

**Herbal Medicine Use and Diversity/Sharing of the Knowledge:**

**The case of Rutamba villages in Lindi Region, Southeast Tanzania**

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『宇都宮大学国際学部研究論集』(ISSN1342-0364) 第48号 (2019年9月) 抜刷

JOURNAL OF THE SCHOOL OF INTERNATIONAL STUDIES  
UTSUNOMIYA UNIVERSITY, No.48 (September 2019)

# Herbal Medicine Use and Diversity/Sharing of the Knowledge: The case of Rutamba villages in Lindi Region, Southeast Tanzania

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## Introduction

### 1. Importance of traditional medicine

Even within the progress of medicine, people continue to use herbal medicine. Within this background, traditional herbal medicine is focused as an affordable and familiar basic medicine<sup>1</sup>.

Traditional herbal medicine has also been given attention also in Tanzania, and there are a number of research accumulation of the knowledge<sup>2</sup> and pharmaceutical effects<sup>3</sup>. The accumulation of research is pushed by the strategy to facilitate research by the Tanzanian government<sup>4</sup>. Furthermore, knowledge on the usage of plants are frequently shared through the mass-media such as the newspaper<sup>5</sup> and TV, leading to spread of knowledge throughout the country.

Classical research on how the people use traditional herbal medicine centered of anthropological studies<sup>6</sup>, and a recent study also analyzes characteristics of traditional healers<sup>7</sup>. There are also research on herbal vendors in Dar es Salaam and Tanga<sup>8</sup>. However, these research tended to focus on the professional users of herbal medicine.

### 2. Users of traditional medicine in Tanzania

On the other hand, comparison and description of the variety of actors using herbal medicine is rare. One article analyzed variety of actors in Tanzanian regions with different characteristics —Dodoma, Lindi, Tanga, Dar es Salaam, Zanzibar— in order to understand the regional and multilayered diversity. Actors including local people, traditional doctors, TBAs (traditional birth attendants), and herbal vendors exist, and various reasons influenced their choice to share or keep their information. Although complete “business” was rarely seen in a rural village, secrecy of knowledge was related

to business: However, they kept it a secret in his/her village, but exchanged information with other traditional doctors from other villages. Magic was also another factor of keeping a secret, and this was especially so if the knowledge was obtained through dreams. Transfer of knowledge was commonly seen within the family; example of sharing knowledge of casual medicine between local people was also analyzed. However, differences in knowledge exist not only among actor types, but even within the people of the same region or ethnic group, and the research indicated the diversity within “ethnic knowledge” of traditional medicine<sup>9</sup>.

There is also a comprehensive research based on interviews to traditional healers and herbal vendors and questionnaires to users in Kilimanjaro. According to the research, 56% of the residents use some kind of traditional medicine. This was not limited to rural population and urban poor, but also extended “to those in higher education levels, professional occupation and across all ages in both urban and rural settings in Northern Tanzania”<sup>10</sup>. They also identified that the following were the determinants for traditional medicine use in Northern Tanzania: Biomedical healthcare delivery, credibility of traditional practices, strong cultural identities, individual health status, and disease understanding. Another previous research also indicated that people go to a modern health facility for “malaria”, but they would go to the traditional healer for “convulsion (*degedege*)” which could also be a symptom of malaria<sup>11</sup>.

Analysis of the casual users of herbal medicine has not been so common either. A research by the author analyzed questionnaire interviews to 100-140 women each in 3 villages of Dodoma, Lindi, and Zanzibar for common and diverse characteristic of women who know medicinal plants and/or go to traditional healers in rural

Tanzania. There were three main findings of the above research. First, there were common characteristics and overlaps of women who knew medicinal plants and went to traditional healers. However, more women knew medicinal plants in rural Zanzibar (40%), and more women went to traditional healers in inland an agro-pastoral village (32%). Many women consulted traditional healers after dissatisfaction in health facilities, and especially for fertility, convulsion, dizziness, and mental illness. Many women without ethnic identity did not go to traditional healers in Zanzibar. Second, more women who knew medicinal plants or went to traditional healers lived in areas remote from health facilities. However, they also utilized knowledge from dispensaries. Third, they generally benefited from mutual assistance, except financial support. Lastly, in Swahili villages, they had tendencies to make their own decisions. In an agro-pastoral village, they tended to make decisions together with their husband, indicating possibilities of information sharing<sup>12</sup>.

According to the above research, 15% (21 respondents), 8% (8 respondents), and 40% (38 respondents) knew herbal medicine in Majeleko village (Dodoma region), Mchinga II village (Lindi Region), and Chaani Masingini village (Zanzibar) respectively. Those who go to traditional healers were 28% (38 respondents), 15% (14 respondents), and 17% (16 respondents) respectively. Those who knew herbal medicine and/or go to traditional healers add up to 28%, 16%, and 45%, which is much lower than 56% of the research in Killimanjaro<sup>13</sup>.

One major question that will be answered in this article is: Is the usage of herbal medicine in Lindi Region as low as it has been implied in the previous research of Mchinga II village? In order to enrich the discussion on the diversity of knowledge and its sharing, the case of Rutamba village will be introduced. Furthermore, characteristics of people who use herbal medicine in two villages of Lindi Region, Rutamba and Mchinga II, will be compared to complement the deficits of previous research. Through these analysis, the article will provide a more comprehensive picture of the usage and knowledge of herbal medicine in villages of Lindi Region and provide a comparative evidence of

an area with different characteristic from Killimanjaro and elsewhere.

## I. Research area and method

### 1. Research area

Lindi Region has relatively high annual average rainfall of 800-1200mm<sup>14</sup> with substantive areas of forests (T8 according to the Kew vegetation classification. See the location in Figure 1). The research is in Lindi Rural District. Majority are Islam especially on the coast, and the major ethnic groups are the Mwera, Makonde, and Makua. The research site of this article is mainly Rutamba villages about 20 km from the coast, but will also refer to Mchinga II on the coast.

Figure 1: Research area



Source: Sakamoto (2009, p.9).

Rutamba has diverse vegetation with Litupu forest reserve and Lutamba Lake. It is also on the way to Kinyope, Milola, and Kinyope area from Lindi City with miombo woodlands and the Noto forest reserve further north. Rondo forest reserve is also in the vicinity of Rutamba villages where people have relatives living near the forests. Some have come from these areas mainly during the Ujamaa villagization, searching for better water. Rutamba used to be an old village as Rutamba village, but has become Rutamba ya Zamani (Old Rutamba) and Rutamba ya Sasa (New Rutamba) in 1974.

The population of Rutamba ya Zamani is 1,231 and

Rutamba ya Sasa is 2499 as of 2009-2010.<sup>15</sup> Rutamba ya Zamani has 469 households as of 2011<sup>16</sup>. The majority ethnic group is Mwera, with a minority Makonde.

Occupation of the majority is farmers, some farm rice, maize, and coconuts around Lake Lutamba utilizing its flood, and many others farm maize, cassava, sorghum, beans, sesame, and cashew on higher altitude. There are also fishermen who fish in Lake Lutamba. There are also other livelihoods such as small business in the market, carpentry, or pottery, mostly in addition to farming. There is a hospital in the village, which was established when the refugees from Mozambique have arrived in the area.

