



## Notice of University Oral Examination

Geodesy and Geomatics Engineering

Doctor of Philosophy

# Boipuso Nkwae

**Monday, February 20, 2006**  
**Head Hall – ADI Room @ 2:00 pm**

Supervisor: Dr. Sue Nichols, Geodesy and Geomatics Eng.  
Examining Board: Dr. David Coleman, Geodesy and Geomatics Eng.  
Dr. Ian Methven, Centre for Property Studies  
Dr. Evie Plaice, Anthropology  
External Examiner: Dr. Chukwudozie Ezigbalike, UNECA, Africa  
Chair: Dr. Demetres Tryphonopoulos

### **Conceptual Framework for Modeling and Analysing Peri-Urban Land Problems in Southern Africa**

#### **ABSTRACT**

Customary periurban environments in southern Africa are facing many challenges, as can be seen in most countries in the region especially Botswana, Malawi and South Africa. The periurban land problems have continued to exist despite many land tenure and land administration attempts aimed at resolving the problems. There is a need to better understand customary periurban land problems in order to design improved intervention strategies to effectively meet the land tenure and land administration requirements in southern Africa.

This research developed a soft systems-based analytical framework to guide the analysis, modelling, design of land tenure and land administration options as well as the implementation to meet land tenure and land administration requirements in periurban areas of southern Africa. A problem highlighted in the study of periurban land problems is the lack of understanding of what the real issues are and the belief in the literature that the periurban land problems can be resolved by merely replacing customary tenure with a western-based statutory tenure system. The primary objective of this research is to help clarify and deepen understanding of periurban land problems often exacerbated by the misconceptions surrounding customary tenure. This was achieved by developing a non-prescriptive and intuitive soft systems-based analytical framework for analysing, identifying and designing strategies for meeting the land tenure and land administration requirements for periurban areas in southern Africa. The major conclusion is that a soft systems approach that incorporates different worldviews, goals, norms, cultures and interests of local communities, rigorously structures thinking about the periurban land problems.

The soft systems-based conceptual framework is developed by integrating concepts and theories from anthropology, cadastral studies/geomatics engineering, urban land economics, planning and soft systems engineering. The conceptual framework analyses the periurban land problems in three major phases: the institutional/cultural systems analysis phase, the operational systems analysis phase and the monitoring and control systems phase. Conceptual models are then developed from the issues identified in the institutional/cultural analysis phase. The comparisons of conceptual models with the real world situations stimulate debate about why the differences exist, and lead to the identification and evaluation of desirable and feasible strategies for meeting land tenure and land administration requirements in periurban environments.

The soft systems-based conceptual framework is tested by applying it to the periurban situation of Botswana in southern Africa. Comparisons are also made with periurban environments of Malawi and South Africa.