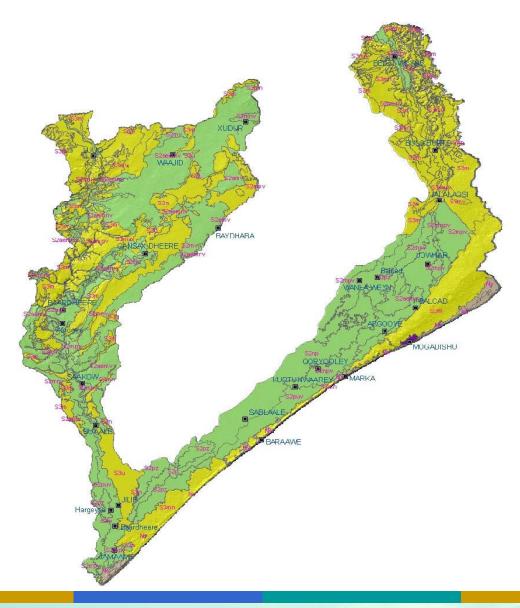


# Land Suitability Assessment of the Juba and Shabelle Riverine Areas in Southern Somalia



Project Report No L-09 July 2007







## **TABLE OF CONTENTS**

## **List of Acronyms**

## Acknowledgment

1	INT	ROD	DUCTION	1
2	STU	JDY A	AREA	1
	2.1	Loca	tion and delineation	1
	2.2	Clim	ate	2
	2.3	Geol	ogy/Lithology	5
	2.4	Land	form and Soils	6
	2.5	Land	cover	б
	2.6	Land	Use	6
	2.6. 2.6. 2.6. 2.6.	2 3 4	Rainfed Agriculture	8 9
	2.7	Popu	ılation	12
3	MA	TERI	ALS	. 13
	3.1	Land	Resources data	13
	3.1. 3.1. 3.1. 3.1.	2 3 4	Simplified Soil Grouping for Land Evaluation  Length of Growing Period (LGP) and rainfall variability  Temperature classes  Simplified Landform information for Land Evaluation  Simplified Landcover information for Land Evaluation	13 13
4	ME	гног	os	. 19
	4.1	Som	alia Automated Land Evaluation System (SOMALES)	19
	4.1. 4.1. 4.1. 4.1. 4.1. 4.1.	2 3 4 5 6	Objectives and principles of land evaluation	21 21 26 27
5			S	
	5.1		suitability for rainfed agriculture	
	5.2		suitability for irrigated agriculture	
	5.3		suitability for extensive grazing (pastoralism)	
	5.4		suitability for forestry	
	5.5	Com	parison of suitability for the major types of land use	59
6	FUE	THE	R DEVELOPMENT OF LAND EVALUATION PROCEDURE	61

7 BIBLIOGRAPHY 6	
List of Annexes	
ANNEX 1: Resource Base Units	66 67 68 69 70 72 86 95
List of Tables	
Table 1: Crop calendar for Rainfed Agriculture Table 2: Crop calendar for Irrigated Agriculture Table 3: Regions, districts, and their populations (Somalia UNDP 2007, draft) Table 4: Simplified soil classes for land evaluation Table 5: Soil characteristics used for land evaluation Table 6: Length of longest LGP and rainfall variability during that Growing Period Table 7: Total LGP and annual rainfall variability of the 15 LGP Zones of Somalia Table 8: Mean annual temperature classes for Somalia and correlation with altitude zones Table 9: Simplified relief classes for land evaluation Table 10: Slope classes for land evaluation Table 11: Aggregated landcover classes of study area for land evaluation Table 12: Diagnostic Land Qualities for various major types of land use Table 13: Land Use Types Table 14: Land suitability for Rainfed Agriculture. Table 15: Land suitability for Rainfed Agriculture (summary) Table 16: Land suitability for Irrigated Agriculture (summary) Table 17: Land suitability for Irrigated Agriculture: with & without soil fertility improvement Table 19: Land suitability for Extensive Grazing Table 20: Land suitability for Extensive Grazing (summary) Table 21: Land suitability for Forestry Table 22: Land suitability for Forestry Table 23: Summary of tree species suitable for various environments and uses Table 24: Overview of land suitability for major types of land use	9 12 14 15 16 16 17 18 18 24 23 33 42 43 49 57 58 60
List of Figures	
Figure 1: Study area	3 5
List of Maps	
Map 1: Land Use of the Juba and Shabelle Riverine areas	22 29 31 36 38 40 45 47 51 53

#### List of acronyms

ALES Automated Land Evaluation System FAO Food and Agriculture Organization

FSAU Food Security Analysis Unit

GIS Geographical Information System

GP Growing Period LC Land Characteristic

LGP Length of Growing Period

LQ Land Quality

LUR Land Use Requirement

LUT Land Use Type

masl meters above sea level

P Precipitation

PET Potential Evapotranspiration

RBU Resource Base Unit

SOMALES Somalia Automated Land Evaluation System

SWALIM Somalia Water and Land Information Management

UNDP United Nations Development Programme

#### **ACKNOWLEDGMENTS**

The authors wish to acknowledge the considerable support given by the Project Task Force.

Thanks should be addressed to Prof. Musse Shaie Alim for his contribution in the crop requirements and the validation of the results.

Finally we want to express our acknowledgment to all technical and administrative SWALIM staff, especially to Antony O. Ndubi for his valuable work in the edition of the maps.