Soils of Mchinga II on the coast is sandier with different vegetation in comparison to Rutamba. Mchinga II has also been a village since “long time ago”, but have become a formal village in 1977. The population is 1,874 as of 2014 with 493 households<sup>17</sup>. Ethnic group is considered to be Machinga which is a mix between the Mwera and Makonde. However, when asked as individuals, most of them answer that they are either Mwera (41%) or Makonde (39%), and only a few answer that they are Machinga. Other minority ethnic groups are Makua, Yao, and Ndonde.

The occupation of the villagers are fishermen and farmers. Major crops are sorghum, cassava, maize, cashew, sesame, and coconuts. Ample coconuts trees are visible between the residential areas, and cashew trees in the surrounding farmland. Those who have been moved from a remote area during the Ujamaa villagization have returned to the areas, constituting a hamlet, so that they have land for farming.

There was no health facility until 2016, and the tide was at times an obstacle to reach the dispensary in the neighboring village of Mchinga I. However, a health facility has been established in 2016.

## 2. Research methods

Qualitative and quantitative methods were undertaken for the research. In Rutamba villages, simple short Swahili questionnaire with the objective to understand the use of traditional medicine was prepared by the author. Interviews based on the questionnaire were implemented by a villager as a research assistant,

in 2017<sup>18</sup>. The respondents were sampled so that the same number of women and men of various ages were questioned in the area near the hospital, area near the market, and area remote from the hospital and the market. As a result, 44 women (45.8%) and 52 men (54.2%) responded; 30 (31.3%) near the hospital, 35 (36.5%) living near the market, and 31 (32.3%) remote from the hospital or the market. Mean age was 45.26, with a median of 47.50, ranging from 12 to 86. Mean years of education was 6.56 with a median of 7.00, ranging from 0 to 16.

As for the qualitative research, it has been done in two folds. First, the author collected samples of plant species in the field that were introduced as their traditional medicine by three informants respectively, and interviewed its local name and usage. The informants are considered to have relatively more knowledge of herbal medicine than others, some traditional healers in Rutamba village and in neighboring villages. Second, the collected samples were showed to 10 people (including the three informants, their family, and neighbors). They were asked to give the local name and usage of the shown sample. Total of 53 samples collected in 2016 were shown to the 10 people, but informants were only asked about samples indicated/collected by other informants. These samples have been identified with scientific names.

The research on Mchinga II was based on a Swahili questionnaire interview to 95 women by the author and assistants. Female-headed and male-headed households were selected in all 10 hamlets of the village in 2014. The research had the objective to understand the general situation of women and children, but this article analyzes questions related to the knowledge of herbal medicine and traditional healers against other variables. The results are further compared with the results of Rutamba.

All the table and figures are formulated from the author's above research unless otherwise stated.

## II. Use of herbal medicine in Rutamba villages

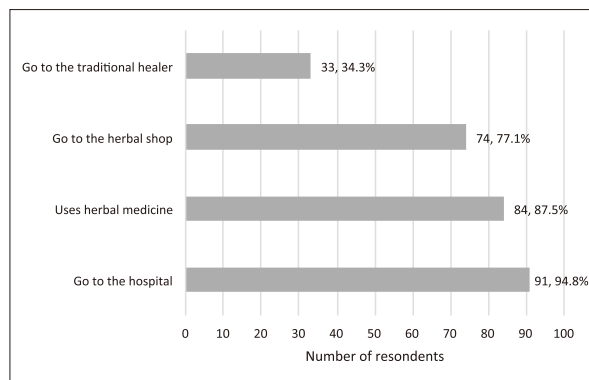
In this section, use of herbal medicine and other medicine in Rutamba village is introduced. Characteristics of the people who use herbal medicine,

the reason why they use it, and disparity/sharing of herbal medicinal knowledge is indicated.

**1. What do you do when you are sick?**

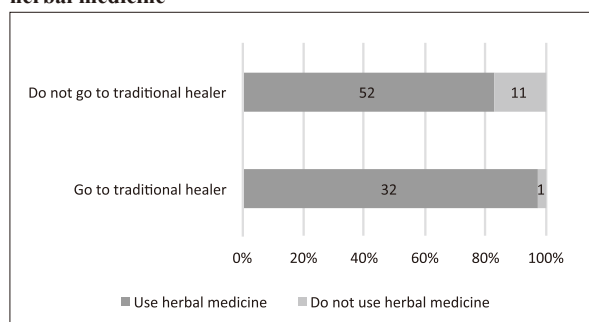
What do people do when they are sick? The most frequent answer was going to the hospital, followed by using herbal medicine, going to an herbal shop, and going to traditional healers (Figure 2). Within the respondents, 94.8% (91 respondents) go to the hospital. At the same time, 77.1% (74 respondents) go to the herbal shop and 34.4% (33 respondents) go to the traditional healer (*mganga*). This indicates that the majority of the people utilized both modern and traditional medicine.

**Figure 2: What do you do when you are sick?**



Among the respondents, 87.5 % (84 respondents) use herbal medicine. All of the respondents that go to the herbals shop use herbal medicine ( $P=0.000$ ). There was also an association between going to the traditional healer and using herbal medicine (Figure 3). There was not a clear association between the use of herbal medicine and going to the hospital.

**Figure 3: Going to the traditional healer and the use of herbal medicine**



Note:  $P=0.053$  (Fisher's Exact Test)

Mean age of respondents who “do not go to the hospital” (Table 1, 54.40, ranging from 30 to 73 years old,  $n=5$ ) and who “goes to the traditional healer” (50.85, ranging from 20 to 86 years old,  $n=33$ ) were higher than the average of all respondents (46.28, range from 12 to 86,  $n=96$ ). However, only those who “do not go to the hospital” was limited to respondents above 30 years old, and other responses had a wide range in age. On the other hand, mean age of respondents who “do not use herbal medicine” (39.33, ranging from 16 to 71,  $n=12$ ) was lower than the average.

**Table 1: Mean age and medicine**

	Mean age	n	Minimum	Maximum	Range	SD
Do not use herbal medicine	39.33	12	16	71	55	20.895
Do not go to the herbal shop	42.95	22	16	71	55	19.910
Do not go to the traditional healer	43.89	63	12	85	73	17.571
Go to the hospital	45.84	91	12	86	74	17.965
<b>Average of all respondents</b>	<b>46.28</b>	<b>96</b>	<b>12</b>	<b>86</b>	<b>74</b>	<b>18.002</b>
Go to the herbal shop	47.27	74	12	86	74	17.418
Uses herbal medicine	47.27	84	12	86	74	17.467
Go to the traditional healer	50.85	33	20	86	66	18.197
Do not go to the hospital	54.40	5	30	73	43	18.663

Note: SD=Standard deviation

Similar tendency was seen in the years of schooling (Table 2). Mean years of schooling for respondents who “do not go to the hospital” (5.40, ranging from 0 to 11 years,  $n=5$ ) and who “goes to the traditional healer” (5.76, ranging from 0 to 11,  $n=33$ ) were higher than the average of all respondents (6.56, range from 0 to 16,  $n=94$ ). However, their range of years in school was wide. The only respondents that had a limited range were those who “do not use herbal medicine” whose minimum year of schooling was 7 years, which had 8.08 mean years of schooling (ranging from 7 to 11,  $n=12$ ), longer than average.

