The Livelihoods Integration Unit
Uses of the Baseline Information and Analysis

USAID
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Government of Ethiopia:
Disaster Management and
Food Security Sector, MOARD

More than 570 people were trained in the LIU's assessment and analysis methodology in the first two years of the project and over 56,000 Ethiopians took part in interviews throughout the country.

Acknowledgements

The massive task of completing 173 livelihood baselines throughout Ethiopia was only made possible due to the hard work and commitment of a large number of people at federal, regional, zonal and woreda levels. The zones in SNNPR were completed by FEWSNET; those in Somali and Afar Regions were carried out by SC-UK in SNNPR. The remaining 108 livelihood zones in Tigray, Oromiya (inlcuding Harar and Dire Dawa), Amhara, Benishangul Gumez and Gambella were completed by the LIU. The LIU would like to take this opportunity to mention just some of the many people who have contributed to the development and ongoing utilization of these baselines.

The LIU would like to acknowledge the contribution and support of the:

- **Former DPPA staff:** particularly Teshome Erkineh (Head of the Early Warning Department) and Hussein Awol (DPPA EWD focal point to the LIU) who provided considerable guidance on the design and running of the project. Their successors in the MOARD DMFSS, particularly Matiwos Hunde (Director of the Early Warning and Response Directorate) and Beyene Sebeko (DMFSS EW&RD focal point to the LIU) who have continued to support the efforts of the LIU.
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- **The LIU Steering Committee**, which, in addition to the regional members listed above, included the USAID ALT team (particularly Tigist Yifru & Suzanne Poland); WFP (Alemtsehai Alemu); FEWSNET (Nigist Biru); and SC-UK (Waddington Chinogwenya & Demeke Eschete). These individuals have provided key support and advice based on their considerable knowledge of assessment methodologies, monitoring and HEA in Ethiopia.
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- **Chemonics,** and Jeanlouise Conaway in particular for setting up the Operational aspects of the program

And last but by no means least, the LIU would like to acknowledge the support, patience and good will of woreda officials, community leaders and community members throughout Ethiopia, without whom none of this work would have been possible, and for whom this work is ultimately intended.

Jane MacAskill

Chief of Party

Livelihoods Integration Unit,

A USAID funded project implemented

by FEG in partnership with the DMFSS/MOARD

The LIU's livelihoods databases contain the most comprehensive and extensive set of national household economy data in the world.

Contents

Section 1: Background and Methodology

Introduction to the guide

This guide is intended to increase the use of the Livelihoods Integration Unit's (LIU) tools and products by deepening awareness of the data and by presenting examples of how the information and analysis have been (and can be) used in a wide range of humanitarian decisions.

The guide starts by providing a short background on the origins of the LIU, highlighting the consensus building process that led to its creation. It then describes the analytical frameworks that underpin the LIU and describes how the field work that has been so essential to building the LIU's datasets has been carried out. An overview is then provided of the information available in the livelihood databases. Section 2 provides readers with a menu of products and tools on offer by the LIU.

The third section of the guide is devoted to highlighting the various uses of the LIU information and analysis. LIU baseline data, in combination with hazard information from existing monitoring systems (remotely sensed and ground-based) provides a solid foundation for conducting evidence-based early warning. The LIU's livelihoods database contains the most comprehensive and extensive set of household economy data in the world. In combination with an evolving seasonal hazards monitoring system, it is increasingly possible to provide highly sophisticated and accurate early warning of food and livelihood crises. In addition to early warning applications, there are numerous development, social protection, and emergency planning uses of the data and analysis. A select number of these are highlighted below. Along the way, reference is made to the specific tools used in each of the examples to enable readers to link the kinds of analysis they might find useful to the processes required to achieve these.

Background to the LIU

The early warning system in Ethiopia is among the oldest government based systems in the world, dating back to the famine in 1973/4. Since the 1990s, representatives of donors, UN agencies and NGOs have been involved in the Government's seasonal assessments, and in the Early Warning Working Group (EWWG), established by the Disaster Prevention and Preparedness Agency's (DPPA) during the 1999-2000 emergency. This has provided a structured network for building knowledge and consensus around early warning activities. The EWWG initiated a series of pilot surveys using the Household Economy Approach to support seasonal assessments, first

in Amhara and Somali regions, with Save the Children UK, and then later through FEWS NET in SNNPR. Through this concerted multi-year process of consensus building, the Disaster Prevention and Preparedness Agency eventually chose HEA as the basis upon which joint seasonal assessments would be conducted in future.

In 2006 USAID funded a project based within the (now former) Disaster Prevention and Preparedness Agency (DPPA) called the Livelihoods Integration Unit (LIU). The LIU is now located under the Ministry of Agriculture and Rural Development (MoARD) as part of the Early Warning and Response Directorate within the Disaster Management and Food Security Section. The main goal of the LIU is to improve the accuracy and objectiveness of seasonal and annual needs assessments in Ethiopia. The strategy for achieving this is to incorporate an understanding of local livelihoods into the needs assessment process using the analytical framework employed by the Household Economy Approach (HEA). The basic principle underlying HEA is that ***an analysis of local livelihoods is essential for a proper understanding of the impact – at household level - of hazards such as drought, floods, conflict or market dislocation.***

The main activities of the LIU include:

- Development of country-wide, standardized, quantified and comparable livelihood baseline data by livelihood zone and wealth group

- Realignment of seasonal assessments around livelihood baselines to ensure collection of appropriate hazard information relevant to each livelihood zone and wealth group

- Capacity building of federal and regional staff to gather and analyze baseline and monitoring information for the purposes of comprehensive food and non-food needs assessment

To be at **risk** of food or livelihood insecurity you must be

- exposed to a **hazard**
- be **vulnerable** to that hazard, and
- have inadequate **capacity** to cope with the hazard's effects

The Analytical Frameworks: the DRR and HEA

The LIU's working methodology is called HEA. **HEA** has been in use for over 15 years, and is, in essence, an operational expression of the Disaster Risk Reduction (DRR) framework, as articulated in the UN/ISDR & UN/OCHA initiative[1]. At the heart of HEA is the idea that in order to predict the effects of any hazard or set of hazards in a bad year, you need first to be able to understand the ways that people piece together their livelihoods in normal years. Not every household will be vulnerable to every hazard; and in order to distinguish between those who will and will not be affected, we need to be able to understand the systems that link households to their local economy, and the wider economic systems that link them to the outside world.

HEA links together mathematically the DRR core components of 'risk', 'hazard', 'vulnerability' and 'capacity' in the context of food and livelihood security. The ***risk*** of food or livelihood insecurity is the outcome of concern for the LIU; ***hazards*** are triggers that may or may not lead to a negative food or livelihood outcome. The impact of hazards (the outcome) depends on the ***vulnerability*** and ***coping capacity*** of people[1].

For example, farmers cultivating along a river side may be vulnerable to flood (which is likely to wash away their crops), but may not be vulnerable to drought (since they can irrigate their crops

Figure 1: The Livelihoods Integration Unit Information & Analysis System

The DRR Framework	(Vulnerability (V)/ Capabilities)	Hazard (H))*f*	= Risk (R)
The LIU System	**Livelihood Baselines** Gathered through intensive field work once every five to ten years (depending on changes in fundamental economy) by highly- trained teams	**Hazard Analysis** Hazard information is gathered during the seasonal assessments by GoE, UN, NGO, and other staff; on-going monitoring (of prices, especially) adds to information base	**Outcome Analysis** Conducted for seasonal assessment and at other times of year and for other purposes as required

1 Mathematically, the relationship between risk (R), vulnerability (V), capacity (C) and hazard (H) can be summarized as: R = f (H,V/C), where Risk = The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions. (ISDR 2007)
Hazard = A potentially damaging physical event, phenomenon, or human activity that may cause the loss of life or injury, property damage, social and economic disruption, or environmental degradation. Each hazard is characterized by its location, intensity, frequency and probability. (ISDR 2007)
Vulnerability = The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of a community to the impact of hazards. (ISDR 2007)
Capacity = A combination of all the strengths and resources available within a community, society, or organization that can reduce the level of risk, or the effects of a disaster. (ISDR 2007)

using water from the river). Likewise, pastoralists may not be very vulnerable to drought if they can move freely in search of water and grazing. They may, on the other hand, be highly vulnerable to conflict if that inhibits their movement to key water points and grazing areas.

The DRR framework, which is expressed in its mathematical terms as R = f(H, V/C), can only be made operational in a food and livelihood security early warning system if it is possible to characterize and quantify each of the framework's components – the 'v', 'h', 'c', and 'r'. The LIU accomplishes this through a series of assessment and analysis steps (illustrated in Figure 1).

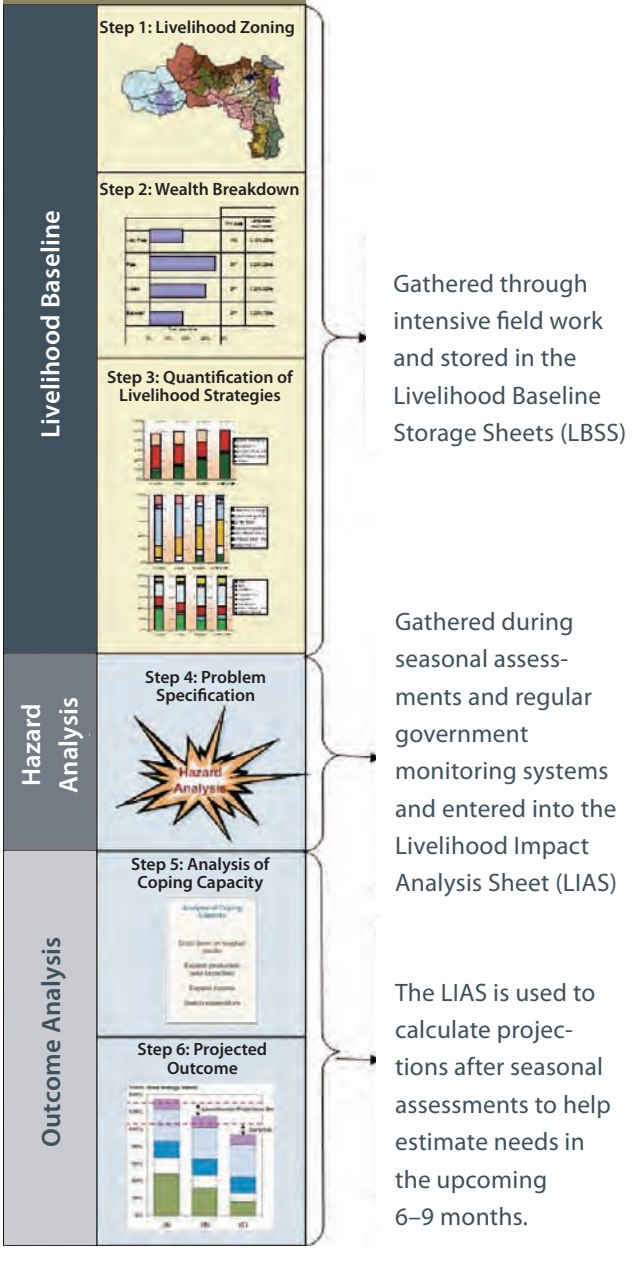
How the LIU Information is Obtained: the HEA Methodology

These steps – livelihoods baselines, hazard analysis, and outcome analysis - are central to HEA. In practice, HEA involves six steps, each with its own information and analysis requirements[2].

