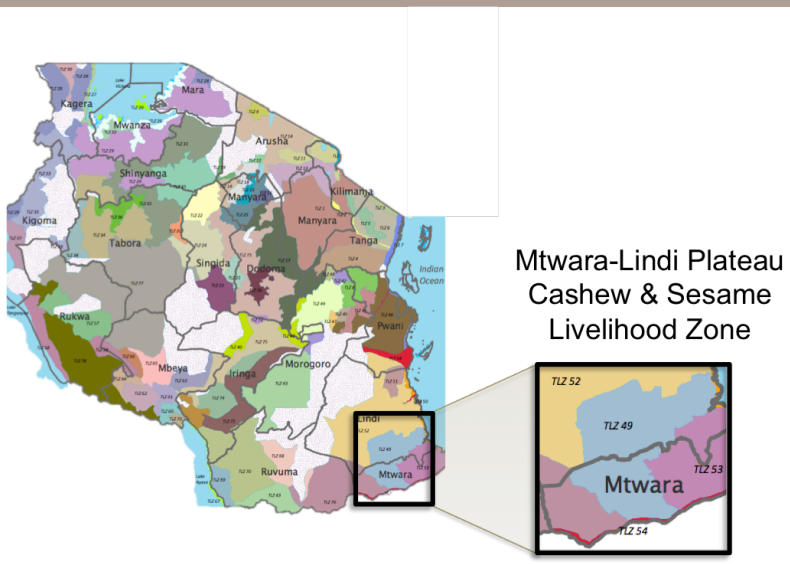
Tanzania Livelihood Baseline Profile

Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone (TLZ 49)

October, 2014[1]

Zone Description

The *Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone* is located in southeastern Tanzania and encompasses part of both Lindi and Mtwara regions. In Lindi Region this zone includes parts of Lindi Rural, Ruangwa, and Nachingwea districts; in Mtwara Region it includes Masasi District. The zone is mainly lowland savannah covered in grasses, bushes and scattered trees with outcrops of rocky mountains. The Lihonja, Lukuledi, Kihatwe and Mbemkuru rivers are found in Nachingwea while the Mbagala and Ruvuma rivers flow through Masasi. The population density for Lindi region is 13 people per square kilometre; Mtwara Region is more densely populated with 76 per square kilometre.



This is a moderately productive zone that relies on rain-fed agriculture. The soils are generally fertile and there is one rainy season, referred to locally as *Msimu*, which starts around November and lasts until May with a peak in March. Temperatures range from 22-32^{o}C.

Cashew and sesame production are the main economic drivers for local households, supplemented by food production and small numbers of livestock. Goats and chickens are kept by most households; cattle are found in some parts of the zone (especially Ruangwa and Masasi), but only kept by better off households. The zone's dominant food crops are maize, sorghum, cassava, ground nuts, pigeon peas and cow peas. Hand hoes are the primary means of cultivation for all households. The most labour-intensive times of the year are during land preparation, weeding, harvesting and spraying (of cashew trees). Very poor and poor household members are hired by middle and better off households to help with these activities. Both women and men provide labour for weeding, land preparation and harvesting; spraying is done only by men.

Services in this zone are minimal. The main sources of water are rivers, smaller streams, shallow wells, ponds, seasonal pools, unprotected wells and boreholes (during the wet season) and rivers, ponds unprotected wells and boreholes in the dry season. Humans and animals share the same water sources. In some parts of Lindi Rural District water is purchased for human consumption, but only by better off

[1] Fieldwork for the current profile was undertaken in August 2014. The information presented in this profile refers to the reference year, the consumption year that started in April 2013 and ended in March 2014. Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2019). All prices referred to in the document are for the reference year.

households. For most people living in this zone, water takes a long time to gather and is often unsafe to drink. Almost all households use temporary latrines and only better off households can afford to build permanent ones. Substantive health care facilities tend to be located far away, and it is difficult for the majority of the population to afford the transportation costs associated with getting there and accommodation costs once there. Most very poor and poor households can only afford to send their children to primary school; middle and better off households send their children to secondary school as well, but in general education opportunities are quite limited. Better off households use solar panels for lighting and electricity, but most households do not have access to electricity. The only credit facilities available are VICOBA (village community banks) but these were only started last year and have not reached a large proportion of the population. The main NGOs working in the area are the Aga Khan Foundation, CARE International, Cassava Adding Value for Africa (CAVA), Mennonite Economic Development Associates (MEDA), Save the Children and the Ruangwa Organization of Poverty Alleviation (ROPA).

