





# PRELIMINARY RURAL LIVELIHOOD ZONING: TANZANIA

**A SPECIAL REPORT BY THE FAMINE EARLY WARNING  
SYSTEM NETWORK (FEWS NET)**

**Contract No. AFP-I-00-05-00027-00 Task Order 1**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



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## ACKNOWLEDGEMENTS

The report that follows was written by Stephen Browne with Julius Holt, the two FEWS NET consultants who facilitated the zoning exercise. We would like to recognize the firm support and constant presence in the workshops of Mrs. Winnie Bashagi, FEWS NET Tanzania Representative and Geoffrey Rwiza, FEWS NET Tanzania Administrator. Further, we would like to express — together with FEWS NET Tanzania — our great appreciation of the collaboration and interest of the Tanzania Food Security Information Team, which made the exercise possible. Finally, heartfelt thanks are due to all the participants who worked hard and with goodwill during the three days of the workshops to achieve a successful outcome and were our kind and expert teachers on the geography of livelihoods in Tanzania.





## INTRODUCTION

This report provides the results of a livelihood zoning project conducted by FEWS NET Tanzania in collaboration with the Tanzania Food Security Information Team (FSIT) in July and August of 2008. As shown in the table on the next page, livelihood zoning is the first step towards creating livelihood profiles or baselines for an area. The objective is to group people who share similar livelihood patterns, i.e., options for producing food, cash-crops, and livestock; securing cash income; and using the market. Doing so enables a geographical analysis of livelihoods aimed at understanding how people make ends meet in different conditions and what resources are available to them should they face misfortune or want to increase their wealth. In particular, a geographically defined livelihoods analysis seems key to determining how people in different circumstances will be affected by hazards such as rain failure or crop disease. To take only the most acute livelihood contrast, pastoralists and cultivators have different measures of what constitutes poor rains and what constitutes a real drought, and they have different responses to these threats. Comparative livelihoods information provides a solid base for monitoring food security among a population, thereby helping governments and international agencies to prevent humanitarian disasters.

In rural areas of most developing countries, livelihoods are based overwhelmingly on the primary production of food and cash crops, and livestock are also usually important even outside pastoral or agro-pastoral areas. Therefore, agro-ecology dominates the zoning. But other elements impinge, such as isolation from roads and markets, or proximity to large cities, irrigated plantations, or mining operations that offer substantial casual employment. Finally, both local culture and government policy can contribute to differences in zoning. One group of people may specialize in a cash crop that another group has the conditions to grow, but perhaps not the tradition or skill. More often, official initiatives or major projects may substantially affect local people's decisions about what to grow or where to offer their labor.

Livelihood zones are rarely aligned exactly with administrative boundaries, since the latter are the result of political events and decisions over time based on more than local economy. Sometimes a *part* of a livelihood zone boundary does coincide with an administrative boundary because both are defined by a major physical feature: perhaps both skirt a major mountain or both run along the top of an escarpment. But most commonly, livelihood zones cross district or even regional boundaries. On the other hand, governments and agencies usually work on the basis of administrative units, and livelihood zone maps are always superimposed on administrative maps so that the populations within the zones can be identified easily.

PRODUCT	WHAT IT IS	WHAT IT HELPS TO DO
Livelihood zoning	A map of areas within which people share broadly the same patterns of livelihood	<ul style="list-style-type: none"> <li>• Understand how people in an area will be affected by different hazards (drought, market failure, floods);</li> <li>• design a livelihoods-based sampling frame for assessments;</li> <li>• target assistance geographically; and</li> <li>• customize indicators for livelihoods monitoring systems.</li> </ul>
Livelihood profiles	A snapshot of the livelihood options (food and cash sources) of different households (poor, middle, rich) in the livelihood zone and of the hazards to which households are vulnerable	<p>The above plus:</p> <ul style="list-style-type: none"> <li>• Understand how different household types (poorer, wealthier) will be affected by different hazards;</li> <li>• design a seasonally specific monitoring system for more precise and efficient results; and</li> <li>• interpret trends in information by season and household type.</li> </ul>
Livelihood baselines	A detailed, quantified breakdown of household livelihood options (food, cash, and expenditure patterns) for different wealth groups in the livelihood zone, highlighting market linkages, responses to hazards, and constraints on opportunities for economic growth	<p>All of the above plus:</p> <ul style="list-style-type: none"> <li>• Calculate whether people will be able to meet their basic survival requirements and/or protect their livelihoods in the short, medium, and longer term; and</li> <li>• provide key information for guiding policy and program decisions in areas such as social protection, agricultural policy, service/needs provision, development planning, and market program design.</li> </ul>
<b>One-Off Targeted Livelihoods-Based Assessments</b>		
Local Livelihoods-Based Emergency Assessment	A customized analysis using livelihood baselines to determine how a population has been affected by a specific hazard or set of hazards	<ul style="list-style-type: none"> <li>• Prioritize assistance on the basis of actual needs; and</li> <li>• highlight most appropriate types of assistance (in-kind food or non-food, market-based transfer, etc.).</li> </ul>
Local Livelihoods Baseline Assessment	A detailed analysis of local livelihoods to answer a specific set of decision-maker questions about food security, income opportunities, the effects of conflict, or the economic context of health/nutrition HIV/AIDS	<ul style="list-style-type: none"> <li>• Determine how to best support and help expand people's livelihoods; and</li> <li>• avoid unintended consequences of poorly designed interventions.</li> </ul>

FEWS NET's livelihoods products are designed to answer decision-makers' questions related to food and livelihood security in countries with significant risk of severe hunger and livelihoods degradation. The first set of products contributes to the longer-term development of food security analysis and monitoring systems based on national livelihoods. These products provide the building blocks for national-level systems that are able to achieve quantified, defensible, evidence-based estimates of annual food and livelihood needs. The second set of products — one-off, targeted livelihoods-based assessments — are custom analyses designed to help specific decision-makers answer pressing questions on a wide range of subjects related to how people are surviving, how changes will affect them, and what can be done to support them most appropriately, given the range of policy and program options available.

In Tanzania, the 2008 livelihoods zoning exercise was designed as a starting point for the potential development of such livelihoods inquiries in the country. Profiling or baseline work would be logical next steps towards livelihoods-based food security monitoring. But the zoning results presented here are useful even now in helping us think about how people in different parts of the country will be affected by various hazards. It provides a rational geography for interpreting existing monitoring information on crop production, prices, and a range of other indicators. In addition, one-off assessments can use the zoning as an appropriate, livelihoods-based sampling frame.

## LIVELIHOODS ANALYSIS AND FEWS NET

Since at least the mid-1980s, there has been a growing understanding that rural food security is not simply a matter of food production, and that effective famine early warning is not simply the measurement of reduced food production. There is also the 'demand side' — the capacity of farmers and herders to buy food. Indeed, in rural Africa today, the overwhelming evidence from the field is that the poorer people are, the more they *normally* rely on purchasing staples on the market, because they cannot get enough food-crops from the land they have, or enough milk from the livestock they keep. Food security analysis has become as much about people's sources of cash as about their production of food.

Livelihoods analysis among rural and urban populations in developing countries has grown via two main strands since the early 1990s. The first has been the product largely of NGOs such as CARE International, using Rapid Rural Appraisal techniques to establish the context of village-level programs, often related to food security. The second strand has been more squarely in the realm of food security. It originated from the need to assess acute food insecurity — actual or threatened — in order to guide donor and government decisions regarding assistance needs, notably food relief. This more specific focus required quantified results, which were a particular feature of the Household Economy Approach (HEA) first developed by the NGO Save the Children UK and then also taken forward by FEG Consulting.<sup>1</sup> But the quantified livelihoods information has been recognized as applicable far beyond food aid decisions, from village-level agricultural investment planning to the design of market development projects.

Starting in 2000, FEWS NET engaged FEG Consulting as its permanent subcontractor for vulnerability and livelihoods analysis. Since then, FEWS NET has run or been prominent in livelihoods zoning and profiling in a dozen African countries as well as five countries in Central America and Central Asia. In Ethiopia and Malawi, together with a number of southern African countries, FEWS NET has helped HEA become the basis of famine early warning by government. Elsewhere, FEWS NET has been able to offer livelihood zoning and profiling results that have been used by government and agencies for a number of different purposes. In all of this work, the key reference point has been the representation of households and how they operate. It is hoped that a similar contribution can be made for Tanzania concerning the many variations of rural economy within the country's wide territory and the livelihoods associated with these variations. Rural livelihood zoning has been a necessary first step.

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<sup>1</sup> An explanation of HEA and a list of resource documents is available at [www.feg-consulting.com](http://www.feg-consulting.com).

## THE LIVELIHOOD ZONING PROCESS IN TANZANIA

The zoning process was a collaborative effort on the part of FEWS NET Tanzania and the Tanzanian Food Security Information Team (FSIT). Before the main exercise, a review was made of the relevant and available secondary data including agro-ecological maps, demographic data, rainfall, production, and market data. Particular attention was paid to work previously undertaken by Save the Children UK (SCUK) in collaboration with the World Food Program in 1999 on household economy fieldwork in three regions: Arusha, Singida, and Dodoma. This work included an element of local livelihood zoning. Attention was also paid to similar work in 2006 by SCUK in Singida and Lindi, and to the 2006 WFP-VAM/SENAC Comprehensive Food Security and Vulnerability Assessment.

Four three-day workshops were organized in Moshi, Mwanza, Morogoro, and Mbeya between July 8 and 31 (to deal with the country in four broad regional parts). The workshops were facilitated by FEWS NET staff and consultants, and participants were representatives from the Ministry of Livestock, Ministry of Agriculture, the Prime Minister's Office Disaster Management Department, and district-level staff (see Annex 1). They were chosen by their respective offices as people with excellent local and regional knowledge of rural areas and living conditions, while several officers also had specific responsibilities for local food security interventions. In each workshop, participants:

- Were given an introduction to livelihoods analysis and the household economy approach, especially as it applies to livelihoods zoning.
- Reviewed available documentation, including some they brought themselves from their districts.
- Constructed and discussed a first-draft outline map of proposed livelihood zones.
- Were split into four or five working groups, where they considered in detail the districts about which they had special knowledge.
- Created a final draft map as a full group.
- Were split into working groups to attribute livelihood zones to the relevant wards so that the eventual digitized map would include both livelihoods zones and administrative boundaries.
- Filled in a livelihood description form for each livelihood zone.
- Attached a food security rating to each livelihood zone, an informal exercise to gain a comparative view across the territory.
- Filled out seasonal calendars to capture the range of production and market activities households engage in within a year (this additional activity took place at the Mbeya workshop).

After each workshop, short field visits were conducted to selected district offices and/or villages to resolve some questions arising from the workshops concerning zone boundaries and livelihood strategies. FEWS NET and FSIT returned to Dar es Salaam to continue with zone verification and collection of additional secondary information. The

data from the zone description forms was transferred to a spreadsheet. A local GIS consultant was hired to digitize and create the first version of the livelihood zone map.

## RESULTS

The chief result of the exercise is necessarily a map, and the national livelihoods zones map is shown below, with a separate table of zone codes and titles. A set of summary descriptions of the zones is then given. In Annex 2, a map and graph of the results of the informal food security scoring are given.

In a country as large and varied as Tanzania, it is not surprising to find that 78 livelihood zones have been distinguished, even with a reasonably broad-brush approach, i.e. avoiding numerous, highly localized differences. As further field investigations are undertaken to create livelihoods profiles or baselines, it is customary to begin (for field sampling purposes) by further verifying with local offices in each zone the livelihood zone qualities and the boundaries down to village level as necessary.

On the basis of the preliminary livelihood zone descriptions and workshop discussions, a few general observations may be offered. One is that perhaps the most ubiquitous livelihood hazard identified is not rain failure, although that is of great importance, but rather the yearly toll on production taken by crop and livestock pests and diseases. These phenomena are rarely dramatic, i.e., rarely at plague or epidemic levels, but the annual combined cost to livelihoods, and indeed to the nation's wealth, must be tremendous, if incalculable – and surely a priority for development investment.

A different but striking matter is that in modern Tanzania the monetization of the rural economy is well advanced. The vast majority of rural Tanzanians are primary producers, but it is impossible to find livelihoods, even in the most productive areas, where people live essentially as subsistence farmers and herders, simply eating the crops and drinking the milk they produce. Of course, rural Tanzanians all produce partly with a view to home consumption. But they also use the market as a fundamental part of their livelihoods. This is now an inescapable fact, beyond any judgment of whether it is a good thing or a bad thing. But if such a judgment were to be attempted, account would have to be taken of the positive role of the market in opening localities and livelihoods to demand for their produce (including livestock) especially from the ever-growing, if often distant, town and city economies, as well as for export into the wider east African region. On the negative side, the increasingly joined-up market (though still seriously lacking road infrastructure in certain parts of the country) can 'import' problems, notably recent food price inflation which badly affects the poorer purchasers. But this is perhaps far outweighed by the crucial role of the market in bringing in food for sale from better favored localities to areas where crops have failed.

Households use the market in many different ways, depending on the economy of the area and the accessibility of physical markets. But market use also depends on a household's level of wealth in productive assets, especially land holdings and herds. It also depends on its 'capital' in family labor and money to hire other labor (in the local labor 'market') and obtain fertilizers, pest control products, and veterinary drugs. From a food security point of view, poorer people very rarely produce enough food to last them

until the next harvest, even in years with enough rain. Commonly, they must buy enough staple food to last them several months: perhaps two or three months in the most productive areas and upwards of six months in the least productive farming areas. And even poor people make a cash-based opportunity-cost decision about the use of their land: what proportion should go under food crops for home consumption, and what proportion for cash-crops. Wealthier people often try to maximize cash-crop production (whether sesame, coffee, fruits, or simply surplus maize and beans for sale), and in particular areas it is common to find wealthy households that grow more cash-crops than food crops and buy their food primarily from the market. However, even a poor household with only six months' worth of harvest in its store very often has to sell some of it in order to pay pressing expenses, including loans taken to produce the grain in the first place.

Pastoralists present a special case: these days all but the very wealthiest do not own enough herds to live by milk and meat alone, if they ever did in the past, and so their economy is based on the premise of exchange via the market of livestock and livestock products for grain and other necessities. At the same time they tend to engage in some food cultivation if they can – i.e. where there is suitable and usually sufficient rainfall for a worthwhile crop and if they have the extra labor beyond the demands of animal husbandry. But it is not only pastoralists who depend on exchanging livestock for grain and other items. Nearly all farmers attempt to maintain some livestock even if among the very poor it is one goat or just a handful of hens. Farmers usually see the main value of the livestock in market terms, whether the sale of a few animals is an annual part of the household income or one fallback resource when times are particularly hard. For the wealthier, while goats and sheep may be kept and sold for ordinary household economy purposes, it is in cattle that they often make their biggest capital investment. These animals tend to be sold for rarer major expenses (whether to capitalize trading activities or to shore up the household food stocks after a failed harvest, or to pay for exceptional educational or medical costs).

