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"Resilience of agricultural systems against crises"

Strategies of El·kababish Camel Herders to Cope with Adverse Climate Conditions in Sudan

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Introduction:

According to FAO statistics (2010), Sudan ranks the second in the world after Somalia with 4.6 millions heads of camels raised on three main types of management systems: the traditional nomadic; semi- nomadic and sedentary system which permit wide utilization of the range lands (Abbas et al., 1992). Camel herders developed their own strategies and practices to deal with environmental changes and crises to achieve their goals (Yaqoob and Nawaz, 2007). The aim of the present study is to address some of the strategies used by El-Kababish camel herders to cope with adverse climate conditions.

Materials and Methods:

A questionnaire was used to interview 122 camel herders randomly selected from four locations (Sodary, Jabra, Umgrfa and Almuwelih) dominated by El-Kababish camel herders. Data was then subjected to statistical analaysis using (SPSS) software.

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Results and Discussion:

The results indicated that 59% of camel farmers were owners, while 41% were shepherds. Illiteracy among camel owners and shepherd was 48.6% and 56%, respectively. These findings were lower than those reported by Musa et al., (2006) who found high illiteracy (79%) among the nomads in north Darfur state. The herders divided camel herds in small groups with an average size of 85.1 ± 37.2 heads. They were distributed in different places with in the region to avoid emerged diseases and nutritional crises. The study revealed that there was high tendency of keeping high percentages of breeding females (74.2%) within the breeding herds to insure recovery of herd size after crises in addition to maintain good level production. Breeding males in different herds investigated were amounted to 25.2%. These findings agreed with El Zubier et al., (2006) who reported camel herders tended to keep more females in their herds compared to males. The majority of herders (49.2%) were found to rear camels only while some herders reared sheep and goats beside camels. Camels and small ruminants were raised separately to satisfy family needs, religious and social ceremonies. These findings go in line with Gihad, (1995) and Musa et al., (2006).

Table (1) shows feeding strategies adopted by El-Kababish camel herders. They practiced seasonal migration for seeking water and pasture to their camels. The length of seasonal migration (south–north) in autumn and (north–south) during summer was found on average 5.8 ± 1.2 months depending on the availability of water and pasture to the northern and southern parts of the State. This agreed with Elamin, (1990) who reported that camel-owning tribes were continually on the move, looking for good pastures and water sources for their animals. Watering interval was long during winter and short during summer which enabled wide utilization of range land. Castration of males was practiced by 40% of the farmers for the purpose of fattening and control of animal behavior.

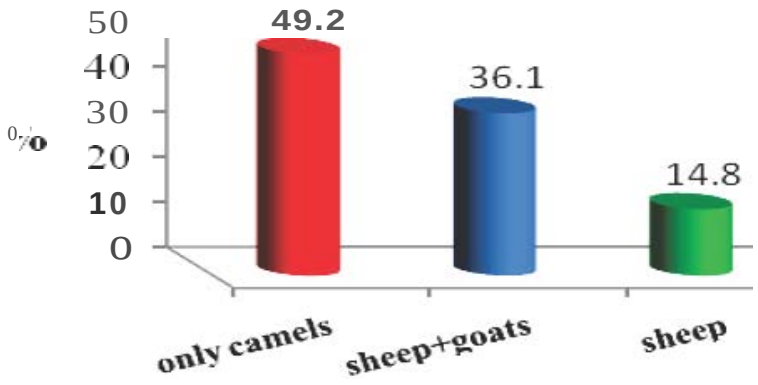

Fig. 1: Percentages of other animals reared beside camels herds in North Kordofan State, Sudan.

Table 1: Feeding strategies adopted by EL-Kababish camel herders.

Measurement	Place of interview				*Overall mean*
	Jabra	*Almewlih*	*Sodary*	*Umgrfa*	
Number of herds	*50*	*15*	*42*	*15*	122
Seasonal migration (*month*)	6.0 [b]	5.0 [c]	5.4 [b, c]	7.6 [a]	5.8 ± 1.2
Browsing & grazing in winter (*hrs*)	12.6 [a]	12.0 [a]	12.2 [a, b]	12.1 [a, b]	12.3 ± 0.09
Browsing & grazing summer (*hrs*)	10.9 [a]	10.3 [a]	10.1 [a]	10.0 [a]	10.5 ± 0.15
Water interval in winter *(Days)*	18.1 [b]	24.5 [a]	21.2 [a, b]	22.8 [a, b]	20.6 ± 0.76
Water interval in summer *(Days)*	7.6 [a]	7.1 [a]	7.4 [a]	5.7 [b]	7.3 ± 0.12

The interviewees reported the presence of 12 major camel diseases in the region and a number of local medicines extensively used (75%) beside veterinary medicines (25%) for the treatment of infected animals.

Conclusion:

Camel owners adopted their local knowledge and strategies which gave them a competitive edge and an excellent chance for survival, ability to maintain rural activities in scare ecosystem and a chance to increase the agricultural activities of the desert margin.

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