



Namibia specific climate smart agricultural land use practices: Challenges and opportunities for enhancing ecosystem services

Nikolaus J KUHN (1), Martha Talamondjila NAANDA (2), and Lena BLOEMERTZ (3)

(1) Physical Geography and Environmental Change, Dept. of Environmental Sciences, University of Basel, Switzerland (nikolaus.kuhn@unibas.ch), (2) Physical Geography and Environmental Change, Dept. of Environmental Sciences, University of Basel, Switzerland (marthatalamondjila.naanda@unibas.ch) , (3) Physical Geography and Environmental Change, Dept. of Environmental Sciences, University of Basel, Switzerland (lena.bloemertz@unibas.ch)

Agriculture is a backbone for many African economies, with an estimated 70% of Africans active in agricultural production. The sector often does not only directly contribute to, but sustains food security and poverty reduction efforts. Sustaining this productivity poses many challenges, particularly to small scale subsistence farmers (SSF) in dry land areas and semi-arid countries like Namibia. SSF in northern central Namibia mix crop and livestock production on degraded semi-arid lands and nutrient-poor sandy soils. They are fully dependent on agricultural production with limited alternative sources of income. Mostly, their agricultural harvests and outputs are low, not meeting their livelihood needs. At the same time, the land use is often not sustainable, leading to degradation.

The Namibia case reveals that addressing underlying economic, social and environmental challenges requires a combination of farm level-soil management practices with a shift towards integrated landscape management. This forms the basis for SSF to adopt sustainable land management practices while building institutional foundations, like establishing SSF cooperatives. One way in which this has been tested is through the concept of incentive-based motivation, i.e. payment for ecosystem services (PES), in which some of the beneficiaries pay, for instance for farmers or land users, who provide the services. The farmers provide these services by substituting their unsustainable land and soil management and adopting new (climate smart agricultural) land use practices. Climate Smart Agricultural land use practices (CSA-LUP) are one way of providing ecosystem services, which could be fundamental to long-term sustainable soil and land management solutions in Africa.

There are few PES cases which have been systematically studied from an institutional development structure perspective. This study presents lessons evolving from the notion that direct participation and involvement of local people, from the initial steps of designing PES, could be one of the crucial ingredients for success. Community self-organisation and mobilisation supported by NGOs, as practiced in the Namibia's Community Based Natural Resource Management (CBNRM) offer useful lessons of how CSA-PES initiatives can be pursued. CBNRM enables farmers to make LUP decisions, impacting value attached to ecosystem services, which can be prioritised now, for what purposes, and which practices can be adopted to enhance the attainment of multiple benefits.

Key words: small scale farmers, land degradation, ecosystem services, Namibia