

The changes in the use and management of agroforestry-parkland in north-central Namibia

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1. Introduction

The characteristic vegetation, parkland landscape, was formed in some rural areas of arid lands in Africa and maintained through the use of trees and the social relationships related to such uses. Tall trees are sparsely distributed inside of crop fields, which is called "farmed parkland" or "agroforestry parkland". The land use of farmed parkland is combined with crop farming and tree uses, and it is classified as one category of agroforestry. Using land in multiple ways is expected to be a major part of solving the issue of land degradation in arid lands and empowering local people through their selling of non-timber forest products. These agroforestry parkland landscape have changed related with livelihood and social changes, land owning system and penetration of market economy in some areas. This presentation aims to clarify the mechanism of forming agroforestry parkland in the society of Owambo agro-pastoralists in north-central Namibia, and examine the recent changes in the use and management of trees with land enclosure and social changes.

2. Methods

The data were obtained from fieldwork undertaken in U village in suburban area of north-central Namibia. To clarify how natural resource uses has changed, I interviewed homestead owners and their wives in 30 households of U village and surveyed the economic conditions of the households. The locations of homesteads, fields, trees, and fences were recorded using the hand-held receiver of a global positioning system (GPS). Besides, aerial photos which were taken in different years were compared to analyze vegetation change in the village.

3. Result and Discussion

(1) The vegetation around former kingdom include the U village was different compare with dominant vegetation type in this area, mainly consisting of indigenous fruit trees. Doum palms (*Hyphaene petersiana*) and marula trees (*Sclerocarya birrea*) were main species in the vegetation, and more than half of individuals grow inside of crop field. The main factors of formation of this vegetation were custom law about tree uses, conservative relation to trees by local people and ownership of trees by traditional authority.

(2) From the analysis of aerial photos, the number of trees have increased from 1970 to 1996. The result of vegetation survey, however, the ratio of young trees were low. The reasons were the mechanization of agriculture and removing of young trees from crop field by farmers because of increase the enough area of crop field.

(3) In recent years, the differences of the management ways of trees among households were remarkable. The role of traditional leaders in resource management include land and trees have changed especially around independence 1990, the tree use and management methods have also changed in each household. Then the households choose the different strategies of tree management such as increase the number of fruits trees or decrease them, then the vegetation of farmed-parkland have changed in heterogeneity.

Keywords: agroforestry, tree use, communal uses, land privatization, arid land