

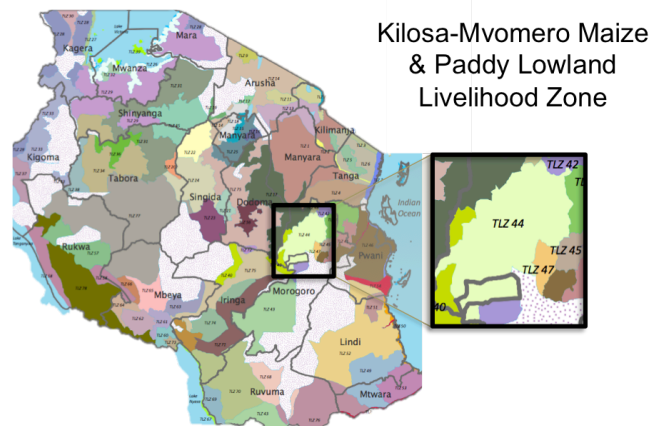
# Tanzania Livelihood Baseline Profile

## Kilosa-Mvomero Maize and Paddy Lowlands Livelihood Zone (TLZ 44)

September 2014<sup>1</sup>

### Zone Description

The *Kilosa-Mvomero Maize and Paddy Livelihood Zone* lies in flat, lowland areas of Kilosa and Mvomero Districts in Morogoro Region. It is located in the northern part of the region and borders a large number of other livelihood zones, ranging from lowlands to highlands. The population density in this zone is 35-45 people per square kilometre.



This is a moderately productive agricultural zone, with annual rainfall of 600 – 1200 mm. There is some irrigated production, but most production is rainfed and relies on the *masika* season rains. The soils are well drained, moderately deep to deep, dark reddish brown, yellowish red or red sandy clay loams and sandy clays. Temperatures range from 18 - 30 degrees Celsius.

Known as a food surplus area in most years, the zone produces maize, paddy, sesame and sunflower in quantities beyond household needs. Households rely heavily on crop production to meet most of their annual food and cash needs. Livestock are less important in this livelihood zone. Most households rear chicken and some keep goats, but only a few keep cattle.

There are Masai pastoralists present in this livelihood zone, but they are not represented by this analysis and should be considered a separate livelihood group living within the livelihood zone. They are not described in this baseline profile. Conflict between pastoralists and farmers over land use is a chronic and widespread problem in this zone, which has resulted in deaths and in ongoing court cases.

Compared to many parts of the country, there is a shortage of land in this zone due to the large number of plantations and large private farms. The government has sold or given land to private investors, so villagers are getting squeezed.

The zone is reasonably well serviced. The main Dar es Salaam to Dodoma road passes through the zone and the main district towns are connected by tarmac roads. The Msowero and Mvumi rivers pass through Kilosa District, while the Divue Wami and Mkindo rivers pass through Mvomero. Households generally obtain water from protected sources (boreholes and hand pumps) and pay a service fee for this. In a few villages, households face seasonal water shortages and have to fetch water from neighbouring villages or use river water as their main source. In the case of health services, there are health dispensaries in some villages but the coverage is not universal and others rely on dispensaries or health centres available at ward centres. Primary schools are

<sup>1</sup> Fieldwork for the current profile was undertaken in August 2014. The information presented in this profile refers to the reference year, which started June 2013 and ended May 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.

available in every village, but children often have to travel to ward centres to access secondary education. Electricity is available in some villages and not available in others. Most poor households use kerosene for lighting, while better-off households use solar power or generators. Almost all households use pit latrines for basic sanitation control. Mobile phones are widely used by all households from all wealth groups and network coverage is generally available. There are credit facilities offered in the zone through VICOBA (village community banks) and SACCOS (savings and credit cooperative organisations). Better off households also access credit from formal-sector banks. There are several non-governmental agencies working in the zone in the agricultural, environmental and health sectors.

## Markets

Market access in this zone is relatively good because it is close to urban centres and to the tarmac road network. However, there can be problems of access during the peak rainy season. Some bridges are very low and during flooding some villages become inaccessible.

