



# PASTORAL LIVESTOCK FARMING IN SAHEL AND WEST AFRICA

5  
preconceptions put to the test

**Inter-réseaux**  
Développement rural



# LEXICON<sup>1</sup>

<i>Agropastoralist</i>	Farmer who raises livestock by traditional methods and whose practices with regards to animals are similar to those of herders, as in transhumance.
<i>Agro-breeder</i>	Farmer who also is a livestock breeder.
<i>Extensive / Intensive livestock breeding</i>	Extensive livestock breeding is essentially based on the use of natural resources (water, pasture, etc.) generally with no notable biotope improvement. Intensive livestock breeding on the other hand uses an overall enhanced environment. There is therefore a high concentration per hectare (more animals on the same surface). Intensive livestock breeding requires more inputs per produced unit than extensive livestock breeding.
<i>Mobility</i>	Refers to something likely to move. Regarding livestock breeding, it refers to herds moving seasonally or occasionally over small or long distances.
<i>Nomadism</i>	Continuous movement of men and their herds. It is a very mobile and non-predictable production system often without crop or a systematic return to a fixed location each year.
<i>Pastoralism</i>	Agricultural practice founded on extensive livestock breeding including systems where animal and/or human movement is significant: nomadism, transhumance, semi-transhumance.
<i>Ranching</i>	Ambiguous and incorrectly used term mostly referring to a modern extensive livestock breeding activity generally including livestock farming (strict meaning of the term) and longer fattening. This breeding method relies on extensive natural pasture exploitation while using minimum work force.
<i>Pastoral resources</i>	Natural resources allowing pastoral feeding of animals: water, pasture and salt marshes.
<i>Semi-transhumance</i>	Production system in which part of the family and/or livestock is seasonally mobile and the other part is sedentary and cultivates in one of the seasonal bases.
<i>Transhumance</i>	Breeding method including seasonal livestock migration. This system is very mobile and there is a return to seasonal bases each year. Farmers have a permanent residence. The calendar and itineraries are regular and the movements are mostly predictable. They are based on seasons and towards known pastures.

1

# << PASTORALISM IS ONLY ASSOCIATED WITH SAHEL >>

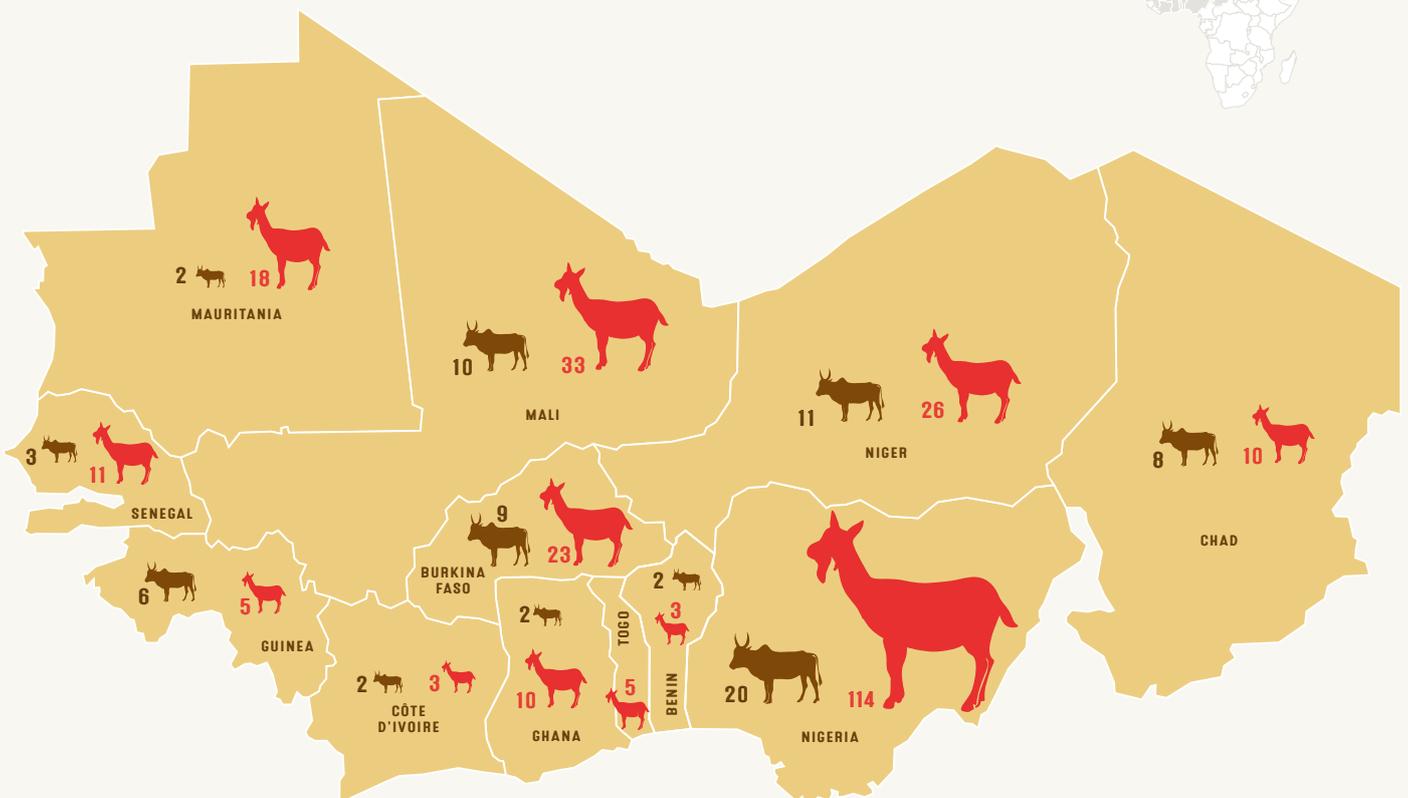
**FALSE**

## PASTORALISM CAN BE SEEN THROUGHOUT WEST AFRICA

Animal mobility, which covers long distances as well as small ones, exists in practically all farming systems in West Africa, even in sedentary systems. The existence of large semi-arid zones makes it very difficult to consider livestock farming without

mobility. Moreover enclosing animals in peri-urban farms or in ranches remains marginal. In the southern zones of Sahelian countries and coastal states where livestock is increasing, transhumance is also a feature of livestock farming.

 Cattle | buffaloes  Sheep | goats **IN MILLIONS**

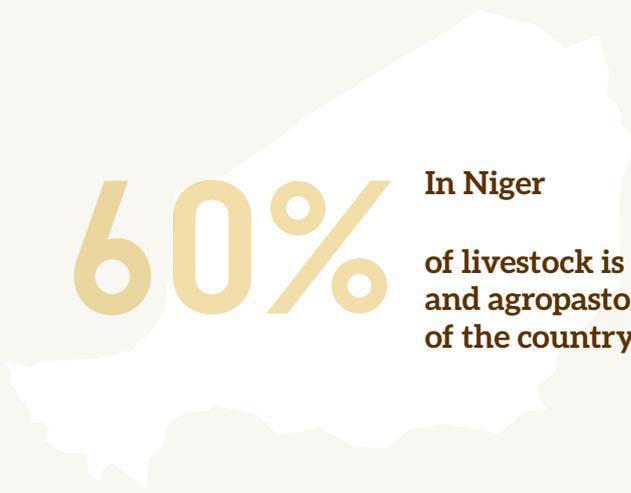


SOURCE FAO<sup>2</sup>

## FARMING SYSTEMS ARE INCREASINGLY TURNING TO AGROPASTORALISM

In cotton-growing areas farmers are increasingly integrating animals into their production system. These animals are on the move for months and cover long distances. At the same time pastoralists' families tend to settle down without altering their livestock. This partial sedentarization enables these

families to have access to healthcare, education, supplies and to the country's political life. By settling most families develop agricultural activities. Agropastoralism and agro-breeding highly prevail in this region.



