

THE PRACTITIONERS' GUIDE TO HEA

Chapter 2: Livelihood Zoning

2

LIVELIHOOD ZONING

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This chapter provides guidance on how to undertake a livelihood zoning exercise. It also sets forth minimum standards to define what a livelihood zoning is, what needs to be included in one, and what it is not, thereby providing a useful reference for interpreting a wide array of map products in livelihood terms. However, it is generally expected that only experienced HEA practitioners will undertake Livelihood Zoning, as this is an area that requires particular skills and a wide body of experience in many country settings. Therefore, this chapter is less a do-it-yourself guide, and more a take-along reference for team members who are being led by an experienced HEA team leader. It can also be used by analysts who are evaluating the validity of livelihood zoning maps or to guide new zoning initiatives and the design of scopes of work.

After reading this chapter practitioners should be able to define what a livelihood zone map is and what value it adds for early warning systems, planning a survey or assessment, emergency needs provisioning, baseline studies, and development planning purposes. They should be able to list the kinds of factors that define a livelihood zone and those that do not; they should be able to name a livelihood zone, and describe the basic outputs of a livelihood zoning. Practitioners should be able to provide a clear explanation of the way that livelihood zones relate to administrative boundaries. In addition, they should be able to describe the basic process for undertaking a livelihood zoning and some of the common pitfalls involved in zoning.

The text for this chapter comes from a Livelihood Zoning Guide that was originally written by Mark Lawrence, Alexandra King and Julius Holt of the Food Economy Group (F.E.G.), using materials prepared by themselves and by Tanya Boudreau and Jennifer Bush (also of F.E.G.) for a variety of assignments, including contracts undertaken for the USAID FEWS-NET project, for Save the Children UK and for the UN World Food Programme.

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RELATED CD FILES

The CD that accompanies the **Practitioners' Guide** contains the following files relevant to Chapter 2, found in the Chapter 2 Directory:

- **Annex A: National Livelihood Zoning Example (Malawi.. continued from main text of Chapter 2)**
- **Annex B: Livelihood Zoning Format**

RELATED TRAINING SESSIONS

The **HEA Training Guide** provides the following sessions relevant to Chapter 2:

MODULE 2: BASELINE ASSESSMENT

- *Session 4: Livelihood Zoning*
- *Session 20: Incorporating Secondary Information*

BACKGROUND

What is a Livelihood Zone Map?

A **livelihood** may be defined as the sum of ways in which households obtain the things necessary for life, both in good years and in bad. Most obviously, these necessities include food, water, shelter, clothing and health care, with education often included too. The household is taken as the unit of reference because it is by far the chief unit through which populations anywhere operate for production, sharing of income and consumption.

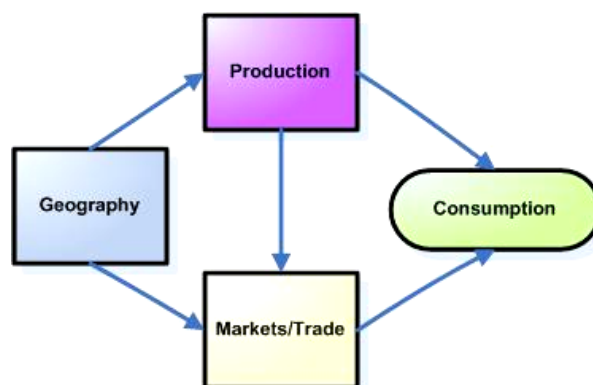
Patterns of livelihood clearly vary from one area to another, which is why the preparation of a **livelihood zone map** can be a useful first step for many types of livelihoods-based analysis. Local factors such as climate, soil, access to markets etc. all influence livelihood patterns. For example, people living in a fertile highland area have very different options from those living in a semi-arid lowland area. In highland areas, people generally pursue an agricultural pattern of livelihood, whereas in the lowlands they grow few crops and are either pastoralists or agro-pastoralists. Those living in a coastal or lakeside zone may follow a livelihood based upon fishing or combining fishing with other activities, and so on.

Where to draw the line

A Livelihood Zone Map is a map which shows areas within which people share broadly the same patterns of livelihood

Agro-ecology is one aspect of geography which determines patterns of livelihoods. Another factor is market access. Market access affects the ability of people to sell their production (crops or livestock or other items) and the price they obtain for these goods. Since patterns of livelihood depend so much upon geography, it makes sense to divide a country or a region into a number of **livelihood zones**. These we can define as areas within which people share broadly the same pattern of livelihood (i.e. broadly the same production system -agriculture or pastoralism for example - as well as broadly the same patterns of trade/exchange). An example of a livelihood zone map based on information gathered from southern Mozambique is presented in **Box 1**.

Livelihood zoning involves more than just the drawing of maps. A livelihood zone map is of little use unless it is accompanied by a basic description of the patterns of livelihood in each zone, and ideally by an analysis of the underlying reasons for differences between zones. This means analysing in some detail the production and trade/exchange options in each of the zones and the influence that the underlying geography has on each of these. We can think of these three factors as linked to consumption as follows: Geography affects both the options for production (climate, soil, etc.) and for marketing/trade (roads, proximity to urban centres, etc.), which in turn affect consumption by the household. Household production (of food and other items) may either be directly consumed or may be traded/exchanged for other items in the market. Consumption is also critically determined by what is available in these markets, and how people obtain the means to purchase these commodities.



- 2) That interventions can only be designed and managed in ways appropriate to local circumstances if the planner knows about local livelihoods and whether or not a proposed intervention will build upon or undermine existing strategies.

Interpretation of information

Food security assessment provides an example of the value of livelihoods-based analysis. This is because it has been found that: *an analysis of local livelihoods is essential for a proper understanding of the impact— at household level - of hazards such as drought or conflict or market dislocation*. Total crop failure may, for example, leave one group of households destitute because the failed crop is their only source of staple food. Another group, by contrast, may be able to cope because they have alternative sources of food and cash income. These alternative sources - such as livestock to sell or relatives elsewhere who can assist - can help make up the production shortfall. Given that the impact of a hazard varies according to the livelihood context, it follows that effective hazard impact assessments must be based upon an analysis of livelihoods.

Design and management of interventions

There are several frameworks for livelihoods-based project planning and management. In one example—the DFID Sustainable Livelihoods Framework—a central concept is the five capitals (natural, physical, human, social and financial), which, in interaction with policies, institutions and processes, determine the types of livelihood strategy that people are able to pursue. The first two of these—natural and physical capital—are clearly determined largely by geography, which means that a livelihood zone map can be a useful starting point for this type of livelihoods-based analysis.

