Temporal Mobility Patterns of Livestock in Semi-Arid Communal Rangelands in South Africa

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Introduction Historically, indigenous communal livestock farmers in Namaqualand, South Africa followed seasonal transhumant patterns between upland areas and coastal plains. They established themselves around permanent water points on the uplands in summer and dispersed down to the coast in winter. After the colonization of Namaqualand, communal farmers were forced to use smaller grazing areas and their traditional grazing patterns were disrupted. This study investigated how communal farmers in Namaqualand have moved their herds around the confined grazing areas for the past ten years. The study also established the time and reasons for movement of animals.

Materials and methods The study area was the Leliefontein communal area which is approximately 192 000 ha in size. The topography varies from 150 m to 1 500 m above sea level. Temperatures rarely surpass 40℃ and the uplands areas often receive below freezing point conditions during winter. Mean annual precipitation varies from 300 mm in the uplands to 90 mm on the coastal plains. Vegetation comprises of grasslands in the east and shrublands in the uplands and the coast. Herds comprise of goats and sheep or either goats or sheep. Herd sizes range from ten to 1 000 animals and are herded from semi-permanent stockposts scattered around the commons. Data for the study were collected through semi-structured interviews with about 300 livestock keepers from ten villages in the Leliefontein communal Area. During the interviews, information was collected on when and why farmers move their stockposts around the commons.

Results The results indicate that both environmental and social factors are considered when stockposts are relocated. Environmental factors include temperature, seasonality, water, forage availability, toxic plants and croplands. Social factors considered include herder health, animal condition, overcrowding, conflict avoidance, stakeholder relationships and herder comfort. Stockpost movement due to environmental factors is mainly seasonal whereas movement due to social factors is unpredictable. In villages where dryland cropping is still practiced, farmers move their stockpost away from the croplands during the growing season and return after harvesting to allow animals to graze on crop residues. Livestock keepers in the upland areas move every winter down the mountain due to cold temperatures. Movement due to forage availability and water is opportunistic and mainly occur during the dry season. Avoidance of croplands and areas with high abundance of toxic plants by herders also occurs mostly during dry periods. Stockpost relocation due to social reasons occurs throughout the year but the time of movement differs between herds and villages. Although communal farmers have restricted grazing space, they continue to practice mobility as an adaptive strategy to maximize efficiency for survival.