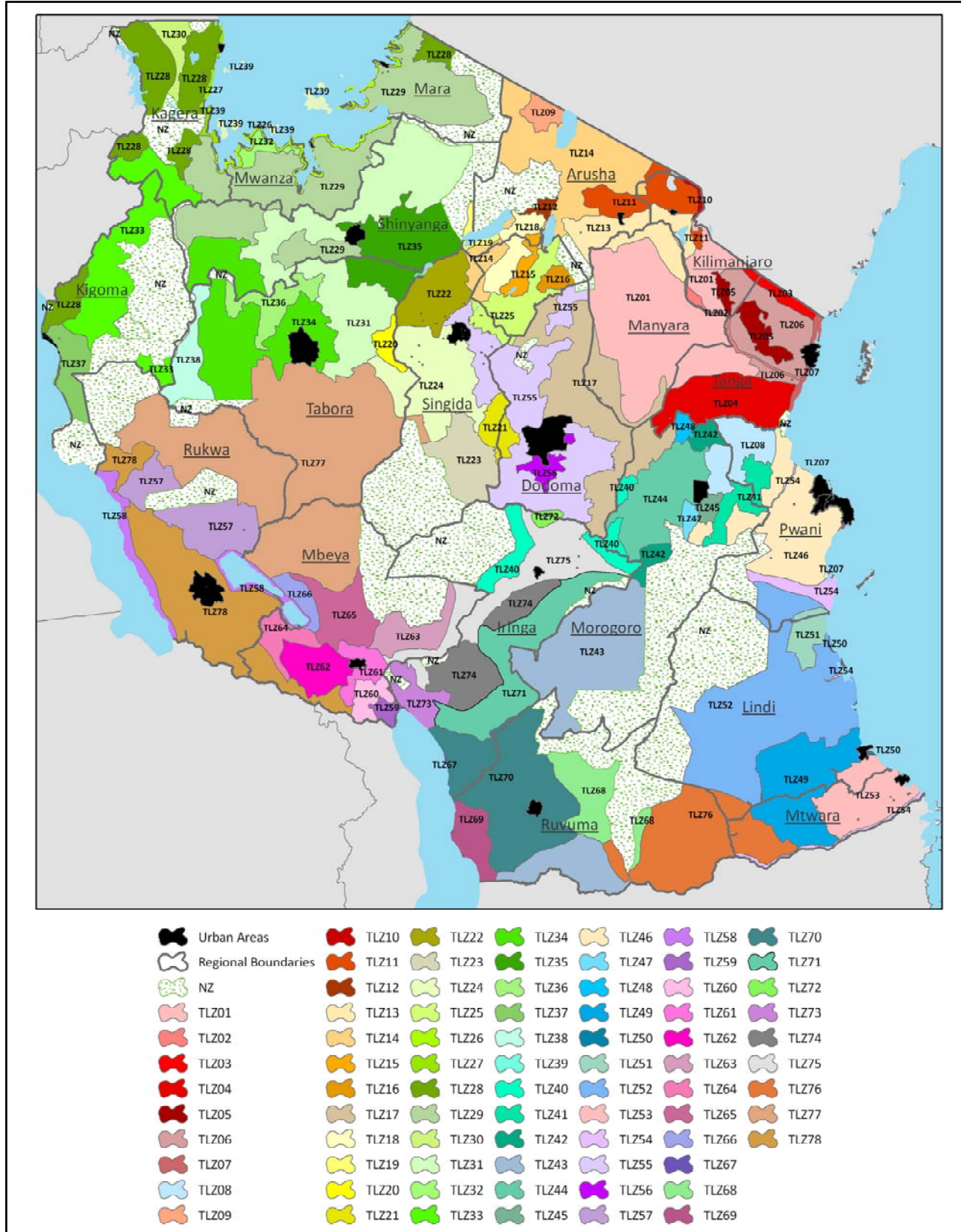
Another key aspect of the cash economy around the country is paid labor. It is very hard to come by statistics, or indeed any official information, on the informal rural employment sector, but it is a crucial part of the economy. Without hiring labor, the wealthier households would be less wealthy: they could not optimally prepare all the land they have, weed the crops, harvest them at the exact time required, or properly tend their herds. With respect to food security, without seeking paid work the majority of poorer people could not survive even in a normal year, let alone when crops fail. It is not that they necessarily make the greater part of their income from employment, although many do. It is that their household budget is so marginally adequate that the one-quarter or even one-tenth that does come from paid work is absolutely required to keep them above the survival margin, especially if we include not only basic food but such necessities (surely) as school costs or even basic clothing. Not surprisingly, in the more productive areas people tend to find local farm work; and today this is mostly paid in cash, not in kind (i.e., in sacks of grain). In the less productive areas, people more often look for work in local towns or migrate for several weeks a year to work in better-favored agricultural



areas or in cities. This phenomenon increases in years when local rains fail or other local shocks occur.

Generally livelihood zones in coastal, lakeshore (Lakes Victoria, Nyasa, and Tanganyika), and highland areas receive comparatively high quantities of rainfall and have comparatively high yields of crops for food and for the market. In these areas, even if the population density is relatively high, the majority of households are able to meet their annual food and income needs and are capable of withstanding production setbacks. These areas suffer perennial problems with crop pests and livestock disease, as well as increasing input prices, notably for chemical fertilizers. But household food security is not threatened. Households that grow and produce non-grain cash crops (such as coffee, banana, fruits, vegetables, and nuts) tend to be more food secure than those that just grow grains and pulses. At this stage, we should not over-interpret the information at hand, but it seems that one reason for this situation is that such diversity in production arises where there is a comparatively temperate climate, or at least one less prone to rain failure than areas where only grain is grown. But the central parts of the country — Shinyanga, Tabora, Dodoma, and central/southern Singida — show a different case: in the livelihood zones in these areas annual cash crops are extensively grown (especially cotton, tobacco, and sesame) but rain failure and poor market infrastructure often inhibit the amounts people can produce and the prices they earn for their crops. Another exception is niche areas, whether small like the Karatu wheat-dominated area (livelihood zone 12 below) or extensive as in the Tanga area where large sisal plantation operations offer substantial employment (livelihood zone 4 below). A unique, but unfortunately failing, ‘niche area’ is that of the Hadzabe hunter-gatherers living in the lowland forest and peripheries around Lake Eyasi (livelihood zone 19 below). This is an area with a small population, but it is distinguished as a zone because that population is discrete and has exceptional food security problems.

As a very general rule of thumb, lower-lying areas are more prone to serious rainfall irregularities than higher areas, but they cannot automatically be assumed to be food insecure. Other factors impinge on household production and incomes, from soil conditions to local irrigation to proximity to urban market demand for labor as well as produce. The Maasai pastoralists (livelihood zones 1 and 14) are simply an extreme example of this. They live in perhaps the harshest environment in the country with low and somewhat untrustworthy rainfall, but their economic adaptation (based on livestock) means that they are not among the most food insecure people in the country. Discovering such information is the point of considering livelihoods in the round, and in livelihood zones.



## ZONE CODES AND NAMES

Livelihood Zone Code	Livelihood Zone Names	Livelihood Zone Code	Livelihood Zone Names
TLZ 1	Southern Maasai Pastoralist	TLZ 40	Ruaha Riverine Maize, Onion, Tomato, and Paddy Lowlands
TLZ 2	River Pangani Paddy and Maize Basin	TLZ 41	Chalinze-Tunuguo Maize, Cattle, and Cassava
TLZ 3	Tanga Maize and Cattle	TLZ 42	Kilombero-Mtibwa Paddy, Maize, and Sugar Employment
TLZ 4	Tanga Maize and Sisal Employment	TLZ 43	Kilombero-Ulanga-Lusewa Paddy, Maize, and Cassava
TLZ 5	Usambara-Pare Highland	TLZ 44	Kilosa-Mvomero Maize and Paddy Lowlands
TLZ 6	Tanga Maize, Orange, and Jackfruit Midlands	TLZ 45	Matombo-Kuyuni Spice, Maize, and Banana
TLZ 7	Tanga-Pwani Coastal Belt	TLZ 46	Bagamoyo-Kibaha Midland Cassava, Cashew, and Maize
TLZ 8	Handeni-Bagamoyo Maize, Cassava, and Fruit Midlands	TLZ 47	Morogoro Highland Maize and Vegetable
TLZ 9	Loliondo Midland Maize, Beans, and Livestock	TLZ 48	Maskat-Kimbet Maize and Beans Highlands
TLZ 10	Lower Rombo Maize, Beans, and Finger Millet	TLZ 49	Newala-Masasi Plateau Sesame, Cassava, Cashew, and Sorghum
TLZ 11	Kilimanjaro-Meru Maize, Coffee, and Plantains	TLZ 50	Mtwara-Lindi Coastal Rice and Cashew
TLZ 12	Karatu Wheat, Maize, and Coffee	TLZ 51	Matumbi Midland Upland Rice, Oranges, and Maize
TLZ 13	Lower Arusha-Simanjoro Maize	TLZ 52	Lindi-Nachingwea Lowland Cassava and Maize
TLZ 14	Northern Maasai Pastoralist	TLZ 53	Southeastern Plateau Cassava, Cashew, and Bambara Nuts
TLZ 15	Nowu Maize, Beans, and Onions Highlands	TLZ 54	Mtwara-Lindi-Pwani Riverine
TLZ 16	Babati Kwaraa Maize, Beans, Sunflower, and Coffee	TLZ 55	Singida-Dodoma Sorghum, B/Millet, Sunflower, and Livestock
TLZ 17	Kiteto-Kongwa-Mpwapwa-Mvomero Maize, Sorghum, and Pigeon Pea	TLZ 56	Dodoma Lowland Sunflower, Grape, and Sorghum
TLZ 18	Mbulu-Karatu Midlands Maize, Beans, and Livestock	TLZ 57	Mpanda Maize, Paddy, Sunflower, and Livestock
TLZ 19	Hadzabe Hunter-Gatherer Wild Honey, Wild Roots, and Wild Fruit	TLZ 58	Lake Tanganyika-Rukwa Fishing, Maize, and Sunflower
TLZ 20	Wembere Paddy, Sorghum, Maize, Sunflower, and Fishing	TLZ 59	Kyela Paddy, Cacao, and Palm Oil Lowlands
TLZ 21	Bahi-Sanza Irrigated Rice, Maize, Bulrush Millet, and Livestock	TLZ 60	Rungwe Banana, Coffee, Tea, and Livestock Midlands
TLZ 22	Iramba Midland Onion, Maize, and Sunflower	TLZ 61	Mporoto-Umalila Irish Potato, Maize, Wheat, and Pyrethrum Highlands
TLZ 23	Manyoni Upland Maize, Sunflower, Sesame, and Livestock	TLZ 62	Mbozi-Mbeya Coffee, Maize, Beans, and Livestock Highlands
TLZ 24	Tabora-Singida Midland Maize, Sunflower, and Livestock	TLZ 63	Usangu Paddy, Maize, Sorghum, and Livestock Wetlands
TLZ 25	Singida-Manyara Maize, Sorghum, Beans, and Sunflower	TLZ 64	Kamsamba Paddy, Sorghum, and Livestock Lowlands
TLZ 26	East and South Lakeshore Fishing, Cassava, and Upland Rice	TLZ 65	Chunya Maize, Sunflower, Cassava, and Groundnut Midlands
TLZ 27	Western Lakeshore Coffee, Fishing, and	TLZ 66	West Chunya Maize, Bulrush Millet, and

Livelihood Zone Code	Livelihood Zone Names	Livelihood Zone Code	Livelihood Zone Names
	Banana		Sesame Lowlands
TLZ 28	Kagera-Kigoma-Mara Banana, Coffee, and Beans	TLZ 67	Lake Nyasa Shore Cassava Fishing and Paddy
TLZ 29	Mwanza-Shinyanga-Mara Cotton, Livestock, Cassava, and Maize	TLZ 68	Namtumbo Tobacco, Maize, Paddy, and Cassava Midlands
TLZ 30	Kagera Lowlands Beans, Maize, and Livestock	TLZ 69	Matengo Coffee, Maize, Beans, and Piggery Midlands
TLZ 31	Shinyanga-Tabora Cotton, Upland Rice, Sweet Potato, and Livestock	TLZ 70	Songea-Namtumbo-Ludewa-Mibinga Maize, Beans, and Cassava Midlands
TLZ 32	Sengerema-Geita Highland Cassava, Rice, and Maize	TLZ 71	Njombe-Mufindi Maize, Timber, Tea, Pyrethrum, and Employment
TLZ 33	Kagera-Kigoma Beans, Cassava, and Maize	TLZ 72	Mtera Dam Fishing, Sorghum, and Sesame
TLZ 34	Kahama-Tabora Midland Tobacco, Maize, Rice, and Livestock	TLZ 73	Makete Wheat, Irish Potato, Timber, and Employment Highlands
TLZ 35	Kishapu-Meatu-Maswa Sorghum, Cotton, Sweet Potato, and Livestock	TLZ 74	Njombe-Mufindi Maize, Irish Potato, and Bean
TLZ 36	Urambo-Nzega Lowland Groundnuts, Cotton, and Maize	TLZ 75	Iringa-Mbarali Maize, Sunflower, Beans, and Groundnut Belt
TLZ 37	Kigoma Lowland Palm Oil, Cassava, and Maize	TLZ 76	Tunduru-Nachingwea-Nanyumbu Cashew, Cassava, and Paddy Lowlands
TLZ 38	Urambo Agropastoral Maize and Sweet Potato	TLZ 77	Mpanda-Chunya-Sikonge Maize and Tobacco Lowlands
TLZ 39	Victoria Islands Fishing, Cassava, Sweet Potato, and Paddy	TLZ 78	Sumbawanga-Mbozi-Mpanda Maize Sunflower and Livestock

## ZONE DESCRIPTIONS

### 1: Southern Maasai Pastoralist Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize, beans</li> </ul>	<p>The zone receives between 400-550 mm of rainfall from December to March. Livestock rearing serves as the foundation for the Maasai pastoralists, although there is some crop cultivation especially by better off people. Livestock and livestock product sales provide households with cash to purchase maize, beans, and vital non-food items. Cattle are the primary livestock kept by all households followed by goats and sheep. A minority of the zone's population supplement their income by working in local towns within the zone. Market access in the zone is hampered by a range of factors, including poor road networks, remoteness, and poor livestock market infrastructure. Cattle and small stock are sold locally according to household need and then transported to larger trading centers and/or exported.</p> <p>The hazards of inadequate rainfall and livestock diseases affect all households. The impact on household food and livelihood security depends on their ability to withstand the shock. Households with more livestock tend to be more resilient, but successive years of either hazard can push wealthier households toward food insecurity. Additionally, over the past several years, encroaching agricultural settlement has obstructed traditional migration routes and increased competition over resources. Tension between farmers and Maasai pastoralists is of increasing concern and could worsen if either group's livelihood is threatened.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Livestock disease</li> <li>◆ Inadequate rainfall</li> <li>◆ Conflict with farmers</li> </ul>	

2: River Pangani Paddy and Maize Basin Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Cassava</li> <li>♦ Rice</li> <li>♦ Coconut</li> </ul>	<p>This zone has two rainy seasons: the Masika (March-June) and the Vuli (October-December). Combined, both seasons deliver, on average, 800 to 1,000 mm of rain annually. The majority of households hand-till their land, producing crops for sale and consumption. Coconuts and rice are sold at local markets and then transported to larger market centers. Livestock such as sheep, goats, and chickens are also sold at local markets within the zone. Households residing closer to the Pangani River benefit from irrigation and may engage in fishing activities.</p> <p>The dominant hazard is inadequate rainfall which limits the amount of crops that can be sold and consumed. Most households are able to compensate shortages by increasing livestock sales and/or engaging in casual labor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Farm and casual labor</li> <li>♦ Livestock sales</li> <li>♦ Fishing (minor)</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Sheep</li> <li>♦ Goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> </ul>	

3: Tanga Maize and Cattle Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Rice</li> <li>♦ Maize</li> <li>♦ Cassava</li> </ul>	<p>Zone 3 is similar to Zone 2 but livestock husbandry, particularly of cattle, is more dominant and rice (rather than maize) is the main staple. Like Zone 2, rainfall in Zone 3 is bimodal at 800-1,000 mm annually. Rain-fed rice, which is cultivated in bunds, is the primary cash crop. It is sold at village markets and taken to nearby urban areas and then transported to Dar es Salaam. Similarly, livestock such as cattle and small stock are taken to local markets within the zone and then transported by traders to larger market centers. Paid labor is an important economic activity for poorer households, with the majority working in rice paddy fields and maize farms and the remaining working in the small towns within the zone. During the wet seasons, market access can be obstructed by impassable roads.</p> <p>The main hazard affecting the zone is inadequate and/or erratic rainfall. Lack of rain not only disrupts normal crop production but also fails to recharge grazing areas and water sources for livestock.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> <li>♦ Mining (minor)</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Sheep and goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> </ul>	

4: Tanga Maize and Sisal Employment Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Cassava</li> </ul>	<p>The Masika and Vuli wet seasons supply between 600-1,000 mm of rain to agriculture. The revival and privatization of sisal plantations have created substantial paid labor opportunities for ordinary rural people, although households still cultivate maize, beans, and cassava for consumption and sale. Poorer households are unable to meet all their food and income needs from their fields and therefore rely on sisal employment for cash and on the market for food. For livestock-rich households, cattle and small stock sales serve as an important source of cash. However, they earn the bulk of their annual income from crop sales. Maize and cassava are sold locally to traders who then transport them to towns within the zone and to larger trading centers in Moshi, Arusha, Tanga, and Dar es Salaam. Cattle are also sold locally and hauled to small towns and/or to Tanga, Arusha, and Dar es Salaam.</p> <p>Rainfall shortages are the main hazards affecting food security in the zone, especially for those who rely on crop production for both food and cash. During the wet seasons, feeder roads become impassable, impeding the delivery of essential food and non-food items.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Sisal labor</li> <li>♦ Crop sales</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Sheep and goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> </ul>	



