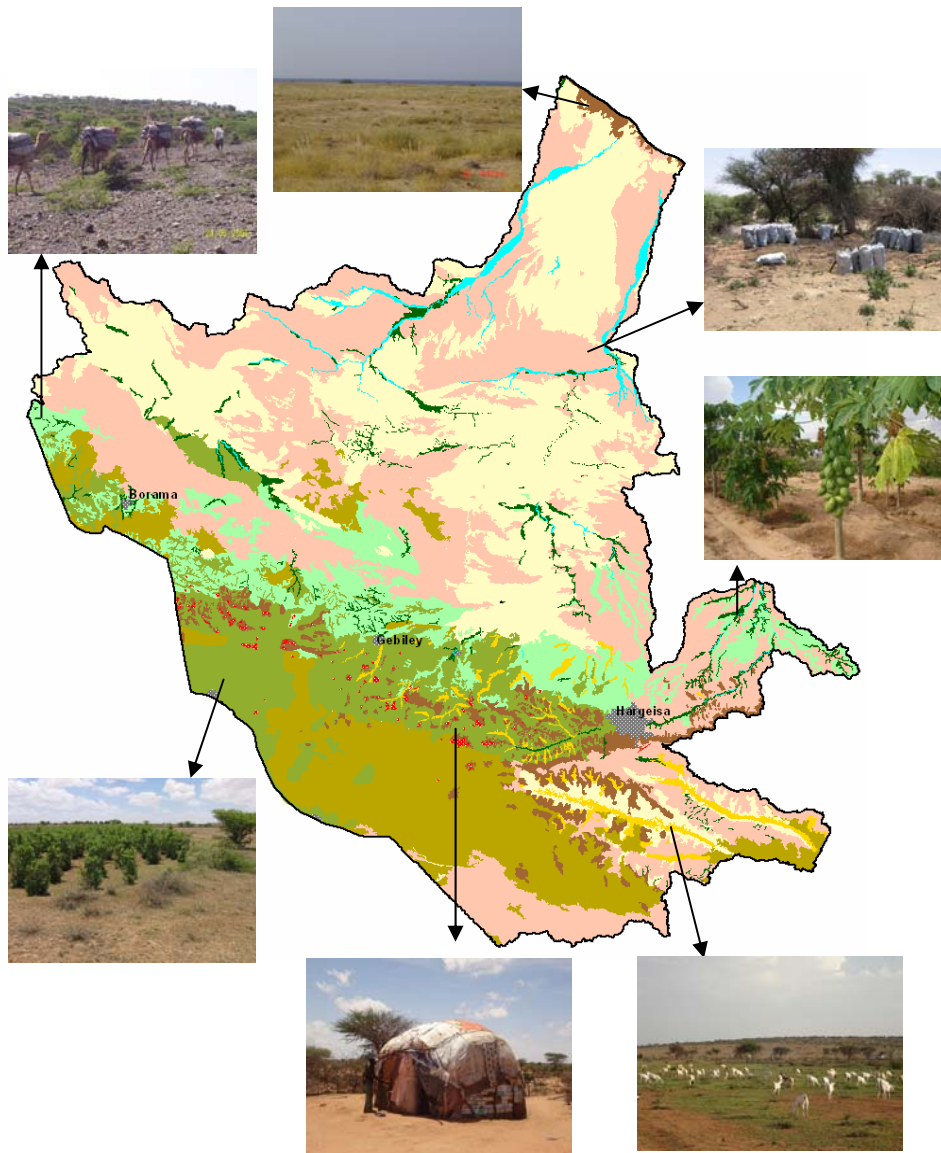


## Land Use Characterisation of a Selected Study Area in Somaliland



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Somalia Water and Land Information Management  
Ngecha Road, Lake View. P.O Box 30470-00100, Nairobi, Kenya.  
Tel +254 020 4000300 - Fax +254 020 4000333,  
Email: [enquiries@faoswalim.org](mailto:enquiries@faoswalim.org) Website: <http://www.faoswalim.org>.



