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**GEOGRAPHICAL INFORMATION SYSTEMS AND
NATURAL RESOURCE MANAGEMENT IN ZAMBIA**

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2010

**GEOGRAPHICAL INFORMATION SYSTEMS AND
NATURAL RESOURCE MANAGEMENT IN ZAMBIA**

**A dissertation presented in partial fulfilment of the requirements for a
Masters Degree in Environmental Management
at Massey University, Palmerston North, New Zealand**



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DEDICATION

To my mother ***Mary Tembo***

To the memory of my father ***Robin M. Mwape***

ABSTRACT

Natural resources play a critical role in the welfare of developing countries. In Zambia, even though its vast natural resources have been important to its economy as well as its people, their exploitation has resulted in severe land and environmental degradation in most parts of the country. Reliable information as to the exact extent and degree of natural resources problems is critically lacking. For effective control and management of these natural resources problems, timely, up-to-date, accurate and complete spatial data are needed.

The integrated application of Geographical Information Systems (GIS) and remote sensing to model natural resources management data, especially at regional level, is presented in this dissertation. Three case studies in Zambia are presented and free, internet-based, datasets are used to demonstrate the application of GIS to support natural resource management decisions in Zambia.

The results of the case studies show that while data-gathering obstacles remain in the use of GIS in Zambia, the systems can be used successfully to fill gaps in decision-making in natural resources management. The results of the case studies have been used to make recommendations as a way forward for the use of GIS and remote sensing data in natural resource management in Zambia. Finally, selected technical issues associated with data access, data incompatibility and data accuracy are identified as important areas of future research.

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