In sum, a livelihood zone map provides a division of the country into reasonably homogeneous zones defined according to patterns of livelihood. It is a means of dividing the population into relatively homogenous groups for a range of analyses, providing a livelihoods basis for various types of survey or assessment, including emergency assessments and baseline studies for development planning purposes. It can be used as the sampling frame for household questionnaire surveys and for rapid assessments. It can form a basis for prioritising the needs of different parts of the country and for targeting assistance on a geographical basis. It can also be the starting point for customizing indicators for a livelihoods-based food security monitoring system.

What Defines a Livelihood Zone?

Geography, production and markets

Most livelihoods are complex, and are shaped by a wide range of factors. In order to simplify the process of defining livelihood zones, it is suggested that the analyst focus on three primary factors. These are set out in the Livelihoods Triangle featured above, and are:

- **Geography:** There are two classes of geographical factors: *natural* and *man-made* (corresponding to natural and physical capital in the DIFD framework). The most important natural factors are topography (i.e. the physical features of an area, including mountains, coasts, rivers, plains), altitude, soil, climate (i.e. temperature and rainfall) and vegetation. The most important man-made factors are those related to infrastructure (roads, railways, telecommunications).

- **Production:** There are several types of rural production system, with the most basic division being between *agricultural*, *agro-pastoral* and *pastoral systems*. (See **Table 1** for a detailed description of these systems.) The system of production is determined by a range of factors, of which geography is clearly the most important. Other factors include the marketing system (e.g. demand for one product as compared

Table 1. Main Categories of Production System

	<i>Main characteristics</i>	<i>Additional notes:</i>
Agriculture	<p><u>Example of main types of Agricultural Livelihood Zones:</u></p> <ul style="list-style-type: none"> • Rain-fed and/or Irrigated • Food crop and/or cash crop • Crop surplus or crop deficit zone • Hand and/or animal/mechanical traction • Short or long rains dependent • Lowland – highland – mid-highland • High potential – low potential • Fertile or infertile soils • Sparse or densely populated 	In this type of zone, the main activity is crop production, typically supplemented by livestock keeping but on a small scale (e.g. 1-2 dairy cattle and poultry for most households). We want to rank the main crops consumed and the main crops sold.
Pastoral	<p><u>Indicate:</u> Agro-ecological zone</p>	Pastoral livelihoods are those where the core or main activity is the raising of livestock. We want to rank the main types of livestock based on their importance to household food and income.
Agro-Pastoral	<p><u>Indicate whether:</u> <i>Crops more/less important than Livestock</i> Plus any of the agricultural or pastoral characteristics</p>	Agro-pastoralists both herd livestock and grow crops.
Fishing	<p><u>Indicate whether:</u> Sea, Lake, River, Pond etc. Offshore and/or Inshore Boats, Nets and/or Lines</p>	In this type of zone, fishing typically provides both a source of food and a source of income.
Labour Based	<p><u>Indicate whether:</u> Plantation – Ranch – Urban Local work – seasonal migration – long-term migration Type of plantation (tea etc.)</p>	In this type of zone the majority of people derive their income from labour and purchase most of their food ¹
Hunter-Gatherer	<p><u>Indicate whether:</u> Hunting of animals more/less important than gathering of wild plants</p>	Hunter-Gathers derive a substantial proportion of their <i>FOOD</i> from hunting and gathering (not just income, as in the case of pastoralists that may collect and sell charcoal, for example.)
Other (e.g. Mining, Trading)	<p>Indicate main characteristics</p>	Include any other types of livelihood pattern not listed above.

¹This will apply to many workers employed full time on large commercial ranches and plantations (e.g. tea or coffee estates). It does not apply to smallholders growing their own tea or coffee (whose livelihood is agricultural). People that both farm and find work on ranches or plantations (perhaps seasonally) can be described as having an agriculture + labour-based livelihood. Similarly, people that both farm and find work in urban areas also have an agriculture + labour-based livelihood. This is true whether the urban area is close by or distant (in which case 1-2 or family members may migrate for all or part of the year).

to another, the experience and capital resources of traders), the financial and banking system (e.g. availability and affordability of credit) and government policy (e.g. development policy, pricing policy, policy on the provision of production inputs, etc.). It is quite possible for two livelihood zones to be similar geographically, but one to be based, for example, upon food and livestock production, while another is given over to the production of sugarcane because agro-ecological conditions are favourable, farmers in the zone are encouraged to grow the crop, there is a processing factory nearby and there are good roads/railways to transport the final product to market.

- **Markets/Trade:** The market system determines the ability to sell primary production, to trade goods and services and to find employment (whether in the formal or the informal sector), all of which have a profound influence on the pattern of livelihood. Three factors are particularly important; these are a) the **demand** for products, goods, services and labour, b) an **efficient system for marketing** these, and c) the existence of **basic infrastructure** to support market and trading activities. The existence of demand (a) is obviously a key factor. Proximity to a large urban centre, for example, often has a profound influence on rural patterns of livelihood (e.g. because of urban demand for rural produce such as fruit and vegetables or urban demand for unskilled casual labour). The efficiency of the marketing system (b) is also important. This is determined by a number of factors, including the experience of traders, their access to capital, credit and equipment (e.g. trucks, storage depots), and government policy and legislation affecting trade (e.g. systems of licensing, taxation, duty, etc.). Finally, the existence of basic infrastructure (c), especially transport and communications, has an obvious and important influence on the market system.

Taken together, these three factors by and large determine the economic operations of households within a particular livelihood zone. They also determine their vulnerability to particular hazards such as drought, conflict or market dislocation, since vulnerability is a function of a) the normal activities of households and b) the activities they turn to in response to a hazard. These, like the normal activities, are determined by the same three factors of geography, production and markets/trade.

Factors Not Taken Into Account When Defining Livelihood Zones

Two types of factors are not taken into account when defining livelihood zones. These are:

- 1) The **hazards** to which different areas may be exposed. Many rural areas are exposed to a range of hazards which may either be natural (e.g. drought or flood) or man-made (e.g. conflict or market dislocation). Hazard exposure is clearly a factor that affects patterns of livelihood, since people will tend to adopt certain strategies either to mitigate the effects of a particular hazard (e.g. cultivation along a river margin to mitigate the effects of drought), or to increase their resilience or ability to recover from a hazard (e.g. the accumulation of livestock that can be sold in a crisis). By and large these types of response will be captured by the analysis of the production system, and it is not therefore necessary to include hazard exposure as a fourth factor defining livelihood zone boundaries (although it is, of course, important to include information on hazards as part of the description of the livelihood zone).

