

A Preliminary Report on Social Network as Insurance in the Tonga Community

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Abstract

This report focuses on the support systems between households in the Tonga community, which provide a type of insurance through a social network. The report analyzes two support systems— quotidian support and extraordinary support. Quotidian support has the following features: (1) most of the members in this support system are close relatives; (2) the participants include household members and neighbors; and (3) the category of members often overlaps. Extraordinary support has the following features: (1) frequency and quantity of this type of support is linked to the phase of agricultural activity; (2) there are seasonal changes in the types of gifts given; and (3) the tendency to give certain types of gifts differs by location.

1. Introduction

Ecological influences create fluctuations in food production and income in rural villages of the semi-arid tropics (“SAT”). The Tonga people live in the SAT in Southern Province, Zambia. In addition to difficulties created by ecological influences, the Tonga people have limited or no access to insurance markets and administrative social security. This study aims to clarify how their social networks function as a type of insurance. The research is ongoing and this is a preliminary report.

2. Research Outline

The research sites are located in lower flat land (“Site A”), middle slope (“Site B”), and upper flat land (“Site C”) in Sinazongwe area, Southern Province, Zambia. The majority of residents at every site are the Tonga people.

The research methods are direct observation and interview through a questionnaire. The research topics are (1) the participation of individuals in the daily activities of food production and consumption and (2) the exchange of labor, money, food and other commodities.

3. Quotidian Support

The research focuses on how the support between households serves as a type of insurance through social network. This study analyzes two support systems: (1) quotidian support and (2) extraordinary support. This section describes quotidian support.

Participation in food production and consumption activities were researched as quotidian support systems and the relationship between participants and their background, such as blood relation and residence, were analyzed.

3.1 Food Production

The research focuses on the participation in collaborative work for agriculture and animal husbandry to analyze quotidian support in food production activity.

3.1.1 Agricultural Activity

Main agricultural activities are clearing, plowing, seeding, weeding and harvesting. The research shows that each activity was practiced by a household individually or several households collaboratively during the 2008–2009 rainy season.

Table 1 Rates of collaborative work in agriculture

Site	Village	Clearing			Ploughing			Seeding			Weeding			Harvesting			Total number of household
		+	-	+^-	+	-	+^-	+	-	+^-	+	-	+^-	+	-	+^-	
Site A	1	28%	28%	28%	56%	56%	54%	47%	47%	47%	13%	13%	13%	28%	28%	28%	72
	2	0%	0%	0%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42
Site B	3	0%	0%	0%	61%	61%	56%	39%	39%	33%	39%	39%	33%	50%	39%	33%	18
	4	16%	16%	16%	48%	45%	41%	48%	48%	43%	27%	30%	20%	34%	36%	25%	44
	5	0%	0%	0%	56%	56%	33%	33%	33%	33%	0%	0%	0%	0%	0%	0%	8
Site C	6	0%	0%	0%	77%	77%	77%	77%	77%	77%	0%	0%	0%	77%	77%	77%	90

In Table 1, ‘+’ equals rates of households which helped others, ‘-’ equals rates of households which were helped, and ‘+^-’ equals rates of household which both provided help to others and were helped.

Values for ‘+’, ‘-’ and ‘+^-’ might be different in this table; the difference between ‘+’ and ‘+^-’ equals the rate of households which helped others but were not helped. The difference between ‘-’ and ‘+^-’ equals the rate of households which did not help others but were helped.

Rates of collaborative work for each category differed widely. In many villages, the fields were cleared by fire, a method that each household can conduct individually. Therefore, the values for clearing were 0% in four of six villages. In contrast, plowing requires the use of two oxen and only a limited number of households own a pair of oxen. Therefore, the values for plowing were the highest, reflecting collaboration between households that do not own a pair of oxen and households that do.

3.1.2 Pastoral Activity

Among the Tonga people, kraal and grazing are important pastoral activities. Results of interviews conducted regarding pastoral activities in 2009 are provided in Table 2.