The main crops sold are maize, paddy, sesame and sunflower. Maize is sold locally to traders who take it to Morogoro and then on to Dar es Salaam. Paddy follows a similar trade route, with Zanzibar as the final destination for some stock. Sesame ends up as far away as China.

The zone does not produce large quantities of livestock for sale. Chickens and goats are sold for the local market and may reach as far as Morogoro town.

The labour market is partly local, with the some poorer rural household members seeking seasonal employment on the farms of the better off during peak labour demand periods – planting, weeding and harvesting. However, most of the labour done by poorer households from this zone is on nearby plantations and private farms (mostly sisal and sugarcane), which are strictly speaking outside the livelihood zone. The peak period for this work is in August to November. Also, a small minority of households find employment in nearby towns.

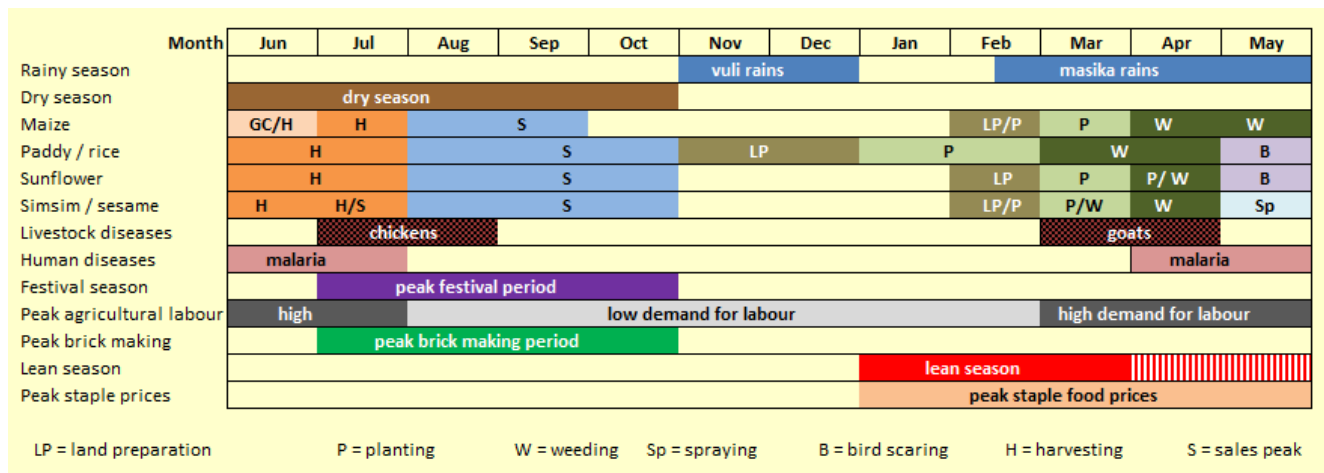
## Timeline and Reference Year

The baseline assessment refers to a very specific time period called the reference year. In the *Kilosa-Mvomero Maize and Paddy Livelihood Zone* the reference year covered the consumption period from June 2013 to May 2014, which starts with the harvest from the production year 2012-13. During community leader interviews, key informants were asked to rank the last five 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 average rain, crop production and prices. 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.