Supposing, however, there is a difference in the pattern of hazard exposure within a single zone that is otherwise broadly homogenous in terms of livelihood? If, for example, the northern half of a particular zone tends to be more drought-prone than the south? This by itself does not justify a division of the zone into two, since both areas share a similar pattern of livelihood and a similar *vulnerability* to

drought, which is the most important consideration at this stage of the analysis. If, in a particular year, the north suffers a drought while the south does not, then, obviously, separate analyses of outcome will be required for the north and for the south, but this is not an analysis that requires the division of the zone into two at the stage of compiling the basic livelihood zone map.

- 2) The level of **service provision** within a particular zone. It is not, for example, usual to divide a livelihood zone into two because one part has better health or education services than another. Why not, when, as has already been stated, a livelihood may be defined as the sum of ways in which households obtain the things necessary for life, including health care and education?

To explain this it is necessary to go back to the reason for preparing a livelihood zone map, which is to assist with emergency and development decision-making. In these cases we may be trying to answer questions such as; how will people in different areas be affected by a hazard (e.g. drought), and what might be their need for food and/or economic assistance? Or how best can we design development interventions that will support rather than undermine existing livelihood strategies? These are questions that are best answered through an understanding of the economic operations of individual households, not in relation to existing levels of local service provision.

This is not to say that mapping levels of service provision would not be a useful activity in its own right. However, rather than incorporating this into the definition of individual livelihood zones, the most useful procedure might be to overlay maps of service provision onto the final livelihood zone map. This would help to identify which parts of which zones are poorly served, perhaps highlighting priority areas for intervention in the health and education sectors.

Relationship Between Livelihood Zones and Administrative Boundaries

Ideally, livelihood zone boundaries would coincide with administrative boundaries, but this is not always possible because homogenous ecological and economic zones often cross political boundaries. As a result, within one administrative unit, it may be possible to find pastoralists living alongside agriculturalists, or agro-pastoralists alongside fishing communities.

Box 2. Examples of Administrative Boundaries

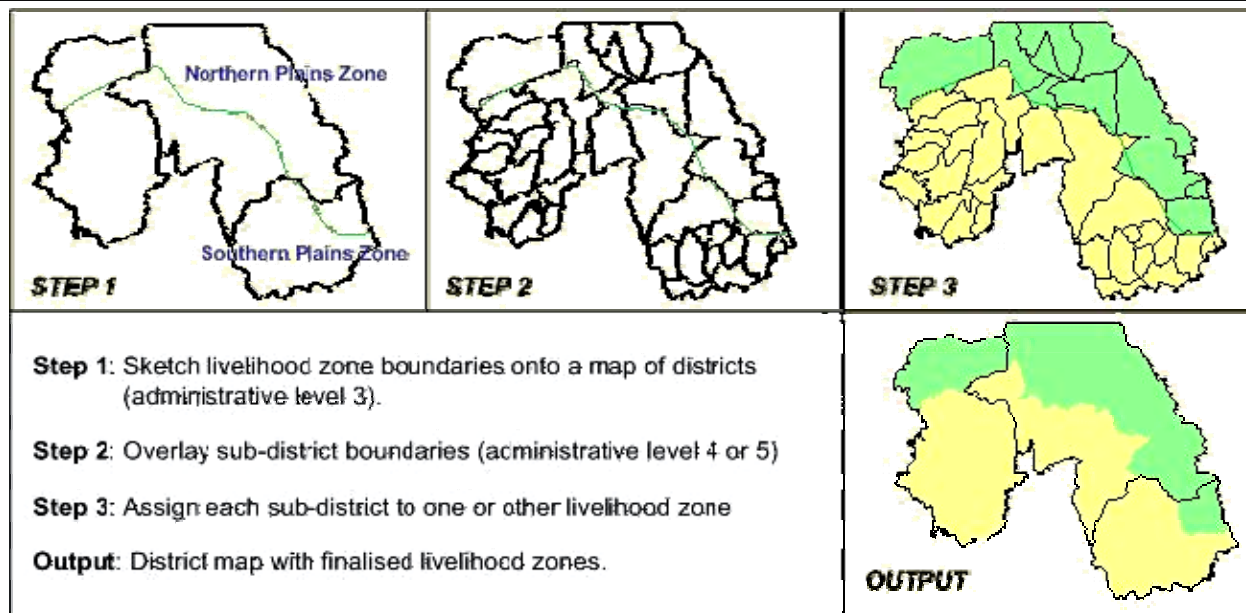
There are typically five administrative levels to be found in a country, beginning at level 1 (the whole country), then level 2 (the primary administrative sub-division, e.g. the region or province), and counting onwards to the lowest administrative unit, which is typically a group of villages.

Examples of Administrative levels, by country				
Administrative level	Ethiopia	Kenya	Zambia	Niger
1	Country	Country	Country	Country
2	Region	Province	Province	Department
3	Zone	District	District	Arrondissement
4	Woreda	Division	Constituency	
5	Kebele / PA	Locality	Ward	

However, because resource allocation and service provision decisions are made on the basis of administrative units, not livelihood zones, it is important that livelihood zones correspond in some way to the lowest level of administrative unit. Ideally livelihood zone

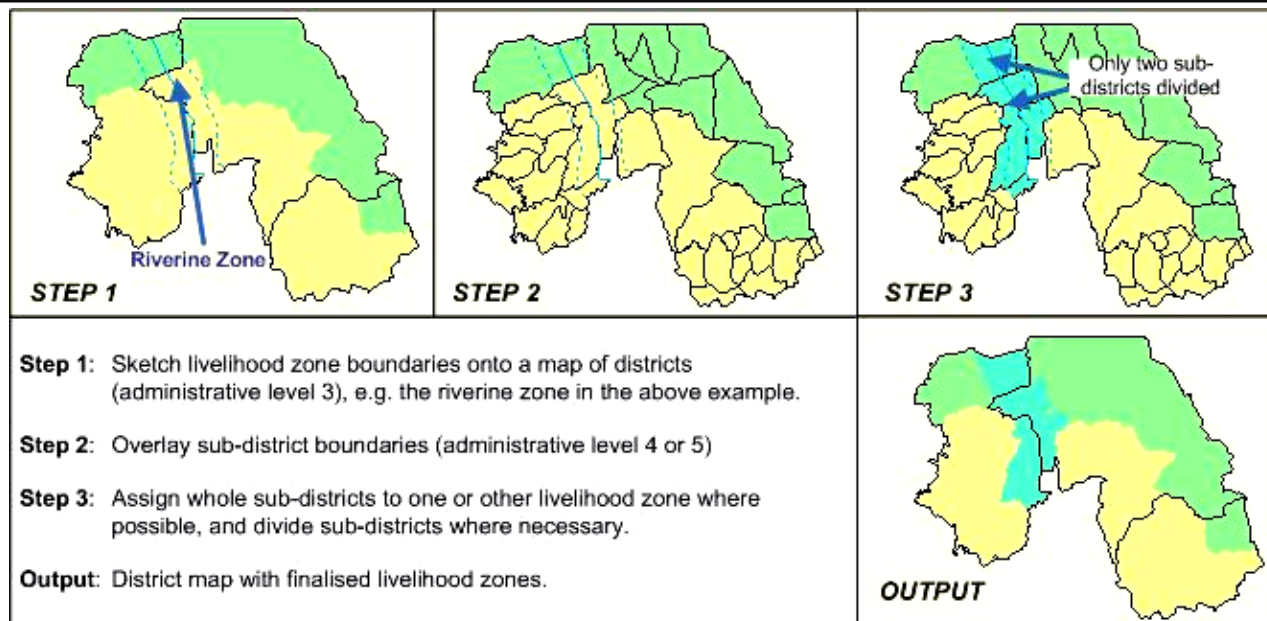
boundaries will broadly overlap with the lowest level of administrative unit (i.e. level 4 or 5), but this is not always the case, and sometimes even these very smallest administrative units have to be sub-divided. See **Box 2** for details on the levels of administrative boundaries.