Table 2 Rates of collaborative work in pastoral activities

Site	Village	Cattle						Goat						Total number of household
		i	ii	iii	iv	v	i,ii&iv	i	ii	iii	iv	v	i,ii&iv	
Site A	1	3%	9%	19%	21%	48%	33%	-	-	-	-	-	-	72
	2	29%	5%	17%	12%	38%	46%	26%	0%	31%	2%	40%	28%	42
Site B	3	11%	11%	11%	17%	50%	39%	-	-	-	-	-	-	18
	4	30%	5%	11%	5%	50%	40%	27%	0%	0%	0%	73%	27%	44
	5	25%	0%	25%	0%	50%	25%	-	-	-	-	-	-	8
Site C	6	38%	10%	12%	24%	16%	72%	20%	0%	14%	0%	66%	20%	90

In Table 2, category ‘i’ equals rates of households which owned animals and shared kraal with other households. Category ‘ii’ equals rates of households which owned animals and kraal and were helped by others with grazing activities. Category ‘iii’ expresses rates of households which owned animals and kraal and completed grazing activities by themselves. Category ‘iv’ equals rates of households which did not own animals (cattle or goats) but helped other households in grazing activities. Category ‘v’ equals rates of households which did not own animals (cattle or goats) and did not help other households with grazing activities.

Households which collaborated in management of kraal are included in category ‘i’. Households which collaborated in grazing activities are included in categories ‘i’, ‘ii’ and ‘iv’. The data shows that the number of households participating in grazing activities is higher than the number of households that own kraal.

The values for grazing differed significantly based on the categories of cattle and goats. Fewer households collaborated in grazing activities for goats than for cattle. In particular, category ‘iv’ shows a marked difference; few households that did not own goats helped others with grazing activities for goats.

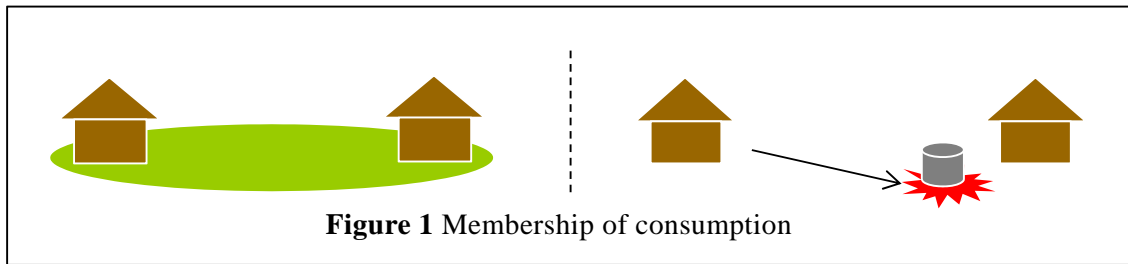
In contrast, many households collaborated in grazing activities for cattle. Since all households need a pair of oxen for plowing but not all households own oxen, many households that did not own cattle still helped others with grazing activities for cattle as a type of collaborative assistance in response to their expected need to borrow an ox or a pair of oxen for plowing.

3.1.3 Comparison between Agricultural and Pastoral Activities

Rates of collaborative works are different depending on each activity. But participation of households was similar. In particular, households that participated in plowing and grazing overlap. The need of most households for oxen to conduct plowing translates into most households participating in cattle grazing.

3.2 Food Consumption

Analysis of data gathered in 2009 through interviews of residence and commensality members shows quotidian support in food consumption activities. Members of a residence are people whose houses face the same yard (Figure 1, left diagram). Members of commensality are people who eat meals together (Figure 1, right diagram).



3.2.1 Residence Members

Table 3 shows values for residence members. Residence members are households that share their yard with others. In the table, values for Site A are higher than Sites B and C.

Intervals between houses in Site A are likely to be denser than site B and C. The higher density may be related to more households in Site A that share yards than in Sites B and C. Future research will analyze the causal relationship between density of houses and residence members with GPS data.

3.2.2 Commensality Members

Table 3 shows values for commensality members. Commensality members are households whose members eat meals with others. In the table, values for Site B are lower than Sites A and C. Gaps between values for Site A and B may be related to the intervals between houses.

