

# ***The Impact of Larger-Scale Agricultural Investment in Ethiopia, Gambella Region***

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## **Socioeconomic and Environmental Impacts of Large-Scale Agricultural Investment in the Gambella Region of Ethiopia**

The Ethiopian government uses agricultural investment as one of its most important and effective strategies for economic growth, food security, and poverty reduction in the country. Since the mid-2000s, the government has awarded millions of hectares of fertile land to foreign companies. This study explores the impact of large-scale agricultural investment, and its consequences for the livelihoods of local people in the Gambella Region of Ethiopia. The survival and identity of the Gambella people are strongly tied to the land and the rivers that run through it. However, foreign and local investors are currently seizing farming areas on an industrial scale, which destroys the Gambella people's livelihoods and increases food insecurity. Moreover, large-scale land acquisition has caused tremendous environmental devastation in the region, such as deforestation, biodiversity depletion, and the draining of wetlands. Meanwhile, people are largely dependent on international food aid and financial assistance. Large Scale Land Acquisitions (LSLA) has also led to forced displacement and "villagization": smallholder farmers have been displaced, pastoralists have lost their grazing lands, and local people have lost their income and way of life. Lastly, due to land corruption, lack of good governance, and transparency in the region, natural resources have become depleted and food supplies have become unstable. Therefore, the Ethiopian government's strategies are on the verge of failing unless an integrated approach is implemented.

## **Land Use Change Detection Analysis in the Gambella Region of Ethiopia Using Satellite Remote Sensing and GIS**

Recently, there has been an increasing demand for large-scale farm investment. This expansion has resulted in unprecedented changes in land use/cover. Gambella is one of the regions in Ethiopia that attracts large-scale agricultural investment, and this rapid investment growth has caused land use/cover changes in the area. The aim of this study is to quantify and analyze the land use/land cover change in the region and compare land use/cover changes over a span of 30 years, from 1987 to 2017. The analysis will be based on LANDSAT 5 and Sentinel 2A satellite images and fieldwork. For supervised maximum likelihood land use/cover classification, in 1987 a LANDSAT Thematic Mapper was used at a resolution of 30 m, and in 2017, a Sentinel 2A image was used at a resolution of 10 m. The results indicate that during the last three decades, decreasing and increasing land use/cover changes were observed in the land use/cover pattern. A change detection matrix also shows that land use/land cover changes from one land class to another. In general, the land use/cover changes in the Gambella region will be discussed in relation to underlying socioeconomic factors.