Livestock

Livestock raising is, next to rice and cereal production, one of the pillars of the national rural economy in Mali. The floodplains of the Inner Niger Delta are essential as grazing grounds during the dry season. This Section provides data and background information.

Livestock raising systems

Livestock raising is an essential activity in subsistence farming for the rural communities in the basins of the Upper Niger Basin and the Inner Niger Delta. In most of the Upper Niger Basin, in the Soudan and Guinea zone, livestock is kept in mixed crop-livestock systems, in which crops (mainly millet, cowpea, sorghum, cotton and groundnut) are combined with livestock activities (cattle, sheep, goats and camels) in different
proportions. The organization of these systems relies mainly on mobile livestock using rangelands and crop residues, ranging from nomadic or transhumant mobile pastoral systems in the north (for the livestock only grazing systems) to more or less seasonally mobile livestock systems in the southern part (rainfed and irrigated mixed crop–livestock systems) (source Ickowicz et al. 2012). Since time immemorial, in the Sahel three main system of livestock raising exist (Le Houérou 1989):

- **Nomadism**: the herds and the nomads stay in the Sahara or the northern Sahel all year, continually moving in search of forage and drinking-water. This concerns the zone north of Kayes – Mopti;

- **Transhumance**: herds of cattle, sheep and goats are guided to fresh pasture in the northern Sahel in the rainy season, and return to the South in the dry season to avoid shortage of drinking-water. The annual productivity of cattle herds is about 12%, which corresponds to only 13 kg of meat per animal. Small ruminants produce annually 3–4 kg of meat per animal; annual herd productivity is about 25%. The transhumance system is highly important in the Sahel zone; in Mali the Inner Niger Delta plays a central role in the Transhumance, including the Sourou;

- **Sedentary animal husbandry**: most cultivators in the southern Sahel and in the savannah keep a few animals for milk, draught power and as an investment. This concerns the zone south of Kayes – Mopti.

The sedentary and the pure nomadic (northern grazing grounds) systems are of little importance compared to the semi-nomadic system, which involves the large scale movements of cattle, called the Transhumance (Breman et al. 1978). In the dry season, from November to July, the herds feed in the perennial pastures of the Inner Niger Delta. First the pastures
around the villages are exploited and when the flood recedes the common pastures in the centre of the delta. Bourgou fields are very important to overcome the dry period. When the rainy season starts, the herd move to the north to exploit the protein-rich annual pastures in the northern rangelands to the west, north and east of the delta.

Transhumance

The traditional nomadic livestock raising system hinges on the transhumance. The system of the Transhumance is a very effective way to deal with the varying and uncertain rainfall in the Sahel and the food resources which are depending on rainfall. In this way herds can exploit the protein rich grazing grounds in the north which are temporarily available
during the short rainy season. During this phase in the grazing cycle reproduction and growth of the cattle is realised (Breman & de Wit 1983, Penning de Vries & Djitèye 1982).

The pastoralist grazing systems are for the Sahel; the system is well described and analyse by Houèrou (1989) and the Cirad: Atlas des évolutions des systems pastoraux au Sahel (Cirad 2012). In Mali, transhumant and nomadic livestock farming concerns about 70-80% of the national livestock (15% of the breeders). Movements vary from year to year depending on the availability of pastoral resources (water, pasture, and salty earth. The rangelands north and west of the delta are essential to the system of the transhumance. During the short rainy season in the north Fulani pastoralist are moving their herds towards grazing grounds north of the Inner Niger Delta, up to in Southeast Mauritania. Mostly these movements start in July.

After exploiting these protein-rich grazing grounds, in the course of the dry season, herds are moving back to rangelands west and east of the delta, and progressively use the bourgou pastures in the delta. In the dry season cattle herds may move more southwards in the Guinea zone to graze (also) on land used for agriculture. Apart from these seasonal movements, there are long-distance trade movements, up to in the southern countries of West Africa (Ghana, Ivory Coast, Togo). Overall, mobility is the key to the pastoralists resilience.

Recently, the process and system of the Transhumance has undergone significant changes due to insecurity and conflicts in the rangelands east, west and north of the delta. This leads to overexploitation, in particular east
and west of the delta (for example in the Niono region), leading to more frequent livestock movements to the south, for example the savannas north of Cote d’Ivoire. On the website ‘Surveillance Pastorale’ (www.sigsahel.info) recent pastoralist developments are being published, including a frequent bulletin on cattle movements and the available food resources, based on satellite telemetry.

Future developments involve in the long run (2045) an extension of the irrigation zone of Office du Niger. The transition of these rangelands may lead to soil degradation of surrounding areas because of the higher pressure on the remaining grazing pastures. In the long run the grazing zone west of the Inner Niger Delta may be loose its potential suitable grazing zone. Already in the present situation these rangelands face overexploitation due to the disturbed system of the Transhumance.

A reduction of the grazing potential of the Inner Niger Delta and interconnected rangelands, will put a high pressure on the livestock system. This loss cannot easily be mitigated or compensated. Sedentarisation goes along with a high risk of soil degradation and lacks the protein boost of the northern grazing grounds in the rainy season, which is essential for growth (of individual animals) and reproduction. Additional bourgou planting in the Inner Niger Delta in order to provide fodder is hardly feasible, as water depths in the future in the delta will be below the growing potential of Bourgou.