60%

**In Niger**

**of livestock is owned by agro-breeders and agropastoralists living in the south of the country.**

SOURCE Republic of Niger<sup>3</sup>

## PASTORALISTS ARE MORE THAN JUST LIVESTOCK PRODUCERS

So called "pastoral" livestock farming is now a complex system which involves different activities and additional income sources: agriculture, livestock trading, fattening, para-veterinary professions, agricultural services (work days, animal loan in

exchange for labour), craftsmanship, transportation of goods or people... Pastoralism often represents only one part of the families' resources. "Pure" pastoralism doesn't exist anymore.



80%

**of family farms analysed in the research by APSS (Association for the promotion of livestock farming in Sahel and Savannah) resort to extra-pastoral activities.**

SOURCE Apess<sup>4</sup>

THE AGROPASTORAL FARMING SYSTEM  
PREVAILS ACROSS ALL WEST AFRICA  
**TRUE**

2

# MOBILE LIVESTOCK ARE LESS PRODUCTIVE THAN SEDENTARY LIVESTOCK

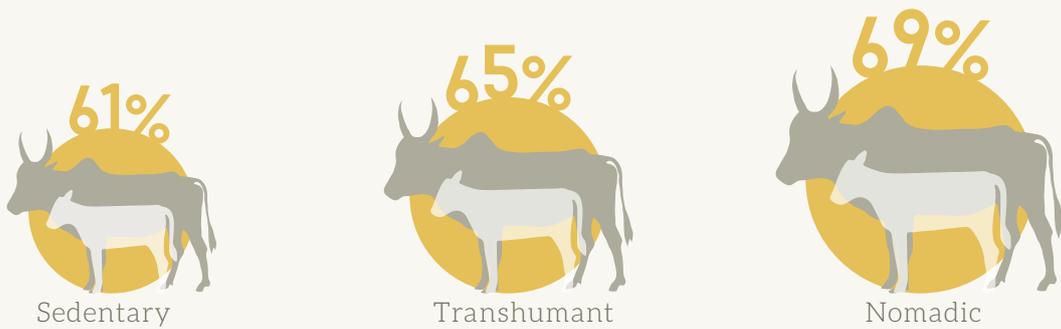
**FALSE**

## TRANSHUMANT LIVESTOCK HERDING IS PRODUCTIVE

Contrary to a widespread belief transhumant livestock farming is more productive than sedentary pastoral farming in West Africa. The more mobile

it is, the more productive! In mobile systems the productivity per hectare is even higher than ranching productivity in the USA or Australia

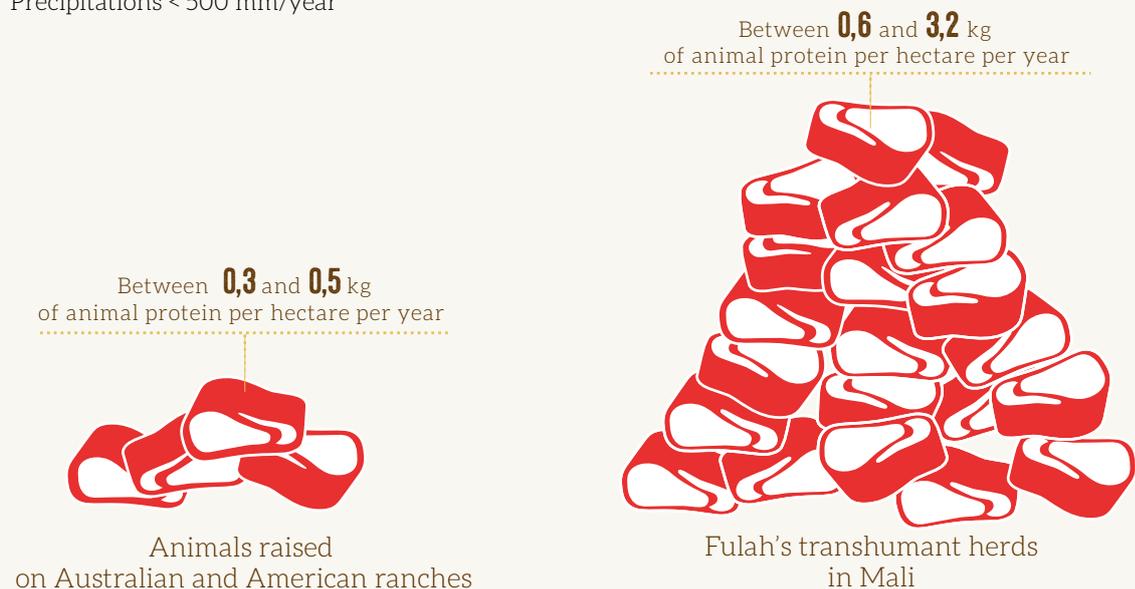
Annual rate of reproduction in sedentary, transhumant and nomadic herds in Niger



SOURCE De Verdière, C.P<sup>5</sup>

Productivity comparison between 2 zones with low rainfall

Precipitations < 500 mm/year



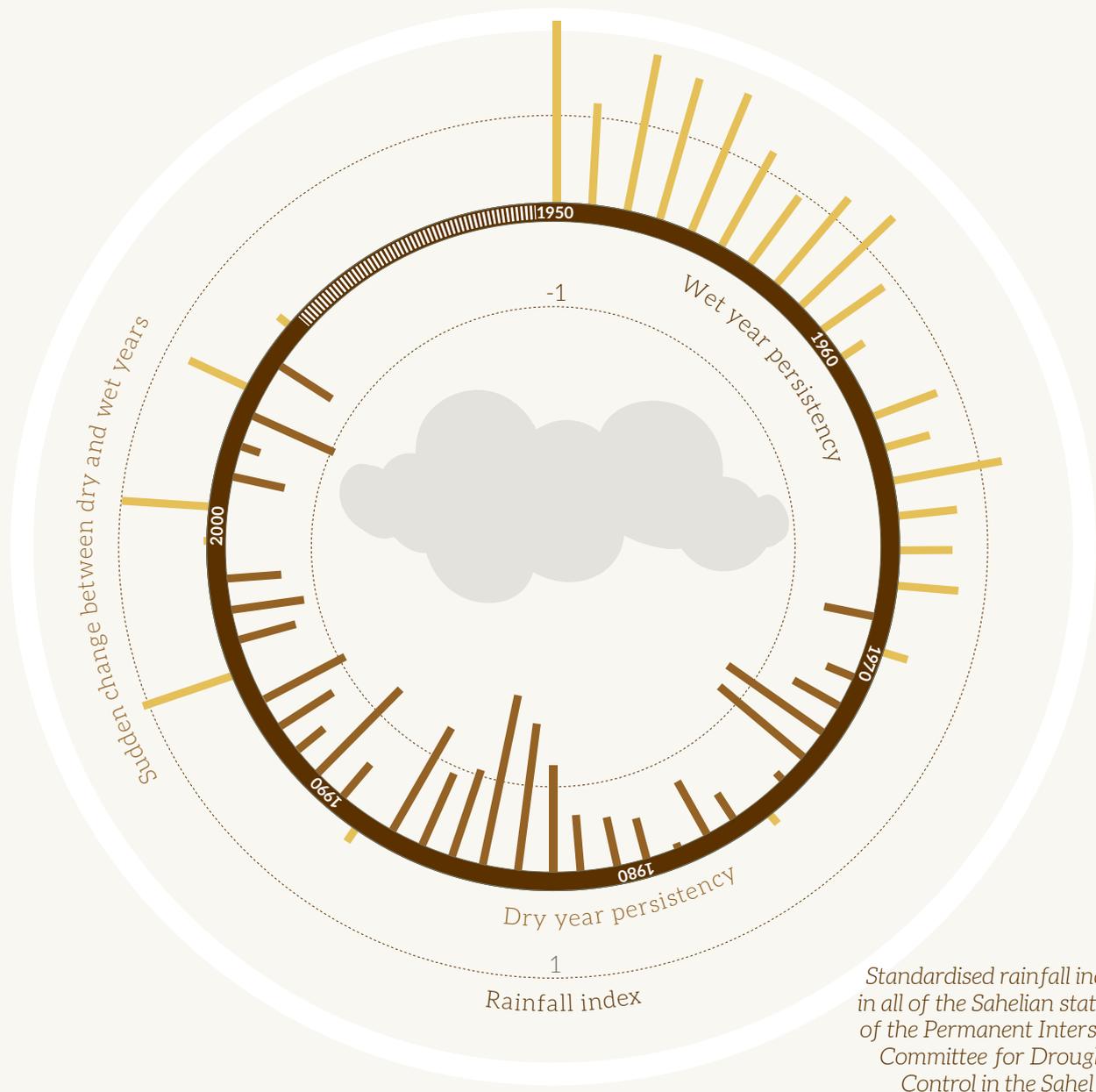
SOURCE Krummel, J.et Dritschilo, S.<sup>6</sup>

