

PROVISIONING SERVICES IN THE MOPANE WOODLANDS OF NORTHERN VENDA

Prepared by Fiona Paumgarten

Rural households in South Africa continue to rely on a range of ecosystem services in order to secure their livelihoods. “Ecosystem services are the benefits people obtain from ecosystems. These include *provisioning services* such as food, water, timber and fibre; *regulating services* that affect climate, floods, disease, water and water quality; *cultural services* that provide recreational, aesthetic, and spiritual benefits; and *supporting services* such as soil formation, photosynthesis, and nutrient cycling”¹. This study focuses on the contribution of *provisioning services* to rural livelihoods in general, and specifically, to potential climate change adaptation strategies (Fig. 1²). The research is being conducted in Limpopo province, including the Mopane woodlands of northern Venda.

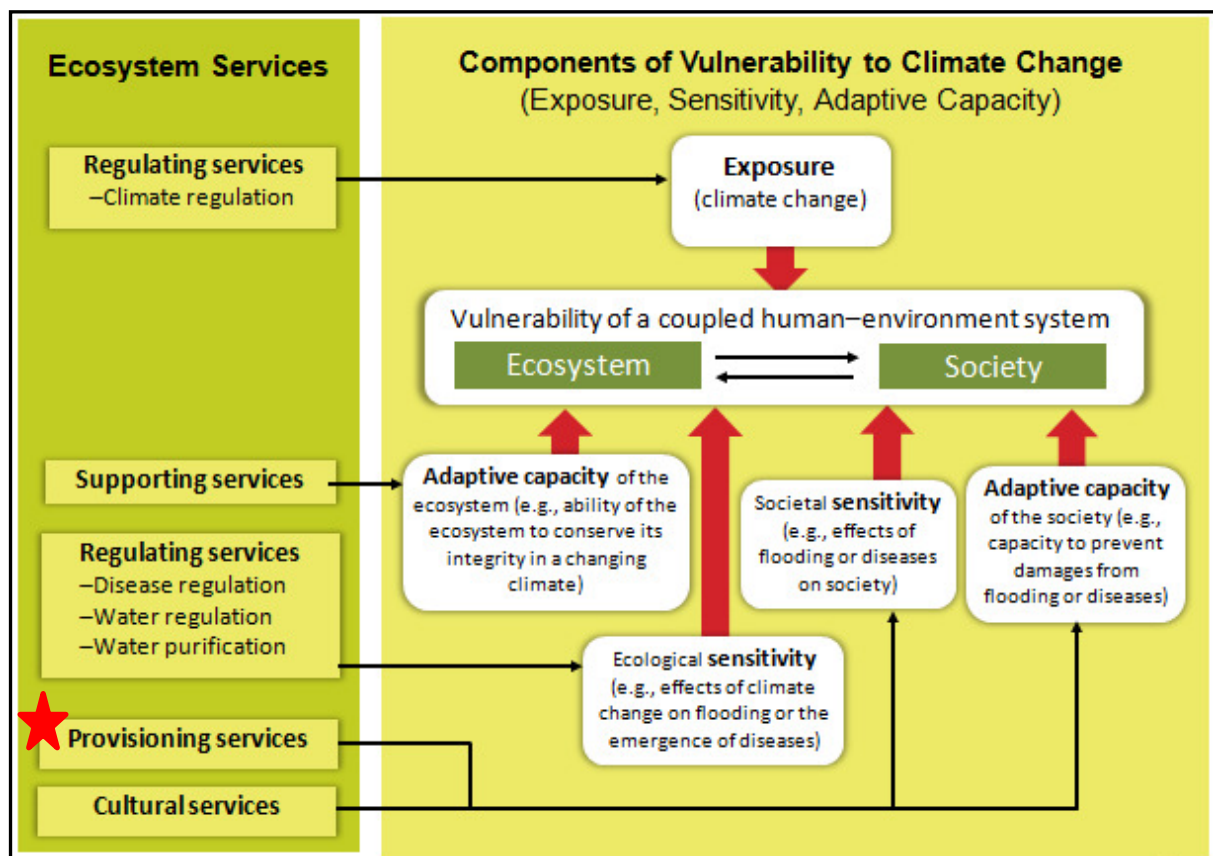


Figure 1: Ecosystem services and their links to vulnerability to climate change (Locatelli *et al.*, 2008)

