, including the modalities of implementation of proposed interventions.

¹ Seasonal movement of flocks and their shepherds, looking for water and pasture, and which brings them to use pastoral areas of several countries (Schöneegg G., Martel P. & B. Sano, 2006).

² Meaning given in the Glossary

³ The last was held from 20-22 October 2011 in Ouagadougou (Burkina Faso) - Sub-regional Workshop for restitution of the study, "Inventory of texts governing transhumance in member countries of the Liptako-Gourma Authority (RBM, 2011)

The first step in the implementation of this second phase was to investigate the report of the first phase, to review documents about the CBT, to develop an interview guide. Once the study methodology was developed, information and opinions were gathered through interaction with pastoral communities, local, national and sub-regional organizations, farmers associations, etc. from five ECOWAS countries (Benin, Burkina Faso, Ghana, Niger and Senegal). A questionnaire survey was sent to people who were unavailable or difficult to access during field studies.

The findings of the study was circulated to livestock authorities in ECOWAS Member States and sub-regional stakeholders and later presented at the validation workshop held in Accra from April 9 to 12, 2012. From this workshop attended by participants from different countries of ECOWAS, representatives of civil society organisation and other stakeholders, valuable comments and suggestions were gathered. These were included in this final report.

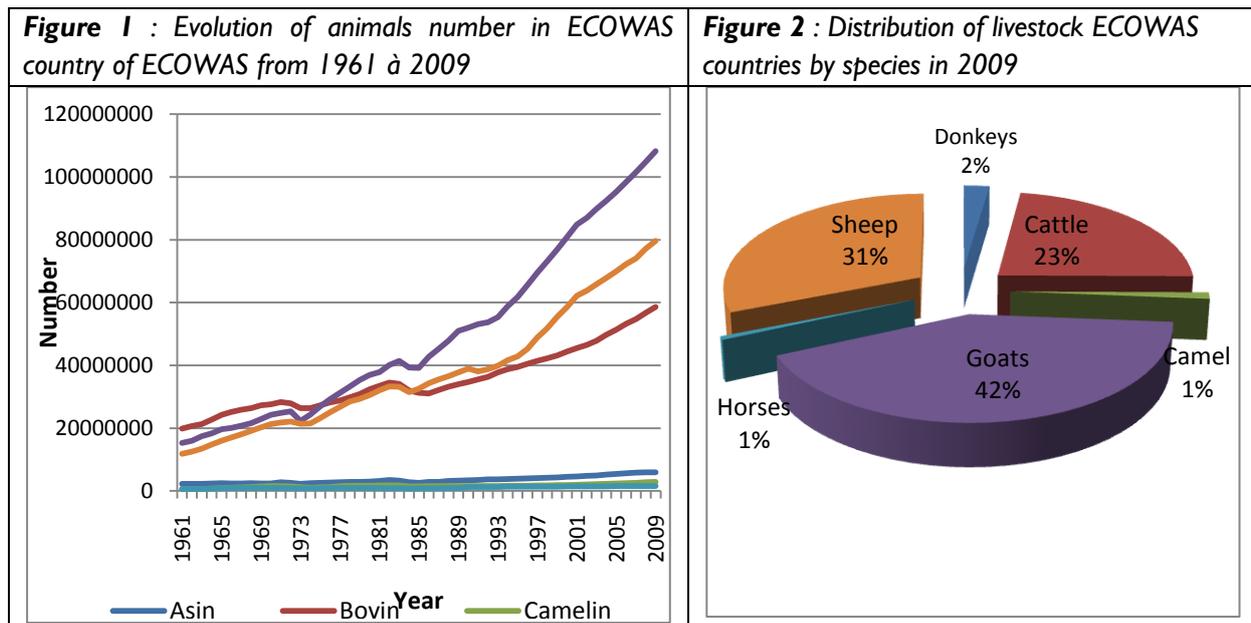
This report is based on the analysis of data obtained from field and presented here in four parts. The first is a presentation of the background of livestock in West Africa. The second part shows the characteristics of CBT in West Africa. The analysis of CBT compared to the great challenges of farming in West Africa is given thereafter followed by the proposal of different solutions. Finally an action plan for sustained improvement in the contribution of transhumance in the economy in West Africa is proposed followed by a conclusion.

2. BACKGROUND OF LIVESTOCK IN WEST AFRICA

2.1. Increasing livestock numbers

The aggregate number of livestock numbers in ECOWAS countries is estimated at 256.9 million head or 103.1 million TLU in 2009 (Figure 1) (FAOstat, 2009). The countries with sizeable number include, Nigeria, which has 41.8% of the total number in the sub-region followed by Niger, Mali and Burkina Faso which have 14.2%, 12.7% and 11.9%. respectively (Calculated from FAOSTAT data, op.cit.).

Changes in the numbers of livestock in ECOWAS countries from 1961 to 2009.



Out of the aggregate figure for 2009, the small ruminants account for 73%, while cattle contribute 23% (Figure 2). Compared to 1961, the numbers have been multiplied by 5.1; small ruminants have the fastest growth, 7.1% for goats and 5.8% for sheep. Camels have also experienced strong growth, 5.2%, while horses, between 2.7 and 2.5%.

2.2. Many animal breeds but some endangered

Cattle breeds – In addition to large number of livestock, the West African region is endowed with genetic diversity (Table 1). Among cattle, about 13 bull-type breeds and 12 zebu type were identified in addition to the crossbreeds. In general, the classification can be done in three categories.

Table 1: Middle weight of adult cattle (kg)

Breeds	Sub-breeds	Adult Male (kg)	Adult Female (kg)
Long-horned zebu Sahelian	Tuareg, Arab, Azawak	425	304
Sahelian zebu long-horned Zebu and Sahelian Arabic horned lyre	Arabe, Touareg, azawak, Djéli, Foulbé de l'Adamaoua, Mbororo	380	323
Cross-breed x Zebu bull	Bambara, Méré, Borgou, Kétéku	325	269
Ndama long-horned bull baths Shorthorn, Shorthorn Bull Fighting savannah Ndama	Ndama, Lagune, Muturu Forêt, Baoulé, Somba, Bakosi, Doayo, Kapsiki, Muturu savane	227	184

Source : Marichatou H. et al. (2005), MINEPIA⁴, Taïga, Pacholek X. et al. (2000), Anonymous (SDf) : Missohou A. et al. LRVZF (2003), Kamga P. et al. (2001), Belli P. et al. (SD), Codjia V. (2001), Hall S. J. G. et al. (1995), CIRADIGRET (2002), République du Niger (SD).

Breed characteristics are variable. The taurine cattle have an adult live weight ranging from a minimum of 115 kg / animal for female Somba breed (Benin and Togo), to 750 kg of male Kouri breed (Niger, Nigeria). The minimum adult live weight among the zebu cattle breeds is estimated at 240 kg for a female Sokoto breed (Nigeria), and the maximum is 660 kg / the animal for the male of the same breed⁵. Concerning milk production, there is low yield (0.5 to two litres / a day) based on breed, animal behaviour and the milking method. It is generally accepted that the breeds producing 0.5 litres per day can produce over two litres per day with better management and feed.

In the socio-economic field, among some pastoral groups, cattle milk is the main source of animal protein for the most vulnerable segments of the population that are women and children. Cattle play an important role in rural areas as labour factors (animal traction and fertilizer) and as savings in areas where financial systems are inefficient. To such market values, others less quantifiable ones have to be added. Most of the bulls have a key feature, trypanotolerance, which promotes them in some tsetse-infested areas deemed hostile to the other genetic types. They are also resistant to other diseases (streptothricosis, tick-borne diseases, helminthiasis), heat, food and water stress (Murray et al. Missohou et al in 1990, nd; of Ieteren, in 1994 and Missohou al, nd).

As for the zebu, they are very suitable for dry areas which they have conquered thanks to their good resistance to rinderpest and heat stress (Payne and Hodges, 1997) in Missohou et al, nd). In marginal areas where pasture land and water sources are scarce, their raising is often the only means for making good use of the land (Jahnke, 1984 in Missohou et al, nd).

Some breeds whose populations are decreasing rapidly have also been identified. A 1992 study by the International Livestock Centre for Africa (ILCA), now International Livestock Research Institute (ILRI) found that of the 25 "breeds" identified in West Africa, 4 (Kouri, Liberia Muturu Dwarf, Dwarf Muturu Ghana, Manjaca), that is 16%, are in danger or about to be extinct (Rege,

⁴ In « Moumini B., sd »

1999 in Missohou et al, nd). Similar work has shown a sharp decline in the Lagoons in Benin (Shaw and Hoste, 1990 in Missohou et al, nd) and among the Muturu in Nigeria (Jabbar and Diedhiou, 2003 in Missohou et al, nd).

The Sheep and Goats: The breakdown of sheep and goat breeds into two species and the sub-breeds is given below (Table 2).

Table 2: Average weight of adult sheep and goat breeds (kg)

Species	breed	Sub-breed	Adult Male	Adult Female
Sheep	Djallonke:	Mossi, naine ouest africaine, naine guinéenne, naine camerounaise, Blackbelly, Kirdi, Kirdimi, Massa, Poulfouli, Mayo-Kebbi	25	18
	Sahelian	Touareg, Grand targui, Petit targui, Ara-Ara, Argooradji, Foulbé, Waila, Futake, Banamba, Fulani, Oudah bicolore, Bouli, Bali-Bali, Balami, Yankasa, Landoum, White Maure, White Arabe, Koundoum, Goundou, Oudah, Touabire, Macina, Sahel, Toronké	40	30
Goat	Djallonke	Chèvre de Fouta Djallon, Guinéenne, naine Guinéenne, Chèvre Guinéenne, naine ouest africaine, Pygmée africain, naine africaine, naine camerounaise, Naine nigériane, naine ghanéenne, Haoussa, Hausa, Kosi, Mossi, Kirdi, Kirdimi	17	21
	Sahelian	Chèvre du Sahel, longues pattes ouest africaine, Désert, Soudan, Fulani Peul, Peulh, Voltaïque, Gorane, Maure, Touareg, Niorp, Niafounke	32	25

Source : IIRI, Nanda P (1987). Touré H. (1987), Chabi S. L. (1987), Noudjalbaye D. (1987), Anonyme (sd), LRVZF (2003), Marichatou H. et al. (2002), Touré G. et al. (2005), CIRADIGRET (2002): République du Niger (SD), Alkoiret T. I. et al (2005), Anonymous (1996)

- The Sahelian: The Sahelian sheep is long-legged (70- to 90-cm-tall), with a much arched muzzle and long hanging ears. The male has large horizontal spiral horns; adults can reach 45 kg live weight. In females, the horns are rudimentary or reduced to stumps. The ears are almost always drooping. Sahel goats are found in north of the 11th parallel and are generally recognized by their tall and slender look. However, it is noted some variation in size in relation to the environment and the degree of mixing.
- The dwarf or Djallonke: The sheep and goats of this type are high in the Guinean zone. Both are small (50 to 65 cm) with several varieties of coat colours. The variety of Blackbelly sheep from Guinea is distinguished by the black colour of its belly, as the name suggests. Both the sheep and goat of this variety are very prolific and excellent animals for meat. Yields are high in goats and sheep in the south, lower in sheep and goats from the north.

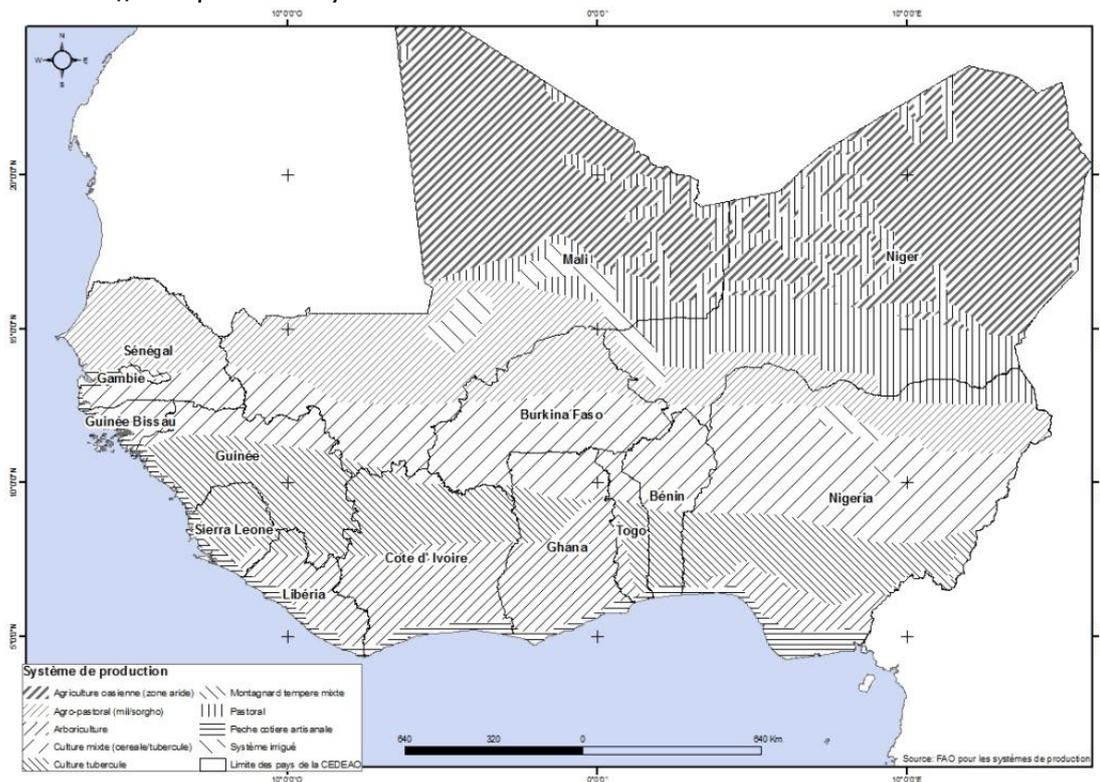
Camels: The breeding area of the camel is in the Sahelian zone below Latitude 14th degree north. They ended up in the north of the West African region (Mali, Burkina Faso, Niger, Northern Nigeria and Senegal), The breeds found in Mali are the Tibesti dromedary, the Air camel and the Iforhas Adrar camel.

Equines: The breeds mostly found are local. As for camels, there are limitations in their distribution because of factors such as the presence of the tsetse fly combined with historical and cultural factors.

2.3. Livestock production systems in West Africa

Based on the classification of several authors (FAO, 1996; Blein et al., (2008); Anonymous (2008a), Seré (1994); Bonfiglioli (1992); Dicko, Mahalmdane et Sangare (2006)), agricultural production systems in West Africa are classified into several categories. Their spatial distribution is given in Figure 3a.

Figure 3a: The different production systems in ECOWAS countries



2.3.1. Pastoral systems

These systems can be found in arid and semi-arid areas in Burkina Faso, Mali and Niger, and they extend to the shores of Atlantic ocean from northern Senegal (and Mauritania), an area covering 224,500 square kilometres, that is 9%. Herds consist of cattle, sheep, goats, camels, donkeys, horses, whether crossbred or not. For the cattle, the zebu genotype predominates in

these systems. The livestock feed is mainly available with natural pasture lands. The latter depend on both qualitative and quantitative rainfall. As a result, lower rainfall adversely affects the nutritional value of grass species. The woody stratum also contributes to animal feed during the lean dry season. The carrying capacity rate is higher than 10 ha / TLU.

Pastoralists move south to cereal- and tuber-based mixed-system areas during the driest season of the year, returning north only in the rainy season. Crops are mostly limited to cereals (millet, sorghum), but increasingly, they are not grown following decrease in rainfall. This system is dominated by small ruminants with over 70% in dry arid and semi-arid areas.

Livestock, through the annual compensatory growth system may during fair weather (the rainy season) gain weight, produce milk and be very competitive *with a significant rate of growth (3 to 4% for cattle and double for sheep and goats)*. The good pastures can largely enable livestock to breed and produce. However, today, the pastoral lands are eroded, invaded and colonized by land-grabbers, even in places where pastoral land ownership is still very strong (Central Delta region in Niger).

Depending on the great variability of the resources both in time and space and the ever increasing internal crises (rebellion or war), seasonal movement can be unpredictable with large flows and more serious problems.

Herd mobility (short or long-range transhumance) allows for better promotion of the diversity of pastoral resources (water and pasture land). These journeys help thereby to exploit pasture lands and streams, but areas of salt licks as well. Cross-border journeys for salt licks in Niger, Burkina Faso, Mauritania and Mali are well known in this context.

The main constraints are:

- Livestock feed is based on deteriorated natural pasture lands, bush fires and pressure from crops;
- The weakness of public and private investment in the field resulting in a lack of basic infrastructure (dirt roads in pastoral-wildlife area, water structures, etc.).
- The weak mechanisms for sustainable resource management - the lasting prevalence of some diseases such as *Peste des petits ruminantes*, Newcastle's disease, African horse sickness etc.;
- The lack of secure land tenure for pastoral activities,

2.3.2. Urban and peri-urban livestock production systems

As the name suggests; these systems operate in cities and towns or at their peripheries. They have gained momentum over the last 25 years owing to growing urbanization and increased demand for animal products, which the traditional pastoral and agro pastoral systems failed to supply adequately due to long supply chain and related transactions. They only use animal feed purchased domestically or imported: grown forages, agri-industrial by-products (concentrated

or coarse), cereals, cakes, brans, straws and stalks. They are mainly poultry (eggs and meat), pig farming and to a lesser extent milk production. Livestock production is done by exploiting exotic breeds and their crossbreds more productive than local genotypes. Fattening of sheep and cattle rely on those animals with poor body condition coming from pastoral systems. Modern poultry and pig farming are usually performed in close cooperation with firms from developed world that provide feed formulation as well as the chicks or breeders, advice and technical support.

In such urban and peri-urban areas, some families practice chicken and guinea fowl husbandry the yield of which is on the increase with better health care, pest control and care against seasonal stress and better nutrition. These systems can not yield greater production than the availability of feed resources allows. But their performance can't be improved without the removal of such major health constraints as Newcastle's disease and avian flu among poultry and African swine fever among pigs.

The profitability milk production is affected by feed prices. Similarly, milk powder imports, subsidized by the European Union, and supplying milk reconstitution semi-industrial units and product manufacturing ones such as yoghurts are a major obstacle to its expansion.

Intensive cattle fattening (cattle feeding in feedlots, based on purchased concentrated feed and fodder) was important in the 1970s in Africa, but has virtually been abandoned nowadays.

2.3.3. Mixed farming Systems (agro-pastoral or agro-pastoral and forestry)

These systems are growing at the expense of purely pastoral systems. It is increasingly rare to find pastoralists who do not practice some sort of agriculture. They cover many pastoralists who had to settle and diversify their economies by doing some farming (pastoralists settling down in farming areas). They also involve a now very large proportion of farmers now who have included farming as a means of economic diversification and of improving technical systems (soil fertility, animal traction, capital providing coverage against certain risks) and their productivity. Cattle herds in individual or corporate ownership are looked after by paid herders. The classification of this category can be done according to activity (annual crop, perennial plants, and in shallow water, fishing, etc.) to which stockbreeding is associated:

- **The agro-pastoral subsystem (millet / sorghum)** covers 287,200 square kilometres of the regional surface area, namely 20%. It is found in northern Senegal, Nigeria, in semi-arid and arid lands. Rain-fed sorghum and pearl millet are the two major food crops, they are rarely traded while sesame and pulses are sometimes sold. Land preparation is done with oxen or camels; thus the cattle is paramount.
- **The cereal / tuber mixed subsystem:** it is found from Southern Senegal to Nigeria through Guinea, Mali, Burkina Faso, Ghana, Benin and Nigeria. The entire system covers an area of 2,339,847 sq km (namely 44%). The main crops are cereals such as maize,

sorghum and millet, tubers such as yams and cassava. The livestock is very important with a clear predominance of cattle and small ruminants.

- **The irrigated sub-system:** it relies on floods along the rivers banks. It covers, in the area a surface area of over 6,500 sq. km, namely 1.3% of the total. The cattle is very diversified.
- **The arboriculture sub-system:** it is found in Nigeria and covers 474,420 square kilometres (9%) of the area's land. This system is based on the production of industrial tree crops, notably cocoa, coffee, oil palm and rubber. Food crops are interspersed between the trees and are mostly for home consumption, livestock is small. The species there are cattle and small ruminants.
- **The mixed upland temperate sub-system:** it spreads over 2,850 square kilometres, namely 0.1% only of total area. This is an area where livestock is present. The cattle are used for ploughing, milk production, manure, bride-price in the event of marriage and savings and sales in an emergency. The sale of sheep and goats, wool, locally-brewed beer, barley, potatoes, pulses and oilseeds represents the main sources of income.

Sub-system based on coastal fishing: It is found only in Nigeria with an area of 35,000 square kilometres namely 2% of regional total. The main activity is local fishing which sometimes add up to terraced crop production in the gardens, root crops under coconuts, fruit trees and cashew (cashew nuts) and some livestock

2.4. The importance of livestock in the economy of West Africa

Potentially, farming should allow West Africa to cope with its domestic needs and to progressively export to overseas markets. Niger is quite illustrative a case of this comparative advantage of the Sahel countries in ruminant livestock. Its livestock is estimated at about 7.5 million Tropical Livestock Units (TLU) in 2004, all species inclusive, for a total value of 706 billion CFA francs and an annual production of 191.5 billion FCFA resulting in 155 billion FCFA added value. Nigeria, Mali, Burkina also have great potential.

In general, the livestock is a treasure gradually formed and used to reduce risks of income losses and food insecurity. This savings and insurance function shall remain important as long as the commercial financial system (banks and insurance companies) are inaccessible to the majority of the population. Some case studies show that farming provides 34% of rural households cash income as against 14% for plant products (Zonon, 2004; CAPES, 2003 in CAD /OECD, 2007). A survey of several agro-pastoralists in the Mossi Plateau in Burkina Faso provides guidance on the importance of breeding income in rural livelihoods. In Niger, a household budget / consumption survey indicates that the livestock sector contributes over 15% in the household budget and its contribution to meeting the needs for food is believed to fall to 25% (MRA, 2004 in CAD / OECD, 2007). Despite this, it only receives weak support in public investment, in terms of processing and packaging infrastructure in all the countries of West Africa. Similarly, it suffers from a lack of policies to boost regional trade.

With an estimated annual growth of 4%, demand for animal products in West Africa will increase at the pace of population growth and taking into account the rapid urbanization. The statistics also indicate a strong demand for animal products, considered as pools of consumption, in sub-Saharan Africa, particularly in West Africa (so many in the coastal countries), more than 250% by the year 2020 (CAD/OECD, 2007). Therefore, the development opportunities of a regional trade exist. But for now, these needs are met from imports from the European Union (EU) and elsewhere. Import shares for meat from outside Africa increased from 3% to 19% in Ivory Coast between 1970 and 1999 and from 4% to 17% in Togo⁷. The appearance of bovine spongiform encephalopathy (BSE) or "mad cow disease" also had an impact on demand for meat from European countries in West Africa, which contributed to lower imports.

Regarding dairy products, their contribution to farm income is particularly important in the Sahel: 40% in Niger, 38% and 32% in Mali, Burkina Faso. However, it remains insufficient to meet the needs of populations. Thus, imports of dairy products from outside Africa are increasing. In Burkina Faso, for example, these imports have averaged FCFA 7 billion annually during 2000-2005, 6 billion FCFA in Niger and nearly 10 billion CFA francs in Mali. Dairy products and continue to burden the import bills of food in the ECOWAS countries, depriving them of opportunities to invest in the pastoral sector and to effectively fight against poverty and food insecurity.

2.5. Pastoralists' economic situation and vulnerability in West Africa

The study of the lives of pastoralists using the elements described in the context of sustainable livelihoods makes it easier to identify the causes and dynamics of poverty. This framework shows that the pastoral population's livelihoods are conditioned both by access to productive resources such as grazing, water, veterinary services, markets, credit and education. They also depend on the conditions under which these goods are used for production and consumption, that is to say the political, institutional and organizational environment. In addition, the framework of sustainable livelihoods place the pastors' live in the dynamic context of risk and seasonal variations. This affects at long-term their means of production and livelihood strategies and increases their vulnerability.

This explains the priority given by States to fight against poverty, supported by development partners. Indeed most of ECOWAS countries are engaged in developing a strategic framework to fight against poverty (PRSP), which target a set of projects with direct impact on poverty alliviation. Livestock rearing is the main economic activities which are dependent on the poorest populations as a source of food and cash income. It is also the main insurance against risks to millions of poor people whose livelihoods depend on rain-fed agriculture. But the disruption of the balance between the needs of a growing population and conservation of natural resources is recognized.

The droughts that occurred in the Sahel during the 1970s and 1980s, and the increased tensions and conflicts in pastoral areas (Niger, Nigeria and Chad) came again to support this vision. Pastoral mobility and the community resources tenure regimes were viewed as serious obstacles to socio-economic development of the pastoralists, hence, the options of private investment and sustainable resource management.

Based on Western models of land management (farm and ranch), policy and development initiatives have focused on pastoral sedentarization of pastoralists and redistribution of occupancy rights of pasture through nationalization or privatization programs.

The privatization of rangelands and development of commercial *haciendas* favoured the emergence of small business elite at the expense of pastoral communities. It took several decades (during 90 years with the United Nations Conference on Environment and Development (UNCED)) for the international community to reconsider its assessment of pastoralism and recognizes the capacity of local communities to effectively manage marginal lands.

