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ISBN: 978-9987-615-27-8

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Research Report 08.3

Bamboo Trade and Poverty Alleviation in Ileje District, Tanzania

Milline Jethro Mbonile

RESEARCH ON POVERTY ALLEVIATION

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Published by:
Research on Poverty Alleviation, REPOA
P. O. Box 33223, Dar es Salaam, Tanzania
Plot 157 Migombani Street, Regent Estate.
Tel.:+255(0)(22) 270 00 83
Fax:+255(0)(22) 277 57 38
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Website: www.repoa.or.tz

Design:
BLACKFIN LIMITED
P. O. Box 78877 Dar es Salaam, Tanzania
Plot 59 Taasisi Street, Warioba Road, Mikocheni B.
Tel.:+255 (0)(22) 2780422

Suggested Citation:
Mbonile, Milline Jethro
ÔBamboo Trade and Poverty Alleviation in Ileje District, Tanzania.Õ
Research Report 08.3, Dar es Salaam, REPOA

Suggested Keywords:
Tanzania, bamboo trade, poverty, agriculture, environment, sustainable resource, environmental management, migration

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ISBN: 978-9987-615-27-8

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Acknowledgements

This work is the result of several people who, directly or indirectly, contributed something towards the completion of this study. Firstly, I would like to thank Research for Poverty Alleviation (REPOA) for funding this study. Secondly, I would like to thank the University of Dar es Salaam, the Mbeya region and the Ileje district administration, for granting me research permits. Special thanks go to Mr Ulimbakisya Shimwela, Ileje District Executive Director, who helped me to choose the areas for research and provided some logistics when the research group had transport problems. Special thanks should also go to the Isoko Hospital, which provided accommodation and transport when there was a strong need to place the researchers in the study area. Last but not least, I would like to thank my research assistants Ms Evelyne Shipela, Miss Mary Mwakasala, Miss Silipha Kapinga and Mr T. Mwashusa, who tirelessly collected field data and I would like to thank Mr Z. Kambele, for entering the data into the SPSS Programme.

Milline Jethro Mbonile

(March 2006)

Executive Summary

This study investigated the relationship between bamboo economy and poverty alleviation in the Ileje district. In order to alleviate poverty, the households in the Ileje district have resorted to the exploitation of bamboo to produce various commodities that are marketed throughout the country and abroad. Other strategies used to alleviate poverty include out-migration (emigration from the area), intra-trade and the introduction of new crops. These poverty alleviation strategies have been used in other periphery districts in the country, such as Ludewa, Makete and Kasulu.

The main bamboo goods producing areas in Ileje district are located in the Ikinga, Kafule and Malangali wards. The population is concentrated under 40 years and marriage is almost universal. The average household size is about 4.1 people per household and most members of the households are primary school leavers. Agriculture is the main activity and other activities include lumbering, trade and fishing. Also, as a periphery district there are few workers such as teachers and health workers.

In the past, bamboo goods were exchanged for food crops such as rice. Also, the mass production of bamboo goods is a recent development because it began after trade liberalisation in the mid-1980s. The major sources of bamboo are the forest reserves and small plots planted near the households. These sources of bamboo are dwindling with time, due to poor methods of harvesting the bamboo and lack of proper replanting programmes.

The goods produced from bamboo include winnowing baskets (nyungo) and baskets (kikapu). A few villages have diversified into producing bamboo wine as a means of alleviating poverty. The skills for making bamboo goods have been inherited, or acquired through training by neighbours, or bamboo traders. Most of the bamboo goods are made during the dry season when the villagers are relatively free from agricultural activities. There is a clear gender division of labour in bamboo goods production, but the division of income accrued from the trade is not clear.

The bamboo goods are marketed within the district, Mbeya region and other regions in the country, including Zanzibar. They have also managed to export to markets abroad, especially to neighbouring countries such as Zambia and Malawi. In order to maximise profit, the bamboo goods are tied in big bundles that can be easily loaded on to lorries or buses and trains.

As hypothesized, there is a strong relationship between bamboo trade and poverty alleviation in the district, because households engaged in bamboo trade have acquired farms and have invested in modern houses, shops and milling/sewing machines. The per capita income of households engaged in bamboo trade is better than those households that are not engaged in bamboo trade.

Again it was hypothesized that bamboo trade could lead to the sustainable management of resources in the district. Sustainable management of resources would occur if concrete measures of propagating and harvesting bamboo sustainably were introduced. So far there is no co-ordinated programme of replanting bamboo after harvesting and due to commercial motives, the bamboo is improperly harvested, which results in several bamboo groves dying. Moreover, there is a decrease in bamboo belts in the natural forests and there is little effort to increase small bamboo plots, because the small plots belong to the clans. Besides this, the increase in outcrop rocks shows that there is severe land degradation. If no proper measures are taken to control this environmental degradation, no sustainable resource management or poverty alleviation will be achieved. Therefore, in order to make the trade sustainable, there is a need to develop programmes which will make bamboo a sustainable resource. This will help to alleviate poverty in the poor rural communities, and the natural resources policies and legal frameworks should be reinforced and reformed.

Bamboo trade has not managed to stop out-migration as a survival strategy of households in the Ileje district. Out-migration is still rampant in the Ileje district and most of the migrants migrate to great centres of commerce such as Dar es Salaam and the regional capital, Mbeya. Nonetheless, these migrants alleviate poverty in the Ileje district through remittances and investments in houses and other economic activities.

Introduction 1

The study investigates the impact of the bamboo economy on poverty alleviation in Ileje District, Mbeya Region. This is because it is universally believed that there is a strong relationship between resource utilization and poverty alleviation [1]. Also, various studies show that proper utilization of resources has a big impact on the development of any community, because sustainable utilization of resources leads to sustainable development [2]. On the other hand, deep-rooted poverty, leading to an over dependency on a single resource for livelihood, undermines the capacity of the population to have sustainable resource management. This problem is more critical in developing countries where rapid population growth, coupled with agricultural stagnation, leads to the invasion of marginal lands, environmental degradation and poverty [3].

As a whole, this study investigates the relationship between the bamboo trade and sustainable resource management in Ileje district. Ileje district has emerged as the leading district in the bamboo trade in Mbeya region and probably in the whole country. The bamboo goods are marketed in all regions in the country and also in other countries such as Zambia, Malawi, Zimbabwe and Botswana [4].

The sustainable development of the bamboo trade would promote and diversify the economy of Ileje district, as well as other remote, less developed districts in the country. Since bamboo harvesting is done in one of the most important catchment areas in the South West of Tanzania, poor management of this resource may lead to environmental degradation that would affect other districts like Rungwe, Kyela, Mbozi and Mbeya Rural.

[1] UDSM/UN, 1993:24
[2] Ehrlich & Ehrlich, 1990; Yanda & Madulu, 2003
[3] Madulu et al. 1993; Economic Commission of Africa, 2001:1; Mung'ong'o & Mwamfupe, 2003
[4] District Profile, 1996:15

2 Statement of the Problem

The impact of poverty and resource utilization began to be acutely felt in Ileje District in the early 20th century. Over-utilization of resources such as the land in the Undali Hills (currently Ileje district) - led to population pressure and heavy out-migration of the population to areas with better land for settlement and employment opportunities in the plantations and mines, such as Mbozi and Mbeya [5]. This problem is still persisting in Ileje district, due to the fact that as a periphery district in the country, it has low agricultural production, per capita income - about Tshs 75,000 in 2003, and employment opportunities [6].