Step 1: Livelihood Zoning Patterns of livelihood vary from one area to another. Local factors such as agro-ecology, climate, soil, access to markets, and types of production (crops/livestock) all influence livelihood patterns. The first step in a Household Economy Analysis is therefore to prepare a **livelihood zone map**. This map delineates geographical areas within which people share basically the same patterns of access to food (i.e. they grow the same crops, keep the same types of livestock, etc.) and have the same access to markets.

Step 2: Wealth Breakdowns Where a household lives is one factor determining its options for obtaining food and generating income. Another factor is wealth, since this is the major determinant of a household's ability to exploit the available options within a given zone. It is obvious, for example, that better-off households owning larger farms will in general produce more crops and be more food secure than their poorer neighbors. Land is just one aspect of wealth, however, and wealth groups are typically defined in terms of

Figure 2: Steps in HEA



their land holdings, livestock holdings, capital, education, skills, labor availability and/or social capital. Defining the different wealth groups in each zone is the second step in HEA, the output from which is a **wealth breakdown**.

Step 3: Quantification of Livelihood Strategies Having grouped households according to where they live and their wealth, the next step is to generate **livelihood strategy baseline** information for typical households in each group for a defined reference or baseline year[3]. The reference year is the basis or standard for evaluation or comparison. The baseline data shows the contribution of crops, livestock, and other sources to households' food intake and cash income.

Step 4: Hazard Analysis (also known as the problem specification). In order to understand how people will be affected by a hazard or a group of hazards, it is necessary to translate each hazard into economic consequences at the household level. This step allows analysts to mathematically link the livelihood baseline to the hazard in order to estimate the outcome.

Through a concerted multi-year process of consensus building, the Disaster Prevention and Preparedness Agency eventually chose HEA as the basis upon which joint seasonal assessments would be conducted in future.

Step 5: Analysis of Household Coping Capacity The objective here is to determine to what extent households will be able to respond to the hazard (s) on their own without using damaging coping strategies.

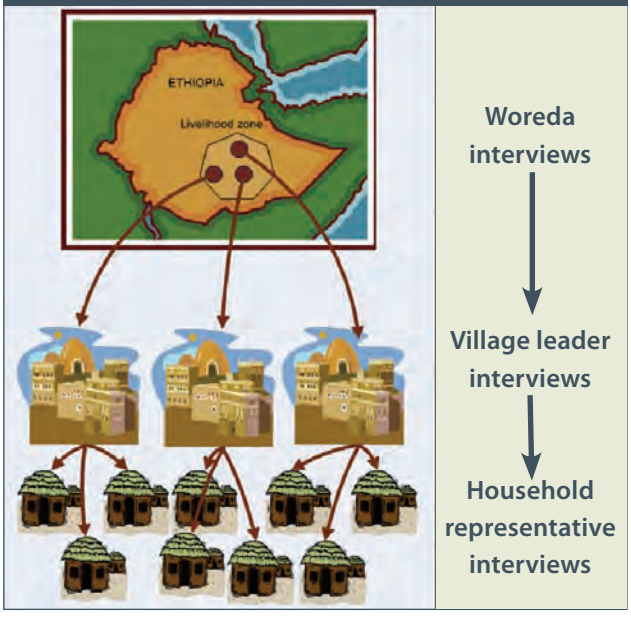
Step 6: Projected Outcome Analysis The last step involves combining the baseline picture with the hazards analysis and the coping capacity analysis to provide a final estimation of households' food and livelihood security in relation to the 'survival' and the 'livelihood protection' thresholds for a defined period of time.

A major thrust of the LIU's first two years was to establish a complete set of livelihoods baseline data for Ethiopia. At the time of printing, baselines had been established in SNNPR[4], Tigray, Amhara, Eastern and Central Oromiya, Harari, Dire Dawa. Western Oromiya, Gambella and Benishangul Gumuz Regions will be completed by the middle of 2009. Comparable baseline data

Region	Number of livelihood zones	Number of people interviewed
Tigray	16	7168
Amhara	24	10752
SNNPR	40	17920
Oromiya (East and Central)	40	17920
Somali	17	
Afar	7	
Western Oromiya	20	(to be completed)
Benishangul Gumez	4	(to be completed)
Gambella	3	(to be completed)

from Somali and Afar Regions has been collected by a second USAID-funded project, the Pastoral Livelihoods Initiative, implemented by Save the Children UK in association with the DPPA.

Figure 3



How the Livelihoods Baseline Information was Gathered

The majority of the livelihoods baseline information was gathered over an intensive three-year period (late 2006 – late 2009) during which over 570 Ethiopians were trained in various aspects of HEA. Primary fieldwork was carried out in every region of Ethiopia, with structured interviews occurring at multiple levels.

HEA internal consistency cross checks

1. Comparison between information obtained and reference data/information

Information obtained	Should add up/ be equal to…	Cross check reference data/info
Food intake		at least 2,100 kilocalories per person per day in reference year
Income		Expenditure
Number of days of agricultural labor 'sold' by poor		Number of agricultural labor days 'bought' by better-off
Gifts received by poor		Gifts given by better-off
Land rented out		Land rented in
Livestock borrowed		Livestock loaned

2. Trends across wealth groups should pass a test of 'reasonableness'

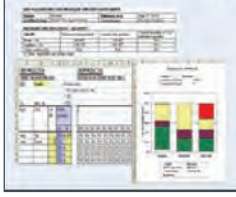
- does total production increase with wealth group?
- does cash income increase with wealth group?
- does the percentage of off-farm versus on-farm income change consistently across wealth group?
- does the proportion of expenditure on staple food decrease with increasing wealth?

Two sets of preparatory interviews take place at the district (*woreda*) and village (*kebele/PAs*) levels to gather information about the livelihood zone and to group households into wealth categories. These interviews cover a wide range of subjects including an inventory of the natural resource base, physical assets, local determinants of wealth, typical production patterns, hazard occurrences, and other information relevant for building up an understanding of local livelihoods.

Figure 4

Baseline information gathered during intensive field work

and entered into Livelihoods Baseline Storage Sheet (LBSS)



after which all zones are compiled into Livelihood Impact Analysis Sheets (LIAS)

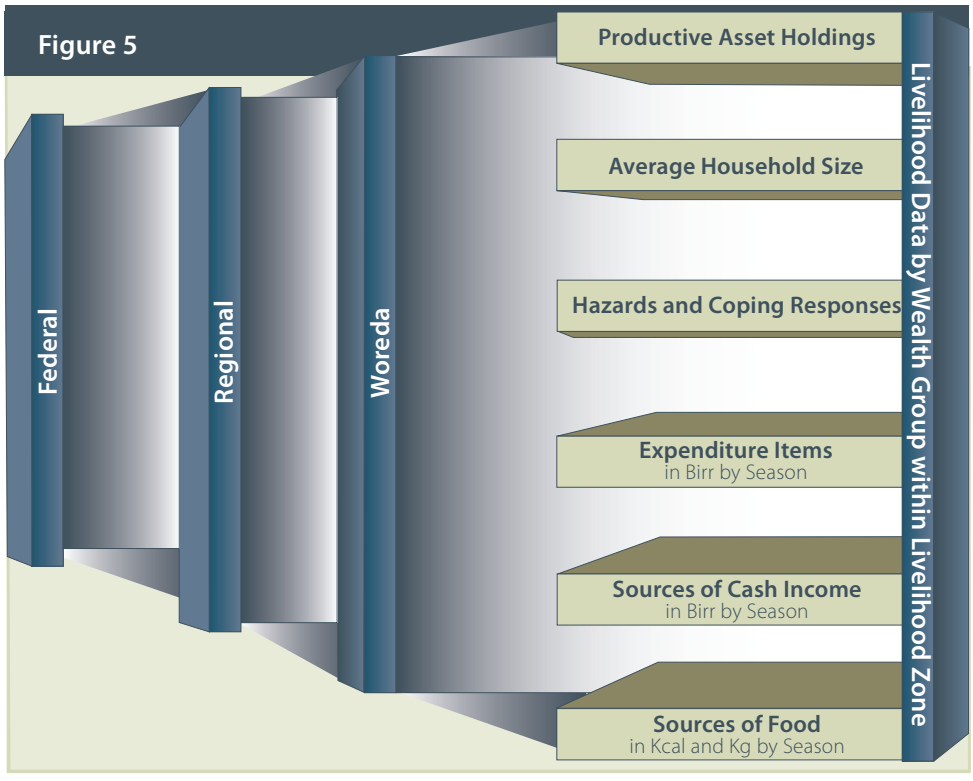
More than 570 Ethiopians were trained in different aspects of HEA, and over 56,000 Ethiopians took part in interviews at the woreda, community and household levels.

The core household baseline information is gathered during rigorous interviews using structured data collection formats with representatives from households falling into each wealth category. Each interview lasts around two hours and is designed to collect quantitative data on households' sources of food and cash income and their expenditure patterns in a specific reference year. During these interviews information on how households survive in years of poor production is also gathered. This is used in the analysis of coping capacity carried out during the Outcome Analysis process.