## IT IS MOBILITY THAT ALLOWS LIVESTOCK FARMERS TO BE SO PRODUCTIVE

Mobility represents an essential component to the herds' productivity. It allows it to benefit from fodder resources which vary in quantity and quality in different areas during the year. The Sahelian region is usually characterised by an alternation of a long dry season (8 to 9 months) followed by a short rainy season (3 to 4 months) which directly impact the available vegetation and fodder resources. However the quantity of rainfall varies from one year to another with some years more or less wet. By moving, the animals select the food they need.

Livestock is made up of a diversity of species which are adapted to harsh environmental conditions and each has their own dietary needs. Mobility is also essential in the production and trade cycle : the on foot travelling process allows the animals to gradually "finish", providing the food they need during the journey before being sold at markets at reception zones.

Sahelian countries alternate between dry and wet years

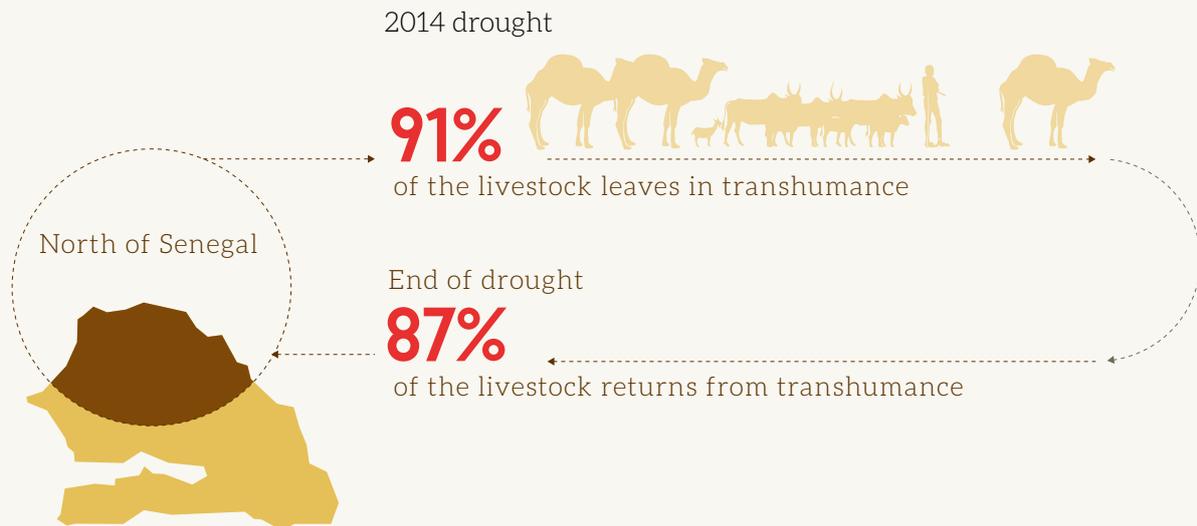


SOURCE Agrhymet

## MOBILITY IS KEY TO PASTORALISTS' RESILIENCE

Herd mobility is an effective response to many risks faced by pastoralists (drought, epizooties, civil insecurity...). This mobility is all the more important when animals die, years are needed before the herd returns to its initial level. Losses therefore strongly

impact not only the farmers' living standards but also the local market supply and national economy. The increasing use of mobile phones by farmers has improved access to information, in particular about the state of resources and markets.



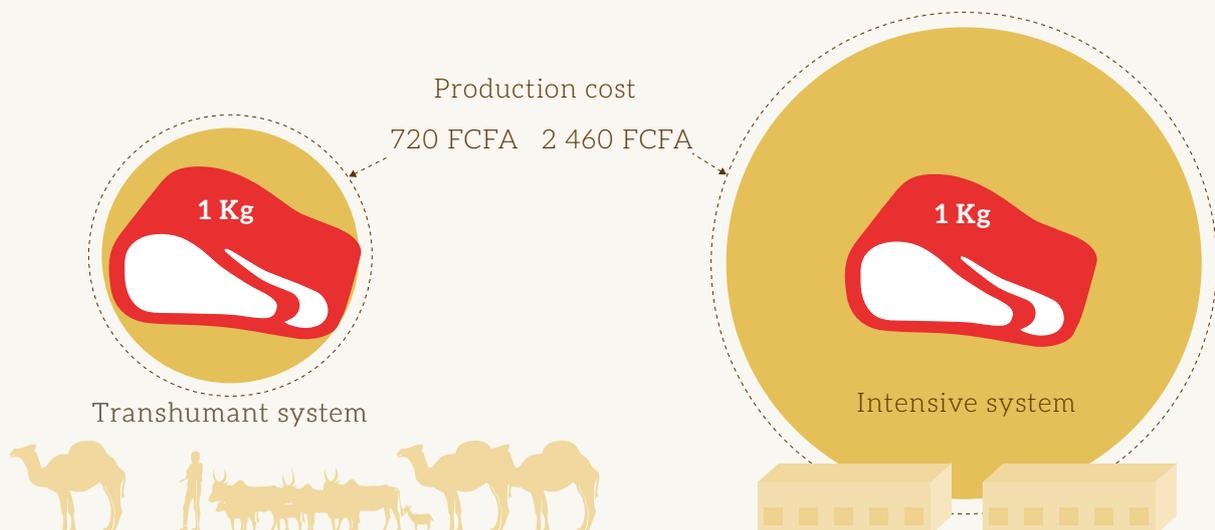
Only 4% of the livestock left in transhumance haven't returned (animal sales, losses)  
Mobility has helped to save family and national livestock.