With an increasing phenomenon of climate change (CC) (ever increasing temperatures, increased rainfall variability, etc.), The different sub areas of West Africa and their inhabitants will be affected in various ways. The implications of climate change on the livelihoods of pastoralists are not yet well understood. Two schools of thoughts emerged; some say the pastoralists will be the first to lose their livelihoods as pastures and water points will dry up, while others argue that they are best able to adapt to climate change, because the pastoral livelihood strategies are designed to react to the scarcity and variability of natural resources and to deal with difficult and uncertain agro-ecological conditions.

But, it should be noted that in most countries of West Africa, the so-called marginal dry areas, have abundant mineral resources in their basement. These include uranium in Niger and oil in Nigeria. Despite the collapse of some of these raw materials, their operation is still priority and any improvements made on these is not without impact on the mobility of pastoralists.

In a risky and random environment, mobility is quite to the contrary an advanced technique that allows access to natural resources essential to life in a pastoral setting. It is essential to enhance and secure access to strategic resources for pastoralists so they can respond effectively to climate change. But also, the risks of epidemic diseases potentially threat all pastoral communities. Poor pastoralists are however particularly exposed. Often living in remote areas, they have no access to veterinary services and cannot afford to buy medicines to prevent diseases or treat their animals. Their movements combined with the diversity of trypanotolerant breeds, are a way to avoid animal diseases and vectors such as tsetse flies.

Adaptive capacity of pastoralists in the Sahelian regions is constrained, however, because of their marginalization. Pastoralism remains the subject of prejudice. It is considered an archaic form of production exceeded; pastors do not sell their animals, "*they prefer to store them, admire them and compose poems about them*". Productivity is considered very low compared to farming

systems that use mobile fewer natural resources and less space. In addition, their access to basic socio economic services (health, education, financial, etc.) remains difficult. For better integration into the national economic system, pastoralists need to settle. This marginalization of pastoralism is therefore a factor in worsening the vulnerability of pastoralists against other factors such as climate change, epidemics and market forces.

3. CHARACTERISTICS OF CROSS-BORDER TRANSHUMANCE IN WEST AFRICA

3.1. The various forms of transhumance

Transhumance is primarily a response to ecological constraints but it can also stem from agricultural, health, economic and socio-cultural factors. It can then take various forms depending on the period and context. We can distinguish two types of transhumance (Abbagana and Youla, 2009).

Short range transhumance: It aims to promote the use of crop residues or to accede to better pasturelands or to give way for crops to be cultivated; this form of transhumance is widespread and it helps to reduce conflicts with farmers. Very often, the journeys are made within the national borders but they can happen across borders, notably for pastors settled near the borders (e.g. journeys across the River Senegal by farmers during the rainy season, pastoralists' journeys from Mali to Burkina Faso, from Niger to Burkina and vice versa).

Long range transhumance: In West Africa, it happens in the dry season and does not correspond to a strict plan for its modalities, its organization and its frequency. It corresponds to cattle movements of big magnitude (north-south and south-north return). They walk distances of several hundreds of kilometres, and frequently go beyond the borders of their country of origin. This type of transhumance concerns above all the cattle that require more important quantity and quality forage than goats or sheep.

In the dry season (January-May), the first leg of the transhumance route is rather comprised of strategic points (streams, grazing areas, markets, salt licks, fords, etc.) which pastoralists are trying to reach (Convers et al., nd). They do not follow a precise track since the fields are not cultivated in this period. Their route is based on tradition but is based on the existence of some "key" pastoral resources (mainly fodder and water). Upon return from transhumance and during the daily journeys in the home country in the rainy season, some specific tracks called corridors are used by the pastoralists to facilitate their passage through farmlands. Today there is a tendency to mark up these corridors, to stop the fields advancing, which provoke violent conflicts between farmers and herdsmen.

This form of transhumance always incorporates a country of origin and a host country. But we must also take into account areas that are crossed (or stopovers) and sometimes may be a third country. An example of this in our study is the CBT involving a country of origin (Burkina Faso) a stop-over (Niger) and finally a host (Benin). As in "normal" transhumance, the herdsman takes their flock to a grazing point on which, during every journey, they nurtures the grass growing there (Diakite, 2003).

The production (milk, meat and manure) is obtained throughout the journey and are marketed everywhere in the space. The border (which, for the herdsman may seem virtual) that is drawn

across this space does not fundamentally change the principles of transhumance (reception and departure area, changing the rules, etc.) but tends to amplify the concept of foreigner. The cattle movement has always existed in this area. However the border transhumance has emerged as a mass phenomenon after the droughts of 1973 and 1984.

3.2. Factors behind cross-border transhumance

In general, the main reasons for pastoral mobility are:

- i. accessibility to quantities of forage (especially after a bad rainy season) or search for quality grass (search for such plant species as *Andropogon gayanus* and *Zornia glochidiata*, harvest residues, etc.)
- ii. Insufficient water for the livestock during the dry season, the avoidance of damage to the fields during the rainy season,
- iii. Decision to abandon areas affected by animal diseases;
- iv. search for mineral licks (salt cure);
- v. the desire to reduce the risk of livestock loss through theft; the avoidance of intertribal conflicts;
- vi. gene research to improve herd productivity;
- vii. insecurity associated with the proliferation of weapons of war and banditry.

The great transhumance that is noted in the West African region occurs between the north and the south (Anonymous, 2008a). Indeed, the coastal countries are part of sub-humid and humid eco-climatic areas, with a growing period of grass exceeding 180 days. In these environments, vegetation is dominated by perennial grass savannas capable of producing new growths with high quality forage during the dry season, which are highly consumed by cattle. It is this eco-climatic comparative advantage, including best watering conditions coastal countries have compared to countries of the Sahel, which determine the migration flows in the North-South direction.

This transhumance towards the southern regions is an age-old phenomenon. But it is mainly by its scope (number of pastors), the distance walked (increasingly long) and the violent conflicts that it provokes which varies from time to time. Two reasons may explain this phenomenon: (i) the disappearance of wetland-related diseases (trypanosomiasis, onchocerciasis), (ii) the crises which have plagued the production systems in the Sahel countries and forced pastoralists to seek new pasture lands.

During these movements, the herders will move towards south in search of water, pasture lands and places where they can freely move with their herds. Some herdsmen who, for example go to Benin look for:

- i. the many surface water points they find in the major semi permanent rivers (Alibori Ouémé),
- ii. green grass (thanks to seasons of more abundant rainfall and longer duration)

- iii. still uncultivated land where animal supervision is easy. As such, the forests of Benin (1.4 million ha) are very attractive targets (Diakite, 2003).

In some northern regions (Mali and Niger), CBT was enhanced because of the relatively recent rise of new forms of insecurity such as weapon proliferation, highly-lucrative trafficking of illegal products, acts of banditry and theft (including animals), not to mention the intrusion of *Al Qaeda* in Islamic Maghreb and the potential consequences of the recent events in Libya (Marty, 2011). These phenomena in the context of weak governments (since the structural adjustment programs) and the departure of development partners can only take their toll on the civilian populations caught in a stranglehold in a highly complex and uncertain environment.

3.3. Evolution of pastoralism faced with constraints in access to resource

Several factors contribute to a drastic reduction in grazing areas, putting pastoral systems in a precarious situation. Thus, in most countries in West Africa, there is a rapid increase in the agricultural front (see section 4.2), by 3 to 6% per year, at the expense of rangelands. The colonization of agro-forestry spaces is growing in the Sudano-Sahel regions south of the Sahel and north of the coastal countries. Agricultural surpluses are often reinvested in cattle, thereby increasing the pressure on the resources.

The degradation of pastoral resources, which accelerated sharply after the major droughts of the 70s and 80s, continues to reduce the pastoral potential. Besides climatic deterioration, increased livestock numbers overload the pasture lands and cause their degradation, particularly in low mobility herds. In the Sahel, the degradation also results in lower groundwater levels with negative consequences on pasture land and pond, lake and river silting (Niger, Senegal and Gambia), thereby reducing their pastoral potential (“*bourgoutiere*”⁵ degradation and livestock watering opportunities).

Access to Sahel pools, lowlands and rivers is an important link in the annual grazing cycle, notably for the use of dry season surface water and fodder reserves (*bourgoutieres*). The agricultural development on strategic pastoral areas through the establishment of crops of all seasons and irrigation schemes in the 70s and 80s has deprived pastoralists of their key private resources. This is the case of the big constructions built over the Senegal River Valley and the Niger River which have not sufficiently integrated livestock development into the development plan. Thus, these valleys have become a true mosaic of crops where it is sometimes difficult to find corridors for livestock passage (IRIN Afrique, 2006). The same is true for the occupation of Lake Chad pasture areas by crop farming. Today, most cattle tracks are obstructed by fields, forcing pastoralists to make long detours to reach water or grazing resources. Similarly, some

⁵ A flooded depression where a grass species *Echinochloa stagnina*, commonly known as Bourgou in the Sahel, is grown. For lack of equivalent word in English, the French-Sahelian word *bourgoutiere* is maintained in the report

transhumance corridors must sometimes pass through protected areas that are closed to grazing.

The deteriorating climate negatively affects the routes' grazing capacity and the opportunities for livestock watering. Indeed, rainfall has a strong relationship with herbaceous biomass; any decrease in the first brings about lower productivity in natural pasture lands. In addition, “*bourgoutiere*” productivity, dry season strategic fodder resources in the Sahel is severely affected when changing the flow of streams and lakes. Finally, the decline in rainfall undermines the sustainability of some water bodies (ponds, dams, lakes, etc.) with negative consequences for drinking and livestock productivity.

Extreme events (droughts, floods, etc.) have become increasingly frequent, with impact on the livestock. Thus, the great droughts of the 70s and 80s have wiped out more than 30% of the cattle and caused misery among many pastoralists in the Sahel. In 2002, torrential rains killed more than 50 000 cattle and 50 000 small ruminants in northern Senegal and southern Mauritania.

3.4. Transhumance directions and itineraries

3.4.1. The main areas of cross-border transhumance

The vast majority of countries in West Africa are experiencing CBT either as countries of origin, or as host or transit. Depending on the season, two types of routes can be distinguished: (i) the north-south routes, the more numerous, which indicate the transhumance movements of the dry season in the starting zones, and (ii) the south-north route, less numerous, which materialize during the wet season transhumance movements.

There are no reliable statistics to quantify the number of animals involved in these movements (Anonymous, 2008a). However, estimates by various organizations of pastoralists reported more than two million cattle are involved annually in transhumance to Benin, Nigeria, Chad, Mali and Burkina Faso. In the Liptako-Gourma (Burkina Faso, Mali and Niger), it is estimated that over 50% of the herds in the three countries are part of the pastoral system (Anonymous, op. cit.).

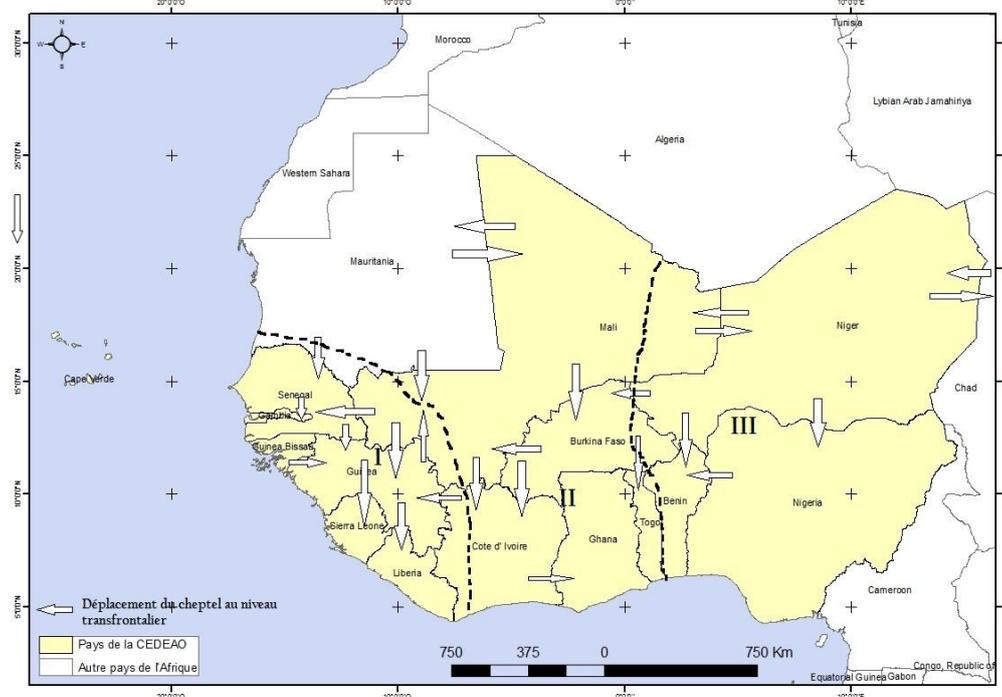
Based on data collected during the validation meeting, the main cross-border routes are identified (Figure 4). According to the intensity, three zones can be described as follows:

The western zone - comprises the movements in countries along the shores of Atlantic ocean countries (Mauritania, Senegal, Gambia, Cape Verde, Guinea Bissau, Guinea, Sierra Leone and Liberia). It is characterized by weak trade with other zones (a few currently happening between Mali and Senegal and between Mali and Guinea), and the weak trade between the countries in the zone themselves (albeit for sheep between Mauritania and Senegal or possibly between Senegal and Gambia). Insecurity resulting from the Guinea-Bissau conflict has limited

the routes near the borders of that State. Gangs that roam the border area both in Senegal and Guinea-Bissau limit transhumance to the south.

Although there are fewer and fewer transhumance movements as we move to the south, they are stronger in northern Casamance (ENDA Diapol, 2007). Cattle rustling are less common in this area than in the border areas of Guinea-Bissau. So do many Senegalese herds journey to

Figure 4 : Transhumance axes in West Africa



Source: Adapted from Anonymous (2008a)

the Gambia without any problem if their owner have a health certificate issued by the departments of Animal Husbandry. On the other hand, the Gambian livestock often travels without a certificate to verify their health status, which requires the Senegalese Livestock services to bear the burden of vaccination.

Traffic flow of cattle between Senegal and The Gambia is in principle easier. There is only a disease control that is done with the presentation of a certificate issued by the veterinary services of the animals' origin. But this relative ease is only fitting if the cattle is to be slaughtered, Gambia depends on them to meet its consumption needs. The situation is different, indeed, from transhumant livestock in search of pasture land. While Gambia has water resources superior to those in Upper Casamance, it worries about the impact of grazing on the farm. This leads the Gambian authorities to show some understanding towards Gambian farmers protesting against the Casamance pastoralists who let their cattle graze in the Gambia during the dry season.

In Mauritania, the flow of transhumant animals towards Senegal and Mali is estimated at over one million animals, namely 5 to 10% of Mauritanian livestock (IRIN Africa, 2006 in

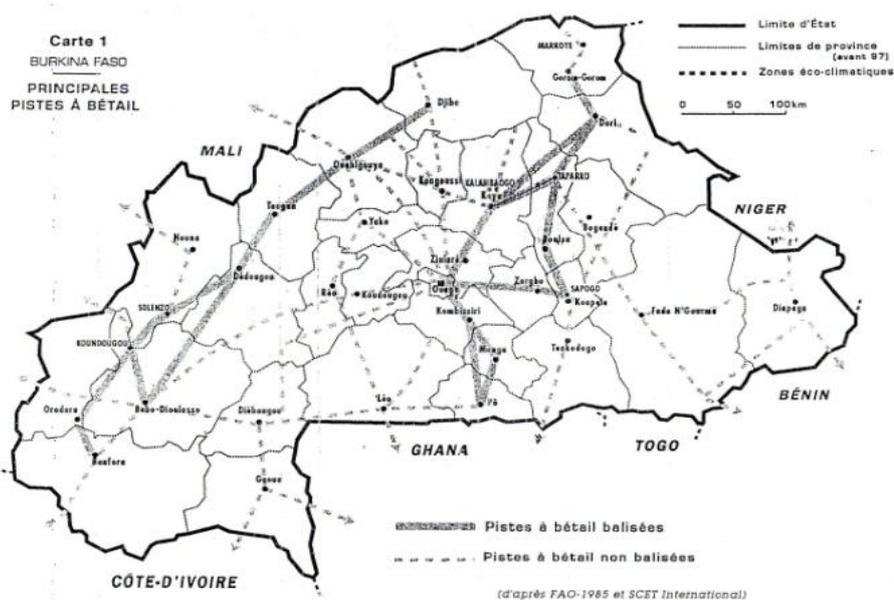
Anonymous (2008a). In 2007, some 87 000 cattle moved from Mali and Burkina Faso to Senegal. However, as far as transhumant livestock is concerned, only 2330 cattle, 625 camels and 80 small ruminants were monitored in 2010/2011 as outgoing and 1300 cattle and 148 small ruminants as incoming for the same period (Niang, 2011). In 2011 the Ministry of Livestock in Senegal did not authorize any entry of camels from the Islamic Republic of Mauritania because of an outbreak of Rift Valley fever reported by the Office International des Epizooties (OIE) in this country.

Cattle from Kayes (Mali) to Senegal go through Kidira, travel along the National Highway number 2 and then get into Bakel and later into Ourossogui. The herdsmen follow, from Matam, the same itinerary as the one taken by the cattle from Mauritania.

In Guinea, the animals move in both directions on the sides of the border (i) of Mali in the prefectures of Siguiiri and Mandiana in Upper Guinea, some animals continue to Liberia, (ii) of the Ivory Coast in Beyla and Lola prefectures of Forest Guinea (iii) of Guinea Bissau in the prefectures of Gaoual and Koundara.

The Central zone - includes movement between Mali, Burkina Faso, the Ivory Coast, Ghana and Togo. This is the central basin, which is a magnet for animal products consumed by the Ivory Coast and, to a lesser extent, by Ghana, trade with zone 3 via Togo. In this country, the number of transhumant cattle identified increased from 35,000 in 1983, to 63,000 head in 1999 and over 80,000 head in 2009. Transhumant herds are received from Mali, Burkina Faso, Niger, Nigeria and Benin. Figure 5 shows the tracks of cattle in Burkina Faso and their outlets to neighbouring countries.

Figure 5 :Track cattle in Burkina



The East Zone - includes the movements between Niger, Burkina Faso, Benin and Nigeria. Some rare movements may originate from Area 2 (Mali, Western Burkina Faso). Other less frequent movements may also exist to North African countries from Niger

The entry checkpoints for CBT herds in Benin are mainly, the Mekrou hunting camp checkpoint at the border with Burkina Faso (Banikoara Commune), Monsey Border Checkpoint with Niger (Karimama) , Madécali border checkpoint with Niger and Nigeria (Malanville Commune); Goumori, Founougo, Alibori Livestock Markets, (all in the town of Banikoara) Mamassi-Fulani (Karimama) Guéné (Malanville Commune) and the Kérou Livestock Market. The herds are then directed as required into the national park of W.

The entry points into Benin for the CBT from neighbouring countries is shown in the table 2:

Table 2: The entrance doors transhumant livestock according to their origin

Origin	Entry points
Niger	Malanville (officially, according to law No. 87-013 of 21 September 1987), but there is a multitude unauthorized gateways: Malanville-Bodjécali-Guéné-Goungoun-Angaradébou
Burkina Faso	Porga; routes are: (i) Porga-Tanguiéta-Natitingou-Djougou-Bassila (ii) Porga-Gouandé-Datori-Korontière-Boukoumbé-Perma-Majatom-Bassila
Togo	Atomey and Lanta; routes are: (i) Atomey along the Mono River and the west side, (ii) Lanta, along the Mono River and the west side
Nigéria :	Waria, Kaboua, Toui, and Ilikimou Gbanago; routes are: (i) Varia-Boukovo-Malete (ii) Kaboua-Savè-Glazoué-Savalou-Tchetti (iii) Toui-Kilibo-Djègbè (for animals from Borgu), (iv) Ilikimou-Idigni-Iladji-Dogo (v) Ibaté-Towe-Illolofin-Gbanago

Once in Benin territory, the areas of concentration of transhumant animal correspond to the endpoints of transhumant route mentioned above and described as follows: (i) **Borgu** (Borough of Angaradébou, Triangle-Varia-Boukovo Malete) (ii) **Atacora** (Bassila, Triangle, (iii) **Zou:** (Triangle-Toui Kilibo-Djègbè) (iv) **Mono** (Mono Along the rivers and Kouffo of 5 km wide and the west side), (v) **Ouémé** (Dogo) (vi) **Atlantic** (Around Hinvi, Agon, Assagota, Koundokpoé).

3.4.2. Transhumance routes

Transhumant herdsmen remain very flexible in their choice of routes although in general they show a certain preference to routes that allow them to reach the reception area as soon as possible and in good conditions of foraging for their livestock. They thus consist of a series of steps carefully selected based on information collected from several informants and personal experience gained from the transhumant for years.

For route selection, pastoralists seek information concerning the existence and quality of pasture, availability of drinking water, the existence of transhumance routes and the presence or absence of crop fields. The presence of the defence forces and security in the area is also a criterion considered to not be on their way to avoid harassment of any kind.

This choice is also dictated by other additional information regarding the safety of livestock and livestock diseases (cattle rustling and animal diseases). All this information allows the farmer to define the route of transhumance and the area of final destination. But throughout his visit, the transhumant adapts and modifies routes in order to enhance areas where feed resources are available in sufficient quantity and quality.

In the 1970s, these routes tended to be longer and more spread-out. This could be attributed to the increased frequency of droughts and to the expansion of the crop field into the cattle corridors which might have forced transhumant herdsmen to create alternative routes.

3.4.3. The livestock corridors and grazing areas during CBT

As part of the CBT, resting areas, grazing areas and the transhumance passage routes are important. The shelters and tracks are fitted to make way for the passage of animals in crop areas or to have access to streams or water points. Both crop producers and pastoralists recognize the utility of corridors as a factor for peace and tranquillity. Despite this fact, however, the corridors are blocked, occupied by crop fields. Defined and materialized corridors are often subject to tear tag. This is explained mostly by the lack of monitoring and the absence of consultation of neighbouring residents.

For example, in the Zinder province (Niger), the international transhumance corridor, 500 m wide has become the largest grazing area in the Kantché District (Diakite, 2003). High population pressure (density 118 / km^2) and the problem of access to land have damaged the hallway. That is how an entire neighbourhood Matameye developed in the corridor; the same is true for three village woods, a cemetery and a school in any census. Nevertheless the international transhumance corridor from Algeria is still identifiable from a distance of 75 km.

In reality, it is the grazing areas as potential agricultural land that causes most problems. The availability of these lands is constantly challenged, if not outright annexed as is the case in the department of Madaoua (Niger), among others. In addition to fallow and plateaus, there is the progressive farmers in the forests say classified on the basis of a contract culture eg in the forest of Gorou Bassoungua (Niger) with the environmental service and in return for payment of 1,000 CFA francs per year / hectare cleared. Baban Rafi forest, hitherto safe haven herds of Madaoua, Konni, Tahoua and Tanout and even Nigeria is full of large agricultural estates belonging to individuals in the region. Encouragingly, the forest of Takeita primarily pastoral is exploited by neighbouring herders.

Village communities have set up management committees to manage the grazing areas. In some places, these areas were covered with grass seeds after which the harvested hay packed as bales was sold to pastoralist at a nominal fee. Such are the cases of Konni, Takeita, Baban Rafi (Niger). Grazing areas that were recovered in such a way well maintained and guarded by the village committees show the possibility of such operations.

Still in Niger, in areas of Toda, Gaya, Konni and Ourafane once hot beds of deadly conflicts between transhumant and crop farmers where rangelands are progressively eroded by farmers,

the conflicts decreased through mutual agreement between the parties. These areas have become progressively settlement areas. But in the Baboye, access to grazing resources is difficult because of the non-functionality of corridors due to the extension of fields, urban areas and the extension of vegetable production. Over 90% of pools from dallols today are surrounded by vegetable production gardens and fields that obstruct the passage of animals to drink water.

3.5. The problems cross-border transhumance is facing

For the reasons previously reported, the pastoralists is sometimes forced to leave their traditional grazing lands for a longer or shorter to travel to other areas that would enable it to improve the productivity of his herd. As and when the pastoralists move, they face different constraints in terms of jurisdictions (A) or populations (P) (Table 2b).