Figure 1: Drawing a Livelihood Zone Map (where livelihood zone and administrative boundary roughly coincide)



Practically, the simplest way of preparing a livelihood zone map is to draw the preliminary livelihood zone boundaries onto a blank district map (i.e. administrative level 3.). Most participants in the exercise will be familiar with district boundaries and will be able to use these as a guide as they sketch out the livelihood zone boundaries. They may not be so familiar with lower level boundaries (i.e. administrative level 4 or 5) and may also find this

Figure 2: Drawing a Livelihood Zone Map (where livelihood zone and administrative boundary do not coincide)



level of detail confusing at this stage. Having sketched out the boundaries in this way, the next step is to assign lower level administrative units to each of the preliminary zones. One way to do this is illustrated in **Figure 1**. This is to overlay the lower level units, in this case the sub-districts, onto the district map and to assign each sub-district to one or other livelihood zone. Another way is to have participants check through a list of lower level administrative units (e.g. the most recent population census), again assigning each sub-district to one or other livelihood zone. Using this method, it is possible at the same time to estimate the population of each livelihood zone.

The procedure for dealing with livelihood zone boundaries that do coincide with administrative boundaries is illustrated in **Figure 2**.

Where sub-districts have to be sub-divided like this, it is necessary to estimate the percentage of the sub-district population that falls into each livelihood zone. There are several ways of doing this, of which the simplest is to split the population in proportion to the area of each zone within the sub-district. A more sophisticated approach is to take both the area and the estimated population density of each zone into account.

How Does a Livelihood Zone Map Differ from other Types of Map?

A livelihood zone map defines areas within which people share broadly the same means of production and broadly the same access to markets. This is different from other common types of map that complement but are not exactly the same as a livelihood zone map:

Agro-Ecological Zone Maps: This type of map often delineates areas that share much the same production potential. These maps are about what *people could grow or produce* rather than what *people actually do*, which may be different. For example, an agro-ecological zone map may indicate that a given zone is suitable for cultivating a particular crop, but that crop may not actually be grown in that zone. In one area, for example, sorghum may be best suited to the agro-ecological conditions there; however, many farmers from that area may choose instead mainly to plant maize, for economic or cultural reasons. Alternatively, in the case of a cash crop, market conditions may not at that moment favour its cultivation in the zone. It is what people are currently doing that we are concerned with in a livelihood zone map.

Land-use Maps: This type of map usually indicates how land is being used and what type of vegetative cover exists in different parts of the country. This is not the same as a livelihood zone map because people pursuing a common livelihood pattern may exploit more than one type of land, perhaps at different times of the year. Agro-pastoralists, for example, may graze their animals in one area (perhaps defined as shrub-land on a land use map) while they cultivate crops elsewhere (perhaps in an area defined as herbaceous crop). Similarly, smallholder farmers may cultivate food crops in one area and cash crops (e.g. tea or sugar cane) in another, and each of these may be defined as a different area on a land use map. In a livelihood zone mapping exercise we are interested in defining areas within which people share the same livelihood and exploit broadly the same set of natural resources, even if this encompasses more than one type of land use or vegetative cover.

Needs Assessment Maps: These maps are based on a current assessment of the needs of certain populations, due to a hazard, such as drought. Livelihood zone maps should help emergency teams to understand why certain groups are in need, as well as help them to determine levels of need. However, a livelihood zone map is very different from a needs

assessment map as it is not about levels of need in times of stress, but about how people make a living in most years.

In sum, the types of map mentioned above provide useful reference material when creating a livelihood zone map. However, they are different things. On their own, they cannot be used in a simple way to define livelihoods (nor can any other single secondary source of information). A great deal of what defines livelihoods is invisible in secondary data. That is why the approach to defining livelihood zones is key informant based, not secondary data based.

How to Name Livelihood Zones

Livelihood zones should have unique names that are useful descriptors and that do not cause confusion. Names should be short, but informative. The easiest way to make them informative is to capture two key characteristics from the following: location in the country, topography, vegetation, or dominant economic activity.

- Location in the country – e.g. northern, southern, or a specific region
- Topography – e.g. mountains, highlands, lowlands, hills, plains, valley, coastal, riverine, lakeshore, roadside, oasis
- Vegetation – e.g. forest, savannah, marshland, desert
- Dominant economic activity – e.g. mining, tea, coffee, sugarcane, coffee, cotton

In terms of names to avoid, “Zone 12A” is not a useful name because it provides no description of the zone. Names that are based upon crops grown or livestock raised may cause confusion unless the crop or type of livestock is unique to the zone. For example, the name “The Cattle Zone” implies that cattle are not kept in other parts of the country, whereas the reality may be that cattle are more important in “The Cattle Zone” but are also kept in smaller numbers elsewhere in the country. Equally, a crop should only be listed as a ‘dominant economic activity’ where the crop is very distinctive for that zone (i.e. not maize where maize is grown very widely in the country).

Outputs from a Livelihood Zoning

The output from a livelihood zoning exercise is not just a map; it is also a way of describing and dividing the population. The following outputs are expected:

- Map with livelihood zone boundaries and districts (admin level 3) overlaid
- Table listing lowest level administrative units (admin level 4 or 5) by livelihood zone
- Cross-tabulation of the population by livelihood zone and district
- Basic description of each zone, including:
 - Geography (topography, climate, soils, etc)
 - Production system (agricultural, pastoral, etc)
 - Markets/trade (trade flows, including employment)
 - Hazards affecting the zone (drought, flood, etc.)
- An optional output for presenting trade information: a map of major trade flows (with description) as an overlay to the livelihood zone map.