The HEA baseline data collection methodology used by the LIU is the culmination of over ten years of field testing in various parts of Africa and Asia, and as such, a number of previously tested cross-checks and internal consistency checks have been incorporated into the data gathering and storage processes to ensure a high level of confidence in the quality of the information[5]. In addition, team members receive intensive training over weeks of field work; team leaders are required to complete at least two full rounds of baseline and analysis work, and to pass various competency tests before taking up their positions.

What information is available in the Livelihood databases?

The livelihoods data is organized by livelihood zone and wealth group, and covers a range of essential livelihood areas. It is stored in such a way to allow the information to be analyzed



and aggregated by administrative unit, from woreda up to regional and federal level. There is a detailed set of data included under each of the main information categories shown in Figure 5.

Date available by wealth group

The LIU collects data for typical households living at different levels of wealth within each livelihood zone. The 'wealth groups' are defined, through community interviews, by the characteristics that determine their access to food, rather than by an external national or international measure. As a result, the poorest households represent those with the least access to food and cash income; and the better off represent those with the best access to food and cash income. This will be common across the country; however, the 'poor' in one LZ will not have the same asset profile or the same income as the 'poor' in another LZ. What allows us to compare how poor households are from livelihood zone to livelihood zone is the fact that their profiles are linked to a quantitative baseline that is converted into kilocalories.

Wealth groups for which data is available

Wealth group	Code	Approximate % of households[1]
Very poor	VP	15%-20%
Poor	P	25%-35%
Middle	M	30%-40%
Better-off	B/O	15%-20%

1 Varies from one LZ to another, according to local circumstances. The actual % of households in each wealth group is given in the database.

Data available for typical households within each wealth group

For each wealth group, data is collected for a 'typical' household. A 'typical' household is one that represents most households in that wealth group. This is not the same as a statistical average of all households within a wealth group. The idea is to identify and quantify the food and income sources utilized by ***most*** households within a particular wealth group, so that we can understand how they will be affected by a given situation. For example, if wheat is grown by most poor households, then wheat is included in the typical picture for the poor because this will help us determine how most poor households will be affected if there is a failure of the wheat crop. But if only a small minority of poor households grows vegetables for sale, then most poor households will not be affected by a change in vegetable prices, for example, and this source of cash income is excluded from the typical picture[6].

The customized products and tools developed by the LIU help decision makers and analysts readily access and use the LIU information for a wide range of program planning.

Food energy is the focus in sources of food

The focus of the enquiry into sources of food is on energy (i.e. kcals). This means that food items that are not a significant source of kcals, such as fruits and vegetables, may be under-represented in the database. This applies to both cultivated and wild fruit and vegetables.

Data not included

Production by state farms is not included in the databases, since the enquiry covers production only by individual households.

Reference Year by Region

Region	Main Season	Reference Year	Start & End Month
SNNPR	Belg	2003-04	July-June
	Meher	2003-04	Sep-Aug
Tigray	Meher	2005-06	Oct-Sept
Amhara	Meher	2005-06	Oct-Sept
	Belg	2006-07	Jun-May
Oromiya	Meher	2006-07	Nov-Oct
	Belg	2006-07	Jul-Jun
Somali	Gu	2003-04 or 2004-05 or 2005-06'	Apr-Mar
Afar	Karma	2003-04 or 2004-05 or 2005-06	July-Jun

Note: [1] Varies by livelihood zone

The reference year

Data are collected for a defined reference year. The reference year is a recent year that was neither especially good nor especially bad in terms of local food security. The reference year covers the whole of one 'consumption' year, defined in terms of the annual agricultural cycle. For agricultural areas, the consumption year begins with the start of the main harvest and ends at the end of the main hungry season, 12 months later. For pastoral areas, the consumption year begins with the start of the main rains (i.e. the beginning of the main milk production season) and ends at the end of the main hunger season, 12 months later. Details of the reference years for the different regions are given in the table above[7].

Sources of Food includes quantitative data on each wealth group's access to food during the main seasons of the year. Detailed data is available on every significant source of food. For instance, under 'own crops', data is provided on each crop grown, including how much is grown by each wealth group, and how this production is utilized (e.g. consumed, sold, stored, used for seed, etc.) Sources of food are quantified in both kgs and in the equivalent kilocalories. The main sources of food include:

- Own crops
- Livestock products (milk/meat)
- Fish and wild foods
- Purchased food
- Payments in kind
- Gifts/relief

Similarly, ***Sources of Cash Income*** contains detailed data in birr, and by season, for each wealth group. Where labor is one of these sources, details can usually be found on the number of days worked per season, the type of work done, and the source of demand for the labor. The main sources of income include:

- Crop sales
- Livestock sales
- Livestock product sales
- Fish and wild food sales
- Labor sales
- Own product sales (e.g. firewood, charcoal, gums & resins)
- Petty trade
- PSNP cash transfers
- Credit
- Gifts and other

Expenditure details are provided as well, with a breakdown in birr showing how much is spent on staple and non-staple foods, water (for people and livestock), agricultural inputs for both crop and livestock production, social services (health and education), clothing, tax, gifts and other core expenditures.

Section 2: LIU Products and Tools Menu

Over the first two and a half years of the LIU project, two general sets of products and tools have emerged:

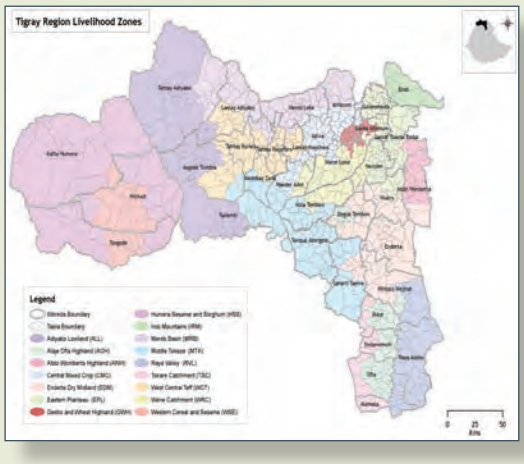
- those related to storing and making accessible **baseline data**
- those used for the **outcome analysis** to predict future outcomes

Summary of LIU Products and Tools	
Baseline Data Product/Tool	**Outcome Analysis Product/Tool**
• Livelihood Zone Maps	• Livelihood Impact Analysis Sheet (LIAS)
• Livelihood Baseline Storage Sheet (LBSS)	• Woreda Impact Analysis Sheet (WIAS)
• Regional Overviews, Livelihood Zone Profiles, Woreda Profiles	• Livelihood Outcomes Mapping Tool
• Woreda Posters	• Monitoring Tools
• Regional Livelihood Databases	
• Livelihood Baselines Mapping Tool	

A brief description of each of these products and tools is found below. For more details on how to use the Livelihood Baselines Mapping Tool, the L/WIAS, and the Regional Livelihood Databases, see references in the Annex.

Baseline Data Products/Tools

Livelihood Zone Maps



Tselemt Woreda Profile, Amhara Region
Population by Livelihood Zone and Kebele (2005)
Woreda: Tselemt
Zone: N Gondor

Woreda populat	55,641			
Livelihood Zone:		Livelihood Zone:		Livelihes
N Highland wheat, Barley & Sheep		Tekeze Lowland Sorghum and Goats		
LZ Population:	17,624	LZ Population:	38,017	
Population by Kebele:		Population by Kebele:		Populati
Abna	2,895	Abera	5,199	
Addi Meher	3,300	Addis Sela	3,724	
Akuna	3,530	Ateba	1,944	
Gilbena	5,392	Chinfera	4,298	
Kerewa	2,507	Dereba	2,436	
		Gicha	3,836	
		Lawkia	2,798	
		Negade Mes	2,730	
		Tara	3,136	
		Tarensh	4,985	
		Zeg	2,933	

Livelihood Zones are areas within which people share similar patterns of access to food and cash income. Regional Livelihood Zone maps provide a geographic representation of these homogenous areas. Each livelihood zone is described in detail in the **Livelihood Zone Profiles**. Livelihood zones are defined down to kebele level. The **Woreda Profiles** list the kebeles in the woreda (together with their population data) by livelihood zone (see table to the left). This means that existing government woreda level baseline and monitoring data can be used in conjunction with the LIU data.

The livelihood zone maps provide an additional level of stratification that can strengthen outputs from surveys (eg nutrition surveys) by ensuring that results for poorer livelihood zones within a woreda are not masked by results from better-off livelihoods zones within a woreda.

Livelihood Baseline Storage Spreadsheets (LBSS)

		SUMMARY			
3	WEALTH GROUP	BASELINE			
4		Very Poor	Poor	Middle	B/Off
10	Food Summary: total (%)	82%	93%	93%	108%
11	crops	36%	55%	73%	91%
12	livestock products	0%	0%	2%	6%
13	payment in kind	0%	0%	0%	0%
14	purchase	51%	38%	18%	12%
15	food aid	5%	0%	0%	0%
16	gifts, other	0%	0%	0%	0%
17	Income Summary: total (birr) pa)	3230	3643	3980	3868
18	crop sales	118	390	560	1147
19	livestock product sales	182	293	450	751
20	livestock sales	91	540	1220	2070
21	employment (e.g. labour) + remittances	515	370	0	0
22	self-employment (e.g. firewood)	284	0	0	0
23	safety nets	750	750	0	0
24	other	1300	1300	1750	0
25	Expenditure Summary: total (birr pa)	3219	3429	3932	3936
26	staple food	1429	1048	528	215
27	non-staple food	92	132	211	462

The **Baseline Storage Spreadsheet** is used to document and cross-check each interview and to facilitate post-field work analysis. It is a simple Excel spreadsheet that enables field teams to enter, check and analyze individual interview data in the field. It is also the basic tool that field teams use to analyze and summarize field data during the interim and final data analysis sessions. It has space to record the results from two levels of interview; those undertaken at village leader level, and those undertaken at household representative level.