Table 2b: The types of problems depending on the actors involved

Country	Types of problem	Actors
Departure	<u>Organizational Problems</u> Uncontrolled number of pastoralists and animals in transhumance; Not all routes identified / determined (for existing ones) or uncontrolled; Difficult access to locations providing livestock services; Limited number of entry points; Refusal / unavailability of livestock identification papers (identity papers) before departure; Weak consultation framework between actors in the country of departure; Lack of information on farmers during the seasonal migration; Discontinuity of transhumance corridors at borders; No prior knowledge of diseases (sometimes animals are neither vaccinated nor dewormed before leaving for transhumance) <u>Problems with indigenous initially</u> Early return from transhumance (stray fields)	A E E E A E E E P
Transit	Destruction of crops; Discontinuity transhumance corridors; Administrative harassment (police, customs, etc.); Obstruction of corridors; Lack of infrastructure and inadequate coverage; Lack of coordination between the border and those reception areas for the determination of animals quotas.	P E E E E A
Reception	<u>Organizational Problems</u> o No determination of carrying capacities of reception areas; o No control of diseases (health constraints, and unvaccinated	E/A E/A

	animals before departure in transhumance) o Breach of length of stay; o Breach of posts of entry and exit; o Lack of information on different types of development; o Inadequate management of grazing areas; o No Boundaries / markup transhumance corridors; o Lack of flexibility on the return routes; o Inadequacy of drainage systems in relation to certain species such as camels. Problems with Aboriginal arrival o Non compliance of the host country; o Silting of water points; Various social conflicts (non-compliance with customs, wandering, violence, rape, theft, ...);	A A E E E E E A E E/A
All countries	o Low awareness / sensitization texts and practices of pastoral; o Damage in the fields; o Excessive falling of trees; o Lack of knowledge of languages spoken in areas of transhumance o Language issues; o Loss of animals; o Incursion of transhumance in protected areas (voluntary, involuntary acts of corruption); Transhumant refusing to identify themselves	E/A P P/E A A/E E/P A/E A

A: Managing E: Breeder transhumant P: population

Source: drawn from the work of the validation workshop of this report, 9-12 April, Accra

When it comes to compliance with regulations, transhumants are mostly illegally as they usually say that "in all cases, you have to pay even if you are in good standing." The illegal practice of transhumance is widespread, and once there, they expect to be able to regularize their situation with the structures responsible for the control and management of transhumance.

3.6. The actors of transhumance

The decision to go on transhumance belongs to the pastoralist. Therefore, the herder must inform the owners to get their approval before departure. In the latter case, it is the animal owner who also chooses the route and reception areas, based on the traditional routes and advice from the structures. However, the transhumant herder has the possibility to adapt the route based on information obtained during the journey. The information they are looking for relates to the state of pasture lands and streams, but also to forest patrols, animal diseases, the location of new cultivated areas and cursed fields, etc. The owners entrust their cattle with the herders, usually two per herd, who are usually their own kin. In the event of major difficulties, the herders have no power of decision. That power is held by the owners, which results in long delays for the settlement of disputes/conflicts. Depending on the relationship held with the herd, we can distinguish:

- Owner transhumant: the herds are driven by the owners or by relatives (son, nephew, cousin). In case of a dispute, they can make their own decisions for a final settlement. That is therefore settled faster. They take special care of their herds, keeping them as much as possible away from areas forbidden bounds to animals like crop fields and classified areas in as much as their limitations have been well materialized.
- Partial owner transhumant: these are pastoralists whose animals are mostly in foster care. Only a few animals belong to them. They are careful herders, but cannot take a final decision in any litigation of some importance. In this case, they should refer to the majority owners of the animals under care.
- Herders: they drive herds they have fully been entrusted with. They are actually service providers whose pay is received on their return from transhumance in the form of heifers. In case of conflict, the dispute drags on because they cannot take any decision without first referring to the owners. Transhumance goes on more or less depending on their experience.

3.7. Conflicts during border transhumance

3.7.1. Origins of conflict

In areas receiving cross-border pastoral livestock, the exploitation of renewable natural resources is divided between transhumance and such other activities as agriculture, forestry, wildlife-fostered tourism, fishing, etc. The extension of cultivated areas has grown significantly, driven by the growth of indigenous peoples, the migrants' arrival from other provinces (including the agro-pastoralists) and the promotion of cash crops, especially cotton. Pressure on agricultural and forest lands has resulted in the occupation of pastoral spaces (cattle tracks and transhumance corridors, reception areas, key resources). This situation, which greatly increases the difficulties of travelling and pastoral exploitation of natural resources by the transhumant, is conducive to land conflicts. There is an increase in conflicts, sometimes fatal, in transhumance areas.

In transhumance areas (transit and reception areas), the conflicts result from clashes of interest between pastoralists and other users of natural resources, sometimes between the pastoralists themselves when the resource forage becomes scarce. The causes of conflict vary according to the protagonists. In addition to conflicts between different users of natural resources, herders are facing other problems. These include the insecurity that results in their ransoming by gunmen with loss of all or part of the herd.

Moreover, transhumance leads pastoralists groups away from home (Gunter et al, 2006). They do not always exactly follow the same path. Often they are unaware of the changes in local rules and although they exploit these spaces they do not in general take part in discussions on the management of these resources. The rules which are then taken are not their rules. From

that moment on, the competition is harsh, quickly turns into conflict and dialogue between stakeholders, essential to finding solutions for joint operations and the establishment and control of common rules, becomes more difficult. The inexistence of communication channels and language problems do not facilitate the management of these conflicts.

Other reasons for transhumance can be reported (Anonymous (2011))

- i. ancestral prejudices; pastoralists are considered as belonging to no country;
- ii. insufficient interventions of public services as far as agricultural and pastoral laying-out;
- iii. cases of non-or poorly resolved conflicts. In such cases, the victims keep a grudge and do not lose the slightest chance to retaliate. Often, the authority (administrative, judicial or customary) is suspected of conniving with one or the other party.

3.7.2. The different types of conflict

Based on the origin of conflicts related to the CBT in different countries origins of transhumant herds (Niger, Burkina Faso and Mali) and host countries (Benin, Senegal, Ivory Coast, etc.), four categories can be identified:

Conflicts over damaged crops: Here crop farmers are in contradiction with pastoralists. Such conflicts are generally observed:

- in early winter when the transhumant leave to the South to regain the northern zone;
- the end of the rainy season, herds take the path opposite, but sometimes the return of transhumant done before the release of the fields, causing damage fields.

Currently, in countries in the northern agricultural areas tend to increase the some as in the countries in the south. In Ivory Coast for example, the former Savannah Region (Korhogo, Ferkessedougou, Boundiali Tengrela) is virtually empty most of the pastoral areas or free. The development of cotton cultivation and promotion of perennial crops including cashew and mango eventually occupy the space formerly grassy savannah and available for easy feeding of cattle ranching system.

In Ghana, some pastoralists deliberately put fire to the bush for the regeneration of fresh herbs to feed their animals. This act often leads to bush fires raging not only burn agriculture, but also destroy standing hay and crop residues in fields that are entered into livestock feed and other ruminant livestock.

There is also a planning problem. The installation of agricultural zones does not take into account the movement of transhumant herds. Fields of indigenous sometimes scattered throughout the village land contrary to the traditional practice which envisaged a space for each activity. The shallow water or some valleys that are naturally rich in pasture and water are also occupied by crop fields (as part of irrigation) or vegetable gardens.

The lack of mutual pastoral and agrarian calendars gives rise to disputes. Products and by-products of the harvest are left at the areas of culture for periods longer or shorter according to tradition or because of work schedule. The regulatory measures to provide for periods of access to grazing postharvest show some limitations which is understandable due to the inter-annual variability that characterizes the crop and fodder deficits more or less early in the regions north.

This situation is particularly serious in case of pastoralists leave early when lack of water and grazing does not allow them to stay any longer in the north. Farmers sometimes guided by the gain set up "traps" fields along the corridors and cause conflict in the hope to reap the fines imposed on pastoralists and generally more than the monetary value of the crop year.

Conflicts over cattle rustling: Conflicts related to the theft of cattle by bandits, who, sometimes are armed with weapons, kill the entire herd. Pastoralists, in pursuit of the perpetrators to recover stolen animals, fight with these bandits; which can lead to loss of life. These kinds of situations cause substantial losses each year to herders going through these areas. Conflicts over cattle theft occasionally pit farmers against the herders. Indeed, farmers' animal, left unattended are easy prey for rustlers who are mostly passing herders who, when the opportunity arises; try to add to their herd wandering animals for sale farther to the butchers. Cattle rustling have increased over the last twenty years to become a "modern" well-organized business, which has acquired motor vehicles and automatic weapons and is hardly or not related to pastoralism and transboundary movements.

Conflicts over the use watering points: These conflicts lead to the fight among pastoralists themselves but also between the pastoralists and the crop/vegetable farmers. The conflicts arise most often between pastoralists to control or appropriate a public stream and either occur on account of irrigating dry-season crops that prevent access to these streams or because use of the village wells is prohibited to the pastoralists and they are accused of polluting them. Other sources of conflict between farmers and herders are born from the installation field traps around the ponds used by the transhumant.

Conflicts over land: Because of population growth and development of several activities, grazing land is being occupied without compensation for losses it generates. In Senegal, in spaces reserved initially for grazing (forests classified, etc.), Contracts are awarded cultures. A little part in the traffic areas of transhumant herds, homes settled clogging the corridors. The development of mining has reduced the possibilities of grazing in some areas. It is the same installation of paved roads that cut some pathways of cattle causing accidents

Conflicts over the use of protected areas: To preserve the rich plant and animal biodiversity that contain different ecological zones of the sub-region, major protection efforts have been made by the government for several ten years. Transhumance is considered among the most important factors in the degradation of these protected areas include areas with reduced grazing lands in the areas of land and opportunities to access resources forage quality and water resources in dry season. Tensions are increasingly common among officials

responsible for the management of these areas and the shepherds who lead the transhumant herds. They are subject to fines if their animals are taken in areas totally forbidden pasture. But if their herds are attacked by wildlife carnivore (jackals, hyenas, etc.) in partially protected areas such as wildlife reserves, the farmer is not allowed to use a firearm to protect his flock. He should also resign because of his inability to get compensation.

3.7.3. Management and prevention of conflicts

Given all the factors behind conflicts, actions are taken in collaboration with local and transhumant for safeguarding and preservation of cohabitation. Some strategies adopted in some countries are listed below.

In **Niger**, there are actions in most provinces, especially in synergy with actions by Land Committees (COFO). In order to prevent conflicts, some projects like the Livestock Sector Support Program (PASEL), some organizations like CARE International or even COFO supported by various financial and technical partners have delineated and marked ancient passage corridors (Diakite, 2003). These operations are executed with a participatory approach with the cooperation of all stakeholders, namely the attending pastoralists, farmers, traditional and administrative authorities. In general, after the work is completed, a committee in charge of these corridors is set up at each stage.

We need nevertheless to stress that these interventions have limitations although some “fora” have been held to bring together the views of all parties involved in the management of pasture lands. But generally the transhumant were not consulted and involved in these grazing areas’ planning process, which generates some misunderstandings. There are also problems with the management of animals, because very often despite the existence of a grazing area and corridors, the rest area is often located tens of kilometres from the starting point of the corridor. Such an approach is due to the reluctance of farmers who refuse to give their land to construct a rest area at a suitable distance and compatible with the animals’ endurance. Some penalties are planned for the protection of this provision. Unfortunately no legal-administrative act has sanctioned the implementation of these fines.

In **Benin** in the Toucountouna region, to try to end the bickering between them, pastoralists and crop farmers have decided to make up pastoral corridors and trips of land reserved for passing herds so that they can accede to pasture lands, streams or livestock markets (Rosier, 2009). This constitutes a historic turning point in the age-old relationship between transhumant Fulani and farmers in the heart of the bush. On the Commune’s territory, two pastoral corridors have been drawn out, over-3-km-long and 50-meter-wide each; to draw these up, they each had to listen.

In the south-eastern province of Borgu, the Pastoral Unit⁶ approach was used. They are organized around a new water storage system and their management is conducted by a committee of pastoralists and farmers. They should gradually develop into an association which, in addition to managing a store of inputs for farming and a cattle market, would be responsible for land management (De Hann, 1992). This approach by the pastoral unit has been used in Senegal and Mali for several years.

In Mali, some development plans for the agro-forestry-pastoral (and fishing) space have been implemented (Marty, 2011). They fully embrace the infrastructure necessary for pastoral activity with cattle tracks and the marking of risky sections, the preservation of stopover lodges (parking lots), guaranteed access to drinking water, respect for areas where they are in order, not to mention the access rights to “*bourgoutières*”, is probably a strategy to develop. Where it was initiated, it has helped secure both pastoral mobility and crop protection to the satisfaction of the two most affected parties (farmers and pastoralists). It's not unusual a case when the former's representatives, sometimes wary at first, eventually recognize the validity of such transactions for their own interests and sometimes become the first applicants.

In **Ivory Coast**, the experience of pastoral developments within SODEPRA has greatly reduced the pollution resulting from the installation of Fulani herds in the village lands and increases the positive effects resulting from this presence. For that, we had to implement:

- A preventive program: **(i)** establishment of close around crops in risky areas (free supply of barbed wire for farmers, etc.) and passages for livestock in areas at risk (cattle tracks, dams, dipping tanks, etc.. **(ii)** make a restraining animals by creating mandatory restraining night paddocks near the Fulani settlements, **(iii)** make an arrangement of space with the creation of Agro Unit agro-pastoral (UAP) with a limitation of the Fulani cattle herders and the territory; pastoralists are the only ones to be allowed to exploit the rangelands and they hold business cards;
- A healing program: to reach a peaceful settlement of damage to crops, to develop associated farms (villagers enjoying pastoral water dams); to promote mixed farming (institution of farmer-rancher tandem that is to say animal manure-culture) encourage the development of a sedentary livestock from Fulani livestock (through the provision of parent or matrix, etc.).

In **Togo**, a national management committee of transhumance has been established; at the prefectural level, a prefectural committee with administrative authorities, traditional leaders and chiefs sedentary and transhumant Fulani. The said committees are to: **(i)** to control the movements of nomadic herders and their animals, **(ii)** to channel transhumant herdsmen and their animals to grazing areas that must define for themselves that animals do not pass fields, **(iii)** to ensure respect by herders of the regulations in force in the country, **(iv)** if possible to

⁶ Pastoral Unit (UP): All camps (or villages) located in the zone of influence of a water point sharing the same space and agricultural and pastoral, the same point water, with socio-economic interests converged to take residents to pool their efforts for sustainable management of their resources. (Adapted from Wane et al. (2006).

settle amicably all disputes between third parties and herders on the occasion of damage caused by them and their animals, (v) to apply the penalties provided by law against any offender against the laws Togolese.

In **Senegal**, mechanisms for conflict prevention also exist everywhere (the meeting is held before harvest, creating conciliation committee, regulatory measures setting out dates of crops, etc.). They are initiated by the administrative authorities (in the different departments of the Region of Kaolack, in Sessene in the department of Mbour, in the Department of Rufisque, etc.) with local authorities (CR Montrolland, etc.) and traditional authorities.

The experiences of community management implemented by local people (occupancy Plan and Planning Sol) with the support of development projects (in the Ferlo zone and the region of Tambacounda, etc.) confirm a shared concern for improving the use of the countryside.

At the level of countries border area in the subregion: Currently, governments are faced with significant challenges to provide their national peripheries with some health, education or security public facilities (ENDA Diapol, 2007). Far from remaining passive before these shortcomings, local actors have initiated and established multiple forms of cooperation beyond the borders:

- Some producers are mobilizing for the development of cross-border valleys;
- traders are organizing themselves to facilitate the circulation of their products on both sides of the border;
- School principals and health posts directors are committed to put up the children and the sick from the neighbouring country;
- Some civil society associations are conducting local processes of conflict mediation, local officials are involved in land community management by stepping over the boundaries, Forestry Technical Services are supporting cross-border management community initiatives of forest resources, etc.

3.7.4. The consequences of conflict

Conflicts between transhumant and indigenous cause a lot of damages. Several cases have been reported. In Benin, area destroyed by wandering herds were estimated at twenty million FCFA from 1986 to 1994, around the Benin side of the park W Pendjari and Ivory Coast, 9268 ha between 1990 and 2000. Also in Benin, the casualties recorded during the same period are estimated at 97morts which 57 in the department of Zou and Collines (Ouinsou, 2011). These conflicts are increasingly relayed by the press (Box 1) because of their scale and they are a matter of national security in particular host countries. And the consequences are multiple.

<h2 style="text-align: center;">Municipal Security Council orders</h2> <p>The Asante-Mampong Municipal Security Committee has given Fulani herdsmen in the area two weeks to relocate with their cattle.</p> <p>Mr Daniel Appau Ohyeamang, Municipal Chief Executive (MCE), said the herdsmen had up to Friday, November 4, to leave peacefully or be thrown out.</p> <p>He told an ordinary meeting of the assembly at Asante-Mampong that the security committee had formally informed the Regional Coordinating Council about the decision.</p> <p>Several hectares of crop farms and farmlands at Kontonho have been destroyed by the herds of cattle and this could not be allowed to continue, Mr Ohyeamang said, adding that the assembly</p> <p style="text-align: right;"><i>Continued on Page 4</i></p> <p><i>Source: Article from the Daily Graphics Saturday, October 29, 2011, page 5.</i></p> <p>Similar situations are reported by the press in Ghana. In Benin, the same situation seems to prevail, which is also the National Committee of transhumance is chaired by the Ministry of Interior.</p>	<h2 style="text-align: center;">‘Fulanis must go’</h2> <p style="text-align: center;"><i>Contd from page 1</i></p> <p>could no longer accommodate the lawlessness and atrocities of the herdsmen.</p> <p>The committee had earlier inspected the destroyed farms and said they were amazed at the havoc caused.</p> <p>The MCE, who is also chairman of the security committee, called on the assembly members to remain vigilant and closely monitor the activities of the herdsmen in their communities.</p>
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Also as a result of these conflicts, there is:

- A tightening of transhumant's welcome: mistrust of people being seized, stay or passage of new migrant farmers let everyone on guard. Exacerbation of feelings of xenophobia, because more than 80% crop damage would be caused by flocks of 'foreigners Fulani';
- In the deteriorating climate of peaceful coexistence between pastoralists and farmers residents. Exactions are also common: local people attacked the shepherds who settled in the area;
- The discharge of pastoral farming activities or considered to be destructive;
- Animals are also poisoned, injured and / or slaughtered in retaliation;
- Increasingly, administrative decisions or justices are challenged, which constitutes a challenge to the authority of the State;
- The hitherto peaceful coexistence and peaceful inter-community social cohesion is disturbed.

Despite all the difficulties they encounter in neighboring countries, we are seeing more and more to transhumance "leakage" because many farmers prefer to settle permanently in these countries with their livestock that suffer abuse in their own country.

3.8. The sanitary consequences of transhumance

In pastoral areas, the existence of some health facilities (pharmacies, veterinary clinics, etc.), the distance from the breeder of health posts, the concern of the shepherds and their traditional attitude of self-medication for their animals, are all factors that limit their access to

these structures when disease breaks out (Abiola et al, 2005). Lacking these inputs in appropriate structures, the transhumant shepherds are turning to markets to stock up on low-cost veterinary drugs and whose qualities are often dubious. Thus does transhumance promote the maintenance of the illicit markets of veterinary drugs, due to the difficult access to health facilities all along the route. The most used therapeutic classes in the transhumance, are antibacterial and antiparasitic agents, A high percentage of non-conformable trypanocidal (nearly 100%) in breeding areas' illicit markets is noted in a study on the quality of veterinary drugs in West and Central Africa.

During their journey, livestock release or are in contact with a number of pathogens. And among the most feared animals diseases, there are: foot and mouth disease, *Peste de Petits Ruminants*, contagious bovine pleuro-pneumonia, trypanosomiasis and anthrax (Abiola et al., 2005). Diseases such as bovine lumpy skin are feared in Togo and Senegal, smallpox is also feared in the latter country.

3.9. The role of women during CBT

Recent economic and socio-political changes affecting pastoralists have contributed to the degradation of women's rights (Nori, nd). Increased competition for resources has led to their gradual exclusion from access to productive assets, while their social and economic duties are gaining importance. Processes that affect pastoral resources' access and condition also affects women as they play on livestock productivity and on access to firewood, to medicinal plants and wild-growing fruit. Land degradation due to shortages, expropriations for agriculture, droughts, regulations, etc. has increased women workload as concerns water, firewood collecting, mowing. Poor women were particularly affected as they depended almost exclusively on community land. While it is recognized that there is little information about relationships between women and land in pastoral societies, the policies aiming at protecting the rights of pastoral communities should recognize women's subordination and suffering.

3.10. Relationship between the TT and marketing of livestock and animal products

A significant increase in grain prices and low livestock prices may encourage pastors to leave the northern areas to reach the markets of Sudan zones, in order to obtain exchange rates of livestock against grain more favourable. Thus, many pastoralists will move southward depending on exchange opportunities encountered while travelling. They also sometimes prolonged stops with their herds on the outskirts of some major livestock markets (eg in parts of Niger and Northern Benin). They can take the opportunity to temporarily transform into small livestock traders, buying animals among herders and selling them before they enter the market. As with any form of diversification, the activity aims to reduce the stocking of their own herd.

Some livestock markets in the Sudan zone only exist thanks to the seasonal movement of livestock because of the prevalence of cross pastors. In some areas (eg in the area of Menaka in Mali), these markets are barely exist outside the period of transhumance.

With regard to the animal products trade at the regional level, the same lanes for the TT are identified. Regarding the western corridor, Senegal remains the main focus of marketing with some 87,000 head of cattle received from Mali and Burkina Faso in 2007. Compared to other corridors, the demand for animal products in this space remains low mainly because of the small market size of each individual country, eating habits centred on fish products as well as poultry products.

The central corridor consists of the sahelian countries (Mali and Burkina Faso) and South countries (Ivory Coast, Ghana and Togo). Exports of live animals between these countries are very old. The size of transactions is not well known and the subject of much controversy. Exports to the Ivory Coast have declined from 154,000 heads in 1998 to 87,000 heads in 2002, a consequence of Ivorian civil conflict (Williams et al, 2004 in). A significant recovery was noted from 2006. Indeed, the Ivorian market was supplied up to 216,156 head of cattle, 313,123 sheep and 531,281 head of goats) from Burkina Faso, Mali and Niger in 2007. The volume of imports of live cattle is estimated at 167,000 head for Ghana (ATP 2008). If we add the request of Togo which is certainly above the fifty thousand head per year, we can estimated at about 400,000 to 500,000 heads, the flow of cattle corridor that brews each year.

The Nigerian market is the main driver of the east corridor,. Nigerian demand seems to have jumped significantly over the last 20 years consecutively to improve the purchasing power of people. According to FAO (2003), the national availability of meat in Nigeria rose from nearly 230,000 tons in 1990 to over 325,000 tons in 1999. Livestock imports from the countries of Niger and Chad would be 720,000 to over one million head per year, from about 20 to 25% of its consumption.

Even if the poles of livestock marketing and transhumance corridors are relatively the same, the objectives of displacement are not the same. On both routes, the problems are not necessarily the same. Ferrying animals for commercial purposes is generally carried on the most direct route possible. Often, conveyor tracks are located along the national highways. Intended destination terminal markets remains the major centres of consumption and must be achieved as soon as possible.

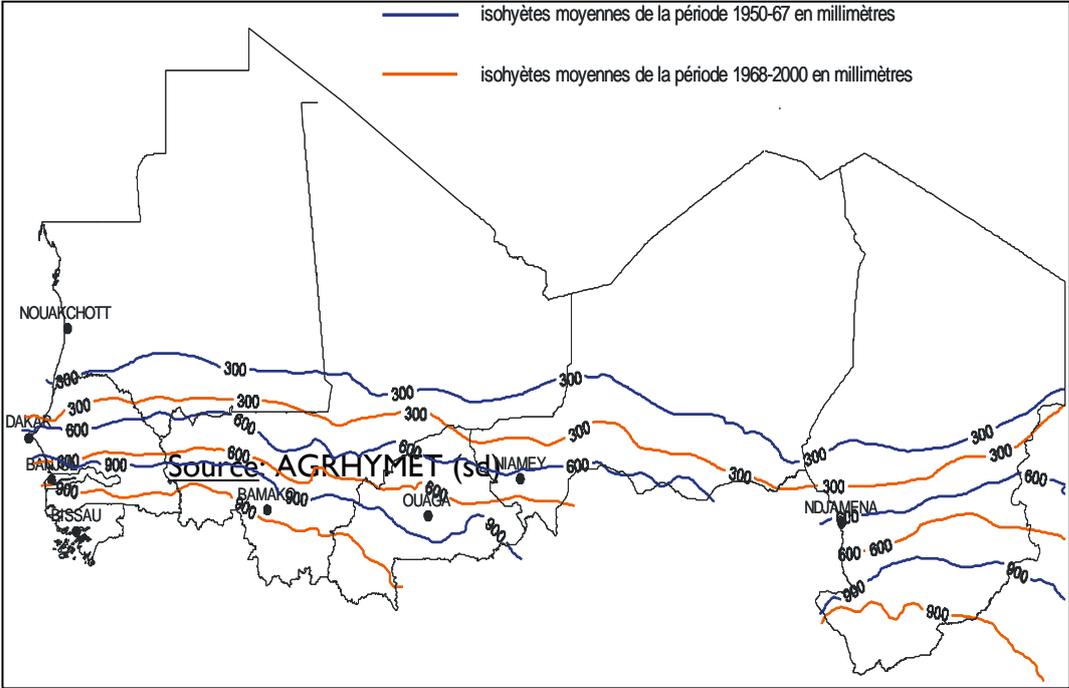
4. ANALYSIS OF CROSS-BORDER TRANSHUMANCE COMPARED TO THE GREAT CHALLENGES OF FARMING IN WEST AFRICA

4.1. Adaptation to climate change and environmental degradation

4.1.1. Climate change and its impacts on production systems in West Africa

The most striking feature of climate change in the ECOWAS region is the reduction of precipitations. In 30 years, the isohyets have moved from 200 to 300 km to the south (Diagram 7) (Blein et al, 2008). In addition to these temporary depletion rainfalls that poured out into the region, the spatial variability of these latter is a major constraint to the mobilization of productions' potentialities at the regional level. For the period after 1993, the average seasonal cycles of wet years and dry years are distinguished at the end of the season. Dry years of the current period are characterized, on average, by a weakening at the end of the season, but not necessarily at start-up.