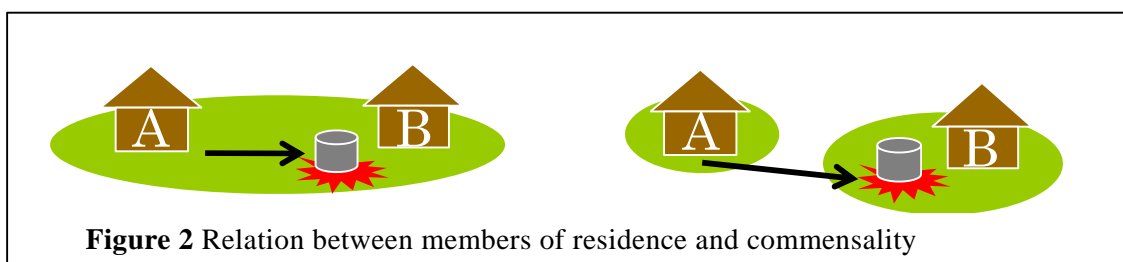
Table 3 Rates of memberships in consumption

Site	Village	Number of household	Residence members	Commensality members
Site A	1	72	47%	46%
	2	42	48%	55%
Site B	3	18	33%	33%
	4	44	22%	33%
	5	8	22%	22%
Site C	6	90	12%	43%

3.2.3 Comparison of Both Memberships for Consumption

Table 3 expresses that rates of Site A are high and of Site B are low in memberships for consumption. This difference may be related to the intervals between houses.

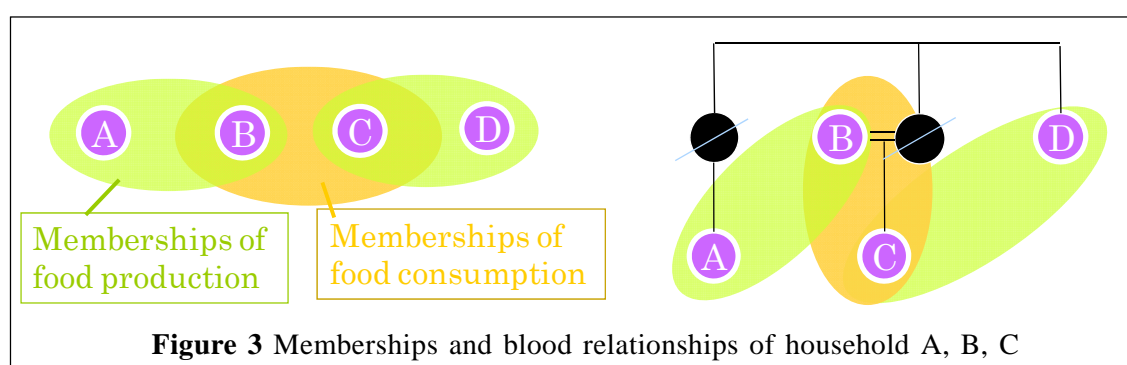
The table shows that rates for memberships of residence and commensality were almost equal in Villages 1, 3 and 5. In addition, rates of residence were less than commensality in Villages 2, 4 and 6. This can be described as “membership of residence = or < membership of commensality”; households that share the yard eat together (Figure 2, left diagram), but households that do not share the yard also may eat together (Figure 2, right diagram).



3.3 Background of Quotidian Support

Analysis of the data gathered on the relationships among members for food production and consumption activities provides an understanding of quotidian support. These activities share three common features: (1) most of the members consist of close relatives; (2) membership is not limited to members of residence and can include neighbors; and (3) memberships often overlap.

However, some households have large gaps between memberships of food production and consumption because of the absence or shortage of cattle. For example, members of Households B and C in Figure 3, left diagram, shared the yard and ate meals together in 2008–2009. Members of Household B worked to plow and graze with members of Household A, and members of Household C did the same with members of Household D. Households B and C, which was a parent-child relationship, were members of joint food consumption, but they could not be members of joint food production since neither owned an ox. Therefore, Household B joined with Household A, a close relative, and Household C joined with Household D, also a close relative, in food production to borrow two oxen owned by Households A and D for plowing. Figure 3, right diagram displays the blood relationships between Households A, B, C, and D. The head of Household B was a nephew of the head of Household A's deceased spouse. The head of Household D was an uncle to the head of Household C.