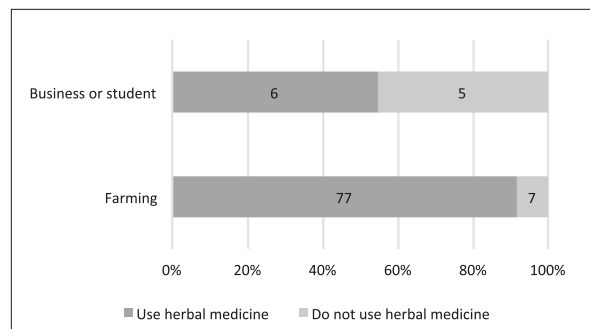
**Table 2: Mean years of schooling and medicine**

	Mean years of schooling	n	Minimum	Maximum	Range	SD
Do not use herbal medicine	8.08	12	7	11	4	1.782
Do not go to the herbal shop	7.09	22	0	11	11	2.653
Do not go to the traditional healer	7.00	61	0	16	16	3.430
Go to the hospital	6.63	89	0	16	16	3.149
<b>Average of all respondents</b>	<b>6.56</b>	<b>94</b>	<b>0</b>	<b>16</b>	<b>16</b>	<b>3.208</b>
Go to the herbal shop	6.40	72	0	16	16	3.359
Uses herbal medicine	6.34	82	0	16	16	3.316
Go to the traditional healer	5.76	33	0	11	11	2.610
Do not go to the hospital	5.40	5	0	11	11	4.393

## 2. Who uses herbal medicine?

There were clear trends of respondents who use herbal medicine and those who do not. Those who farm have a higher tendency to use herbal medicine in comparison to those who only do business or a student (Figure 4).

**Figure 4: Occupation and use of herbal medicine**

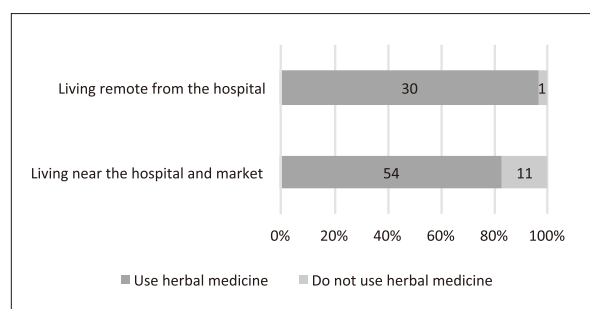


Note:  $P=0.004$  (Fisher's Exact Test)

“Farming” includes those who farm and do business. “Business or students” refer to those who only do business or those who study in school as a student.

Higher percentage of respondents living far from the hospital or market used herbal medicine, in comparison to those who lived near the hospital or the market (Figure 5).

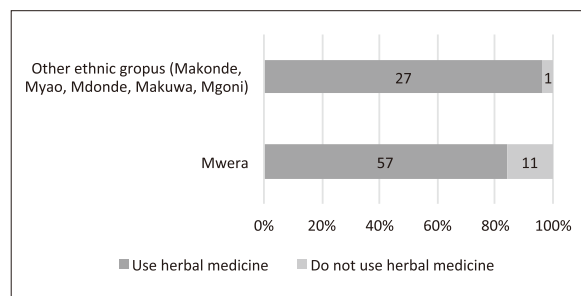
**Figure 5: Residence of respondents and use of herbal medicine**



Note:  $P=0.096$  (Fisher's Exact Test)

There were also differences between ethnic groups. Higher percentage of minority ethnic groups within the village, such as the Makonde, Mdonde, Makua, and Mgoni utilized herbal medicine in comparison to the majority ethnic group Mwera, although not at a statistically significant level. The one and only respondent within the minority ethnic groups who did not use herbal medicine was a Myao (Figure 6).

**Figure 6: Ethnic group of respondents and use of herbal medicine**



Note:  $P=0.171$  (Fisher's Exact Test)

There was no statistical association between the use of herbal medicine and sex.

## 3. Why do you use herbal medicine?

All 84 respondents that use herbal medicine explained the reason why they use herbal medicine (Table 3). Within them, almost half (49%, 41) explained it with reference to the hospital (Table 3-1). Twenty-one (21) explained that they use traditional medicine when it doesn't heal after going to the hospital, and that they either use herbal medicine (14 respondents) or traditional medicine (3), go to the traditional healer (2), or change medicine (1). Ten (10) respondents indicated that they go to the hospital to get measured etc., but also use herbal or traditional medicine (6), or go to a traditional healer (1). Seven (7) indicated that hospital fee is expensive, and herbal medicine is cheaper (2). On the other hand, 3 indicated that they used to use herbal medicine in the past, but now they go to the hospital.

Even within those who did not specifically indicate the hospital (Table 3-2), 11 explained that they wanted to change medication, and 3 indicated that because they found herbal medicine cheaper. One man of age 69 living relatively far from the hospital indicated that he did not know how to get (modern) medicine, so he uses herbal medicine.

On the other hand, 6 explained that herbal medicine is their tradition, another 6 indicated its function, and 5 simply liked herbal medicine. Three (3) respondents further explained that herbal medicine does not have chemical or “poison”. Fifty-year-old man living far from the hospital explained an episode that he went to a traditional doctor in Lindi City, obtaining herbal



Table 3-1: The reasons for using herbal medicine (in relation to hospital)

Reason (English translation)		
When	Where	
When it doesn't heal after going to the hospital	When it doesn't heal after going to the hospital,	goes to the traditional healer.
	When it doesn't heal after going to the hospital (gets measured and given medicine),	goes to the traditional healer.
	Because hospital medicine often does not heal.	That is why I use herbal medicine.
	Because it doesn't heal after going to the hospital,	he uses traditional medicine.
	Goes to the hospital and,	uses herbal medicine.
	I first use hospital medicine,	then I use herbal medicine.
	I first use hospital medicine, and if it finishes and I haven't healed,	I use herbal medicine which is cheaper.
	I use hospital medicine,	then I use herbal medicine.
	I use hospital medicine and if it doesn't heal,	I use herbal medicine.
	Start with the hospital, but when it doesn't heal after going,	I get advise to use herbal medicine.
	There are disease that can't be treated in the hospital.	After this I use herbal medicine.
	There are sickness that can't be treated in the hospital,	so I must use herbal medicine.
	They treat differently from the hospital.	That is why I use herbal medicine.
	When hospital medicine does not heal,	I use herbal medicine.
	When it doesn't heal after going to the hospital,	gets herbal medicine that he knows.
	When it doesn't heal after going to the hospital,	she uses traditional medicine.
	When it doesn't heal after going to the hospital,	she uses traditional medicine.
	When it doesn't heal after going to the hospital.	
	When it doesn't heal after going to the hospital,	to change medicine.
Some treatment cannot be done in the hospital,	so I go back to herbal medicine.	
There are sickness that can't be treated in the hospital.		
Get measured. Use both	I first go to the hospital to measure,	then I use herbal medicine.
	Hospital is to get measured.	Traditional healers gives herbal medicine.
	Goes to the hospital,	and uses herbal medicine.
	Hospital medicine that we use has come far.	But we still use herbal medicine even now.
	I give birth in the hospital,	but I use traditional medicine.
	I go to the hospital,	and also use herbal medicine.
	I use both hospital treatment,	and also use herbal medicine.
	Both is treatment.	
	Both traditional medicine and hospital is good.	
I try to use or mix our medicine and foreign medicine.		
Hospital is expensive	Hospital fee is expensive,	but herbal medicine is cheaper.
	I don't have money to pay the expenses of a hospital.	That's why I use herbal medicine
	I can't go to hospital.	
	I don't have money to pay the expenses of a hospital.	
	When I don't have money for the hospital.	
	When I don't have money for the hospital.	
	When I don't have money for treatment and measurement.	
Changed to hospital	We used to use these medicine,	but now I use hospital medicine.
	I used to use herbal medicine because hospital was very far,	and we had to walk by foot.
	Long time ago, hospital used to be far.	So in our environment, if get sick, we get treated by a traditional healer and get leaves and roots.

