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# New forms of pastoral mobility among sheep herders in the Algerian steppe; the case of pastoralists of Djelfa.

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**Keys words:** transhumance, steppes, systems, Algeria, pastoral breeding.

The recent socio-economic, political and climatic changes experienced by the Algerian steppe for the last decades have led to profound changes in pastoral mobility practices. This study describes the new mobility practices as currently adopted by the breeders of the Djelfa region. The realization of 59 semi-directive surveys was conducted between 2014 and 2016 among breeders in different reception areas. Practices related to the distance travelled during an annual cycle, the transhumance calendar and itinerary and the passage or not in the homeland are diverse. These practices of mobility can vary from one year to another or during the life of a breeder. This study shows an adaptability of long-term mobility to the changing context of the Algerian steppe, a result that contradicts other findings on the abandonment of mobility by pastoralists under the effect of the tightening of space and the settlement of pastoral populations.

## 1. Introduction

In the North Saharan steppe, sheep husbandry has been the main source of income of local populations for centuries. Livestock and pastoralists used to move all the yearlong to feed their animals with spontaneous vegetation. Since Independence (1962) human population of the Algerian steppe increased from 4 (1977) to 34 (2015) million inhabitants (Kanoun, 2016). The majority of this population settled in towns or villages, ceasing traditional mobility. In the same period, the sheep numbers increased from 6 to 18 million (Yabrir et al., 2015). As a result, the feeding capacity of the steppe rangeland has drastically dropped (Le Houerou, 1995; Daoudi et al., 2013; Hammouda et al. 2013).

A series of land tenure reforms (1977, 1984, 1987, 2002) have led to a large extension of ploughed land around towns and villages resulting in an increased crop production but reducing the grazing areas. Jointly with the availability of subsidised barley, this situation allowed some sheep farmers to avoid long range mobility and to stay near their homeland all the yearlong. (Aïdoudetal., 2006; Ghozlane et al, 2009). However, long distance mobility is still operated, even with new modalities and sometimes on longer distances.

The present study aims to characterize, through the case of Djelfa herders, the current forms of mobility of herders in the Algerian steppe. It starts from the analysis formulated by Idda et al. (2017) that ancestral practices can continue in innovative forms that consolidate them. It attempts to explore the hypothesis put forward by Ben Hounet (2009) that pastoral systems are characterized by their "ability to adjust to fluctuating and difficult geopolitical, economic and social contexts". It is therefore a question here of bringing out the diversity of long-distance mobility practices in a more precise manner with a view to understanding their organization, operation and the factors that influence the decisions of breeders.

## 2. Materials and Methods

Due to the rapid and profound changes it has undergone in recent decades, the region of Djelfa offers a prime field for studying the new forms of mobility undertaken by herders to face the context of varied uncertainties experienced by the Algerian steppe. To study pastoral mobility, surveys were carried out between October 2014 and November 2016.

The “long-distance” mobility considered in this study are those that take place outside the wilaya of Djelfa. Semi-directive surveys were made with 59 sheep owners registered as having their homeland in Djelfa and operating long distance mobility. Sampling of breeders was carried out using a combination of three methods (Kherri, 2013; Kheffache, 2018): i) "reasoned convenience" sampling carried out in the case where the sampling units are easy to reach and available to respond to interviews; ii) "judgmental sampling" carried out when a breeder or a group of breeders are considered interesting to meet the objectives of this study; iii) “snow ball” method, when one or several herders are identified by a previously interviewed herder.

### **3. Results and discussion**

Three main types of long-distance mobility were described (Fig 1)

#### **1. Medium amplitude displacement**

Pastoralists of this type move about 500-800 km to the pre-Saharan regions of the bordering wilayas of Laghouat and El Bayadh. They move to these areas in winter to find warmer temperatures, space and safety, and some vegetation to graze. Their goal is to ensure good birthing conditions for the ewes and to minimize loss of lambs due to cold or theft. At the beginning of spring, the herders return to the steppe zones of altitude (800 to 1,200 m) where they rent defended land or fallow land. In the summer these farmers rent thatch or damaged cereals in the north in the Tellian region. The choice of this route does not seem to be linked exclusively to the economic means of the breeders. It seems that the breeders in this group choose profitable routes with a minimum of constraints in terms of transport and difficulties of access to the land.