Markets

Market access in the *Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone* is relatively good. The main road connecting Lindi to Masasi is tarmac while other roads in the zone are gravel and dirt. The main roads are accessible throughout the year but feeder roads become impassable during the wet season.

Cashews form a central part of the local economy and their sales are fundamental to all households. The main season for selling cashews is October to December. Cashews are mainly traded through the government warehousing system, regulated by the Tanzania Cashew Nut Board, which sets a price each year in August for the coming season. When farmers who are members (which includes most of the population) hand over their consignments to primary cooperative societies, they get 60% of the official price. The other 40% comes after the consignment has been sold (3-4 months later). If the Board makes a profit, it is distributed to the farmers as a bonus (in around January or February). The Cashew Nut Development Trust Fund in turn provides pesticides/sulphur to farmers at a subsidised rate, paid in cash. The main trade route for cashews is from farmers to the Cashew Nut Board which warehouses the cashews in Mtwara and then sells them on to India. There is also some trade going on with private traders, which is officially illegal; again the final destination of these cashews is India, but transport routes may go through Mtwara and/or Dar es Salaam first.

Sesame is the next most important cash-earning crop in this zone, and it is an especially important component of cash income for poorer households. From June to August farmers sell sesame locally to private traders who sell it on to Dar es Salaam.

Maize is sold between April and September to local traders who transport it to Lindi, Masasi, Ruangwa and Nachingwea. Pigeon peas become available for sale in July and continue to be sold through October, again bought by local traders who collect it in local warehouses before selling on to Dar es Salaam.

Staple grains, such as maize (especially for poorer households) and rice (for better off households), are purchased throughout the year but the demand for maize peaks from November through March. Much of the rice supply is sourced from Morogoro (Ifakara) and transported through the main regional markets of Lindi, Masasi, Ruangwa and Nachingwea and then on to local markets. Maize supplies come from Ruvuma (Songea) and then, after reaching the regional markets, follow the same distribution routes as rice.

Livestock (cattle for better off households; goats for poor, middle and better off households; and chickens for all households) are sold locally. Goats are normally sold at the age of 12 months while chickens are sold at around 6 months. This is not an area known for livestock keeping in any serious way; the few livestock sold are all purchased within the zone.

The labour market is also entirely local, with better off and middle households hiring members from poor

and very poor households during peak agricultural demand periods to help with land preparation, weeding and harvesting.

Timeline and Reference Year

The baseline assessment refers to a very specific time period called the reference year. In *Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone* the reference year covered the consumption period from April 2013 until March 2014, which corresponds to the production year of 2012-13. During community leader interviews, key informants were asked to rank the last four years in terms of seasonal performance with '1' indicating a poor season and '5' an excellent season. The table below, which summarizes the responses of the community leaders, shows that the reference year (production year 2012-13) was ranked as average, with fair rainfall amounts and distribution and a fair harvest. The baseline information presented in this profile, therefore, provides a view into how households in this livelihood zone make ends meet in a typical year, drawing on a normal range of options.