Table 3-2: The reasons for using herbal medicine (independently)

Reason (English translation)		
When		Where
Change to herbal medicine	Has been sick for a long time.	Now tries herbal medicine.
	Alternative treatment.	
	Alternative treatment.	
	I add treatment.	
	I change medicine.	
	I change treatment.	
	I change usage of medicine.	
	To change medication.	
	To change medicine.	
	To change medicine.	
	To change usage of medicine.	
Cheaper	Herbal medicine is cheap and easier to get.	
	I don't have enough money, I can get it cheaply.	so I use traditional leaves and roots.
	I don't know how to get medicine here,	so I get herbal medicine.
Tradition	Herbal medicine is our tradition.	
	I use herbal medicine of our tradition. It come's from our ancestors.	
	It is our ancestors tradition to use medicine from leaves and roots.	
	These are our traditional medicine.	
	Traditional medicine is our ancestor's.	
We are used to traditional medicine from our parents,	and even now, we use until now.	
Effective	Followed the treatment and recovered.	
	I recover from it.	
	I recover if I use it.	
	It treats well.	
	These medicine can treat and heal.	
Like	Likes herbal medicine.	But shops for herbal medicine is not available.
	I like herbal medicine.	
	I really like herbal medicine.	
	Likes herbal medicine.	
	Traditional medicine is important for us.	
No poison	According to research, herbal medicine does not have poison.	
	Herbal medicine is not chemical for humans, and it works when you follow the dosage.	
	Many research shows that herbal medicine does not have much poison.	
Other	Because I am sick.	
	I went to a (traditional) doctor in Lindi, and he gave me traditional medicine,	but it is powder in a bottle.
		Goes to the traditional healer.
		I use these I got from traditional doctor.
		I get treated traditionally.
		Goes to herbal medicine shop.
		Treats himself and his family.
		Medicine I mix together and treat myself.
	Gets herbal medicine from the forest herself and treats herself.	



medicine in a bottle. There were three respondents (37-year-old man, 47-year-old man, and 73-year-old woman) indicating that he or she treats himself/herself and others.

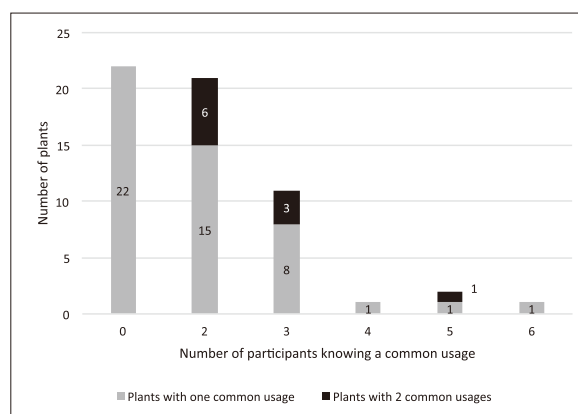
### III. Disparity/sharing of herbal medicine knowledge

In this section, diversity and sharing of herbal medicine knowledge will be introduced based on a research in Rutamba village and its vicinity. Useful plants focusing on medicinal plants have been collected by informants Abdala Issa Mpandamile (AIM), Ahmad Mtambo (AM), and Rashid Litunungu (RL). These plants have been shown to their family and neighbors to see to what extent the information is shared among family and neighbors (Table 4).

First of all, divergence of knowledge on plants is visible. For example, a professional traditional healer AIM knows medicinal usage of 68% of the plants collected by other informants, but MM, 26-year-old daughter-in-law of AM knows only knows 2%. Percentage of other 8 participants fall in between the range. Even including other usages, AM did not know the usage of 96%, but AIM 9%. Furthermore, AIM knew usage related to witchcraft for 30 % of the plants, whereas HM (23 years old, male), SI (age unknown elderly, female), and MM did not know any.

The usage of a plant is diverse among participants (Figure 7). Within the 53 plants, 22 plants do not have any common medicinal usage among the 10 participants. Fifteen plants have common usage between only 2 participants, and 8 plants have common usage among 3 participants. Total of 5 plants have more than two usages (total of 10 usages) that are common. There is one plant each with 4, 5, and 6 participants, with one common usage, which is relatively rare in this collection. Therefore, diversity stand out more than the commonality of the usages in general.

Figure 7: Common usages



However, three aspects can be viewed from the common usage: Well-known medicinal plants, sharing of information between relatives and neighbors, and coincidental common usage.

First example of a well know medicinal plants is ID number 32, *Azadirachta indica* (Meliaceae family). Its local Swahili name is “Marubaini”, which means 40 medicines. Among the 10 participants, 5 participants recognized it as medicine for stomach, and 3 recognized it as medicine for hernia. Marubaini has been planted in other parts of Tanzania, and is also famous in other regions of the country.

Plant ID number 36, *Tamarindus indica* (Caesalpinioideae family), local Swahili name Mkwaju, English name Tamarind, is a famous fruit of African origin which is popular for juice, also available in the market. Among the 10 participants, 5 agreed that it is good for cough.

Plant number 61, *Piliostigma thonningii* (Caesalpinioideae family), local name Nekee, is not as famous nationally, but 6 participants agreed that it is good for cough. The plant is available widespread throughout tropical Africa especially in semi-arid to moist tropics, and the use as cough medicine is found elsewhere as well<sup>19</sup>.

Other medicinal usages are shared mostly among relatives and neighbors. Most common sharing was seen between traditional healer “uncle” AIM and his distant “nephew” AM whose father was also a traditional healer. They call themselves “uncle” and “nephew” and they are in fact relatives with ancestors of traditional healers, but not direct uncle and nephew. Other sharing

has been seen between next door neighbors AM and RL (e.g. plant ID no.5, 6, 8, 52, 56, 57, 41), brother-in-law and sister-in-law (RL and AM, no.33), husband RL and wife SI for stomachache (no. 29) and hernia (no.14), husband AM and wife FL for eye (no. 8), and others simply between neighbors (e.g. RL, SSK, and FL shares the knowledge of no.24 for wound). Some exception may be that unrelated elderly traditional healers AIM and SSK have common usage for witchcraft (no. 11, 48). As a summary, it can be explained that family, relatives and neighbors share the knowledge for some of the medicinal plants.

#### IV. Comparison with women's traditional medicine usage in Mchinga II village

This section reviews the tendencies of women's use of traditional medicine in Mchinga II for comparison with the case of Rutamba village.