Hence, in order to deal with this endemic problem, the people in Ileje district have adopted several coping strategies. Firstly, the most popular strategy has been the exploitation, for trade, of one of the major natural resources in the district, namely bamboo. The immediate outcome of this strategy has been poverty alleviation among households engaged in bamboo trade. Moreover, it has exposed the people of Ileje district to the rest of the world, because bamboo goods are marketed throughout the country and abroad [7].

Despite this widespread network of trade, most of the traders remain small-scale traders, because they have adopted the hawking approach, or machinga type of trade, of tirelessly moving with bamboo commodities from one place to another. On the other hand, the introduction of internal and external markets of bamboo goods is more likely to alleviate the poverty by raising the standard of living of the people of Ileje district and in turn minimise out-migration.

Secondly, as observed by Liviga and Mekacha [8], the other major strategy of poverty alleviation in periphery districts like Ileje is the out-migration of the young population to various places in the country, particularly to major urban centres such as Mbeya and Dar es Salaam. Whatever they earn from these areas is remitted and helps to alleviate their poverty and that of the district.

The third strategy has been the establishment of petty trade, especially in minor settlements such as Isongole and towns like Itumba (the district headquarters). Intra-district trade has also led to the emergence of several weekly markets (magulio) in centres such as Isoko, Bulanga, Ibungu, Luswisi and Mtula.

[5] Hall, 1945; Brock, 1966:27; Knight, 1974:51
[6] District Profile, 1996:34; District Report, 2003
[7] District Profile, 1996; District Report, 2003
[8] 1998:8

As indicated by the Ileje District Socio-economic Profile [9], the fourth strategy has been the introduction of cash crops in areas where there were no cash crops before. For example, in the Bulambya Division, coffee has been introduced, while in areas that border Mbeya district, pyrethrum has been introduced. Nonetheless, this strategy is thwarted by problems of low prices in the world market of cash crops such as coffee and pyrethrum, thus forcing local communities to search for alternative sources of income.

[9] 1996

3 Objectives of the Study and Hypotheses

The study intends to examine the relationship between the bamboo trade and poverty alleviation in Ileje district. The study as a whole will address a number of research questions:

(1) What factors have promoted the bamboo trade in Ileje district?

(2) To what extent has bamboo trade promoted the development of intra-district trade?

(3) How has the bamboo trade reduced out-migration?

(4) What is the impact of the bamboo trade on poverty alleviation?

(5) How has the bamboo trade led to sustainable development?

(6) How is the income earned from bamboo trade divided by gender?

This study aims to test the following major hypotheses:

(1) There is a strong relationship between the bamboo trade and poverty alleviation in Ileje district.
The introduction of marketable commodities such as bamboo goods in rural societies which had previously depended on subsistence agriculture, will revolutionize the livelihood pattern and the development of the district. This hypothesis will be tested by comparing the standard of living of households engaged in bamboo trade with a control group of households that are not engaged in bamboo trade.

(2) There is a strong relationship between the bamboo trade and environmental degradation / sustainable management of other resources such as land and water in Ileje district.
This hypothesis will be tested by using satellite images from 1995 and 2000, to examine if there is a positive or negative change in land use in the district.

(3) There is a strong association between poverty alleviation and the reduction of out-migration in Ileje district.
In former labour reserves like the Ileje district, the people depended on selling their labour in other places. Therefore, an introduction of a reliable source of income, such as the trade in bamboo products, would reduce out-migration and over-dependence on employment in other locations. The hypothesis will be tested by examining changes in out-migration in areas where the bamboo trade is dominant.

(4) There is gender bias in the division of labour and income in bamboo trade.
This is verified by the facts that in rural communities cash crops and sources of income are dominated by males. The gender bias in income distribution will be tested by looking at the division of labour and income by gender.

Rationale of the Study and Theoretical Framework

4

4.1 Rationale

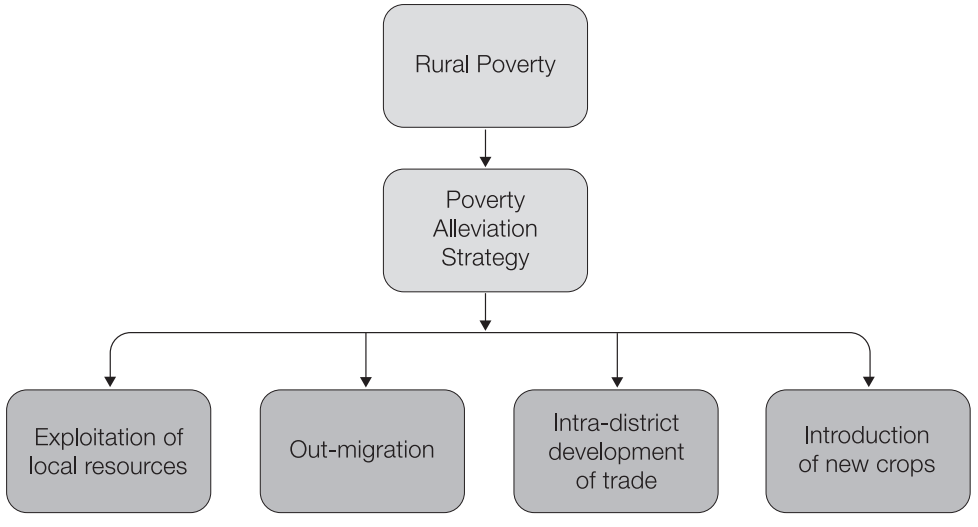
A study of the relationship between the use of natural resources, and adding value to the resource in order to get out of poverty, is an important process to understand in Tanzania because other districts also have resources whose value could be increased through processing and using various skills in the communities. Such indigenous enterprise to alleviate poverty is very essential in a remote and landlocked district like Ileje. Also, a more reliable business would reduce out-migration, which in turn might positively influence the development of the district.

4.2 Theoretical Framework

Figure 1 shows the strategies of poverty alleviation in less developed areas such as the Ileje district. Rural societies adopt several strategies to alleviate poverty. Firstly, they utilize the natural resources such as bamboo to manufacture goods that are marketed in other areas in order to increase their income and improve their livelihood. The second strategy is out-migration to areas with better economic conditions, eventually r emittances are used to improve the livelihood of members of the household who have been left at the place of origin. The third strategy is the introduction of intra-district trade that changes the rural population from agrarian to non-agrarian societies. These non-agrarian activities improve the chances of capital and social investments.

The fourth strategy is the introduction of new crops and the improvement of cash crops, but the impact of this strategy is minimized by poor prices on the world market.

Figure 1: Poverty Alleviation Strategies in Ileje District



Source: Ileje District Bamboo Trade Survey 2002

5 Literature Review

The people in the economically periphery areas, or former labour reserves like Ludewa, Makete, Ileje and Ufipa (Rukwa) in South West Tanzania, were famous during the pre-colonial period for making iron tools, bamboo goods, salt and pottery, which they traded with the people in neighbouring areas like Mbozi, Rungwe and Mbeya [10]. The medium of exchange was usually the barter system and so these traders exchanged their goods for commodities such as rice, beans and millet and sometimes clothing [11].