SOURCE Acting For Life-Nordic Consulting Group, Brigitte Thébaud<sup>7</sup>

## MAKING LIVESTOCK FARMING SEDENTARY IN WEST AFRICA: A HIGH COST

Mobile systems enable a higher production per hectare than sedentary ranching systems. Sedentary systems are nevertheless more productive if we take into account the animal production per head of livestock. However this productivity per animal has high economic, social and environmen-

tal costs. Intensive sustainable sedentary systems can hardly be considered in West Africa. The region offers limited space for possible settlement: in arid zones animal feed and water aren't available all year round; in agropastoral zones competition over land is already high.

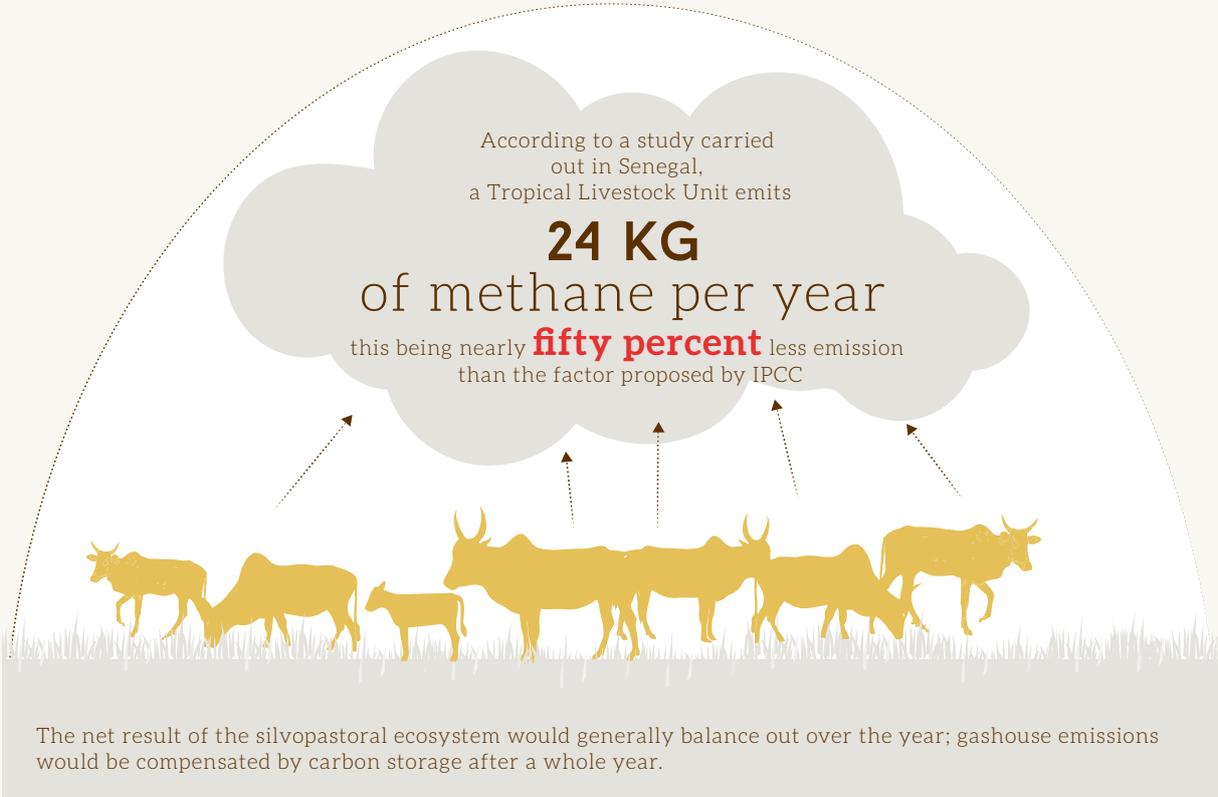


SOURCE FAO<sup>8</sup>

### SEDENTARY LIVESTOCK FARMING "POLLUTES" MORE THAN MOBILE FARMING

Settling herds amplifies environmental risks due to the continuous pressure the animals put on local forage resources. Degraded pasture lands often go hand in hand with sedentary livestock farming sites. On the contrary mobility allows this pressure to be limited by avoiding overgrazing and undergrazing. It even encourages the regeneration of several species as a result of seed dispersal.

According to recent research a "Livestock Standard Unit" (i.e. a 250 kg live weight animal) would emit in total over a year, nearly fifty percent less methane than the regional norms proposed by the Intergovernmental Panel on Climate Change (IPCC). Regarding gashouse emissions, the net result of the silvopastoral ecosystem would generally balance out over the year; gashouse emissions would be compensated by carbon storage after a whole year.



SOURCE Mohamed Habibou Assouma<sup>2</sup>

LIVESTOCK MOBILITY IS THE KEY  
TO ITS PRODUCTIVITY

**TRUE**

# TRANSHUMANT LIVESTOCK HERDING CONTRIBUTES LITTLE TO NATIONAL ECONOMIES

**FALSE**

## LIVESTOCK FARMING IS AN IMPORTANT ECONOMIC ACTIVITY IN WEST AFRICA

Livestock farming strongly contributes to the regional states' GDP in particular in Sahelian countries. It is also one of the main activities generating revenue in these countries' trade balance. Livestock

are the most traded products between West African countries. Livestock farming is a driving force behind regional economic integration.



Pastoralism contributes up to **15%** of the GDP

Products originating from pastoral farming represent the **3<sup>RD</sup> LARGEST EXPORT PRODUCT**

SOURCE BAD/OCDE; Apess<sup>10</sup>

## PASTORALISM CREATES A PARALLEL ECONOMY TO THE PRODUCTION

ropastoral systems provide many things such as the supply of high protein foods (milk, meat), manure (for soil fertilisation) and energy (transport, water extraction, animal traction). They also pro-

duce skin, wool and leather. They therefore supply an entire economy and provide a considerable amount of employment in the production chain.



**Energy**, animals can be used to transport agricultural products, for working in fields



**High protein food** (milk, meat) sold to consumers or third parties who transform these products (dairy, wholesale meat)



**Manure** used to fertilise agricultural lands

**PASTORAL SYSTEMS**



**Skin, wool, leather** used to produce and sell clothes, bags, objects

## TRANSHUMANT PASTORALISTS CONTRIBUTE TO THE ECONOMY OF THEIR TRANSIT TERRITORIES

Mobile pastoralists pay many taxes while in transit, whether is it to access resources or to sell their animals at the market. They sell and buy good during their journey. They therefore supply the economies they pass through. Big markets have

been developed in cross-border communication areas. They generate multiple economic activities and obtain important fiscal resources for local authorities.

During a transhumance a farmer's family spends on average **1 230 000 FCA** split between 17 types of expenditure



SOURCE Acting For Life-Nordic Consulting Group, Brigitte Thébaud <sup>7</sup>

## EXPORTING FROZEN CARCASSES RATHER THAN LIVE ANIMALS: NOT SUCH A GOOD IDEA

Most of the intra-regional meat trade is in the form of live animals. Yet some think that Sahelian countries should rather slaughter animals on their territory and sell frozen carcasses to coastal countries. According to them this would enable the Sahelian countries to increase the added value of their products and reduce the movement of live animals in the region which is often source of violent conflicts. However it doesn't take into account that the actual system of moving live animals by foot allows coastal countries' markets to be supplied with quality meat at low prices while supporting thousands of people along the value chain.

It also neglects the fact that many buyers rely on the physical appearance of the live animal to estimate the quality of the product. Finally it ignores the reality that the export of frozen carcasses would be mainly intended for a market (supermarkets, butchers) in which competition with products from the rest of the world is severe. Building slaughterhouses in Sahelian countries is important in particular to supply these countries' markets. The export of live animals to coastal countries remains a rational and efficient system. In fact in 2015 France exported more than a million live heads of cattle over 80 kg (Eurostat).

