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“Development on the margin”

## Agriculture and the Rural-Urban Continuum — GIS-based Analysis of Urban and Periurban Agriculture in Moshi, Tanzania

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### Abstract

As shown by a wide range of research activities within the last years, urban and periurban agriculture can contribute to the overall food security of cities in Africa. Furthermore it shapes the socio-economic situation of urban and periurban farmers as well as it plays an important role in the spatial development and planning efforts in cities. Even though research on this topic has grown recently, there still is a notable bias on capital cities and the main economic centres while medium-sized cities have been widely neglected.

This case study concentrates on the changes of the importance of urban and periurban agriculture along the rural-urban continuum in medium-sized Moshi, a municipality of about 180.000 inhabitants located on the foothills of Mt. Kilimanjaro, Tanzania. A twofold approach was applied to get a comprehensive data set on the importance of agriculture for the livelihoods of Moshi's inhabitants on the one hand and to get data about the change of land use patterns along the rural-urban continuum on the other. Therefore four transects from the city centre to the periurban areas of Moshi have been identified, each eight kilometres long and a hundred meters wide. Within those transects, a GIS was applied to sample about 400 households that were interviewed with a standardised questionnaire to assess the importance of agricultural activities for the individual households. Secondly, the land use patterns within the transects were mapped using high-resolution satellite imagery and *in situ* methods. After combining the geocoded household data and the information on land use in a GIS, a comprehensive Agricultural Activity Index could be developed for every respective scale unit along the continuum. In a next step, the index values were spatially analysed using other spatial information such as construction activity and social data (*e.g.* household income, household assets, tribe) in order to identify correlations. Supported and visualised are these findings by a GIS-based analysis of the gradient of agricultural activities from the city centre to the surrounding areas.

**Keywords:** Agricultural activity index, geographic information system, Moshi, rural-urban continuum, urban and periurban agriculture