Despite the fact that the people in Ileje district have been maintaining their livelihood by harvesting their natural resources such as produce from the land, including bamboo for subsistence, they did not manage to effectively alleviate their poverty due to poor infrastructure and markets to sustain this business. As a result, most of them were forced to out-migrate to other places in the country, to seek waged employment and also to look for new areas for settlement[12]. During that time, the main destination of migrants from Ileje was areas with land for settlement, such as in Mbozi district. Long distance migrants sought waged employment in the sisal, coffee and sugar plantations in regions such as Morogoro, Tanga, Kilimanjaro and Arusha. There was also long distance migration to the mines in Central and Southern Africa[13].

During the post-independence period the people in Ileje district were encouraged to grow food crops such as maize and millet and non-traditional cash crops like cardamoms. Those in better-watered areas were encouraged to grow traditional cash crops such as coffee. This attempt only partially succeeded, because there was very stiff competition from districts which had better access to transport throughout the year, such as Rungwe. The fall in price of traditional cash crops on the world market brought economic misery to the district. Others resorted to casual labour on the small-scale plantations which are abundant in other districts of Mbeya region, such as Mbarali [14].

The biggest revolution in poverty alleviation in Ileje district began immediately after trade liberalization in the 1980s. This is when the opportunity for the mass production of bamboo goods developed, and the marketing of bamboo goods became pan- territorial and crossed international borders to countries such as Malawi, Zambia, Botswana and South Africa. The revolution of the bamboo goods trade was accompanied by the emergence of entrepreneurs in other trades, and so some of the people in the district started owning big shops and buses such as Hekima (plying between Tunduma and Dar es Salaam)[15]. This surge in bamboo trade has had a big impact on poverty alleviation in the district.

[10] Wilson, 1977; Lwoga, 1985; Mbonile, 1993
[11] Knight, 1974
[12] Gulliver, 1955, 1957; Mbonile, 1993
[13] Mbilinyi & Omari, 1996:20; Liviga & Mekacha, 1998:4
[14] Mbonile & Mwamfupe, 1997
[15] District Profile, 1996; District Report, 2003

The relationship between poverty and resource utilization is not easily identified. Traditional environmentalists and economists such as Ehrlich et al [16] link poverty and the depletion of natural resources such as land, soil, water, forests and food, that sustain the livelihood of the population. Almost the same concern was raised by the Brandtland Commission by concluding that poverty is both a major cause and effect of global environmental problems [17]. The same issue was raised by the Rio Conference [18] and other studies, that poverty and wealth have an impact on the environment leading to environmental problems such as land degradation jeopardize diversity and global warming, that in turn jeopardize the existence of life on the planet. The response to these environmental changes varies between localities in relation to differing environmental endowments and levels of poverty [19].

The definition of poverty itself is also controversial, because scholars define it differently. Economists categorize poverty by using measurable indices such as head counts, the poverty measurable gaps, the Sen Index, the Ahluwilia-Chanery and the social indicators [20]. Sociologists, however, perceive poverty in the form of indices that define the social status of a person or group of people relative to others, or other social groups and social organisations of the respective communities [21]. In addition, political scientists define poverty in terms of how groups of people or individuals can, or cannot, influence policy formulation and implementation. In this case, the poor interact with centres and processes of power in a very narrow way, through elections and other processes that may not liberate them from poverty [22].

[16] 1977:179, 1990
[17] WCED, 1987
[18] Earth Summit, 1992
[19] Omara-Ojungu, 1992:20-22; Mung'ong'o & Mwamfupe, 2003:1
[20] Semboja, 1994:40
[21] Omari, 1994:49
[22] Liviga & Mekacha, 1998:4

6 Physical Characteristics of the Area of Study

The Ileje district is located in the south-western part of Mbeya region. It lies between latitudes 9° 14Õ and 9°37Õ South and longitude 32°80Õ and 33°45Õ East. It is bordered by Kyela district in the east, Rungwe district in the north-east, Mbozi district in the north-west and Mbeya district in the north (Map 1, page 14). Songwe river in the south marks the boundary with the Republic of Malawi. The district covers an area of about 1,908 km ^{2} and an estimated population of about 109,847 people in the year 2002. The average population growth rate is about 2.2% per annum, which is lower than the national and regional population growth rates of about 2.9% and 2.4% per annum respectively, due to the heavy out-migration in the district. It has a population density of about 57.6 people per km^2 [23].

Plateaus and highlands generally dominate the topography of the district. The lowlands in the south- west include river valleys such as the Songwe. The western strip of the rift valley is occupied by the River Songwe, which drains into Lake Nyasa. The climate of the district is largely influenced by the r elief of the district. It lies between 1,360-2,500 metr es above sea level. The temperatures range from about 16° C-26° C, although in some middle lands it may reach about 32° C. The annual rainfall ranges between 750-2,000 mm per annum [24].

Economically the district can be divided into three main agro-economic zones. The middle zone lies between 1,300-1,500 metres above sea level and it is largely found in Bulambya division. The zone has temperatur es ranging between 26-32° C and receives an annual rainfall of 750-1,000 mm per annum. The soils of the zone are sandy and relatively poor and so ar e mainly suitable for annual crops such as maize, finger millet, groundnuts and beans. The second agr o-economic zone is the Nor th-Eastern Highlands. The highlands lie between 1,500-1,600 metr es above sea level. Here the temperature ranges between 16-20°C and the area receives an annual rainfall ranging from 900-1,200 mm. It has clay soil, which is relatively fertile, and so it is possible to cultivate crops such as coffee, pyrethrum, maize and potatoes. The third ecological zone is the High Easter n Highlands. It lies between 1,600-2,500 metres above sea level. It has an average annual rainfall of between 1,500-2,000 mm. The temperatures range between 18-22° C [25].

[23] District Profile, 1996:1-3; URT, 2003:107
[24] District Profile, 1996:8-9
[25] District Profile, 1996:8-9

Methodology of the Study

7

7.1 Sources of Data

The main source of primary data was a structured questionnaire that was administered to households involved in the bamboo trade. A special questionnaire was administered to 50 non-bamboo trade households in Ikinga Village which acted as the control group on issues of poverty alleviation only. Secondary data was obtained from district reports and some village reports. Also, in order to obtain more details on the main issues of research, the study used focal group discussions in a few selected study areas. The size of focal groups ranged from eight to ten people, both males and females, and mixed age groups. Besides this, in order to quantify the changes in land use/cover after utilizing the resources, satellite images were used. Finally, the data is presented as percentages, frequencies, graphs, maps and both chi and simple correlations were used to test hypotheses.

7.2 Sampling Procedures

There is an unequal distribution of bamboo r esources in Ileje district that necessitated the use of purposeful sampling both at division and village levels. The Ileje district is divided into two major divisions, namely Bulambya and Undali. The production of bamboo goods is concentrated in Undali division and so this division was automatically selected.