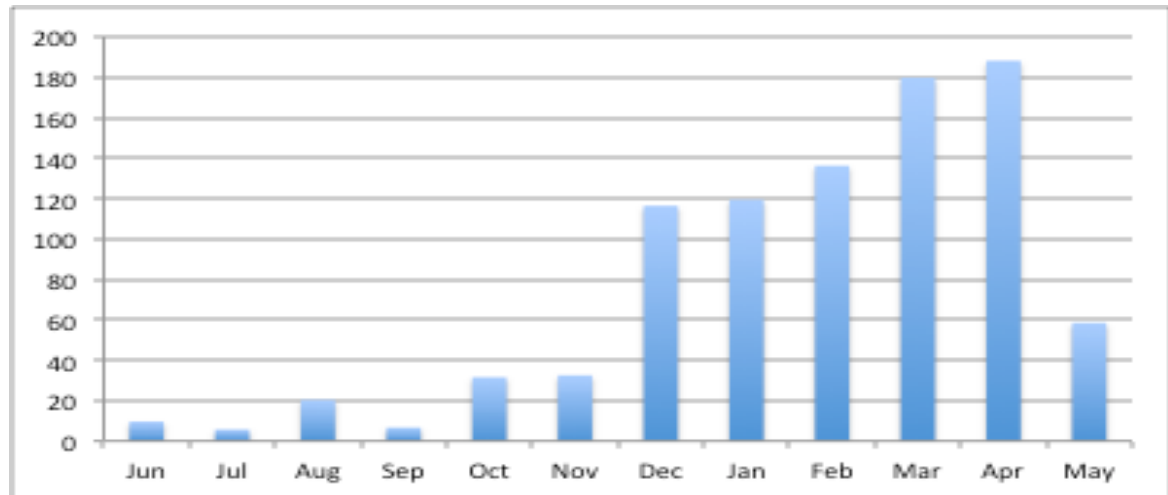
Production Year	Rank	Critical Events
2013- 14	5	Good rains and crop production in most parts of the livelihood zone. Stable prices for both livestock and crops. Damaging floods affected small pocket areas.
2012-13	3	Average rainfall and crop production, with moderate prices for cereals. Army worm caused problems in some parts of the zone, but this was localised.
2011-12	1	Drought with delayed and poorly distributed rains caused poor crop production. High prices for food items and low availability of supplies in the market.
2010-11	4	Above average rains and crop production. Rainfall well distributed. No problems with crop prices or flooding.
2009-10	2	Below average rains and crop production.
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



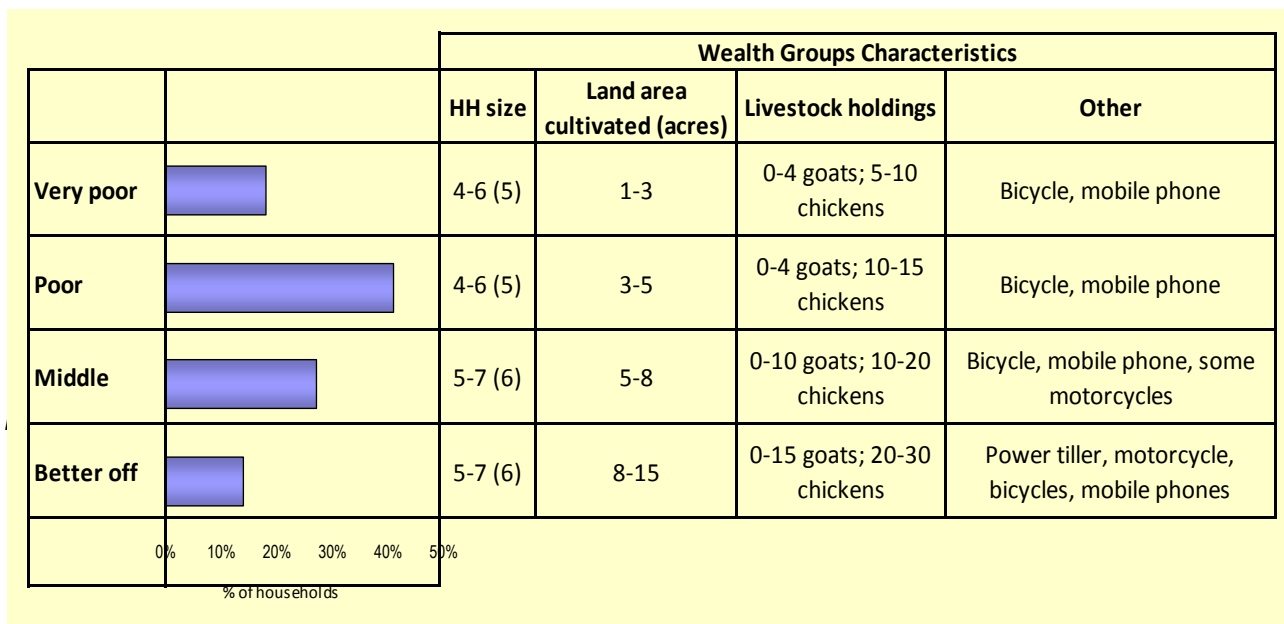
The graph to the right shows monthly rainfall in mm based on a recent 10-year average for Kilosa District. Source: TZ Met. Dept.