##### 1. Characteristics of women using traditional medicine in Mchinga II

According to the previous research<sup>20</sup>, not many women in Mchinga II knew herbal medicine or went to the traditional healers. Only 8.4% (8 respondents) knew herbal medicine, and 14.7% (14 respondents) went to the traditional healers (Table 5). In total, 15.8% (15 respondents) either knew herbal medicine and/or went to traditional healers.

**Table 5: Women's knowledge of herbal medicine and going to traditional healers**

	Know herbal medicine	Don't know herbal medicine	Total
Go to the traditional healer	7	7	14
	7.4%	7.4%	14.7%
Don't go to the traditional healer	1	68	69
	1.1%	71.6%	72.6%
Total	8	75	83
	8.4%	78.9%	87.4%

Note: Respondents not included in the table did not answer.  
Source: Sakamoto (2018b)

As seen in other research villages in Dodoma and Zanzibar, there was a correlation between knowing herbal medicine and going to the traditional healer in Mchinga II as well (correlation coefficient 0.616,  $P=0.000$ ). In Mchinga II, most of those who knew herbal medicine also went to the traditional healer, and only one woman that knew herbal medicine responded

that she did not go to the traditional healer.

##### (1) Women who know herbal medicine

In Mchinga II, 8 women (8.4%) responded that they knew herbal medicine. According to correlation analysis with other answers in the questionnaire questions, these women had the following tendency (Sakamoto 2018b).

- Goes to the traditional healer (correlation coefficient 0.616,  $P=0.000$ )
- There is ample food throughout the year (0.264,  $P=0.011$ ) and there are many months with food (0.217,  $P=0.037$ )
- There is a household member working (0.338,  $P=0.001$ )
- Help others bring up children (0.360,  $P=0.000$ )
- Had higher number (0.209,  $P=0.050$ ) and percentage of children's death under 5 out of total births (0.259  $P=0.020$ ) and out of children brought up (0.223,  $P=0.037$ )

In addition to the tendency that women who knew herbal medicine went to the traditional healer, they also tended to be in a stable household where they had enough food, and had other family members working. They also tended to help others bring up children. However, they also had a tendency to have experienced children's death.

##### (2) Women who went to traditional healers

What were the tendencies of 14 women (14.7%) who went to traditional healers?

- Knew herbal medicine (0.616,  $P=0.000$ )
- Food for children was enough (0.259,  $P=0.021$ )
- Help others bring up children (0.416,  $P=0.000$ )
- There is a household member working (0.232,  $P=0.037$ )
- The husband makes a decision on cash consumption (0.249,  $P=0.022$ ) and not the couple together ( $-0.278$ ,  $P=0.010$ )

Since there is a strong correlation between knowledge of herbal medicine and going to the traditional healer, some of their tendencies overlap or are similar. Their food for children tended to be enough, and they tended to help others bring up children. There was a tendency that there was a household member who worked. This may have been the husband who made the decision.

Table 4: Knowledge of Medicinal Plants in Rutamba villages

Plant species ID number	Plant species (ID number)			Abbreviation of name	AIM	AM	RL	SSK	SM	FL				
	0=Within the village, 1=Within the area, 2=Within the district	0=Natural, 1=Planted	Use indicated by informant											
	Relationship	Occupation	Ethnic group	Sex	Age	Education	Place born	Place of resident						
32	0	1	1,3	1	Diaphragmatic hernia	1,3 <i>Abortion, Insect repellent, Shadow</i>	1	Fever from hernia	1	Hernia	1	1 hear others use it for medicine		
61	0	0	1	1	Stomachache	1 Cough	1 Cough	1 Cough of small children	1	Cough	1	Cough		
36	1	1	1	2		1,2 Cough	1 Toothache, Cough, Diarrhea	1,2 Cough, Nausea	2		1	Cough		
33	0	0	1,4	4	Poison against witchcraft	1,4 <i>Feet groaning, Poison against witchcraft</i>	1 Nausea, Stomachache	1 Small children's medicine	1	Facilitate birth, Abortion	0			
29	0	0	1,4	1	Diaphragmatic hernia	1,4 <i>Pus, Poison against witchcraft</i>	1 Nausea, Stomachache	0	0	0	0			
24	0	0	1	0		1	1 Wound	1	Wound	3	1	Wound		
8	0	0	1	1	Facilitate birth	1 Hematuria, Eye	1 Eye	0	1	1	1	Eye		
34	0	1	1,2,4	1,2	Stomach, Eye	1,2,4 <i>Cleanse the stomach, Poison against witchcraft</i>	1,2 -	1,4 Measles, Spirit	2		2			
14	0	0	1	1	Stomach detoxification	1 Convulsion	1,3 Hernia	1	Women's fertility	2	4	Witchcraft		
31	0	0	2,3	1,4	Convulsion, To get rid of bad spirit	1 Convulsion	2	Relish for elders. "Tree with a scent"	1	Stomachache (stuka)	0	3	Mosquito repellents	
45	1	0	1,3	1	Children's stomachache, Menstruation pain	1 Side-stomach pain	1,3 <i>1 Stomachache, 3 Rope to tie to make a basket</i>	1	Diarrhea	1	0	0		
43	1	0	1	1	Gynecological disease	1 Menstruation pain	0	1	Menstruation pain	0	0	0		
62	0	0	1,3	1	Strengthen body, Stomachache, Backache	1,3 <i>Hernia, Ant repellent</i>	1,3 <i>Hernia, Ant repellent</i>	1,3 <i>Cut, Ant repellent</i>	1,3	Cut, Ant repellent	1,3	Cut, Ant repellent		
26	0	0	1	1	Strengthening, Breathing, Cold	3	1	Cough	1	When a child can not speak	3	Wood	0	
13	0	0	1,2,3	1,2	Swelling	1,2,3 <i>1 Swelling wound, 2 Fruit, 3 Radiator</i>	1,2	When a pus of a wound broke	1,2	Difficulty in birth	0	2		
5	1	0	1	1	Convulsion	1 Convulsion	1	Convulsion of children	0	1	Broaden the route for giving birth	0		
57	1	0	4	4	Plant in the farm for good harvest	4 To be blessed with food	4	1 Stomachache, 3 Rope to tie to make a basket	4	Make a wish for good harvest	0	0		
41	1	0	1	1	Diaphragmatic hernia	1 Hernia	1	Hernia	0	0	0	0		
37	1	0	1	1	Headache, Stop sneezing	1,3 Diaphragmatic hernia	1	Hernia	0	0	0	0		
6	0	0	1	1,4	Strengthening, Detoxification	1 Convulsion	1	Convulsion	1	Stomatitis	1	0		
56	1	0	1	4	Strengthening against witchcraft	1 Eye	1	When the eye hurts	0	1	1	0		
52	0	0	1	1	Snake	1 Ear	1	Ear	0	0	1	Body		
12	0	0	1	1	Sprain	1	When the feet hurts	1	Malaria	0	2	4	Witchcraft	
23	1	0	2	1,2	When bitten by a snake, Convulsion	1,2 Snake venom	2,3	2,3	0	1,2	0	2		
18	1	0	2	1,2	Children's sickness	1,2	When a child has difficulty to walk	0	0	0	2	2		
35	0	0	1,2,4	4	Poison against witchcraft	1,2,4 <i>Feet, Food, Point against witchcraft</i>	1	Dizziness	0	0	0	0		
51	1	0	4	4	Aphrodisiac	4 Aphrodisiac	3	Straw to drink alcohol	0	0	0	1		
30	0	0	4	4	Poison against witchcraft	4 Poison against witchcraft	0	0	0	0	0	0		
50	1	0	4	4	To get rid of devil	0	4	To get rid of bad spirits	0	3	0	0		
11	0	0	1,2	1,2	Strengthening, Spirit	1,2 <i>1 Swollen feet, 2 Eat the fruit</i>	1,2	A difficult medicine, Wound	1,2,4	Medicine for bad things (e.g. fever, death) will not to come	1,2	2		
48	1	0	1,4	1,4	Snake, Witchcraft	0	0	4	Strengthening big spirits	0	0	0		
39	1	0	1	1	Hernia	1	When the child is delayed to start walking	1	Swelling	0	1	To decrease the days of menstruation	0	
9	0	0	2	1,2	Convulsion	2	Eat the fruit	1,2	Diaphragmatic hernia	1,2	Swelling after giving birth	2	2	
7	0	0	1	1,2	Snake venom detoxification	1	Swollen hands	2,3	Food in times of hunger	1,2	Birth	2	2	
4	0	0	2	4	Strengthening, Detoxification	2	Drink the water	1,2	Burn, Pus	1	Fever, Measles	1	Hernia	2
44	1	0	1,3	4	Give good luck to the farm	1,3 <i>Measles, Disease of long time ago, Wood</i>	3	3	1,3	Measles, Hear that is medicine for men	0	0		
38	1	0	1	1	Increase blood	1	Eye	1	Sickness (details unknown)	0	0	0		
54	1	0	2	1,2		2	2	Food in times of hunger ("Can die from the poison")	2	1	I hear that it is food	2	2	
10	0	0	2	1,2	Finger, Dematzoa	2	Eat the fruit	1,2	Wound, Diaphragmatic hernia	2	2	2	2	
19	2	0	2	1,2,4	Constipation, Make a wish	2	2	1,2	Hernia	2	0	2		
17	2	0	2	1,2	Diaphragmatic hernia	2	2	1	Normal swelling	2	0	2		
15	2	0	2	1	Head	2	2	2	0	0	0	2		
47	1	0	1	1	Stomachache	0	0	1	Children's convulsion	0	3	Small pounding stick	0	
3	0	0	2	2		2	Eat the fruit	2	2	0	0	1	Body	
25	0	1	2	0		1,2	Head	2	Eat the fruit	2	Fruit	0	2	Fruit
21	2	0	2	4	Witchcraft for soccer	2,3	Food, Toothbrush	2	2	1	After menstruation	0	2	
60	1	0	3	1	Eye, Diarrhea	3	3	Wood for construction, firewood	3	Firewood	2	0		
46	1	0	4	4	Sickness of a body by witchcraft	0	0	1	Snake	0	0	0		
53	1	0	3	1	Strengthen body	3	3	Pounding stick	3	Pounding stick	3	0		
58	1	0	3	1	Hemorrhoids	3	3	Wood for construction	0	0	0	0		
40	1	0	1	4	Against thieves	0	0	0	0	1	Abortion	0		
42	1	0	1	4	Strengthening the spirit	1	Strengthening men	0	0	0	0	0		
49	1	0	1	1	Strengthening men	3	3	0	0	0	0	0		
Introduced plants, number (italic)					6	21	17	0	0	0	1			
Asked plants, total(excluding introduction as an informant)					47	32	36	53	53	53	52			
*Use														
1	Rate of knowing medicinal plant				68%	44%	56%	38%	26%	15%				
2	Rate of knowing edible plants				30%	38%	39%	26%	28%	31%				
3	Rate of knowing other usage				4%	25%	14%	11%	9%	2%				
4	Rate of knowing plants related to witchcraft				30%	6%	6%	6%	0%	4%				
0	Rate of not knowing any usage				9%	19%	14%	45%	53%	58%				

