

Soil Erosion Risk Assessment – The catchment of the Thiririka River, Gatundu South, Kenya

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Study area

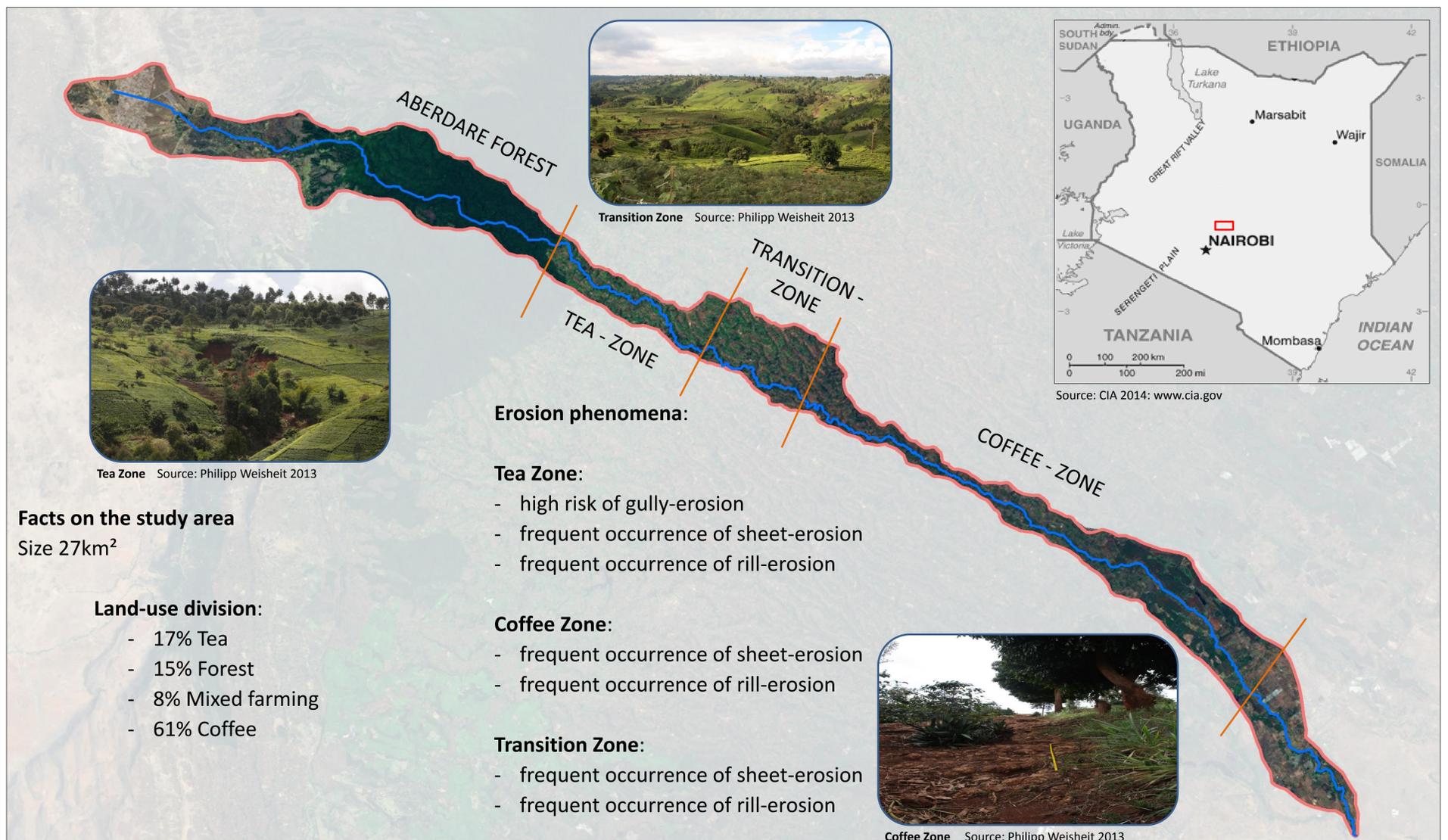
The study area (~ 27km²), the catchment of the Thiririka River – Gatundu South is located in the Central Province of Kenya, 40km to the north of the metropolitan area of Nairobi. The main industries are textile production and horticulture in the urban areas of the catchment while the rural areas are mainly driven by agriculture. With Nairobi's population growing rapidly, a large part of the south-eastern catchment is suspect to functional urbanisation.

Objectives and Methods

The study aims to identify the hotspots of soil erosion in the catchment. To archive this we have to determine the different risk-levels of soil erosion. Therefore quantitative interviewing with farmers on their knowledge of soil erosion has been carried out. Furthermore, the land-use of the catchment has been mapped as well as a detail mapping on soil erosion phenomena at four sites. Soil samples have been taken for further analyses on the soil erodibility.

Practical Utility

Soil erosion has the potential to lead into the degradation of the ecosystem function – the decrease of agricultural productivity and the displacement of human populations. Therefore, it is important to identify the drivers of soil erosion and to determine the different-risk levels in the catchment to achieve a sustainable managing development.



Source: Philipp Weisheit 2013

First Results and Outlook

The mapping showed that the vast majority of farming activities is done by small scale farmers with only few larger farms. This can be seen particularly in the "Tea-Zone" upstream where there are no large scale farms at all. Typically field fruits for own usage are grown and cash crops (coffee, tea) are added depending on the farms acreage. The most common erosion phenomena are rills and sheet erosion through all the zones. The development of gullies is mainly limited to the "Tea Zone" induced to the

steepness of the slopes. The interviews showed that the farmers are aware of the soil erosion problem. Terraces are therefore the main measures which are applied to control soil erosion. However the majority of the farmers are not able to take care of them. The argument is, that it is too costly to repair or to take care of it. To put the collected data in perspective, the soil erosion risk has to be calculated. What allows us to define zones with high, medium and low risk in the catchment and furthermore a sustainable management.