There are two rainy seasons: the short rains in November to December (called *vuli*) and the long rains from February to May (called *masika*). Although farmers used to cultivate during the *vuli* season, it is now considered extremely unreliable and is not used for crop cultivation in most years. Only in years of exceptional *vuli* rains do farmers grow maize in this season.

Most crops are planted by February or March and harvesting starts in June. Crop sales start at harvest time and continue through October. The consumption year starts with the main harvest in June and continues to the following May. The annual hunger season starts in January and continues through May, although it becomes less serious from March-April when agricultural labour becomes more available and poorer households can obtain significant amounts of work. This is also the period when staple food prices peak.

## Wealth Breakdown



The main determinant of wealth in this zone is the amount of land owned and cultivated. These two things are usually the same, as there is little unused land in villages in this zone. A small number of households are landless, in the sense of not owning land, and they rent land to cultivate, but this is not typical of any wealth group in the zone.

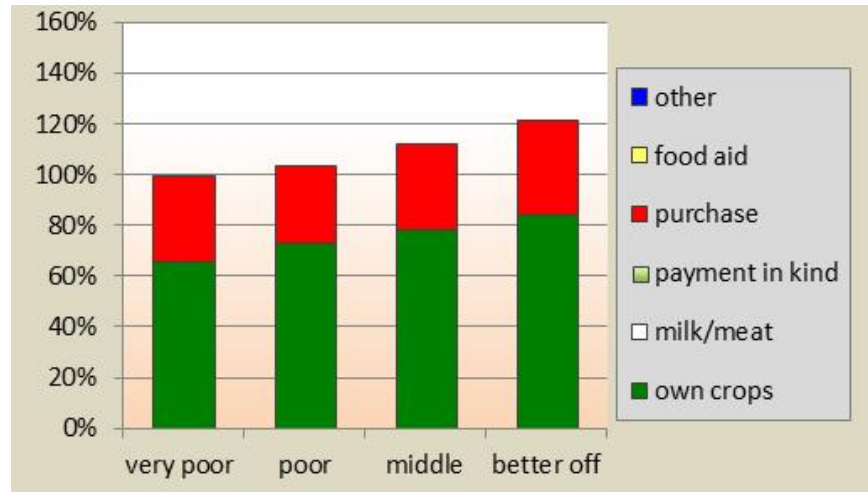
Very poor households typically own and cultivate 1 - 3 acres and comprise 15 - 20% of households. Poor households cultivate 3 -5 acres and represent 35 - 44% of households. Middle households cultivate 5 - 8 acres and represent 25 - 30% of households. Better off households cultivate 8 - 15 acres and represent 10 - 20% of households.

Livestock ownership is limited in this livelihood zone. Some households own goats across all wealth groups. Most households keep chickens, both for consumption and for sale. Cattle ownership is not widespread amongst the farming community and oxen are generally not used for ploughing (although this varies somewhat from village to village).

Most households own bicycles and mobile phones, while better off households and some middle households own motorcycles (some of which are used as motorcycle taxis or *boda boda*). Better off households typically also own power tillers, which they use for their own cultivation and also rent out to others.