Figure 7: Sliding isohyets in West Africa



In Benin, for example, major identified climatic risks are: "drought", floods and "late and violent rains" (MEPN, 2008). Some disturbance in the global water cycle has been observed in recent years. Since the late 1960s, an average yearly amplitude reduction of rains overall heights of 180 mm was recorded as well as an intensification of droughts that occurred during the same period, notably in the 1970s and 1980s.

Moreover, rains of rainy season's commencement are violent, frequently reaching intensity higher than 100mm/h, which promotes flooding and erosion on poorly protected soil. In Benin's Northern Province, climate data recorded over 40 years and implementation of relevant

models of climate change analysis show a downward trend of annual rainfall. Furthermore, the rain distribution mode is moving towards lateness of rainy events and shortening of the single rainy season that normally characterizes the province, as pointed out by the people's representatives at the workshops for the assessment of vulnerability; which determines the lengthening of the dry period and the violent rains. It should be added that in the southern part of the country, except in the coastal area where the trend of the rainfall is going onwards, there is also a deficit and a shortening of the second rainy season, causing a reduction in crop yields and in coverage turnover rate.

Increasing desertification in semi-wet and dry areas is due to agricultural deforestation, to the degradation of verdure and to the high urban growth in the wetland. Forest loss is accelerated by the high growth in cutting firewood. These changes stand for, on a local scale, climate change in the ECOWAS region.

Land reservations were stormed by cultivations and herds expansion, because of rains uncertain nature and its diminution, as well as the lack of alternatives in terms of sustainable modernization and intensification of the production systems. More and more increasing pressure is being exercised on their natural resources at a time when protection of the environment has become a global necessity. All these factors contribute to exacerbate the conflicts between farmers and herders.

With the intensification of climatic unforeseen turn of events, large amplitude transhumance tends to disappear so as to be replaced by low-amplitude movements (Ouaga, sd). Localized mobility strategies are becoming more and more frequent. In Niger, the spatiotemporal localized mobility was observed on the Keita District tableland. In this area, the aforementioned strategy is developed by sedentary pastoralists.

The water plan like Lake Chad's has lost 80% of its surface area in 40 years, thus reducing the pasture payload as well as floodplain productivity, strategic fodder resources during the dry season (Aliou, 2010). In Benin, a period of relative drought has specially affected Benin's pastoralists. At the same time, the Sahel pastoralists' immigration has been considerably amplified. By itself, this immigration is nothing special (De Hann., 1992). For centuries, the Sudanese zone of West Africa has been characterized by the immigration of sahelian people. Recent immigration is resulting from an increasing aridity in the Sahel. In fact, it is only one element of very large amplitude transhumance movements. It is characterized by a substantial arrival of transhumant from Niger, Nigeria, Burkina Faso and Togo, and even Ghana and Mali during the dry season.

For a long time already, sahelian pastoralists' immigration is no longer limited to the Borgu Department in Benin but also reaches the central and southern departments of the country (De Hann, 1992). The farmers in these regions not being too much familiar to these nomad pastoralists, immigration creates, there again, some problems. In this region, arable lands have dramatically expanded in the eighties thanks to animal traction and the expansion of cotton production. Up to now, the land shortage was not absolute, but the extension of the fields

combined with land use by the farmers has exerted an increasing pressure on the environment, and has triggered a process of soil degradation.

Similarly, the symbiosis between farmers, pastoralists and merchants helped, in the past, to conserve nature. Changes in lifestyle (introduction of the cotton crop, substantial livestock numbers, the use of animal traction, etc.) have today accentuated the deterioration of any environment related to these activities. Cohesion between herders and farmers has been decreasing gradually as the complementarities becomes blurred. The lack of watering points, the pastoralists' immigration and the extension of agricultural and horticultural areas has led the cattle to cause more and more damage to farmers' fields. As farmers are becoming more and more used to the use of chemical fertilizers, they give less importance to manure contracts. Moreover, conflicts becoming more frequent, farmers entrust less and less to Fulani their cattle and the latter remains grazing in villages' vicinity throughout the season.

Currently, the problem faced by transhumant herders is the reduction and degradation of their grazing areas, silting and drying of water sources both in their settlement areas and on the usual transhumance route (Abbagana and Youla 2009).

The increase in cultivated areas causes the gradual disappearance of grazing areas, which, because of their reduction, suffer from pastoral overexploitation. Crops' encroachment on pasture lands and fields' cultivation around pastoral streams, the scarcity of space where the animals can graze and the degradation of the latest grazing areas are largely reducing the quantity and quality of the fodder still available.

Many studies also highlight the climate and anthropic changes as well as the extreme complexity of the problems arise in the agro-pastoral domain. Dembele (2008) summarizes them as follows: (i) "Conversion of pastoral zones" into fields which affect pasture lands, cattle tracks, lodges, and reduces grasslands and extends the herds' routes, (ii) "a Profusion of decision-making centres on the grasslands": conflict, "deteriorated atmosphere for negotiation," "obstacles" to the improvement of the grasslands, increase of fee payment sites. (lii) "Obstruction of pastoral tracks": conflicts between users, higher costs for pastors in cases brought to court, lack of access to some resources (Marty, 2011).

In northern Mali (Tombouctou, Gao and Kidal), pastoral livestock occupies a prominent place among both the villagers and the travelling pastoralists who had come in since the drought, in a clear settlement-creating process for families while maintaining in general herd mobility (Marty, 2011).

Pastoral activities have suffered more than elsewhere from the droughts' aftermath of the 70s and 80s. Those of 2009-2010 affect mainly the Gao and Kidal Provinces. Each time there was a drastic collapse of the herd followed by a reconstruction more or less rapid depending on the family. It follows a state of poverty and insecurity among a large number of them and cattle accumulation in those who also have financial resources (Marty, 2011). However, it should be noted that during the last drought, many farmers have reacted by organizing early

transhumance over long distances with unprecedented destinations, using new technologies (mobile phones, vehicles for transport), selling livestock so as to buy rations and animal food. This mobilization allowed in limiting losses while the initial situation was so critical in 1984. Since then, the good rainy season in 2010 brought hope for a new reconstruction.

Pastoral activities also suffer from insecurity that affects areas of northern Mali since 1990 with then slack period's episodes alternating with worsening episodes (Marty, 2011). Whenever risks resurface, farmers are worried about their livestock, fearing theft of animals. This insecurity has unfortunately resumed in recent years.

4.1.2. Increased invasion of the Protected Areas (PA)

More and more protected sites are increasingly frequented by transhumant livestock. In Senegal, in Niokolo Koba Park, some large herds, notably some small ruminants from the Senegalese agro-pastoral zone and from Mali move southwards in the dry season to exploit pasture lands and water.

In the 'W' Park, since the seventies, transhumance has also increased. Several herds graze in the same pasture lands over a year. This causes serious degradation of tree formations. On the one hand, we note a loss of the gallery forest, a reduction in sparse woodland as well as forested savannas but on the other hand a strong expansion of shrub lands and grasslands. This degradation is mainly caused by bush fires and wandering livestock. Pastures are therefore overexploited. The development spike of cereal plant is blocked and the bush fires burn and block seed germination.

Everywhere, the need for space is imperative, especially during drought years; protected sites are increasingly used especially in the dry season for surface water and pasture lands from the new sprouting after the fires. Pastoralists also benefit from their presence in these areas to exploit the honey and other forest products particularly in northern Borgu where the streams are scarce in areas legally accessible for cattle that is to say outside the protected sites. Karimama and Malanville Communes (Benin) should be in a favourable situation because they line with the River Niger and are crossed by two rivers, the Sota River and the Alibori River. In fact, the extension of low water crops has captured the rich pastures of the dry season the river bed and prohibits any passage to livestock watering points. The pastoralists in the valley of the river are also forced to head southwards during the dry season. Even if they do not graze cattle for example in the National Park of "W", they are forced to cross the park (although it is officially prohibited) to reach pasture lands further south.

The management of the relationship between livestock and wildlife depends on the protected site. In Djoudj Sanctuary, the animals are not allowed according to the rules and regulations, but as animals are in small number in the villages, they are allowed to frequent the park. No problem of cohabitation has so far been recorded contrarily to Niokolo Koba Park, where the tension is between the local residents, the travelling herders and National Park services. Despite a formal prohibition on entry into the park, 1/8 of the park is visited by cattle that

sometimes move as far 16 km inland. Some conflicts exist permanently between the eco-guards and the travelling herders.

4.1.3. Development of agro forestry and pastoral and its consequences

An important innovation that the Sahel has experienced for some decades is the birth and spread of agro-pastoralism, that is to say the combination of agriculture and livestock within the same farm. This new way of exploiting resources was born from the strategy of farmers and shepherds to limit the risks due to climate uncertainty (Anonymous, 2008b). Agricultural practice among pastoralists helps them limit their purchases of cereals during the lean season, farmers, investing in livestock, seeking to capitalize and diversify their income sources. This development in the practices is combined with a spatial transformation of the activities which is partly modelled on the evolution of the Sahel's climatic conditions. In search of better pastures, nomad pastoralists travel more or less long distances, in general northward, during the rainy season. Once the season ends, they gradually return to their villages where some pasture lands and streams are still remaining. The droughts of 1973/74 and 1984/85 have especially changed the spatial dynamics of transhumance and routes in the Sahel.

The case of the Dallol Bosso Fulani (Niger) is very instructive. Many of these pastoralists have found refuge further south in Benin and Nigeria and have sometimes settled there. This change was sustainable; the "pastoral runs" of 1973 and 1984 are now transhumance routes in the dry season. The environment is part of the pastoralists' lives in the Sahel. Transhumance characterizes this adaptation need to the changing environment. Climate change, whether favourable or not, shall alter the quantity and quality of the natural pasture lands and shall, no doubt constitute an occasion for some new forms of breeding routes in the region. But pastoralists shall have to face an increasing pressure from agriculture, from stronger environmental constraints in the years to come, from occasional political risks and from institutional progress (decentralization) and land legislation. Some of them will turn more towards either agro-pastoralism or to a sedentary or semi-transhumant breeding system. For the others, mobility is still at the heart of their strategy, provided it is better accompanied.

The striking phenomenon was the migration of cattle from north to south, whose impact is most evident in the Sikasso region (Mali) where numbers increased from 260,000 to 1,229,231 heads respectively from 1960 to 1998. During this same period, small ruminants have grown at North in relative terms by 47% that is to say from 744,894 in 1991 to 1,091,315 animals in 1999. In terms of systems functioning, there is a gradual transition to pure grazing systems, to pastoral systems, leading pure farmers to the practice of breeding as a means of diversification of activities and production security.

Further analysis revealed that the first step begins with the acquisition of livestock by farmers (capitalization, coupled cultures, diversification of consumption etc.). The second step involves the direct care of the herd by sedentary populations. This is reflected in the establishment of an agro-pastoral system based primarily on inappropriate exploitation of natural resources of the village land. At the same time, crop-livestock integration develops through the sedentarization

of pastoralists who associate in their activities, more productive agricultural practices in addition to breeding.

The expansion of cultivated areas and reducing pasture land favor the use of agricultural and agro-industrial by-products. Crop residues are collected and stored whereas organic manure is best appreciated in perspective of a more efficient use of land through small-scale mechanization (animal traction). In the agro-pastoral system where animal traction has been a remarkable growth, the peasant farmers are more involved in feeding their oxen and in the productivity of their livestock for milk and meat. These new realities are key determinants of the profitability of integrated systems of agricultural production in Mali.

Grazing affects the interactive processes of plant physiology and soil biology. The strong seasonality that characterizes the use of pastoral resources in the Sahelian zone reduces the risk of overgrazing and the resulting environmental damage, to short periods and limited areas. Locally, although very few herbaceous plants are totally disregarded by livestock, the intensive and selective nature of pasture during the growth's period favours the annual short cycle edible plants (*Zornia glochidiata*, *Alysicarpus ovalifolus*, etc.) and plants less palatable perennial long cycle (*Cymbopogon gyganteus*). So the heavy pasture that is not observed but only on small areas affects locally plant diversity.

The lopping of species such as *Acacia seyal*, *Acacia senegal* and *Balanites aegyptiaca*, stands exposed to the devastating effects of bush fires and termites. Annual vegetation in the Sahelian zone seems very unstable, but is resistant to attack by strong pastoral dynamics of annual seed production, the effectiveness of the dispersal and germination patterns of species. The increase in livestock, combined with the negative effects of climate change on vegetation, helps to break this natural balance.

In Mali, the south is known to be the area of cotton and also cereals. Recently, it has become the first in cattle (Marty, 2011). Profits made from high production years were invested to create herds' ownership. To that state of fact were added transhumants coming from farther northern regions especially after severe droughts. The fight against tsetse has contributed to that. Due to Ivorian crisis, number of farmers came or came back to get bigger the cattle. The herds of dense areas like Koutiala have been transferred to farther southern parts of Mali.

In addition, these last years, they are crossed by significant flows of animals destined to meat supply for coastal cities like Abidjan. It should be added that many pastors, arriving in an impoverished state, have gone in for agriculture and their young have become the shepherds of local agro-pastoralists. This relatively recent influx obviously causes welcoming and cohabitation problems. It also causes a strong demand for pastoral infrastructure. It revives the prejudices of the pastors and disrupts relations of coexistence that prevailed before with much smaller numbers. As elsewhere, pastures and cattle tracks tend to be eroded by crops. Conflicts have arisen and obviously authorities and the overall involved stakeholders had persistent feeling of anxiety regarding the matter (Marty, 2011).

4.1.4. Trend of production systems due to different mutations

According to several authors, the productivity of land and livestock in the Sahel has increased although it varies considerably from year to year. And if this productivity increase is undoubtedly the result of a combination of factors, in no way it indicates a continuing downward trend in the production of grazing land, and therefore a lower productivity, as one believed it. The risk of immediate degradation of plant biodiversity is very low. Mixed grazing systems (large and small ruminants, camels and wild animals) help to maintain a large plant biodiversity and, as the vegetation has a great capacity for regeneration, any modification of that would not be caused but by an exceptional drought, and therefore temporary.

The factor that has the greatest impact on natural resources is the pressure of population growth, especially when it comes from outside. If shepherds population growth is slow (Pratt et al., 2012), that of non-pastoralist people in arid regions is among the highest in the world, leading farmers to encroach on lands (the key resources) of shepherds. Floodplains, traditionally used for grazing during the wet season, like the Inner Niger Delta and the valley of Senegal in West Africa the lands of which are fertile, as well as smaller sites, are converted to cropland. Moreover, these new demographic pressures, and loss of transhumance corridors resulting from, impede the movement of animals between the dry season and wet season. As the herds tend to be increasingly focused on the same land from one to another end of the year, the ecological cycle of alternating dry season grazing and wet season breaks, leading to overexploitation of dry season grazing and, inevitably, to human suffering.

In fact, these pressure factors are not all external from pastoral systems as noticed in some other pastoral regions (Borana, southern Ethiopia). Indeed, the indigenous populations' growth causes decrease in the number of dairy cattle per capita. Shepherds are then faced with a growing impoverishment; their level of energy supply decreases and they become increasingly vulnerable to the effects of drought. In addition, growing populations in the region leads to increased consumption of fuel wood. Land degradation is the inevitable consequence of the effect of all these pressures. Drought often exacerbates these situations and, indeed, the ability to recover from the drought is a major indicator of social and environmental sustainability of pastoral systems in arid environments.

4.1.5. Impact of mining activities on rangelands

In Senegal, the region of Tambacounda, gold mines installation in pastures creates deep holes causing serious accidents to animals (Lobbying Advocacy Network, 2008). Similarly, dust from mining activity invades surrounding areas downwind. Although it does not affect wildlife, significant amounts will be deposited on plants including crops. Dust blocks the stomata of the leaves and reduces gas exchange that affects photosynthesis and growth making the plants less tasty for domestic and wild herbivores. Mining activity also contributes in worsening the problem of dust in the Sahel regions. Mining has caused negative impact on farming: Pasture has lost about 16 percent of its area. However, the holes left after the extraction of materials for

road construction⁷ favour the retention of water in the rainy season being used for drinking trough for transhumant livestock in the dry season.

4.1.6. Changing the epidemiological map

The manifestations of climate change through droughts, storms, floods and global warming have a negative impact on the development and evolution of animal diseases. And this is so true with the phenomenon of transhumance that obliges the cattle to travel along far distances and thus to subject animals to new pathological processes or that the latter carry with them pathogenic germs on their rangelands. Ecological conditions (surface water, air humidity, temperature, flora, fauna, etc.) having been modified facilitate the development of vectors (mosquitoes, ticks and flies), pathogens (sources of parasitic, of arboviruses, of soil-borne diseases, nutritional diseases, etc.). Thus in most areas where hydro-agricultural planning was implemented to reduce the impact of climate change and improve agricultural productivity, diseases like shistosomiasis developed. This disease also appeared in areas where some stretches of water (ponds and lakes) experienced changes in their water regime. Similarly, fever Rift Valley (or the germ causing the disease) runs from both sides of the Senegal River Valley and strings of ponds in pastoral areas.

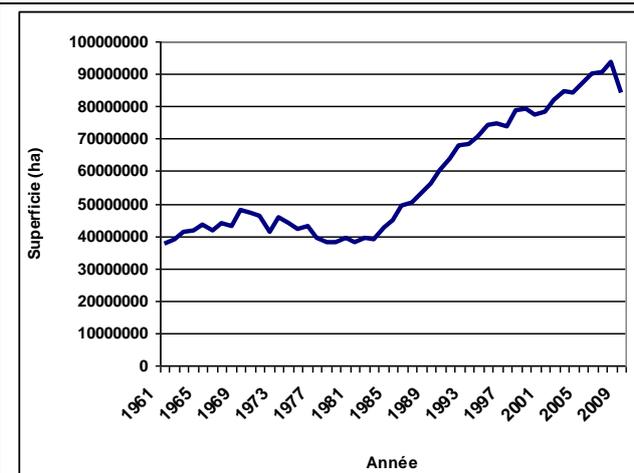
4.2. Consideration of the CBT in land policy

4.2.1. Competition for access to land by nomadic grazing

Potential of agricultural lands in West Africa is still very important. According to FAO statistics, the region has about 236 million hectares of farmland (Blein et al., 2008). At this potential cultivable, one must add some 119 million hectares of pasture in favour of livestock development. Alongside this farmland that experienced an increase of 2.5 between 1960 and 2009 (Figure 8), forests and woodlands occupied 74 million ha in 2005 against 88.7 million in 1980. They declined (Figure 9) of 16.2% over the last 25 years. This regression of forested areas was mainly due to deforestation for agricultural expansion and grazing areas. Grazing areas have grown by 5% between 1985 and 2005. Compared to grazing areas, cultivated areas have evolved more rapidly confirming the strong influence of producers on land resources. This extension was made possible by the increase in household assets and other techniques for more efficient crop (animal traction and mechanization).

⁷ This is the construction of the road Linguere Matam in forest grazing area of Senegal

Figure 8: Evolution of agricultural land in West Africa from 1961 to 2009



Source: data FAOSTAT, 2009

Figure 9: Evolution of forests and woodlands in West Africa



Source: Anonymous 2008a

Taking into account the total area of ECOWAS, one realizes that the livestock has evolved considerably. It increased from 19 ha / TLU in 1961 to 5 ha / TLU in 2009 (Calculated from data FAOSTAT). And if the trend continues, it will be only 3 ha / TLU in 2030 and 1 ha/TLU in 2050.

With the global food crisis and the increased need for renewable energy, States and national and international investors have become purchasers of large areas in developing countries. In a country like Senegal, this phenomenon has become a recognizable reality in many rural communities, particularly in areas with highest agro-physical potential. These acquisitions of large-scale land somehow translate the vision of land policy as the state tries to implement. Indeed, these phenomena appear to be largely encouraged by some programs initiated by the State since 2006 and that support the top national officials. Research on land acquisitions at large scale shows that these processes accrue mainly to administration officials, religious dignitaries and clients of the ruling party (IPAR, 2010). Land transactions are concentrated in regions with high agro-physical potential (the valleys representing areas of decline in livestock during the dry season) and they cover areas ranging from 100 to 80 000 hectares by assignee.

4.2.2. Assessment of the security of pastoral land by states and institutions in regional

The pastoral breeding is at the crossroads of several crucial issues that should be included in the definition of a pastoral policy in the medium term (at least five-year periodicity) (Bonnet and Guibert, 2011). Primarily, it is economic challenges of pastoralism security and its mobility that can enhance important natural resources and at the same time variable from year to year. Making efficient use of the pastoral resources allows not only the pastoralist's family members to earn income, but also stimulates a wide range of actors and institutions that continue into the value chain: State, Public and socio-professional organizations working in the livestock trade.

It is also country planning challenges. According to Bonnet and Guibert (2011), pastoral infrastructure, water points, roads, grazing areas conception are a crucial step in the development of communal space, but also requires coherence to a larger scale, either in inter-communal and even regional level.

Then onwards, these are legal challenges on which the conception of such strategy is based. Indeed, it must favour at the same time, the rules and regulations application but also their coherence: Law on decentralization and the mandate of Communes, on pastoral land, the national water policy, the rural code and pastoral charter, the national policy on livestock, etc... Finally, in a socio-economic context characterized by the increased demand for food, especially animal protein, the development of pastoralism represents a real challenge for food security, sustainable economic growth, development of pastoral areas and social peace (Bonnet and Guibert, 2011). This development is hindered, for the moment, by multiple constraints (LEISA Magazine, 2010):

- reduced access to natural resources (water and pasture);
- keen competition between the different users of rural land (including farmers, ranchers and fishermen);
- Development of private use of the territories (ranching, irrigation and crop production for export);
- Development of protected sites (forest areas, nature reserves ...).

Resource depletion, concomitantly with the growth needs (food, energy, etc..) causes locally strong pressure on resources. Land disputes between farmers, including transhumance, and the other groups (especially farmers) are more and more frequent (ECOWAS, 2005).

The issue of better management of pastoral resources in an integrated development has become more pressing in XX and XXI centuries because of structural changes that have transformed the problem of access to pasture (IRAM, 2005):

- Establishment of the modern state with its apparatus, its divisions of space and design of pastoral land as "vacant and ownerless"
- Changes to access rights and land tenure,
- Increased human and animal pressure
- Changes in relationships between farmers and pastoralists and decrease of old complementarities,
- Reduction of fodder resources,
- Hazards of climate and market felt more vulnerable in economic contexts.

In almost all states, the objective of security of tenure has been affirmed or reaffirmed, particularly in the area of rural land and pastoral land (ECOWAS, 2010). The land originally being a legal concept refers to all legal relationships the subject of which is land (the land in opposition to the building): land loan, land sales, land lease (Ark pastoral, 2006). This legal approach has been supported for a long time by the political economy for which the land is

subject to the question "Who is the landlord?" Very quickly the notion of land under the aegis of anthropologists has been extended referring to a broader set of relations.

As highlighted in Arche Pastorale (2006), the land has been increasingly used to describe relationships between people about the earth, but also about all the natural resources it supports (forests, water, grazing ...). Thus we spoke of "land forests," said "land of the tree" or of "pastoral land". "We could then agree that the pastoral land refers to all uses of space and natural resources for the achievement of pastoral activities".

If almost all states have proceeded to land laws revisions more or less significant, the land registration system introduced in colonial period remains largely valid (ECOWAS, 2010). The result is a paradoxical situation in most countries: the system of land tenure security is mostly in place of land registration, introduced by the colonizing countries to "take over" the land that was traditionally held (Bassari, 2010). But this system, responding to a colonizing logic (and the colonizing countries have refrained from well set up in their own country), is available today to secure major foreign and domestic investors, while there are still not, in most countries, alternative tools for securing land tenure for small family farms.

In all countries the traditional and customary law, religious law and the law inspired by modern French or English according to each country's past are coexisting (Mfou'ou, 2002). In principle, in case of conflict, modern law takes precedence over that of religion or custom, but in practice, the religious, traditional, often outweighed. The spirit of these different laws is not the same and this creates a serious problem in land management.

In Mali, the influence of state on national territory is so jealously claimed, that the natural environment is entirely appropriate for public power state (Barriere and Barriere, 1997). In Niger, the abolition of grazing land's ownership by the French administration and then recovered by State, strongly influenced negative attitudes of farmers who have the feeling of being deprived of their rights and environmental responsibilities.

Changes in land tenure operate at different levels. At the micro level, rivalry between men and women and between within the same compound and between generations often leads to a women and youth's removing so as to prevent them from controlling productive resources, so that family assets are actually privatized by elder people (IIED, 2006). On a larger scale, the encroachment of "common" by commercial agriculture and the marginalization of small farmers, for example by large foreign investors, are common phenomena. According to IIED (2006), such processes can often be endorsed by the state when governments perceive pastoral modes or small farms as "backward" and unproductive use of land.

Priority is given to agriculture (excluding livestock) - with the argument that it is only agriculture that must feed a rapid growing population, quickly forgetting that stockbreeding plays also a tremendous role in it and cultivation of marginal lands often results in serious degradation and this tends to reduce grazing areas, to nibble on livestock routes and lodges and surround the watering points (Marty, 2011).