Production Year	Rank	Critical Events
2012-13	**3**	Fair rainfall distribution and fair production conditions resulting in fair harvest.
2011-12	**3**	Fair rainfall distribution and fair production conditions resulting in fair harvest.
2010-11	**2**	Below average rainfall distribution resulting in below normal harvest. Increased casual labour for food particularly for very poor and poor households. Increased consumption of wild food particularly Ming'oko
2009-10	**3**	Fair rainfall distribution and fair season performance resulting in fair harvest.
2008-09	**2**	Below average rainfall distribution resulting in below normal harvest. Increased casual labour for food particularly for very poor and poor households. Increased consumption of wild food particularly Ming'oko

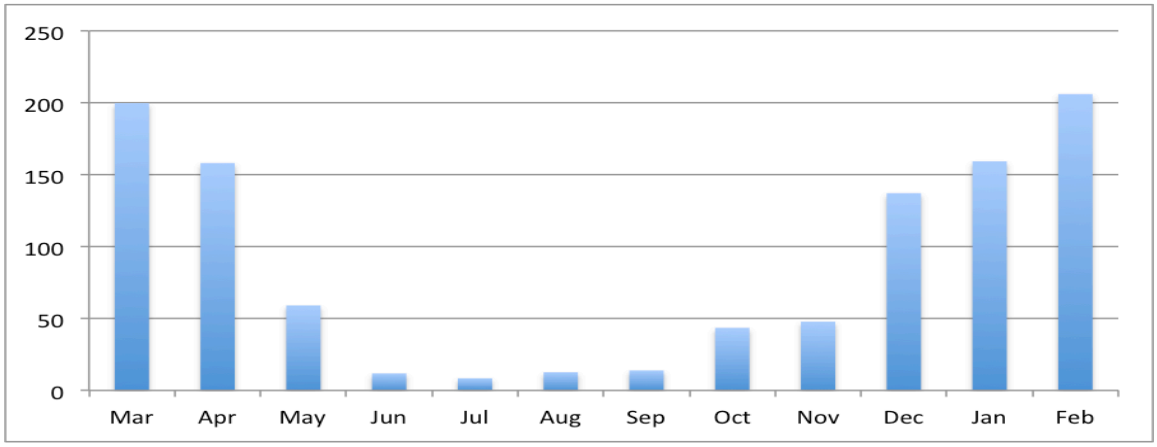
5 = an excellent season for household food security (e.g. due to good rains, good prices, good crop yields, etc)
4 = a good season or above average season for household food security
3 = an average season in terms of household food security
2 = a below average season for household food security
1 = a poor season (e.g. due to drought, flooding, livestock disease, pest attack) for household food security

Seasonal Calendar for Reference Year

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Rainy season	rainy season								rainy season				
Maize	weed/green cons		harvest		maize sales			land preparation		planting	weeding		
Sorghum					harvest			land preparation		planting	weeding		
Pigeon Peas			green consumption		harvest			land preparation		planting	weeding		
Cassava				green consumption		harvest		land preparation		planting	weeding		
Cow peas	GC							land preparation		planting	weeding		GC
Sesame					harvest			land preparation		planting	weeding		
Ground nut	GC	harvest							land prep	planting	weeding		GC
Cashew production		weeding		spraying			harvest		LP	planting			
Cashew sales								cashew sales					
Chicken sales	chicken sales												
Lean season	LS									lean season			LS
Festivals	festivals					festivals							
Casual labour	casual labour demand					casual labour demand							
Human diseases	human disease								human disease				

GC = green consumption
LP = land preparation
LS = lean season

The graph to the right shows monthly rainfall in mm for Mtwara, based on a 10-year average (2004 – 2013) Source: TZ Meteorology Department



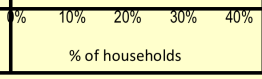
There is one rainy season in the *Newala Masasi Plateau Cashew-Sesame Livelihood Zone*. Referred to locally as *msimu*, the rains start in November and finish around May. Just before the rains begin, people start to prepare their fields, often with the help of hired labour (if they can afford it). Maize, sorghum, cassava, young cashew nut trees, and cow peas/pigeon peas are inter-cropped while sesame and big cashew nut trees are planted as single stands. Planting of all crops occurs in December with weeding for most crops taking place in January and February. Maize continues to be weeded into March as the green consumption of short cycle crops - cow peas and ground nuts - begins. Ground nuts are fully harvested in April and eaten alongside maize, which is consumed green in April (although in some areas the green consumption of maize can start as early as March). The main harvest of maize starts in May, followed by harvesting of sorghum, pigeon peas and sesame in July and cassava in August.