TRANSHUMANT LIVESTOCK FARMING  
IS FULLY INTEGRATED  
INTO THE REGIONAL ECONOMY

**TRUE**

4

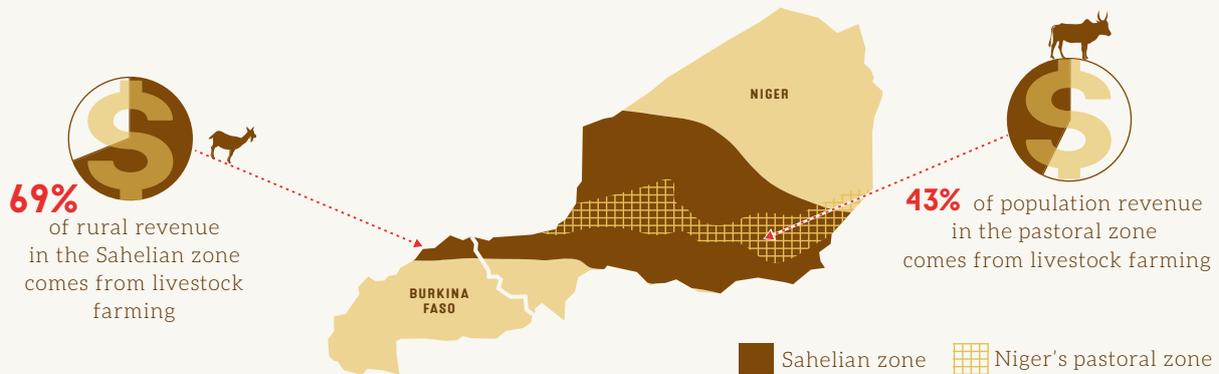
# PASTORAL FARMING DIVIDES OPINION IN THE REGION

**FALSE**

## TRANSHUMANT LIVESTOCK HERDING IS SAHEL'S MAIN RURAL ACTIVITY

Livestock mobility is associated to conflicts, sometimes extremely violent. Mainly due to a rising pressure on resources and increasing barriers to livestock mobility, these conflicts drive many decision makers to prefer sedentary livestock farming systems. Yet only transhumant livestock mobility

enables the development of widespread territories non-adapted to crops. In certain rural zones it is therefore an essential source of employment and revenue. Particularly in Sahel it represents the main rural economic activity where few lawful alternatives exist.



SOURCE Apess<sup>11</sup>

## HERD MOBILITY LEADS TO STRONG TIES BETWEEN COMMUNITIES

Herd mobility is only possible thanks to social networks which are constantly renewed and maintained particularly with resident livestock farmers. These relationships are partly based on important trades between communities: donations and trade of food (cereals, livestock), guarding of settled pastoralists' livestock by herders on transhumance, loan

and donation of animals, storage of mobile herders' food by sedentary farmers, guarding of herders' plots by villagers during transhumance. With the development of systems integrating agriculture and livestock farming these links are of course reduced but remain important.

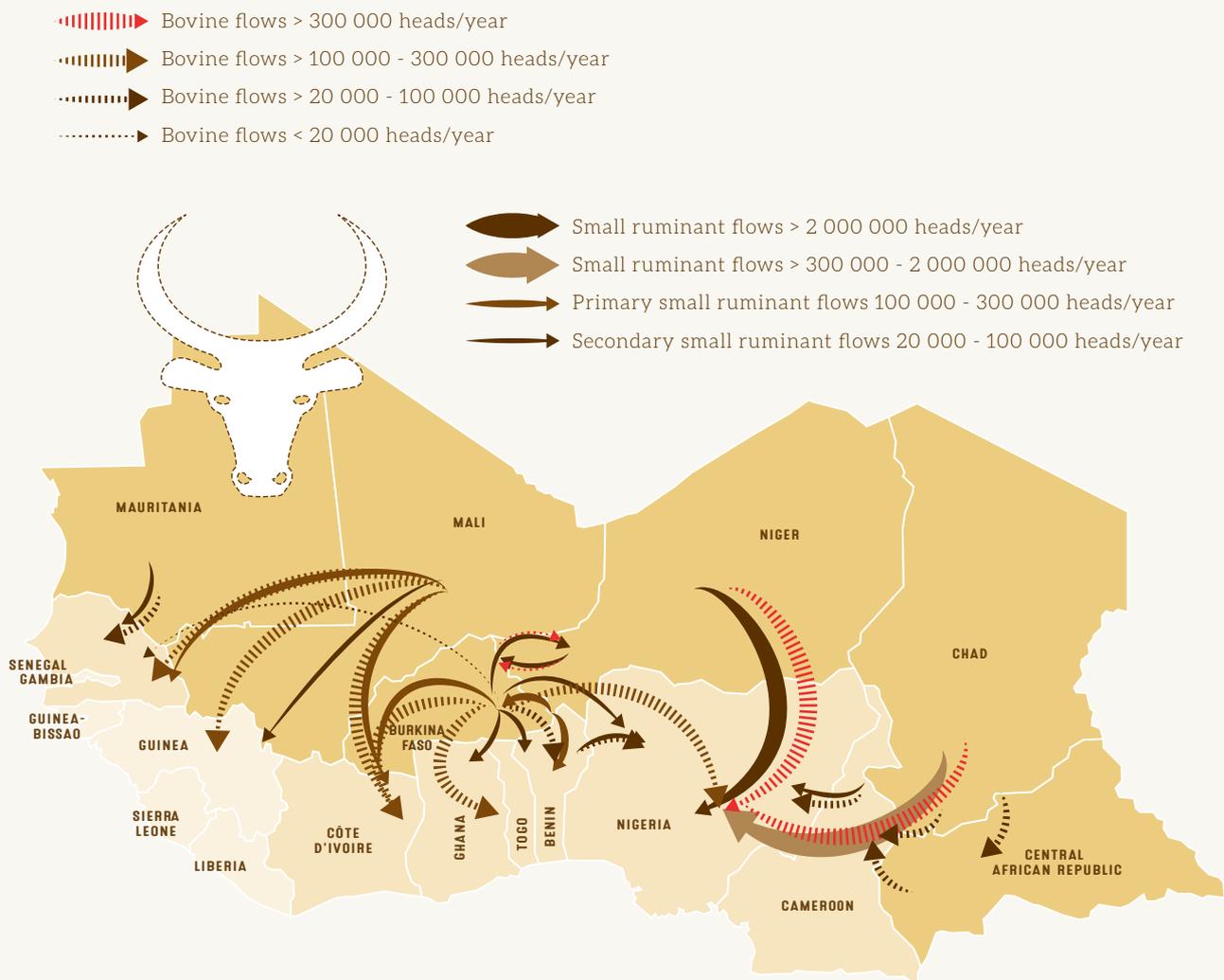


## TRANSHUMANCE FARMING IS AN IMPORTANT FACTOR FOR REGIONAL INTEGRATION

Breeding probably represents the most regionally integrated activity in West Africa and Sahel. Livestock products are the leading item in the food industry trade and the second most important in the overall commercial trade. Hundreds

of thousands of animals cross the Sahelian countries' borders to supply coastal countries' markets. Animals conveyed by foot add value to resources during the entire journey. Physical insecurity unfortunately increasingly hinders this mobility.