Plant species ID number	HN		SI		AM		MM		Number of people who use the plant for medicine	Number of people who use it for common sickness	Plant known? Common medicinal use (bold) Diversity	No of people who do not know the plant name
	Son of SM Farmer Mwera Male 23 4 years (junior high) Rutamba village Rutamba village	Wife of RL Farmer Mwera Female Unknown No Rondo Rutamba village, living with RL	Sister-in-law of RL, Sister of SI Farmer Mwera Female Unknown No Rondo Rutamba village, near SI	Daughter-in-law of FL, daughter of AM Farmer Mwera Female 26 7 years Rutamba village Rutamba village								
32	1	<b>Stomachache</b>	1	<b>Stomachache</b>	1	<b>Stomachache</b>	1	<b>Stomachache</b>	10	5+3	A tree known to many people (planted all over Tanzania). Use for normal stomachache, hernia is common	0
61	0		3		1	<b>Cough</b>	0		7	6	Relatively known medicine for cough	2
36	1		0		1,2	<b>Cough</b>	2		6	5	Well known fruit. Also known that is it good for cough.	1
33	0		0		1	<b>Stomachache</b>	0		5	2+2	Witchcraft is common between "uncle" and "nephew". Stomachache is common between brother/sister-in-law.	4
29	0		1	<b>Stomachache</b>	0		0		4	3	Stomachache is common between husband and wife. Traditional healer also use it for diaphragmatic hernia.	6
24	0		0		0		0		3	3	Garden plant. Neighbors use it commonly for medicine for wound.	6
8	0		0		0		0		5	3	Couple, neighbors use it commonly for medicine for eyes.	5
34	2		2		1,2	<b>Eye</b>	2		6	2+2+2	Cultivated crop that all know. There are various medicinal use, but using is for stomach, eyes, and witchcraft are common for 2 people	0
14	0		1,3	<b>Hernia</b>	1		0		6	2	Relatively known tree. There are various medicinal use, but a couple use it commonly for hernia.	2
31	1		1		4	<b>Spirit</b>	0		5	2+3	Relatively known herb with scent. Use for convulsion between traditional healer "uncle" and "nephew". Commonly used against witchcraft among unrelated elders.	2
45	0		0		0		0		5	4	Stomachache is common use between 4 people.	5
43	0		0		0		0		3	3	Gynecological disease and menstruation pain in common between "uncle", "nephew" and elderly woman.	7
62	0		0		0		0		4	2+3	Ant repellent is common. Hernia is known between neighbors.	1
26	3	<b>Wood for construction</b>	0		0		0		3	2	Known wood for construction, but elders also know it as cough medicine.	4
13	2		2		0		2		4	3	Known fruit tree in the forest. "Uncle" and "nephew" use it commonly for swelling, and neighbor also use for a similar usage.	2
5	0		0		0		0		4	3	"Uncle", "nephew", and neighbor use it commonly for convulsion.	6
57	0		0		0		0		0	3	"Uncle", "nephew", and neighbor use it commonly use it to wish for good harvest.	7
41	0		0		0		0		3	3	"Uncle", "nephew", and neighbor use it commonly for hernia.	7
37	0		0		0		0		3	2	Hernia is used commonly between neighbors.	7
6	0		0		0		0		5	2	Only used for medicine, neighbors commonly use it for convulsion. There are also other uses.	5
56	0		0		0		0		6	2	Neighbors commonly use it for eye medicine.	6
52	0		0		0		0		5	2	Neighbors commonly use it for ear medicine.	6
12	3		1	<b>Body pain</b>	3		0		4	2	Relatively known plant. Among various medicinal use, "uncle" and "nephew" use it for feet.	2
23	0		2		2		0		3	2	Relatively known fruit of the forest. "Uncle" and "nephew" use it commonly for snake detoxification.	3
18	2		0		0		0		2	2	Known as food. "Uncle" and "nephew" use it for children's medicine.	5
35	0		3		0		0		2	2	"Uncle" and "nephew" use it commonly for witchcraft.	6
51	0		0		0		0		1	2	"Uncle" and "nephew" use it commonly aphrodisiac.	6
30	0		0		0		0		0	2	"Uncle" and "nephew" use it commonly against witchcraft.	7
50	0		0		0		0		1	2	Elderly men commonly use it to get rid of devil.	7
11	2		2		0		2		5	2	Unrelated traditional healers use it against witchcraft.	1
48	0		0		0		0		1	2	Unrelated traditional healers use it against witchcraft.	8
39	0		0		0		0		4	0	There are many medicinal usages, but various.	6
9	2		2		2		2		3	0	Well known fruit in the forest. Medicinal uses are various.	0
7	0		0		0		0		3	0	Known as food in times of hunger with poison, but the medicinal use is various.	4
4	0		0		0		0		3	0	Uses are various	4
44	1,3		0		0		0		3	0	Uses are various	5
38	0		3		0		0		3	0		6
54	1		2		2		0		2	0	Known as food in times of hunger with poison,	1
10	2		2		0		0		2	0		2
19	2		2		0		0		2	0	Relatively known as a fruit in the forest. 2 people have medicinal uses but not for common use.	3
17	2		2,3		0		0		2	0	Known as food, but medicinal use are various.	3
15	0		0		0		0		2	0	Fruit not available in the area. There are medicinal uses.	7
47	0		0		0		0		2	0	Various uses.	7
3	0		2		0		0		1	0	Some eat it as a fruit in the forest.	4
25	0		2		0		0		1	0	Fruit planted near the house.	5
21	0		2		0		0		1	0	Uses are various	4
60	3		0		0		0		1	0	Used as firewood.	4
46	2		0		0		0		1	0	Uses are various	5
53	0		0		0		0		1	0	Elders know it as used for pounding stick. There are also medicinal uses.	5
58	0		0		0		0		1	0	Used as wood for construction. There are also medicinal uses.	7
40	3		0		0		0		1	0	Uses are various	7
42	0		0		0		0		1	0		8
49	0		0		0		0		1	0		8
Introduced		0		0		0		0				
Asked		53		53		53		53				
*											<b>Common medicinal uses.</b>	
1		11%		9%		11%		2%				
2		19%		25%		11%		11%			<b>Common use against witchcraft</b>	
3		11%		9%		2%		0%				
4		0%		0%		2%		0%				
0		70%		70%		87%		96%				