Where have Livelihood Zonings been Conducted?

At the time of the publication of the **Practitioners' Guide**, Livelihood Zoning had taken place in the following countries (either at the national or sub-national level) and urban centres (please see [Chapter 6](#) for more on zoning in an urban setting).

- Afghanistan
- Angola
- Burkina Faso
- Burundi
- Chad
- Djibouti (city and rural)
- Ethiopia
- Guatemala
- Haiti
- Harare, Zimbabwe
- Hargeisa (Somaliland)
- Honduras
- Lesotho
- Liberia
- Malawi
- Mali
- Mauritania
- Mozambique
- Nicaragua
- Niger
- Nigeria
- Rwanda
- Sierra Leone
- Somalia
- Southern Sudan
- Swaziland
- Tanzania
- Uganda
- Zambia
- Zimbabwe

<i>Country/Region</i>	<i>Number of Zones</i>
Less diverse	
Mauritania	7 zones
Niger	8 zones
More diverse	
Guatemala	16 zones
Zimbabwe	24 zones
Most diverse	
SNNP Region in Ethiopia	43 zones
Note: When completed, Ethiopia promises to have well over 100 zones	

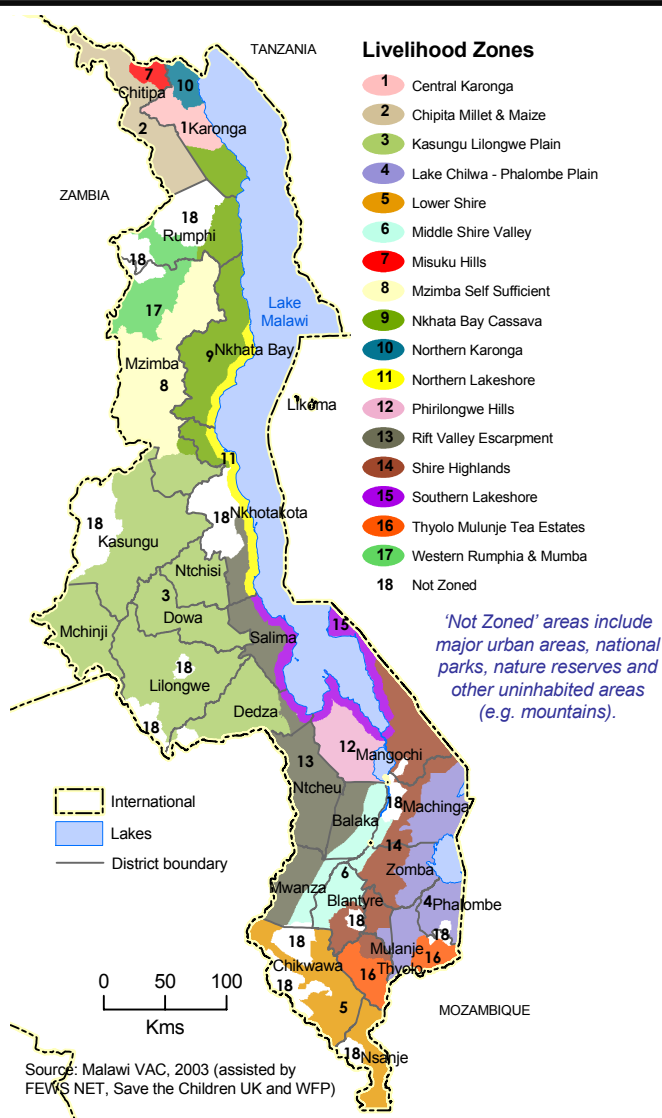
Examples of National Livelihood Zoning: Malawi and Djibouti

The following pages illustrate the outputs of livelihood zoning exercises from Malawi and Djibouti. The Malawi exercise was mainly based on types of crop production, while livelihood zones in Djibouti were defined mainly on the basis of patterns of trade/exchange. Note that the formats of the two case studies differ slightly. The content is the same; it simply shows that there is more than one way to present the same type of material. A continuation of the Malawi output, with a cross-tabulation of the population by livelihood zone and district, and zone by zone descriptions, is provided in **Annex A**, located on the CD that accompanies the **Practitioners' Guide**.

Case Study 1 : Malawi National Livelihood Zoning

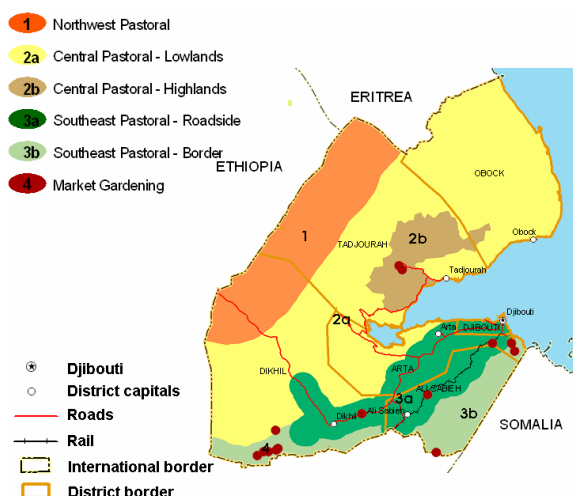
POPULATION BY LIVELIHOOD ZONE

Livelihood Zone	Population
Chitipa Millet and Maize	112,620
Misuku Hills	35,110
Northern Karonga	108,554
Central Karonga	43,254
Northern Lakeshore	183,108
Western Rumphii & Mzimba	115,312
Mzimba Self-Sufficient	454,876
Nkhatabay Cassava	274,429
Kasungu Lilongwe Plain	3,249,092
Southern Lakeshore	393,578
Rift Valley Escarpment	1,040,591
Phirilongwe Hills	205,584
Shire Highlands	1,038,400
Middle Shire Valley	404,970
Lake Chilwa/Phalombe Plain	1,155,384
Thyolo Mulanje Tea Estates	649,330
Lower Shire Valley	630,879
Total	10,095,070

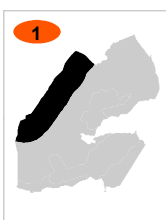


Case Study 2 : Djibouti National Livelihood Zoning

Despite the country's small size (23,200 km²) and small rural population¹², there is considerable diversity in rural patterns of livelihood. The main productive activity in rural areas is livestock keeping (due to the hot climate and lack of rain - <150 mm rainfall per year in most areas). Nowhere, however, can the majority of the population survive on livestock income alone. The national economy is dominated by Djibouti city, and most of the cash income to supplement livestock keeping is urban in origin. The main difference between the four rural livelihood zones is in their economic relationship to Djibouti city and the secondary towns.