Casual labour demand is highest during the weeding period, but labour is also hired to prepare land and for harvesting. Both men and women from poor and very poor households provide daily labour for middle and better off households, in exchange for either food or cash. Men are hired also to help spray cashew trees from May to July.

Human diseases, mainly malaria, peak during the rainy season, coinciding with the peak labour demand period, potentially reducing the income poorer households can obtain from weeding labour (if productive household members are sick) while at the same time putting additional strain on the budget as medicines are required to treat the sick. This also coincides with lean season months (especially November and March) when household

food stocks from the previous harvest have run out, and in-kind food in exchange for labour is less available.

Wealth Breakdown

		Wealth Groups Characteristics				
		HH size	Land area cultivated (acres)	Livestock holdings	Cashew trees	Other
Very poor		5-8 (6.5)	2 - 3	5 - 15 hens	30	Bicycle, mobile phone
Poor		5-7 (6)	3 - 5	5 - 20 hens	50	Bicycle, mobile phone
Middle		5-7 (6)	5 - 10	10 - 20 hens	100	Bicycle, mobile phones, some have motorcycle
Better off		5-7 (6)	10 - 20	15 - 30 hens	200	Bicycle, mobile phones, motorcycle, kiosk
						

Note : The wealth breakdown percentages reflect the mid-point of a range.

The main determinants of wealth in this zone are the amount of land cultivated and the number of cashew trees owned. The poorer two groups make up over half of the households in the zone (split equally between very poor, 28% of households and poor, 28% of households); middle households comprise around 29% of households and better off 15%.

Very poor households cultivate approximately 2 - 3 acres whereas better off households cultivate 10 - 20 acres; poor households cultivate 3 - 5 acres and middle households 5 - 10 acres. Land is prepared by hand for all wealth groups. Maize, sorghum, sesame, pigeon peas, cow peas, cassava and groundnuts are the main crops grown in these fields. These crops are used for both food and cash income. But sesame is the real income earner of the ground crops, providing a large proportion of annual cash income for all wealth groups.

Cashew production and sales is the main economic driver in this livelihood zone, although because of the particular temperature range in this livelihood zone, cashew production is lower here than in areas further to the south, such as the *Southeastern Plateau Cashew Livelihood Zone* (TLZ 53). All households rely on income from cashew sales, with households at the top of the wealth spectrum benefiting most since they have the most trees. Better off households own and maintain as many as 200 trees from which they can derive almost two million Tanzanian Shillings annually. Their poorer neighbours own around 100 trees (middle households), 50 trees (poor households) and 30 trees (very poor households).

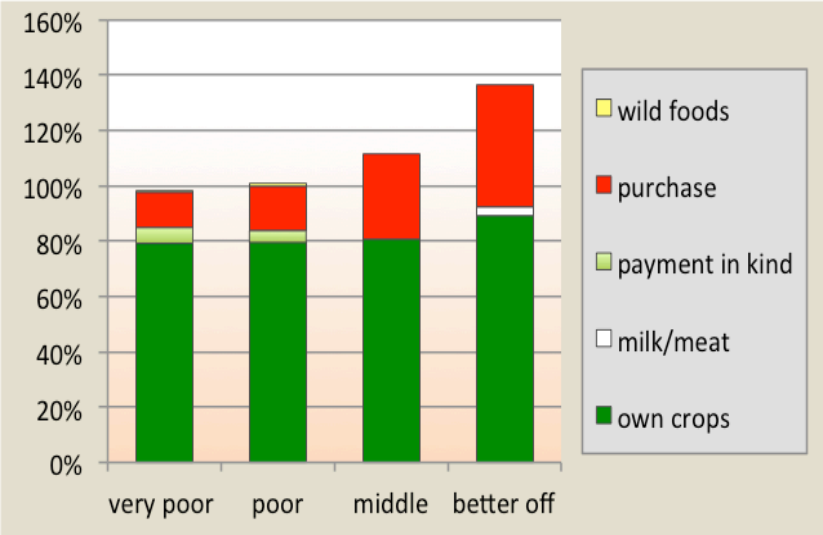
The number of livestock owned corresponds to wealth, but it is not the main determinant of wealth. Livestock provide some additional income in the form of cash from livestock sales: mainly chickens for very poor and poor households; goats and chickens for middle households; and cattle, goats and chickens for better off households. Only better off households own cattle, which provide both milk and a much higher market value than the other livestock. Chickens and goats tend to be slaughtered and eaten during festivals. Both men and women look after the livestock within the household