4. Insurance Among Households: Extraordinary Support

Among the Tonga people, giving and receiving is practiced irregularly. This includes gifts, trade, loans and reward for labor. This report focuses on gifts given as extraordinary support. Below is an analysis of the differences among seasons and locations in the case studies. This section deals with case studies of Households E and F.

4.1 Case Study of Household E

Members of Household E live in Site A and consist of six people; a female householder, her two children, her mother, her niece and the niece’s baby. The head of the household is in her late forties.

Figure 4 shows the frequency of gifts given each month in the period March–November 2009. The gifts consist of staple food, supplemental food, cooked meals, cash and other items.

Total frequency declined rapidly during March–June and remained at a low level after June. The frequency of giving staple food reduced by half during March–April and continued to drop by a quarter during April–May. After May, staple food was rarely given. Gifts received by Household E decreased gradually between March and July, and between August and October, they rarely received gifts. Both giving and receiving increased slightly in November.

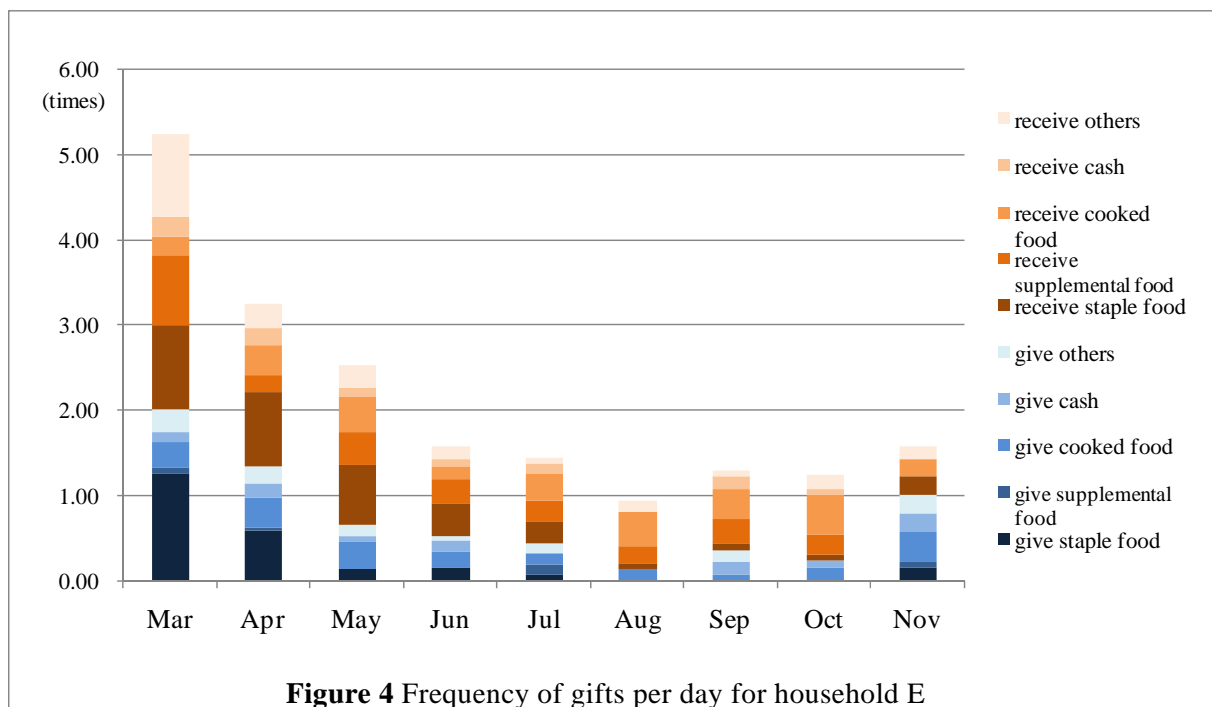


Figure 4 Frequency of gifts per day for household E

The frequency of gifts is linked to the cultivation of cereals, particularly maize which peaks around harvest season. Gift giving is highest in March at the beginning of harvest. During the maize harvest, fresh cobs were often given and received. Also, dried grain and flour were frequently given and received. Until the dry maize was harvested those suffering from food shortage received assistance from others. In April, during the dry maize harvesting, cooked meals and small amounts of harvests were often given and received.