¹ Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. <http://www.millenniumassessment.org>

² Locatelli *et al.*, 2008. Facing an uncertain future: How forests and people can adapt to climate change. CIFOR Forest Perspectives. (http://www.cifor.org/publications/pdf_files/media/CIFOR_adaptation.pdf)

Ecosystem-based adaptation recognizes the role of woodlands in providing ecosystem services for society. This in turn offers opportunities for woodland-dependent people. Protecting ecosystems can be a cost-effective protection from natural disasters such as floods and droughts, while being simultaneously good for biodiversity and livelihoods³.

This research aims to contribute towards the growing dialogue on rural vulnerability in general and to climate variability and change in particular. The role of *provisioning services* in the adaptation strategies of rural households in South Africa will be investigated. However, before exploring the role of *provisioning services* in climate change adaptation, their more general role in rural livelihoods has to be explored. While the research is on-going, initial findings from northern Venda suggest a strong reliance on *provisioning services*. Some of these initial findings are discussed below.

Food: Although some households in northern Venda practise arable agriculture and animal husbandry, the climate, the foot-and-mouth red line and the associated costs provide barriers. As such these strategies make a limited contribution to households' food supplies. Most households rely on purchased foods although wild foods, harvested from the surrounding Mopane woodlands, also make an important contribution. These wild foods include wild fruits (e.g. baobab), wild vegetables and bushmeat. Bushmeat includes fish caught in the nearby rivers, wildlife (including animals poached from within the Kruger National Park) and Mopane worms (Fig. 2). Bushmeat is being used for home consumption and is being sold.



Figure 2: Fish caught in the Limpopo River; dried buffalo meat (biltong) and Mopane worms

³ CBD, 2009. Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change. Secretariat of the Convention on Biological Diversity, Technical Series 41, Montreal.

Fiber: Wood harvested from the surrounding Mopane woodlands makes an important contribution. Wood is used for the construction of houses, fences and livestock enclosures. Grass is also an important product particularly for roofing material and grass brushes (Fig. 3). Grass is also collected and stored as fodder for livestock although this is limited by overgrazing.



Figure 3: Wooden fences around fields help to reduce raiding by domestic livestock and wildlife; grass brushes for household use and grass roofing.

Fuel (fuelwood): Although most households in the village have been electrified, fuelwood remains an important source of fuel, particularly for cooking, heating and brick-making (burnt in kilns; Fig. 4). Several households are also engaged in the sale of fuelwood to passing traffic. Existing regulations allow for the harvesting of dead wood and not live trees, however, discussions suggest an increase in illegal harvesting as the supplies of dead wood are depleting.



Figure 4: Local kiln for making bricks



Figure 5: Bark harvested for traditional medicines

Natural Medicines: Although some households still rely on traditional medicines, this use is less prevalent than in the past with the younger generations preferring “Western medicines”. There are still traditional healers in the village who continue to harvest a variety of barks, leaves, fruits, roots, etc. (Fig. 5). Traditional healing is associated with a specific knowledge granted by the ancestors and as such harvesting for traditional medicine is generally restricted to healers.

Fresh Water: Most households now collect water from communal taps rather than from the nearby river (as was the case in the past) (Fig. 6). Access to these taps reduces the amount of time collecting water, and several people also raised concerns about the quality of the river

water. Water collected is stored in buckets and drums for household use and the irrigation of small household vegetable gardens. The river is still important as a source of water for livestock and for fishing (as noted above). Although fields are cultivated along the river, farmers practise rainfed agriculture due to the costs of installing irrigation schemes. As such arable agriculture is highly seasonal.



Figure 6: Cattle drinking from the Mutale River; buckets being filled at a communal tap; buckets storing water for household use and irrigating a small homegarden

Future fieldwork will examine how droughts and floods affect the availability of these *provisioning services* in order to determine their viability as an adaptation strategy for rural households in the face of climate variability and change.