### Estimated bovine and small ruminant trade flows



SOURCE IRAM, Issala, LARES<sup>12</sup>

TRANSHUMANT LIVESTOCK FARMING  
CONTRIBUTES TO THE INTEGRATION  
OF REGIONAL TERRITORIES

**TRUE**

# HERD TRANSHUMANCE IS ONLY CROSS-BORDER

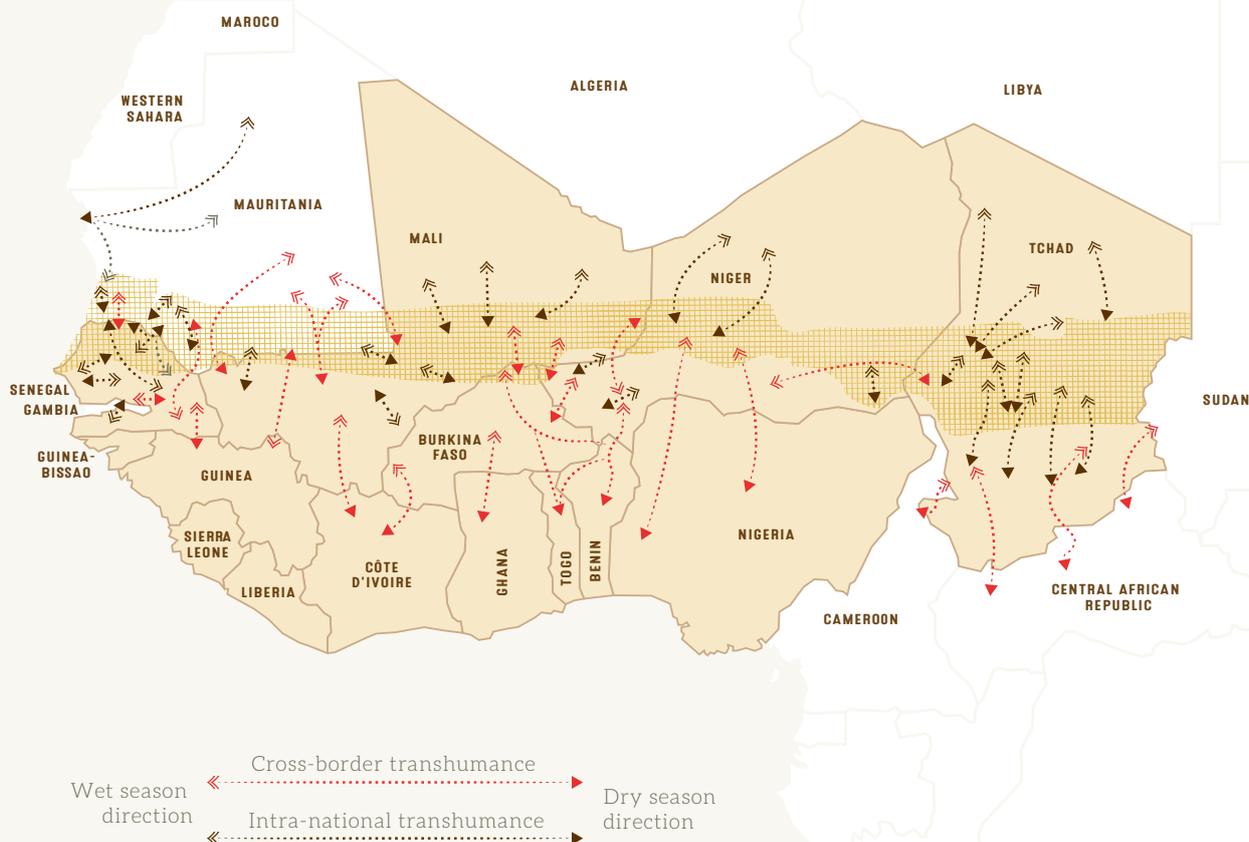
**FALSE**

## HERD MOBILITY IS ALSO LOCAL

The mobility isn't only cross-border. Daily movements of a few kilometres allow the exploitation of surrounding pasture lands. In Senegal transhumance are mainly internal with animal movement towards the Groundnut Basin and oriental Senegal. This local mobility is fundamental for animal feeding. It is as important and complex to manage as

transnational crossings. Creating reception zones and corridors is not enough to preserve mobility. This doesn't solve the issue of local mobility and doesn't correspond to the actual situation of breeders whose rangelands change depending on risks and opportunities.

Intra-national and cross-border transhumance in 2013



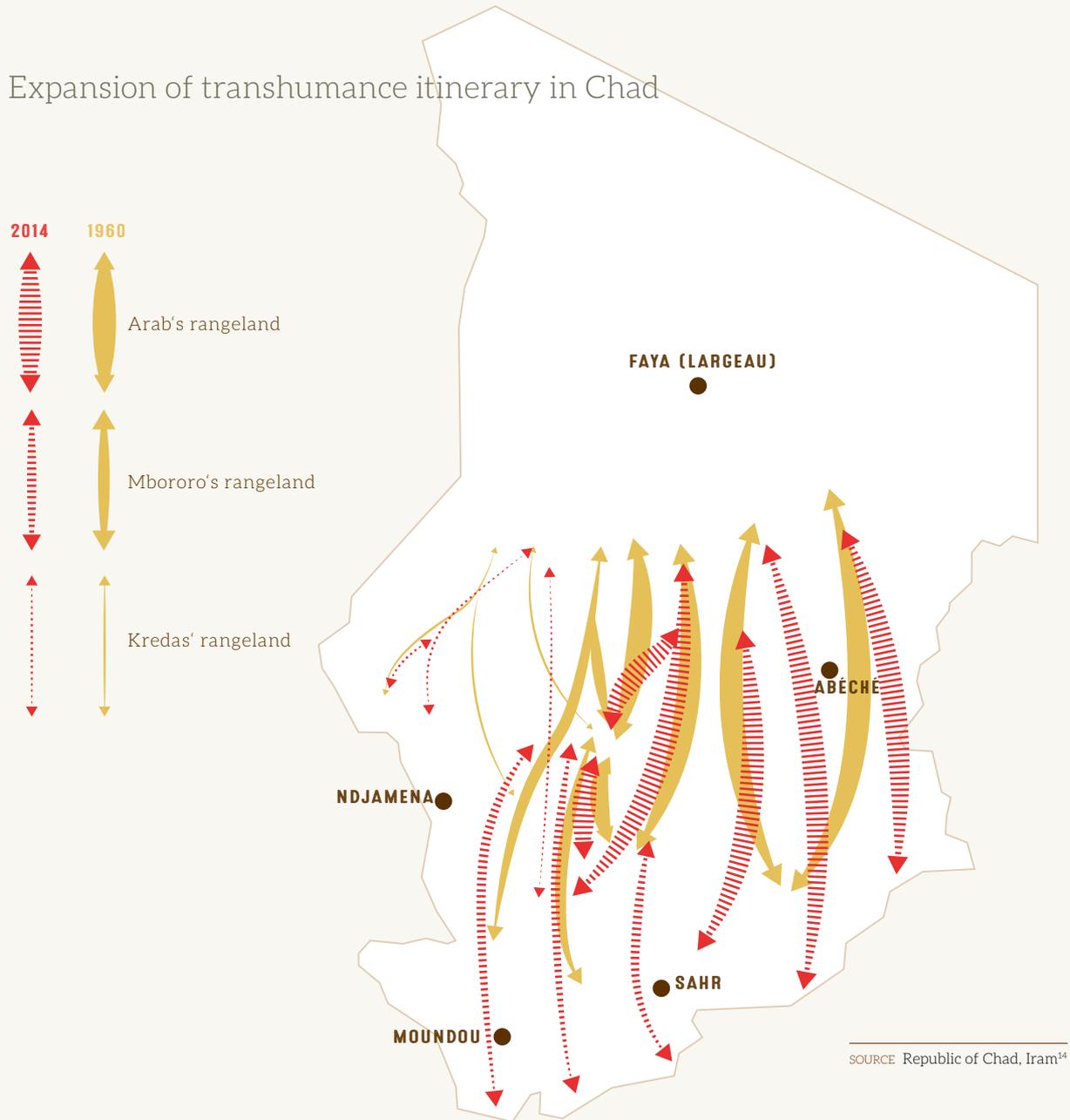
SOURCE Touré et al<sup>13</sup>

## MOBILITY ISN'T FROZEN

Routes taken by pastoralists and their herds are dynamic. They evolve depending on opportunity (existence of water points, social bonds) and constraints (civil insecurity, sanitary crises). Some movements are regular, others occasional. During

recent years transhumance have expanded towards more humid southern regions, often near very cultivated regions. The aspects of mobility also evolve with the use of technology such as telephones and lorries.