Figure 5 shows the monetary value of gifts measured in the Zambian currency Kwacha each month during the period March–November 2009. The details of the values are the same as Figure 4.

The monthly total values were high during May–July despite lower frequency of gifts than in

March and April. After the harvest had been completed, households had enough time to visit other households and opportunities to give and receive large amounts of gifts. Since November was seeding period and households' food stocks had been depleted and were in double demand for meal and seed, the monetary value of staple food rose sharply.

Through an analysis of Household E, it became evident that the frequency and monetary value of gifts are linked to the phase of agricultural activity, especially maize cultivation. Because agriculture is the main livelihood activity of most people and maize is the main staple food in the research sites, there are seasonal changes in frequency and monetary value of gifts. For example, during the harvest period of fresh maize in March 2009, harvested cobs were given and received frequently. During the harvest period of dry maize in April 2009, cooked meals and small amounts of harvests were given and received. The amount of giving and receiving of staple food rose in November 2009 during the seeding period. The frequency and monetary value of staple food increased around periods of harvest and seeding.

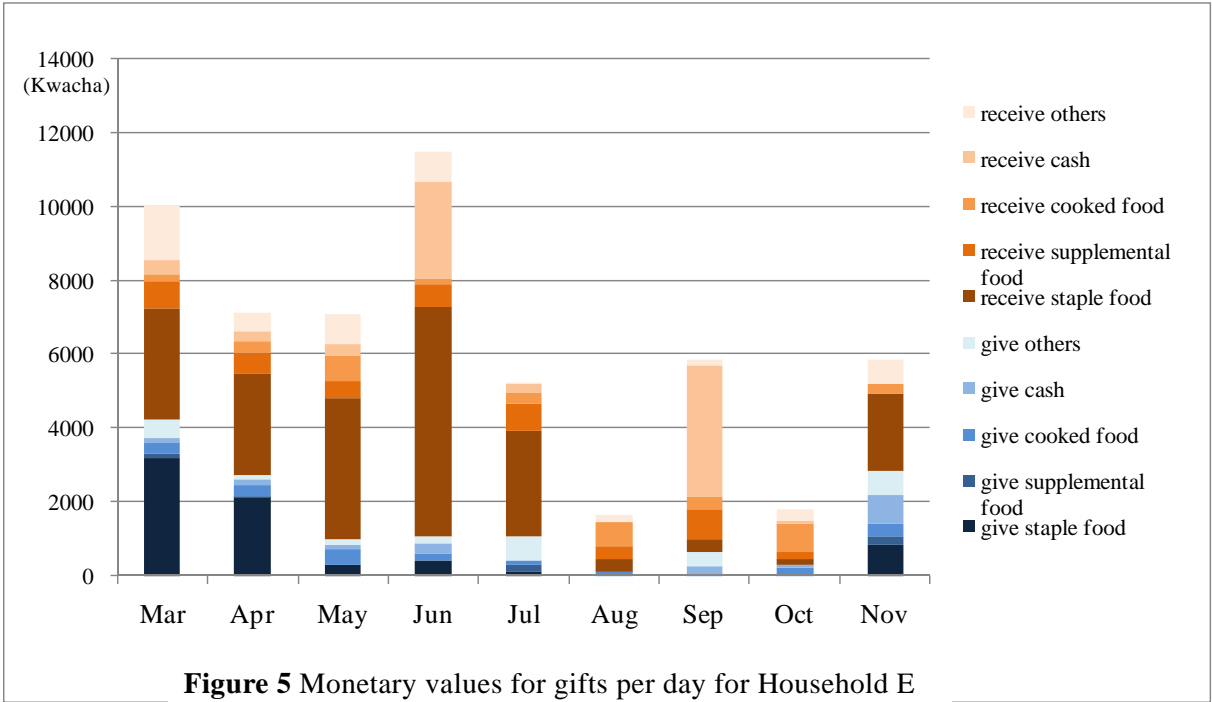


Figure 5 Monetary values for gifts per day for Household E

4.2 Case Study of Household F

The members of Household F live in Site C and consist of eight people: the head of household, his wife, their five children, and the niece of the head of household. The head of household is in his late thirties.

