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Driving factors of landscape transformation in Abaya-Chamo sub basin, Southern Ethiopia

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Abstract

The human-induced land use land cover change dynamics have extensively changed regional and local landscapes for the several decades. Land use change is typically a function of a selection of different socioeconomic and biophysical variables by different agents. The agro-ecology of Abaya-Chamo sub basin multiplied by the two big rift valley lakes resource played a big role in the transformation of the landscape. Thereby this contribution will highlight how different stakeholders on a landscape has transformed the Abaya-Chamo sub basin of Southern Ethiopia in the last 30 years. Moreover modelling the decision factors of land use changes at smallholder farmers’ level and at a higher policy makers’ level is of higher importance to convey collective action of active stakeholders in transforming landscape. At various scales several driving forces have different influences on the land use system. Between 1991 and 2021, 10.3 % of the shrub and grasslands of Abaya-Chamo sub basin has been converted to other land uses whereby farm land has taken the largest share in this transformation which has expanded by 7.99 %. During the last 30 years, forest land slashed by 0.49 % and barren land in the sub-basin increased by 0.46 %. The irrigation potential of the area contributed to higher rural urban migration and increased the built up area share of the land cover by 1.16 % in the last 30 years. The settlement in the surrounding resource has been the major driving factors in the land use land cover change of the area through larger conversion of shrub and grasslands to other land uses. The drivers of landscape transformation are economic, political, cultural, demographic and technological forces that influence the decisions of agents involved in transforming landscapes. Modelling the different decision factors of the land use at smallholder farmer level contributes towards farm diversification in agro-ecology practice. Hence the transformation of the landscape contributes to the livelihood of the local community. Furthermore, considering land use decision factor at higher policy makers’ level contributes towards amalgamation of different stakeholders actively involved on landscape transformation.

Keywords: Decision factors, diversification, land use, landscape, transformation