In all areas where farming is highly developed, there are frequent conflicts between farmers and herders (Mfou'ou, 2002). The first ones often complain about the destruction of their crops by the later who bring their herds grazing there. In places, these conflicts cause loss of human life and can escalate into armed conflict (see section on Impact of Conflict).

Most public initiatives planning ignores the dynamic use of space by the "nomads" and mobility is often viewed by policy makers as an obstacle to the structuring of space for the resources' protection (Harchies et al., 2006). The 'multi-scale "systems of transhumance (dispersion production, marketing and trading spaces) gives them a label systems difficult to control, the strategies of" nomads "remaining largely unknown. Tenure insecurity allegedly charged at the customary tenure of rural land, such as "Hurum," according Harchies et al. (2006), has been for a long time considered, rightly or wrongly, as a limiting factor for investment and agricultural modernization, and at the same time as proof of the introduction of private property in land legislation of many ECOWAS countries.

The pastoralists are rarely identified a priori as partners in a dynamic planning for natural resources management. As an example, when starting the program W-ECOPAS Park in 2001, the movement was identified as the major constraint to achieving the objectives of biodiversity conservation in the cross-border Park W (Convers et al., 2007). The situation is considerably complicated when the Beninese decided unilaterally to suspend cross-border transhumance on its territory which is contradictory to the A/DEC.5/10/98 transhumance regulations decision between ECOWAS member states. The adverse effects of such decisions were immediate. On the one hand, some farmers in Burkina and Niger remained in their country over creating rangelands in their fields and consequently gradually degrading them in the absence of seasonal destocking that is essential to sahelian pastures conservation (Achard et al., 2001). On the other hand, even if it means being "outlaw" many pastoralists have chosen to take the direction of the Park in order to ensure access to fodder and drinking trough for their herd in the dry season.

The trend of agricultural occupation and increasingly private grazing lands unfortunately ignores that cattle ranching is strict in terms of agricultural productivity. Thus, according to Aquino et al. (1995), in the southernmost areas of Sahelian zebu penetration, especially in Northern Ivory Coast, it was shown that herding has been the basis of the tremendous growth of animal traction and also a form of particularly efficient agriculture, consumes little space and that manages to maintain sustainable soil fertility⁸.

Lifestyle that is pastoralism, contrary to some ideas too quickly asserted, is not regressive or falling. Transhumance is access resources more or less random and more or less rare with the

⁸Due to their increasing demand for meat in Ivory Coast, authorities are more interested in the livestock sector. The Malian and Burkinabe Fulani settled in the region with their herds. Complementary relationships were established between Fulani and Senufo peasants. However, due to the increase of cattle and non-crop protection, crop storage in the fields more and more conflicts are recorded. Lack of material and financial resources of the territorial governments (sub-prefectures) resulting in a slow findings and compensation of damage also contribute to increasing the frustration of farmers. Doubts and criticisms against sub-prefectural authorities, whose competence and honesty are at issue, a problem of trust. That is why disputes between farmers and ranchers are increasingly settled locally with the help of hunter

seasons, the years but also the areas concerned because of rainfall or anthropic factors. Further that the Sahel is characterized by structural variability of rainfall, access to water, pasture and saline lands is subject to both social and land mechanisms more or less open or closed. All combine to make the necessary mobility (Marty, 2011). Besides, it is largely in danger because of new travel constraints of men and herds. New migration, elongation of transhumance to areas near forest with animals more adapted, diversification of activities, attachment to the anchor via agro-pastoralism, involvement in trade including animals with new technology, information and communication (such as mobile phones, social networks, etc.) are examples of mutations affecting the general heart of pastoral societies (Bonnet and Guibert, 2009). Inevitably, pastoral practices such as access to water, shared use of pastoral resources and agricultural practices was seen to be modified.

4.2.3. Levels of inclusion of pastoral land

During the past ten years, there is a trend among states to adopt a participatory approach to preparing documents and laws relating to land. All countries are not yet at the same stage: some try to design a land reform, others are at the stage of the implementation of their reform, and others not yet consider time for reform. Four States in the region (Ghana, Sierra Leone, Guinea, and Burkina Faso) have adopted land policy documents. Some states (Niger, Ivory Coast, Benin, etc.) adopted parent acts on land; two States (Mali, Senegal) have passed Agricultural Orientation laws that forecast the elaboration of land management policies and laws on rural land (ECOWAS, 2010).

There is an increasingly assertive will to create a linkage between the political / legislative framework on land tenure and other sectoral policies and legislation, including those relating to natural resource management. Efforts have also been produced in the direction of a closer link with decentralization laws, even if the transfer of skills and resources to local authorities is rarely effective (ECOWAS, 2010). Innovative local initiatives exist in many parts of West Africa to facilitate and protect livestock mobility. The traditional transhumance routes and corridors are being renegotiated and defined, researchers are studying the costs and benefits of transhumance; and management mechanisms corridors and conflicts between different users groups are established (IIED, 2008). But the results of research don't enlighten enough the States' land policies, which States seem to make adjustment as for the conflicts at the cost of an effective land planning.

Some governments have recognized the importance of livestock mobility for dry land ecosystems. New legislation in Burkina Faso, Guinea, and Mali, affirm the right of shepherds to move their animals within and across national borders (IIED, 2008). But government officials still have limited understanding of pastoral systems; those laws may therefore be applied excessively in a technocratic and centralized way and continue in practice to impede mobility. While the various regional integration processes across Africa allow the free movement of persons and property, shepherds still face many difficulties during the cross-border movements of their animals (IIED, op. Cit.)

The development of pastoralism is still facing with major constraints and to deal with, the regional agricultural policy developed by the UEMOA and ECOWAS focuses on cross-border transhumance as a means of efficient exploitation of natural resources and agro ecological complementarities between the Sahelian countries and coastal countries (LEISA Magazine, 2010). But the inadequacies of laws, regulations and agreements on transhumance in the ECOWAS regions are numerous. In transhumance practice, the various states are facing:

- the inadequacy of modern national laws to local realities of rural land;
- the diversity of the frame pastoral land and its perception by country;
- the low consideration of pastoral systems, traditional managers and actors;
- limited financial resources, human and material resources to monitor and support the measures taken;
- the weak support structures and supervision consultants to assist decentralization policies.
- the impoverishment of many Sahelian pastoralists;
- the breakdown of pastoral societies with the effects of climate change and its migration to the cities to increase the mass of "jobless" or their conversion into shepherds or temporary laborers;
- the various socio-political crises in countries and their impact on the movement of people and livestock in border areas;
- the weak organizations of farmers and low consideration in decisions related to livestock.

Differentiated perception of National and Community instruments is necessary to establish the foundations for a real improvement of legislative and regulatory framework governing transhumance (ROEPAO, 2001). To do this, it is essential that the approach of land issues is harmonized at ECOWAS countries' level, trends in different countries (or non-integration of customary rules, liberalization or central management, etc.) on land management must compulsory be determined to succeed in solving the constraints of transhumance, the main pillar of pastoralism resilience.

4.3. Taking into account CBT while developing policies, legislation and regulation

4.3.1. Consideration of the CBT in policies and institutions at national and sub regional level

4.3.1.1. The place of transhumance in development policies

Historically, the governments of West Africa have seen pastoralism (and livestock mobility in particular) as backward, inefficient and destructive. The tendency has been to promote the settlement and try to convert the pastoralists into "modern" herders (IIED, 2008).

This approach to policy in West Africa is often the product of "top down" reflection, conducted mostly by technicians and decision makers in government services. Interventions focused on health support, the supply of cities, on pastoral developments and programs of intensification (PPLPI, 2004).

Originally, the colonial administrative structure has deliberately fragmented open spaces dedicated to pastoralism, but also to the collection, hunting and practice of extensive farming, in specific territories of development. Some "ethnicization" of social groups and their respective territories has emerged, instead of inter practices based on exchange as well as symbolic and material reciprocity. A wide planning policy has gradually removed the shepherds of wetlands and lowlands, privileged path of retreat in case of drought or irrigated areas devoted to cash crops (cotton, peanuts in particular) (Bonnet and Guibert, 2011).

When we draw a parallel between what is invested in agriculture or pastoralism, we see that there is an enormous gap. Despite investment low rate it attracts, pastoralism has some amazing production capacity. In Niger, with two thirds of very arid territory, where all farm work is impossible, we are still at 31 million head of cattle. Remember that pastoralism requires interactions between deficit and surplus areas. It is not to privilege systems over others, but to see how to maximize their complementarities. (Défis Sud, 2010).

Access by country of West Africa to political sovereignty has not led to a breeding policy guidelines change. In the specific case of Burkina Faso, it was not until 1987 that adjustments were made, with the development of a document entitled "Ageing to the Year 2000" (PPLPI, 2004).

With structural adjustment policies, the agricultural policy tools have been primarily directed towards the financial profitability of production without the necessary accompanying measures to achieve the objectives of agricultural policies: food security, rural employment and market integration regional (ECOWAS, 2005).

With a more or less early decentralization, local governments are opening up new possibilities for local resource management. However, the pastoral breeding appears somewhat inconsistent with the main levels of intervention of decentralization. Furthermore, the communal development greatly benefits from local revenue from the livestock sector, nevertheless without any investment for breeding (Bonnet and Guibert, 2011). One of a major consequence of this policy has created wincing over the use of natural resources due to administrative boundaries largely incompatible with the exercise of pastoral performance, thus necessarily mobile. This distinction has helped to highlight a very simplistic explanation of the future of farming (IIED, 2008): According to some managers, modernization would involve a farm where the animal load control over a territory, necessarily restricted, would be the based strategy (ranches, farms and stations modernized farms, etc.).

Their orientation towards water projects (large diameter boreholes and wells) not always make sense ecologically (Thebaud, 1990) and veterinary care coverage against major animal diseases

regularly appearing in the Sahel, public policies in ECOWAS, in recent years, have considerably taken into account the modernization of pastoral and even sedentarization of transhumants. As an example, the modernization of farming is at the centre of Senegalese policy objectives. The livestock productivity increase is supposed to enable the sector to meet the multiple challenges of the future; they are formulated in terms of market supply, food safety, environmental management or fight against poverty. Vaccination, artificial insemination, stabling, forage crops and improvement of hygienic products constitute the basis of this "intensive" model that Senegal and the development partners aim at promoting the sector. Agro-Sylvo-Pastoral Orientation Law (LOASP) has several opportunities to implement these new principles of breeding modernization (PPLPI, 2004). It recognizes the diversity of production structures and stresses the importance of agriculture and rural Council and public research in the rural development process. However, the text focuses on national issues and seems to neglect the importance of local institutional dynamics.

In PPLPI Regional Workshop report (2004), the parties stressed that for 30 years; this "productivity" model is just to win in rural areas and is confined mostly to the periphery of major urban centres. Despite this, official documents continue to promote this "modernization" of farming, particularly through the concept of "model farms".

This system differs from pastoralism ranch ownership by private and state rangelands. Meat production for sale is generally the sole objective of these companies, while milk production is absent. The "ranching" system excepted few cases the objective of which is often the development and promotion by the State of a race, is still inefficient to carry the multiple farming challenges and pastoralism in particular in Africa West.

But there are exploitable natural comparative advantages between countries in the region. Sahelian countries have the double distinction of having a surplus available and a potential surplus in production of domestic ruminants (ECOWAS / OECD, 2008). Livestock sector policy analysts agree that the demand for animal products will increase the pace of population growth by taking into account the rapid urbanization. Some authors do not even hesitate to speak of "livestock revolution" in the next 25 years with regard to this increase in production driven by demand for livestock products (Delgado et al, 1999 in Anonymous 2008a). In West Africa, the statistics (FAO, 2005 in Anonymous, 2008) also indicate a strong demand for animal products, especially in coastal countries: 520,770 heads of cattle / year for Benin, Cote d'Ivoire, Ghana, Nigeria and Togo combined. More recent data on animal productions in three landlocked countries of the Sahel (Burkina Faso, Mali and Niger) indicate a total exploitable potential of 22.5 million head of cattle in 2005.

Opportunities of regional trade development of meat are there, but the paradox remains from ever increasing imports of animal products from outside Africa even though imports of meat from the EU show a downward trend. For example, the share of meat imports from outside Africa increased from 3% to 19% in Ivory Coast between 1970 and 1999 and 4% to 17% in Togo (Balami, 2003).

Regarding dairy products, several projects and programs have been developed in recent years in suburban areas of cities, as it is the case of the Development Project of the peri-urban agriculture (PDAP) in Mali or the National Pilot Dairy Development Programme (PNPDL) in Burkina Faso. At the initiative of West and Central African Council for Agricultural Research and Development (CORAF / WECARD), a competitive fund was set up to run a research and development. This project addresses access to markets and diversification of agriculture in the West African Economic and Monetary Union (WAEMU) zone in an attempt to improve competitiveness in the dairy sector in a number of countries in the region and to strengthen regional integration. In spite of these efforts, dairy products imports from outside Africa are increasing. In Burkina Faso, for example, these imports have averaged CFAF 7 billion annually during 2000-2005. For Senegal, they represent in absolute value 36.7 billion CFA francs in 2004, CFAF 6 billion in Niger and nearly 10 billion CFA francs in Mali.

4.3.1.2. The place of transhumance in the national institutional Environment

In each country, the institutions are in place to act on issues related to pastoralism and thus transhumance. It is concerned about State and political systems put into place, but also the institutions of civil society or international development partners. However, the creation of some of these organizations is rarely spontaneous, the objectives are too broad, the actual services provided to members are reduced or absent; individual commitment: gratitude to the organization is very low. But increasingly they are becoming key players in the evolution of pastoralism.

In Burkina, a Ministry of Animal Resources was created in 1997 with first tasks the reorganization of the traditional breeding through training, and supervision of pastoralists. Through the Directorate General of pastoral areas and facilities, program management, security and recovery areas and pastoral development have been formulated. It also worked on the development of pastoral areas, the promotion of animal food industries, increased forage production and intensive promotion of private and State farm. Actions plan and Investment Programs of the Livestock Sector (PAPISE) newly developed reaffirms these guidelines.

Civil society organisations are represented by pastoralists' organizations whose main activities provide training and advice to local community groups and existing pastoral communities. Being more present in the North like RAW (Regional Committee of the Sahel farmers' unions) or APESS (Association for the Promotion of Livestock in the Sahel and Savannah), they tend to develop south-eastwards (region of Fada). Other structures of civil society can interact on pastoral issues (this is for example the case of Research and Action Group on Land (GRAF) on topics such as land, the Natural Resources management and Local Conventions).

Herders Federation of Burkina Faso (FEB) is a private organization that has so far developed few initiatives for securing mobile livestock. More recently, in the Southeast and Southwest the Network for communication on pastoralism (Recopa) induced by Veterinarians without Borders project, has shown great commitment in securing pastoral land for the particular realization of transhumance trails. It is currently supported by the project ARECOPA funded by

the Swiss Cooperation. Development partners, like the GTZ seem to divert actions towards pastoralism to concentrate on a value chain approach and agricultural modernization. Yet the two are not necessarily contradictory.

In Mali, the Ministry of Livestock and Fisheries created in 2005 consists of two directorates: the Directorate of Veterinary Services and the Directorate of Industries and Animal Industry Committee on Issues of pastoralism. Different transversal policies interest the sector of Pastoralism in the country (MEP, 2008): (i) the National Policy Planning, (ii) The Strategic Framework for Growth and Poverty Reduction (CSCR) (iii) The Master Plan for Rural Sector Development (SDDSR) (iv) The national policy of decentralization for better promotion of regional and local development, (v) The National Food Security Programme (NASP), (vi) The Agricultural Orientation Act (LOA), (vii) The Economic and Social Development Project (PDES) which provides among others the development of animal industries in the five -year planning.

In Senegal, the creation of a pastoral division within the Directorate of Livestock dates back to early 1990. But one must say that other divisions contribute to the improvement of herding: Division of Animal Health for Cross-border Diseases and Division of Animal Production facilitate access to food complementation, the organization of gathered purchasing, acquiring mowers. The Ministry of Livestock was created around 2004. The institutional reform of 2008 allowed the creation of three directorates: Directorate of Livestock, Directorate of Veterinary Services and Directorate of Equine Livestock.

New Sectoral Initiative for Livestock Development (NISDEL) was established in 2004 (MDCE, 2004). Its objective is the modernization of breeding in the stall, the creation of private farms and the establishment of funds for calves. There is now a national campaign funded by the state IA. The NISDEL is a transitional framework that will be replaced by the National Plan of Livestock Development (PNDE) (MOE, 2011), subject of the implementation of the Agro-Sylvo pastoral Orientation Law (LOASP) that aims at: (i) updating the regulations, (ii) enhancing the security of herds, (iii) developing the PNDE (iv) establishing a agro-pastoral-wildlife fund.

Regarding these points, the PNDE was validated in June 2011, and one is still waiting for its approval at the cabinet meeting. In this paper, Livestock transhumant is taken into account in one of the pillars and in one of the actions lines, pastoral resources concerted management. Regarding the pastoral code, the terms of reference for its development are developed; a request was made to FAO. It should help to harmonize the different legal principles governing the occupation of pastoral areas.

A livestock identification program was implemented between 2008 and 2010. It is question to use loops instead of fire marks that devalue the leather. The results were promising. Similarly, a codes' review of criminal proceedings has been sought but in the meantime, the Ministry of Justice requested through a circular letter to increase penalties for cattle theft. Finally, improved mobility services and producer organizations (institutional support to men and services) will allow better supervision of pastoral populations.

Benin has no ministry of animal resources, but a ministry that includes agriculture, livestock and fisheries (APRM). The Department of Livestock asked in 2005 all municipalities to establish transhumance committees according to ministerial decree No. 010 of 1992 to more effectively manage the transhumance at the municipal level. [Republic of Benin, Inter-ministerial Order No. 010/MISAT7MDR/D-CAB, Relative to the creation, organization, powers and functioning of transhumance Committees]

Pastoral associations are a few number (at most 3 or 4) and are in competition for leadership. Yet they are not on the same plan. Lawol Fulfulde is a national structure established by the old Fulani elite. It focuses on literacy and language preservation Fulfulde, Benin. It also claimed to be the sole legitimate representative of Fulani herders in Benin. This role is disputed by other associations younger, including the Departmental Union of professional organizations of ruminant (UDOPER) that has formed around the management of livestock markets. It is supported by SNV and the French NGO AFDI. Potal Men (in Attacora) and the Association for the Promotion and Protection of Livestock in Benin ASPEB (Malanville and Karimama) play their role at the regional level in the management of transhumance.

Overall, farmers are very poorly represented in decision-making bodies and in public debates. The level of training of farmers seems lower compared to the two other countries. Among them, the operators developments (domestic or international) have focused on natural resource management and particularly around the forests. Note also the presence of SNV looking to work on the problem of cross-border transhumance.

In Ghana, the Ministry of Food and Agriculture (MOFA), in charge of the agricultural sector, covers the sub-sectors of crops, fisheries and livestock, with the exception of cocoa, coffee and forests under other ministries. MOFA is developing the agricultural policies and programs and provide the monitoring and evaluation of national development programs in the area. Since the 1997 adoption of the decentralization policy, the department was divided into nine technical departments: planning, monitoring and evaluation of agricultural policy (PPMED) Animal Production (ODA), Animal Health (VOD) and Services to crops (CSD);

In Niger, a Ministry of Animal Resources (MRA) exists, but the budget part allocated to pastoralism is relatively low. The High Commission for the Consolidation of Peace attached to the Presidency also handles issues of TT.

Since the early 90s, pastoral associations were established in all regions. They play both an advocacy role for farmers and development agents (as prime contractor for a number of projects). Some like the AREN and FNEN Daddo have a real national coverage and have a real capacity federation of farmers, action and information dissemination. They remain relatively low due to limited means at their disposal but also because of a lack of experience in the management of specific issues. They include a lot of trouble, despite the existence of a collective of the Cell Analysis for Development Policy of the National Assembly (CAPAN), to join together to defend common issues such as cross-border transhumance. On the peripheral

area of the complex WAP, the three main structures are the AREN, and the CAPAN Gajel Sudubaba.

Development partners are relatively numerous to act on the pastoral problem. They can, in collaboration with pastoral associations, form a lobby in favor of a genuine consideration of pastoralism. In September 2005, two workshops were organized during which the issue of pastoralism in the decentralization process was discussed. The pastoral forum provides a framework for exchanges between individuals from state structures, national and international associations. It has initiated important reflections on themes close to that of our study, particularly on the relationship between protected areas of WAP and ranchers

In Guinea, the National Directorate of Livestock (DNE) is under the Ministry of Agriculture and Livestock (MAE). Division of Animal Production (DPA) through the Breeding section is responsible in particular to ensure the application of the rules and regulations regarding the livestock movement, management and improvement of genetic resources. A national strategy for resolving conflicts between farmers and herders has been set up with: (i) harmonization of legislation on agricultural land management (Farming Code and Land Code, lands and rural) and the development of laws application of pastoral code, (ii) the strengthening of communication for continuing operations initiated as part of conflict resolution, (iii) the strengthening of measures against cattle rustling.

In Togo, the Directorate of Livestock and Fisheries (DEP) under the Ministry of Agriculture, Livestock and Fisheries (MAEP). It is divided into three divisions: Division for the Advancement of Livestock - Division for the Advancement of fisheries and aquaculture - Legislation Division, food hygiene and veterinary public health. At regional and departmental level, there are departments of Agriculture, Livestock and Fisheries attached to the APRM.

Because of the crisis that the country has experienced in recent years, Togo did not have an agricultural policy framework document. Interventions in the agricultural sector are governed by the Agricultural and Rural Development Policy Document (ADP) developed for the period 1993-1997 and adjusted for 1996-2000, Strategy of agricultural growth (SCSA), developed in 2002, after a long process and validated in national workshop in 2004, the rating of agricultural policy (NPA), developed and adopted in 2006 to cover the period 2007-2011, and the Recovery Strategy for agricultural production (AFS) , prepared and adopted in July 2008 to cover the period from 2009 to 2010 (IFAD, 2010). The industry guidelines are focused on increasing the use of inputs, development of short-cycle animal species, large ruminants, the fight against major epidemic diseases and the revitalization of inland fisheries. However, they remained, most often without satisfactory result.

In Ivory Coast, the livestock sector was managed by a Secretary of State under the Ministry of Agriculture during the 1960s. Subsequently, a Department of Animal Production (MPA), with responsibility for promotion and development of livestock has been established since 1970. In 1984, it was attached to the Ministry of Rural Development and in 1990, it was again independent. In 1998, the sector will be entrusted to the Directorate General of Animal

Resources (ARB) under the Ministry of Agriculture and Animal Resources (MINAGRA). It became from 1998 to 1999 a Ministry Delegate to the Ministry of Agriculture. Currently, a Ministry of Animal Resources and Fishery with a Department of Management and Pastoral area Equipment and Aquaculture (DGEEPA) takes the responsibility of the sector.

Since 1972, the National Livestock Development has become a priority for improving the country's food self-sufficiency. This determination arises from the inability of the Sahelian countries to ensure its steady supply of meat, following the droughts that have decimated their herds. Society of Animal Production Development (SODEPRA) was created this year for the supervision of pastoralists and improving livestock productivity. Ranches and State breeding farms are created between 1972 and 1983 having among various other missions the national cattle increase.

From 1993 up to now, State interventions have been restructured in a Livestock Sectorial Programme (PSE), now included in the Master Plan for Agricultural Development (CAADP) 1992-2015. They are dictated by the structural adjustment program imposed by the World Bank and International Monetary Fund, and having compelled the state to dismantle most of its support structures and protection of its agriculture. Organizational changes occurred are the liquidation of the SODEPRA in 1993, the creation of ANADER and privatization of animal health in 1994.

The different programs and projects the execution of which was on progress after the liquidation of the SODEPRA In 1993, as well as those initiated later were operated without the required cohesion and effectiveness. The main causes for that are: inadequate and irregular funding, changing policies of development assistance donors, inadequate supervision of players, and the resurgence of the high incidence of certain animal diseases, the low level of training and organizational actors, the lack of organization of marketing channels, the successive socio-political crises.

On the Gambia, the government developed a national plan of agricultural investment [Gambia National Agricultural Investment Plan (GNAIP)] to address the challenges that agriculture faces and thus reduce poverty in rural areas. The GNAIP will enable to strengthen the capacity of small and medium producers and improve market access and value added agricultural products including livestock. One of its main components is about "Improved management of other shared resources" with a component "rangeland management improvement and transhumance organization.

4.3.1.3. The place of transhumance in the institutional sub-regional

In West Africa, there are several institutions, regional, continental and international that support or accompany the States in the improvement of animal production. The two most significant for CBT are ECOWAS and WAEMU (Anonymous 2008a). ECOWAS (Economic

Community for West African States) includes all the states of West Africa. Its main objective remains the creation of a vast common market in West Africa and the creation of a monetary union. To do this it seeks to promote cooperation and development in all areas of economic activity, abolish restrictions on trade, to support the free movement of goods and services. As such, in 1998, the Conference of Heads of States took a decision in 1998 to regulate the migration. In that decision the conference said "convinced that in the current conditions of means under Member States disposal, the movement is useful in preserving and increasing livestock production, but is aware that transhumance is yet a source of many health, social, environmental, economic and political problems". It also defines the conditions of transhumance between states:

- i. Each country sets its entry and exit;
- ii. Each defined state reception areas;
- iii. Travel must take place along roads defined by the States;
- iv. Border crossing should be done in days;
- v. Finally, to cross borders ,the transhumant should be equipped with an international transhumance certificate (ITC). In this certificate the stockbreeder must declare all his animals, certifying their immunization and define its route.