Table 1: Number of Households Sampled by Ward and Village

Village		Number of Households	Percent
Ikinga	Ikinga*	57	28.4
	Kikota	43	21.4
Sub-total		**100**	**49.8**
Kafule	Kapelekesi	35	17.4
Sub-total		**35**	**17.4**
Malangali	Malangali	65	32.3
	Bulanga	1	0.5
Sub total		**66**	**32.8**
TOTAL		**201**	**100.0**

*Note 50 control group households collected in Ikinga Village
Source: Ileje Bamboo Trade Survey 2003

The major wards producing bamboo goods include Ikinga, Kafule and Malangali. Of these wards the major bamboo goods pr oducing ward is Ikinga, and so about 100 households were randomly selected from this ward (49.8%). A control group of about 50 households were randomly selected in Ikinga village in or der to compar e the standard of living between households engaged in bamboo trade and those households that were not engaged in bamboo trade. In Ikinga ward the villages that were selected were Ikinga and Kikota. In Kafule ward Kapelekesi village was selected, while in Malangali war d Malangali and Bulanga villages were selected (Table 1, & Map 1 overleaf).

Map 1: Location of Bamboo Harvesting Areas in Ileje District

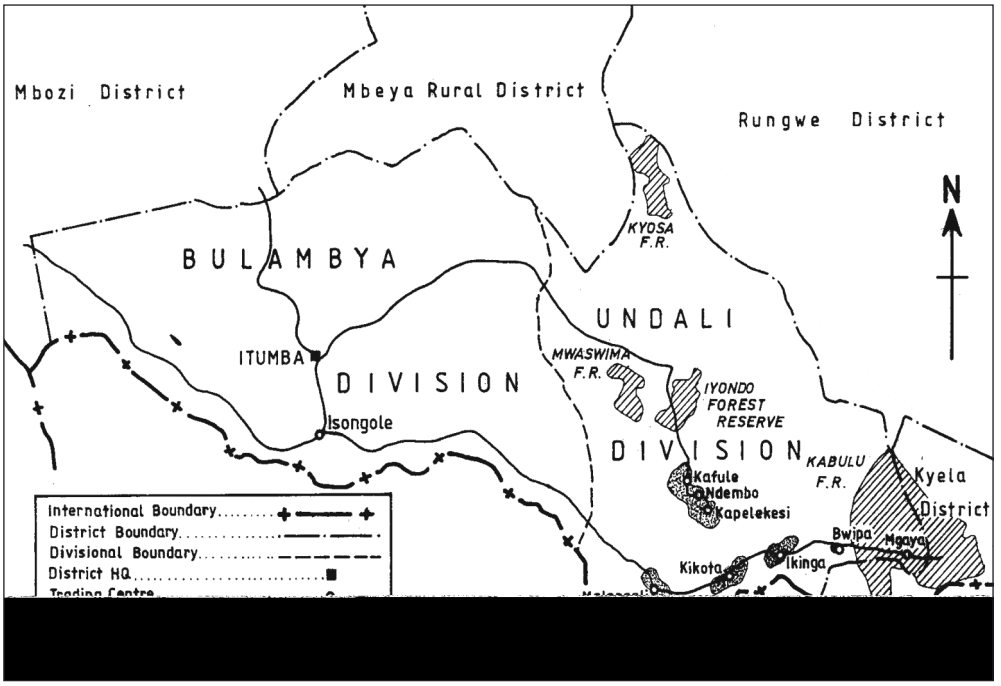


Photo 1: Small bamboo plots near the River Ndembo (Ndembo Village)

Table 3: Location and Problems of Supplying Bamboos

Reasons for Bamboo Being Found in these Areas	No. of Households	Percent
Availability of water	129	64.2
Availability of water and fertile soils	65	32.3
Grown to prevent soil erosion	1	0.5
Grown in large numbers	6	3.0
TOTAL	**201**	**100.0**
Reasons For Bamboo Not Obtained Very Easily		
Not applicable	140	69.6
Poor harvesting methods	35	17.4
Harvesting has increased	13	6.5
Few areas for growing bamboos	13	6.5
TOTAL	**201**	**100.0**

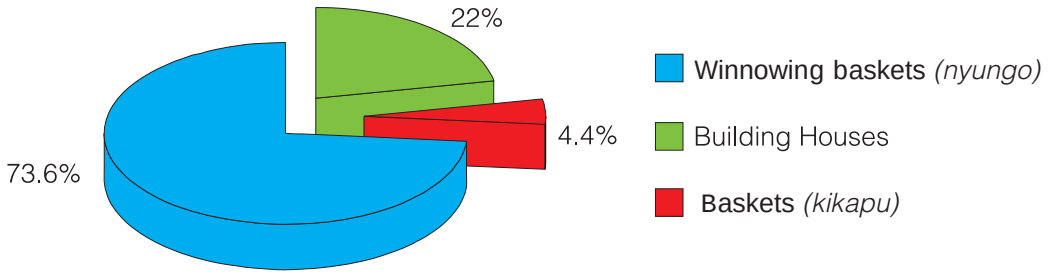
Source: Ileje Bamboo Trade Survey 2003

Last, but not least, they usually purchase bamboo from small plots by paying at least Tshs 65 for every bamboo harvested, and in order to make several bamboo goods they are compelled to visit several small plots in the village (Table 3).

10 Production of Bamboo Goods and Other Products

Since time immemorial people have used bamboo poles for all kinds of items, such as for hunting and fishing, musical instruments, arts, decoration, food, gardening and several types of utensils. Besides this, it is used as a source of energy, because it is a renewable resource[31]. Most of these functions of bamboo are observed in Ileje, but this study will concentrate on the following:

Figure 6: Past and Present Uses of Bamboo in the Ileje District



10.1 Winnowing and Other Baskets

Commercial production of baskets is concentrated in a few wards such as Ikinga, Kafule and Malangali in Undali Division. However, there is a big potential for this technology to spread to all wards in the district which have a big coverage of bamboo forests and small plots, especially in Bulambya division. The study also r evealed that most households acquired the skills of making bamboo goods by inheriting them from parents and grandpar ents (54.2%) and others acquired them through training, after realizing that bamboo goods trade is pr ofitable (45%). In addition, since bamboo goods pr oduction is a supplementar y activity in most households, it is carried out during the dry season when agricultural activities have been r educed to a minimum and there is plenty of sunshine for drying raw materials for bamboo production.

The study revealed that most households produce one or two types of bamboo products such as winnowing baskets (selo in Kindali or nyungo in Kiswahili), or baskets (kapombo in Kindali and kikapu in Kiswahili) Other minor bamboo products include fish traps and beehives. The most popular bamboo product, with a wider market in the country and abroad, is the winnowing basket. The selo are popular because they are used for winnowing grains, storing commodities for a short period, as well as being ornaments in both households and hotels. They are popular because they are easily tied in large bundles, which can be transported very easily from one place to another, by using a simple means of transpor t such the bicycle (see Table 4 overleaf, Photos 2, 3 & 4 the following page).