## Sources of Food

The graph to the right presents the sources of food for households in different wealth groups in the livelihood zone for the period June 2013 – May 2014. June 2013 represents the start of the consumption year because it is when people begin to consume most of their food from their own production. 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.*

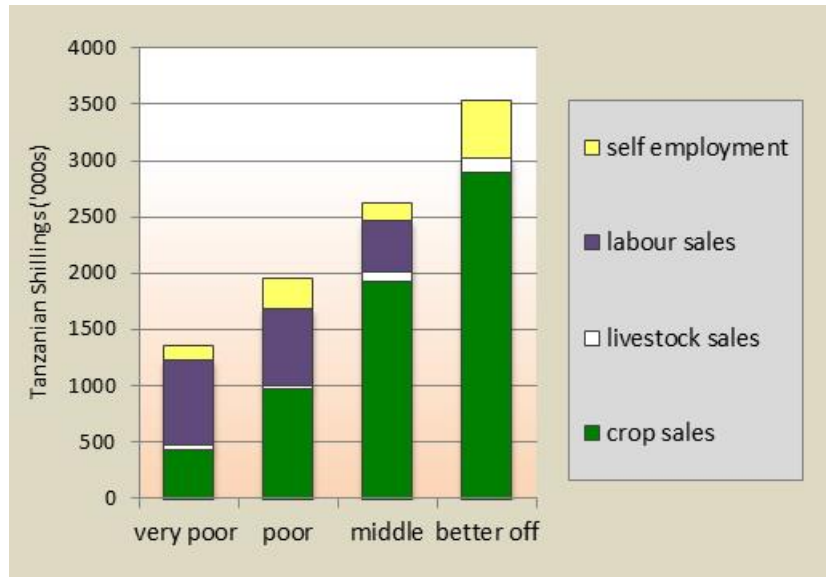
Households from all wealth groups obtain food from two sources: own crop production and market purchase. The contribution of own crop production increases with wealth, as does total consumption per person.

Crops grown and consumed include maize, rice and sunflower (after conversion into oil). Food items purchased by all wealth groups include beans, plantain, cooking oil, sugar, dried fish (called *dagaa*), vegetables and meat. The quantities purchased of all of these items increase with wealth. Only very poor households purchased small quantities of cereals (maize and rice) in the reference year.

Only a few households keep livestock other than chickens, so the contribution of own milk/meat is negligible. There was no food aid in the reference year and wild foods are rarely consumed in this livelihood zone. Payment in kind is also not common, with most casual work being paid in cash.

## Sources of Cash Income

The graph to the right presents cash income sources by wealth group for the reference year 2013-14. Very poor households obtained most of their income from casual labour, supplemented by crop sales, self-employment (which included a mixture of brick making, brewing, prepared food sales and petty trade) and very small livestock sales. Poor and middle households had the same income sources, but crop sales increased in importance with wealth. Better off households obtained most of their income from crop sales and from hiring out power tillers (included in the self employment category).



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

Rice is the main cash crop for very poor, poor and middle households, followed by sesame, maize and sunflower. For better off households, sesame is the most important cash crop, followed by rice

and maize. Sunflower is less important for this wealth group. Better off households obtain better prices for their crop sales because they can afford to wait for prices to rise post-harvest. Poorer households generally sell at harvest time.

Planting, weeding and harvesting are the main agricultural activities that generate casual income for very poor, poor and some middle households. Much of this work is done for larger private farmers and plantations that surround the villages in this livelihood zone, including sisal and sugarcane plantations. In contrast, most land preparation work is done using power tillers or hired tractors, so this is not a large source of casual work for poorer households.

Self-employment activities in this livelihood zone vary by wealth group, but also vary by household within each wealth group. Brick making, brewing, prepared food sales and petty trade are the common activities for very poor and poor households. Better off households are more likely to be engaged in hiring out power tillers or motorcycles (for transport) or to be involved in some type of trading activity (including owning small shops or kiosks). Middle households fall somewhere between these two groups.

Livestock sales are relatively unimportant in this livelihood zone. Most households own a small number of chickens and sell a few of these per year. Small numbers of goats are also reared. Only a few households keep cattle and this was not considered to be typical of any wealth group. It should be noted again that there are Masai pastoralists present in this livelihood zone, but they are not represented by this analysis and should be considered a separate livelihood group living within the livelihood zone.