The **WAEMU** (West African Economic and Monetary Union) helps the Francophone countries to have a common currency, the Franc CFA. Many goals are shared with ECOWAS in particular for the transhumance. Diplomatic niceties can promote the resort to one structure or the other depending on the contexts. Thus, if ECOWAS has defined the overall framework for the TT and promoted the use of international transhumance certificate (ITC), WAEMU chaired the 2004 dialogue between Burkina Faso, Niger and Benin on transhumance around the complex - Protected Areas W, Arly, Pendjari (WAP). Bilateral agreements exist between certain States (ECOWAS recommended). This is the case of Burkina Faso and Niger, which meet every six months for an update on the situation of transhumance. There are none with Benin. Despite these agreements, some countries have sought to close their borders. This is particularly the case of Benin. Indeed, in 1995 following unrest in the centre of the country (officially 90 deaths between 89 and 94), it was decided at the cabinet meeting to suspend the TT. This measure is not really acted upon, until 2000 when the Benin will conduct a tour of neighbouring countries to implement it. Immediately the other countries have appealed to ECOWAS for the cancellation of this suspension.

According to the director at the Ministry of Agriculture, Livestock and Fisheries, Benin is ready and interested to cancel the suspension, but under the conditions that certain measures are taken. It refers to the negotiations within ECOWAS and especially the recommendations of the experts meeting in Cotonou in 2001. Benin considers that there was no follow-up for this meeting. In fact today that it expects ECOWAS provides the means for improving the infrastructure needed to transhumance. Until these improvements are not made, Benin considers legitimate to repress foreign transhumant or implement repressive measures to protect the parks or to fight against the transhumant who do not respect the rules.

In fact, there is a phase of renegotiation of the terms of access to natural resources of Benin. With population growth, expansion of cultivated areas and the monetization of rural production in the country, the Beninese consider that resources (land, pasture and water) can no longer be free and accessible to everyone. The resource belongs to the Benin government; municipalities have the vocation to manage them effectively and efficiently. They intend to install package of taxes (at municipal level) and entry fees (at the borders). Therefore the TT can have a future, but perhaps it would no longer be free (assuming it exists). This renegotiation is also happening in a tense situation between Niger and Benin with other conflicts that do not have direct links with the transhumance but may weigh into the debate (conflict on the island of Lete, recurrent conflict carriers).

CILSS also plays an important role in ensuring the Technical Secretariat as part of the development of ECOWAS agricultural policy. It has tools and techniques of research through the Sahel Institute (INSAH) based in Mali working on population issues and of agro-socio-economic aspects. In addition, the AGRHYMET (based in Niger) is already playing a leading role in climate and rainfall forecasts. Finally CILSS promotes programs including the issue of management of transhumance and reducing conflicts over access to resources which is a central concern.

The Niger Basin Authority (NBA) is an institution for the West African countries (Benin, Burkina Faso, Ivory Coast, Guinea, Mali, Niger and Nigeria) and Central African ones (Cameroon and Chad). The NBA works in the field of shared water resources of its member countries who wish their concerns about access to drinking water and pasture can be taken into account.

The Liptako Gourma Authority (ALG) (Burkina, Mali, Niger) is an institution of sub-regional cooperation: A recent program of livestock development in the area among other aims: training for producers, the realization of water infrastructure and animal health and pastoral development. It has recently organized (October 2011) with the Network BillitalMaroobe a workshop on transhumance.

The African Union (AU) through its Department of Rural Economy and Agriculture has developed a framework for pastoralism in Africa (GITPA, 2010). This framework will help secure and protect lives, livelihoods and rights of pastoral communities and ensure the continent's commitment to the political, social and economic communities and pastoral areas and also to strengthen the contribution of pastoral herds to national and regional economies of the continent.

The EU held a briefing on the development in partnership with the African Union (CTA weblog of the Brussels office, 2012). On this occasion, it will be given an overview of key issues affecting pastoralists, particularly in ACP countries, as well as opportunities provided by the existing policy frameworks and processes at continental and regional level. It will then process the sharing of best practices and field experiences across regions. The urgent and concrete policy actions to support pastoralism will be identified. An overview of key issues

affecting pastoralists and opportunities provided by existing frameworks and political processes in continental and regional level will be given. Finally, best practices and field experiences will be shared between regions

4.3.2. Consideration of the CBT regarding the laws and regulations

The different West Africa states have taken laws and regulations to reduce such conflicts related to border transhumance. Listed below are those taken in some of them.

In **Benin**, the law on the common pasture of 1987 (87-013) regulates mobile livestock (grazing, keeping of animals and transhumance. In 1989 (Order No. 12 of 165/MDRAC/DGM/DAFA/SAA June 1989) and in 94 two inter ministerial orders establish grazing and animals' entry fees in the territory. Since 1995, the border transhumance is formally suspended. But in fact this ministerial order has not the means to be in field application.

Committees were established by transhumance Inter ministerial Order No. 010/MISAT/MDR/D-CAB of 20 January 1992. There is a National Transhumance Committee with divisions at the department, municipal, district and village level. These Committees are responsible for preparing the transhumance, to monitor progress and provide solutions to problems that arise, according to a concerted

In 1993, the law on forest tenure in Benin allows the exploitation of forests, including pastoral farming. This preserves the vast pastoral areas which are sought after by pastoralists and necessary for the existence of transhumance. Rules and operating taxes (for wood as for breeding) are provided for these forests.

The minutes of meetings relating to the management of transhumance were also reported: (i) Mission Outreach in Nigeria, Niger, Burkina Faso and Togo from 11 to 30 May 2000 on the damage of border transhumance in Benin, (ii) Meeting of Experts on the regulation of cross-border transhumance between ECOWAS States of 13 to 17 November 2001 in Cotonou (goal was to take stock of the implementation of Decision A / DEC. 10/05/98) (iii) bilateral consultations between Benin and Burkina Faso was held from 10 to 11 April 2002 in Ouagadougou in the context of better regulation of transhumance between the two states.

In **Ghana**, the policy on pastoral development is based on two laws: (i) the Local Government Act (Act 462) (1993) and (ii) the Land Act, Bill of 2010 with the objective of revision and consolidation of statutory laws to harmonize land policies with existing customary laws. Indeed, Ghana does not have a large pastoralist population dependent on extensive cattle or small ruminants. The primary production system is that of small farmers engaged in extensive grazing or making use of free range, there are only a few commercial farmers who operate mostly in the coastal savannah. Ghana is however a reception and transit area for border transhumance and conflicts are increasingly noted even in forest areas. However, the existence of a memorandum of agreement with Burkina Faso for the management of transhumance has been reported.

In Ivory Coast, the decree N° 96-431 of June, 3, 1996 regulates the cattle movements all over the national territory area, establishes agro pastoral calendar of the starting and ending of annual farming cycles, regulates the external transhumance and finally establishes the pound and sanctions for wandering pets. The decree N° 96-432 of June, 3, 1996 obliges the livestock owners and herders to get registered at their sub-prefecture; it requires the creation of sub-prefectural and departmental pastoral associations as for rules and regulations that come into force. The decree N° 96-433 of June, 3, 1996 relative to conflicts settlement between farmers and pastoralists forecasts the installation of village commissions of settlement out of court; it creates sub-prefectural commissions in each sub-prefecture and arbitration and appeal prefectural commission in each prefecture. The decree N° 96-434 of June, 3, 1996 states compensation principles of harms caused to breeding animals. The ministerial order n° 28 MINAGRA/MEF of March, 12, 1996 is on setting of compensation scales of destroyed crops. The ministerial order n° 21/MINAGRA/MININT of January, 22, 1997 establishes the creation of Cohabitation and follow-up National Commission of Farmers and pastoralists. A law regarding transhumance is elaborated in June 2010 at cabinet meeting but it's not yet approved and issued by National Assembly.

Togo is facing strong pressure regarding land and land over-exploitation due to high population growth. In the north, conflicts more and more violent between farmers and herders come into existence. Decrees No. 2007 and No. 2006-033/PR - 089/PR indicate the creation of a National and prefectural committees of transhumance. As for the Ivory Coast, a guidance law is being prepared.

In **Guinea**, despite the fact that it is a forest country, a pastoral code was introduced (Law No L/95/51/CTRN dated August 29, 1995). It stipulates the legal principles governing the organization and exploitation of natural resources for breeding purposes, the guarantee of pastoral rights of use disputes' settlement between ranchers and farmers. The document also defines transhumance and its conditions of exercise (times of departure and return of animals, the keeping of animals on transhumance, periods of tolerance of the straying of livestock), indicates the basis of conflicts' resolution between farmers and ranchers and finally proposes the establishment of a pastoral development fund.

In **Senegal**, the following statutory texts have been adopted: (i) document on the classification of forest from 1930 (due to the amount of land classified as Wildlife and pastoral Zone (ZSP), a large stretch of the rangelands is governed by this law), (ii) law 64-46 known national estate of 1964 and its application decree 64-573 transfer all traditional owners' land inheritance to public power, (iii) Decree 80-268 defining standards of land use to pasture (iv) the Environmental Code (Law No. 2001-01 of January 15, 2001, (v) Decree No. 2001-282 of 12 April 2001) and that of water (Law No. 81-13 of March 4, 1981, (vi) stopped putting in place the management committees of hydraulic structures (1984) (vii) Decree 86-320 of March 1986 and its application decree concerning the use of grazing by camels is governed by specific legislation, (viii) inter-ministerial circular (without No.) January, 1st, 1984 will allow at pastoral sinking level the creation of pastoral committees, (ix) Decree 65 -078 February 10 and thereafter the law

93-06 of 4 February 1993 with its application Decree No. 95-357 of 11 April 1995 defining the terms of access to forest resources (lack of accuracy is still identified regarding the notion of species partially protected and woody pruning standards are not yet available and this is causing tensions between ranchers and the Forest Service), (x) Law 96-07 of 1996 transferring certain powers of the State to the regions and rural communities (there are still difficulties in its application because of the difficulties of mobilizing financial resources for local and national implement development programs and monitor resource).

Between Senegal and neighbouring countries, draft agreements were signed to regulate cross-border transhumance: (i) the one with Mali signed April 12, 2005) and (ii) that of Mauritania signed on 25 April 2006).

In **Burkina Faso**, a country of transhumance, several laws have been developed or proposed for regulation of transhumance (the Law on Agrarian and Land Reform (RAF) from 1984, (ii) Law No. 055-2004/AN December, 21,2004 General Local Authorities Code in Burkina Faso, (iii) Law no. 006/97/ADP of January, 31,1997 forest code, (iv) Law no. 14/96/ADP of May, 23,1996 on agrarian and land reform, and finally Law no. 34-2002/AN of November, 14, 2002concerning orientation law on pastoralism.

This is a collection of rules relative to the pastoral stockbreeding. Subject to reciprocity, the foreign herds are allowed to cross national borders in the framework of transhumance. The main conditions such as keeping of animals, compulsory vaccination of animals, possession of international transhumance certificate (ITC) as well as cattle trails are defined and distinguished. Moreover approach "pastoral areas" to promote development of a sedentary farming is reaffirmed.

A document entitled "Action Plan and Investment Program for Livestock Sector (PAPISE)" is prepared for the period 2010 to 2015 (RA 2010). While relying on a modernization and marketing of animals, the PAPISE recognizes that Burkina is still dependent on a mobile and extensive ranching. Therefore, the program forecasts the demarcation and development of 40 new pastoral areas and 1000 km of transhumance tracks.

The Village Development Commission (VDC) is the legal recognized body for local affairs and natural resources management. "They are slowly being introduced by villages, possibly with the support of development actors. But in reality, they are struggling to be effectively operational. A ministerial order concerning about settling disputes between farmers and pastoralists forecasts the implementation of conciliation boards at village and departmental level.

Various draft agreements were also signed to regulate the CBT with Mali, Niger and Benin

In **Mali**, the statutory texts dealing with pastoral issues are: (i) Ordinance No. 027/P-RM of March,22, 2000 on Land and state Code, (ii) Law No. 01/004 / of February ,27 ,2001: on the Pastoral Charter in the Republic of Mali (the Act defines the basic principles and general rules governing the exercise of pastoral activities in Mali) (iii). Decree No. 06/439 / P-RM of 18 Oct.

2006: defining the Law application modes No. 01-004 of 27 February 2001 charter Pastoral (iv) The Agricultural Orientation Law: Law N ° 06-045 of September 5, 2006, (v) Decree No. 10/602 / P-RM of 18 Nov. 2010: it deals with the transhumance's modes.

In the application of these statutory texts, the most important problem on transhumance arises at the Niger office lands' level, one of the largest development projects of irrigated lands in West Africa. The consideration of pastoralism in the improvement of lands has not been effective. As a result, valuable rest areas for pastoral livestock were gradually lost or undervalued. But in this country, pastoral development is closely linked to access and mobilization of surface water and pasture of recess in case of drought. Theoretically, the pastoral law has been added to a juxtaposition of management methods and modern & customary rights of individual, collective, private or public ownership that are not well-suited sometimes. Issued in 2001 by the President of the Republic, the pastoral law has not still an application decree.

Niger is a stockbreeding country with high stakes in the field of pastoral livestock. Among the relevant statutory texts include: (i) Ordinance no. 93-015 of March,2, 1993 on Principles of Orientation of the Rural Code, (ii) Ordinance No.93-016 of March,2, 1993 on the 1997 Mining Code, (iii) Decree no. 97-006/PRN/MAG/EL of January,10, 1997 regulating the development of natural resources, (iv) Decree no. 97-007/PRN/MAG/EL of January,10,1997 establishing the status of land for herders, (v) Decree no. 97-008/PRN/MAG/EL of 1997 on the organization, duties and functions of institutions responsible for implementing the Principles of guidance of the Rural Code (vi) Law no. 98-07 of 1998 on the arrangements of hunting and wildlife protection; (vii) Law no. 2001-23 of 2001 establishing administrative districts and local governments; (viii) Law no. 2002-12 and no. 2002-13 of June,11, 2002 Law no. 2002-13 to 2002 on the transfer of competences to local bodies, (ix) Pastoral Ordinance of 2010.

In the statutory texts, the 1961 Act points out an area exclusively pastoral. The Land Commissions (from the Rural Code of 1993) are the main institutions responsible for implementing the Code. The latter stipulates that farmers have rights of use over natural resources to conduct their farming activities.

The Rural Code provides for a range of evidence relating to pastoralism. This is particularly the case for the recognition of corridors, the notion of home land or rules on pastoral water. In order to prevent conflicts, and in collaboration with a number of development partners (GTZ, Swiss Development Cooperation, the United States of America, DANIDA, etc.) they are doing in the materialization of pastoral spaces (corridors, transhumance routes, rest areas or pastoral areas). These realizations aim at maintaining grazing land in agricultural areas and securing the movement of herds. The work of demarcation, often initially controversial, always difficult to negotiate since it is opposed to many individual interests, is becoming widespread and is increasingly being asked by all communities.

In case of conflict, the local chief has the power of reconciliation. This reconciliation must be proved by reconciliation minutes of meeting. Regarding customary aspects (land, inheritance,

etc.), before going to court, an attempt to settle the conflict in a friendly way by the local chief is compulsory. For technical questions (damage assessment), the local chief can seek the support of relevant technical services.

Municipalities are often relatively small, local councillors often illiterate and budgets often ridiculous (12 million CFA francs in certain municipalities). Everything is to invent, create and organize. But the dynamism of local councillors is sometimes impressive.

Nigeria is a large coastal country but where livestock is very important. Two regulations have been identified: (i) National Development Plans of 1981-1985, (ii) the Act of March, 29, 1978 on the development of land.

Just after independence in 1962, the Government of Northern Nigeria promulgated a land law under which all lands were under the authority of the governor, who held and administered them for the use and common benefit of local populations of the region. Growth in demand for land followed the urbanization process and the oil boom. This situation has exacerbated the high land speculation. There is a department in charge of livestock which is under full supervision of the Ministry of Agriculture. Thus, the overall objective of the livestock sub-sector is to put all the animals in the best conditions of use and achieve self sufficiency in the production of stockbreeding and cattle so as to meet the country's animal protein needs. This is specifically to provide local input to the livestock industry, to effectively protect farmers against the vagaries of climate and unpredictable risks to animal production, land use and maintenance of ecosystem for livestock production.

Most disputes between farmers and herders require arbitration of traditional leaders. They have developed a type of judicial procedures with witnesses, the site inspection and an independent assessment of costs. However, some of them, pronounce arbitrary sentences, and are often accused of taking bribes. In some areas, for example, pastoralists are favoured in all cases because they are richer than farmers and can afford more. Elsewhere, sentences are always pronounced in favour of farmers. The village chiefs, more vigilant put into place preventive measures. Such is the case of Bauchi and Yobe states that have what is called "Welcoming Committee". These are local residents appointed by the village head that are going to meet the transhumants (Fulani) recently came to the area looking for a camp.

The Government put focus on the allocation of land to nomads who over the years have become landless. In this perspective, it aims at continuing its legal allocation procedure of grazing land. These grazing lands will also be available in areas with agricultural use. The Federal Government will dwell on the marking of surfaces for grazing in all states. Thus, 10% of the total land area of the country will serve as grazing areas for livestock.

Documents related to pasture management at local level (Conventions or local charters⁹) (Sankharé, 2011) **have been elaborated in most countries (Senegal, Mali, Benin, etc.)**. However the application of such clauses face with number of constraints: (i) administrative authorities' reluctance to sign the various documents that have no legal basis, (ii) low diffusion of the agreement resulting in users' misunderstanding of the several clauses of the various articles it contains, (iii) difficulties in implementing a truly participatory approach, (iv) low efficiency of monitoring mechanisms, etc.. Yet local conventions have shown positive impacts: they contribute to strengthening social cohesion in areas where they are implemented; they contribute to the consolidation of environmental awareness and reduce the extent of natural resource degradation.

Reports of inter-states meetings organized by ECOWAS to discuss problems related to CBT, including the application of the decision A/DEC- 5/10/98: These are:

- **the meeting Cotonou-Benin** where ECOWAS experts and representatives from regional institutions met to reflect to the regulation of transhumance in order to identify and discuss problems and other shortcomings identified in terms of cross-border transhumance between neighbouring states.
- **the meeting of ECOWAS' member states ministers in charge of Livestock** held in Ouagadougou (Burkina Faso) in October 2002, and the bilateral meeting of ministers in charge of Livestock in Burkina Faso and Niger Republic held at Dori (Burkina Faso) in December 2002 on the practical application of the decision A/DEC-5/10/98,
- **the meeting of ECOWAS' member states experts** on the regulation of cross-border transhumance in Cotonou (Benin) in November 2001;
- The 33rd meeting of the Cabinet meeting of the “*Conseil de l'Entente*” member states held in Niamey in December 1998 on the regulation of transhumance.

Reports of “fora” in different states of the sub region are also reported. They were the place for discussions that helped make important decisions in terms of management of the TT. This form of meeting is one among others means of expression of Professional Organizations (POs) and Non-Governmental Organisations (NGOs):

- **The forum of Maradi (Mali) in January 2008 and that of Gogounou (Benin) in July 2008**, besides the question of transhumance, addressed issues of cross-border marketing of livestock. These meetings were attended by policy makers in the livestock / pastoralism sector at the sub region level, sub-regional institutions such as CILSS, ALG, WAEMU, international NGOs such as SNV, Oxfam, ACORD and pastoralists crest tiles organizations APESS, Recopa, etc..
- **The forum Nioro (Mali) in November 2007** brought together leaders and the entire rural area of Kayes and Koulikoro and had as objective to enable pastoralists

⁹ Agreements, written or oral, negotiated between two or more groups of stakeholders, defining a set of management rules and land use and / or natural resources included in a given space

themselves to exchange and with the technical managers, politicians and administrators as well as other social and professional groups.

- **The forum on transhumance in the circle of Yanfolila in southern Mali** held from July 22 to 23, 2010 at Yanfolila (Sikasso region) receives, through good times and bad, pastoralists of Koulikoro, Mopti and some of Kayes because of its enormous pastoral potential. Recurrent conflicts between pastoralists and farmers in the region including that of January 2010, led the Malian government to organize this meeting in this area very popular with thousands of herds from the north or centre of the country

4.4. Contribution to the demand related to population growth and urban centres' development

4.4.1. The contribution of pastoralism to demand related to population growth

Demographers do not know the real impact of Acquired Immune Deficiency Syndrome (AIDS), the rate of population growth in West Africa should be kept at more than 2.4%? (More than 3 for Niger).

In West Africa, the statistics (FAO, 2005) also indicate a strong demand for animal products, especially in coastal countries - 520,770 heads of cattle in Benin, Ivory Coast, Ghana, Nigeria and Togo combined. More recent data on animal production in three landlocked countries of the Sahel (Burkina Faso, Mali and Niger) indicate a total exploitable potential of 22.5 million heads of cattle in 2005.

Based on figures of 2006, one estimates on average that meat from ruminants represent 1.26 million tons of annual production meaning 4.75 kg per capita per year. Meat produced in the region has a total volume of 2.35 million tons, or 8.7 kg per capita per year.

The growth rate of animal products supply is currently estimated at 2%. But, with annual growth estimated at 4%, the demand for animal products will increase by over 250% by 2020 (ECOWAS). The imbalance between sub-regional supply and demand will therefore persist and worsen in the coming years.

Urban growth will therefore increase the need for longer marketing channels that will be competing directly with import channels since most major West African cities are port cities and the Sahelian countries (landlocked) have nonetheless ease of access to ports in the coastal countries.

The ruminant livestock contributes greatly to the dynamics of regional integration. The three landlocked countries of the Sahel - Burkina Faso, Mali and Niger are the three major producers of bovines and ruminants. They are net exporters towards the coastal countries, mainly Nigeria, Ghana and Ivory Coast. These are net importers of meat products.

Many non-political and political constraints affect the fluidity of Sahel intra-regional and West African exchanges (Williams et al., 2004). They include tariff and non tariff instruments, legal or non legal instruments as well. Examples are:

- The numerous roadblocks with the collection of illegal taxes and "wild" taxes;
- The official high taxes on products (costs of obtaining export, immunization or health certificates, diverse road costs between various countries, various levies for fund development of livestock and / or agriculture (for example in Niger and Burkina Faso) and arbitrary taxation at the destination country (example of Ivory Coast);
- The roads' bad states and the high cost of livestock transportation to markets;
- The inadequate flow of market information (price, level of supply and demand);
- The absence of formal contract and forcing transaction between market participants; The prominence of the trade of livestock;
- Language diversity can be an obstacle at two levels: at the time of trade at the border between two countries, and then over the movements of herds in transhumance at the border between Burkina Faso and Ghana. This is made more difficult by the low level of education of the majority of those intra-regional traders.
- Monetary diversity: Business transactions between the countries of franc area and those outside this area require two trading operations (animal products and their consideration in money which is then exchanged against the currency of the seller's country of origin). There are two kinds of problems. First, the actors are mostly illiterate and do not have any control over exchange rates. Then, the exchange rate in importing countries (Ghana and Nigeria) are fluctuating so that even when having mastered exchange rates, the risk of losses are sometimes considerable; the seller is bound to exchange immediately so as to go back.
- Insufficient and / or antiquated infrastructure for processing of animal production. Most countries do not have enough slaughter houses and even existing slaughterhouses are quite bad conditions. As a result, daily slaughters are insufficient to meet growing demand in coastal countries' cities while the living animals on livestock markets accumulate. This state of fact creates virtual surplus supply of living animals and leads to lower livestock prices; this has been reported particularly in Ivory Coast and Ghana.
- Norms and standards of animal products. The traditional channels are based on living animals' exchange the standards of which seem difficult to develop and enforce. However, international trades of food products are increasingly subject to rules and standards. Traditional channels will have to cope with these requirements if the Sahel and West Africa (ODS) want to take an active part in international trade of food products as exporters.

Concerning the milk production at the sub-regional level, we can say that the number of dairy cows is important. However, milk production is very limited because of low genetic potential of these breeds (1 to 3 litre of milk / day for most, or even less during the dry period). Production can be estimated at 2.05 million tonnes on the basis of numbers of 2006, of around 7.7 litres per capita per year. This represents very low power consumption. In addition, a significant

proportion of milk production is consumed (35-60%) by area, view up to 80%. The importance of trafficking (choice between milk production and calf feeding) and the marketed share depends on several factors.

In this last years, several projects and programs got involved for the development of this dairy potential through marketing in the sub-urban areas of some West African cities: Mali (MEP, 2008), Senegal (Broutin and al, 2000), Burkina Faso and Ivory Coast (Metzger et al., 1985).

Several constraints, however, block the development of local milk production at local level. Among these, one can list: (Broutin et al, 2000):

- Access to food: scarcity and poor fodder quality and costs of complementation / supplementation food and inputs;
- level of infrastructural facilities including inadequate basic infrastructure, irregular watering during the dry season, poor housing;
- poor knowledge of staff and limited genetic performance of local breeds;
- low-technology (production and processing),
- Milking poor hygienic conditions;
- poorly organized marketing channels and poor protection of the domestic market; socio-professional organizations of sluggish farmers;
- low public funding;
- Difficulties in accessing credit.