### 5: Usambara-Pare Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> </ul>	<p>The bimodal wet seasons Masika and Vuli soak the Usambara-Pare Highlands with up to 1,700 mm of rain annually. Agricultural plots are small, and households choose to use most of the space for the zone's multiple cash crops: vegetables, fruits, Irish potatoes, cardamom, and coffee. Therefore, they source most of their food from the market and complement their diets with maize and beans from their own fields. Agricultural labor, poultry sales, and remittances are an important source of income among poorer households. Market access is bad due to poor feeder road networks and impassable roads during the rainy seasons that can limit the in/out flow of commodities.</p> <p>Like neighboring zones, inadequate and erratic rainfall are the main hazards affecting household food and livelihood security; but this hazard is infrequent.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Cash crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> <li>◆ Remittances</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

### 6: Tanga Maize, Orange, and Jackfruit Midlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Rice</li> </ul>	<p>The Masika and Vuli rains deposit 600-1,200 mm of rainfall annually on this zone, feeding both food and cash crops. All households sell maize, oranges, jackfruit, mangoes, coconut, and cashews. The amount varies according to the number of trees owned by the household and the volume of rainfall. Wealthier households source most of their food and cash from their own production whereas the poor get food from their fields but most cash from paid labor. Households owning livestock sell animals as an additional source of income, most commonly poultry, while some may sell sheep, goats, and cattle according to need. Like other areas in the zone, market access is poor during the rainy season when dirt roads become impassable.</p> <p>Heavy reliance on crop production for food and cash make households especially vulnerable to food stress if rains fail. Poorer households are more vulnerable as they depend heavily on agricultural work, which can disappear in bad years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock</li> <li>◆ Remittances</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

### 7: Tanga-Pwani Coastal Belt Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Rice</li> </ul>	<p>The Tanga-Pwani Coastal Belt stretches from the Kenyan border southward towards the Rufiji Delta. The width of the zone varies but is estimated to stretch between 5 and 10 km from the shore. The zone's population, like that of neighboring Zone 6, relies on agricultural production for both food and cash. Masika and Vuli wet seasons deliver 800-1,000 mm of water annually to the zone's staple crops of maize, cassava, and rice. Perennial cash crops such as coconuts and cashews are sold to local traders and then transported to the larger trading centers of Moshi, Arusha, Dodoma, and Dar es Salaam. From Dar, cashews are exported to Pakistan and India. Coconut production is of greater importance in Tanga than it is in Pwani, yet both areas see it as their primary cash crop. Cattle and small stock are owned by households but account for only a small portion of their annual income. Better-off households living closer to the coast engage in fishing and earn significant portions of their money through fish sales. A minority of the zone's population collect seaweed, process fish, and engage in petty trading. Most poor households earn cash by working on farms or as hired hands on fishing boats.</p> <p>Although all households living along the coast share the same basic livelihoods, climatic and soil conditions in the southern part are less favorable than in the north. Rain failure, though not frequent, impacts household food security in Pwani more than in Tanga.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Fishing</li> <li>◆</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Chicken</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

8: Handeni-Bagamoyo Maize, Cassava, and Fruit Midlands Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Pulses</li> </ul>	<p>Like Zone 6, this zone benefits from bimodal rains for both main staple crops and the variety of fruits that households grow and sell. Oranges, mangoes, and jackfruit trees speckle the landscape and nearly all households sell them in some amount. Traders haul the fruits to Dar es Salaam and sell them to city distributors. Some are purchased by international traders for export to Kenya and Uganda. Livestock, mainly goats and cattle, are sent to Dar, where they are butchered or sold on the international market. Poorer households often do not produce enough food and cash crops to meet their annual needs and therefore must sell their labor to be able to purchase essentials.</p> <p>Sesame is cultivated throughout the zone but is more dominant in the Morogoro wards. Sisal plantations cover most of Ubenazomzi and Mikese wards and the livelihood systems in these areas are similar to those of Zone 4.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Goats</li> <li>◆ Cattle</li> <li>◆ Chicken</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> <li>◆ Rodents</li> <li>◆ Wild animals</li> </ul>	

9: Loliondo Midland Maize, Beans, and Livestock Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> </ul>	<p>Zone 9 sits on the border of Kenya in the Arusha Region. Despite its remoteness, the zone is relatively food secure. Bimodal rains totaling 800-1,000 mm per annum recharge livestock watering holes and allow growth of crops of maize and beans for consumption and sale. Households are able to produce most of the annual food needs from their own fields, relying on the market for the rest. Livestock sales represent the majority of income for all households in the zone. Animals, mostly cattle, are sold locally and at the various livestock markets along the Kenyan border. Apart from their rain-fed maize and beans, some wards have irrigation schemes that produce vegetables, bananas, and fruits.</p> <p>In one of three years, households are affected by lack of rain but most are able to cover deficits by increased livestock sales or labor migration. Livestock disease, and crop pests and diseases affect production in most years, but the damage is comparatively minor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Crop sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Livestock disease</li> <li>◆ Crop pest/disease</li> </ul>	

10: Lower Rombo Maize, Beans, and Finger Millet Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Finger millet</li> </ul>	<p>Situated at Mount Kilimanjaro's northern and western foot, this zone is on the Lower Rombo watershed and receives between 400-600 mm of rainfall annually. All households rely on crop production to supply themselves with food and cash. Poorer households may also do paid agricultural work in the zone, receiving payment in grain for their labor. Roughly 5 percent of the zone's population migrates outside the zone in search of paid labor – mostly to the Kenyan Highlands. People who own livestock may sell some animals to traders who then transport them to larger trading centers or to Kenya. Some households receive remittances from wealthier family members living outside the zone.</p> <p>Production hazards include lack of rain, crop diseases, destructive wild animals (notably elephants), and army worm: some combination threatens food and livelihood security annually to the extent that poorer households sometimes require official assistance.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Remittances</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease</li> <li>◆ Wild animals</li> <li>◆ Army worms</li> </ul>	

11: Kilimanjaro-Meru Maize, Coffee, and Plantains Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Plantains</li> </ul>	<p>This is a crowded but highly productive and food secure zone. Copious</p>

<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock product sales</li> </ul>	rainfall in the two seasons of Masika and Vuli and a relatively temperate climate enable substantial coffee production as well as a mix of crops, with maize and plantains uppermost for food. Coffee is sold to international traders; plantains are sold in Arusha town and then transported to Dar es Salaam and Kenya by traders. Dairy products from cattle and goats provide wealthier households with additional income and food. Given that Mount Kilimanjaro is one of Tanzania's main tourist hubs, the zone has a good road network, which promotes marketing of produce to the larger towns of Arusha and Moshi and also offer many opportunities for casual employment.
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Dairy cattle</li> <li>◆ Dairy goats</li> <li>◆ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop disease</li> <li>◆ Wild animals</li> </ul>	

#### 12: Karatu Wheat, Maize, and Coffee Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Wheat</li> </ul>	This is a small zone — a highland providing a particular niche for wheat, which is by far the principal cash crop and has made a good number of people relatively rich by rural Tanzanian standards. Maize and beans provide substantially for local food consumption, while coffee adds to cash incomes in a minority of wards. Nearly all households also supplement their income with some level of livestock sales, if only poultry: local town demand, including for the tourists visiting the neighboring Ngorongoro and Serengeti national wildlife reserves, offers a good market. Poorer households also sell their labor to wealthier rural neighbors to earn the cash to purchase essential food and non-food items.  Like Zone 11, this zone is very food secure but does experience crop pest and other hazards, but to a comparatively mild extent.
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Livestock product sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Dairy cattle</li> <li>◆ Goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Livestock disease</li> <li>◆ Army worms</li> <li>◆ Wild animals</li> </ul>	

#### 13: Lower Arusha-Simanjoro Maize Zone Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Sunflower</li> </ul>	This is a low-rainfall zone where livestock production vies with crop cultivation in importance for local households (enough that it may be considered agro-pastoral). Maize, and to a lesser degree, beans and sunflowers are the main crops, the last being mainly a cash crop. All households rely on the market to meet the bulk of their food needs, and much of the cash for this comes from livestock sales, especially cattle. Most of the animals are bought by traders locally or taken to the Arusha town market. Good road networks and infrastructure allow for a steady flow of commodities to enter the zone throughout the year.  Production hazards exist but are not acute, and the mix of agro-pastoral production largely guarantees food and livelihood security. Tanzanite quarries attract some laborers from within the zone, but the local economic effect is minor compared to the rural production.
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Livestock disease</li> <li>◆ Army worms</li> <li>◆ Wild animals</li> </ul>	

#### 14: Northern Maasai Pastoralist Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> </ul>	The vast grasslands of the Northern Maasai extend north into Kenya. Pastoralists in this zone benefit from their proximity to the larger Kenyan livestock markets at the international border. All households rely on livestock sales as their primary cash source to purchase food and non-food items. Cattle ownership is the essential determinant of household wealth. Every household also owns goats and sheep. At the
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Labor</li> <li>◆ Crops</li> </ul>	



#### 14: Northern Maasai Pastoralist Livelihood Zone

<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Sheep</li> </ul>	<p>same time, many of the zone's residents also engage in a little cultivation where they can, but to a lesser extent than in the southern pastoral Zone 1. As in that zone, a minority of poorer households may also do paid work for wealthier households or perform casual labor in smaller towns within the zone.</p> <p>Inadequate rainfall is the main hazard in the zone, affecting livestock health, reproduction, and milk production as well as crop yields. Livestock diseases and wild animal attacks on livestock and crops occur every year. However, the extent of damage depends on the household's ability to cope (for example, using veterinary drugs and more labor for protecting crops).</p>
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate rainfall</li> <li>♦ Livestock disease</li> <li>♦ Wild animals</li> </ul>	

#### 15: Nowu Maize, Beans, and Onions Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Irish potato</li> </ul>	<p>The Msimu wet season delivers 800-1,000 mm of rain annually to this productive zone. All households live primarily by their own agricultural activities, growing maize, beans, and Irish potatoes for food but also onions and garlic as cash crops. Road networks in the zone are good and passable year-round. Town markets receive a steady stream of traders from outside the zone. The cash crops sold in the zone are sold at local town markets and then shipped to Dar es Salaam, Zanzibar, and Saudi Arabia. Pigs are the main livestock in the zone, and large, mature pigs can bring large sums of cash. All livestock in the zone are sold at local markets, taken to Mbulu or Babati, and then taken to larger trading centers like Arusha, Moshi, and Dar es Salaam.</p> <p>Inadequate rains and crop/livestock disease tend to reduce production and cash earnings significantly in one out of three years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Livestock sales</li> <li>♦ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Pigs</li> <li>♦ Poultry</li> <li>♦ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> <li>♦ Crop disease</li> <li>♦ Livestock disease</li> </ul>	

#### 16: Babati-Kwaraa Maize, Beans, Sunflower, and Coffee Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Bananas</li> </ul>	<p>Bimodal rainfall of 1,100-1,200 mm annually allows cultivation of a wide range of food and cash crops in the zone. Most households are capable of feeding themselves from their own fields for the greater part of the year; but poorer households have to purchase some food before the next harvest. Sunflower, maize, pigeon pea, and coffee (as well as livestock) are sold, although with wide differences in amounts and numbers according to wealth: Poorer households reserve most of their farm plots for food crops and own fewer livestock. Paid labor, both agricultural and in towns, is the main source of cash for poorer households. Market access is relatively good, and commodities are sold at the local biweekly markets or in towns and exported to other areas in the country.</p> <p>Like Zone 15, zone hazards may occur every year but can be more severe one out of three years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> <li>♦ Crop pests and disease</li> <li>♦ Wild animals</li> </ul>	

#### 17: Kiteto-Kongwa-Mpwapwa-Mvomero Maize, Sorghum, and Pigeon Pea Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Sorghum</li> <li>♦ Bulrush millet</li> </ul>	<p>The Msimu rains give between 600-800 mm of rain to this large livelihood zone. Agriculture is the dominant activity, and it supplies all households with food and cash. But for many of the zone's poor, the harvest may last only a few months. As a result, they must sell their labor to be able purchase the necessary food and other essentials. Most of the labor is performed within the zone but about 5 percent of</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock</li> </ul>	

### 17: Kiteto-Kongwa-Mpwapwa-Mvomero Maize, Sorghum, and Pigeon Pea Livelihood Zone

<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> <li>◆ Poultry</li> </ul>	<p>people may find work in Kibaigwa, Morogoro, Dodoma, Kilindi, Kondo, or Dar es Salaam. Livestock sales provide a significant secondary income for the wealthier; animals are sold locally then exported to other areas within and outside Tanzania. Market access is mediocre, except for the areas near Kiteto and Mpwapwa. Poor infrastructure and bad feeder roads limit commodity flows, especially during the rainy season. Production hazards tend to be more severe one out of three years, and poorer households are susceptible given their very high reliance on farm work rather than livestock. Nevertheless, this is a reasonably food secure zone.</p> <p>Conflicts between farmers and Maasai pastoralists is of increasing concern as farmers continue to encroach on tradition grazing areas.</p>
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> <li>◆ Wild animals</li> <li>◆ Conflict</li> </ul>	

### 18: Mbulu-Karatu Midlands Maize, Beans, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Finger millet</li> </ul>	<p>The single wet season (Msimu), with 400-600 mm of rain annually, supports the main crops of maize, beans, and finger millet. Depending on the rains and access to resources (land, labor, inputs, etc.), most households can produce more than six months' worth of food. Once food stocks expire, they must purchase food until the next harvest. For most, cash crops (beans, pigeon peas, sorghum) account for the bulk of their cash income with cattle and small stock sales and trading making up the difference for the wealthier. Poorer households rely a little on poultry sales but more on casual labor, most of it on local farms. Zonal access to markets is fair with many using the Mbulu town market as their main trading post.</p> <p>Zone hazards occur every year to some degree but are more serious one out of three years, when official aid may be given to the poorest.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Trade</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop pests</li> <li>◆ Livestock disease</li> </ul>	

### 19: Hadzabe Hunter-Gatherer Wild Honey, Wild Roots, and Wild Fruit Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Wild meat</li> <li>◆ Wild roots</li> <li>◆ Wild fruits</li> </ul>	<p>The Hadzabe are a rare remaining example in Africa of a hunting and gathering society. Living in lowland forest around Lake Eyasi, the Hadzabe rely on the collection of wild fruits/roots and bush meat for food. They sell wild honey and meat in towns near Ngorongoro district and/or Meatu town and use the cash to purchase maize. For most, this is insufficient to meet their food needs, and food aid is delivered annually to avoid outright hunger.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Wild honey</li> <li>◆ Wild meat</li> </ul>	
<b>Livestock</b>		
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ External pressure on livelihood resources</li> </ul>	<p>Failing rainfall can leave traditional Hadzabe hunting grounds deserted, and the encroachment of slash-and-burn farmers is continually reducing the resources available for a traditional existence. The Hadzabe are a chronically food insecure population.</p>

### 20: Wembere Paddy, Sorghum, Maize, Sunflower, and Fishing Livelihood Zone

<b>Food</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Sorghum</li> <li>◆ Maize</li> </ul>	<p>The zone is situated south of Lake Kitagiri and spreads over the western fringes of Singida Region and eastern parts of Igunga District. Households in the zone rely on agricultural production, fishing, and (to a lesser degree) livestock to meet their food and income needs. The majority of poorer households produce enough</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Fishing</li> <li>◆ Livestock</li> <li>◆ Labor</li> </ul>	

20: Wembere Paddy, Sorghum, Maize, Sunflower, and Fishing Livelihood Zone		
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	<p>food for consumption to last six months (at most), requiring them to buy their remaining food from the market. They rely heavily on paid agricultural work to earn cash but also sell some fish and cash crops. Wealthier households produce substantial quantities of food from their own fields but also rely on purchases as their food reserves run low before the new harvest. Sales of fish, livestock, and to a lesser degree cash-crops (rice, sunflower seed) account for the bulk of better-off households' income. A good number of the poor struggle to make ends meet even in a normal year. Given the lack of diversity in income sources, if there is any production failure considerably more people become food insecure.</p>
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease and pests</li> </ul>	

