

# Mashare - Landscape



Fig. 1: Village surrounded by Manketti trees (*Schinziophyton rautanenii*) at the start of the dry season (photo: R. Revermann).

Table 1: Landscape characteristics.

Geology		Lithology	
Pleistocene Kalahari sands & Holocene river sediments		Unconsolidated sands & loams	
Mean height (m a.s.l.)		Mean annual precipitation	
1,090 m		571 mm	
Landscape units (LSU)			
	LSU 1 (Recent Floodplains): 5%	LSU 2 (Old Floodplains): 15%	LSU 3 (Kalahari Dune Area): 80%
Related land uses			
	fishery, washing, grazing, reed harvesting, extraction of loam for construction	subsistence agriculture, irrigation agriculture, grazing, firewood collection	subsistence agriculture, grazing, wood extraction, grass harvesting, hunting
Ecosystem goods			
	drinking water, fish, thatching reed, meat, adobe bricks	e.g. pearl millet, maize, wheat, cow peas, groundnuts, vegetables, firewood, meat	e.g. pearl millet, maize, cow peas, groundnuts, timber, firewood, meat, thatch grass

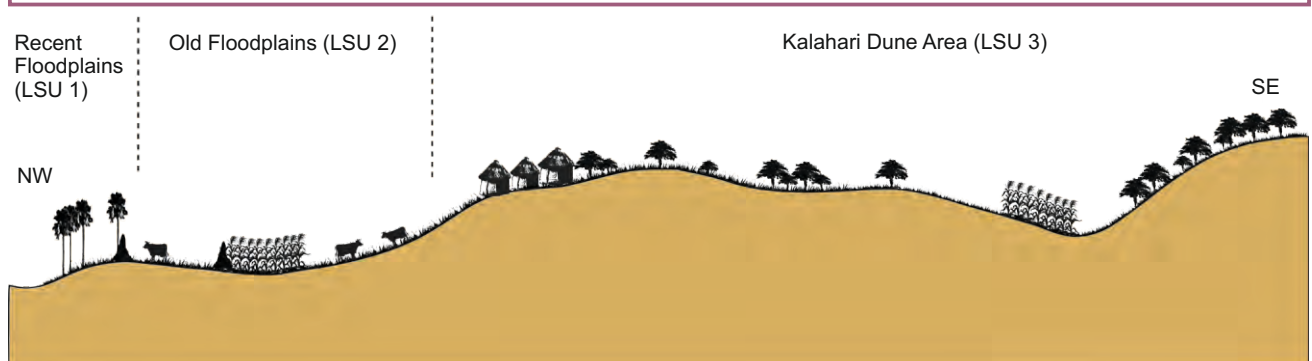
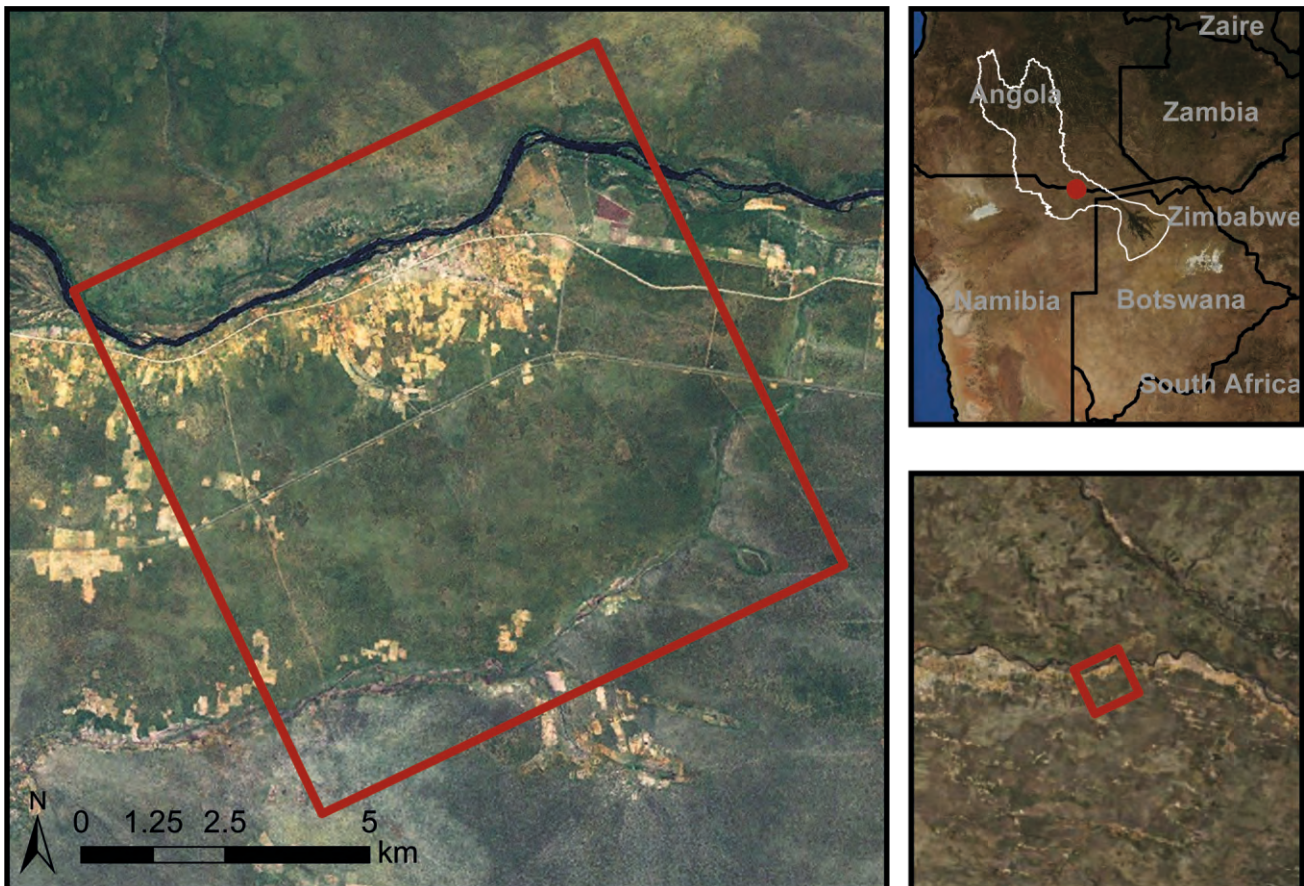