#### **2. Large amplitude displacement**

This category includes trips of more than 1,500km. It is characterized by a long passage in the steppe, from the beginning of autumn until the middle of winter. During this period, the pastoralists remain at the foot of the mountainous areas of the steppes located in the wilayas of Laghouat or El Bayadhin order to shelter from the cold winds. When the year is announced favourable (in terms of rainfall and therefore in terms of pastoral vegetation) in the Saharan regions, the herders go there and stay there until mid-spring. This route to the Saharan regions is taken when the herders estimate, either visually or by their trusted informants, that the ephemeral vegetation called "achebs" grows well after the rains to ensure a free forage resource for several months (Chehma et al., 2005). If this is not the case, the herders prefer to stay in the steppe to rent land defended by the State or fallow private land in Tellian areas. End-of-winter trips to the Sahara are usually done by truck, heading to regions like Tindouf, Bechar. They can even reach the Libyan or Moroccan borders, where important inter-regional markets are held. In the middle of spring, the herders stopover in the steppe by renting defenses or by occupying collective lands while waiting to be able to move on the stubble or the damaged cereals of the Tellian regions towards the north. Stubble that the breeders reserve beforehand with farmers with whom they preferably use to stay.

The herders who do this kind of transhumance generally own a truck. To transport all of their animals, they use other trusted breeders who own a truck, preferably from the same tribe, so that there is no theft along the way. These operations are only accessible to breeders with good social relations in their wilaya and in the host wilayas.

## 2. Small amplitude displacement

Breeders in this category move to areas not far from their native soil, and for short durations. They spend the winter in the pre-Saharan regions like Brizina and Lebyed Sidi Echikhà El Bayadh for the reasons mentioned above for the breeders of the first category. In the spring, they return to the steppe to rent land that has been defended by the State. Leased areas may vary from one breeder to another depending on herd size and land availability.

In summer, the herders of this category remain in steppe on collective land whose access is controlled by tribes from the north of El Bayadh to Rogassa. They can also return to Djelfa on their own lands or on the collective lands of their own tribe. However, the vegetation is poor and only provides them with fibre needs. The choice of this route seems to be due to the economic difficulties and the lack of social relations to find rental land and to move to the Saharan regions. The distances covered during the year by these breeders do not exceed 500 km.

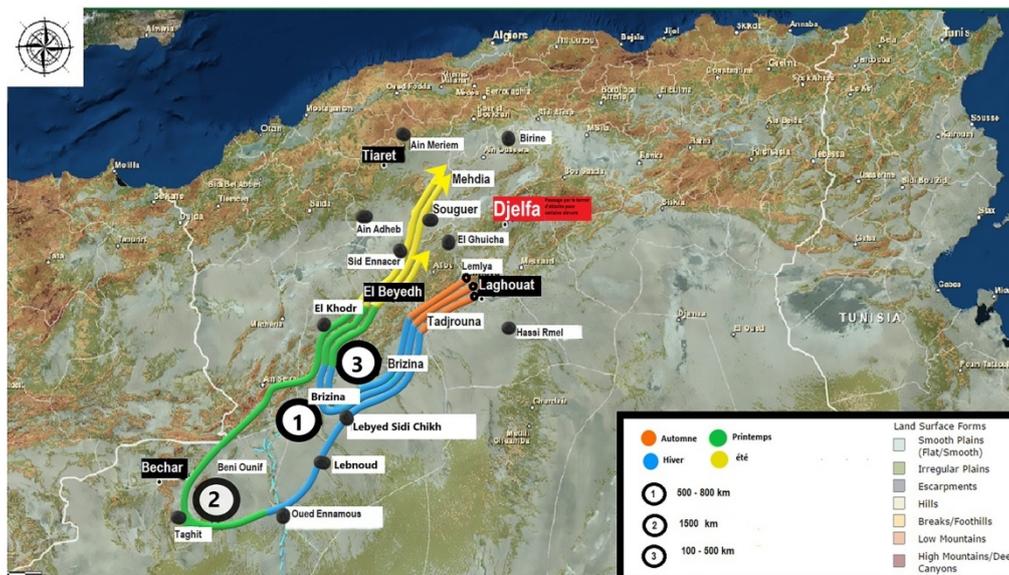


Figure 1: Map of main routes.

The surveys carried out highlight the current existence of long-distance mobility practiced in a sustainable manner and in various ways on the part of breeders in the wilaya of Djelfa. This observation calls into question the proposals analysing the abandonment of large mobility as due to the reduction of routes, the narrowing of transhumance corridors and the adoption of a sedentary lifestyle by the pastoralists (Bensouiah;2005 and Bencherif;2011). The present study makes it possible to establish that, on the contrary, these constraints have encouraged certain breeders to innovate in terms of pastoral mobility in order to maintain their pastoral activity.

## 3. Conclusion:

This study highlights new organizations of great mobility among breeders of the wilaya of Djelfa. The different forms of transhumance identified are distinguished by their routes, the distances travelled during an annual cycle and the transhumance calendar. It has been shown through this study that the

mobilities are still relevant in the steppe territory and that the breeders adapt to their context by mobilizing material and human means to achieve it. At present, large-scale mobility is a means of maintaining livestock farming systems.

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