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“Bridging the gap between increasing knowledge and decreasing resources”

The Role of Advanced Technique in Natural Resources Assessment

MUSTAFA MAHMOUD EL ABBAS, ELMAR CSAPLOVICS, TAISSER H. H. DEAFALLA

Technische Universität Dresden, Dept. of Geosciences, Germany

Abstract

Despite the several series of world summits, transnational advocacy, and scholarly studies, we haven't sufficiently investigated negative environmental and social outcomes as explicated by the deadlock of natural resources extinction crisis. There are several challenges faces the natural resources management in developing countries, which imposes the need for well-designed information systems and management plans. To cope with this issue, spatiotemporal earth observation (EO) data were used to update LU/LC information with needed precision and in cost-effective manner. Time series Object-Based (OB) image analysis approach was applied to generate accurate LU/LC maps during the period 1990 to 2010. The method adopted in this research involves cross operation of classified maps to precisely delineate the change areas with semi-automation process. Aggregated to the community-level, the study utilised a well-designed questionnaire to address the driving forces associated with the change dynamics. The present study exhibits a great potential for accurate LU/LC change detection with OB post-classification technique. Additionally, it reveals strong capability of the adopted method for gaining knowledge about the change dynamics and its drivers. At the community level, the study indicates the disregarding of customary laws led the local community no more look at the forests as their own, and thus have commenced to practice all their activities as illegal, causing a rise in the rate of deforestation. Furthermore, the results of the combined analysis revealed that the mechanised agriculture was the major force of deforestation. In sum, creating enabling strategies based on innovative approaches is essential component to advance the natural resources management and planning in the area that seriously looking for better economic opportunities than were available.

Keywords: Natural resources management and planning, semi-arid region, time series analysis