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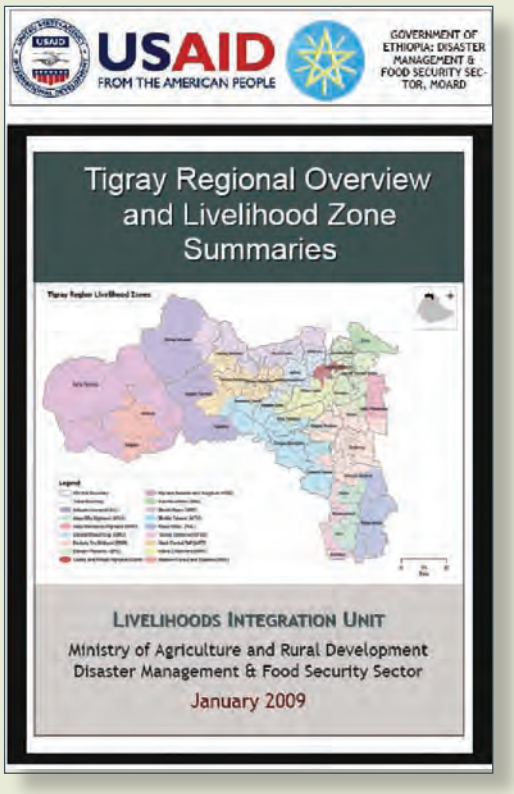
Regional Overviews, Livelihood Zone Profiles and Woreda Profiles

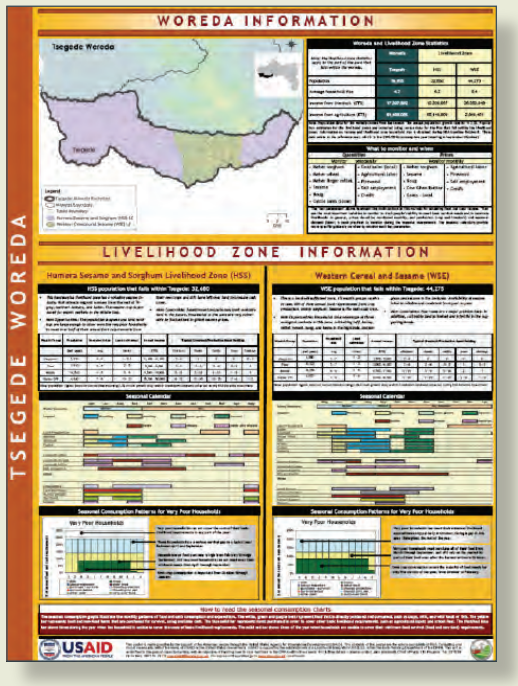


The **Regional Overview** provides a rapid introduction to the livelihoods in the region, including short summaries for each livelihood zone.

The **Livelihood Profiles** describe livelihoods in the region. Each profile highlights the major characteristics of the livelihood zone, including a basic description of the livelihood and food security status of different wealth groups. Common hazards and coping strategies are also identified.

The **Woreda Profiles** are a compilation of the livelihoods information directly relevant to a single woreda. They provide a map of the woreda showing the livelihood zones within the woreda, population data by kebele and livelihood zone, the relevant livelihood zone profiles and the key parameters (indicators) for monitoring within the woreda.

Woreda Posters



The **Woreda Posters** summarize for woreda officials relevant livelihood information of practical use in livelihood monitoring and for targeting of some types of assistance. They include: a map of the woreda with livelihood zone boundaries; population by livelihood zone and wealth group; key monitoring indicators for the woreda; total income generated from crop and livestock production within each livelihood zone; average productive assets by wealth group; a seasonal calendar for each livelihood zone; and seasonal consumption patterns for very poor households.

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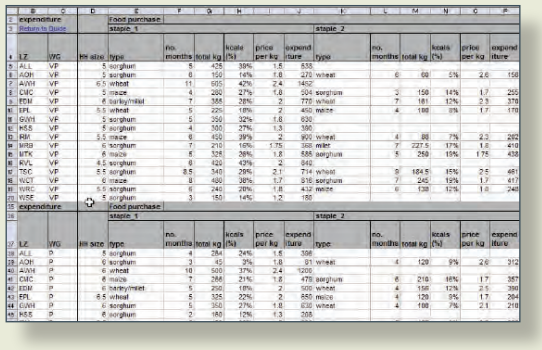
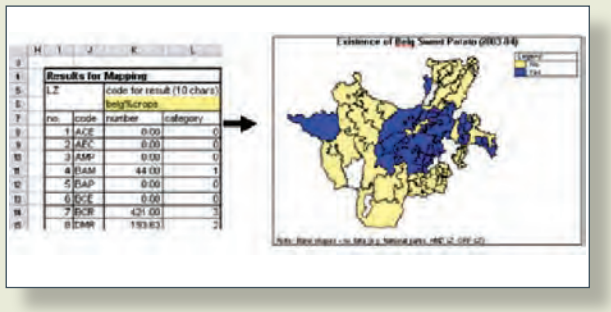
Baseline Data Products/Tools *continued from previous page*

Regional Livelihood Databases



The **Regional Livelihood Databases** enable users to group the livelihoods information, aggregating, for instance, livestock income for each wealth group, or showing total production by crop type for each household type, or the amount of income earned from different types of laboring activities. There is one database per region. The database contains all the livelihoods baseline data collected for each region. Data are presented by sector or theme (e.g. crop data, livestock data), by livelihood zone and by wealth group.

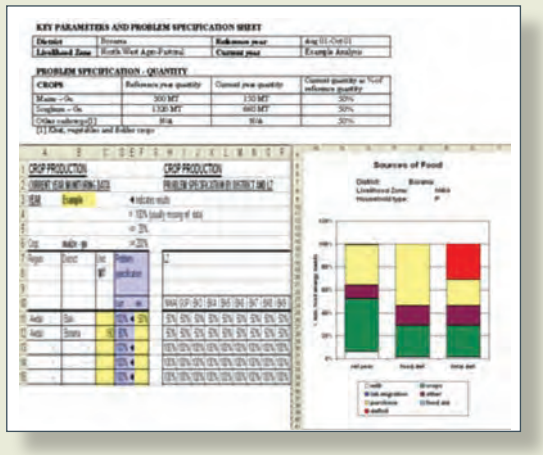
Livelihood Baselines Mapping Tool



This tool allows users to map outputs of the livelihoods baseline data by providing a simple link between the regional livelihood databases, ArcView 3.2 and Word documents. It is possible with this tool to map a large number of variables, such as where households within a region are dependent on belg production; or in which livelihood zones dependence on labor income exceeds crop sale income; or where honey sales make up a significant portion of household income.

Outcome Analysis Products/Tools

Livelihood & Woreda Impact Analysis Spreadsheets (L/WIAS)



The **L/WIAS** is used for Outcome Analysis. It allows program staff to enter a real or hypothetical problem specification (e.g. a climatic or market shock) and review the outcome both in figures and in graphs. These can be used for both emergency response and development planning. The spreadsheet makes use of the Household Economy Analysis framework (HEA) to estimate hazard impacts at household level. Three types of data are used for the analysis: 1) Livelihoods baseline data, i.e. data on baseline food, income and expenditure; 2) Coping strategy data, i.e. estimates of the amounts of additional food and cash income that can be accessed to help deal with a hazard; and 3) Hazard data, i.e. data that defines the problem, including changes in crop and livestock production compared to the baseline, changes in market prices, etc.

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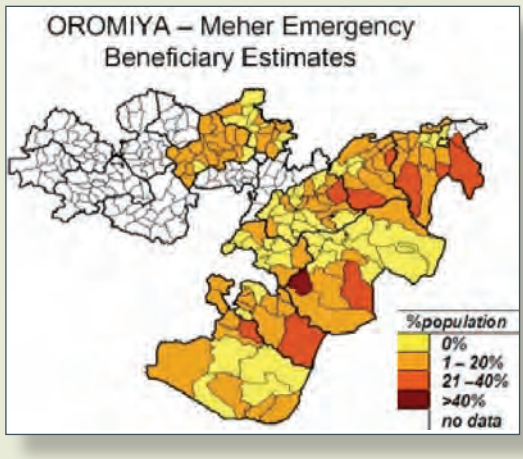
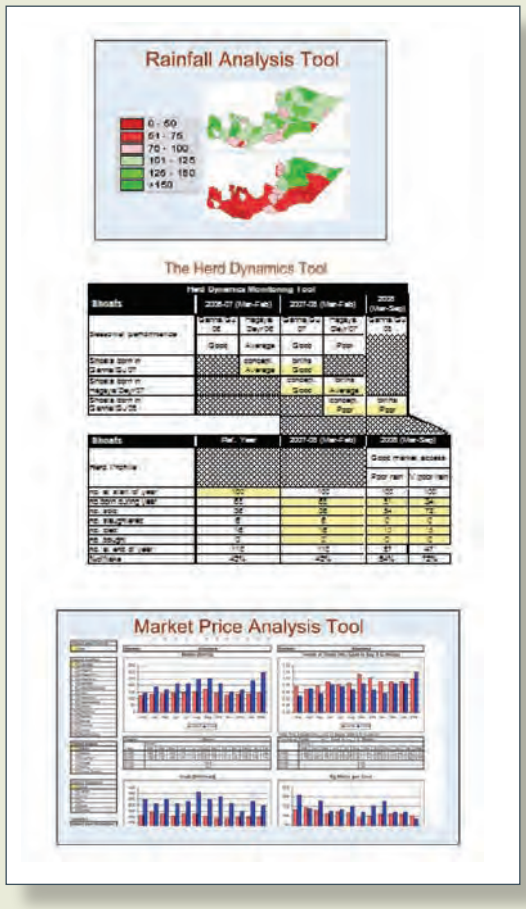
Livelihood Outcomes Mapping Tool



This tool allows users to map outputs from the seasonal assessments as well as hazard data collected during the seasonal assessments. This tool can be used to compare results between woredas and to contribute to discussions on data quality and results with officials from woreda level up to regional and federal levels.

Customized Monitoring Tools



Three monitoring tools have been developed to help analysts link the livelihood baselines to monitoring systems. These tools have the potential to improve data collection and analysis particularly in pastoral areas by helping seasonal assessment teams cross-check the data they collect.