Note: \*1=Medicinal, 2=Food, 3=Others, 4=Witchcraft, 0=No usage

Source: Research in 2016 (Sakamoto et al. 2019)

### (3) Comparison with the case of Rutamba

One major difference is in the percentage of the usage of traditional medicine between Rutamba and Mchinga is that, in the research of Mchinga II, the question was limited to traditional healers and knowledge of herbal medicine, whereas usage of herbal medicine is questioned in the research in Rutamba. Use of herbal medicine is very common (e.g. 87.5% in Rutamba), but knowledge is not common as seen also in the disparity of it in Rutamba.

The following table (Table 6) is the mean age of women by their choice of medicine in Mchinga II. Women who “know herbal medicine” has a higher mean age (48.37, n=8) than average (44.21, n=81) with a narrow range from 36 to 65 years old.

**Table 6: Mean age and medicine of women in Mchinga II**

	Mean age	n	Minimum	Maximum	Range	SD
Do not go to the clinic/dispensary	41.00	2	40	42	2	1.414
Do not go to the traditional healer	43.34	58	20	75	55	14.307
Go to the clinic/dispensary	43.71	76	20	75	55	13.656
Do not know herbal medicine	44.13	71	20	75	55	13.844
<b>Average of all respondents</b>	<b>44.21</b>	<b>81</b>	<b>20</b>	<b>75</b>	<b>55</b>	<b>13.632</b>
Go to the traditional healer	44.71	14	27	65	38	11.900
Know herbal medicine	48.37	8	36	65	29	11.401

Looking at the mean years of schooling, it indicates a different picture from Rutamba. Although the answer is limited, those who “do not go to the clinic/dispensary” have longer years of education (7.00, n=2) as well as those who “go to the traditional healer” (3.80, n=15).

**Table 7: Mean years of schooling and medicine of women in Mchinga II**

	Mean years of schooling	n	Minimum	Maximum	Range	SD
Do not go to the clinic/dispensary	7.00	2	7	7	0	0.000
Go to the traditional healer	3.80	15	0	11	11	3.913
Know herbal medicine	3.50	8	0	7	7	3.742
<b>Average of all respondents</b>	<b>3.49</b>	<b>95</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>3.820</b>
Go to the clinic/dispensary	3.49	89	0	11	11	3.841
Do not know herbal medicine	3.40	84	0	11	11	3.790
Do not go to the traditional healer	3.33	70	0	11	11	3.866

There was no association between ethnic group or occupation, and going to the traditional healers or knowing herbal medicine.

## 2. Utilizing modern and traditional health facilities in Mchinga II

Total of 15.8% women either went to the traditional healer and/or knew herbal medicine, but 94% women went to a modern health facility in Mchinga II. All of the women who went to the traditional healer also went to a modern health facility.

They had their explanations on how they chose where to go. A few women indicated that in case they had health problems (headache, stomachache, fever, or injury), they would go to a dispensary or hospital to check. If it was not malaria or roundworm, or the hospital medicine does not work, they would go to a traditional healer.

There was also a woman who expressed that if it was “darkness” or if she has symptoms such as dizziness, she would go to the traditional healer. According to a woman, she would go to a health facility if it is “a problem caused by god” such as malaria or the problem of the leg. On the other hand, if it is a “problem caused by a person (witchcraft)”, she would go to the traditional healer. These explanations for choosing modern and traditional medicine in Mchinga were in line with the explanations why they use traditional medicine in Rutamba.

## V. Discussion and Limitation

First, the relationship of traditional medicine and modern medicine was confirmed. This was understood from the explanation why they use herbal medicine, and also from the fact that relatively more people living remote from the hospital utilized herbal medicine. The situation in Rutamba underlined previous research in Killimanjaro<sup>21</sup> that villagers utilized both traditional and modern medicine according to the understanding of disease, and the result of biomedical health care delivery.

Second, some characteristics of the user of traditional and herbal medicine were also confirmed. In relation to the “cultural identity” that pushed people in Killimanjaro to traditional medicine<sup>22</sup>, research in Zanzibar added that women without ethnic identity did not go to traditional healers<sup>23</sup>. The research in



Rutamba further added an example that minority ethnic groups had a relatively stronger tendency to use herbal medicine.

