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RURAL POVERTY AND LAND DEGRADATION: A Determinant Study for Natural Resource Management in Marginal Lands of South Africa.

by

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DEDICATED

"To Kaka and all my forefathers,

grandfathers and grandmothers in the generation

of Gubhela ka Khabazela ka Mavovo, particularly

Agnes Sithombe, Salesia, Elijah Gingitshe, Dli, and Raphael

and all those I do not know but who brought me into this world".

NKOSI YAMI, NKULUNKULU WAMI, OYIKO KONKE KIMI

(St Francis of Assisi – patron saint of ecology)

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ABSTRACT

RURAL POVERTY AND LAND DEGRADATION: A Determinant Study for Natural Resource Management in Marginal Lands of South Africa

The study started with the "four tenets of conventional wisdom", namely: (i) marginal lands are defined in biophysical terms which establish them as having low inherent productivity for agriculture, being susceptible to degradation, and involving high risks for agricultural production; (ii) they support a high proportion of the rural poor, particularly the poorest of the poor; (iii) the combination of fragility and high density of poor people who place a premium on current consumption (resulting in over-exploitation of natural resources) leads to accelerated erosion or vegetation destruction. The consequence is a downward spiral of poverty and resource degradation with significant negative externalities; and (iv) the impact of agricultural research on agricultural productivity increase, environmental protection and above all poverty eradication has been limited in these areas. The thesis presented direct empirical verification of the relationship between poverty and land degradation; explored poverty information, land degradation, and investigated correlations and models of degradation. This provided the basis for data collection and analysis, enabled the description of rural populations, rural poor living on marginal areas, post-harvest activities employed and the institutional constraints, all of which could potentially contribute to poverty eradication on "marginal lands", defined using biophysical characteristics. The thesis concluded with the rejection of the first tenet and confirmed the subsequent three. It introduced the concept of "marginal areas" (MA) as areas where there are concentrations of marginal rural people and where its geographic location can be derived from a set of relatively homogeneous poverty related variables together with biophysical variables. No specific inferences could be drawn regarding potential poverty eradication gains from research investment on MAs, be that in the form of new technologies,

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farm and off-farm linkages in family survival strategies, or changes in policy and institutional frameworks likely to hinder poverty eradication. The study raises four key issues and recommendations, which will guide future research and resource allocation decisions for reducing poverty in these marginal lands.

Keywords:

Rural poverty, land degradation, marginal areas, favoured areas, poverty eradication, biophysical, soil degradation index, veld degradation index, combined degradation index and sustainability.

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LIST OF ACRONYMS AND ABBREVIATIONS

ARC	Agricultural Research Council
BMR	Bureau of Market Research
CBNP	Community Based Nutrition Programme
CCWR	Computing Centre for Water Research
CDI	Combined Degradation Index
CGIAR	Consultative Group on International Agricultural Research
CPR	Common Property Resource
DBSA	Development Bank of Southern Africa
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Mineral and Energy
DTI	Department of Trade and Industry
DWAF	Department of Water Affairs and Forestry
ENPAT	Environmental Potential Atlas
FL	Favoured Agricultural Lands
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GGP	Gross Geographic Product
GIS	Geographical Information System
HDI	Human Development Index
IARCs	International Agricultural Research Centers
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRAF	International Centre for Research in Agroforestry
IDT	Independent Development Trust
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
IPM	Integrated Pest Management
IRDS	Integrated Rural Development Strategy
LQI	Land Quality Indicators

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LUT	Land Use Types
LUZ	Land Use Zone
MA	Marginal Area
MAP	Mean Annual Precipitation
MAT	Mean Annual Temperature
ML	Marginal Land
NARS	National Agricultural Research System
NDA	National Department of Agriculture
NGO	Non Governmental Organization
NGS	Natal Group Sandstone
NRM	Natural Resource Management
OHS	October Household Survey
PCA	Principal Component Analysis
PDA	Provincial Department of Agriculture
PPIs	Priority Poverty Indicators
PSLD	Project Living Standard and Development
R & D	Research and Development
RDP	Reconstruction and Development Programme
REI	Rainfall Erosivity Index
SADC	Southern African Development Community
SDI	Soil Degradation Index
SMMEs	Small, Micro, and Medium Enterprises
TVBC	Transkei, Venda, Bophuthatswana and Ciskei
UNDP	United Nations Development Programme
UNEP	United Nations Environmental programme
UNNCD	United Nations Convention to Combat Desertification
USLE	Universal Soil Loss Equation
VDI	Veld Degradation Index
WTO	World Trade Organisation