Fig. 2: Landscape catena of the core site Mashare.



**Fig. 3: Mashare core site at three scales. The white line depicts the Future Okavango Research Area (FORA) (background: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community).**

The landscape of the Mashare core site is characterized by the Okavango River that has cut its way through the vast Kalahari Dune Area. However, altitudinal differences between river and adjacent sandveld are small (about 30 m) resulting in short and gentle slopes mainly along the terraces of the river (Fig. 2). Land use directly reflects the opportunities offered by the landscape structure, being built-up of three main units (Tab. 1).

The river flows in large meanders through the **Recent Floodplains (LSU 1)**, a large strip of low lying lands at the valley bottom (and including islands within the river) which are periodically to episodically inundated. Typical sandy levees are built-up along the channels by recent river sediments. These conditions result in a diversity of abiotic properties and habitats. Gallery forests along the cliffline and on the levees have mostly been

destroyed by over-exploitation.

The **Old Floodplains (LSU 2)** are situated only a few metres above the Recent Floodplains. They developed in former times when the Okavango River bed was less incised in the landscape. These areas are structurally similar to the Recent Floodplains, however they are nearly flat and flooding only occurs during extraordinary high waters, if at all. Special features are calcretes in the subsoils caused by long-term accumulation of carbonates from the flowing groundwater and active, or remnants of, large termite mounds of *Macrotermes* species.

The landscape unit with the biggest extent is the **Kalahari Dune Area (LSU 3)**. Within the core site former dunes were eroded and leveled, leaving behind areas with different soil colour and dry riverbeds ('Omiramba'). The reddish-brown transition zone outlines the change

between substrates of fluvial and aeolian origin.

Depending on the water provision for household needs, the settlements have been placed on flood-safe positions in proximity of the river or at boreholes in the hinterland. The preferred areas for cropping are the more nutrient-rich, dark soils on the Old Floodplains as well as the soils in the transition zone. However, due to increasing demands even the poorer sandy areas are used for subsistence agriculture.

### Acknowledgements

This study was funded by the BMBF (The Future Okavango project). For details see authors' general acknowledgements in this volume.

Responsible authors: A. Groenroeft, J. Luther-Mosebach, L. Landschreiber, R. Revermann, M. Finckh, A. Eschenbach