INCOME SUMMARY TABLE				
Wealth group	Very poor	Poor	Middle	Better off
Annual income per household <sup>2</sup>	1,000,000	1,700,000	2,300,000	3,000,000
	-	-	-	-
	1,700,000	2,300,000	3,000,000	4,000,000

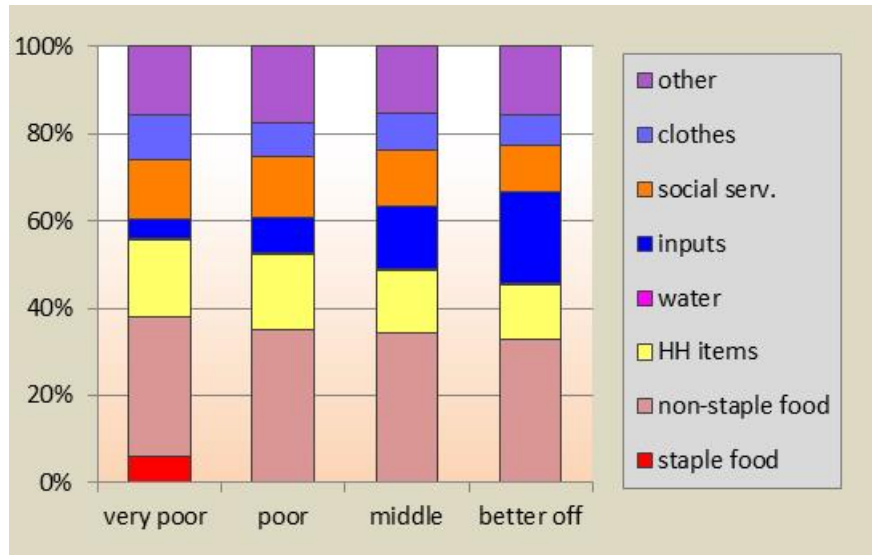
Note: All results are the mid-point of a range

<sup>2</sup> The average exchange rate from June 2013 to May 2014 was US\$1 = Tsh 1600.

## Expenditure Pattern

The graph presents expenditure patterns for the reference year June 2013 to May 2014. While total expenditure increases with wealth, the expenditure breakdown by percent in this graph demonstrates the *relative* amount of income spent on different categories.

Compared to other livelihood zones, the expenditure pattern across wealth groups in this zone is quite similar. The main difference is that expenditure on household items declines with wealth, as a proportion of total expenditure, while that on inputs increases with wealth.



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

Only very poor households spent money on staple food (maize grain and rice, in red in the graph) in the reference year. Non-staple food items purchased by all wealth groups to diversify the diet included beans, plantain, cooking oil, sugar, dried fish (called *dagaa*), vegetables and meat. The quantities purchased of all of these items increased with wealth. Spending on non-staple foods was approximately 30-40% of total expenditure across all four wealth groups.

The category 'HH items' (in yellow in the graphic) includes spending on soap, grinding, salt, tea leaves, kerosene, contributions for community water sources, and firewood/charcoal. 'Social services' (in orange) includes spending on education (including school fees, contributions, stationery, uniforms and pocket money) and health care. Primary school is officially free (i.e. there are no school fees), but most households are required to make contributions to schools for various purposes. 'Other' (in purple) includes mobile phone charging and credit, lotion, religious contributions, community obligations and extra spending during festivals.

The category 'inputs' (in bright blue) includes the cost of land preparation (hiring power tillers or tractors), seeds, tools and labour payments. This is a large expenditure category for middle and better off households.

## Hazards

The *Kilosa-Mvomera Maize and Paddy Livelihood Zone* is subject to a number of hazards, some of which undermine food security every year while others threaten food security periodically. These include drought, floods, unstable prices for crops, conflict between farmers and pastoralists, unreliable short season rains, and crop pests.

**Drought** occurs one year in five and can greatly reduce crop production.

**Flooding** occurs most years in some part of the zone, with rivers shifting course and land and crops being washed away. The proportion of households affected in any given season, however, is small.

