Landscape Dynamics: A case study of the Confluence zone of the Shashe and Limpopo Rivers, eastern Botswana

Sarah Mantshadi Mothulatshipi
University of Botswana

The Shashe–Limpopo Basin (SLB) is a prehistoric landscape with an extreme and extraordinary dynamic environment and it is by no coincidence it has attracted a considerable amount of research attention that contributed invaluably to the understanding of socio-cultural and economic changes in Southern Africa. Research interest in this environmental setting has, however, remained heavily skewed and sites explicitly targeted for investigation were those which could offer insights in the development of social complexity, such as Mapungubwe and Great Zimbabwe (Fig. 1).

By employing a combination of practical methodological approaches this study demonstrates that the development of complex social formations represents settlement structures that epitomise interaction of both long and short-term cultural and economic processes and that the organisation of such structures is randomly distributed throughout the landscape. The focus here is on the part
of the SLB situated on the Botswana side at the confluence of the Shashe and Limpopo rivers (see insert on Fig. 1 above).

The application of remote sensing techniques, in particular aerial photography, reveals how the attributes possessed by the landscape dictated on the human land-use and management strategies at the confluence zone of the SLB. Essentially this approach has provided the background of this study and the results obtained shows how this area remained unexplored because of its geomorphological setting and the otherwise poor visibility of archaeological sites that could parallel in size and status neighbouring sites across the political boundaries (Fig. 2). The analysis of landscape attributes using GIS spatial and geochemical datasets on located sites suggests a significant influence by the terrain units on the type of activities undertaken. It is evident from the phosphate concentration variations at Tuli Circle 2, that there is variation in site activities and this therefore calls for a revisit to the long standing belief that white ‘patchy’ areas (or savanna glades) are cattle or animal enclosures (Denbow, 1979 and Payton, 2005).
Fig. 3 An aerial photograph showing the transects of soil sampling points running through Tuli Circle 2 subdivisions and a 100mx100m grid square presented on Figure 4 below.

Fig. 4 A GIS interpolated graph showing the concentration levels of phosphates for soil samples collected over a 100 by 100 metre grid.
It is evident that the fluctuating environmental conditions of the SLB, made human habitation of the floodplain problematic and restricted settlement and social organisation to its periphery largely on high ground and hill summits, whilst different parts of the floodplain terrain were exploited as water sources, cultivation and grazing resources which have left its landscape scarred with erosional gullies, pediments and track marks (Fig. 5) running in the direction of the rivers and their tributaries.

![Fig. 5 A dissected floodplain showing pediments and gully erosional surfaces as an indication of an active landscape in the past](image)

The results of this study are considered useful and they will indeed assist in fine-tuning existing knowledge, which is largely influenced by ceramic typologies, within this new conceptual framework of a landscape whose history is now better understood. In light of the proposed Trans Frontier Park, the techniques used in this research are crucial for the discovery and documentation of sites needed for regional policy formulation and development planning.

**References**