All households, even the very poor, own a mobile phone, and middle and better off households own two or three mobile phones. Poorer households tend to have a bicycle as well, and their huts have grass-thatched roofs. Better off households own bicycles and a motorcycle, which is used to generate

additional cash income by ferrying people or goods in return for cash. Their houses have iron sheet roofs. Middle households may or may not have a motorcycle, but usually have iron sheet roofs on their houses.

Sources of Food

The bar charts in the graph to the right present sources of food for households in different wealth groups in the livelihood zone for the period April 2013 – March 2014. April represents the start of the consumption year because it marks the end of the hunger period, as people begin consuming green maize in significant quantities and groundnuts are harvested. Food is presented as a percentage of 2100 kcal per person per day for the 12-month period.



In the graph, food access is expressed as a percentage of minimum food requirements, taken as an average food energy intake of 2100 kcals per person per day.

Households' own crop production provides the majority of their food in this livelihood zone with almost the entire remainder being purchased.

In an average year (like the reference year) cassava, maize and sorghum are the most important food crops for all households, with a smaller calorie contribution coming from pigeon peas, cowpeas, groundnuts and sesame. Middle and better off households are able to depend more on maize (around 20-44% of annual calorie requirements) whereas poorer households rely more heavily on cassava (around 33-37% of annual calories). This reflects the fact that cassava, in this relatively drier rain-fed area, is a much safer bet. Maize also requires more careful tending and maintenance than cassava, which better off households - unlike poorer households - can hire labour to provide. Sorghum, again a lower-risk option, is also more important for poorer households than for better off, providing around 13% of calories for very poor households and 5% for better off households. Pulses (groundnuts, pigeon peas and cowpeas) contribute additional calories (and needed protein) for all households.

Purchases are the second-most important source of food for all wealth groups. Maize, rice, beans, dried fish, oil and sugar are purchased by all. Better off households are the only wealth group that buys meat. The wealthier the household, the more it tends to shift the balance of purchases away from maize and towards rice, beans, meat, fish, sugar and oil. In fact, better off households in a typical year do not buy any maize, deriving around 18% of their annual calorie needs from rice and 25% from a combination of beans, meat, fish, sugar and oil. Very poor households, on the other hand, buy around 7% of their annual calories in the form of maize and rice, and only 5% of their calories from beans, fish, sugar and oil. In other words, better off households utilize their stronger purchasing power to obtain a more diverse diet than poorer households.

Payments in kind (maize in exchange for work), make up around 4 - 5% of annual calories for poor and very poor households and are especially common during the weeding season. Both men and women from poorer households provide weeding labour for middle and better off households. For two months of the year (January and February) over half the food these households consume comes from payments of maize in exchange for weeding labour.