21: Bahi-Sanza Irrigated Rice, Maize, Bulrush Millet, and Livestock Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Bulrush millet</li> <li>◆ Maize</li> <li>◆ Rice</li> </ul>	<p>Agricultural production is primarily rain-fed (with the single Msimu wet season), but the Bahi swamp irrigates some of the fields in the zone and provides fishing opportunities. Harvest yields sustain poorer households for six months or less, and they sell their labor (for cash or in-kind grain payment) in order to fill food gaps. Most of the labor is performed in the zone with a minority of the laborers traveling to Dodoma and Dar es Salaam for a few months in search of work. All of the zone's residents sell bulrush millet, rice, and sunflower. However, amounts sold depend on the rain performance and the resources available to the household. Most of the crops produced are sold to traders at local markets who then take them to larger markets in Sanza, Dodoma, and Dar es Salaam. Livestock-owning households — usually the better-off — may sell a few animals per year to cover essential expenses. Livestock are taken to Bahi Market, where traders buy and haul to Dar es Salaam for export. Fishing and mining activities are performed by some of the zone's residents but not very many.</p> <p>The zone's natural hazards, especially rain failure, significantly reduce production one in three years, but on the whole this is a comparatively productive and food-secure area.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease and pests</li> <li>◆ Livestock disease</li> </ul>	

22: Iramba Midland Onion, Maize, and Sunflower Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Sorghum</li> <li>◆ Bulrush millet</li> </ul>	<p>The reasonably dependable Msimu rains (800-1,200 mm annually) support a varied agriculture, with substantial production of food crops and cash crops. Onions are a particularly valuable sales item, and money is also made from sunflowers and maize. The commodities are sold to traders locally who then haul them to larger trading centers in Tanzania. The majority of poorer households work on the farms of the better-off, while others find work in small towns inside and outside the zone. The Misigiri gold mine is one location where people find work, but this is minor compared to the other employment. Wealthier people mainly sell crops and livestock and pursue small-scale trading.</p> <p>Crop-related hazards such as pests and diseases are perennial impediments to food security in the zone, but not enough to cause food insecurity.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop disease and pest</li> <li>◆ Livestock disease</li> <li>◆ Inadequate and erratic rainfall</li> </ul>	

23: Manyoni Upland Maize, Sunflower, Sesame, and Livestock Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Sorghum</li> <li>♦ Sweet potato</li> </ul>	<p>This zone gets only 500-700 mm of rain annually (comparatively little), and once every two years there is some level of rain failure. For wealthier households, the risk of reduced harvests is allayed by livestock ownership and sales, while in certain localities residents exploit forest resources of timber and wild honey. Market access in the zone is good as the road network allows steady trade flows throughout the year. But poorer people own few livestock and are able to produce only limited amounts of cash crops (sesame and sunflower). At the same time, they are normally far from covering their annual food needs from their fields. They make most of their cash from paid labor and from brewing activities.</p> <p>Thus, the risk of rain failure makes this a borderline food-insecure area; even people who are not poor may be vulnerable if there are substantial harvest losses.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop pests</li> <li>♦ Livestock disease</li> <li>♦ Unreliable rain</li> </ul>	

24: Tabora-Singida Midland Maize, Sunflower, and Livestock Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Sorghum</li> <li>♦ Bulrush millet</li> </ul>	<p>The Msimu rains deposit between 550 and 800 mm of rainfall annually, recharging water holes, grazing lands, and crop fields. As in Zone 23, livestock represent an important source of income for the zone's residents. The majority of households grow food crops, but poorer households are unable to produce enough to cover their annual needs and must purchase food when stocks run out. Livestock sales (goats and poultry), and agricultural and casual labor accounts for the majority of the poor's income. Some also engage in honey production and sales as well as handcraft production. Market access is relatively good with most cash crops and livestock being sold locally and then distributed within and outside the zone. Given its proximity to the Ruaha Game Reserve, wild animals such as elephants and predators destroy crops and kill livestock. Poorer households are extremely vulnerable as any food or cash shock threatens their food security.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Wild animals</li> <li>♦ Crop pests</li> </ul>	

25: Singida-Manyara Maize, Sorghum, Beans, and Sunflower Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Sorghum</li> </ul>	<p>The moderately fertile soils of Zone 25 soak up the 550-950 mm of rain the Msimu delivers. All households source the bulk of their food from their fields but as stocks run out, they rely on the market to cover needs until the next harvest. Having greater access to agricultural resources (land, paid labor, and agricultural inputs), wealthier households are able to sell sunflower, onions, and pigeon. Livestock sales represent another important source of income for many of the zone's residents. However, the income earned varies according to livestock ownership. Distances from larger market centers and poor road networks hamper producers' ability to sell their crops and livestock throughout the year. Crop and livestock diseases and inadequate rainfall are common threats in the zone and severely affect household food security one out of two years. Households typically can see through hazards by employing a range of coping strategies.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Livestock sales</li> <li>♦ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop disease</li> <li>♦ Livestock disease</li> <li>♦ Inadequate rainfall</li> </ul>	

### 26: East and South Lakeshore Fishing, Cassava, and Upland Rice Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Cassava</li> <li>◆ Maize</li> </ul>	<p>The Vuli and Masika provide 900-1,200 mm of rain in this lakeshore zone. Agriculture is the dominant activity, but those living closer to the water engage in fishing activities. Rice, cassava, and maize are the staple food and cash crops grown. However, some households that own plots closer to the shore use irrigation to produce vegetables. Livestock sales are important sources of income for all, but cattle are mostly sold by wealthier households. Poorer household earn most of their cash by working for wealthier households on fishing boats or in the fields. Market access is very good in the zone as tarmac roads trace the shore, providing multiple venues for people to hock their crops to the traders and consumers passing by. Bicycles are an important asset in this zone as they are used to transport crops, fish, and even chickens to the weekly markets in the lakeshore wards.</p> <p>Crop and livestock pests and diseases occur every year and limit the amounts that a household can produce and sell. Households are often able to offset the impact of hazards by employing coping strategies.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Fishing sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> </ul>	

### 27: Western Lakeshore Coffee, Fishing, and Banana Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Bananas</li> <li>◆ Cassava</li> <li>◆ Beans</li> </ul>	<p>Situated on the western shore of Lake Victoria, this zone benefits from the 1,400-2,100 mm of rainfall it receives annually. Like Zone 26, the residents of the Western Lakeshore Zone depend mainly on agriculture and supplement their food and income with fishing. Most households grow bananas, cassavas, and beans and produce enough to last most of the year. Highland residents produce coffee while those living closer to the shore grow tomatoes and other vegetables in irrigated plots. Fish sales and boat labor is the main source of income for most households. Members of poorer households may migrate to the sugar plantation in Kagera or mines in Mwanza and/or Shinyanga to look for casual work. Market access is similar to that of Zone 26 as there are good road networks connecting the zone to larger trading centers. Livestock, especially pigs and poultry, are sold at local markets or Bukoba and traded/sold within the zone.</p> <p>Crop pests such as cassava mosaic and banana weevils reduce food crops but not enough to threaten food security.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Fish sales</li> <li>◆ Labor</li> <li>◆ Coffee sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Pigs</li> <li>◆ Poultry</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests</li> <li>◆ Wind</li> </ul>	

### 28: Kagera-Kigoma-Mara Banana, Coffee, and Beans Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Bananas</li> <li>◆ Cassava</li> <li>◆ Beans</li> </ul>	<p>Households living in the banana-, coffee-, and bean-growing areas of Kagera, Kigoma, and Mara share the same access to food and income and therefore were grouped in one livelihood zone. These surplus-producing areas enjoy bimodal rains delivering 1,000-1,200 mm of rain. Most of the crops produced can sustain households for the majority of the year and serve as the main source of their annual income. Livestock sales supplement cash earned from selling coffee, bananas, and beans. Poorer households may also sell their labor to wealthier households in exchange for cash, but the contribution of wages to their annual income is less important than that of crop and livestock sales. Most labor opportunities are found in the rural areas and only a minority of laborers migrate to towns in search of casual labor. Market access in this zone is good as road networks link the zone to larger trading centers.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	

<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop diseases</li> <li>♦ Livestock diseases</li> <li>♦ Raiding</li> </ul>	Crop and livestock diseases occur one out of three years while livestock raiding can occur annually. Though food and cash income can decrease after a shock, most households are able to cover deficits through increased livestock and labor sales and increased reliance on cassava.
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### 29: Mwanza-Shinyanga-Mara Cotton, Livestock, Cassava, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Cassava</li> <li>♦ Rice</li> </ul>	<p>This large livelihood zone receives between 600-1,000 mm of rain per year. Food crops are grown by all households, but the harvests of poorer households last for only a few months. Once food stocks are depleted, poorer households must earn cash to cover their food needs for the rest of the year. Cotton sales and labor from the cotton fields are the main sources of income for the zone's residents. Cotton is sold at local markets and transported to one of the multiple ginneries surrounding the zone. Rice and other cash crops are sold at local markets and then taken to larger trading centers within and outside the zone. Wealthier households supplement their income through livestock, cattle, and goats and poor households through poultry. Poorer households may also engage in casual labor in the towns within the zone, while a minority of the poor work in the mines outside the zone.</p> <p>As in many parts of Tanzania, hazards reduce household access to food and cash every year but at varying degrees. Poorer households are less resilient to these shocks and can take longer to recuperate from severe losses. Households living closer to the game parks and conservation areas are also threatened by wild animals, especially elephants, which often wreak havoc on crop fields.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Cotton sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Rain failure</li> <li>♦ Crop pests and disease</li> <li>♦ Livestock disease</li> <li>♦ Wild animals</li> </ul>	

### 30: Kagera Lowlands Beans, Maize, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Banana</li> <li>♦ Maize</li> <li>♦ Beans</li> </ul>	<p>This lowland zone receives between 1,000-1,200 mm of rain annually, providing farmers with food to meet most of their annual needs. Their remaining food needs must be met through market purchases. Coffee and surplus food crops are sold locally and exported out of the zone. Poorer households earn most of their cash supplying agricultural labor to wealthier households or in local towns inside and outside the zone. Households that own sufficient heads of livestock may supplement their income by selling a few during the year. Poorer households sell according to need and often sell smaller, less-mature animals. Good road networks allow for a steady stream of commodities in and out of the zone, especially to and from Uganda.</p> <p>Insufficient rains are the main hazard affecting the zone, but they severely impact household livelihoods in one out of five years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Goats</li> <li>♦ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate and erratic rainfall</li> </ul>	

### 31: Shinyanga-Tabora Cotton, Upland Rice, Sweet Potato, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Rice</li> <li>♦ Sweet potato</li> </ul>	<p>The Msimu rains deliver 500-1,030 mm of rainfall annually, feeding the essential food and cash crops and recharging livestock watering holes and grazing areas. Most households grow food crops, but poorer households are unable to produce enough to cover their annual needs and therefore must purchase food when stocks run out. Additionally, most people in the zone grow and sell cotton, yet the quantities harvested and sold depend on a number of factors, such as rainfall, land dedicated to cotton, labor, and agricultural inputs. The poor often reserve most of their land for growing food</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	



<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Poultry</li> </ul>	<p>crops and therefore produce and sell less cotton. As in Zone 29, most of the cotton is brought to local markets and sold to traders and then shipped to the ginneries in Shinyanga, Kahama, Maswa, Bariadi, Lalago, and Kokumbe. Poorer households earn most of their cash by doing agricultural labor or casual labor in towns located within the zone. Some go to larger towns like Mwanza and Dar es Salaam in search of work. Livestock sales serve as an important source of income for many, especially wealthy households. Most of the cattle and shoats in the zone are sold to traders and hauled to larger trading center outside the zone and internationally. Poor households live with borderline food insecurity. Hazards that affect their access to food and income will push them below their survival requirements and render them in need of external assistance.</p>
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease</li> <li>◆ Livestock disease</li> </ul>	

### 32: Sengerema-Geita Highland Cassava, Rice, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Beans</li> </ul>	<p>The 1,000-1,200 mm of rain this zone receives allows crop surpluses in most years. Its proximity to Mwanza town and access to good road networks offers optimal market access. Residents source most of their food from their fields. However, once stocks expire, they must rely on the market to fill existing gaps. Rice, cassava, and pineapples are the main cash crops and are sold in Geita and/or Mwanza. Poorer households earn cash mostly by selling labor and also by selling cash crops and chickens. The amount of cash crops produced and sold by the poor is less than their wealthier neighbors since much of their land is dedicated to producing food crops. Wealthier households earn most of their cash from crops followed by livestock sales. Some households may also engage in fishing, mining, and timbering. Though zone hazards can affect access to food and cash, their impact is usually minor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop disease and pest</li> <li>◆ Livestock disease</li> </ul>	

### 33: Kagera-Kigoma Beans, Cassava, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Cassava</li> </ul>	<p>Vuli and Masika rains deliver 700-1,000 mm of rain to this zone. Food crops are grown by the majority of households but poorer households are unable to produce enough to cover their annual needs and therefore must purchase food when stocks run out. Wealthier households can produce excess amounts of maize and beans and have some plots reserved for cotton. The latter crop is sold locally and then taken to ginneries in Kahama and Shinyanga. The maize and beans are also sold locally and then transported to larger trading centers inside the zone. Brewing is another common source of income for those better-off which is usually sold at the village level. Poorer households rely on agricultural and casual labor to earn cash. Some travel to Kahama, Geita, and Ushiroambo from July until August as farm laborers or mine workers. Goats and chickens are sold locally and then taken for slaughter at Kibondo, B'ulo, and Kasule. Cattle are taken to auction markets and then transported outside the zone. Market access is fair with many of the roads passable throughout the year. Rain failure may occur one out of three years but most households are able to sustain the impact.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Goats</li> <li>◆ Poultry</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

### 34: Kahama-Tabora Midland Tobacco, Maize, Rice, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Maize</li> <li>◆ Sweet potato</li> </ul>	<p>This unimodal rainfall zone produces an array of food and cash crops. However, the amount produced by households is limited by rainfall and the resources households have available. Poorer households produce limited amounts of crops for food and sale and rely on the market to meet most of their food needs. Labor, both on-farm and casual, is the primary source of this group's income, which is supplemented by crop sales. Wealthier households source the bulk of their food and cash from their fields. The main cash crop in this zone is tobacco, which is sold at local markets and then taken to Morogoro for processing and export. Rice and groundnuts are also produced and sold in the zone but are overshadowed by tobacco. Livestock such as cattle and shoats are sold mostly by better-off households locally and transported outside the zone to larger trading centers. Market access is good as commodities flow in and out of the zone throughout the year. The impact of inadequate rainfall on food security depends on the severity of the shock and households' ability to cope. In this borderline zone, poorer households will have difficulty sustaining production shocks and will require external assistance.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Shoats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

### 35: Kishapu-Meatu-Maswa Sorghum, Cotton, Sweet Potato, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Sorghum</li> <li>◆ Maize</li> <li>◆ Sweet potato</li> </ul>	<p>This moderately populated deficit zone receives between 400 and 700 mm of rainfall annually. Livelihoods are dependent on agricultural production and, to a lesser degree, livestock. Food crops are grown by all households but poorer households are unable to produce enough to cover their annual needs and therefore must purchase food when stocks run out. To cover food expenses, poorer households do agricultural work for wealthier farmers or find casual labor opportunities in nearby towns. Like their better-off neighbors, the poor have cotton plots but most of their land is reserved for food crops so they tend to sell smaller quantities. Market access in the zone is relatively good with roads connecting the zone to larger trading centers and cotton ginneries. Livestock are exported from the zone and taken to larger livestock markets in Mwanza, Arusha, Tarime, and Dar es Salaam.</p> <p>This zone is plagued with inadequate rainfall and crop pests every year, resulting in the distribution of food aid by the local authorities. Other hazards such as animal pests and excessive rainfall occur one out of every three years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and excessive rainfall</li> <li>◆ Crop and livestock pests</li> </ul>	

### 36: Urambo-Nzega Lowland Groundnuts, Cotton, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Rice</li> <li>◆ Sweet potato</li> </ul>	<p>This surplus zone receives 500-1,000 mm of rain annually feeding staple crops such as maize, rice, and sweet potatoes. All households cultivate food crops but, for the zone's poorer population, the amounts produced do not fulfill their annual needs. They mostly rely on purchased foods and supplement their diets with the crops they do not sell. Cash crop sales (cotton, groundnuts, and maize) are sold to traders who then export the goods to other areas within the country. Crop sales, followed by livestock sales, are the main income-generating activities for the better-off. Cattle, shoats, and, to a lesser degree, poultry are sold locally and then taken out of the zone. Zone hazards occur every year. However, the extent to which they</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> <li>◆ Poultry</li> </ul>	