Even though opportunities for improvement exist through the following levers:

- the definition and implementation of development policy taking into account the potential of different livestock regions translating into more public investment;
- a more efficient market including better access to inputs and support to the organization of the industry (collection)
- Support the professionalization of the sector to strengthen the producers' technical skills but also processing units that currently benefit from a very low training so that they can play a vital role in the enhancement of local production,
- More favourable prices and taxation system for the local production (taxes especially for manufacturers don't encourage them to use local milk and the prices for producers don't facilitate the intensification.

Even without taking into account the contribution of animal traction¹⁰ and manure, the livestock's contribution to Gross Domestic Product (GDP) of various West African countries varies from 10 to 15% (MRA / Niger, 2001; MRA / Burkina Faso, 2005; MEP / Mali, 2004) (Anonymous, 2008a). It is relatively lower in the coastal countries that are Senegal (8%), Ghana

¹⁰ In Mali for example, the proportion of the workforce of draft animals in the national herd is 5.2% for cattle, 27.3% for donkeys and 48.3% for Equine and the number of working days / day is 4, 5, -6.5 for cattle, 3.5 to 5.5 for donkeys and 4.5 to 6 for Equine. The number of days worked per year is on average 37 days in a field in Mali. The price of working hours is an average of 900 CFA francs for cattle (Lhoste, 1990).

(9%) and Togo (8%), Ivory Coast (5%) and Nigeria (3%). At local government level, the contribution of livestock is also very high in the operating budgets of their institutions. Despite this, the sector only receives weak support in public investments in infrastructure in terms of processing and packaging. It faces also a lack of policies to boost regional trade in animal products.

4.4.2. The contribution of pastoralism to the development of urban centres

The FAO data (FAOSTAT, 2009) indicate that the average rate of urbanization has increased significantly in West Africa. It went from 16% in 1961 to 44% in 2009 (Table 5). And, by state, it has varied over this period by 49% in Nigeria to 17% in Niger.

Table 5: Trends in the urbanization rate from 1961 to 2009

	1961	1970	1980	1990	2000	2009
Rate of urbanization (%)	16	18	27	33	39	44

Source: FAOSTAT, 2009

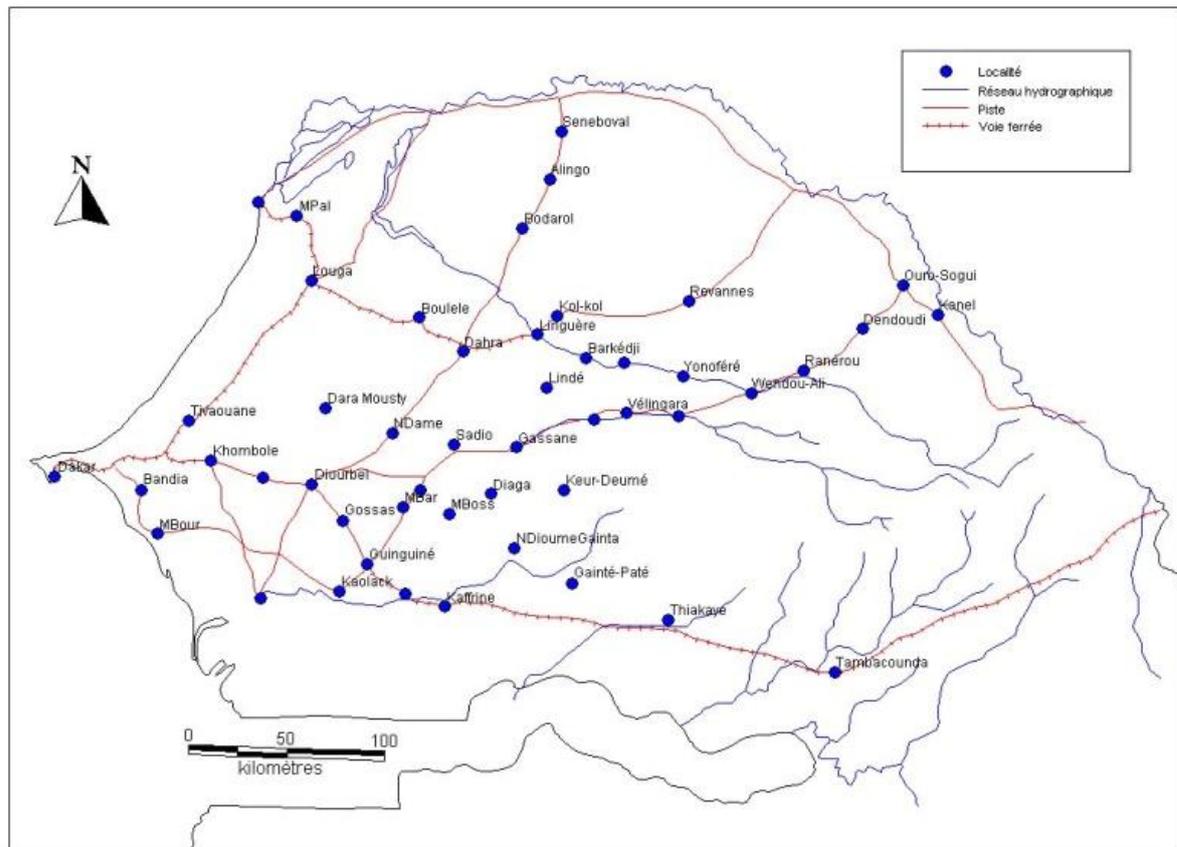
This urban growth is mainly obtained initially by population movements from rural areas resulting from both an attraction factor and a repulsion factor. But for several years ago, births are rather the source of this urban growth (up to 70%).

The position of Fulani institutions regarding to non-nomads (villages or cities) depends on the size of migrant families, accompanying animals and nature of exchanged services (Ba, 1982). Pastoralists who migrate during the dry season settle around villages or in cultivated sub-urban areas. In fact, these settlement areas correspond to farms to fertilize or strategic points allowing them to be near high consumers’ centers (mostly for dairy products sale) and post crop or natural rangelands.

When the stay is prolonged, sometimes settlements are established gradually in the immediate vicinity of villages. These camps end to spawn and adopt the architectural sedentary style. They grow and form real suburbs remarkable for their vast stockyards.

In Senegal, the first boreholes in the northern part of Senegal (Pastoral Region) will be installed on the transhumance lines connecting livestock areas of the Senegal River Valley (Podor and Matam) to consumption centers of the Groundnut Basin (Kaolack, Diourbel, etc.) (Figure I0).

Figure 10: Locations of the first boreholes in the northern part of Senegal



Recently, the emergence of secondary cities in the Senegal River Valley is resulting from the optimization of hydro-agricultural potentials through strengthening and /or creation of various support services (Sy and Diop, 2009). One of the major consequences is the transformation of these villages in market-towns where the neo-rurals (pastoralists) come and get city services. Development of land and property market in these cities allows neo town dwellers to "live" awaiting the owner's homecoming (Sall, 2004 in Sy and Diop, 2009). This form of occupation concerns the parents of the owner, its allies, but also the Fulani who, in former times, herded the family's cattle. In addition, as part of development activities related to the rice industry (rice mill) and processing tomato or sugar cane, pastors are interested in large amounts of bran, grains and tomatoes molasses produced for their livestock. The creation of these secondary strategic cities enhances the possibilities of selling the products of these pastoral areas and increases the incomes of people living there.

5. SOLUTIONS TO VARIOUS CHALLENGES FOR A SUSTAINABLE IMPROVEMENT IN THE CONTRIBUTION OF TRANSHUMANCE TO THE ECONOMY OF WEST AFRICA

5.1 Sustainably reduce the production losses of transhumance due to climate change and various forms of pastoral land degradation

5.1.1. Identify and develop the necessary space for livestock grazing:

- Delineate the areas necessary for the transhumance: In countries like Burkina Faso, Niger and Benin, initiatives are underway by various institutions (ministries, NGOs) to map the corridors of transhumance; these initiatives within of some countries need to be extended at all countries and especially to coordinate continuity of corridors;
- Provide a legal status the areas proposed for TT: Such spaces will be preserved if there is initially recognized legal frameworks
- Install infrastructure: These include (grazing areas, rest areas, transhumance routes, avenues of access to grazing areas and water points, checkpoints of transhumance (veterinarians, Police and Customs and Forestry);
- Assessing the environmental impact of experiences in terms of area or units or pastoral areas: In most countries of the sub region, approaches have been implemented for better management of space for of sustainable livestock production; these experiments were mainly made in the context of development projects, but few of them have been subject to environmental impact assessment after the completion of projects
- Evaluation and respect the carrying capacity: The map of biomass has become an increasingly popular and it will be necessary to couple it with the advice of pastors to reach consensus have a charge and respected by users themselves

5.1.2. Define the conditions for use of protected areas and buffer zones at the border transhumance: These areas are the last refuges of biodiversity of plants and animals in West Africa, because of climate change, and pressure-related presence of a transhumant flock more and more important, it is necessary to work to reverse the trend and, as such, IUCN has worked in the periphery of national parks Niokolo Koba (Senegal) and Badiar (Guinea Conakry) to improve the interface Wildlife-Livestock-Environment.

5.1.3. Promote the integration of livestock and agriculture: To reduce vulnerability to climatic hazards, pastors are increasingly agriculture and livestock farmers, a practice that is very beneficial at the outset that the densities of human populations animal and are not often high initially, but if adequate techniques of crop-livestock integration are not implemented, there very quickly to environmental degradation, hence the need to establish techniques of sustainable management of natural resources (soil fertility management, water resources, livestock and crops); CORAF through funding from the Australian Co has established research and development activities in this direction at countries of the sub-region.

5.1.4. Reduce mortality and morbidity of livestock during seasonal migration (transhumance livestock and livestock reception areas) should be put in place a system of epidemiological

surveillance and access to veterinary care in pastoral areas; Indeed, the existence of some health facilities (pharmacies, veterinary clinics, etc.), the distance from the breeder of health posts, the concern of the shepherds and their traditional self-medication for their animals, are all factors that limit their access to these structures when the disease broke out. Lacking these inputs into appropriate structures, the transhumant shepherds are turning to markets to stock up on veterinary drugs and lower costs whose qualities are often dubious. Transhumance helps maintain the illicit market of veterinary drugs, due to difficult access to health facilities all along the route. The therapeutic classes used in the transhumance, are antibacterial and antiparasitic agents. A high percentage of trypanocidal non conforming (nearly 100%) in illicit markets farming areas in a study on the quality of veterinary drugs in West Africa and Central.

5.1.5. Establish an information system on pastoral systems: Initiatives are under way in some countries (eg Niger,) or will be implemented in other countries (eg Senegal). The Drylands Pastoral Pole tried to establish in the Sahel Information System (SIPSA: Information System Pastoralism in the Sahel)] based on national systems. But to date no effective system to learn about pastoral resources is still working like agricultural production. However, CILSS / AGRHYMET acquired much experience in monitoring of pastoral resources (water points, pastures). More recently, further strengthened collaborations with organizations and stakeholders including producers, farmers and Tahoua group ranchers, irrigators / gardeners and fishermen in the Tillabery region in Niger, have led to the establishment of a system Geographical information and advice to support local, dedicated to producing farmers of this region.

- Make available information agro pastoralists on pastoral resources (water, pasture): Under the extension of activities already carried out in Niger, it is to work with livestock associations to disseminate and improve the tools of information on pastoral resources.
- Developing the achievements of the Information System on Pastoralism in the Sahel (SIPSA) by transferring and integrating SIPSA in the information system of the ARC;
- Harmonize approaches and diagnostics on the vulnerability of ecosystems and socio pastoral systems;
- Support the development process of an observatory of the border transhumance between the Sahel and coastal countries;
- Test and validate the three models predicting forage biomass following the bioclimatic context and taking into account spatial and temporal variability compare models available in the Sahel (AGRHYMET models, CSE-Senegal, Niger-MRA), validate the models and make proposals for improvement.
- State of knowledge on current models for estimating biomass or forage in the Sahel area with high variability;
- Analysis and processing of data to propose a reliable model for predicting forage production in the Sahel in the context of variability;

5.1.6. Strengthen the capacity of pastoralist associations to access feed and medicines during livestock transhumance:

- Support the creation of local manufacturing plants (equipment, training), promote accessibility to animal feed, and subsidies to farmers:
- Supply of animal feed can secure a ranching in distress, but also lets consider a fattening (fattening). Pastoralists' organizations can be mobilized to ensure a fair procurement prices to the benefit of pastors in need; Ferlo (Senegal), organized by the supply farmers with a modest amount of animal feed has to readjust prices exercised by traders; it is the same drug whose quality is poor especially, supply chains across markets are questionable and do not guarantee a correct management of diseases during periods of transhumance

5.1.7. Establish a functional framework for dialogue on issues of border transhumance at regional and national level: This is to renegotiate the rules of use of natural resources and develop a regional conflict management. As mentioned above, there are many frameworks. For example, Niger and Burkina Faso have signed an agreement to manage the seasonal migration between the two countries [Action plan for sustainable management of transhumance border between Burkina Faso and Niger Republic. January 2003]. They organize two annual meetings and to plan and take stock of transhumance. The two countries have invited Benin to attend the 2006 meeting. Other countries have similar frameworks. The challenge will be to put these approaches and networking initiatives to create synergies effective.

5.1.8. Identify endangered breeds of farm animals for their preservation: As stated in Chapter 2.2, West Africa has several breeds some of which are increasingly threatened by the combined effect of exploitation by men, a desire to improve productivity and climate change. For this purpose, the following actions will be needed: Identify areas of high concentrations of local breeds; characterize the performance of animal genetic samples, collect and preserve animal semen of local breeds; strengthen the breeding program of the strains of local breeds in danger of extinction Identify areas of concentration in nuclei of races under threat of extinction; Analyze the perception of farmers and agro-pastoralists of extinction risks of domestic animal breeds; Raising awareness and owners of domestic animals of local breeds ; Develop a participatory program of in situ conservation of endangered breeds;

5.1.9. Creating a development tax on developed land with public funds: the recognition of rights to use the problem of land developed on public investment. The state has already agreed to transfer to rural communities. Unlike some proposals for land legislation specific to Senegal River Valley, farmers are in favour of a land law that addresses the unique arrangements made by the State. In addition to the tax on the right to use, the beneficiaries pay a tax planning. The tax collected at the same time that property taxes can be calculated based on the cost of the development and spread over a given period; Introduction of a grazing fee of which serve to preserve the environment and to develop the areas of home. Formerly, as part of Dima in Mali, fees were also paid for access to “*bourgoutières*” by pastoralists.

5.1.10. Implement land use plans: they have been experienced in rural communities of Delta and the Senegal River Valley, some experiments were conducted in the southeast of the country (Tambacounda, Kolda), and several projects of land management and natural resources are

experimenting planning and management in different areas of the country, the synthesis of these experiments would define the regulations that could enrich POAS; procedures preparation must allow community consultation and the plan must be submitted for the approval of regulatory authorities.

5.1.11. Reduce the women's vulnerability during transhumance: even if they are not actresses to the forefront in the transhumance, their role should be better known, during the TT, they can accompany men or they stay in camp take care of the family, an additional workload over to them under the health consequences related to transhumance

5.1.12. Perform a prospective analysis of CBT: analyze existing and emerging trends in mobility of livestock in selected countries, in a general context of climate change, growth in demand for livestock products, promotion modernization as a way out of poverty, and growing interest outside the pastoral areas (driven by oil interests, counter-terrorism and tourism).

5.1.13. Evaluate the contribution of the CBT in the phenomenon of global warming: the mobility is recognized as a strategy used by pastoralists to reduce the effects of climate change, however like all human activities, its carbon footprint needs to be done (in term possibility of sequestration and in terms of issue).

5.1.14. Organize training techniques for sustainable use of pastoral resources: for example it is necessary to form the herdsmen to pruning techniques.

5.1.15. Support the development of research and training in the field of Livestock transhumance: the transhumance was still considered a complex system, and because it is regarded as uneconomic, it did not the purpose of developing specific tools for assessing and monitoring its performance. Such research is needed to provide robust evidence, compelling and communicated in favour of pastoralism and to support key policy messages (e.g. Opportunity costs of alternative systems of land use in pastoral areas, etc.).

5.1.16. Reduce the loss of animals during transhumance (thefts and accidents) are measures to be taken legally example (in Senegal for example, the sentences following the theft of livestock were increased).

5.1.17. Strengthening the capacity of authorities to monitor the border transhumance: in most countries, human resources and infrastructure are inadequate to allow an accompaniment of the TT that requires trained teams and mobile awareness and training of justice personnel (magistrate, policeman, police, etc.) the national and local government.

5.2 Strengthen the role of transhumance in the development policies and national institutions and sub-regional

5.2.1. Assessing the economic burden of transhumance in the local and national economies:

data on the contribution of livestock to the GDP of States are available, but the tools are to be refined to measure its real contribution to national and local level; such information could be decisive in the budget decisions and decision making in land.

5.2.2. Assessing the Impact of large-scale land acquisitions encouraged by the State: With the global food crisis and the increased need for renewable energy, state and national and international investors have become purchasers of large areas in developing countries developing. In a country like Senegal, this phenomenon has become a recognizable reality in many rural communities, particularly in areas with potential agro-highest physical. These acquisitions of large-scale land somehow translate the vision of land policy as the state tries to drive. Indeed, these phenomena appear to be largely encouraged by some programs initiated by the State since 2006.

5.2.3. Evaluate the impact of decentralization on cross-border transhumance: Decentralization is a process and now an indispensable part in land management and natural resources in most countries of ECOWAS. Indeed, there is more than the local authorities are recognizing the value of the land entrusted to them, the natural resources they contain, their fragility but also of their enormous potential. Their responsibility, that of the administrative and civil society is very important in the management of rural land, and especially pastoral transhumance as a lifestyle and use of pastoral resources. But it is a form of fragmentation of pastoral areas. How to access resources (statutory) are different from one entity to another and the views of transhumance is not taken into account despite their contribution to the operating budgets of their institutions.

5.2.4. Analyze regulations on ECOWAS: The regulations signed by ECOWAS states in 1998 are not applied; at the same time, each coastal country adopts himself his own texts, often in total contradiction with the laws sub-regional, letting agents and decentralized structures, especially municipalities, dictate their own laws on farmers and transhumant herds; the international transhumance certificate (ILC) set up by ECOWAS since 1998 is no longer a guarantee in some states in the sub region that have yet adopted, obtaining even this certificate is an obstacle course for farmers in some areas.

5.2.5. Harmonize the various laws and regulations on cross-border transhumance: Understanding the regulations is already not an easy task especially for actors often illiterate multitude of texts.

5.2.6. Strengthen the capacities of social organizations and chambers of agriculture to negotiate: Identification of different organizations;

5.2.7. Support networking and capacity building of human resources and socio-professional organizations of Chambers of Agriculture: It is to the identification of associations, to strengthen the capacities of socio-professional organizations and chambers of agriculture and structuring network across the region and build a unitary discourse against other players.

5.2.8. Strengthen the role of communities in land management: Following decentralization, the responsibilities of local management of resources have been increased, yet the level of training of persons responsible for such management is poor.

5.2.9. Create a unified framework for action Non Governmental Organizations (NGOs) working to improve the CBT.

5.2.10. Analyze the role of different institutions in managing cross-border transhumance: The role of ECOWAS must be effective, it has established a Task Force "Transhumance and Livestock Development" in 2003 which would meet once a year to take stock and provide solutions to problems.

5.2.11. Establish a unified framework of socio-professional organizations of actions occurring in the field of CBT: This is an inventory of pastoral associations and carry out discussions with a common message. Indeed, the development of a "pastoral voice" and a single "critical mass" of opinions is critical to achieving policy influence, but it is a relatively complex due to the diversity of pastoral groups and the many differences between them and within them in terms of concentration on livelihoods, wealth, power, etc.. But the examples of Niger have shown that it is possible to develop a "voice" and a "critical mass" of this type, but it requires a slow and bottom ("bottom up") led by pastoral groups themselves, not by entities from outside, however well intentioned they are. Given the transboundary nature of pastoralism, it is crucial to build alliances between pastoralist NGOs across international borders if they are to support pastoral mobility.

5.3 Improve the contribution of nomadic herds to supply animal products to urban centres

5.3.1. Establish an information system on pastoral production (meat and milk): Increasingly, a system for collecting market data is implemented in several countries, it is essential to extend the network.

5.3.2. Disseminate technologies for local processing of animal products: In Niger, a cheese, "Tchoukou" is made by the Fulbe. This is a product that will keep several months. It seems that efforts should be developed to support the players to control such processes simple and manageable craft in a technological context. Moreover, FAO is implementing a project of development of production Animal (GTFS/MLI/030/ITA) with the Community Pastoral Menaka (Mali). Also in coastal countries, including Benin, Fulani women have developed a long tradition of making cheese guard known as "cheese Benin" this type of cheese is simple to manufacture in low technological conditions expensive. The specificity of this cheese is the use of the sap of a wild plant (present throughout the Sahel) to coagulate the milk. This is the *Calotropis procera*. This is the sap of this plant is used for coagulation. This cheese can be eaten fresh or cooked in oil and used in making sauces. Several more countries of Benin mastered the technique, namely

Ghana and Togo. Efforts can be made to promote such a technique that would address wet season excess.

5.3.3. Strengthen initiatives for the collection and processing of local milk: Many initiatives to promote dairy industries to meet the demands of urban markets (sanitary quality of milk, conservation issues) have emerged in recent years and often develop with success, with forms of contracting technical support between producers and dairies.

5.3.4. Finance activities of livestock trade: In Ghana for example, there are no structures specialized credit fund may trade in animals.

5.3.5. Establish a common currency: When you want to buy cattle, we will inform the price and then it goes to the bank but in the meantime, the price of money has changed, these statements by the President of the trade association of cattle in Ghana seems to reflect the problems associated with changes in commercial transactions.

5.3.6. Create a favourable environment for market access for pastoral herds: This is primarily to improve the fluidity of transport that is to say, to make arrangements to reduce the difficulties in the carriage of livestock. Indeed, the red along the road are real handicap: there are 19 police barriers between Paga (Frontier) and Accra; more mobile squads; banditry, customs and language problem.

5.3.7. Establish chain-fed in coastal areas: the supply of livestock of coastal areas could be strengthened by improving opportunities for productions of these countries that have significant availability agricultural by products.