### Expansion of transhumance itinerary in Chad



LIVESTOCK MOBILITY  
IS DYNAMIC AND COMPLEX

**TRUE**

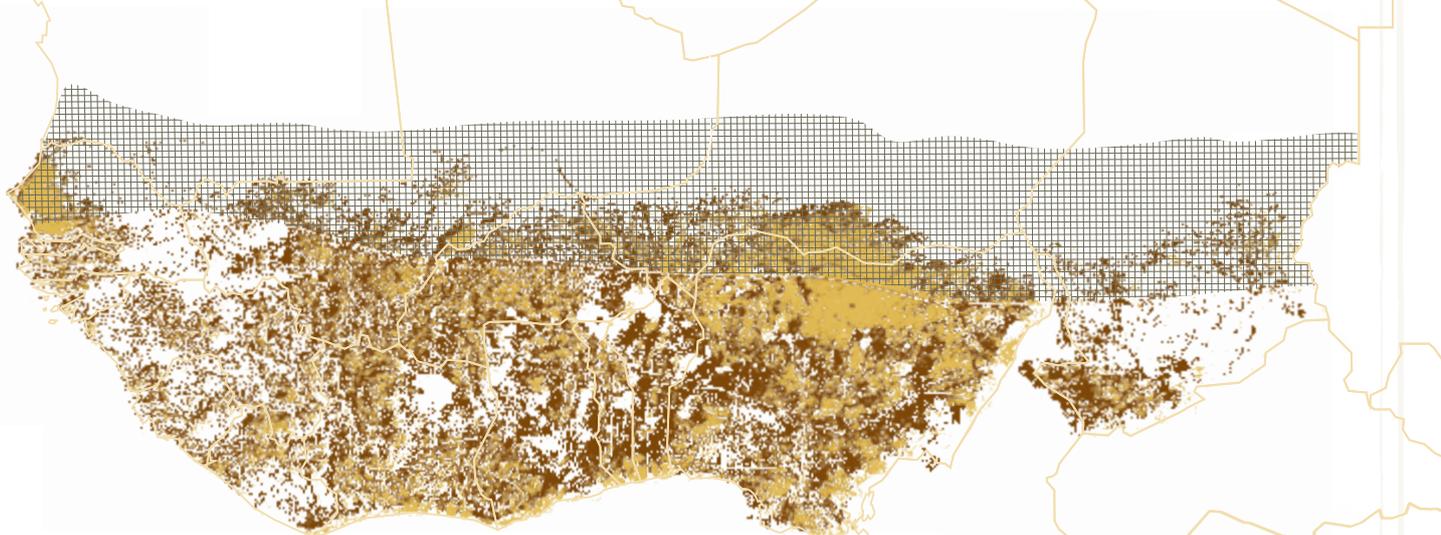
# WHAT WILL BE TOMORROW'S CHALLENGES?

## RESOURCES UNDER INCREASING PRESSURE

The development of agropastoralism has led to a complementarity reduction between pastoralists and livestock breeders. Simultaneously livestock and population increase while cultivated areas expand. New actors are emerging in some regions: land developers, extractive industries (oil, mines and water) and private ranches. Pressures on natural resources are being reinforced which lead to activities disturbing herds' mobility: cultivation of pastoral rangelands, transformation of pas-

tures into rice fields, monopolisation of pastoral water points by groups of farmers or settled ones, non-compliance with agropastoral calendars. This situation creates conflicts, sometimes very violent. It is however possible to prevent and manage these conflicts by securing pastoral mobility by introducing clear and consensual regulations of access to resources and establishing a conflict management framework.

Expansion of cultivated surfaces since 1975



- Cultivated lands 1975 | 562 700 km<sup>2</sup>
- Expansion of cultivated lands 2013 | 686 400 km<sup>2</sup>

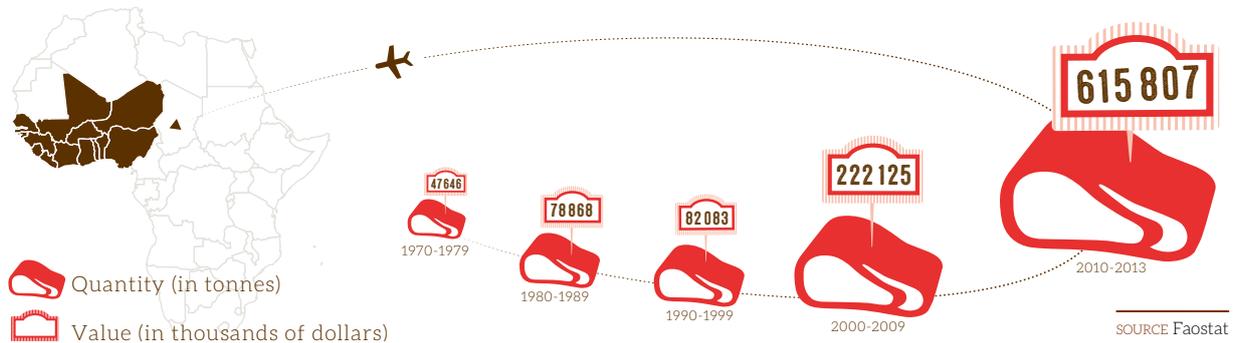
SOURCE Cilss, 2016<sup>15</sup>

## A GROWING DEMAND FOR FARMING PRODUCTS

Valuations estimate that within the next 20 years there'll be at least double the number of livestock products. An increasing amount of consumers are demanding a better quality of products (hygiene, continuous cold chain, modernisation of butchering, packaging...). To answer these concerns, important changes are needed throughout the production chain. Livestock and animal production are increasing but are having trouble keeping up with

the quick changes in demand, in quantity and quality. The sharp rise in imports particularly of milk powder and poultry meat allows populations' food needs to be met. In the long run this strategy of resorting to high extra-regional imports has proven to be costly and risky. The sharp increase in prices of some food products in 2007-2008 has shown the danger of such a dependence on imports.