<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop pest</li> <li>◆ Livestock pests</li> </ul>	impede access to cash and food depends on the household's ability to cope. Severe hazards will affect the poorer population most but could also affect the ability of better-off households to sustain future shocks.
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### 37: Kigoma Lowland Palm Oil, Cassava, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Beans</li> </ul>	<p>Situated in the western part of the region, this zone receives 800-1,000 mm of rainfall annually. All households source the bulk of their food from their fields and produce enough to sell. Palm oil is also produced and sold in the zone. However, the majority of cash earned from crops comes from maize and beans. Households supplement their income with livestock sales, earning the most from poultry sales.</p> <p>Those who own goats and cattle sell a few per year to cover immediate expenses. The eastern part of the zone is mostly forest and uninhabited. Some households exploit the forest by selling firewood, timber, and charcoal. Fishing is also common among households residing along the shore but agriculture remains the dominant livelihood activity.</p> <p>Though zone hazards can affect households' access to food and cash, their impact is usually minor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop pest and disease</li> <li>◆ Livestock disease</li> <li>◆ Hail</li> </ul>	

### 38: Urambo Agropastoral Maize and Sweet Potato Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Sweet potato</li> <li>◆ Cassava</li> </ul>	<p>Msimu rains amount to approximately 600 mm annually. Most households produce sweet potatoes, cassava, maize, and rice (the latter two are both food and cash crops). Poor households rely on labor being paid both in cash and in-kind. Although paid work is their main source of income, the poor may also sell crops and shoats or poultry to supplement their income. Better-off households produce surplus amounts of crops, which are both consumed and sold.</p> <p>However, most of their money comes from the sale of cattle and small stock. Market access in the zone is good. Rice is sold locally at (bi) weekly markets, taken to hulling machines in Dar es Salaam, and then shipped within the country or abroad. Livestock are also sold locally, transported to larger trading centers, and then to Kenya. Livestock diseases are the most common hazard in the zone affecting all households indiscriminately. Though diseases occur every year, serious outbreaks can occur one out of every five years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Livestock disease</li> <li>◆ Crop pests</li> <li>◆ Inadequate rainfall</li> </ul>	

### 39: Victoria Islands Fishing, Cassava, Sweet Potato, and Paddy Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Sweet potato</li> <li>◆ Rice</li> </ul>	<p>Households in this densely populated livelihood zone depend on fishing and agriculture. Bimodal rains leave 900-1,300 mm of water, enabling cultivation of the main food and cash crops of the zone: cassava, sweet potato, and rice. All households get most of their cash and food from these crops, supplemented by fish and livestock sales. Though spanning several small islands, market access is relatively good.</p> <p>Zone hazards can affect access to food and cash annually though their impact is usually minor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Fishing</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> </ul>	

#### 40: Ruaha Riverine Maize, Onion, Tomato, and Paddy Lowlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Rice</li> <li>◆ Beans</li> </ul>	<p>Vuli and Masika total 300-500 mm of rain annually. Food crops such as maize and beans are rain-fed while onions, tomatoes, and rice are irrigated from the Ruaha River and its tributaries. All households in the zone rely on agricultural production as their main source of food and income. Poorer households supplement their crop incomes by working on better-off household's farms. A minority of the poor travel to local towns for work. Better-off households earn additional cash by selling livestock, especially cattle. Poorer households can only afford to sell a few animals and often according to immediate need. On the other hand, better-off households can sell more animals and wait until prices peak. Given its proximity to the urban centers of Iringa and Morogoro, the zone's producers have access to larger trading centers. Those living close to the A7 highway can sell or exchange goods with traders and consumers passing through the zone.</p> <p>Though zone hazards can affect access to food and cash annually, their impact is usually minor.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Onion and tomato sales</li> <li>◆ Labor</li> <li>◆ Petty trade</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Indigenous poultry</li> <li>◆ Goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests</li> <li>◆ Inadequate rainfall</li> </ul>	

#### 41: Chalinze-Tunuguo Maize, Cattle, and Cassava Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Rice</li> </ul>	<p>This is a mixed-livelihood zone with a number of farmers and pastoralists competing for the same resources. Those engaged in livestock husbandry rely on livestock sales for cash, which they then use to purchase essential food and non-food items. All farmers in the zone source their food and cash through crop production with better-off households capable of selling more. Some poor households complement their crop income by selling labor locally, while most travel to zone towns from October to May. Others may find seasonal work in Dar es Salaam. Given its proximity to Dar es Salaam and the good road networks, a steady exchange of commodities maintained at the village level.</p> <p>As in most zones, production hazards impede access to food and cash and push vulnerable households toward food insecurity. Conflict over resources (migration routes and water) have become more frequent in the zone and could exacerbate food security threats.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Indigenous Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Wild animals</li> <li>◆ Conflict</li> </ul>	

#### 42: Kilombero-Mtibwa Paddy, Maize, and Sugar Employment Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Maize</li> </ul>	<p>Sugar-cane outcropping and plantation employment provide the majority of households in this zone with cash. Although all households produce rice and maize for food, poorer households produce less and rely more on the market to source most of their annual food needs. Sugar cane is sold to sugar factories for processing and then exported.</p> <p>Hazards, such as fires, can destroy sugar crops, leaving the majority of outcroppers with no product to sell. Inadequate rainfall reduces the amount of food crops produced and forces households to rely on the market to cover food deficits. Both hazards affect how households access cash and income but do not occur every year. Delayed payment to outcroppers is an annual hazard that results in conflict. Some wards near Moshi and in Kagera regions share the same livelihoods as this zone.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Sugar cane employment</li> <li>◆ Rice sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Indigenous poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Conflict</li> <li>◆ Fire</li> <li>◆ Inadequate rainfall</li> </ul>	

#### 43: Kilombero-Ulangu-Lusewa Paddy, Maize, and Cassava Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Cassava</li> <li>♦ Rice</li> </ul>	<p>Production of maize, cassava, and rice provides households with the bulk of their annual food and cash needs. Rice, maize, and bananas are the dominant crops sold in the zone. Farmers sell their harvests to traders, who take it to larger trading centers outside the zone. Poorer households also rely on cash earned from agricultural labor and casual labor in zone towns. A minority travel outside the zone from December to February in search of work. Poorer households also rely on charcoal and timber sales but the amount they earn from this activity is overshadowed by labor and crop sales. Better-off households also sell cattle and small stock, and these sales are second in importance to their crop sales. Animals are typically sold and purchased locally throughout the year.</p> <p>Given their reliance on crops for food and cash, hazards that limit the amounts produced will hamper households' ability to meet annual needs and will push poorer households toward food insecurity. Ulangu and Lusewa receive food assistance every couple of years (one out of three). Some fishing is done in the central part of Kilombero district, especially in the swamp areas. In addition, conflicts over land and resources are common in some of the western wards in Kilombero district.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> <li>♦ Charcoal sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Indigenous poultry</li> <li>♦ Cattle</li> <li>♦ Sheep and goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop disease and pests</li> <li>♦ Inadequate rainfall</li> <li>♦ Conflict</li> </ul>	

#### 44: Kilosa-Mvomero Maize and Paddy Lowlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Rice</li> <li>♦ Sorghum</li> </ul>	<p>Households in this lowland zone rely heavily on crop production to meet most of their annual food and cash needs. Some of the food crops (including sesame) are sold at the village level and then transported to Dar es Salaam markets to be sold to larger traders and urban consumers. Livestock plays a secondary role in terms of income. Better-off households earn more money through cattle and goat sales whereas poorer households sell mostly chickens and goats. The poor also earn cash by working on better-off households' farms and as casual laborers in zone towns. A minority of households may also engage in timber sales.</p> <p>Hazards such as inadequate rain and wild animals can impede household access to food and cash annually but are more severe once every three years. Previously, conflict between farmers and pastoralists were common.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Livestock sales</li> <li>♦ Labor</li> <li>♦ Timber sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Indigenous poultry</li> <li>♦ Cattle</li> <li>♦ Goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate rainfall</li> <li>♦ Wild animals</li> <li>♦ Conflict</li> </ul>	

#### 45: Matombo-Kuyuni Spice, Maize, and Banana Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Rice</li> <li>♦ Banana</li> </ul>	<p>This surplus zone receives 600-1,200 mm of rainfall annually, which goes to feed the zone's prized cash crops. The majority of households purchase their food and reserve most of their plot space to grow cardamom, cloves, cinnamon, and other spices. They sell their spices locally, and the buyers take them to Dar es Salaam, where they are purchased by consumers or exported. The fruits produced are sold to traders passing through the zone and are taken to Dodoma or Dar es Salaam. The old Dar es Salaam Road, which links Morogoro to Dar, cuts through the zone, ensuring a steady flow of commodities and multiple venues for farmers to hock their goods along the road.</p> <p>Zone hazards like inadequate rain and crop diseases can disrupt the amount of crops households can produce for the market. Poorer households are more susceptible to such threats as they may not be able to afford the necessary pesticides or have access to irrigation.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Cash crop sales</li> <li>♦ Petty trading</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Indigenous poultry</li> <li>♦ Goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate rainfall</li> <li>♦ Crop disease</li> </ul>	

#### 46: Bagamoyo-Kibaha Midland Cassava, Cashew, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Rice</li> <li>◆ Maize</li> </ul>	<p>The Vuli and Masika rains total 600-1,000 mm of water annually. All households get the bulk of their food from the market. Cashews, bananas, and rice sales dominate this zone's economy with better-off households producing larger quantities for sale. These households also provide members of poorer households with seasonal agricultural labor opportunities. All households sell indigenous poultry but the amounts owned and the quantity sold in a year varies according to wealth. Many are also engaged in timber, wild honey, and charcoal sales. The zone's proximity to Dar es Salaam allows a steady flow of commodities in and out of the zone.</p> <p>A heavy reliance on crop production for cash and paid work make all households especially vulnerable to food insecurity if the rains fail. Annually, crop diseases and wild animals reduce food and cash crop yields, limiting the amount that can be consumed and sold. Kiwanga Ward is slightly different from the rest of the zone as pineapples, instead of cashews, are its main cash crop.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Cash crop sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Indigenous poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease</li> <li>◆ Wild animals</li> </ul>	

#### 47: Morogoro Highland Maize and Vegetable Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Banana</li> </ul>	<p>This densely populated, surplus zone overlooks Morogoro town in the highlands and receives 600-1,200 mm of rainfall annually. The majority of households farm on small plots, producing an array of cash crops to sell at local village markets. Traders pass through the zone via the old Dar es Salaam road and purchase vegetables and sell grains. Though some households grow crops for consumption, the majority purchase their food from the market. Unlike other vegetable-producing areas, this zone produces vegetables all year round, providing a steady source of cash. Farmers receive the best prices for their vegetables, especially tomatoes, when the national prices peak and other areas are not harvesting. Households can complement their crop income with livestock sales. Livestock — such as poultry, goats, and pigs — are sold to traders as they pass through the zone. Most are taken to the larger trading centers in Dar es Salaam and Morogoro. A group of farmers organized and constructed cement-lined irrigation canals that distribute spring and run-off water to various plots.</p> <p>Inadequate and erratic rainfall affects the zone one in three years but households are able to cope by eating reserve foods and cassava.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Vegetable sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Indigenous poultry</li> <li>◆ Goats</li> <li>◆ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

#### 48: Maskat-Kimbet Maize and Beans Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Cassava</li> </ul>	<p>This surplus zone receives 600-1,200 mm of rainfall from the Vuli and Masika seasons. All households in the zone rely on agricultural production as their main source of food and income. Households supplement their income by selling livestock but the amounts earned vary according to the number and type of animals sold and the time of year. A minority of households also engage in petty trade and timber activities. The market infrastructure is good, and the zone has a number of local, open-air markets located throughout and a series of tarmac roads leading to larger towns and trading centers.</p> <p>Periodically the zone is threatened by inadequate and erratic rains. However, households are able to bear the shock by employing a series of coping strategies.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Indigenous poultry</li> <li>◆ Goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

#### 49: Newala-Masasi Plateau Sesame, Cassava, Cashew, and Sorghum Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Sorghum</li> <li>◆ Maize</li> </ul>	<p>This very food-secure zone receives 850-1,100 mm of rainfall annually. The majority of households rely on consuming cassava, sorghum and maize produced from their own fields. Poorer households purchase food for a few months, especially as food stocks expire. Agricultural labor serves as the primary source of income for this group, followed by handcraft sales. Wealthier households earn cash from the sale of cashews and sesame, which they sell to cooperatives who transport the goods to Mtwara for export. This group also earns significant portions of their income from livestock sales. Market access in the zone is moderate, since some villages are further away from the trading centers and some of the road networks are only passable during the dry season.</p> <p>Hazards in the zone may affect food security for some of the zone's poor, but they occur infrequently (in one in five years).</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> <li>◆ Handcrafts sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop disease</li> <li>◆ Rodents</li> <li>◆ Livestock disease</li> </ul>	

#### 50: Mtwara-Lindi Coastal Rice and Cashew Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Cassava</li> <li>◆ Vegetables</li> </ul>	<p>This coastal zone extends south of the Rufigi Delta down to the border with Mozambique. Similar to Zone 7, most of its coastal landscape is covered with mangrove estuaries. Households rely primarily on crop sales and paid work for income. Better-off households source most of their food from their fields whereas poorer ones rely more on the market. Poorer households earn cash by working on better-off households' farms or by working in town as casual laborers. Smaller portions of the poor's income are derived from crop and fish sales. The better-off get most of their cash from the sale of coconuts, cashews, and cassavas. Most of the crops are sold at local markets and distributed throughout the zone and region. Cashews are taken to the port at Mtwara and then exported internationally. Better-off households also engage in fishing on a slightly larger scale than the poor. A smaller portion of the better-offs' income is from salt sales. After harvesting salt from small ponds, they sell it to traders who take the salt for iodization. Market access is fair within the zone given its remoteness and poor road networks. Most of the population relies on small weekly or biweekly markets to purchase and sell goods. The port of Mtwara is the main entry point for various commodities coming in and out of the zone.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Cash crop sales</li> <li>◆ Labor</li> <li>◆ Fish sales</li> <li>◆ Salt sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> </ul>	

#### 51: Matumbi Midland Upland Rice, Oranges, and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Maize</li> <li>◆ Cassava</li> </ul>	<p>Crop production serves as the primary source of food for all households in this zone and the main source of cash for the better-off. The poor get most of their income by working in rural areas, while some find work in zone towns and outside the zone. Others (a smaller group) sell the zone's main cash crops. Market access is poor given the zone's remote location, and most commodities are sold to individual buyers at the local level and then exported to Dar es Salaam. Rice is sold to cooperatives who then take them to Dar.</p> <p>Though there are hazards that affect production, they occur infrequently. Severe hazards will affect poorer residents in the zone most as they have limited resources to draw on to cover food and cash deficits.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Cash crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop pest and disease</li> </ul>	

### 52: Lindi-Nachingwea Lowland Cassava and Maize Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Sorghum</li> </ul>	<p>Households in this sparsely populated livelihood zone receive most of their food from their fields. Poorer households get the remainder of their food from in-kind payment and the market. They earn cash by working in rural areas and in small towns as daily labors. They also sell chickens and produce baskets and mats. Wealthier households get most of their cash from crop sales and by selling cattle and shoats. Cash crops such as (cashews, groundnuts, and pigeon peas) are sold to cooperatives and then shipped to Mtama, Lindi, Masasi, Nachingwea, Ruangwa, and Kilwa. Livestock are sold locally and then taken to larger trading centers to be sold. Some households also engage in timber sales but this is not as common as other income activities.</p> <p>Crop pests and diseases will affect production in the zone, decreasing production yields, and will push poorer households towards food insecurity. Livestock diseases, like Newcastle disease, can tap poorer households' annual earnings, forcing them to search for alternate ways to earn cash.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> <li>◆ Handcraft sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> <li>◆ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> </ul>	

### 53: Southeastern Plateau Cassava, Cashew, and Bambara Nut Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Sorghum</li> <li>◆ Bambara nuts</li> </ul>	<p>The Msimu rains deliver between 800-1,000 mm of water to the zone, enabling the cultivation of essential food and cash crops. All households get the majority of their food from their fields. However, the amounts produced by poorer households may last only 5-6 months. In-kind payment and market purchases make up their remaining food sources. Farm labor accounts for the bulk of the poorer households' income, followed by shoaat and poultry sales. Wealthier households earn most of their income by selling cashews, cassavas, and bambara nuts in the villages, where they are bought by primary societies or cooperatives before they are shipped out of the zone.</p> <p>Crop pests and diseases affect household access to food and income. If severe, these hazards can push poorer households toward food insecurity. Livestock diseases chip away at household earnings, limiting the amount households can spend on essential food and non-food items and their ability to bear successive shocks.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> </ul>	

