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Farmers’ and academia’s views”

## Bush fodder production on commercial farms in the Waterberg region, Namibia: challenges and potentials

MELISSA GURNY

*University of Kassel, Ökologische Agrarwissenschaften, Germany*

### Abstract

As a result of climate change, imminent desertification and accelerating bush encroachment, semi-arid rangelands are under increasing pressure. The Waterberg region in Namibia is predominantly farmed by commercial cattle farmers. Interviews from 2019 have shown that farmers were struggling with a severe drought in 2018 and 2019. One short-term coping strategy was to produce bush-based feed.

The present study analysed challenges and potentials of the use of bush-fodder in that region. Semi-structured interviews were conducted with ten farmers, looking into their general farming business, rangeland management and their knowledge, experience and perception about the use of bush fodder. Additionally, feed samples were taken and analysed in a feed-quality laboratory. The analyses included the classical Weende fractions, van Soest fiber fractions and *in vitro* incubation in the Hohenheim gas tests. Based on the results, the samples were assigned an overall quality-score ranging from -5 (very poor) to 5 (very good).

Most farmers (n=7) stated they only used bush-fodder during the drought, to cover the maintenance requirements of their livestock, and because there was no other feed available. The average quality-scores of pure bush samples, bush-based total mixed rations (TMR) and a mineral lick containing bush were -1.1 and 2 respectively. Correlation analysis indicated that poor quality of bush-feed lowers the willingness of farmers to use it in the future ( $r^2 = -0.88$ ). Yet, a perceived good acceptance by the animals is positively correlated with the willingness of farmers to use it again in the future ( $r^2 = 0.92$ ). The most frequently named barriers against future investments in bush-fodder preparation were monetary costs (n=9), labour costs (n=7) and (unknown) quality (n=6). Other constraints were “lack of necessity” and “unmatching price performance”.

Bush-fodder production may not have great potential as a permanent feed. But seemingly, its use was a good short-term risk mitigation strategy. When harvested shortly after the wet season and produced on stock it can serve as a sustainable feed for following years. Besides high investment costs, some farmers are continuing to use bush feed as they perceive it as a win-win situation due to the necessity to remove bushes on parts of their farm anyway.

**Keywords:** Bush encroachment, bush fodder, cattle, feed quality, livestock nutrition