In Household F, the total frequency of gifts declined rapidly in the period March–May 2009 and continued to drop lower. However, the monetary values of gifts were extremely high in May, August and October in the form of staple food, which was different from Household E's trend. To understand the gift giving trend for household F, each staple food crop is analyzed.

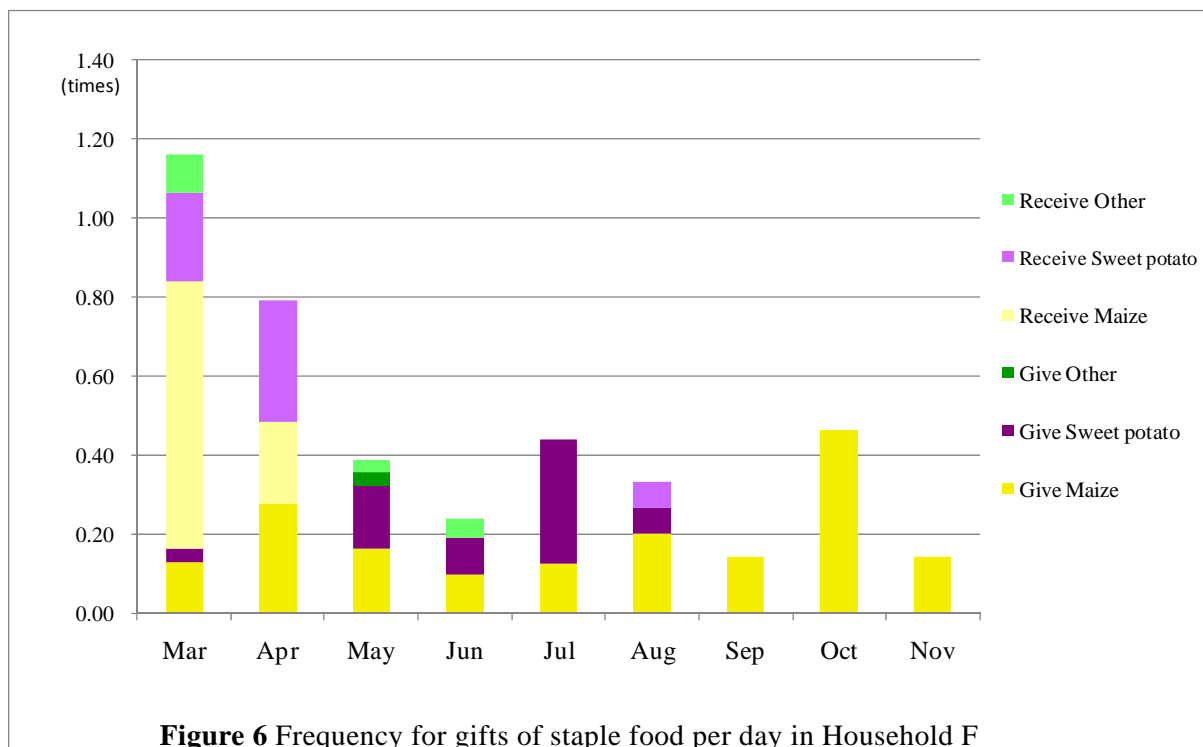
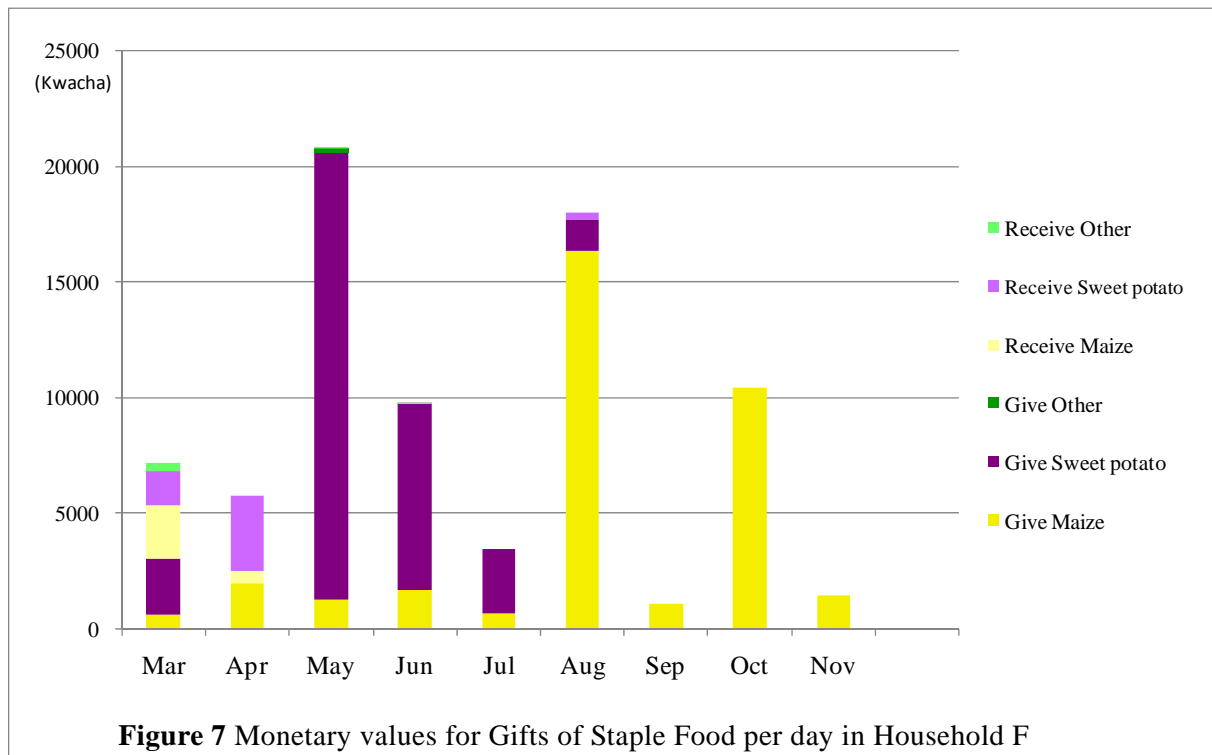