### 54: Mtwara-Lindi-Pwani Riverine Zone Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Rice</li> <li>◆ Maize</li> <li>◆ Sweet potato</li> </ul>	<p>All three riverine zones share the same livelihood patterns, and all households rely on agricultural production to meet their annual cash and food needs. Better-off households earn significant income from selling rice, sweet potatoes, other vegetables, and fish. The poorer sectors of the zone's population may also sell crops, but rely mostly on rural paid work. Those that have access to irrigated plots plant vegetables and rice. Fishing provides an alternate source of income for the zone's residents and is mostly practiced by those who can afford the necessary inputs (boats, nets, lines, etc.).</p> <p>Flooding and crop diseases are the main hazards in the zone occurring once every three years. Market access is seasonal. Many of the road networks become impassible during the rainy season.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Fish sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Floods</li> <li>◆ Crop diseases</li> </ul>	



### 55: Singida-Dodoma Sorghum, B/Millet, Sunflower, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Sorghum</li> <li>◆ Bulrush millet</li> <li>◆ Maize</li> </ul>	<p>This dry lowland zone receives 500-600 mm of rain per year, which is often enough to grow the zone's food and cash crops. Households also depend on livestock as a main source of income. However, the amount they earn depends on the type and numbers sold, the season, and the animal's size. Better-off households earn most of their income from selling their cattle, shoats, and poultry to traders at the village level. Better-off households may also earn portions of their annual income from selling cash crops, like sesame, groundnuts, and sunflower. Once harvested, these cash crops are sold locally and then transported to Dodoma or Dar es Salaam. Since the amounts of food produced by poorer households usually cannot sustain them for a whole year, they must rely on purchased food to meet their remaining food needs. Paid work is their main source of income, and they perform it largely in rural areas or towns. A minority of the zone's laborers travel seasonally to Dodoma, Kibaigwa, and Dar es Salaam in search of casual labor. Poorer households may own some livestock, but it is uncommon for them to sell it. A minority of the zone's population may also sell charcoal or honey to supplement their income.</p> <p>Food and livelihood security depend on successful rains. Livestock owners rely on the rains to recharge pastures and water supplies, and all depend on the rain for successful crop yields. Like the other zones, hazards are an impediment to household access to food or cash, and they can push vulnerable sectors of the population to food, and inevitably, livelihood insecurity.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Labor</li> <li>◆ Crop sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Livestock diseases</li> <li>◆ Crop pests</li> </ul>	

### 56: Dodoma Lowland Sunflower, Grape, and Sorghum Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Sorghum</li> <li>◆ Bulrush millet</li> <li>◆ Maize</li> </ul>	<p>This livelihood zone is very similar to Zone 55 but differs in its production and sale of grapes. Grapes are produced for both consumption and the production of wine. Recently, wine specialists from South Africa visited the region to offer technical expertise on how the region can improve and expand its wine industry. Like Zone 55, households (especially the poor) rely on agricultural production and paid work to meet most of their food and income needs. Wealthier households depend more on livestock sales but may also earn significant portions of their income from crop sales.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Labor</li> <li>◆ Crop sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Livestock diseases</li> <li>◆ Crop pests</li> </ul>	

### 57: Mpanda Maize, Paddy, Sunflower, and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Rice</li> <li>◆ Sweet potato</li> </ul>	<p>All households in the zone depend on crop production to meet the majority of their food and income needs. Rice, cassava, and sunflowers are produced and sold by all households in varying quantities. Once harvested, they are taken to Mpanda market to be sold. To meet immediate needs, poorer households often sell after harvest at low prices only to buy back food at higher prices when stocks run out. Aside from crop sales, the poor also sell poultry and/or engage in paid work inside or outside the zone. Wealthier households own more livestock and can afford to sell some cattle and goats throughout the year or according to needs. Flooding is the only impediment to food security in the zone and may occur in one of every five years.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Flooding</li> </ul>	

### 58: Lake Tanganyika-Rukwa Fishing, Maize, and Sunflower Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Rice</li> </ul>	<p>This small livelihood zone is composed of the areas that surround Lake Rukwa and the Lake Tanganyika shoreline south of Makome National Park. Fishing and agricultural production serves as the foundation for livelihoods in the zone. All households produce cassava, maize, and rice for household consumption but poorer households are not able to produce enough to meet their annual food needs and therefore must rely on market purchases. To cover this expense, poorer households earn cash from fish, firewood, charcoal, and labor sales. Better-off residents rely mostly on livestock, crop, and fish sales. Cash crops are sold locally and then taken to Zambia, DRC, and Dar es Salaam.</p> <p>Periodically, the zone is threatened by inadequate and erratic rains, winds, and poor cash-crop marketing.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Fish sales</li> <li>◆ Crop sales</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Goats</li> <li>◆ Cattle</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate and erratic rainfall</li> <li>◆ Wind</li> <li>◆ Cash crop marketing</li> </ul>	

### 59: Kyela Paddy, Cacao, and Palm Oil Lowlands Livelihood Zone

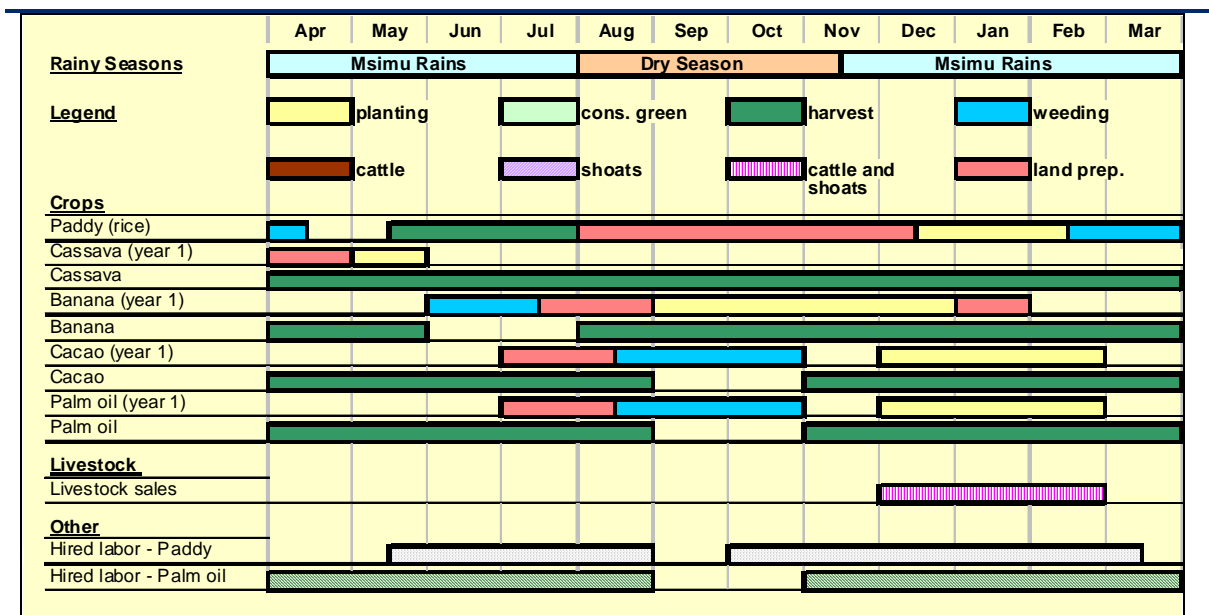
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Banana</li> <li>◆ Rice</li> <li>◆ Cassava</li> </ul>	<p>This relatively food-secure livelihood zone receives bimodal rains that enable cultivation of diverse crops though cassava and bananas are the main food crops. All households rely heavily on agricultural production to meet the majority of their food and income needs. Livestock is the second most important income source in the zone, with wealthier households selling mostly cattle and pigs and poorer households selling poultry. Cacao, palm oil, and paddy are the main cash crops produced in the zone, and they are sold locally and transported to larger trading centers outside the zone. Cacao is taken to Dar es Salaam and then sold to international buyers. Market access is good as many commodities going to and from Malawi pass through the zone.</p> <p>Flooding does not occur frequently, but it is the most damaging hazard as it destroys both homes and fields, making poorer households more susceptible to food insecurity. Livestock diseases, like Newcastle disease in poultry, also reduce poorer households' annual income. However, they can offset cash deficits by increased labor sales.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crops</li> <li>◆ Livestock</li> <li>◆ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Pigs</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Floods</li> <li>◆ Livestock diseases</li> </ul>	

### SEASONAL CALENDAR

Rice is the most labor-intensive crop in the zone, and it requires a long land (bund) preparation period. Rice is then planted mid-December and weeded several times before it is harvested in mid-May. Cassava and bananas can be consumed throughout the year and surpluses sold. Long harvesting periods and reliable international markets make it worthwhile for the poor to divert most of their time and labor from food to cash crops. Additionally, the labor requirements for cassava and bananas are only intensive during the first year, providing enough food to cover needs thereafter.

Livestock sales are the second most important source of cash for the zone's residents. Peak selling periods fall between December and March. Though most poor households source food and cash from their own fields, the amounts they produce are not enough to cover their annual needs. Therefore, poorer household also work for the better-off residents of the zone performing a range of agricultural activities. Peak hired labor periods for rice and palm oil occur mostly during the wet season for planting, weeding, and harvesting.





### 60: Rungwe Banana, Coffee, Tea, and Livestock Midlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Banana</li> <li>♦ Maize</li> <li>♦ Beans</li> </ul>	<p>This densely populated zone benefits from bimodal rainfall, which provides sufficient moisture for the zone's prized cash crops: bananas, tea, and coffee. All households rely on agricultural production and livestock sales to meet most of their food and income needs. For livestock earnings, the wealthier have the advantage not only of more cattle and pigs but also of choosing the season for sale, while the poor sell whenever they are under pressure to buy food. Those who own dairy cows (usually the better-off residents) sell milk locally, which is then taken to nearby Mbeya, Kyela, and Tunduma. As in Zone 59, the road connecting the Malawi border with Mbeya transects the zone, providing producers an opportunity to sell their goods to cross-frontier traders and to purchase essential food and non-food items.</p> <p>Production hazards occur annually but the affect on household production is limited.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crops sales</li> <li>♦ Livestock sales</li> <li>♦ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Dairy cattle</li> <li>♦ Pigs</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Wind/hail</li> <li>♦ Crop disease and pests</li> </ul>	

### 61: Mporoto-Umalila Irish Potato, Maize, Wheat, and Pyrethrum Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Round potato</li> <li>♦ Beans</li> </ul>	<p>This moderately populated zone produces a range of food and cash crops. Poorer households get most of their food income from payment for work, supplementing it with market purchases and crops from their fields. This situation does give them food security, although not wealth. The remoteness of the zone and its poor market access makes food more valuable than cash, therefore much of the labor performed by poorer households is paid in-kind. Cash payment covers purchase of remaining food needs and essential non-food items. Poorer households also engage in firewood and poultry sales for income. Better-off households earn most of their income selling the zone's cash crops: potatoes, pyrethrum, and wheat. Livestock sales, poultry, pigs, and to a lesser degree dairy cattle are also sold.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crops sales</li> <li>♦ Livestock sales</li> <li>♦ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Dairy cattle</li> <li>♦ Pigs</li> <li>♦ Poultry</li> </ul>	

### 61: Mporoto-Umalila Irish Potato, Maize, Wheat, and Pyrethrum Highlands Livelihood Zone

<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Wind/hail</li> <li>◆ Crop disease and pests</li> </ul>	The frequency and severity of zone hazards is often minor, and most households are capable of filling any deficits incurred.
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### 62: Mbozi-Mbeya Coffee, Maize, Beans, and Livestock Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Groundnuts</li> </ul>	Households living in this surplus area depend on their fields and animals to meet the majority of their annual food and cash needs, and coffee is fundamental to the economy. Poorer households earn smaller portions of their annual income from charcoal sales, while the better-off households supplement their income by selling livestock. Poultry is the animal most commonly sold. However, some households may sell cattle and pigs according to need. Those that own dairy cattle may sell milk. The network of roads that cut through the zone allows a steady flow of commodities into and out of the zone. Coffee is sold locally and then taken to processing plants in Mlowo and Mbeya. Maize and beans are the other crops produced for the market and are sold to local traders and then hauled outside the zone.
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> <li>◆ Charcoal sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Dairy cattle</li> <li>◆ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests and disease</li> <li>◆ Livestock disease</li> </ul>	
		Crop pests and disease are the perennial hazards, but their impact on household food security is minimal.

### 63: Usangu Paddy, Maize, Sorghum, and Livestock Wetlands Livelihood Zone

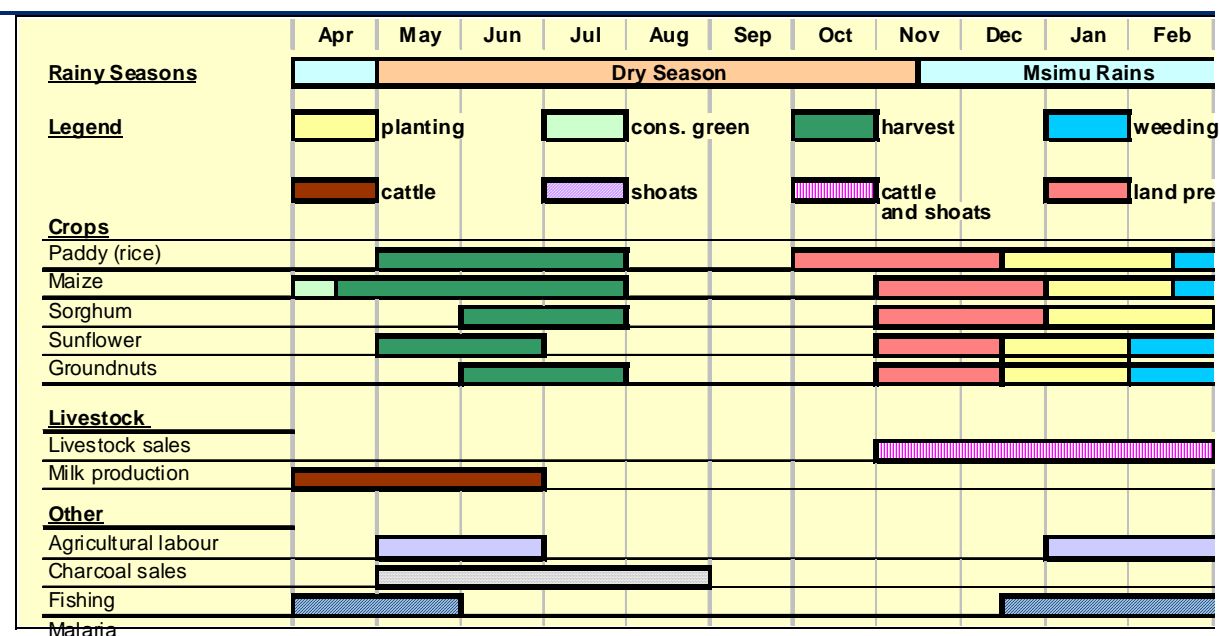
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Rice</li> <li>◆ Sorghum</li> </ul>	This sparsely populated deficit area sits below the Ruaha National Park. Households produce maize, rice, and sorghum for food and sell groundnuts, sunflower, and some rice. Though all households produce crops for consumption, the amounts the poor produce do not last the whole year. Therefore, they must rely on market purchase to meet their remaining food needs. Paid agricultural work is the main income source for the poor, followed by brewing. Better-off residents earn cash from crop and livestock sales. The better-off also receive remittances from family members living in urban areas of the country. Most of the commodities are sold locally and then taken to larger trading centers outside the livelihood zone.
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Remittances</li> <li>◆ Brewing</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rains</li> <li>◆ Crop pests</li> <li>◆ Livestock diseases</li> <li>◆ Poor cash crop marketing</li> </ul>	
		Any threat that reduces the amount households produce for food and income will push poorer groups toward food insecurity.

### SEASONAL CALENDAR

Agricultural activities begin with the onset of the Msimu rains and continue until crop harvests in August.

The “green” harvest of immature maize is the beginning of the consumption year for all households. For poorer households, food crops may last four-five months before stocks run out. Afterwards, these households must rely on selling their labor to purchase food to meet their remaining needs. Charcoal sales provide additional income especially before the main harvest season. In this deficit area, better-off households depend on livestock sales to finance food purchases. Those living closer to streams and Ruaha River tributaries also fish.