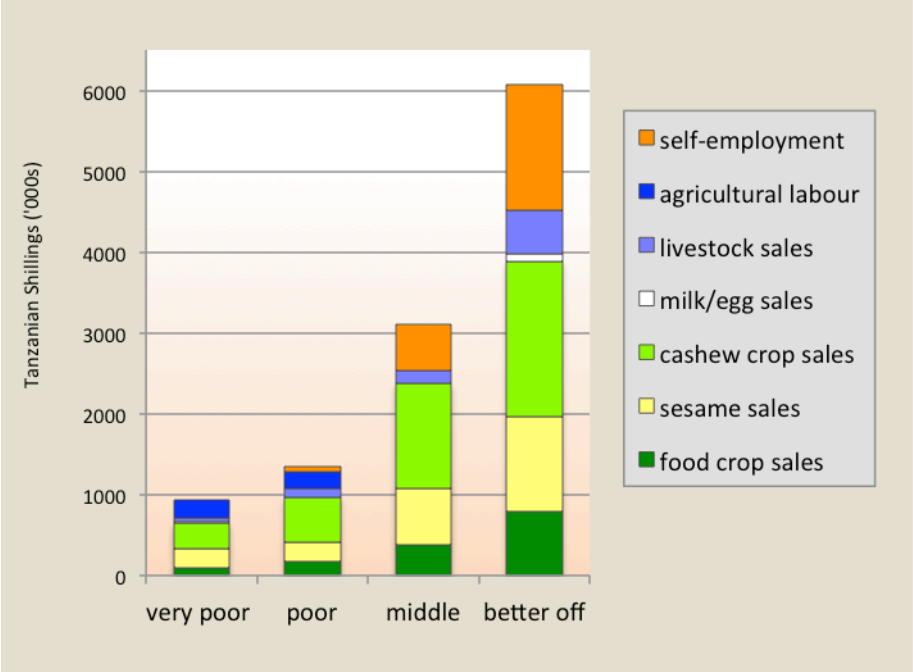
Milk makes up a very small component of annual calories (less than 5%) for only better off households. No

other wealth group owns cows, and goats are not milked in this livelihood zone.

Ming'oko, a wild tuber, is gathered by very poor and poor households in most years from November to February, but the calorie contribution from this source is quite limited meeting only around 1% of annual needs. This shows up on the graph above as 'wild foods'.

Sources of Cash Income

As shown in the graph to the right all four wealth groups earn the majority of their cash income from crop sales (food, sesame and cashew). The top two groups also rely significantly on cash generated from small businesses ('self-employment'). Livestock sales comprise a relatively small component of annual income for the three bottom groups and slightly larger proportion for the better off. Very poor and poor households earn some cash from local agricultural labour as well.



The graph provides a breakdown of total annual cash income in Tanzanian Shillings according to income source.

INCOME SUMMARY TABLE (in Tanzanian Shillings)				
Wealth group	**Very poor**	**Poor**	**Middle**	**Better off**
Annual income per household [2]	750,000 – 1,150,000	1,150,000 – 1,550,000	2,000,000 – 4,000,000	4,000,000 – 8,000,000

Cashew sales are fundamental to the local economy in this zone. Poor and middle households generate more cash income from cashews than from food crops and sesame crops combined. Better off households, with around 200 cashew trees, obtain about the same amount from cashews as they do from food crops and very poor households, with only around 30 cashew trees, obtain more from their food crop sales than cashews.

Sesame sales are another critical source of cash income from local households. This high value crop provides more than double the cash income derived from other food crops for very poor households, and it brings in over a million Tsh for better off households in a typical year. In addition, all households typically sell maize and pigeon peas; middle and better off households also sell small quantities of sorghum.

Middle and better off households supplement their crop-based income with cash generated from small businesses, such as kiosks, and motorcycle taxis (*boda boda*) which transport both people and goods. Poor households also earn some cash from self-employment, but this is mainly from making and selling bricks.

[2] The average exchange rate from April 2013 – March 2014 was US$1 = TZS1,600

Poorer households don't have the capital (such as a motorcycle, or surplus cash to purchase the commodities sold in the kiosks) to pursue these alternatives.