[31] ABW, 2004 (http://usuarios.arnet.com.ar/bambu/Echambu.html)

Table 4: Acquiring of Skills, Period and Type of Bamboo Goods Produced		
How Skills Are Acquired	**No. of Households**	**Percent**
Inherited	109	54.2
Inherited and trained	50	24.9
Trained	42	20.9
TOTAL	**201**	**100.0**
Period When More Bamboo Goods Are Produced		
Dry season	176	87.6
Dry and Wet season	21	10.4
Wet season	4	2.0
TOTAL	**201**	**100.0**
Why This Season is Popular		
Agricultural activities reduced	124	61.7
Bamboo have matured very well	48	23.9
There is sunshine for drying bamboo	19	9.4
There is good transport	10	5.0
TOTAL	**201**	**100.0**
Types of Bamboo Goods Produced		
Winnowing baskets *(nyungo)*	188	93.5
Baskets *(kikapu)*	9	4.5
Fish traps and other uses	4	2.0
TOTAL	**201**	**100.0**

Source: Ileje Bamboo Trade Survey 2003

Photo 2: Preparation of materials for making bamboo goods

Photo 3: Decorated and undecorated winnowing baskets ***(Nyungo)***

Photo 4: Bamboo baskets in Ikinga Village

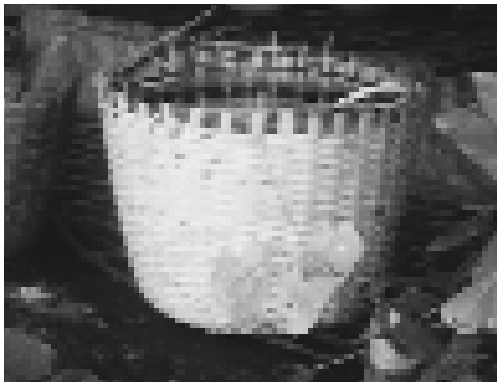
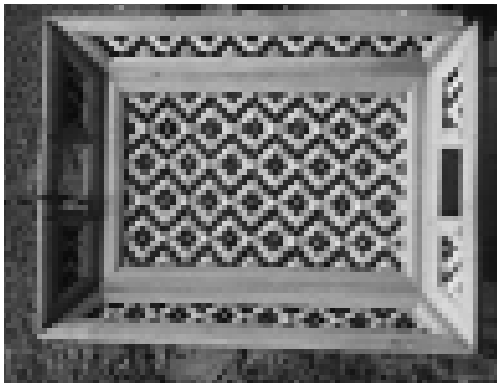


Photo 5: A decorated bamboo tray in Itumba T own



Some bamboo goods weavers have recently been producing specially decorated bamboo goods, although not in large quantities, which can be expor ted to other countries. Discussions with focal groups making decorated bamboo goods indicated that if they had the support of the government and other organisations, they could manage to produce large quantities of these commodities and become giants of bamboo goods production, as with China and Latin America. The gradual evolution of these skills of making decorated bamboo goods is clearly expressed below by Mr Itika Pwele of Kapelekesi Village, who has been involved in pr oducing decorated bamboo goods since the late 1990s. Due to these activities he is very famous not only in Mbeya region, but in several trade fairs in neighbouring countries such as Malawi and Zambia (see Photo 5).

ÒI started making these decorated bamboo goods in 1996 but I perfected my work sometimes in 1998. At first I marketed my products in Ileje district but later I was told to display them in Mbeya town especially during the Saba Saba festivals or recently Nane Nane day. The people liked my commodities very much and so advised me to sell these commodities in the trade fare that occurs every year in Dar es Salaam. The market in Dar es Salaam is very good because an item that fetches Tshs 9,000 /= in

Mbeya Municipal fetches about Tshs 15,000/= in Dar es Salaam City.Ó

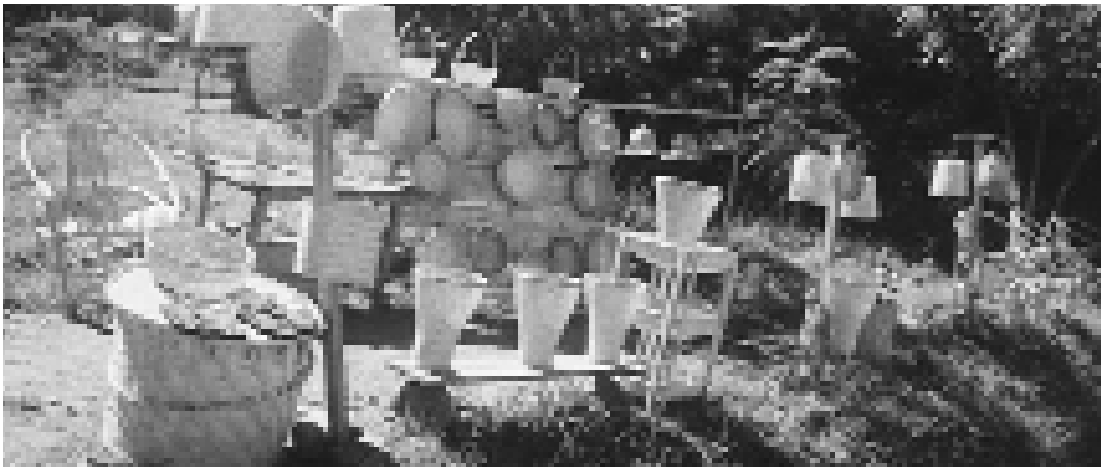
Mr Itika Pwele

The process of making bamboo goods products is rather long, because first the bamboo is cut or split into narrow, long pieces of bamboo that are smoothed into thin, weavable strips of bamboo. Then the strips are woven to make ordinary winnowing baskets or dyed to make baskets and decorated bamboo goods.

The availability of bamboo differs from one season to another. The bamboo produces several buds of bamboo at the beginning of the rainy season (October/November) and it takes about 5 months for the bamboo buds to mature for harvesting (April/May). Hence the peak of bamboo harvesting and weaving is between April and July and declines to low levels between November and March every year because the weavers are engaged in agriculture and other activities such as trade.

Furthermore, the study found out that bamboo goods made in Ileje were somewhat inferior to those made by experts trained by the Small Industries Organization (SIDO) in places like Mbeya Municipal, because they are using more weaving materials and ordinary tools like knives and machetes, which do not produce fine strips. Worse still, the mass production of bamboo goods for the market has introduced several amateur weavers to the business who do not care for the quality of goods. Hence it was advised that deliberate measures should be taken by the local authorities to train these local weavers in centres run by SIDO; because it is believed that the technical improvement of weavers will increase the market of bamboo goods both internally and abroad. Hence the amount of income earned by weavers will increase and there will be a reduction in the deforestation of bamboo, because less raw materials will be used by the weavers (Photo 6).

Photo 6: Good quality bamboo goods produced by SIDO trained experts



10.2 Bamboo Wine ***(Ulanzi)***

Furthermore, the study found that the production of other bamboo products like bamboo wine (ulanzi) was not fully integrated into the economy of the people of Ileje, despite the fact that Ikinga Village bears the name of one Kinga called Kyamba, who settled in the village sometime in the early nineteenth century. He was very famous throughout the

whole of Bundali, because he introduced the cultivation of finger millet. Focal group discussions were of the opinion that since Kyamba originated from Makete he might have brought with him the bamboo called Aruadinaria alipina that produces bamboo wine (Photo 7).