Malaria can affect household food security if income earners catch it: the peak malaria season corresponds with periods when agricultural labor is needed (notably weeding) and infections in a household can result in lost employment income.



#### 64: Kamsamba Paddy, Sorghum, and Livestock Lowlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Rice</li> <li>♦ Sorghum</li> </ul>	<p>The majority of households rely mostly on consuming rice and sorghum produced from their own fields. As stocks deplete, poorer households especially need markets to meet their food as well as non-food needs. Rice and sesame are sold in the zone and account for the majority of all households' income. However, the amount earned from crops sales depends on the amount sold and the season when it is sold. Poorer households often sell when prices are low just after harvest to meet immediate needs while the wealthier can afford to wait when demand and prices are higher. Paid work is another important source of cash for the poor. Most perform agricultural labor or casual labor in zone towns, but a few may migrate seasonally to outside the zone to look for work. Livestock sales, especially cattle and pigs, represent an important source of income for better-off households. Some households in the zone are also engaged in honey sales, but crop production and livestock sales overshadow these sales in significance.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Local cattle</li> <li>♦ Pigs</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate rains</li> <li>♦ Crop pests</li> <li>♦ Floods</li> </ul>	

#### 65: Chunya Maize, Sunflower, Cassava, and Groundnut Midlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Cassava</li> <li>♦ Beans</li> </ul>	<p>This is a deficit and borderline food-insecure zone. All households produce maize, cassava, and beans. However, the amounts produced by poorer households are usually insufficient to meet their annual food needs. As a result, the poor must perform paid agricultural work to purchase essentials. They supplement their income by brewing local beer and/or working in nearby mines. Better-off households rely on crop production to meet their food and cash needs. Maize, sunflowers, and cassavas are sold locally and then transported to Mbeya. Livestock sales represent a significant portion of the better-off households' income. Cattle and small stock are sold locally then taken to Mbeya and Dar es Salaam. The better-off may also barter livestock directly for food.</p> <p>The chief production hazards are annual crop pest and disease damage, but rainfall is relatively reliable.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock</li> <li>♦ Remittances</li> <li>♦ Brewing</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Sheep and goats</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop pest and disease</li> </ul>	

<b>66: West Chunya Maize, Bulrush Millet, and Sesame Lowlands Livelihood Zone</b>		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Bulrush millet</li> <li>◆ Beans</li> </ul>	<p>Similar to neighboring Zone 65, households in this borderline food-insecure zone rely heavily on crop production to meet most of their food and income needs. Whether providing farm labor or selling crops, production is crucial for food security.</p> <p>Hazards to production are significant: crop pests such as rodents contribute to food and cash deficits. Livelihoods in this zone are very similar to those found in Zone 65, except that in this zone households produce bulrush millet for food and sesame for sale. Additionally, the poor in this zone rely less on brewing and more on livestock sales to supplement their income.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop pests</li> </ul>	

<b>67: Lake Nyasa Shore Cassava Fishing and Paddy Livelihood Zone</b>		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Maize</li> <li>◆ Rice</li> </ul>	<p>The boundaries of this zone surround Lake Nyasa, extending several kilometers from the lake's shore. Households rely mostly on agriculture and augment their food and income sources with fishing. As in many other rain-fed deficit areas, the poor have to buy most of their food and sell labor to finance their expenses. They also sell some crops immediately after harvest to cover immediate needs or to repay debts. Livestock and fish sales are made during the months preceding the harvest, when labor opportunities are more limited. Better-off households earn most of their income from crop sales followed by livestock and fishing. Though road access is generally poor, most of the goods produced in the zone are sold at local markets then taken to the larger market of Mbinga.</p> <p>Cassava production is affected by pests and diseases every year, which contributes to the borderline food insecurity for part of the population.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Wind</li> <li>◆ Crop pests and disease</li> </ul>	

<b>68: Namtumbo Tobacco, Maize, Paddy, and Cassava Midlands Livelihood Zone</b>		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Rice</li> </ul>	<p>Maize, cassava, and rice are the staple foods produced in this midland zone, and all households source most of their food from their fields, purchasing the rest. Tobacco is the dominant cash crop, followed by maize and rice. All households produce and sell tobacco. However, the amount sold depends not only on rainfall but also on inputs used and amount of land dedicated to it. As a result, the wealthier make much more from tobacco than do poorer households, who make a greater proportion of their income from paid work. Most laborers work in rural areas as farmhands, but some may go to local towns or outside the zone to look for casual employment. Poorer households also sell poultry, sheep, and goats according to cash needs. Better-off households earn most of their income from crop sales and livestock. The zone has good market access as many of the roads are passable throughout the year and are connected to larger trading centers. Production threats — such as crop pests/diseases and wild animals — occur annually but the effect on household food and livelihood security is relatively limited. Rain failure is rare.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Goats</li> <li>◆ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Wild animals</li> <li>◆ Crop pests and diseases</li> <li>◆ Inadequate rainfall</li> </ul>	

<b>Zone 69: Matengo Coffee, Maize, Beans, and Piggery Midlands Livelihood Zone</b>		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Beans</li> </ul>	<p>The Msimu wet season gives 1,000-1,200 mm of rain annually, which nourishes the zone's food and cash crops. Coffee is the most important crop, providing labor opportunities to poorer households</p>

Zone 69: Matengo Coffee, Maize, Beans, and Piggery Midlands Livelihood Zone		
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	and serving as the main source of cash for the wealthier. Food crops (such as maize, cassava, and beans) provide all households with the majority of their food, although many must still turn to the market before the next harvest. Livestock, especially pigs, supplement household income, although more often for wealthier people. Some households also earn cash by selling bush products and working in the nearby mines.
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Pigs</li> <li>♦ Cattle</li> <li>♦ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Crop diseases and pests</li> <li>♦ Wild animals</li> </ul>	

70: Songea-Namtumbo-Ludewa-Mibinga Maize, Beans, and Cassava Midlands Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Cassava</li> <li>♦ Beans</li> </ul>	This sparsely populated livelihood zone produces a surplus of its main food and cash crops: maize, beans, and cassava. Households derive most of their food from their fields. But the amount poorer households can produce for consumption is often not quite enough to sustain them for a full 12 months, and they must rely on the market to cover some period until the next harvest. Crops are sold throughout the year and represent an important source of income for all in the zone. Poorer households often sell some quantities after the harvest at lower prices to cover immediate expenses; but the main source of cash income for this group is paid work. The majority of laborers find work in rural areas performing land preparation, weeding, and harvesting for better-off households. A minority travel to nearby towns or outside the zone in search of casual employment. Poultry is the primary livestock kept in the zone. However, better-off households sell goats and sheep according to need.  Rodents are considered the dominant hazard in the zone as they spoil post-harvest stocks. Crop diseases and inadequate rain often result in reduced yields. But generally this is a food-secure zone.
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Labor</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Poultry</li> <li>♦ Goats</li> <li>♦ Sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Wild animals</li> <li>♦ Crop pests and diseases</li> <li>♦ Inadequate rainfall</li> </ul>	

71: Njombe-Mufindi Maize, Timber, Tea, Pyrethrum, and Employment Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Irish potato</li> </ul>	Timber farms and tea plantations serve as an important source of income for many in this zone. Timber companies hire unskilled labor via subcontractors to perform various pre-processing activities. For the poor, wage-employment is their main source of income followed by brewing. Timber is mostly sold by wealthier households, while all households conduct tea outcropping, though to varying degrees. Poultry is the primary livestock kept in the zone though better-off households also own and sell goats and sheep. Maize production is the primary source of food for most of the zone's residents followed by purchase and in-kind payment for work (poorer households).  Brush fires and crop diseases are the main hazards in the zone and occur somewhere every year.
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Timber sales</li> <li>♦ Employment</li> <li>♦ Outcropping</li> <li>♦ Brewing</li> <li>♦ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Poultry</li> <li>♦ Pigs</li> <li>♦ Cattle</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Brush fires</li> <li>♦ Crop diseases</li> </ul>	

72: Mtera Dam Fishing, Sorghum, and Sesame Livelihood Zone		
<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Sorghum</li> </ul>	This small livelihood zone surrounds Mtera Dam, extending several kilometers into the hinterland. Fishing is the dominant activity in the zone, and it supplies better-off households with the bulk of their

### 72: Mtera Dam Fishing, Sorghum, and Sesame Livelihood Zone

<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Fishing</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	<p>annual income and poorer households with labor opportunities. All households grow crops for household consumption but the amounts are often insufficient to cover their annual food needs. As a result, they must also source food from the market (better-off and poorhouseholds) and in-kind payment (poor). Better-off households get most of their income from fishing, followed by livestock and sesame sales. Poorer households may also sell sesame and some food crops, but they get most of their cash by working on farms or in local towns.</p> <p>Poor households without fishing equipment rely heavily on crops (for food, for cash, and for labor opportunities). These households are vulnerable to rainfall irregularities, which occur frequently. Food assistance has been given one year in two.</p>
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Goats and sheep</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop diseases</li> <li>◆ Inadequate rain</li> <li>◆ Livestock diseases</li> <li>◆ Floods</li> </ul>	

### 73: Makete Wheat, Irish Potato, Timber, and Employment Highlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Wheat</li> <li>◆ Maize</li> <li>◆ Irish potato</li> </ul>	<p>This highland zone receives 1,600-2,000 mm of rainfall annually. The sparse population source most of their food from their fields and livestock, but most still supplement with purchases. Poorer households earn most of their cash by selling their labor. Half of the zone's population work in the fields of better-off households; others travel seasonally to nearby tea and timber plantations. Cash crops such as timber, wheat, and pyrethrum are sold by all in the zone in varying amounts. Timber is the primary source of income for better-off households followed by pyrethrum and wheat. Pigs and poultry are the main livestock kept, and chickens are the primary animal sold.</p> <p>Frost is the main impediment to crop production, and it occurs annually. Households can offset deficits by selling livestock. This zone has the highest recorded HIV/AIDS rates in Tanzania, and the resulting loss of man/womanpower in households is one element that prevents this productive zone from having the highest degree of food security. Isolation from markets, along with poor roads, is another negative element to the zone's economic standing.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Timber sales</li> <li>◆ Employment</li> <li>◆ Crop sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Frost</li> <li>◆ HIV/AIDS</li> </ul>	

### 74: Njombe-Mufindi Maize, Irish Potato, and Bean Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Beans</li> <li>◆ Irish potato</li> </ul>	<p>The production of maize, beans, and Irish potatoes serves as the main source of food and cash for all in this relatively fertile and food-secure zone. Nevertheless, poorer households need to supplement their production by buying food. They get the necessary money from paid local agricultural work and casual labor in towns. Livestock sales are an important source of cash mainly for the wealthier. This zone benefits from reliable road networks linking it with the larger trading centers of Iringa, Njombe, and Mbeya.</p> <p>Crop disease is the main hazard threatening food security, affecting poorer households more severely. Households can offset food deficits incurred by this hazard by selling additional livestock or by increasing labor activities.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop diseases</li> </ul>	

### 75: Iringa-Mbarali Maize, Sunflower, Beans, and Groundnut Belt Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Sorghum</li> <li>◆ Beans</li> </ul>	<p>All households in this livelihood zone rely on agricultural production for food and cash. Poorer households do source food from their fields but the amounts they produce do not meet their annual needs. As a</p>
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### 75: Iringa-Mbarali Maize, Sunflower, Beans, and Groundnut Belt Livelihood Zone

<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Livestock sales</li> <li>◆ Labor</li> <li>◆ Crops</li> <li>◆ Brewing</li> </ul>	<p>result, they must purchase most of their food. Paid labor sales, both farm and casual, are the primary source of cash income for the zone's poor, followed by home brewing. Better-off households rely on laborers to perform a variety of farm activities, such as land preparation, weeding, and harvesting. In addition, some households engage in charcoal, logging and firewood sales.</p> <p>Though better-off households produce more food crops, they too rely on the market when their stocks expire. To earn cash, they sell livestock (mostly cattle and sheep) and cash crops, like sunflower and groundnuts. Livestock diseases in particular threaten their incomes, while unreliable rains affect everyone and sometimes push the poor to seek extra work beyond the zone, notably in the Mbarali rice fields.</p>
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Cattle</li> <li>◆ Sheep and goats</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Crop disease</li> <li>◆ Livestock disease</li> <li>◆ Inadequate rains</li> </ul>	

### 76: Tunduru-Nachingwea-Nanyumbu Cashew, Cassava, and Paddy Lowlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Cassava</li> <li>◆ Rice</li> <li>◆ Maize</li> </ul>	<p>This sparsely populated livelihood zone sits between Selous Game Park and the Mozambique border. The villages scattered throughout it rely on agriculture for food and income. Similar to other borderline food-insecure areas the zone's poor cannot fulfill their annual food needs from their own fields, so they earn cash through labor sales and purchase most of their food. Most of the available labor opportunities are farm-based. However, a minority of laborers may find casual employment opportunities in nearby towns. The poor also earn smaller portions of their annual income by selling cashews, rice and maize, and livestock. Better-off households earn most of their cash by selling cashews, rice, and maize followed by chicken, sheep, and goat sales. This zone's remoteness and its poor infrastructure restrict market access. Most of its products are sold and bought locally.</p> <p>Wild animals damage crops even more than crop pests and disease, and there is serious rainfall shortage one year in five. Poorer households have limited strategies to overcome food and cash deficits, and must sometimes look for wild foods and increase their work opportunities by migrating out of the zone.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Labor</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Poultry</li> <li>◆ Sheep and goats</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Wild animals</li> <li>◆ Crop diseases</li> <li>◆ Crop pests</li> <li>◆ Inadequate rainfall</li> </ul>	

### 77: Mpanda-Chunya-Sinkonge Maize and Tobacco Lowlands Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>◆ Maize</li> <li>◆ Cassava</li> <li>◆ Sorghum</li> </ul>	<p>This very large, sparsely populated livelihood zone spreads across Tabora, Rukwa, and Mbeya regions and includes both plains and forested terrains. Poorer households get most of their food from direct payment in grain for work, and some by purchase. They do produce some food crops but mostly dedicate their resources to growing and selling. The zone's main cash crops are tobacco, groundnuts, and maize, along with honey (which is sold to earn extra cash). Wealthier people sell tobacco as well as surplus maize/livestock and get remittances from kin working elsewhere. There is some timber trade, and some money comes from tourists to the neighboring game park.</p> <p>The zone suffers from frequent rainfall shortage. There are some irregularities every year, and this reduces wealth and poses some threat of food insecurity.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>◆ Crop sales</li> <li>◆ Honey sales</li> <li>◆ Livestock sales</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>◆ Goats</li> <li>◆ Cattle</li> <li>◆ Poultry</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>◆ Inadequate rainfall</li> <li>◆ Crop disease and pests</li> <li>◆ Wild animals</li> </ul>	

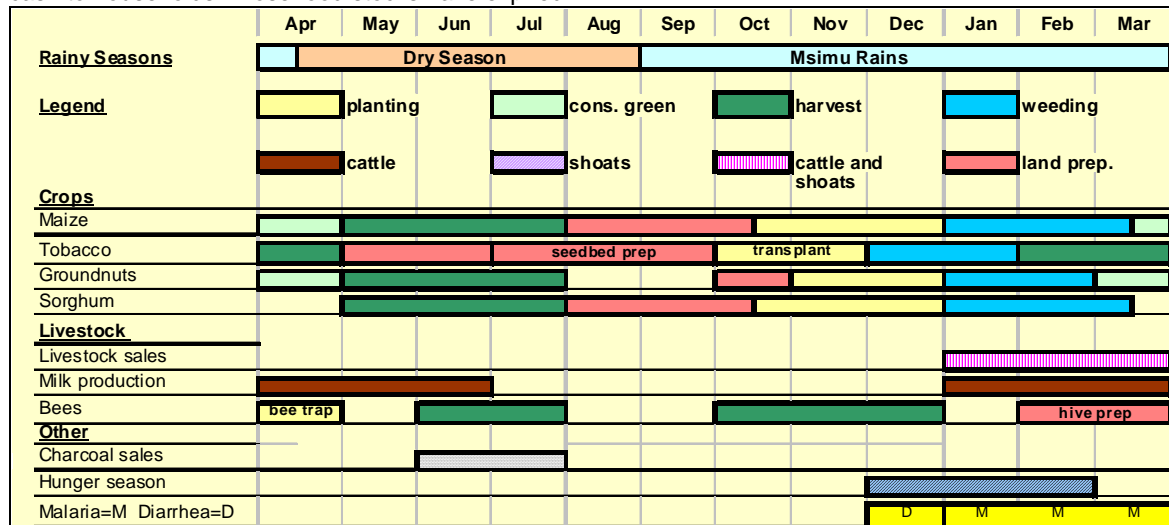


## 77: Mpanda-Chunya-Sinkonge Maize and Tobacco Lowlands Livelihood Zone

### SEASONAL CALENDAR

Adequate rainfall is a key determinant for successful livelihoods. It is needed for crops, for pastures, for livestock water-holes, and even for the flowering plants and trees that are key to honey production.