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## LIST OF ACRONYMS

EC	European Commission
FAO	Food and Agriculture Organization of the United Nations
FSAU	Food Security and Assessment Unit
GIS	Geographic Information Systems
GPS	Global Positioning System
LADA	Land Degradation Assessment in Drylands
SWALIM	Somalia Water and Land Information Management
UNDP	United Nations Development Programme

## 1 INTRODUCTION

Land use may be defined as the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. This definition of land use establishes a direct link between land cover and the actions of people in their environment (Di Gregorio & Jansen, 2005). Land use surveys provide spatially defined information for land management, usually in the framework of rural development planning and decision making.

There is a growing concern over the degradation of natural and agro-ecosystems. In this case, land use studies form the basis for analysis of the causes leading to degradation of agro-ecosystem outputs, or deterioration of a natural ecosystem.

A prerequisite for improved land use is information on existing land use patterns and land use through time (Anderson *et al*, 1976). Such information is needed by legislators, planners, and state and local government officials to determine better land use policies, to project transportation and utility demands, to identify future development pressure points and areas, and to implement effective plans for regional development.

A land use policy is clearly of importance to many countries. It is important for nations and governments to know how much land and of what quality does a country and its provinces contain, which crops or other plants or trees can be grown on different kinds of land in different places, whether irrigated or rainfed, how potential yields vary from place to place and from season to season, and how many people can land support at different levels of production cost and with different management techniques.

This information can be used to assist in making wise choices about land use, determining where best to locate new settlements, cropping, drainage, irrigation, where and when to apply new technologies, to explain spatial and temporal variations in output, and to respond to many other questions about management, use and conservation of the natural environment (FAO, 1990).

Several techniques may be used to map land use. However, in the case of the present study areas the situation is complicated by a lengthy civil war, insecurity and landmines making field observations difficult. Available information for the study area is old and patchy, and the only available natural resource inventory is one that was carried out by SOGREAH in 1981.

The present study combines the scientific research techniques of GIS and remote sensing as mapping tools, accompanied by ground observations involving site-specific semi-structured interviews with local people familiar with the area and contact with local organizations. Interviews and discussions with local farmers and herdsmen were not only necessary for the collection of socioeconomic land use data, but were also very fruitful in the land use characterisation from technical and ecological perspectives.

A variety of land use characterisation methods suitable for various planning objectives were possible, although each scheme has its limits. Automatic inference of land use information from land cover is problematic given the complex area-specific relationship between land cover and land use. Satellite remote sensing, used alone, currently offers limited possibilities for routinely providing comprehensive agricultural land use information, including important land management aspects (George & Petri, 2006). Land management information is generally scarce and, when available, is usually aggregated over large geographic regions, thereby diminishing its suitability for land characterisation. George and Petri (2006) propose a framework that integrates remote sensing-derived data with other complimentary land use datasets. Characterisation elements can be grouped into three main categories: resources base, land use purpose

and management, and the socioeconomic setting. The current study follows this scheme, with some slight modifications.

The resource base-map was obtained through interpretation of satellite remote sensing data to produce a land cover map of the study area, which was then used as the basis for mapping land use. Sample polygons were selected and visited for land-use management and limited socioeconomic setting characterisation. The results included a land use map and a table (legend) with a description of the 13 land use types occurring in the area.

The land use classes, in their order of dominance, were as follows:

- Transhumance Pastoralism/Sedentary Pastoralism/Wood Collection
- Transhumance Pastoralism/Sedentary Pastoralism
- Transhumance Pastoralism/Rainfed Agriculture/Wood Collection
- Rainfed Agriculture/Sedentary Pastoralism
- Transhumance Pastoralism/Rainfed Agriculture
- Sedentary Pastoralism
- Transhumance Pastoralism/Irrigated Orchards
- Hay Production/Rainfed Agriculture
- Transhumance Pastoralism/Hay Production/Wood Collection/Rainfed Agriculture
- River Bed
- Urban Area
- Rural Settlement
- Airport

## 1.1 Objectives

The overall objective of the study was to characterise and map current land use in the Dur-Dur and Gebiley area of Somaliland, also referred to as the Northern Area of Interest (NAOI). Specific objectives were:

- a. To assess, classify and map the present use of the land.
- b. To analyse the causes and reasons underlying the present land use situation by means of technical assessment and the use of rural appraisal techniques.