## Evolution of extra-African meat imports to West Africa

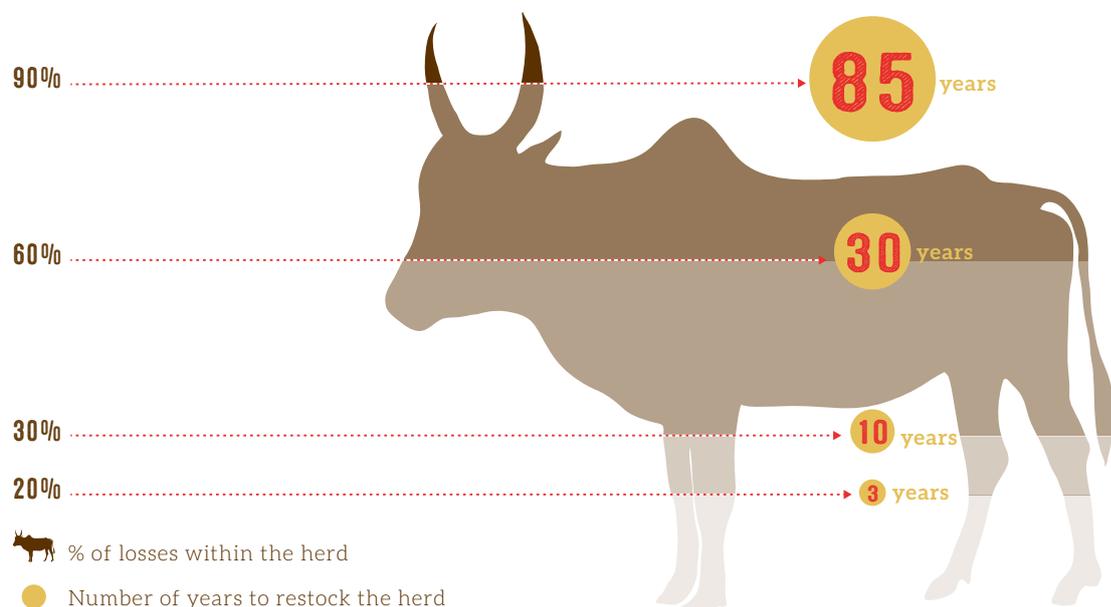


## AN INCREASE IN CLIMATE RISKS

It is difficult to accurately predict the impacts of climate change in West Africa, but experts agree that there is a greater risk of extreme weather events (droughts, heavy rains, floods). The vulnerability of agropastoral populations is all the greater as the mortality of livestock has an impact over several years. Herd-rebuilding takes time; from a certain

threshold of loss, this rebuilding becomes impossible. But we can prevent and above all manage these risks, by developing information systems on meteorological and fodder conditions that are accessible to agropastoral farmers as well as social nets adapted to mobile breeders (livestock insurance, livestock feedstocks, herd rebuilding...).

## Reconstitution time estimation for a bovine herd according to the level of losses



# MOBILITY, IS THE KEY TO SUSTAINABLE AND EFFECTIVE LIVESTOCK FARMING

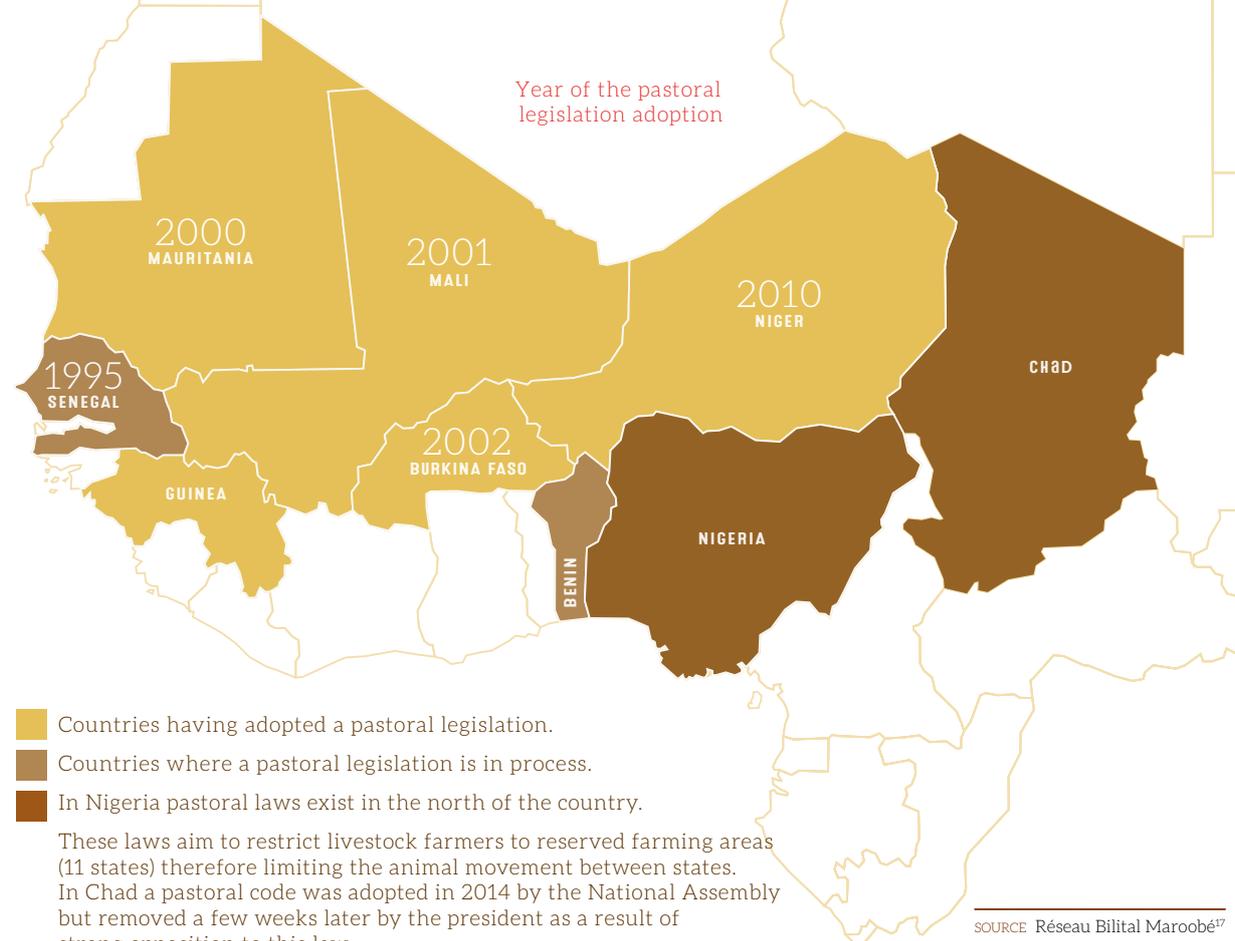
Addressing these different challenges will require the implementation of policies adapted to the issues faced by livestock farmers in their territories and coherent on a regional level. Such policies will need to include a diversity of factors responding to farmers' diverse needs: animal health services, processing and marketing structures, wells and drilling networks, strengthening the skill of farmers' organisations, conflict prevention and management frameworks, climate crisis prevention and management, etc.

However these measures won't be enough if pastoralists' and herds' mobility is increasingly hindered. This mobility whether local, national or cross-border is essential for the productivity and durability of the region's pastoral systems. It is a key aspect of these systems.

Several countries of West Africa have adopted since the 1990s pastoral laws. Their main goal is to guarantee access to pastoral resources and preserve farmers' and herds' mobility. At a regional level ECOWAS adopted in 1998 the "Decision A/DEC.5/10/98" to manage cross-border transhumance.

It will take some time for these policies to become fully operational. The transition from text to implementation in the field remains difficult. There is also a lack of harmonisation with other official texts (on water, forests, protected areas) and ambiguities particularly on the key aspect of "pastoral promotion" (which theoretically gives a legal recognition). Local mobility is too often "forgotten" by policies and programs whereas most "regional" programs don't apply to Sahelian countries.

Pastoral legislation situation in West Africa



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