These include:

- a **rainfall analysis tool**, which helps line up remote sensing data with the livelihood baselines and can be triangulated with data collected on the ground;
- a **herd dynamics tool** which encourages a pastoral analysis that facilitates a cumulative analysis of changes in herd size and composition over time
- the **market price analysis tool**, which helps analysts create price projections, and monitor relevant terms of trade for different wealth groups

By making it easier to monitor livelihood zone-appropriate indicators, and linking these more effectively to impacts at the household level, these tools together could significantly improve the quality of seasonal and annual needs projections.

Section 3: Uses of the LIU Information and Analysis

How the LIU Information and Analysis Helps Address Core Decision Maker Questions	
Core question	**How HEA helps answer the question**
Who	**Wealth breakdowns** help group the population in a way that shows who will be most affected by different shocks.
What	**Livelihood strategy identification, description and quantification** (Food, income, expenditure) shows what can be done to support existing livelihoods, and, just as important, what might harm them.
How Much	**Outcome analysis** determines what kinds of gaps will be left in the event of a shock or multiple shocks. This leads directly to an analysis of how much help is needed.
Where	**Livelihood zoning** helps group people in a way that allows you to see where affected populations will be.
When and for How Long	**Outcome analysis**, combined with careful use of seasonal calendars, provides a basis for determining when different types of assistance are needed and for how long.

While the LIU was initially established for the purposes of early warning and needs assessment, a much wider potential set of applications exists for both the livelihood baselines and for the outcome analysis. This is because any decision that aims to support people – whether in the short term or the longer term – benefits from starting with a clear and quantified description of how those people live.

The following section provides examples of how the LIU information and analysis has been, and can be, used to inform decisions in the following areas:

- Early warning of food and livelihood crises
- Emergency response planning
- Nutritional Surveillance
- Social Safety Nets: PSNP
- Development planning and risk reduction activities

Early warning of food and livelihood crises

Early warning is a difficult business: it requires putting together very different kinds of information to make predictions about how many people, where, when, and for how long, may require assistance. In practical terms this means that we need to understand how people in different

The **Livelihood Mapping Tool** enables baseline data to be presented in a more accessible format. For early warning purposes, it helps to identify areas in which certain hazards will have a greater impact, for instance, where ***belg*** rain failure will have the worst impact on livelihoods; or where cattle disease or avian flu might be important to monitor.

A key parameter is a source of food or cash income that contributes significantly to the total, so that a reduction in access to that one source may have a significant effect on total income.

Figure 6

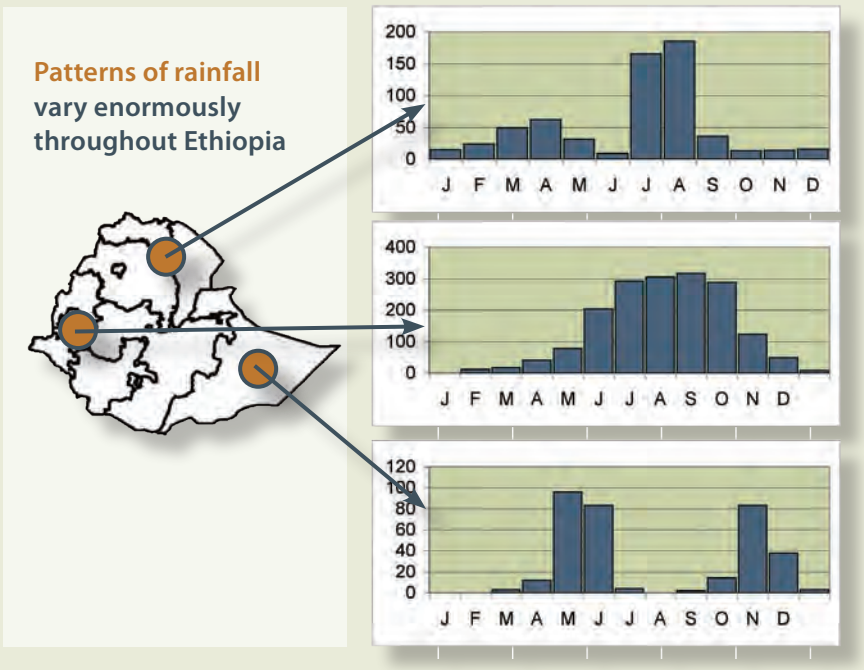
Within one woreda, there may be several agro-ecological zones..

areas will be affected by any number and combination of shocks – both natural and man-made. What determines how people will be affected is linked to:

- the degree to which different households rely on different sources of food and income to meet their annual requirements;
- the minimum requirements for survival and for protecting livelihoods in different areas; and
- the likely nature, magnitude and timing of hazards.

In Ethiopia, the early warning task is particularly complicated. Ethiopia has a large growing population,[8] diverse agro-ecological zones with dramatic variations in altitude and rainfall, sometimes within single administrative units. In addition, many households live close to or below the survival margins, and for these households even relatively small shocks can result in disastrous outcomes. This complexity creates the need for a highly refined and sensitive system.

Figure 7



Where to monitor

It is neither efficient nor desirable to monitor all indicators everywhere all the time. People's dependence on food and cash income sources differs across the country and from month to month, and so their vulnerability to various shocks will also differ. For instance, in many livelihood zones, a greater proportion of cash income derives from livestock than it does from crop sales. It makes sense to increase the emphasis on livestock-related indicators in these zones, while retaining a higher emphasis on crop indicators in the crop-dependent zones. And within most livelihood zones the poorest households rely most heavily on labor markets to secure their basic requirements: so there must be more of an effort made to systematically monitor relevant wage rates (formal and informal) throughout the country. The LIU baselines point out which monitoring indicators are most important to track in each region, livelihood zone, and woreda.

What to monitor

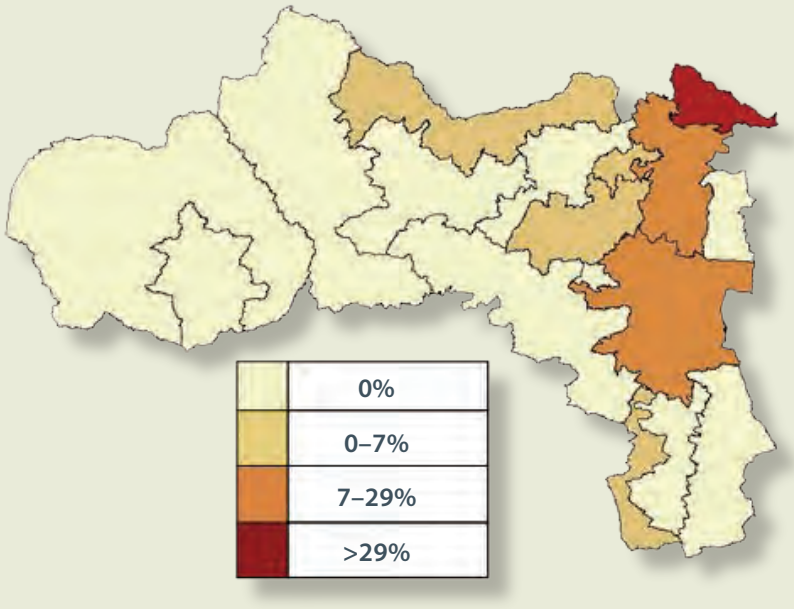
In the LIU, monitoring indicators are referred to as 'key parameters'. Key parameters are livelihood zone specific. Coffee production will be a key parameter in some zones, for example, but not others. Information on key parameters enables early warning analysis to go beyond assessing crop production to including other sources of income. For example poor households in one livelihood zone regularly migrate to work for better-off households in another livelihood zone. In order to get the early warning picture right, it is essential to understand the links between house-

In Ethiopia the task of early warning is particularly complicated, requiring a system that is sensitive to local variations in livelihood pattern.

Figure 8

On the margins Many households in Ethiopia already live close to or below the survival line. The graphic below illustrates this point in Tigray Region, where a significant proportion of the population in the northeast of the region is unable to make ends meet even in relatively good years. The job of 'early warning' is especially important in this context, where even small shocks can translate into dire consequences for these impoverished households.

Percentage of the Population with a Survival Deficit in the Reference Year: Tigray Region



Boundaries represent livelihood zones. See Tigray Regional Overview for more details on these livelihood zones. The deficit is calculated without food aid.

holds and the wider economy so that the local impact of changes in the destination market can be appropriately factored in.

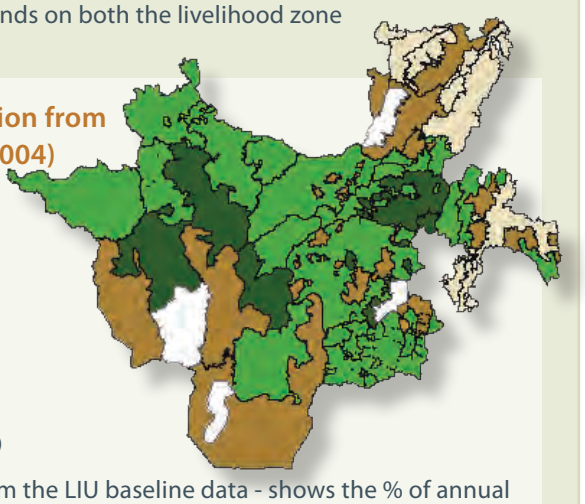
For instance, in the North Highland Wheat, Barley & Sheep LZ (NWB), labor migration provides the single most important source of cash income for poor households. Sesame production in the North West Cash Crop LZ, where people migrate to, is therefore a key parameter for NWB, and should be assessed and monitored on a regular basis. (See Figure 10.)

Figure 9: Where to Monitor – Three Examples

What one monitors where depends on both the livelihood zone and the type of hazard.