1: NORTHWEST PASTORAL ZONE



Geography: The zone consists of mountains, hills and plains. Main season rains for the zone (July-September) drain onto the plains giving rise to an important source of late summer pasture.

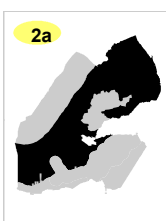
Production: Livestock-keeping is the main activity.

Economy: Far from the major towns, access to the urban market is poor and few households receive remittance income from Djibouti city. The zone's only advantage is its proximity to Ethiopia, where maize and sorghum can be bought for half or less of the price in Djibouti. People in the zone also trade salt with Ethiopia and collect and sell *onga* (dorm palm leaves, for mat-making).

Hazards: Drought and disease affecting livestock. Crop failure in Ethiopia affecting food prices.

Livestock	Goats, Camels	Main Income Sources	Sale of: livestock, butter, salt, <i>onga</i>
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2: CENTRAL PASTORAL ZONE - *2a: Lowland Sub Zone, 2b: Highland Sub Zone*



Geography: Geographically varied, including the Mabla and Goda mountains (*Highland Sub Zone*), their foothills and the coastal plain (*Lowland Sub Zone*).

Production System: Cattle are kept in the highlands compared to camels in the lowlands – this is the main difference between sub zones. Goats are kept everywhere.

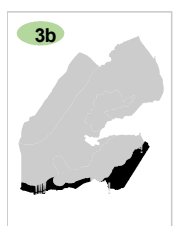
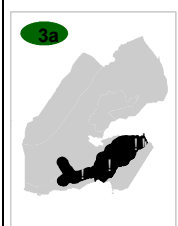
Economy: Most households in this zone survive on pension income or remittances from family members in Djibouti city. Sale of firewood is a secondary income source for those living along the main coast road, but is less of an option further inland.

Hazards: Reduced salary/pension income, increased food prices, drought/disease.

Livestock	Cattle, Camels, Goats	Main Income Sources	Pensions/remittance, Firewood
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¹²There is considerable uncertainty as to the population. Most estimates are in the range of 450,000–700,000 for the country as a whole (with the UN estimate for 2003 being 702,000). Sixty to eighty percent of the population are thought to be resident in Djibouti city.

3: SOUTHEAST PASTORAL ZONE – 3a: Roadside Sub Zone, 3b: Border Sub Zone



Geography: Hills, valleys and plains. The Southeast Pastoral Zone has relatively good road and rail access to Djibouti's main urban markets.

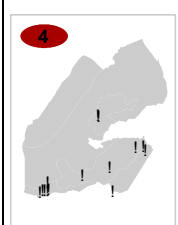
Production System: Livestock-based, with milking camels especially important in the *Roadside Sub Zone* – the purchase of fodder for camels is common here.

Economy: Communities close to the main road and rail corridors (the *Roadside Sub Zone*) sell fresh milk to the urban market, where demand is strong and prices high. More remote communities sell firewood and charcoal (the *Border Sub Zone*).

Hazards: Drought/disease, reduced salary/pension income, increased food prices.

Livestock	Goats, Camels	Main Income Sources	Milk, Firewood/charcoal, Pensions/remittance
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4: MARKET GARDENING ZONE



Geography and Production System: The irrigated production of fruits and vegetables is practiced in *wadi* areas, mainly in the south of the country and in Tadjourah district.

Economy: Djibouti city and the main towns are the main market for these products. The activity was introduced with government assistance in the 1980s. It is now in decline due to a number of factors including persistent drought, lack of pump maintenance, the high costs of production, poor roads (and high rates of crop loss en route to market) and competition from cheaper imports from Ethiopia.

Hazards: Drought, flood, crop pests and diseases, increased input prices, reduced salary/pension income, increased food prices.

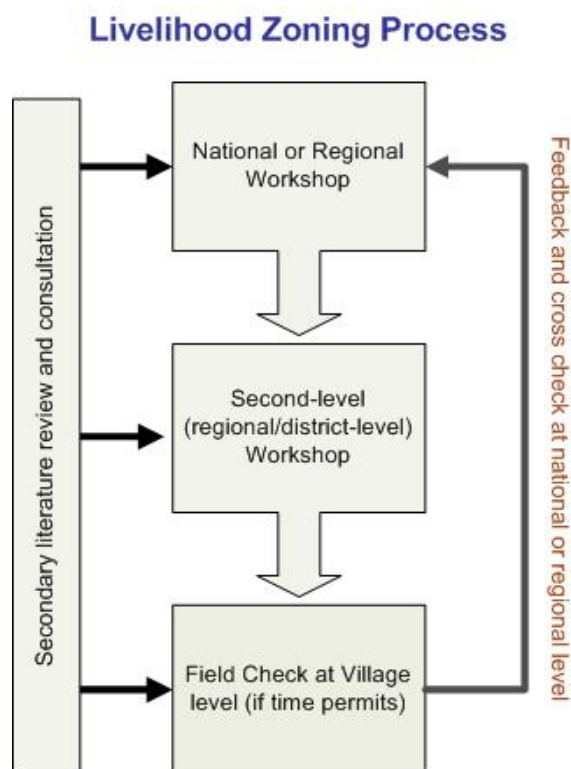
Livestock	Goats, Sheep	Main Income Sources	Sale of fruit/vegetables, Pensions/remittance
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HOW TO DO IT

This section provides a guide to the steps required to produce a livelihood zone map. The process relies heavily on key informants. We have already indicated that conducting a livelihood zoning is not about manipulating secondary data in a computer or using one single existing type of map. Instead, livelihood zoning is an iterative process, gathering information from key informants, verifying data with the field, then cross-checking with secondary sources. The process involves a clear structure as elaborated below.

Livelihood zoning begins with a workshop to obtain a preliminary map and zone descriptions. This initial workshop will be held either at national or regional level. Questions that arise at this level can then be followed up at a second level during consultations with key informants and possibly some village visits. After this, it is wise to return to the first level to agree any changes with partners and to get a consensus on the 'final' map. It is important to emphasize at all stages, however, that there can always be further changes to the map as a result of future more detailed fieldwork.

Whether you start at the national level (Admin Level 1³) or at the regional level (Admin Level 2) depends on the size and complexity of the country in question. In a small country, with relatively little geographical variation, it is best to start at national level and then proceed to regional level for confirmation and clarification. In a large country, with great geographical variation, it is usually best to start at regional level and then proceed to district level (Admin Level 3) for confirmation and clarification.