As demonstrated in the seasonal calendar below, agricultural activities occur year round making the need for labor important all year long. Better-off households hire laborers to perform a range of activities. Tobacco cultivation, in particular, is labor intensive. Charcoal sales mostly occur during the dry season once the demand for harvesting labor has passed. Livestock and milk sales occur after the onset of the hunger season, providing cash to households whose food stocks have expired.



## 78: Sumbawanga-Mbozi-Mpanda Maize Sunflower and Livestock Livelihood Zone

<b>Food Crops</b>	<ul style="list-style-type: none"> <li>♦ Maize</li> <li>♦ Beans</li> <li>♦ Cassava</li> </ul>	<p>Vuli and Masika wet seasons deliver between 1,350 and 1,550 mm of rain to this zone, but there are irregularities one year in three. Although the zone has no hunger threats, there are wide disparities between poorer and wealthier households. The poor do not produce enough food (maize, cassava, etc.) or cash crops each year to purchase the food they need. As a result, they must rely on producing and selling charcoal as well as laboring for pay. Wealthier households complement their cash crop earnings (sunflower, beans, surplus maize, etc.) by selling cattle, poultry, and pigs. They also engage in timber and small-scale commerce. Animals are traded to Mbeya and Dar es Salaam, and as far as Zambia and the Congo. There is a good all-year road network that encourages these market activities.</p>
<b>Income</b>	<ul style="list-style-type: none"> <li>♦ Crop sales</li> <li>♦ Livestock sales</li> <li>♦ Charcoal sales</li> <li>♦ Labor</li> </ul>	
<b>Livestock</b>	<ul style="list-style-type: none"> <li>♦ Cattle</li> <li>♦ Poultry</li> <li>♦ Pigs</li> </ul>	
<b>Hazards</b>	<ul style="list-style-type: none"> <li>♦ Inadequate rainfall</li> <li>♦ Crop disease</li> <li>♦ Livestock disease</li> </ul>	

## ANNEX 1: PARTICIPANTS IN THE REGIONAL WORKSHOPS

### FEWS NET–FSIT National Livelihood Zoning Workshop 1

**Date:** 09-11 July 2008

**Center:** MOSHI

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### FEWS NET–FSIT National Livelihood Zoning Workshop 2

**Date:** 14-16 July 2008

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21	Julius A. Kichele	Magu	0784 848 760	

### FEWS NET–FSIT National Livelihood Zoning Workshop 3

**Date:** 21-23 July, 2008

**Center:** MOROGORO

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14	Henry John Mgingi	Morogoro	0754 546 429	
15	Emil L. Njau	Manyoni	0784 541 841	
16	E. Masanganya	Kilosa	0754 026 770	
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18	Thomas Mumanyi	Chamwino	0754 236 389	
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#### FEWS NET–FSIT National Livelihood Zoning Workshop 4

**Date:** 28-30 July 2008

**Center:** MBEYA

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7	George D. Ngoya	Nkasi	0784 778 834	
8	Gordon T. Mwambululu	Mbarali	0754 615 056	
9	H.O. L. Ngohele	Rungwe	0754 655 314	
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11	Israel Mwakapalala	MCC	0712 199 007	
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## ANNEX 2: INFORMAL FOOD SECURITY RATING OF THE LIVELIHOOD ZONES

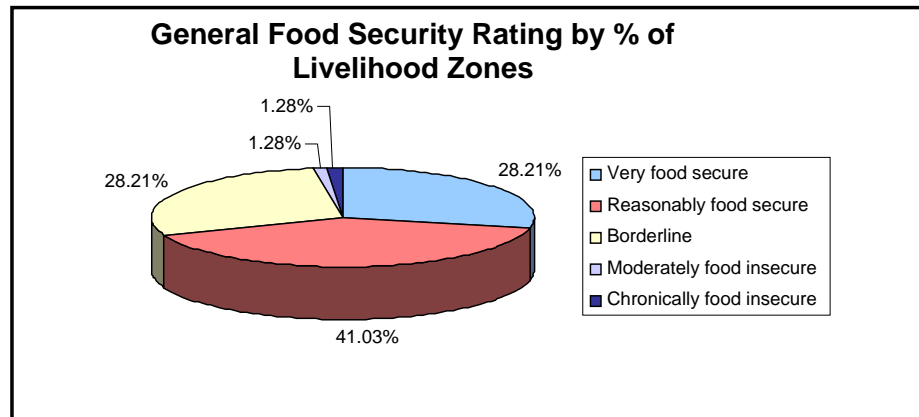
At the end of each workshop, the participants were invited as a group to give each identified livelihood zone a food-security rating on a five-point basis (shown below). It was understood that this was a quite informal process and that the result had no official weight. It is included as an annex here, because it offers a first glimpse of how a food security map might look in terms of livelihood zones according to a specific group of well-informed officers that had some direct experience of food security matters.

Rating	Description
<b>Very food secure</b> 5	These are productive areas where households can virtually always feed themselves and are minimally affected by food security-related hazards.
<b>Reasonably food secure</b> 4	In these areas, households were described as able to meet their annual food needs during most years, including years of less than catastrophic hazard. Only successive years of low production could push poorer sectors of the population towards food insecurity.
<b>Borderline</b> 3	These areas were described as being able to meet annual food needs during normal years. But when they are confronted by more than the usual production hazards, the poorest households will face hunger, while others will be impoverished by the effort to buy enough food and may take years to recover sold assets, especially livestock.
<b>Moderately insecure</b> 2	Rain failure is frequent and poorer households have difficulties meeting their food needs. There is a frequent need for food aid.
<b>Chronically food insecure</b> 1	The majority or large minority of the population are unable to meet their food needs in any year and require some degree of food aid annually.

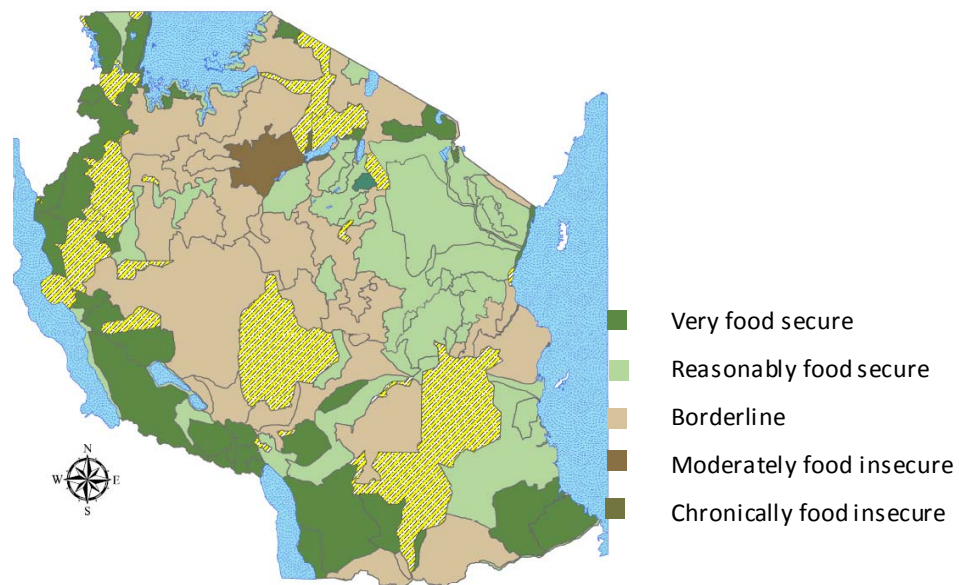
Before presenting the results below, we may make one or two comments. The primary consideration brought forward by the participants was the trustworthiness of the rains (i.e., the tendency of failure, not simply whether one or another zone was on average low or high rainfall area). A second consideration was whether there was a history of relief aid in a zone. Third, participants considered how productive a zone was, and whether it was normally food self-sufficient overall. However, this last concern was evidently not the primary criterion, or else the Maasai pastoral zones would automatically have scored 1 or 2 rather than 3 (North) and 4 (South).

Again, it was clear that in rating a zone, the essential consideration was the status of its poorer households rather than the wealthier households, which tend to be food secure via the market unless a real catastrophe strikes. However, food insecurity and poverty, although associated, are not synonymous. Poorer households are vulnerable to smaller events than are wealthier households (e.g., poor rains as compared to full drought), but some are more resilient than others due to various factors, notably the diversity of their income sources which in turn reflects the qualities of the local economy. Thus, the scoring was partly a judgment of the frequency and severity of hazards to production rather than one of people's ability to withstand such hazards. While they may be impoverished to some degree, how likely are they to be made hungry? The results show

some 70 percent of livelihood zones as reasonably or very food secure, while just under 30 percent were considered borderline. Just one livelihood zone was put as moderately food insecure: Kishapu-Meatu-Maswa Sorghum, Cotton, Sweet Potato, and Livestock Livelihood Zone (No. 35). And just one zone was considered chronically food insecure: the special case of the Hadzabe hunters and gatherers (No.19), where livelihoods have become increasingly unsustainable.



**Map of food security rating by livelihood zone**  
 (please refer to the livelihoods zone map in the main text)





TLZ 1	Southern Maasai Pastoralist	4
TLZ 2	River Pangani Paddy and Maize Basin	4
TLZ 3	Tanga Maize and Cattle	3
TLZ 4	Tanga Maize and Sisal Employment	4
TLZ 5	Usambara-Pare Highland Zone	4
TLZ 6	Tanga Maize, Orange, and Jackfruit Midlands	4
TLZ 7	Tanga-Pwani Coastal Belt	5
TLZ 8	Hadeni-Bagamoyo Maize, Cassava, and Fruit Midlands	4
TLZ 9	Loliondo Midland Maize, Beans, and Livestock	4
TLZ 10	Lower Rombo Maize, Beans, and Finger Millet	3
TLZ 11	Kilimanjaro-Meru Maize, Coffee, and Plantains	5
TLZ 12	Karatu Wheat, Maize, and Coffee	5
TLZ 13	Lower Arusha-Simanjiro Maize Zone	4
TLZ 14	Northern Maasai Pastoralist	3
TLZ 15	Nowu Maize, Beans, and Onions Highlands	4
TLZ 16	Babati Kwaraa Maize, Beans, Sunflower, and Coffee	5

TLZ17	Kiteto-Kongwa-Mpwapwa-Mvomero Maize, Sorghum, and Pigeon Pea	4
TLZ18	Mbulu-Karatu Midlands Maize, Beans, and Livestock	4
TLZ19	Hadzabe Hunter-Gatherer Wild Honey, Wild Roots, and Wild Fruit	1
TLZ20	Wembere Paddy, Sorghum, Maize, Sunflower, and Fishing	3
TLZ21	Bahi-Sanza Irrigated Rice, Maize, Bulrush Millet, and Livestock	4
TLZ22	Iramba Midland Onion, Maize, and Sunflower	4
TLZ23	Manyoni Upland Maize, Sunflower, Sesame, and Livestock	3
TLZ24	Tabora-Singida Midland Maize, Sunflower, Livestock	3
TLZ25	Singida-Manyara Maize, Sorghum, Beans, Sunflower	4
TLZ26	East and South Lakeshore Fishing, Cassava, and Upland Rice	4
TLZ 27	Western Lakeshore Coffee, Fishing, and Banana	5
TLZ 28	Kagera-Kigoma-Mara Banana, Coffee, and Beans	5
TLZ 29	Mwanza-Shinyanga-Mara Cotton, Livestock, Cassava, and Maize	3
TLZ 30	Kagera Lowlands Beans, Maize, and Livestock	4
TLZ 31	Shinyanga-Tabora Cotton, Upland Rice, Sweet Potato, and Livestock	3
TLZ 32	Sengerema-Geita Highland Cassava, Rice, and Maize	5

TLZ 33	Kagera-Kigoma Beans, Cassava, and Maize	5
TLZ 34	Kahama-Tabora Midland Tobacco, Maize, Rice, and Livestock	3
TLZ 35	Kishapu-Meatu- Maswa Sorghum, Cotton, Sweet Potato, and Livestock	2
TLZ 36	Urambo-Nzega Lowland Groundnuts, Cotton, and Maize	4
TLZ 37	Kigoma Lowland Palm Oil, Cassava, and Maize	5
TLZ 38	Urambo Agropastoral Maize and Sweet Potato	4
TLZ 39	Victoria Islands Fishing, Cassava, Sweet Potato, and Paddy	5
TLZ 40	Ruaha Riverine Maize, Onion, Tomato, and Paddy Lowlands	4
TLZ 41	Chalinze-Tunuguo Maize, Cattle, and Cassava	3
TLZ 42	Kilombero-Mtibwa Paddy, Maize, and Sugar Employment	4
TLZ 43	Kilombero-Ulanga- Lusewa Paddy, Maize, and Cassava	3
TLZ 44	Kilosa-Mvomero Maize and Paddy Lowlands	4
TLZ 45	Matombo-Kuyuni Spice, Maize, and Banana	4
TLZ 46	Bagamoyo-Kibaha Midland Cassava, Cashew, and Maize	3
TLZ 47	Morogoro Highland Maize and Vegetable	4

TLZ 48	Maskat-Kimbet Maize and Beans Highlands	4
TLZ 49	Newala-Masasi Plateau Sesame, Cassava, Cashew, and Sorghum	5
TLZ 50	Mtwara-Lindi Coastal Rice and Cashew	4
TLZ 51	Matumbi Midland Upland Rice, Oranges, and Maize	4
TLZ 52	Lindi-Nachingwea Lowland, Cassava, Maize	4
TLZ 53	Southeastern Plateau Cassava, Cashew, Bambaranuts	5
TLZ 54	Mtwara-Lindi-Pwani Riverine Zone	4
TLZ 55	Singida-Dodoma Sorghum, B/Millet, Sunflower, Livestock	3
TLZ 56	Dodoma Lowland Sunflower, Grape and Sorghum	3
TLZ 57	Mpanda Maize, Paddy, Sunflower and Livestock	5
TLZ 58	Lake Tanganyika- Rukwa Fishing, Maize and Sunflower	4
TLZ 59	Kyela Paddy, Cacao and Palm Oil Lowlands	5
TLZ 60	Rungwe Banana, Coffee, Tea and Livestock Midlands	5
TLZ 61	Mporoto-Umalila Irish Potato, Maize, Wheat, and Pyrenthrum Highlands	5
TLZ 62	Mbozi-Mbeya Coffee, Maize, Beans and Livestock Highlands	5

TLZ 63	Usangu Paddy, Maize, Sorghum and Livestock Wetlands	3
TLZ 64	Kamsamba Paddy, Sorghum and Livestock Lowlands	4
TLZ 65	Chunya Maize, Sunflower, Cassava and Groundnut Midlands	3
TLZ 66	West Chunya Maize, Bullrush Millet and Simsim Lowlands	3
TLZ 67	Lake Nyasa Shore Cassava Fishing and Paddy	3
TLZ 68	Namtumbo Tobacco, Maize, Paddy and Cassava Midlands	5
TLZ 69	Matengo Coffee, Maize, Beans and Piggery Midlands	5
TLZ 70	Songea-Namtumbo-Ludewa-Mibinga Maize, Beans and Cassava Midlands	5

TLZ 71	Njombe-Mufindi Maize, Timber, Tea, Pyrethrum and Employment	4
TLZ 72	Mtera Dam Fishing, Sorghum and Sesame	3
TLZ 73	Makete Wheat, Irish Potato, Timber and Employment Highlands	4
TLZ 74	Njombe-Mufindi Maize, Irish Potato and Bean Zone	5
TLZ 75	Iringa-Mbarali Maize, Sunflower, Beans and Groundnut Belt	3
TLZ 76	Tunduru-Nachingwea-Nanyumbu Cashew, Cassava and Paddy Lowlands	3
TLZ 77	Mpanda-Chunya-Sinkonge Maize and Tobacco Lowlands	3
TLZ 78	Sumbawanga-Mobozi-Mpanda Maize Sunflower and Livestock	5