Photo 7: Tapping bamboo wine in Bwipa Village

This is slightly different from the bamboo Bambusa vugaris, which is used for weaving selo. But all these bamboo species belong to the same family called Gramueae or Poache. This bamboo wine tapping technology introduced by Kyamba disappeared after his death. His wives and children were resettled in Kyela and Rungwe district. However, it is believed that the tapping technology is gradually spr eading fr om neighbouring districts like Mbozi, which adopted this technology from Mbeya district, which in turn adopted it fr om Makete. Therefore, it is now common to find ulanzi in villages like Bwipa where one litre is sold at Tshs 200 and it is common in the rainy season from November-April. The total amount of money earned from selling ulanzi from this village is not easy to estimate, because most of it is drunk by households.

10.3 Gender and Bamboo Production

As stated by Todaro [32], labour participation by gender in a rural economy such as Ileje district, has several facets that are unique and cannot be easily resolved by using conventional economic analysis. As in other parts of the country the household as unit of production is organised on the basis of age and sex, which in tur n determines the labour participation. The field observation in Ileje shows that out of a total of 201 households engaged in bamboo trade only 11 (5.5%) were female-headed households. Moreover, these female-headed households wer e composed of thr ee divorced women and eight widows. As a whole, several bamboo trade activities in the household are dominated by males, because the skills of weaving bamboo goods is passed down from grandfather to father and from father to son. Recently, however, there have been a few women who have started penetrating the industry, because they have realized that bamboo trade is more

[32] 1992:200

profitable. The other activities where females are involved in the production of bamboo goods include the dyeing of decorated bamboo goods, transporting the commodities to local trading or transit centres, and the cooking of food when there is reciprocal work leading to mass bamboo goods production. Reciprocal work usually involves a group of people (not less than five), who gather together to complete a certain task like farming or bamboo goods production, and after the completion of the task they drink local beer together, or eat delicious food as a means of payment. Each member is supposed to reciprocate this support to the other members of the group. The importance of reciprocal work is increasing, because there is a need to produce large quantities of bamboo goods within a short period, due to the fact that the raw materials for bamboo goods production are obtained very far from the traditional bamboo producing villages.

On the other hand, the level of female participation in bamboo trade during the dry season increases, because most of the agricultural activities involving women, such as crop harvesting, have been reduced to a minimum. The other advantage of females participating in bamboo trade during the dry season is that in a semi-landlocked district like Ileje, the dry season has more reliable transport for most roads are passable (Table 5).

Table 5: Participation of Households in Bamboo Trade by Gender

Month	Activities	Gender
January - May	Planting bamboo in small plots	Males
	Weeding small plots	Females
	Collecting bamboo in the forest/small plots	Males
	Preparing bamboo strips	Males
	Weaving bamboo goods	Both males & females
	Cooking food for reciprocal work	Females
June - December	Transporting and marketing of bamboo goods to local trading centers	Both males & females
	Transporting and marketing of bamboo goods to long distance markets	Males

Source: Ileje Bamboo Trade Survey 2003

Although the division of labour between males and females was ver y clear, the division of income between the two gr oups was not very clear, because the income was generally treated as a household income. Nonetheless, focal group discussions with females revealed that in some households, males use the income obtained fr om bamboo trade for drinking beer or increasing the number of women, especially among believers in traditional religion. Also, there were some women groups which indicated that, due to the increase of income obtained from the trade in bamboo goods, some husbands had absconded from their homes leaving their spouses and children under hard living conditions. The husbands have migrated completely from Ileje to unknown places and it is believed that they ended up marr ying other women in the areas of destination.

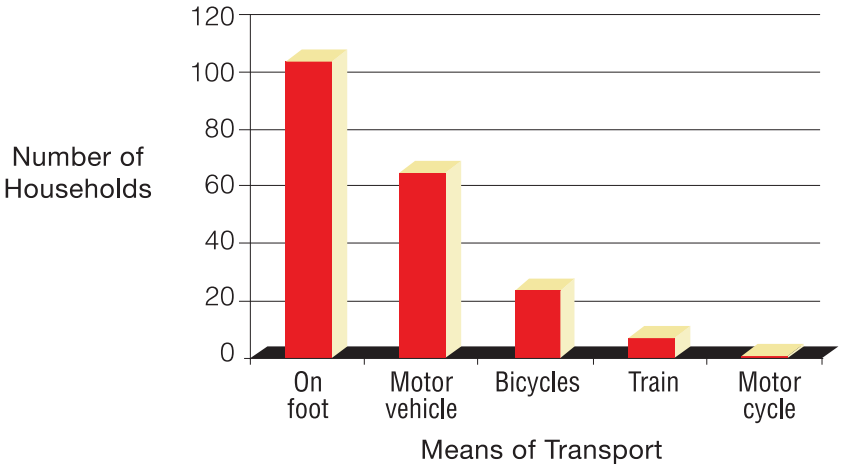
11 The Marketing of Bamboo Goods

Although the marketing of bamboo goods within Ileje district is limited (21.1%) it has, to a certain extent, promoted the growth of internal trade. Bamboo goods are generally marketed in major trading centres and in weekly markets (magulio) such as Katengelebalindu. The other main market of bamboo goods is within Mbeya region (12.5%). At the national level the marketing of bamboo goods is done in most of the regions, especially in major urban centers such as Dar es Salaam, Mwanza and Zanzibar (47%).

Internationally, bamboo traders market these commodities in countries like Malawi, Zambia, Zimbabwe, South Africa, Botswana and Kenya (19%). This is because there is a good road transport network between Tanzania and these countries and it also due to an easy foreign exchange policy. In Malawi, for example, the marketing can be done in Tanzanian shillings or Malawi kwacha or dollars. Other traders prefer to exchange their bamboo goods for commodities such as radios, clothes and soap, rather than cash that could be confiscated by custom officers, or stolen by thieves. It was also reported that some of the long distance bamboo traders are marketing these commodities as far away as Dubai (Table 6 overleaf, Photos 8 & 9 on the following page).

Before reaching the market, bamboo goods traders utilize several transport systems. Firstly, they are forced to walk, using various footpaths, or go by bicycle/motorcycle to collection centres such Ndembo and Itumba. Then these commodities are transported to other areas by motor vehicles and trains (Figure 7).

Figure 7: Means Used to Transport Bamboo Goods



Moreover, in order to sustain the bamboo trade for the whole year, a chain of trade has been established, starting with owners of small bamboo plots and weavers who are still engaged in agriculture. There are also trade centres within and outside Ileje, which distribute bamboo goods to petty traders in other regions, and lastly the hawkers (wamachinga), some of whom originate from neighbouring districts such as Mbozi district.

