

A Survey of Commercial Cattle Farmers in Semi-arid Rangelands of Namibia on Risk, Management and Sustainability

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1. Introduction

Farmers depend upon the specific spatio-temporal provision of ecosystem services which is influenced by risks acting on various space and time scales. To what extent farmers are affected by these risks depends on the risks' characteristics, risk and time preferences and their endowment (Gollier, 2001; Machina/Rothschild, 2008). Farmers employ a variety of management strategies to lessen risk (Shogren/Crocker, 1999; Perrings, 2004). Some of these strategies induce environmental changes that may adversely affect the well-being of future generations (Stern, 2000) and thus threaten the sustainability of the system.

Both environmental risk and sustainability are especially critical in semi-arid rangelands, a globally important ecological-economic system that covers approximately 8% of the Earth's surface and provides livelihood for hundreds of millions of people (MEA, 2005: 627). One prime example is commercial cattle farming in Namibia, which is subject to a number of environmental, economic, political and social risks. It also suffers from degradation in the form of extensive bush encroachment (de Klerk, 2004) and of biodiversity loss (MET, 2006). Finally, it is economically important, contributing by far the largest share (37%) to total agricultural output and directly 1–2% to GDP (MAWF, 2009: 7, 9).

To study risk, management and sustainability, we conducted a survey among 2,119 Namibian commercial cattle farmers in August 2008, consisting of a mail-in questionnaire and in-field experiments for the elicitation of risk and time preferences. As detailed in Table 1, we collected information on 1) personal and

* Many scientist, experts and farmers contributed with their comments and discussion to the design of this survey, and we wish to express our gratitude to all of them. Special thanks go to Volker and Ursula Dieckhoff, Arne Gressmann, Claus Hager, Harald Marggraff, Thomas and Heidrun Peltzer, Elsabe Steenkamp, Welmoet van Kammen, Peter Zensi and Ibo Zimmermann. We also thank our cooperating organizations Namibia Agricultural Union, Namibian Agricultural Trade Board and Agra Co-operative Ltd. Finally, we are grateful to the German Federal Ministry of Education and Research (BMBF) for financial support under grant 01UN0607.