People's Relationships with Natural Resources in Tanzania
—A Case Study of Charcoal Production—

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Place of Fieldwork: Tanzania
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●Research background

In Tanzania, forest resources, such as firewood and charcoal, are used as the main energy resources. In urban areas, electricity and gas are used instead; however, as they are expensive, only a few people can afford these types of energy resources. With population growth and changes in housing, utilization of charcoal has recently increased. Despite this, in rural areas, charcoal production crucially contributes to financial resources. As the demand for charcoal has risen, deforestation has become a serious problem.

●Research purpose and aim

If a forest is managed effectively in a use cycle, sustainable charcoal production might be possible. The intention of this research is to generate a deep understanding of the system of charcoal production and utilization in the villages, and therefore examine the sustainability of the forest. I especially focus on people living in suburbs that produce and use charcoal for themselves. Furthermore, I study the relationship between tree species and charcoal quality, which is connected to the changes in the forest's vegetation.

●Results and achievements of fieldwork

I carried out my research in the M hamlet of Kilosa town in the Kilosa District, (Figure 1), where the production and consumption of charcoal is significant. Previously, people living in this area used to sell vegetables; however, since 2000, the demand for charcoal has increased, and so the number of people producing it has also risen. Currently, almost every living there is involved in charcoal production.

From my observations, it seems that two kinds of kilns (local name, *tanuri*, seen in Figure 2) are used, namely the *Dogoli* style and the *Box* style, and the use of each type depends on the tree species being processed. Trees such as *Combretum imberge* or *Acacia goetzei* that have a dense and hard trunk require use of the *Dogoli* kiln. On the other hand, trees with soft rather than dense trunk calls for use of the *Box* kiln. The tree's diameter is around 15cm at the level of a person's chest.

Drawing on data collected in interviews conducted with 19 producers, I found that 21 species of trees are used in the production of charcoal. *Pericopsis anglolensis* was previously the main tree species used as it provided high-quality charcoal. However, because of a shortage in the availability of this tree, produces began to use more than 10 other lower- quality tree species. Charcoal produced from these trees has low volume and density, and it sparks, crumbles easily, burns quickly, and produces much smoke and ash. The trees used in charcoal production are also used for medicine or construction; therefore producers fear that there may be shortage of trees that might lead to a decrease in their standard of living.

Figure1: Photo of the view from a hill in M hamlet

●Implications and impacts for future research

In order to understand what effects the production and sale of charcoal have on the forest resources of M hamlet, I will research the vegetation of this area and attempt to determine the distribution of the tree species that are used in the production of charcoal. I will also investigate the length of time needed for a tree to regrow. I will study relationships between the species of the trees used and the characteristics of resulting charcoal. Finally, I will investigate the manner in which consumers purchase and use charcoal. By gathering this information, I hope to contribute perspectives on how to maintain the sustainability of charcoal in the study site area. In order to conduct this important work, I intend to improve my Swahili even more so I am able to be effective in my research activities.

Figure 2: Photo of a *Box* kiln (*Box* style)

Figure 3: Photo of a sack of charcoal