Table 6: Areas Where the Bamboo Goods are Marketed		
Areas where Bamboo Commodities are Sold in Ileje	**Frequencies**	**Percent**
Weekly markets *(magulio)*	198	14.5
Itumba	89	6.5
TOTAL	287	21.0
Where the Bamboo Commodities are Marketed in Mbeya Region		
Mbeya	114	8.5
Tukuyu	24	1.7
Kyela	24	1.7
Mbarali	3	0.2
Mbozi	3	0.2
Chunya	6	0.4
Sub-total	**174**	**12.7**
Where Bamboo is Marketed in Other Regions of Tanzania		
Dar es Salaam	195	14.4
Mwanza	126	9.2
Arusha	57	4.2
Zanzibar	51	3.7
Musoma	3	0.2
Iringa	42	3.1
Kilimanjaro	21	1.5
Tabora	6	0.4
Tanga	36	2.6
Rukwa	39	2.9
Kigoma	15	1.1
Morogoro	33	2.4
Pwani	10	0.7
Shinyanga	3	0.2
Dodoma	1	0.1
Ruvuma	6	0.4
Sub-total	**644**	**47.1**
Where the Bamboo Commodities are Marketed Abroad		
Malawi	94	6.9
South Africa	18	1.3
Zimbabwe	21	1.5
Botswana	35	2.5
Zambia	87	6.4
Kenya	8	0.6
Sub-total	**263**	**19.2**
Grand Total	**1,368**	**100.0**

Source: Ileje Bamboo Trade Survey 2003

Photo 8: Tying winnowing baskets ready for transportation

Photo 9: Storage of winnowing baskets in Ndembo Village

On the other hand, as indicated earlier, the type of trade conducted at its destination is largely informal, or hawking-type. Most small-scale traders move with these commodities from one house to another, carrying their commodities either on their backs, or dangling them in their hands. Negotiation of prices depends on the type of winnowing basket. The price of decorated winnowing baskets ranges fr om Tshs 700 to Tshs 1,000/=. That of non-decorated winnowing baskets ranges from Tshs 500 to Tshs 700/= in large towns like Dar es Salaam and Mwanza. Also, in order to supplement the income from winnowing baskets, other commodities such as fr ying pans and short brooms made from highland grasses, are marketed together with bamboo goods (Photos 10 & 11 overleaf).

Photo 10: A hawker selling winnowing baskets and frying pans

Photo 11: Customers buying winnowing baskets in Dar es Salaam

12 Bamboo Trade and Poverty Alleviation in Ileje District

As observed above, there are several indicators for measuring poverty alleviation, but this study used the number of farms/plots, properties acquired and per capita income of households as indicators:

12.1 Number and Size of Farms

As observed by Mascarenhas (2000:29), in rural areas land is the most important asset that a household can possess, because it gives identity to the clan or tribe and it is an area where households can grow crops both for their subsistence and marketing. The study on farm ownership in Ileje showed that most of the households owned at least one plot of land (47.3%), followed by those who owned 2-4 plots of land (44.3%). There were few households who owned more than five plots of lands/farms. The average plots of land owned by households were 2.3 plots/farms (Table 7).

Table 7: Number and Size of Farms Owned by Households Involved in the Bamboo Trade

Number of Farms Owned			Acres of Holdings		
Number of Farms Owned	**Number of Households**	**Percent**	**Acres**	**Number of Households**	**Percent**
0	0	0	0-1	83	41.3
1	95	47.3	2-4	90	44.7
2-4	89	44.3	5-6	11	5.5
5-6	12	6.0	7-8	8	4.0
6-8	5	2.4	9+	9	4.5
TOTAL	**201**	**100.0**	**TOTAL**	**201**	**100**
Average Number of Farms	**2.3**	**-**			**2.4**

Source: Ileje Bamboo Trade Survey 2003

However, the mere ownership of farms is not adequate to show how land can be used to alleviate poverty. Therefore, it is important to know the size of the farms owned. The study revealed that the majority of households engaged in bamboo trade had less than one acre of land and so it was not adequate to alleviate poverty, bearing in mind that it is the same plot of land which is used in the production of food and cash crops, and also bearing in mind that agriculture in the area is moderately intensive. Actually, the plots of land have been diminishing with time, due to the inheritance system that was introduced during the pre-colonial period (Table 7).

Meanwhile, when ownership of land was further examined by using the control group of non-bamboo trade households in Ikinga Village, it was observed that households engaged in bamboo trade were better off in terms of the number of farms owned when compared to non-bamboo trade households. The same trend was observed in the average farm sizes where the bamboo traders had a higher average farm size when

compared with non-bamboo traders. The test shows significant association at a 1% level between bamboo/non-bamboo traders and number of farms owned (Table 8). Hence it shows that bamboo traders have a better chance of alleviating their poverty when compared to non-bamboo trade households. Nonetheless, the buying of farms by bamboo traders from non-bamboo traders may create landless households in Ileje district in the future.

Table 8:

Number of Farms Owned					Size of Holdings in Acres				
Number of Farms Owned	Bamboo Traders	%	Non-Bamboo Traders	%	Size	Bamboo Traders	%	Non-Bamboo Traders	%
0	0	0.0	0	0	<1	22	22.7	29	58.0
1	28	28.9	27	54.0	2-4	44	45.4	11	22.0
2-4	46	47.4	13	26.0	5-6	15	15.5	3	6.0
5-6	18	18.6	6	12.0	7-8	11	11.3	4	8.0
6-8	5	5.1	4	8.0	9+	5	5.1	3	6.0
TOTAL	**97**	**100**	**50**	**100**		**97**	**100**		**100**
Average Number of Farms	**3.1**	**-**	**2.5**	**-**	**-**	**3.7**	**-**	**2.4**	**-**
$\chi^2 = 19.$					χ^2				