Previous research in Killimanjaro indicated that traditional medicine was not limited to rural population and urban poor but also extended to those in higher education levels, professional occupation, and across all ages in both urban and rural settings in Northern Tanzania. Although it does extend to all ages, mean age of those who went to traditional healers were relatively higher in both Rutamba and Mchinga. Furthermore, the mean age of those who knew herbal medicine was even higher in Mchinga. This complements the picture that those who know herbal medicine is limited even within the rural community.

The research in Rutamba indicated that more farmers used herbal medicine in comparison to business people and students. This gives a contrast to the research in Killimanjaro which indicated that traditional medicine was extended to professional occupations. This provides a picture that those with occupation close to the nature had more opportunity to utilize herbal medicine.

By comparison of the mean and cross analysis, the research indicated some tendencies with the case of Lindi region. However, it should be noted that analysis provided evidence of tendency, but the ranges indicate that it is not limited to, therefore, does not deny the previous research in Killimanjaro. Another limitation may be the fact that the sample used in Killimanjaro was much larger than that of this research, making the evidence in this research weaker. Regardless, it has shed light on the some of the common and different characteristics of those who utilized traditional medicine.

Comparison between the research of Rutamba villages and Mchinga II identified the following difference to be indicated in the conclusion by definition, but it should also be noted that the researcher and context may also have caused a difference. An interview by the foreign author, although accompanied by villagers as assistants, with the research topic of understanding the situation of women and children in Mchinga II, may have made respondents reserve

their answer about their usage of traditional medicine, in comparison to the interview by a villager, with the objective of understanding the use of herbal medicine in Rutamba. Similar limitation has also been noted in previous research in Killimanjaro by biomedical practitioners<sup>24</sup>. This article was able to maximize the finding by a questionnaire focusing on the use of traditional medicine, and the actual interview implemented by a villager. Research on traditional medicine needs to be cautious about the context and background of the researcher.

## VI. Conclusion

The research of Rutamba village in comparison with Mchinga II village indicated that although knowledge of herbal medicine is limited as indicated in the research in Mchinga, also confirmed in Rutamba, use of herbal medicine is very common in Rutamba of Lindi Region. Percentage that use herbal medicine in Rutamba (88%) is even higher than the percentage that use "some kind of traditional medicine" in Killimanjaro (56%). This gives a picture that majority of the people use herbal medicine based on the knowledge of a minority of people. However, since the percent that go to traditional healer is not as high (34%) even in Rutamba, it indicated that they utilized herbal shops (77%) and also knowledge from relative and neighbors.

## Acknowledgement

I thank the informants, participants, and respondents of Rutamba villages and Mchinga II village who cooperated in this research. I especially thank Biti Somoe Magaya to have implemented the questionnaire interview in Rutamba village and also to Ahmad Mtambo for his assistance in this research. I highly appreciated Mr. Frank Mbago of University of Dar es Salaam to have identified the plants species. I thank the COSTECH to have granted Research permit, and also the Governments including Lindi Region, Lindi District, Rutamba villages, and Mchinga II village for welcoming the research. This research is a result of JSPS KAKENSHI Grant Number 15H05139, and partly supported by 25360005, 25284171, and 18H00776. The research has been approved by the Ethic Review

Committee for Research Involving Human Subjects of Utsunomiya University (H15-0049).

- <sup>1</sup> For example, see Qi and Kelly (2014) for the WHO 2014-2023 strategy of traditional medicine.
- <sup>2</sup> For example, see Chhabra, Mahunnah, and Mshiu (1987, 1989, 1990a, b, 1991, 1993) for east Tanzania; and see Kombo and Makame (1998) for Zanzibar. There are also research that focus on specific disease, such as Moshi et al. (2005) focusing on convulsion. Sakamoto (2018a) also list usage of plants including traditional medicine in southeast Tanzania.
- <sup>3</sup> For example, Omolo et al. (1997) and Kiraithe et al. (2015) and others in *Journal of Ethnopharmacology*.
- <sup>4</sup> Stangeland et al. (2008).
- <sup>5</sup> For example, a newspaper Tabitu has a regular article by Dr. Edgar Kapagi on the medicinal effect of plants and fruits (e.g. 19-25 Sept. 2013, 5-11 Dec. 2013).
- <sup>6</sup> For example, Swantz (1990)
- <sup>7</sup> Gessler et al. (1995a, b)
- <sup>8</sup> Otieno et al. (2015)
- <sup>9</sup> Sakamoto et al. (2019)
- <sup>10</sup> Stanifer et al. (2015), p.13
- <sup>11</sup> Gessler et al. (1995a), Makundi et al. (2006), Spjeldnaes et al. (2014).
- <sup>12</sup> Sakamoto (2018b)
- <sup>13</sup> Stanifer et al. (2015)
- <sup>14</sup> Tanzania (1997)
- <sup>15</sup> According to Office of the Rutamba Ward and Village Administrative Office. It used to be 2,424 in Rutamba ya Zamani and 3,666 in Rutamba ya Sasa as of 1988 census (Sakamoto 2009, p.33). It looks as if population has decreased, but it is likely to be due to the division of village to Michehe village with a population of 1,211, and Chilala village with 1,453 as of 2009-2010.
- <sup>16</sup> Sakamoto (2014)
- <sup>17</sup> Sakamoto (2018b). The population was 2,254 in the 1988 Census (Sakamoto 2009, p.33).
- <sup>18</sup> Somoe Magaya has been a research assistant in previous researches, and has been trained on-the-job.
- <sup>19</sup> Useful Tropical Plants "Piliostigma thonningii" <http://tropical.theferns.info/viewtropical.php?id=Piliostigma+thonningii> (Accessed 3 May 2019)
- <sup>20</sup> Sakamoto (2018b)
- <sup>21</sup> Stanifer et al. (2015)
- <sup>22</sup> Stanifer et al. (2015)
- <sup>23</sup> Sakamoto (2018b)
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# Herbal Medicine Use and Diversity/Sharing of the Knowledge: The case of Rutamba villages in Lindi Region, Southeast Tanzania

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## Abstract

Previous research indicated a very low use of traditional medicine in southeast Tanzania in comparison to Northern Tanzania. However, this article clarified that although those who know herbal medicine may be limited and those who go to the traditional healer is not a majority (34%), *use* of herbal medicine is very common in the case of Rutamba villages (88%). It also indicated that many utilized herbal shops (77%) and also shared necessary knowledge between relatives and neighbors. The choice of modern and traditional medicine was not an either-or, but rather a decision by the people depending on the effectiveness of the modern medicine for each case, cost, and preference. There was also a tendency that people who go to traditional healers and those who know herbal medicine to be older in average, and that more farmers used herbal medicine in comparison to business people and students.

## 薬用植物の使用とその知識の多様性・共有

－タンザニア南東部リンディ州ルタンバ村の事例から－

阪本 公美子

## 要約

タンザニア南東部における伝統医療の使用は、北部と比較して先行研究では極めて低い結果であったが、本論では、薬草知識や、呪医の活用（34%）が一部に限定されているものの、薬用植物の利用は一般的である（88%）ことをルタンバ村の事例で示した。薬草店の利用（77%）や必要に応じた親族・近隣間での知識共有も紹介した。近代・伝統医療は二者択一ではなく、各病気の近代医療の有効性、コスト、選好に基づき人びとが決定していた。呪医の利用や薬草有識者の平均年齢は比較的高く、商人や学生よりも農民の薬草利用が多かった。

(2019年5月29日受理)