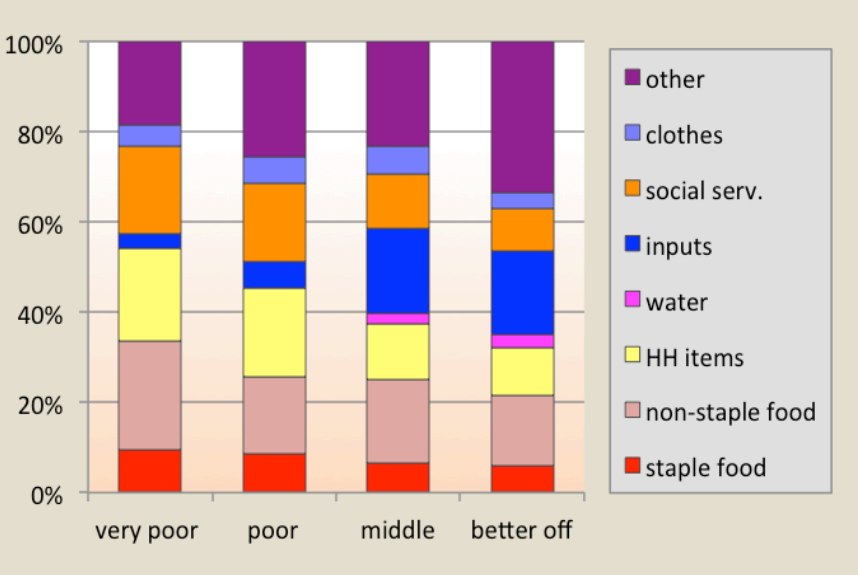
Very poor and poor households also rely on working for middle and better off households during peak agricultural labour periods. Land preparation, weeding and harvesting are typically the most demanding times, and at least one person from every very poor and poor household works for a middle or better of household during these periods. The most money is earned during weeding time, which lasts three months and sees someone from a poorer household working at least ten days a month.

Livestock sales are a relatively minor source of cash in this zone. Better off households are the only ones to generate any meaningful income from this source, selling perhaps a young bull every year. Goats are also sold by middle and poor households, and very poor households sell chickens. This source of cash, while minimal, is nevertheless important: what very poor households earn from chicken sales can cover around 40% of school fees, and for a cash-strapped household that means something.

Expenditure Patterns

The graph to the right presents expenditure patterns for the reference year April 2013 – March 2014. While total expenditure increases with wealth (as shown in the cash income section), the expenditure breakdown by per cent in this graph shows the *relative* amount of income spent on different categories.

In this zone, the proportion of cash income spent on food (staple and non-staple) decreases as you move up the wealth spectrum, but all households spend at least 20% of annual cash on food in a typical year.



The graph provides a breakdown of total annual cash expenditure according to category of expenditure

Better off households, as explained in the section above (Sources of Food), buy more expensive food (rice, meat, fish) as a matter of preference and in order to diversify their diets. So although their total expenditure in absolute terms is actually higher than that of very poor households (over a million Tsh for better off households versus a little over 300,000 Tsh for very poor households), in relative terms food expenditure takes a bigger portion of total income for very poor households.

Expenditure on household items (tea, salt, soap, kerosene, grinding, etc.) are highest in relative terms for poor and very poor households. These daily or weekly expenditures add up over the year and take a surprising amount of cash income to cover. It is also worthwhile noting that only middle and better off households have sufficient cash to spend on water. Water collection takes an enormous amount of time in this zone, diverting labour away from more productive pursuits. Middle and better off households occasionally opt to purchase drinking water to reduce this collection burden on the household, and also to ensure a safer source of potable water.

Expenditure on inputs (the blue bar) reflects the investment priorities of different wealth groups. Better off

households, who spend over 1.1 million Tsh on agricultural inputs, are focused every year on ensuring they can continue to capitalize on their land and cashew trees. Hiring labour takes up over half of the input expenditure for better off households and about a fifth of middle households'. Pesticides (especially spray for the cashew trees), fertilizers, seeds and tools and small amount of animal drugs make up the remainder of the spending. Very poor households only spend money on the spray used on their cashew trees, unable to afford any of the other inputs.

The cost of social services, such as school and health, put a heavy burden on very poor and poor households, but these households nevertheless can only afford the most basic of services. Middle and better off households send their children to secondary school, but very poor and poor households can only manage to pay for primary school, and even that is a stretch. Expenditure on medicine is also lower for very poor and poor households, equivalent to about 25% of better off household expenditure on health.

Other expenditures include things like phone credit, transportation, gifts, social obligations, beer, tobacco and cigarettes. Better off households spend more in both absolute and relative terms on this component.