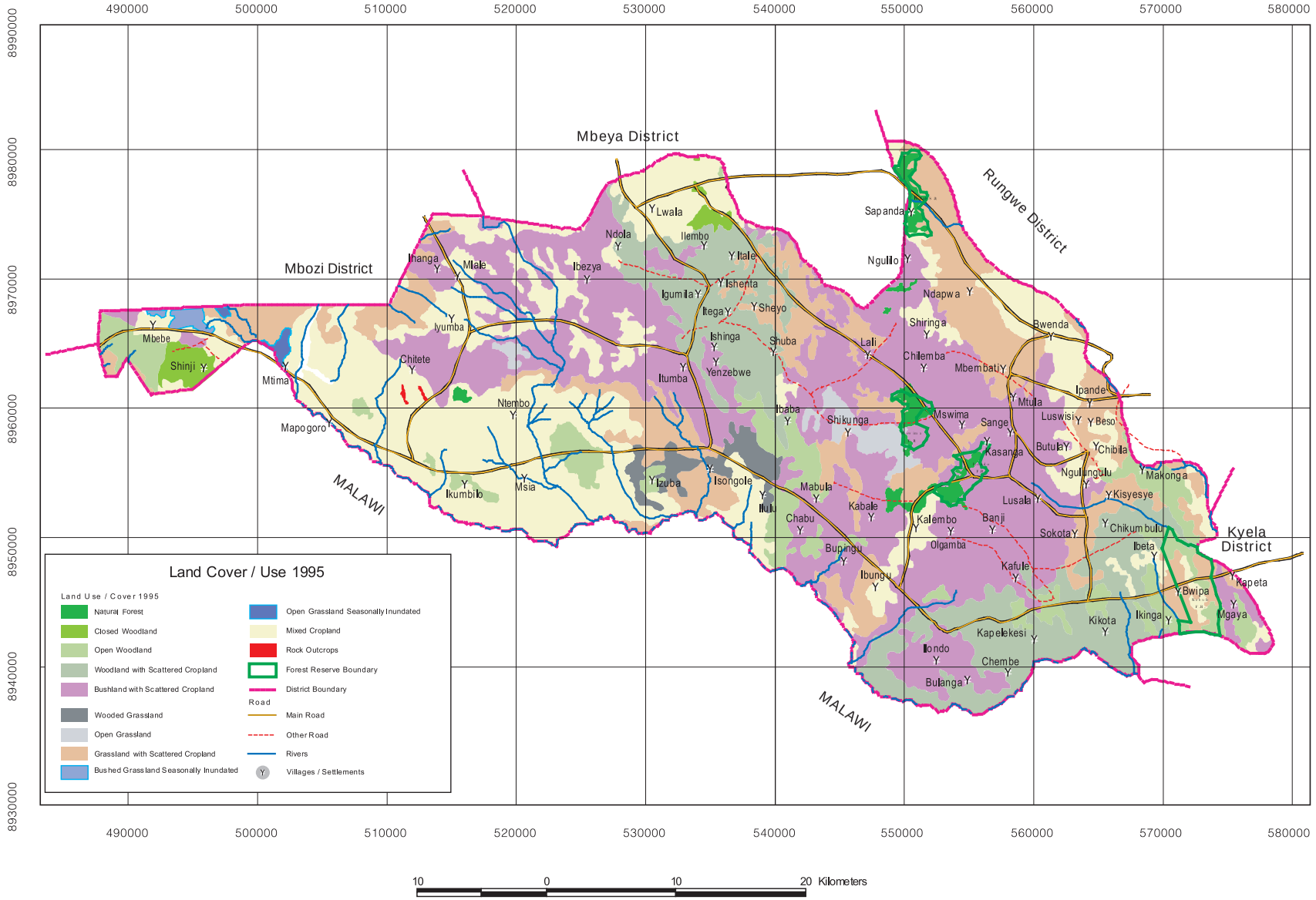
Source: Ileje Bamboo Trade Survey 2003

12.2 Acquisition of Capital and Assets

In terms of acquiring capital or assets, the study reveals that the majority of households in the study villages managed to build modern houses. They also invested in shops/groceries/kiosks, milling machines and sewing machines that had the dual purpose of serving the village communities as well as increasing the income of the household. Moreover, they managed to acquire assets such as radios, motorcycles and motor vehicles. Others managed to acquire more farms and livestock in order to increase their income and reduce food insecurity. The test shows significant association at the 1% level between properties acquired by bamboo traders and localities where these properties are found (Table 9).

Furthermore, focal group discussions showed that that those who benefited most from this trade were businessmen, followed very closely by weavers, who were selling bamboo goods to businessmen. The last group to benefit from bamboo trade was the farmers, who were selling bamboo from small plots to weavers. Above all, they managed to rank bamboo trade as the major source of income among households engaged in bamboo trade, although most households still treat it as a supplementary activity when compared to agriculture. Other supplementary activities include petty trade, fishing and bee keeping, followed by the marketing of agricultural products such as bananas, rice, beans, finger millet and traditional cash crops such as coffee and pyrethrum.

Map 2: Ileje District: Land Use/Cover 1995



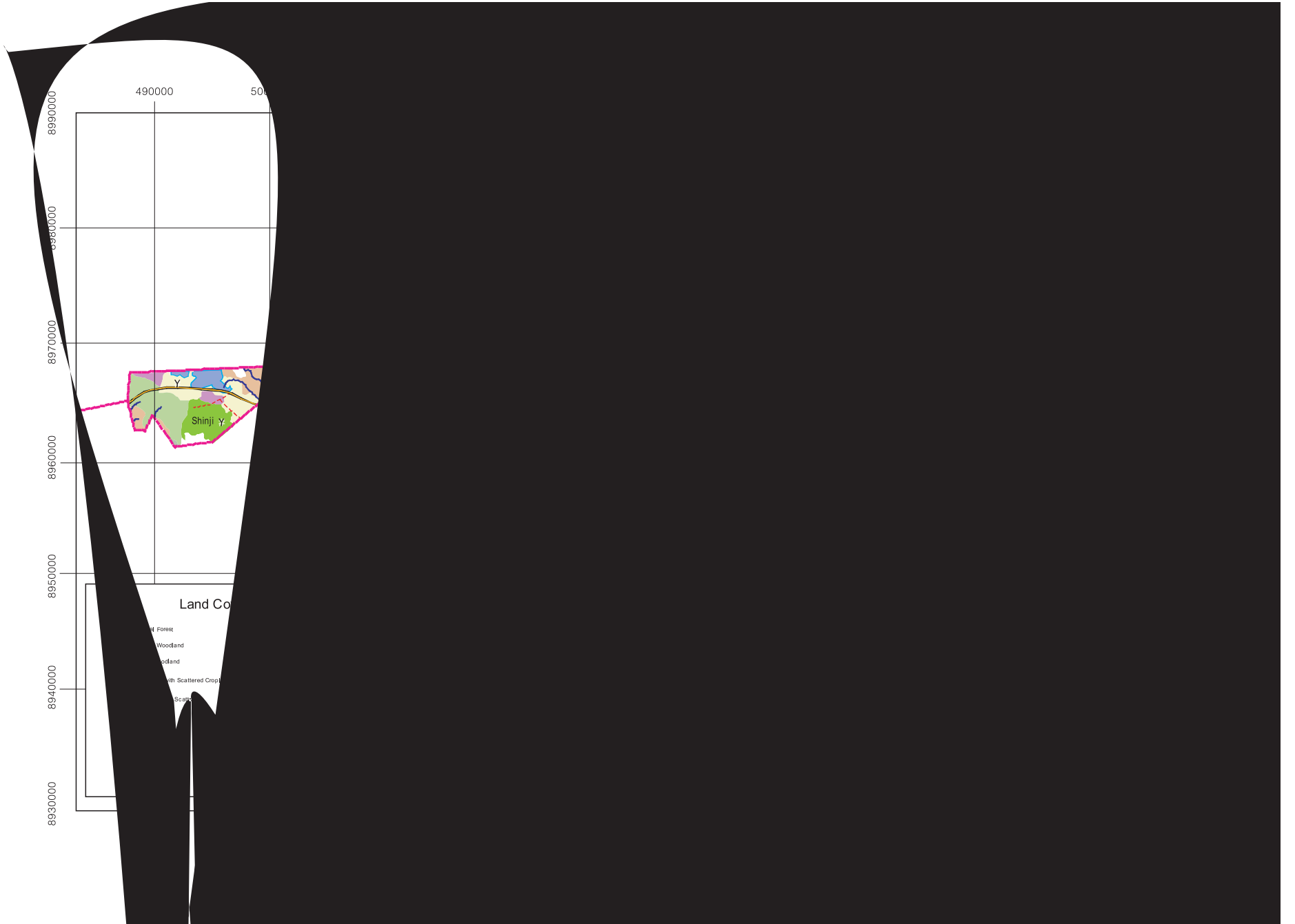

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Figure 8: