



Tropentag, September 16-18, 2015, Berlin, Germany

“Management of land use systems for enhanced food security:
conflicts, controversies and resolutions”

Livelihood Transformation as Influenced by Socio-Environmental Changes and its Impact on Food Security among Small Producers of the Red Sea Zone of Eastern Sudan

ABDELAZIZ GAIBALLA, NANCY IBRAHIM ABDALLA

Sudan University of Science and Technology, Range Science, Sudan

Abstract

Eastern Sudan is dominated by semi-arid climate especially along the Red Sea coast and western plains of The Red Sea hills. It is also characterised by low and erratic rainfall. In this area Beja tribes are the main inhabitants, raising livestock mainly camels (*Camelus dromedarius*) as a main livelihood activity, that contributes significantly to income and food security. Camel pastoralism is historically known to be adaptable and greatly linked with the rural livelihood activities. The prevailing land uses and socio- environmental changes have greatly disturbed the existing livelihood pattern.

The study objective was to assess the impact of livelihood transformation on food security and environmental sustainability among the small producers at Red Sea coast.

The methodology assessed recent and past land uses, beside assessment of browsing resources and characteristics including mangrove trees. GPS loggers were used for tracking camels browsing at selected mangrove forests. It also included socio-economic survey using questionnaires among pastoralists within two selected rural clusters, investigating mainly livelihood changes.

The results indicated that, irrational land uses, climate variability and change greatly contributed to disturbance of the rural livelihood of the Beja tribes. Terracing for farming between the coast and western hills has greatly affected the mangrove (*Avicenna marina*) habitat, by blocking of rainfall water running to the sea. Urbanisation as harbor expansion, growing tourism investments and increasing numbers of salt ponds along the coast greatly disturbed livelihood activities that already have witnessed a transformation towards more marginal livelihood activities

The study identified some sustainable livelihood practices that are sustainable and need promotion, while others are unsustainable and need to be managed. Camel browsing on mangrove is not continuous all over the year; since more than 80% of camels go to the western plains in summer. The increasing market of camel milk motivates more herders' to increase their herds. Decreasing of preferred rangelands plants and the wide spread of mesquite tree (*Prosopis juliflora*) which invaded the area are urgent issues that need handling. Corridors along the coast are needed for browse access. In addition to these, sustainable conservation means and management plans for mangrove trees are required.

Keywords: Camel herding, food security, land use, livelihood, rural livelihood, socio environmental changes