

## **Effects of Drought on Socio-Economic Conditions of Pastoralists in Balochistan**

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### **Abstract**

*Drought in Balochistan has remained an overwhelming natural disaster that affected every sector of life. Nushki is amongst the most affected areas and people continue to suffer from drought. This study has been carried out for assessing the effects of drought on pastoralists of district Nushki, Balochistan. For this purpose, both primary and secondary data were used for this study. The findings of the present study illustrated that the drought is extremely affecting communities. Animals became malnourished and many perished. Many sold their domesticated animals on low costs and relocation likewise happened. On the light of the study results, it has been suggested that the government should organize veterinary camps in affected areas, provide fodder for livestock and take mitigation measures to minimize drought impacts.*

**Key words:** Drought, Pastoralism, Agro-pastoralism, Transhumant, Nushki

### **1. Introduction**

Disasters have adverse effects on human beings and natural ecosystems. A disaster occurs when a hazard affects vulnerable population causing damage and casualties (Anjum et al., 2012). Of all the natural disasters, drought is one of the main threats to people's livelihood and community development. Not only affecting tens of millions of people each year worldwide, drought has played inversely role to starvation and famine among millions of people (UNISDR, 2007). Drought affects almost all aspects of society, and compare to other natural disasters, it has likely greater impacts. Disasters like floods, earthquake and tropical storms come for short period on limited area, but drought affects larger areas and nearly all aspects of society. Occurrence of drought is inevitable as it is a normal feature of climate (Wilhite, 2000).

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Drought affects most of region on earth (Wilhite & Buchanan, 2005) and can occur in any climate of the world (Ding et al., 2010). Though its occurrence is frequent in arid areas. While drought affects every sector of life, its effects are utmost amongst the pastoralists who depend on livestock for their livelihood and constitute the major population in arid areas (Barton et al., 2001; Orindi et al., 2007). Tilahun et al. (2017) are in view that in contemporary period, pastoralists are becoming more vulnerable to drought impacts than they used to be. In pastoral communities, drought is a major reason of poverty. It reduces water sources and forage for livestock. Furthermore, drought results in livestock deaths, which is the main asset of pastoralists (Orindi et al, 2007). Moreover, pastoralists become vulnerable to food shortage due to drought. Repetitive drought in Balochistan has affected large population of pastoralists in arid and semi-arid areas.

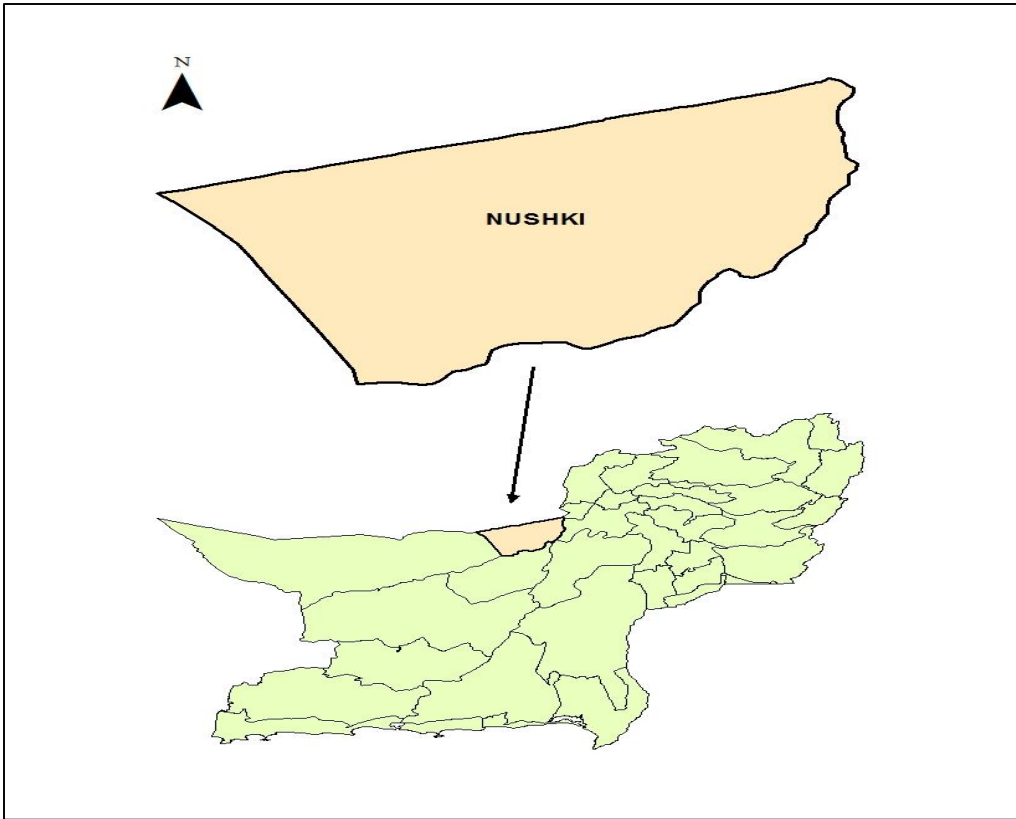
Balochistan is among the dry regions and frequently experiences several droughts. The annual rainfall ranges from 50 to 125 mm in southwestern desert. Repetitive drought is one of the main challenges faced by Balochistan. Nushki is one of the worst-affected areas, which had not seen any drizzle for years. (Anjum et al., 2012). The livelihoods of people in Nushki are highly dependent on agriculture and livestock. Their miseries increase when precipitation is below than the average. The latest drought in Nushki is affecting people with enormous impacts, as since 2013, rainfall has hardly been a quarter of the usual amount (UNDP, 2015). This research study is an effort to understand the effects of drought on pastoralists of Nushki District, Balochistan.