Preparing for a Livelihood Zoning Workshop

Pre-workshop activities for facilitators

- Select and organise a venue
- Invite participants
- Purchase workshop materials
- Compile secondary materials
- Review secondary materials
- Meet with selected key informants to discuss livelihood zones

³ Please see **Box 2** for a description of administrative levels 1 – 5. These vary from one country to the next, but the most common terms have been used in this section.

Who to invite

Participants in a livelihood zoning workshop should include technical staff from relevant line ministries (e.g. agriculture, livestock, meteorology, natural resources, fishing), NGOs and international organisations. Participants need to have a broad knowledge of the country or region. When selecting them, it is useful to include people who grew up, or have been based for part of their working life, in one or other parts of the country. It is also useful to include some participants from Admin Level 2 in your Level 1 workshop (or Level 3 participants in your Level 2 workshop, depending on where you start the process). The maximum number of participants in the workshop should be 20 people, plus 1-2 facilitators to lead the exercise. Any more than this number becomes unmanageable and the quality of output suffers.

Information and materials required

The following secondary source information should be obtained before the workshop. Some of the information is essential, as indicated below.

1. List of administrative units and population down to admin level 4/5 (with – if possible – a breakdown of population by rural/urban etc) – *essential*
2. Maps:
 - Regional maps showing administrative divisions down to level 4/5 (*essential*), digitised if possible⁴
 - National topographical maps showing major admin units, contours, roads, rivers, etc. 1:250,000 or 1:500,000 scale – *essential*
 - Agroecological/land use maps
 - Soil maps
 - Vegetation maps
 - Population density map
3. Rainfall data for major weather stations, by month, long term average (last 20-30 years)
4. List of crops actually grown in order of importance by district and seasonal crop calendars
5. List of livestock types in order of importance by district
6. Any other general descriptions of the geography and economy of the country or region.⁵

The basic materials and equipment required for the workshop is as follows:

- An LCD or overhead projector
- Large copies of the maps mentioned above to post on the wall (these will be used by participants to hand draw proposed livelihood zone boundaries.)
- Notebooks, pens and pencils for participants

⁴ You will need mapping software with digital map files and the ability to overlay administrative boundaries with towns, roads, railways, rivers, and livelihood zones.

⁵ A very useful source of information can be a secondary school geography textbook or atlas.

- Flipchart paper, masking tape and marker pens

Pre-workshop preparation by workshop facilitators

It is helpful if the workshop facilitators are familiar with the country or region that is being zoned. They should start the workshop with a rough hypothesis about the types of zones in the country or region and where they are located. This should include a basic map in their own heads on the basis of a review of secondary data and preliminary discussions with selected key informants. The purpose of this hypothesis is not so the facilitators can dictate the livelihood zones to the participants, but so that they can guide the process with a basic understanding of the area in question.

Time required

The facilitators will require about two days to review secondary information (assuming it has already been compiled) and to develop a preliminary hypothesis in discussions with 2-3 key informants. The workshop itself requires two days. Between two and five days should be allocated for follow up in the field depending on travel time and the number of questions that emerge in the workshop. After the fieldwork, half a day should be adequate for a final consultation with key partners before producing the outputs. At this point, after roughly 7-10 days, you should be ready to produce the outputs (brief descriptions of each livelihood zone, a 'final' map in digital form, and a population table). It is difficult to estimate how many days will be required to do this because it depends on the number of zones that are identified and how much mapping data is already digitised.

Workshop Programme

1. Introduction: During the first morning of the workshop, the facilitators should provide an introduction to zoning: what it is, why you do it, how you do it, and examples from other countries and regions. This guide should provide the core elements of the introduction.

2. Listing productive systems: Following the introduction, it is important to have a practical exercise to get participants thinking along the same lines. A plenary session to list the broad productive systems that can be found in the country or region is a useful starting point (e.g. agricultural, agro-pastoral, pastoral, labour-based, hunter gatherer). Then, a discussion on how to sub-divide further will produce a more detailed list of productive systems in the country or region. Useful materials for this exercise include a large topographical map that can be posted on the wall and a reference table of productive systems (Annex C).

3. Mapping productive systems: The next step is to draw the productive systems that you have listed on a large map that just shows the basic administrative boundaries (perhaps to Admin Level 3) and main geographical features (mountains, rivers, lakes).

4. Introducing market access: One way to introduce the topic of market access and trade is to overlay towns, roads, and railways on the production system map that you have just drawn. Consider the main sources of household income for each zone and markets for products sold (including labour) and products purchased. Outline key trade routes (where people sell things and the subsequent flow of goods, and where they buy things and their original source) and employment markets. Using this understanding of markets, consider whether you need to subdivide or change any of the productive system zones mapped in Step 3 above. Does market access differ significantly within any of the productive systems that you have outlined?

5. Develop descriptions of the livelihood zones: Using the format in **Annex B**, (which can be found on the accompanying CD in the Chapter 2: Annexes folder) describe the main characteristics of each livelihood zone. The format includes sections to describe the main category of livelihood, the main characteristics of the production system, topography, vegetation, other natural resources, climate, market access, hazards (and their frequency) and household-level response strategies.

6. Refine livelihood zone boundaries: Using a map of the lowest available administrative level (level 4 or 5) and the most recent census of population by administrative level, assign each administrative unit to a livelihood zone. This will allow a precise map to be drawn and population figures to be calculated for each livelihood zone.

At every stage in the process, you can use the various maps and secondary data that were initially compiled to **cross check** your zones. For example, a map showing areas where tea is the main crop may help you to draw a livelihood zone that is centred on tea. Rainfall data may confirm similar climate patterns within livelihood zones. Crop and livestock information may help you to distinguish between livelihood zones.

As you are defining livelihood zones, **list questions** and issues that remain unresolved and that require follow up at the next administrative level. This should remind everyone that the product of the two-day workshop is not final, but part of an ongoing process to define zones.

Follow Up at the Next Administrative Level

Participants in your first workshop (whether at national or regional level, depending on where you choose to start) may be very well informed. Furthermore, you may have managed to include participants from the next administrative level in your first workshop. In these cases, you may not have many (or any) questions to follow up afterwards. However, assuming that you do have some questions or issues that need clarification, then there are two alternative ways to proceed.

First, if stakeholder consensus at the second administrative level (regional or district) is important, then it is useful to hold small, short workshops at this level also. These would be more rapid versions of the first workshop, described above, and would use the livelihood zone map already developed as a starting point. Second, the facilitators can travel to important administrative centres (Admin Level 3) and meet key informants in the agriculture, livestock and planning sectors in a more informal manner. When selecting the centres to visit, the list of questions developed in the first workshop should act as a guide. The purpose of the workshop or of the informal meetings at this level is to confirm the map, clarify any outstanding issues and develop your understanding of the livelihood zones. One issue that might need to be clarified is in which livelihood zone to place some of the lower level administrative units.