% Total Food Consumption from Own *Belg* Crops (2003-2004)

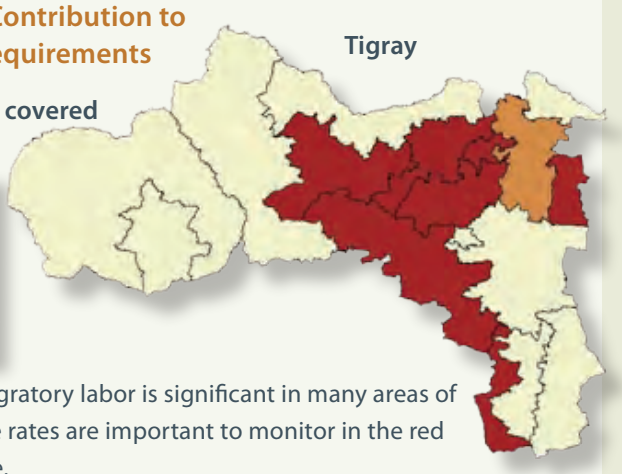
% min kcals
0
1–25
26–50
>50



Source: LIU baseline database
Note: Blank shapes - no data
(e.g. National parks, HMZ LZ, ORF LZ)

The map above – created from the LIU baseline data - shows the % of annual food households in SNNPR get from their own *belg* crops. *Belg* rainfall and production indicators should be monitored in the green areas.

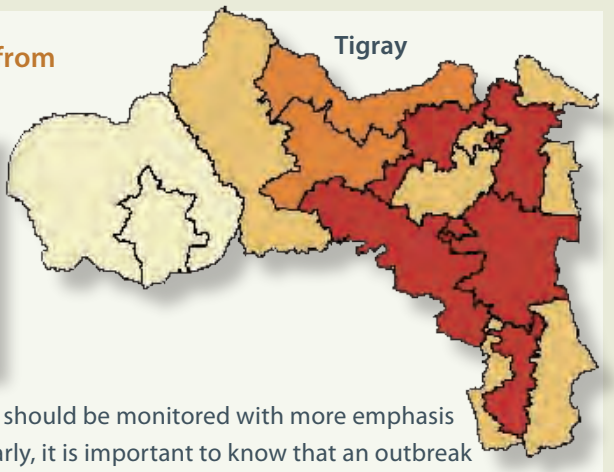
Migratory Labor's Contribution to Household Food Requirements



% min hh food needs covered by migratory labor
0%
1%–7%
7%–14%
>14%
No data

The contribution of migratory labor is significant in many areas of Tigray. Therefore, wage rates are important to monitor in the red areas in the map above.

Total Cash Income from Eggs and Chickens

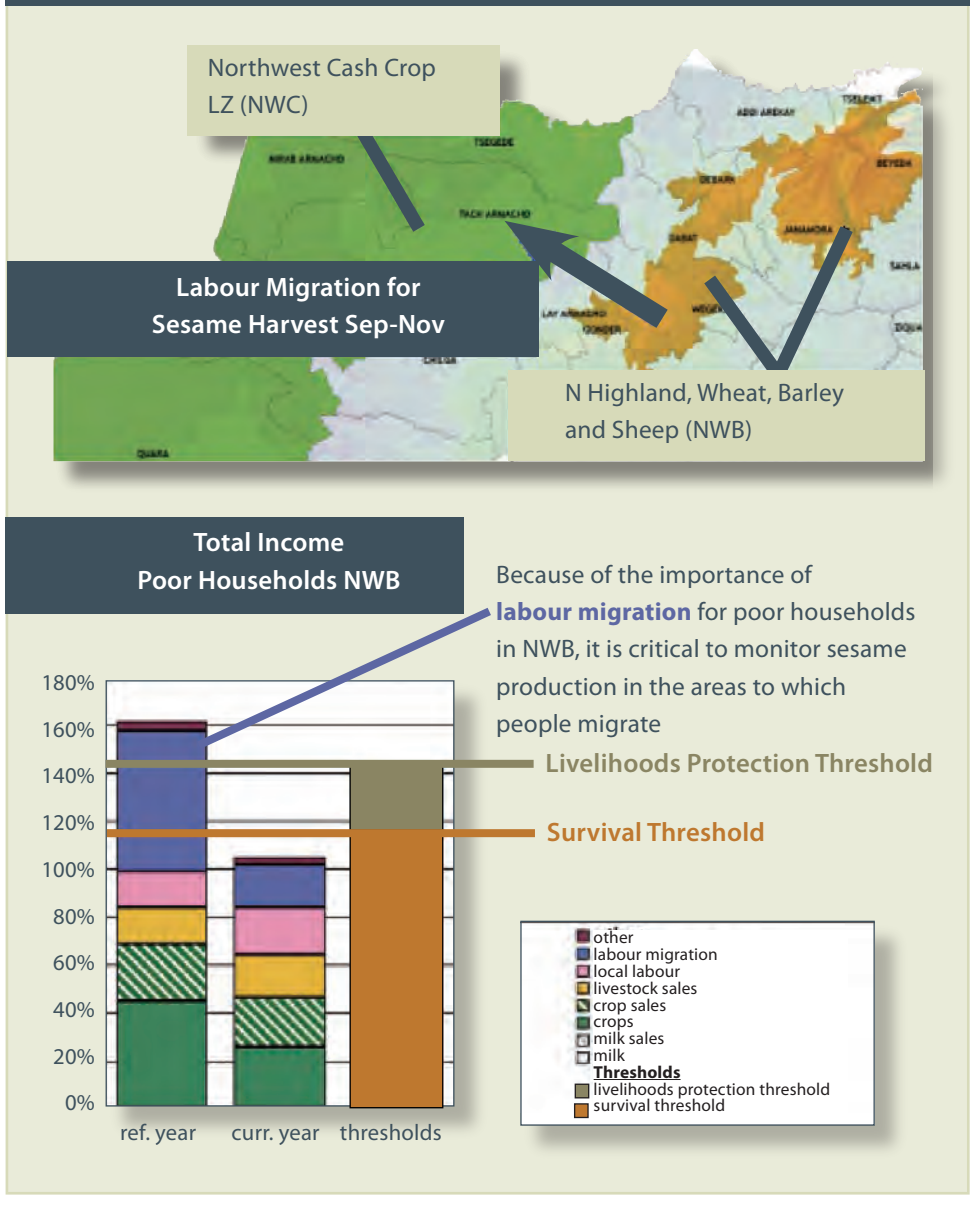


Birr per livelihood zone
0
1–3,050,000
3,050,001 6,100,000
> 6,100,000
No data

Egg and chicken prices should be monitored with more emphasis in the red zones. Similarly, it is important to know that an outbreak of Newcastle's disease will have serious income effects in the red zones.

The LIU methodology (HEA) offers a way to convert all food and income sources to a common currency, either in food or in cash, thereby allowing for a comparison of what is available and accessible (gathered through monitoring) with what is needed (e.g. the thresholds).

Figure 10



When to monitor

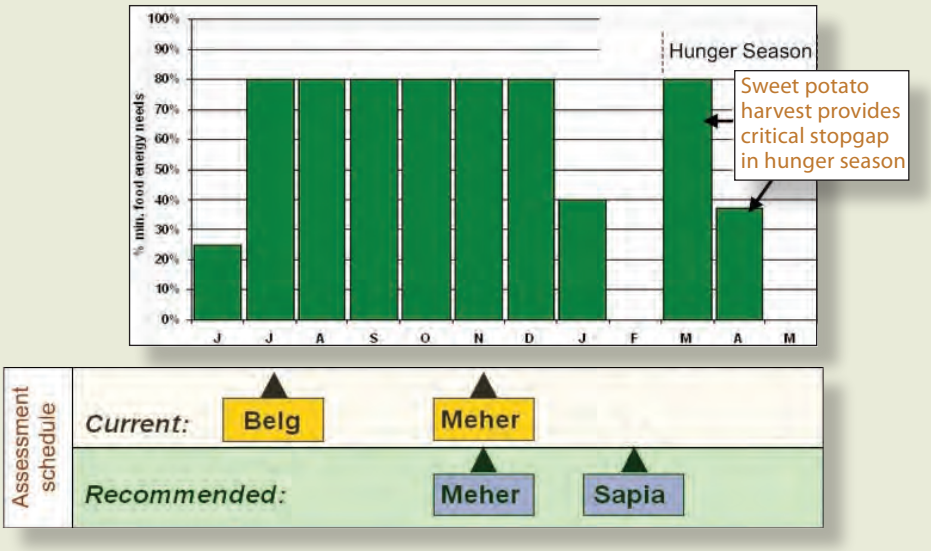
A better understanding of livelihoods and of seasonal patterns, in particular, provides information that is essential for designing the most effective assessment schedule.

In Ethiopia, seasonal assessments are regularly undertaken twice a year, at the end of the ***belg*** and ***meher*** seasons (in July and November respectively). This is appropriate for most crop-producing livelihood zones in the country (which depend primarily on one or other harvest), but is less appropriate for SNNPR, where crops are harvested in sequence throughout the period June to November. In these areas – unless there is a very serious failure of the ***belg*** (as occurred in 2008) - an assessment in July (at the start rather than the end of the main harvesting period) generally provides little information of practical use.

Figure 11

Wolayita Maize and Root Crop LZ

Season Food Access Calendar



Note: The green bars denote the availability of crops for consumption in the reference year. The crop harvested in March-April is *belg* season sweet potato. This provides a critical stopgap during the hunger season months from Feb-May. Therefore, in this context it makes sense to monitor in February rather than July.

The annual hunger season in these areas generally runs from February until May, with the severity of food shortages depending on a number of factors including the performance of:

a) the previous meher season

b) the light Sapia rains in Jan-Feb (essential for maturation of belg season sweet potatoes planted in October and harvested in March-April).

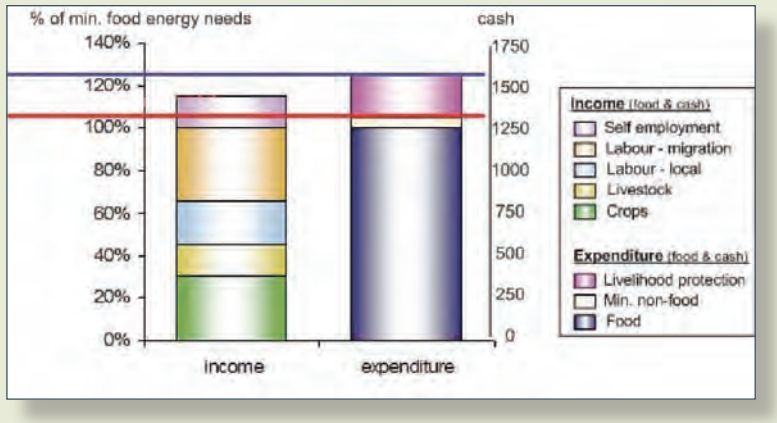
c) the belg season rains from March to May, which affects sweet potato production, and - equally important for poor households - the availability of agricultural labor in the critical pre-harvest months.