**Data and monitoring of livestock**

As being one of the pillars of the rural economy, developments in the livestock sector are closely monitored. Livestock numbers – cattle, sheep,
goats and others - are collected on the level of cercles already from the 1960s onwards. Data are collected under responsibility of the Direction Générale de l’Elevage and on a regional level by DGRC/OMBEVI (annual reports). Most of these data are made available to the FAO and are available on Faostat and the Mali Data Portal.

Livestock is counted during certain moments in the annual cycle of livestock, mostly at the end of the rainy season when herds are moving back to the south. The general method used to census transhumant and nomadic livestock is to carry out a terrestrial census of animals present in the areas of concentration at the end of dry season. At this time the transhumant and nomadic livestock is most concentrated (Michel et al. 2002). Concentration sites are often found at the remaining water bodies in the dry period, for instance at several locations in and directly west of the delta, in the Fala’s in the Niono regions and along the river Niger (Michel et al. 2002).
As stated by Michel et al. (2002), the census of transhumant and nomadic livestock on such a large extent as in Mali, is very complex and difficult, and risks to have many sources of errors. Terrestrial censuses are not often carried out in Mali, due to the laborious and complex work. The last terrestrial census in the former century was in 1991 and in the past decades only one census was carried out in April-June 2001 (Michel et al. 2002). According to the DRPIA the numbers of livestock for the years after 2002 are based on the estimation of the annual growth rate of the population of each species of animal. It is therefore difficult to interpret the data. For more general use, the data reflect the developments in the livestock sector.

Data for the Mopti and Tombouctou regions, the most important concerning the flooding of the Inner Niger Delta, are summarised by Zwarts et al. (2005) and Schep et al. (2019). Two data sources were used to show information on the quantity of livestock in Mopti and Tombouctou: data from the Direction Générale de l’Élevage and annual reports from DGRC/OMBEVI (Direction générale de la réglementation et du contrôle). Additional data were found on the Mali Data Portal data (FAO). For the period 2000 until 2011, the DRPIA (Direction Nationale des Productions et des Industries Animales, Ministre de l’Élevage et de la Pêche) data were used. For 2012 until 2015 only data from the DRPIA were available. The raw data sources can be seen below with solid lines indicating the data taken for the graphs and dashed lines indicating data which was not considered. All data from DRPIA were considered.
Raw data for the Mopti region used in the graphs. 'DRPIA' is the Direction Nationale des Productions et des Industries Animales, Mali. ‘MDP’ is the Mali Data Portal. ‘NaL’ is Niger, a Lifeline, Zwarts et al. (2005).

Cattle

In Mali, the Mopti region is most important in terms of cattle densities, linked to the key role of the Inner Niger Delta in the Transhumance. Also high numbers of cattle are found in parts of the Tombouctou region and the Niono area (Ségou region). Within the Mopti region, cattle densities vary with the movements of the Transhumance. High numbers may be found in the cercles of Mopti and Bankass (Sourou area). According to the official FAO-data, the cattle population in Mali has grown to about 10 mln heads in 2014, with a average growth rate of 1,9% (1961-2018). Cattle numbers in the Mopti and Tombouctou region account for at least 5 mln heads in 2014, which means that these regions account for at least 50% of the cattle stock in Mali.

The longest time series for the Mopti region is available for cattle, from 1980 until 2015. For the period 1978 until 1983, data the only source of data was Niger, a Lifeline. Between 1984 and 1999 the only source was the Mali Data Portal. For the period 2000 until 2015, DRPIA data were used. Although the general trend is a steady growth in numbers between 1985 and 2015 there was a large decline between 1982 and 1985. These years correspond with the end of a long period of drought in the Sahel, named the Great Drought (Zwarts et al., 2005). A comparable situation is found in the region of Tombouctou regarding livestock quantities. The dip in numbers in 2007 may be caused by data errors, as these are not found in the national figures.
Raw data for cattle numbers in Tombouctou region. Between 1984 and 2000, the yellow series is indicated by a solid line for data that was used in the analysis from Mali Data Portal (MDP). Other used data include 1978 until 1984 from Zwarts et al. (2005) in Niger, a Lifeline and 2000 until 2015 from DRPIA and DNPIA.

**Sheep and goats**
All sheep and goat data were used form Mali Data Portal. Similarly, the cattle numbers, sheep and goats have been steadily increasing except for a large fall from 2006 to 2007. Although sheep numbers now exceed figures from 2006, goat numbers have yet to fully recover. It is unclear whether the ratio sheep – goats is reflecting the actual situation.

**Sources and more information**

(Production Sahélo-Soudanienne).


---

**Socio-economy**

- Agriculture

- Livestock
Bamako

BP 5017 Hamdallaye ACI 2000
Rue 392 Face Clinique Kabala
Bamako, Mali

+223 20 29 09 01
malipin@afribone.net.ml
Support

Data & information: Altenburg & Wymenga ecological consultants, AKVO
Technical: Wyldebeast & Wunderliebe, B2Design

2017 © Observatoire