Assessment of vegetation cover status in dry lands of North Kordofan State, Sudan, using social and terrestrial data

Mohammed Hamed Mohammed¹, Suzan Abdelrahman Elelaigy² and Hassan Elnour Adam¹

¹Department of Forestry and Range Sciences, Faculty of Natural Resources and Environmental Studies, University of Kordofan, 51111 Elobeid, Sudan
²Forests National Corporation, North Kordofan, Sudan

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The current study was conducted in 2015 in Bara Locality, North Kordofan, Sudan. The study area has experienced recurrent drought spells since 1970s of the past century. Consequently, desertification and desert encroachment have threatened thousand hectares which once upon a time considered as productive areas as far as crops, trees, rangelands and biodiversity aspects are concern. The main objective of this study was to assess the vegetation cover status in the area. The study was based on qualitative and quantitative data to accomplish the above mentioned objective. In qualitative data, household survey was conducted in which 100 respondents were randomly interviewed on issues related to vegetation cover past and current status in the area. Quantitative data were collected using terrestrial inventory and satellite imageries. In terrestrial inventory, coordinates of 22 points, randomly distributed in the area, were recorded using GPS. In each point, tree species by number was inventoried within an area of 1 hectare. Remote sensing data, covering the target study area, were acquainted using LANDSAT5 imageries (2014) with spatial resolution of 30x30 m. Remote sensing data were preprocessed, classified and assessed. The obtained data was subjected to analysis using Statistical Package for Social Science (SPSS) and Microsoft Excel. Results of the household survey revealed that only 13 shrub/tree species as mentioned by 45% of the respondents, while only nine woody species were identified, belonging to eight families, from terrestrial inventory. Almost all of the sample households prefer to plant Acacia senegal (Hashab), 66% for Ziziphus spina-christi (Sidr) and 45% Azadirachta indica (Neem) in their homeland and/or farmlands. The household survey showed that 45% of the respondents indicated that vegetation cover was in good condition 20 years ago. The study indicates that linking between data obtained via social survey and terrestrial
data supported by remote sensing techniques is an efficient approach for assessing vegetation cover in dry lands of the Sudan.