If there is time, and as a further optional activity, village visits can be scheduled to clarify any topics that remain unclear. As you are driving through livelihood zones as part of this exercise, don't forget to keep your eyes open and observe the differences between zones. This can help in defining the boundaries between zones.

Common Pitfalls

The following are examples of some pitfalls that are commonly made when defining livelihood zones:

- Zones are defined only on the basis of crop and livestock production, ignoring markets and exchange.
- Zones are defined on the basis of sources of food or sources of income, but the link is not made to underlying causes such as geography (altitude, rainfall, rivers) and markets.
- Zones are split on the basis of difference in wealth (i.e. a wealthier or poorer village with the same livelihood sources is mistakenly used as a basis for splitting a zone).
- Geographical areas at opposite ends of the country are placed in the same livelihood zone, ignoring questions of market access. Although there can be local splits, zones are usually discrete geographical entities.
- One of the factors used to define zones is exposure to current hazard. This is understandable because people sharing the same basic livelihood may at the time of the zoning be pursuing different activities at different intensities because of their exposure to current hazard (e.g. if one part of an area is affected by drought, while another is not). However, this is incorrect because livelihood zones deal with underlying patterns of livelihood (including responses to different types of hazard), but not exposure to current hazard *per se*. One problem of including current hazard is the implication that the livelihood zone map will have to be revised each year.
- Administrative boundaries are ignored at all levels, making it very difficult to link information gathered for the livelihood zones to decision making.
- Zones are combined in the interest of reducing the total number in the country when there are very real differences between them.
- Livelihood zone maps are drawn using a small number of colours despite the fact that there are a large number of zones, making many zones indistinguishable.

FREQUENTLY ASKED QUESTIONS

Q. What happens when two groups of people live in the same area but pursue quite different patterns of livelihood, e.g. for cultural reasons or because of differences in ethnicity?

A. By and large, where you live defines your livelihood options, but not everybody can or chooses to exploit these options in exactly the same way. The most common reason for pursuing different patterns of livelihood within a single zone is a difference in wealth. In an agricultural area, for example, most of the farmland may be owned by a relatively small number of better-off households, with the majority of the poor making a living as farm labourers. In this case, both groups are making use of the same basic livelihood options, but in different ways because of their different levels of wealth. Occasionally, however, other cultural or ethnic factors may result in quite different patterns of livelihood being pursued within the same geographical area. Consider, for example, a lakeshore zone within which there are two groups: cattle keepers that do not fish and fisherfolk that keep a few cattle. The first thing to check is that these apparent differences in livelihood are not just reflections of differences in wealth. The test of this is that within each livelihood there should be people living at quite different levels of wealth (e.g. fisherfolk with boats and more cattle versus fisherfolk without boats and with few cattle). If this is the case, then two patterns of livelihood need to be defined. The fact that the groups pursuing these patterns of livelihood live in exactly the same geographical area poses little problem for most aspects of the analysis – the two groups are simply considered as separate livelihoods. The problem is how best to represent this situation on the map. The simplest solution is to consider the base from which each group operates. Even though both groups graze their cattle within the same area, perhaps the home villages of the fishing group are along the lakeshore, while the cattle-only villages tend to be inland? If so, two zones can be defined on the basis of each group's home base. If this is not the case, i.e. the fishing villages are genuinely intermixed with the cattle-only villages, then another means of mapping the two zones has to be found. One solution might be to colour in the zone with stripes of two colours, one colour representing each pattern of livelihood.

Q. How are the issues of migration and location of residence handled when calculating population figures?

A. Most people, even nomadic pastoralists, have a place that they (at least mentally) consider to be their base or their home. Provided the majority of household members spend the majority of the year at that base in years that are not particularly bad, then this should be considered their home and they should be included in the livelihood zone. Examples: For a highland Ethiopian family that sends two household members to work in the lowlands for 4 months of the year almost every year, the highlands are their home and livelihood zone. In contrast, wealthy Nicaraguan families who have agricultural businesses in rural livelihood zones but live in towns for most of the year are part of the economy of the rural livelihood zones but are not part of the population of those livelihood zones.

How do you draw the line between urban and rural livelihood zones (both on a map and when calculating population figures)?

A. In this guide, we are looking at rural economies and therefore are not as concerned with zoning urban centres. As far as the rural zones are concerned, it often makes sense to include the smaller towns in these, since many small-town dwellers participate in rural economic activities such as farming and livestock raising. In practical terms, you will have to decide on a figure (e.g. >5000) or a description (e.g. Admin Level 4 centre) beyond which you will exclude the population from your rural zone.

Q. How many livelihood zones should there be in a country?

A. There are always practical considerations or compromises to keep in mind when defining livelihood zones. It is possible to define more and more detailed livelihood zones and to finally end up with hundreds of zones that are nearly indistinguishable and a complicated system that will never be used. It is generally more practical to have a smaller number of broader zones, but it depends on the purpose of your zoning exercise. For what purpose is the information going to be used? It may take little effort to define and draw a new zone and to calculate its estimated population, but if the percentage of the national (or regional) population in the zone is tiny (i.e. less than 1%-2%) then how useful will the information be for emergency or development purposes? Will it be worth the effort to gather and continuously update information on a very small zone? At the same time, in the interests of having a 'manageable' number of livelihood zones, outright inaccuracy must not be allowed. Geographical areas that clearly have different livelihood patterns should not be combined. So there is obviously a trade off between simplification and accuracy. A small country, or a country with little geographical and livelihood variation, will generally divide into 8-15 rural livelihood zones. A large country with great geographical and livelihood variation⁶ may divide into as many as 70-80 rural livelihood zones. See **Table 2** for a few examples.

Q. Can variations in health factors, like HIV/AIDS prevalence, result in different livelihood zones?

In theory, it is possible that HIV/AIDS prevalence could be so high as to alter a production system and result in a fundamental change in the pattern of livelihood of a population in a given geographical area. If this is the case, it may justify the definition of a separate zone, or more likely a sub-zone within a larger zone. However, to date this has not been a basis for defining livelihood zones.

Q. How frequently does a livelihood zoning need to be updated?

A. Rural economies in developing countries tend not to change all that rapidly, and a good livelihood zone map will generally be valid for roughly 10 years. What varies is the prevailing level of food or livelihood security, but this is a function of variations in hazard, not variations in the underlying pattern of livelihood itself. Put another way, the level of maize production may vary from year to year (hazard), but the underlying pattern of agricultural production does not (the livelihood).

⁶ A country with great geographical and livelihood variation has mountains and deserts and everything in between. It has a coastline and large interior lakes. It has both smallholder and commercial agriculture, livestock rearing and fishing.