In this setting, the most important assessment is that carried out during ***meher*** (in November), while the second most important would be an assessment of the ***Sapia*** rains at the end of February. A ***belg*** season assessment in these types of areas should only be required in the event of a very severe failure of the ***belg*** rains, which would lead to a delay in cultivation.

Re-orienting the seasonal assessment schedule around livelihood appropriate timetables in pastoral areas, and other livelihood zones where there is not a straightforward strict ***meher-belg*** pattern would contribute to improved disaster management and enable timely interventions with a focus on early livelihood support rather than late humanitarian responses.

Figure 12: Livelihoods Protection and Survival Thresholds

In this example income is sufficient to cover basic survival needs, but there is a gap between minimum livelihood requirements and available income. In this case, an appropriate response might include a cash transfer program, or in kind support to cover one or more of the expenditure requirements.



The Survival and Livelihood Protection Thresholds are **emergency intervention** triggers, **not development targets**.

Emergency Response Planning

The same questions that underlie food security early warning are also at the heart of emergency response planning. The LIU information and analysis is designed to improve the quality of emergency response planning because it focuses on answering these key decision maker questions: When is it an emergency? Who needs help? How much help is required? Where is help needed? When is help needed? What kinds of assistance are most appropriate?

When is it an emergency?

The first requirement in any emergency response system is to define what constitutes an emergency. HEA establishes the basis for setting two important thresholds, which are designed to trigger appropriate responses:

- the Livelihoods Protection Threshold and
- the Survival Threshold.

The Survival Threshold represents the total income required to cover:

a) 100% of minimum food energy needs (2100 kcals per person), plus

b) the costs associated with food preparation and consumption (i.e. salt, soap, kerosene and/or firewood for cooking and basic lighting), plus

c) any expenditure on water for human consumption.

The Survival Threshold is the line below which intervention is required to save lives.

The Livelihoods Protection Threshold represents the total income required to sustain local livelihoods. This means total expenditure to:

a) ensure basic survival (see above), plus

b) maintain access to basic services (e.g. routine medical and schooling expenses), plus

c) sustain livelihoods in the medium to longer term (e.g. regular purchases of seeds, fertilizer, veterinary drugs, etc.), plus

d) achieve a minimum locally acceptable standard of living (e.g. purchase of basic clothing, coffee/tea, etc.)

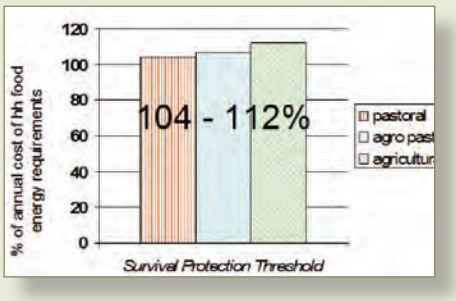
The Livelihoods Protection Threshold is the line below which an intervention is required in order to maintain existing livelihood assets and strategies.

As a rule, the survival threshold is similar across all livelihood zones (with small variations due to water and firewood/ kerosene purchases), because what people need to survive is the same regardless of livelihood system. The livelihood protection threshold, on the other hand, varies by livelihood zone, because what it costs to maintain a production system in one zone is different from what it costs in another zone. Maintaining a herd of cattle requires a different set of inputs than cultivating a ½ hectare of land; and cultivating a hectare of sesame requires different inputs than cultivating a hectare of teff. In some livelihood zones most children attend primary school, in other livelihood zones very few children attend primary school in a typical year.)

Figure 13

What does it cost to live in Ethiopia?

An analysis of 80 livelihood zones in Ethiopia revealed that the survival threshold is equivalent to around 104-112% of the annual cost of household food energy requirements (2100 kcal). Variability is due to differences in requirements for purchasing water and/or firewood and kerosene.



The same analysis showed that the cost of protecting basic livelihoods and ensuring survival ranges from 137 – 185% of the annual cost of food energy requirements, and is generally most expensive in agro-pastoral areas, where inputs for both agriculture and livestock put pressure on the household budget.

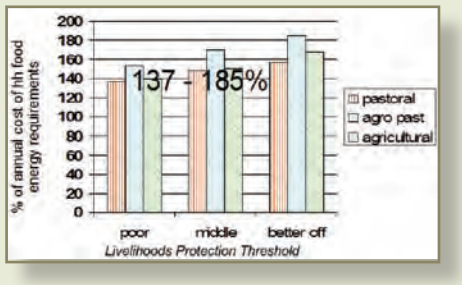
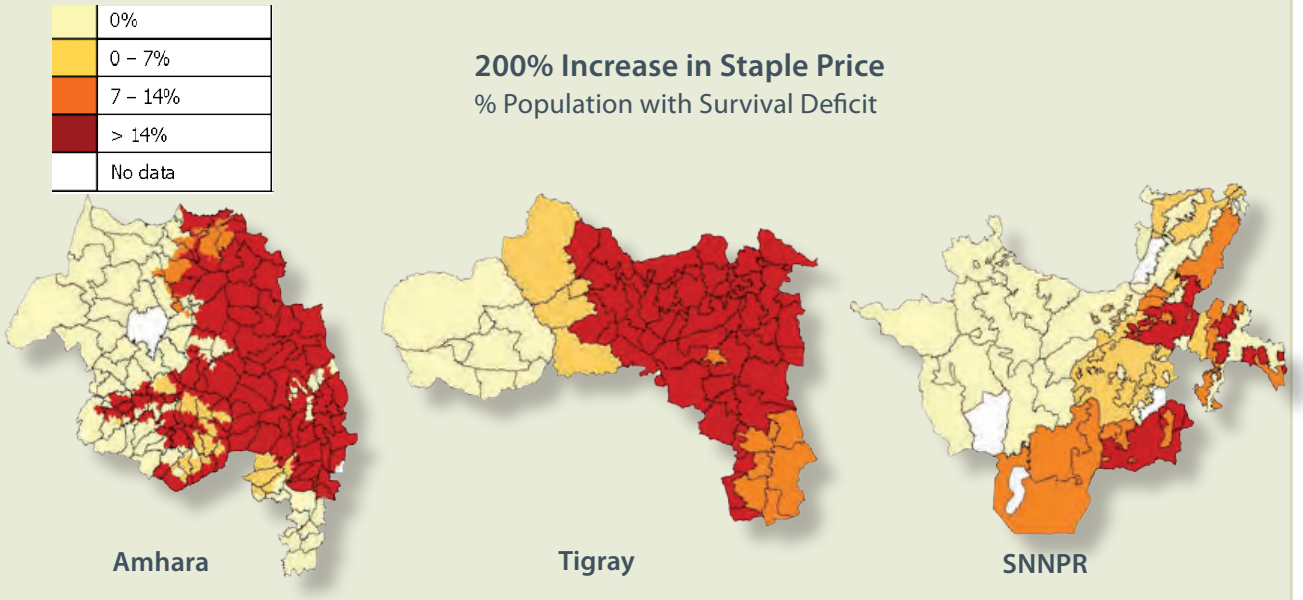


Figure 15



By quantifying the emergency response triggers in Ethiopia, and using a standard comparable quantification approach for monitoring households' changing access, the LIU has helped turn the precept to "save lives and livelihoods" into a practical reality.

Who needs assistance & how much is needed?

Who needs assistance and how much is needed are the fundamental questions at the core of any emergency response system. We can only answer these questions if we know something about the people who live in the area of concern, both before and after a hazard occurs. An example from the Middle Tekeze Livelihood Zone in Tigray is provided to illustrate this point. (See example on Page 32.)

Where is help needed?

Livelihood patterns determine the way in which people are affected by hazards. These livelihood patterns can be mapped, allowing us to rapidly see affected areas. The regional maps in Figure 15 illustrate this point using a hypothetical hazard scenario of a 200% increase in staple food prices. Mapping of baseline data can equally highlight who would be at risk of avian flu or cattle disease or a range of other hazards.

Livelihood patterns in Ethiopia are one half of what determines who will require assistance during a food emergency; the specific pattern of hazard that occurs is the other half. With rainfall failures, which can be highly localized, it is sometimes not enough to apply projected outcomes to the

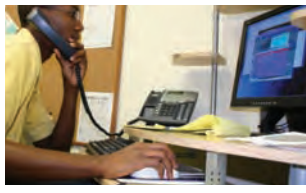
Figure 16

Targeting below woreda level:

Analysis by livelihood zone within the woreda:
This map shows Gonder Zuria Woreda, which contains two livelihood zones: The Northern Highland Wheat, Barley, and Sheep LZ and Tana Zuria LZ. An outcome analysis is conducted for both livelihood zones within the woreda using woreda-level monitoring data.

…and more detailed analysis of 'pocket problems'

It is also possible to analyse pocket problems within livelihood zones if PA level monitoring data exists



entire livelihood zone. In these cases, it is possible to conduct an analysis of 'pocket' problems by using crop and price data from the PA level in conjunction with the livelihood baseline data to conduct the outcome analysis.

When is assistance needed and when can it be stopped?

The LIAS has a seasonal component that combines seasonal calendar data with quantitative food and cash data, making it possible to project what the seasonal pattern of consumption will be. This is important in terms of estimating ***when*** deficits are likely to occur, and also when people will be able to once again meet their needs on their own – both crucial pieces of information for emergency response planning.