Hazards

The *Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone* is subject to a number of hazards, some of which undermine food security every year while others threaten food security periodically. The main hazards affecting the zone, in order of severity, are:

Crop pests and diseases, such as powdery mildew, which affects cashew production and army worms, which affect maize and sorghum, are a worry every year. Rodents are also a problem, reducing potential production for maize, pigeon peas, cow peas and ground nuts.

Livestock diseases, such as Foot and Mouth disease (cattle and goats), Newcastle disease (chickens) and CCPP (goats) occur regularly as well – typically during the wet season for cattle and shoats.

Human diseases, particularly malaria, occurs every year during the rainy season. This reduces the labour available for agricultural activities and other productive work, and increases expenditure required for medicines.

Response Strategies

Households engage in a number of strategies in an attempt to cope with hazards and bad years. The responses vary by wealth group, with better off households increasing their income using their financial and physical capital, and poorer households depending more heavily on re-deploying their own labour.

Poorer households try their best to increase casual labour income, although this is limited in bad years because increased competition for existing labour opportunities means that usually fewer jobs are available at lower pay. When local employment on farms is no longer available, they are sometimes forced to migrate outside of the zone. These households also attempt to sell more chickens and eggs – again a limited strategy given their small flock sizes. In addition, during the months when wild foods are available, they will spend more time digging and collecting wild foods, both for sale and household consumption. Ultimately, during bad years, poorer households try to increase their income by whatever limited means available in order to purchase more food to fill the gap left by poor production. But when these strategies fail, they are forced to reduce consumption.

Better off households attempt to do more business outside the zone. They also aim to increase the area under cultivation by exchanging food for labour (rather than cash) so as to off set the losses due to reduced

yields. Better off households also try to sell more livestock, and because they have more high value livestock to sell, this is a more successful strategy for them than for poorer households.

Key Parameters for Monitoring

The key parameters listed in the table below are food and income sources that make a substantial contribution to the household economy in the *Mtwara-Lindi Plateau Cashew & Sesame Livelihood Zone*. These should be monitored to indicate potential losses or gains to local household economies, either through on-going monitoring systems or through periodic assessments.

It is also important to monitor the prices of key items on the **expenditure** side, including staple and non-staple food items.

Item	Key Parameter – Quantity	Key Parameter – Price
Crops	• Maize • Cashew • Sesame • Pigeon peas • Sorghum • Cassava • Ground nut	• Cashew – producer price • Sesame – producer price • Maize – producer price • Pigeon peas – producer price • Sorghum – producer price
Livestock production	• Livestock herd sizes (cattle and goats) • Chicken numbers	• Livestock prices (Cattle and goats) • Chicken prices
Other food and cash income	• Land preparation demand • Weeding demand • Harvesting demand • Spraying demand • Self employment demand	• Agricultural labour rates • Self employment rates
Expenditure		• Maize price – consumer price

Programme Implications

The longer-term programme implications suggested below include those that were highlighted by the wealth group interviewees themselves and those made by the assessment team following detailed discussions and observations in the field. These represent potential areas of further investigation and would require detailed feasibility studies and cost-benefit analyses. They are organized into four categories: social service provision, agriculture/livestock service provision; Income generation/livelihood strategy support; and market support.

Social Service Provision	Agriculture/livestock Service Provision
• Improve provision of health services. • Provide electricity. • Improve sources of water for both humans and livestock. • Improve schools and access to education.	• Provide agricultural inputs to improve yields. Provide tractors for cultivation of larger areas. • Develop irrigation scheme. • Provide livestock drugs.

Income Generation/Livelihood Strategy Support	Market Support
• Build cassava-processing factory to generate local employment opportunities and to form a nearby source of demand for local produce. • Build sesame-oil processing factory to generate local employment opportunities and to form a nearby source of demand for local produce • Develop livestock and beekeeping projects	• Provide market intervention to stabilize or increase producer prices for crops. • Improve local roads and infrastructure. • Review the marketing system for cashew nuts and abolish warehouse receipt system.