Figure 6 Frequency for gifts of staple food per day in Household F

Figure 6 shows the frequency of gifts of staple food each month during March–November 2009. Staples foods include maize, sweet potato, cassava, and pumpkin. The frequency of giving maize was high in March and April because it was harvest season and maize cobs were plentiful. Sweet potato was given and received between March and August.

Figure 7 shows the monetary value of gifts of staple food in the Zambian currency Kwacha each month between March and November 2009. The details of values are the same as Figure 6. In March and April, the monetary value was small in comparison to the frequency of gift giving and receiving. Since it was harvest season, small amounts of staple food such as maize cobs were given and received frequently. In May, the total value increased rapidly, corresponding with the peak season for sweet potato harvest. The value of sweet potatoes given and received decreased gradually until August. In August, when households started seeding maize in the field for dry season, the demand and value rose. Also, in October, the demand and value of maize increased, corresponding with the season for seeding maize.

It is apparent that Household E and F peaked differently. Household F experienced peaks during the rainy season for maize and during the dry season for sweet potato and maize. Since Household F is located in Site C which includes abundant lands suitable for dry season farming, it has several cultivation seasons. In contrast, Household E is located in site A, which lacks sufficient lands for dry season farming. Therefore, Household E cultivates only once during the rainy season.



4.3 Findings Through Analysis of Gift

The data discussed in Section 4 shows (1) the frequency and monetary value of gifts are linked to the phase of agricultural activity since agriculture is the main livelihood activity of most people in the research sites; (2) there are seasonal changes in frequency and monetary value of gifts wherein staple food increases around periods of harvest and seeding; and (3) The differences in gift trends are caused by differences in location. In particular, accessibility to dry season fields produces multiple agricultural seasons, which influences gift trends.

Future research will analyze the relationship between givers and receivers, focusing on the distance between their residences and their blood relationships.