## **2. Study Area and Methodology**

Nushki district lies between 29°01'51"-29°52'37" North Latitudes and 65°07'42"-66°18'45" East Longitudes. The district has total geographical area of 5,797 square kilometers. The climate of District Nushki varies from extreme hot in summer to severe cold in winter. The rainfall is irregular and low. Majority of population is dependent on agriculture and livestock rearing as main source of livelihood.

The study is based on both primary and secondary sources of data. Both data sets were used. For primary data, field observations, focus group discussions and key informant interviews were employed. Secondary data were collected from various departments and organizations. The relevant information has been obtained from the analysis of government reports, journal articles, drought updates of relief agencies etc.

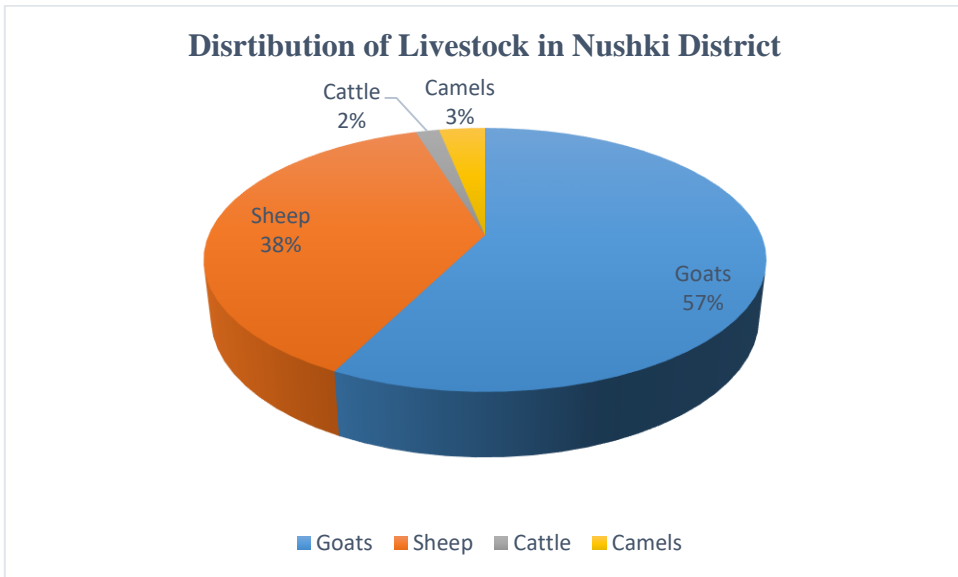
Figure 1: Map of Study Area



### 3. Pastoralism

In Nushki district a large number of people practice varying degrees of pastoralism, namely, raising of livestock on open ranges and ‘natural’ pasture as opposed to their rearing on a ranch or farm or around fixed feeding stalls (Salzman, 2005). In the local language they are called *Maaldar*. They are distinguished from the agriculturists who are called *Zamindar*. However, in actual practice, crop raising and livestock rearing form two ends of a continuum of livelihood (Jamali, 2006). According to official records, there are 348,910 heads of goats, 228,930 heads of sheep, 19,199 heads of camels and 9,754 heads of cattle in Nushki in 2016. As figure 2 shows, the majority of the livestock owners are dependent on small ruminants (goats and sheep) for their livelihood.

Figure 2: Relative distribution of livestock in Nushki



#### 4. Grazing Practices

The three major grazing systems in Balochistan are nomadic, transhumant, and sedentary; these depend on the lifestyle of the animal owner and the rangeland property regime (Rodriguez,1994). Pastoralists practice various grazing systems including sedentary agro-pastoralism, short-range nomadism and long-range transhumance (Buzdar et al., 1989). Short-range nomadic and long-range transhumant pastoralists own larger livestock herds than agro-pastoralists because they are highly mobile and, therefore, are able to draw on pasture and water resources in distant areas. Sedentary agro-pastoralists are basically agriculturists who own a sizeable number of animals as well. The erratic conditions of rainfall and seasonality of vegetation do not allow many farmers, especially those in the rain-fed areas, to rely on crop-production as the sole source of their income. Therefore, in rain-fed areas farmers keep goats, sheep and camel as a source of supplemental income. Crop residues as stalks, stubble and straw are an important source of feed for livestock; the livestock, in turn, provide draft power, for example in ploughing and levelling the fields, and manure for crop production. They graze their animals on their own fields or within a very small radius of the settlement where they live (Buzdar et al., 1989; Jamali, 2006).