6. ACTION PLANS FOR A SUSTAINABLE IMPROVEMENT OF THE CONTRIBUTION OF TRANSHUMANCT HERDS TO THE ECONOMY OF WEST AFRICAN

Working method, stakeholders and means involved

6.1 Sustainably reduce transhumance's production losses due to climate change, pastureland degradation and livestock loss

Activities	How	business managers / Actors	Resources	Timelines
1.1 Identify and develop the necessary spaces for pastoral production (CBT routes, rest areas, etc.)	Inventory, surveys, participatory approach, mapping, GIS	Departments, NGOs, ECOWAS, WAEMU, <u>FAO</u> ¹¹ , Local communities	Financial, technical, legal	ST ¹²
1.2. Define the conditions for use of protected areas and buffer zones in the course of border transhumance	Materialization boundary surveys, participatory approach, mapping, GIS	Department in charge of wildlife / forests, <u>IUCN</u> , local residents	Techniques; regulatory	ST
1.3. Promote Agriculture - Livestock integration (IAE)	Dissemination of technological packages, Research in EAI	<u>CORAF</u> , Dissemination Services, Research, Ministry of Livestock / Agriculture, <u>FAO</u>	Financial, technical	ST - MT
1.4. Reduce livestock mortality and morbidity during seasonal migration (transhumance livestock and reception area livestock)	Epidemiological monitoring device, establishing a control program, input supply	Veterinary services, service control, OP Research, <u>FAO</u>	Financial, technical, regulatory	ST
1.5. Establish a sub regional information system under the transhumance	Existing information systems inventory, implementation of information systems	<u>CILSS / Agrhymet</u> , NGOs, POs, telephone operator, Animal husbandry services, <u>FAO</u>	Financial , technical, organizational	ST
1.6. Strengthen the capacity of pastoralist associations to access food and medicines in	access to credit	<u>FAO</u> , POs, NGOs, Industrialists, Ministry of Livestock, Veterinary	Financial, organizational	ST

¹¹ FAO: Institutions leader

¹² ST : 5 years ; MT : 10 years ; LT : more than 10 year

livestock transhumance period		Pharmacies, Financial Services		
1.7. Establish a functional framework for dialogue on border transhumance issues at regional and national levels	Generalize the establishment of functional national committees	<u>ECOWAS</u> , <u>UEMOA</u> , <u>FAO</u> , Ministry of Livestock / domestic; Customs Services, Local	Financial, regulatory, organizational	ST
1.8. Identify endangered farm animal breeds for their preservation	Inventory, surveys, participatory approach, genetic research, animal breeding	Ministry of Livestock, local communities, <u>FAO</u> , NGOs Financial, regulatory		ST
1.9. Promote the establishment of a fee for access to publicly funded pastoral spaces and infrastructure	Delineation of developed areas, determination and harmonization of fees to pay, Establishment of a system of tax collection	<u>ECOWAS</u> , <u>UEMOA</u> , Ministry of Livestock / domestic, local authorities, ministries of finance, POs, NGOs	Regulatory, technical	ST
1.10. Implement land use and land distribution plans	Inventory, surveys, participatory approach, Development of standards for the use (or charter agreement), Establishment of a monitoring system, training of local stakeholders	<u>local authorities</u> , Government, ministries (Interior, Agriculture, Livestock, hydraulics, etc.), NGOs	Financial Research, Regulatory, Technical	ST - MT
1.11. Reduce women's vulnerability during transhumance	Definition of vulnerability indicator for women, identifying factors, Training	<u>Department</u> (in charge of women, health), NGOs Financial, Technical	Financial, technical	ST - MT
1..12. Perform a prospective analysis of cross-border transhumance	Prospective Analysis, Modeling search, NGOs	<u>Research</u> , NGOs	Financial	ST
1.13. Anticipating Climate Change Impacts on CBT	Inventory, Surveys, Research Modeling,	Research, <u>FAO</u>	Financial	ST - MT
1.14. Hold training on the techniques for a sustainable use of pastoral resources	Development of management tools, Development of training modules,	<u>FAO</u> , Shepherds, research, training, ministries (Forestry, Livestock, etc.)	Financial	ST
1.15. Support the development of research and actors' training on CBT	Development of management tools, Development of training modules, research	(NARS, ILRI, <u>CORAF</u> , Training (EISMV, CRESA, etc..) extension service, NGOs	Financial, Technical	ST - MT

1.16. Reduce animal losses during transhumance (theft, accident)	Livestock identification, re-examination of legal texts, Securing livestock pathways	<u>Ministries</u> (justice, interior, livestock, legal, regulatory)	Ministries (justice, interior, livestock, legal, regulatory)	ST – MT
1.17. Strengthen the capacity of border transhumance monitoring authorities	Training, availability of equipment, installation or rehabilitation of infrastructure	<u>CILSS/AGRYMET</u> ,States, development partners, NGOs	Financial, technical, human	ST - MT

6.2. Strengthen the role of transhumance in development policies and with national and sub regional institutions

Activities	How	business managers / Actors	Resources	Timelines
2.1. Assessing the economic burden of transhumance in local and national economies	surveys, statistical analysis,	<u>WAEMU</u> , Research, Ministries of Economy,	Financial	ST
2.2. Assessing the Impact of large-scale land acquisitions on national and international transhumance	Inventory, survey, GIS	<u>ECOWAS</u> , Ministries of Land, Search (NARS, CORAF), OP	Financial, technical,	ST
2.3. Assessing the Impact of decentralization on cross-border transhumance	Surveys, participatory research	<u>NARS</u>	Financial	ST
2.4. Analyzing ECOWAS and WAEMU's statutory texts on CBT	Inventory,	<u>ECOWAS</u> , Ministries	Financial	ST
2.5. Harmonizing the various laws and regulations on cross-border transhumance	Inventory, participatory approach, ECOWAS, Ministries (Livestock, Interior	<u>ECOWAS</u> ,responsible for Justice	Financial	ST
2.6. Build capacity for social organizations and chambers of agriculture to negotiate	Training, definition of process for designing consensual messages, periodic meetings	<u>WAEMU</u> , ECOWAS, OP	Financial	ST - MT
2.7. Create a functional management framework for CBT at local, national and sub regional levels	Census for existing executives, Identification of malfunctions, periodic meetings	<u>ECOWAS</u> Institutions in charge of TT (interior, farming, foreign affairs ministries, etc.), OP	Financial,	ST

2.8. Strengthen the role of local community in land management	Development of training modules on pastoral lands; holding training sessions for Local Government	<u>Local authority</u> , Ministry of Land	Financial	ST - MT
2.9. Create a unitary action framework for NGOs working to improve CBT	Inventory, Periodic meetings	<u>NGOs</u> , Ministries (livestock, domestic, etc.), OP	Financial, human	ST
2.10. Define the duties of sub-regional institutions and States in the management of the CBT	Participatory Approach,	<u>ECOWAS</u> , <u>WAEMU</u> , <u>CILSS</u> , Ministries (Breeding, Interior, ...)	Financial	ST
2.11. Set up a unitary action framework for social and professional organizations working in the field of CBT	Networking OP, periodic meeting,	<u>ECOWAS</u> , OP, Ministries (Breeding, interior,	Financial	ST - MT

6.3. Improving transhumance's contribution in supplying rural and urban areas with animal products

Activities	How	business managers / Actors	Resources	Timelines
3.1. Establish an information system on the availability and sale of animal products from transhumance	Database census on existing national and regional pastoral productions), database alignment	<u>CILSS / INSAH</u> , <u>FAO</u> , Ministries of Livestock, POs, NGOs	Financial, technical	ST-MT
3.2. Disseminate local technologies for processing animal products,	inventory Testing, labelling, dissemination	<u>FAO</u> , dissemination services in charge, NGOs, POs	Financial, technical	ST – MT
3.3. Strengthen initiatives for local milk collection and processing	inventory, testing, labelling, training, dissemination	<u>FAO</u> , Livestock Department, Research, <u>WAEMU</u>	Financial, technical	ST

3.4. Establish a loan system for the sale of livestock from the pastoral system	Census existing systems,	UEMOA, Ministries of Finance, NGOs, POs	Financial, human	ST - MT
3.5. Establish a common currency	Meetings	WAEMU, States	Legal, Financial	LT
3.6. Create an enabling environment to market access for pastoral herds	Meetings, establishment of joint committees for control of axis and borders, use of ICT, awareness of all actors (customs officers, journalist, police, etc.) single pricing system, governments,	ECOWAS, NGOs, POs,	Legal, Financial, technical, administrative	ST
3.7. Establishing a cattle fattening field in coastal provinces ,	Training	FAO, Ministry of Livestock, POs, NGOs	Financial, technical	ST - MT

Indicators, verification sources, payment schedules and assumptions

6.4 Sustainably reduce transhumance production losses due to climate change, degradation of pasture land and livestock predation

Activities	Indicators	Sources of Verification	Assumptions
6.4.1. Identify and develop the necessary space for pastoral productions (CBT routes, rest areas, etc..)	Area having been subject to development plan Number / distance of/from transhumance axes developed pathways Amount of funding to the pastoral spaces	Studies and surveys Share of pastoral investment in the national investment program	Stable socio political context Willingness of governments to support maintained transhumance
6.4.2. Define the conditions for use of protected areas and	Area in protected areas that have been subject to planning	Study reports by different actors Surveys of target populations	National Park Service accepts collaboration

buffer zones during border transhumance	Reduction of conflicts related to attendance of protected areas No. of farmers involved Reduction in livestock numbers attending Protected Areas	Amount of funding allocated to the development of the protected areas peripheries of	
6.4.3. Promote Agriculture - Livestock integration (IAE)	No. of trained pastors Number of technologies developed Level of improvement of soil fertility Cultivated area by pastoralists Area cultivated by animal traction	Study report by the various actors Surveys of target populations Statistical Services in charge of Livestock and Agriculture	Stable socio political context
6.4.4. Reduce livestock mortality and morbidity during seasonal migration (livestock transhumance and livestock reception areas)	Rate of health coverage Reducing the prevalence of diseases transmitted during the CBT Level of pastor supply in input	Study report by the different actors Surveys of target populations Statistical Services in charge of border	Cross-border transhumance banned
6.4.5. Establish a sub-regional information system on transhumance	Number and types of information systems on cross border transhumance Number and types of actors using information systems	Study report User surveys	Stable socio political context Partners' agreement to participate in the program
6.4.6. Build the capacity of pastoralist associations to access food and medicines during the period of livestock transhumance	Number of livestock associations have been the subject of capacity building Level of increase in the quantity of animal feed and drugs (availability + cost) for livestock	Proceedings training Reports of activities of pastoralists' associations	Availability of appropriate modules and competent trainers
6.4.7. Establish a functional framework for dialogue on issues of border transhumance at regional and national levels	No. of pastoralists' associations that have been subject to capacity by country Feed quantity level of increase Number of meetings held by committees at national and regional Reduced numbers of Farmers Pastoralists conflicts	Surveys of the actors Minutes of meetings	Stable socio political context

6.4.8. Identify endangered farm animal breeds for their conservation	Extent and nature of genetic research and selection of local breeds Importance of threatened livestock management programs	Amount of funding allocated to local livestock conservation activities	Governments' willingness to maintain livestock biodiversity There are minimum environmental requirements for the breed survival
6.4.9. Promote the establishment of a fee for access to publicly funded pastoral spaces and infrastructure	Number of meetings for price harmonization at CBT Existence of a regional pricing system; Contribution of these taxes in the budgets of the various administrative entities	Meetings Reports Document relative to pricing Monitoring and Evaluation Document Budget document	Stable socio political context Willingness of States to conduct a tax harmonization
6.4.10. Implement land use plans and land use plans of Existence (+ maps)	Statutory text number Proportion of rangeland likely to be exploited Number of local actor training Level of satisfaction of stakeholders Fewer conflicts Farmers Pastoralists	Study Reports (+ maps) Monitoring and Evaluation Document	Willingness of rural stakeholders
6.4.11. Reduce the vulnerability of women during CBT	Increased attendance of health services by women Reducing the difficulty of household chores Women income share in household revenues Number of women taking part in training	Activity report by services (health or for the Advancement of Women) Surveys	Men's participation in the process
6.4.12. Perform a prospective analysis of cross-border transhumance	Number of workshops held Existence of a prospective report Existence of models	Study Report on the prospective	Participation agreement by National and regional institutions in task Access to expertise in the field
6.4.13. Anticipating Climate Change (CC) Impacts on CBT	Number of Studies (program) on the impact of CC on CBT	Study Report	Access to laboratories adequately equipped for some Research Availability of agro meteorological socio economic data

6.4.14. Hold training on techniques for a sustainable use of pastoral resources	Number of tested and transferred innovations Rate of adoption of innovations	Existence of a teaching Number of training and types of actors affected	Study Report Monitoring and Evaluation Results Training report Pedagogical support
6.4.15. Support the development of research and training of the actors on the CBT	No. of tested innovations and transferred Rate of adoption of innovations Existence of a teaching Number of training and types of actors affected Number of theses and Masters	Research's role on CBT about the overall funding of research in West Africa Activity Report by Development or Dissemination Services Universities and other institutions' Training Program	Availability of skilled human resources Student interest in such trainings
6.4.16. Reduce the loss of animals during transhumance (theft, accident,	Existence of legal texts Number of cases of cattle rustling handled by courts Reduction of losses of animals during CBT	Report of judicial authorities (police, police, judge)	Stable socio political context
6.4.17. Build the authorities' capacity to monitor border transhumance	Amount of funding for equipment in border areas Staff training Number and type	Administrative structure budget document Training Report	Governments' political will

6.5 Strengthen the role of transhumance in development policies and with national and sub regional institutions

Activities	Indicators	Sources of Verification	Assumptions
6.5.1. Assessing the economic burden of transhumance in the local and national economies	Number of studies (Master and PhD) in the field Availability of an evaluation method	Thesis or master's degree dissertation The Ministry of Economy and Finance Documents	Non-availability of funding to carry out the job

6.5.2. Assessing the Impact of large-scale land acquisitions on national and international transhumance	Areas' importance Livestock numbers affected by acquisitions Number of conflicts	Media Study reports + maps Surveys of actors involved	Unavailability of funding to conduct the work Authorities' refusal to carry out such studies
6.5.3. Assessing the Impact of decentralization on cross-border transhumance	Conflict reduction rate Number of meetings between local authorities and transhumant Existence of a consultation framework between authorities and transhumant Difference between transhumant and natives in services payment	Media Study reports + cards Surveys involved Unavailability of funding to conduct the work	No authority involvement in school
6.5.4. Analyzing ECOWAS and WAEMU statutory texts on CBT	No. of texts analyzed No. of times Texts' level of enforcement Transhumant level of satisfaction	Study Report Surveys of transhumant	
6.5.5. Harmonizing the various laws and regulations on cross-border transhumance	Number of texts analyzed Number of meetings between institutions Proportion of transhumant knowing the texts of the host country Satisfaction of transhumant Number of texts that have had modifications	Study Report Surveys with transhumant	States' Refusal to make changes
6.5.6. Building socio-professional organizations and chambers of agriculture's capacity to negotiate	No. of training sessions Number of meetings between associations No. of common messages used in pleas	Training session reports Minutes of meetings Media	Refusal of organizations to work together Governments' willingness to negotiate separately with the OP Stable political and social context
6.5.7. Create a functional management framework of CBT at the local, national and sub-regional levels	No. of frames recorded Existence of a management scheme	Study Reports Investigations	Stable socio political context

6.5.8. Reinforce the role of local government in land management	No. of courses Number of people involved in training Number of conflicts	Study Report Maintenance	No involvement of local groupings Stable political and social context
6.5.9. Create a unitary framework of NGOs working to improve the CBT	Existence of joint action plan Number of meetings between NGOs	Existence of a unitary framework Minutes of meetings Report of NGO activities Media	Refusal of NGOs to participate
6.5.10. Define the duties of sub-regional institutions and Governments in the management of the CBT			
6.5.11. Set up a unitary framework of actions by social and professional organizations working in the field of CBT	No. of meetings between OP Existence of a federating network	Document	No participation of POs Leadership problem

6.6 Improve the contribution of transhumant herds in animal product supply to rural and urban populations

Activities	Indicators	Sources of Verification	Assumptions
6.6.1. Establish an information system on the availability and sale of animal products from transhumance	Existence of an information system	Study Report Surveys of base users Website	Stable political and social context Availability of data
6.6.2. Disseminate local technologies for the processing of animal products	Number of tested technologies Adoption rate Number of products in the market	Study Report Surveys Market visits and consumption zones	Enabling tariff policy for similar import products
6.6.3. Reinforce initiatives for the collection and processing of local milk	Number of tested technologies Number of products in the market Funding's rate of increase No. of courses	Operators' activity report Support services Surveys Media	Enabling tariff policies for similar imported products

		Financial institutions' activity reports	
6.6.4. Establish a system of loan for the sale of livestock products from the pastoral system	Rate of increase in funding Level of increase in # of livestock traders with access to credit	Financial institutions activity reports	Reduced lending power for financial institutions
6.6.5. Establish a common currency	Existence of a common currency	No. of meetings Presence in the currency market	Stable political and social context Political will
6.6.6. Create an enabling environment for market access for pastoral herds	Pastoralists' level of satisfaction Corruption's level of reduction Number of joint committees for control	Existence of a pricing system Study Report Surveys	Stable socio political context
6.6.7. Establish fattened cattle fields in coastal areas	Ratios of animals from No. of fattened animals in the market Number of feedlot rations developed; Number of producers practicing fattening	Study Report Market surveys Livestock Services Statistics	Stable socio political context Willingness of countries to contribute to the supply of animal products from the region

7. CONCLUSION

At the end of this study, we can say that farming is changing in West Africa. Livestock numbers have steadily increasing. Its impact is even greater because this increase is caused by small-sized ruminants whose impact on vegetation is more significant as they are not very selective.

Animal biodiversity remains very important. Local breeds make up the majority of the recorded livestock numbers. However, many breeds are in danger of disappearing. As a result of population increase and development which has favoured crops, the amount of cultivated land has greatly increased and certain zones which used to be pasture land ("*bourgoutieres*") and areas difficult to access in the past in the northern regions have been shifted to crop cultivation.

More and more livestock roaming in protected areas are causing increasingly significant biodiversity losses and promoting a livestock/wildlife contact with changes in the epidemiological of diseases. With regards to this situation, production losses are being brought about by; the weakness of sanitary infrastructure, difficulties in healthcare provision, the pastoralists not abiding by sanitary prophylaxis protocols, and the proliferation of certain vectors unseen before due to climate change.

Cartographic documents exist on the national and sub-regional level with regards to pastoral land, trails and season migration pathways. However, they must still be completed as well as updated and most importantly, cross-country information must be collated. Different land space necessary for migratory livestock practices are occupied to a greater extent by other actors; migratory livestock management committees are in place in most countries but unfortunately they do not function as they should due to lack of resources.

With changes in climatic conditions, the threat of climate change on resources is real although, for the time being, its real impact is yet to become clearer. But at least, even if it varies greatly, it has resulted in greater vulnerability for pastoral populations. And this is contributing to the intensification of conflicts which are for the most part resolved at the expense of the transhumant due to his 'foreigner' status.

On the political, institutional and statutory level, efforts are being made in almost every country for a better management of pastoral mobility, fewer conflicts and improved productivity. Also in most countries, breeding is entrusted to government departments who have detailed specific policies with regards to breeding even if sometimes the language emphasises the intensification of production, structures have been put in place to reinforce pastoralism, and legislative and statutory texts have been undertaken.

Meetings are taking place to discuss the difficulties linked to the application of statutory texts notably ECOWAS A/DEC5 98 decision. Suggestions for its revision have been made but no arrangements have been made for their implementation. Memoranda of Understanding have

been signed between countries but what is really missing, is the implementation of a regular consultation process and the application of the recommendations made.

Due to the growing pressure on natural resources, CBT continues to be a source of conflicts, sometimes deadly. Migratory livestock breeding is criticised by many actors.

More and more pastoral associations are emerging to defend their interests. But their message must be unified. On the same note, these associations are accompanied by Non Governmental Organisations whose activities must be unified and coordinated.

The ECOWAS population is increasing at a significant pace. In the countryside but above all, in the urban centres, a growing need for animal products can be felt. Importation is currently the main answer but with this has adverse consequences on the balance of payments.

Despite all this, CBT continues to be a unifying factor between southern countries and those on the coast. It remains, to this effect, a priority for most countries in the sub-region as well as for sub-regional institutions like ECOWAS and the WAEMU. It is in this spirit, that this report which leads to the detailing of an action plan is relevant - principally following all these ecological and socio-economic changes. The actions proposed regarding migratory livestock breeding make up the synthesis of data coming from a significant bibliographical analysis and interviews with various key actors and in five countries of the sub-region (Benin, Burkina Faso, Ghana, Niger and Senegal). They may be judged incomplete but they might also constitute the base for discussions so that, as soon as possible, all the actors who are working on the issue, "Sub-regional institutions, Governments, Producer Organizations" can really start to tackle poverty in West Africa. This concern has been felt and anticipated by the people we've met on every national and sub-regional level.

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9. ANNEXES

9.1 List of persons met

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9.2 Terms of Reference



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Terms of Reference for Consultant/PSA

Name:	Dr. Amadou Tamsir DIOP	
Job Title:	Consultant	
Division/Department:	Sub-regional Office for West Africa (SFW)	
Programme/Project Number:	The study on cross-border transhumance in West Africa, 2 nd phase	
Location:	Dakar, Senegal	
Expected Start Date of Assignment:	ASAP	Duration: 40 days
Reports to:	Name: Mr. Berhanu BEDANE	Title: Animal Production & Health Officer / SFW

General Description of task(s) and objectives to be achieved

1. Objectives of the consultancy

As part of FAO's strategic Objective for increased sustainable livestock production and organizational result on better management of natural resources in livestock production, the sub-regional office of FAO for West Africa (SFW) has planned to conduct a study on equitable use of rangelands by cross-border transhumance for increased livestock production in West Africa. The proposed study is in line with the above listed concern of the African Union Commission and responds to ECOWAS Agricultural Policy, the ECOWAP' needs.

The main objective of the study is to clarify the current socio-economic, legal and policy issues affecting transhumance in West Africa. Since the ultimate goal of the study is to support ECOWAS in its endeavour of effectively managing cross-border transhumance, the study will explore challenges facing the implementation of the decision A/DEC.5/10/98 and regulation C/REG.3/01/03 of 2003 of ECOWAS on transhumance. Similarly, the study is expected to address the concerns expressed in Action 1 (secure and facilitate transboundary movement of livestock and reduce conflict) of Result 2 (create conducive environment for the development of the livestock sector) of the recently validated strategic action plan for the development and transformation of livestock farming in ECOWAS member states. The study is expected to feed policy dialog and enable the formulation of strategy and plan of action for transhumance in West Africa, which lead to increased and sustainable livestock production, improved livelihood for transhumant communities (reduced vulnerability and improved food security) and better mechanism for early warning and prevention of conflicts and resolution if they occur.

The study is divided into two phases.

The first phase, which is already concluded and the final report submitted, focussed on the general inventory and description of the current status of transhumance in West Africa¹³, through desk study. This phase of the

¹³ And adjacent countries, mainly Mauritania, Chad and Cameroon.

study listed the following major constraints, which need to be addressed for better management of transhumance.

- Climate change and environmental degradation
- Land tenure system ignoring transhumance
- Lack or unclear policy on and institutional support for transhumance
- Lack or unclear legal provisions governing transhumance
- Little evolution of the traditional subsistence mode of production and understanding of and adjustment to evolving demography and settlement

The 2nd phase (Current) of the study - Based on the priority challenges identified during the 1st phase of the study (listed above), the consultant for the 2nd phase will conduct an in-depth analysis of these challenges through field work and suggest the strategies and plan of action for better management of transhumance including the modalities of implementing the proposed actions. The consultant is expected to take into account the following four stages of 40 calendar days allocated to this study;

1. An initial stage involves studying the report of the first phase, including the proposed methodology for the second phase (about 5 calendar days allocated). The consultant is expected to adopt or adapt the proposed methodology or draft a new study methodology, which should be presented to SFW and agreed upon before continuing to the next stage.
2. The second stage of field study (once the above mentioned study methodology is agreed upon) involves field study in five countries (i.e. Benin, Burkina Faso, Ghana, Niger and Senegal). The field works are aimed at gathering information and opinions through interaction with pastoral communities, local, national and sub-regional authorities, crop farmers, associations, etc. The consultant is expected to make arrangements on whom to meet, which institutions to visit and what type of information to collect from each of these countries prior to the visits. SFW, through FAOR's in each of these countries will assist where ever it is possible. This exercise takes three to four days in each country and a total of 20 calendar days are allocated.
3. The third stage of the study is compiling the report according to the outline provided below. The draft report should be submitted at the end of this stage for circulation among participants of a validation workshop to be organised. About 8 calendar days are planned for this task.
4. Fourth stage – involves facilitation of the validation workshop and gathering of comments, suggestions and additional inputs from participants for approximately three to four days.

The final report incorporating all pertinent comments, suggestions and additional inputs gathered during the validation workshop will be presented one week after the end of the workshop. Approximately 3 days are allocated to incorporate comments to the final report.

key performance indicators

Expected Outputs:

Required Completion Date:

<p>2. Tasks of the consultant for the 2nd phase of the study</p> <p>The Terms of Reference (ToR) for the consultant for the 2nd phase are;</p> <p>2.1 Study the consultancy report of the first phase on cross-border transhumance in West Africa and its challenges and take notes of areas which require further investigations and analysis during field work</p> <p>2.2 Understand the field work methodology proposed during the first phase of the study included in the above mentioned report</p> <p>2.3 Adopt or adapt the above mentioned methodology by analysing its suitability to address the study of the identified and prioritized challenges</p> <p>2.4 Present the adapted or in case of unsuitability, draft a new study methodology for approval before starting field work.</p> <p>2.5 Interact with transhumant communities, local, national and sub-regional authorities, crop farmers, associations, etc. and conduct in depth analysis of the following challenges identified during the first phase of the study</p> <ul style="list-style-type: none"> • Climate change and environmental degradation • Land tenure system ignoring transhumance • Lack or unclear policy and institutional support on transhumance • Lack or unclear legal provisions governing transhumance • The traditional subsistence mode of production and understanding of and adjustment to evolving demography and increased settlement evolved very little. <p>2.6 Plan which stakeholders and institutions to visit and the type of information to gather from countries to be visited for the field work before the travel</p> <p>2.7 Visit five countries (two sources of transhumant herds Burkina Faso and Niger and three recipients, Benin, Ghana and Senegal) to conduct the above study.</p> <p>2.8 Propose solutions to the above challenges and how to approach them by designing the strategy and plan of action (when, how, by whom and inputs required)</p> <p>2.9 Produce a draft report to be discussed at a validation workshop involving different stakeholders of the West African sub-region</p> <p>2.10 Facilitate a validation workshop and gather suggestions, comments and additional inputs from participants of the workshop</p> <p>Produce and submit a concise final report in English and French not more than 80 pages.</p> <p>EXPECTED OUTPUTS</p> <p>I. Study methodology for field analysis of cross-border transhumance in West Africa</p>	<p>This study is planned to start on <u>7 or 10 October 2011</u> and last for a total of <u>40 days</u>. The approximate breakdown of the 40 days was provided in page 2 under the section entitled the Second phase of the study.</p>
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2. A concise report on challenges of cross-border transhumance and proposed solutions as expressed by different stakeholders in five countries visited during field work
3. Facilitation for the validation workshop to be organised at the end of the study
3. Qualifications and experiences of the consultant

The incumbent should be animal scientist or veterinarian or professional of related fields (agricultural economist with hands on experience on livestock), with postgraduate qualification. General work experience of at least 10 years and proven experience of working with transhumant pastoralists for at least 5 years are key requirements. Previous working experience in West Africa is an advantage. The consultant should be fluent in both English and French (reading and writing)

ANNEX I – GUIDE TO THE STRUCTURE OF FINAL REPORT (OUTLINE)

Executive summary

1. Introduction
2. Background, cause/s, magnitude/s and trend/s of each of the following challenges of transhumance in West Africa and in particular in countries visited;
 - Climate change and environmental degradation
 - Land tenure system ignoring transhumance
 - Lack or unclear policy and institutional support on transhumance
 - Lack or unclear legal provisions governing transhumance
 - The traditional subsistence mode of production and understanding of and adjustment to evolving demography and increased settlement evolved very little.
3. Proposed solutions (and different options) to challenges facing transhumance in West Africa
Proposed strategy and plan of action in alleviating challenges facing transhumance in West Africa (when, how, by whom and inputs required)
4. Conclusions