**Unstable prices for crops** make decision making and profit making difficult for farmers.

**Conflict between farmers and pastoralists** is a chronic problem in this livelihood zone. Masai pastoralists have moved into the zone over recent decades and livestock periodically cause significant crop damage. Peace-making efforts have been undertaken in some locations, with designated areas for the different communities to live, cultivate and rear livestock.

Although this livelihood zone falls in a bimodal rainfall area in theory, in reality **unreliable short season rains** mean that most farmers have stopped cultivating during the *vuli* season and only cultivate during the *masika* season. This is a chronic situation.

**Crop pests** (particularly birds and army worm) negatively affect production in most years.

## Response Strategies

Households in this livelihood zone engage in a number of strategies in an attempt to respond to hazards. These include:

**Switching of expenditure** – Reducing expenditure on non-essential items (alcohol, tobacco, mobile phone credit, sugar, meat, etc), in order to purchase more staple food, is a commonly used coping strategy pursued by all wealth groups.

**Increased livestock sales** – Livestock herds are not large in this zone. However, households sell additional livestock to cover basic food and non-food expenses in bad years. Middle and better off households that own goats are better equipped to exploit this strategy.

**Labour migration** – Members of very poor and poor households travel to nearby plantations and towns (Kilosa, Mvomera, Morogoro) to look for increased casual work in bad years. The length of migration depends on the timing and scale of the problems they are facing.

**Selling charcoal/firewood:** Very poor and poor households sell forest and bush products found locally in order to secure additional income.

**Increased brick production and sale:** Provided clients can be found, this dry season strategy is pursued by very poor and poor households to obtain cash income in bad years.

**Reduced sale of staple food crops:** When crop production is reduced, farmers reduce the proportion of the crop that is sold in order to ensure they have enough food to eat.

**Gifts/food aid:** Very poor and poor households in particular look for additional support from better-off



neighbours and relatives, or from the government, to make up food or income deficits from a shock. However, the quantity of food aid provided in bad years is typically very small.

## 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 *Kilosa-Mvomero Maize and Paddy 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
<b>Crops</b>	<ul style="list-style-type: none"> <li>• Maize production</li> <li>• Rice production</li> <li>• Sunflower production</li> <li>• Sesame production</li> </ul>	<ul style="list-style-type: none"> <li>• Maize prices</li> <li>• Rice prices</li> <li>• Sunflower prices</li> <li>• Sesame prices</li> </ul>
<b>Livestock production</b>	<ul style="list-style-type: none"> <li>• Goat herd sizes</li> <li>• Chicken numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Goats</li> <li>• Chickens</li> </ul>
<b>Other food and cash income</b>	<ul style="list-style-type: none"> <li>• Agricultural labour (planting, weeding, harvesting)</li> <li>• Self-employment (brick making and hiring out power tillers)</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural labour wage rates</li> <li>• Brick prices</li> <li>• Power tiller rental rates</li> </ul>
<b>Expenditure</b>		<ul style="list-style-type: none"> <li>• Maize price – consumer price</li> </ul>

## 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.

**Agricultural inputs and extension** – This was suggested by households from all wealth groups and includes requests for improved seeds, fertilizer and know-how with the aim of increasing yields.

**Loans and business skills** – This was a suggestion by middle and better off households. They envisaged using the loans to start small businesses.

**Health services** – Some villages do not have access to nearby health care. Requests were made to improve this situation.

**Livestock investment** – This included requests for increased numbers and improved breeds. Farmers in this livelihood zone own few cattle and see potential in this area.

**Reliable markets for crop production** – One of the main problems faced by farmers is unstable prices for the crops that they produce and there is a wish for this situation to improve.

**Irrigation schemes** – Much of the rice produced in this zone is rainfed rather than irrigated and farmers see the potential for increased yields through irrigation schemes.

**Improved storage facilities** – Storage facilities at village level are minimal and this forces many farmers to sell soon after harvest at relatively low prices in order to avoid losses.