Short-range nomadic pastoralists keep moving within the district and adjacent areas from one waterhole to the other in an opportunistic search for pasture. While they also engage in raising crops on a small scale, generally as tenants or hired labourers, it is insufficient to meet their needs (Buzdar et al., 1989).

On the other hand, long-range transhumant pastoralists take their animals to the far away Kachhi plains in Southeastern Balochistan. They traverse the huge intervening mountain ranges in search of rangeland during winter and bring their livestock back to Nushki in spring (Buzdar et al., 1989).

## **5. Effects of Drought on Pastoralists**

The drought also had a devastating effect on the vegetation in the area. As a result, pastoralists in the area are severely affected. They lost their livestock because there was no water and no fodder to supplement the feed of the animals. Their livelihoods were affected. Many left with no option other than to migrate. The effects of drought on pastoralists are discussed as under:

### **5.1 Migration**

Drought forced many to migrate. Large number of people migrated from rural areas to Nushki town. Many people from rain-fed areas moved to and settled around tube wells in other areas of the district. Because they cannot find required water and fodder for their animals. Due to drought there is no water in the *Nawars* (earthen ponds). Vegetation cover has been lower due to lack of precipitation. Whatever little vegetation remained on the rangeland, had dried up due to very high temperatures and had thus become inedible for livestock.

Transhumant pastoralists, on the other hand, who take their animals to the far away Kachhi plains in winter and return in spring, have migrated from the area. Due to drought, 25% transhumant pastoralists have not returned to Nushki and are wandering in search of water and pasture since 2013 in other areas.

### **5.2 Malnourishment, Diseases and Mortality:**

The loss of vegetation coupled with the decline in animal fodder from agricultural sources meant that even the minimal forage requirements of the livestock could not be met. As a result, the animals became malnourished and weak. This led to a progressive increase in disease and death in the livestock population and a decline in the fertility of breeding animals. Mortality rate reported among animals is low as compared to previous drought of 1998-2004.

According to Livestock Department, Nushki, 10-12% animals perished due to current drought. This figure is low if we compare this to the previous drought in the district. Where, according to some livestock owners, due to shortage of vegetation 80% of their livestock including goats and camels either perished or they sold them at very low prices. The reason for low mortality is that around 25% transhumant pastoralists have not returned for the last three years. Other reason is high number of tube wells, which have extremely increased in last 7-8 years. So, to some extent, water and fodder for livestock is available despite

the drought, which was not the case in 1998-2004 drought when tube wells were few in number. But this high number of tube wells will have other severe impacts in near future if persistent drought continues. Because water level is dropping day by day.

### **5.3 Forced sell of Livestock**

For a pastoralist, his flock is not only his source of income for him but it means more than it for him. It is never easy for him to sell his livestock. But drought has left no other option for them other than to sell the livestock. Many were forced to sell their animals because selling animals was the last option for survival. 20% livestock owners were unable to pay their debt which they have taken for fodder of animals and were compelled to giveaway animals.

### **5.4 Loss of Livelihood**

In Nushki district majority of inhabitants rely on livestock rearing and agriculture for their livelihood. Agriculture and livestock rearing is the backbone of the district's economy. Persistent drought has severally affected livelihood system and compelled many to look for alternate sources of livelihood due to drought. Pastoralist households who have settled near around tube wells now work as labour in the fields while a few work on daily wages. And for others there was no other option except migration.

### **5.5 Decline in Prices:**

Malnutrition and diseases also led to reduction in the live weight of animals which is the chief determinant of their market price in Balochistan. Some 25% livestock owners sold their animals on low prices in livestock market. The resulting fall in market prices significantly reduced the income of pastoralist households. People were forced to sell their livestock on such a low price because they had no other means to fulfill their food needs. The study indicates, on the basis of interviews with livestock owners, that the average price of livestock dropped to about 60%.

### **5.6 Decline in production of milk and milk products:**

Lastly, domestic production of milk from sheep and goat decreased by 60-70%. As there is lack of water and pastures for livestock due to which livestock health are affected. This in turn has affected production of livestock. Incomes of livestock owners have been reduced due to decline in revenue of livestock production. Nutritional status and income level of the households in the area has been affected due to decline in milk production of animals. The decline in milk production meant that pastoralist households-especially those in the rain-fed areas- lost an important source of their daily food.

## 6. Conclusion

Nushki is one of the most affected and has been prone to drought more severely. Majority of population is dependent on agriculture and livestock rearing as main source of livelihood. Drought had lasting socio-economic impacts on people. Drought has severely affected pastoralists. Malnourishment and mortality of animals have been recorded. Many have lost their livelihood and many sold their livestock on very low prices and displacement also occurred. This paper finds out that no measures have been taken seriously for drought mitigation. It is recommended that mitigation measures should be taken to reduce the drought impacts. Camps should be organized in drought affected areas. Provision of medicines and fodder for livestock should be on priority basis to reduce the further casualties. An urgent need exists for a detailed survey of the population in order to assess the magnitude of the situation and to respond accordingly.

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