The figure on page 34 provides an example of how the seasonal analysis was used to help explain the severe food crisis experienced in parts of SNNPR in 2008. The series of graphics shows the effect of *belg* season rain failure on poor households in the Wolayita Maize & Root Crop LZ in SNNPR. In this livelihood zone, a failure of the belg rains can lead to rapid declines in nutritional status between January and June, often with very little warning. The seasonal analysis presented on page 34 shows how this can happen:

1) **Failure of belg season sweet potatoes.** Planted at the end of the meher season in October, belg season sweet potatoes mature during the belg rains and provide an

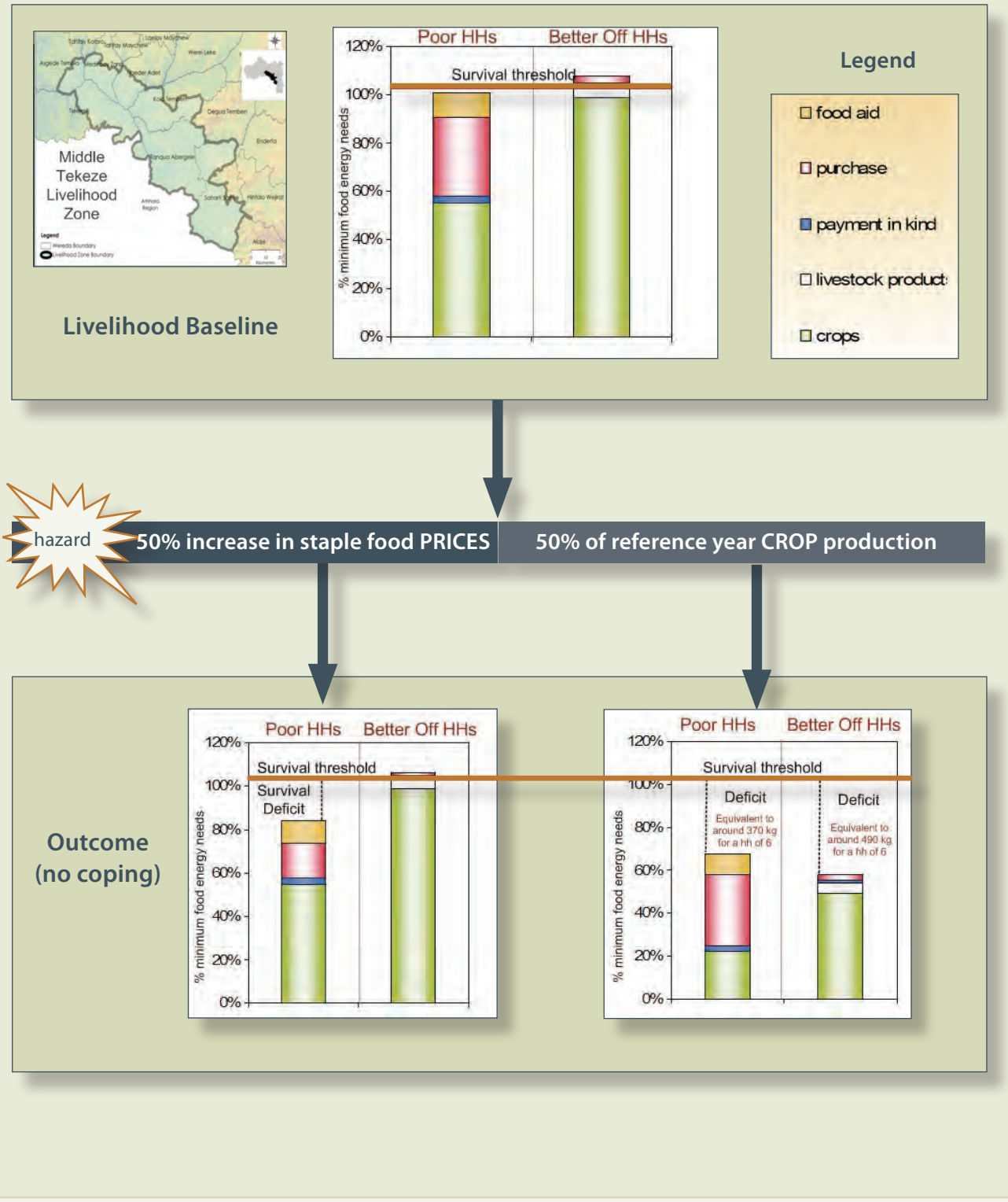
By quantifying the emergency response triggers in Ethiopia, and using a standard comparable quantification approach for monitoring households' changing access, the LIU has helped turn the precept to "save lives and livelihoods" into a practical reality.

The Middle Tekeze Liveihood Zone

The Tekeze River runs through this dry lowland zone on its westward course towards Sudan. Sorghum, teff, maize, sesame and flax are cultivated on the low lying plains, valleys and foothills. Teff is the main cash crop, along with surplus sorghum, maize, and very small amounts of sesame, flax and millet. Infertile soils and recurrent droughts have made a significant part of the population food insecure. Lack of oxen further inhibits the capacity of poor households to fully utilize the land resources available to them. The poor and very poor get 40-50% of their income from agriculture labor opportunities on sesame farms in Humera. Their situation is in stark contrast to the middle and better-off who are cultivating up to four times more land than the poor, and meet most of their own food requirements as well as having sorghum and millet for sale. Livestock sales are the main income source for the middle and the better-off, and they augment their productivity by investing a proportion of their income on hiring labor, and purchasing fertilizer and tools[9].

Just who will need assistance in this zone depends on what the shock is. Poorer households in this zone are more reliant on purchased food, as shown in the figure on the previous page (Livelihoods Baseline graph - top left) and therefore, more affected by an increase in staple prices, as illustrated by the Outcome graph (bottom left). Better off households, on the other hand are more reliant on crop production (to right), which puts them at higher risk in the event of a crop failure, as illustrated in the graphic (bottom right). It is possible to calculate just how much assistance is required by measuring the difference between the survival threshold and the outcome for each type of household after the shock. For instance, the gap for poorer household (assuming a household size of 6) before coping is equivalent to around 370 kilograms, and it is around 490 kg for better off households. The outcome after coping is likely to be significantly improved for better off households, as they are able to sell livestock or other assets.

Figure 14: Answering 'Who' and 'How Much': Accounting for Differences in Wealth



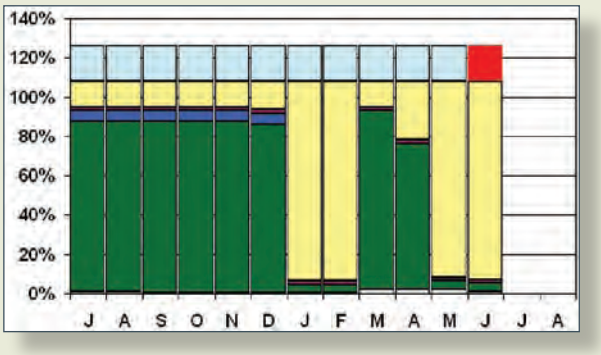
important stopgap between March and May. A failure of this crop is by itself enough to create deficits from April-June, but not before.

2) **Reduced availability of agricultural labor.** Agricultural labor is the single most important source of cash income from January onwards. If the belg rains fail, there is less labor available, and the deficit gets larger.

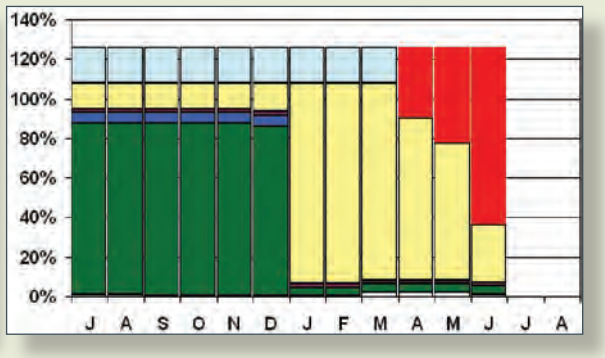
3) **Increases in maize prices.** Once the belg season sweet potatoes have failed, purchase becomes the most important source of food. As prices rise, so less food can be purchased, and the bigger the deficit becomes.

Figure 17: Seasonal Analysis Showing the Effects of Severe *Belg* Rain Failure on Poor Households in the Wolayita Maize & Root Crop LZ of SNNPR

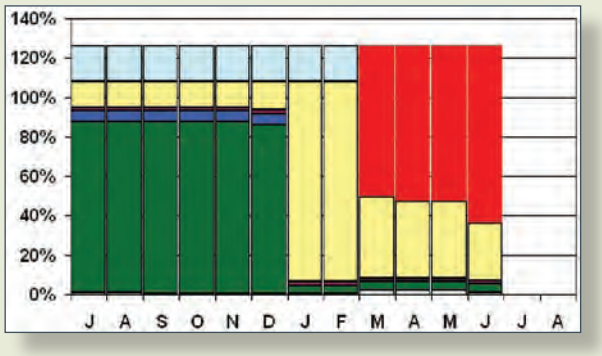
Seasonal Consumption Pattern in the Reference Year



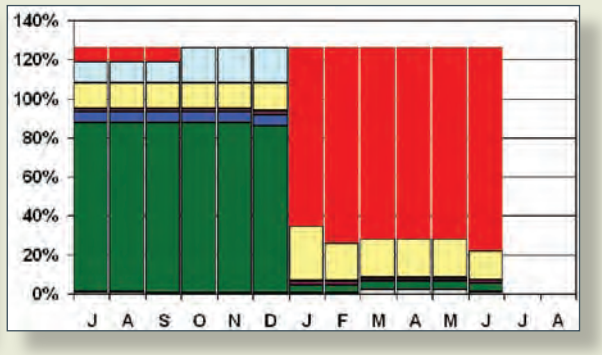
1) The Effect of *Belg* Season Sweet Potato Failure



2) …Plus a Reduction in the Availability of *Belg* Season Agricultural Labor

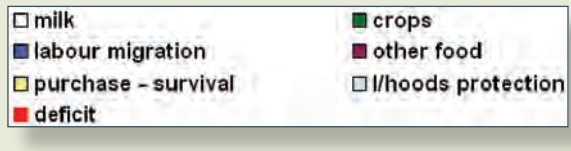


3) …Plus a Doubling of Maize Prices



The graphs show seasonal patterns of *consumption*, compared to two thresholds – the survival threshold and the livelihood protection threshold. Sources of food are shown by month (crops in green, purchase in yellow, etc.). Expenditure on livelihoods protection is shown in light blue.

Legend



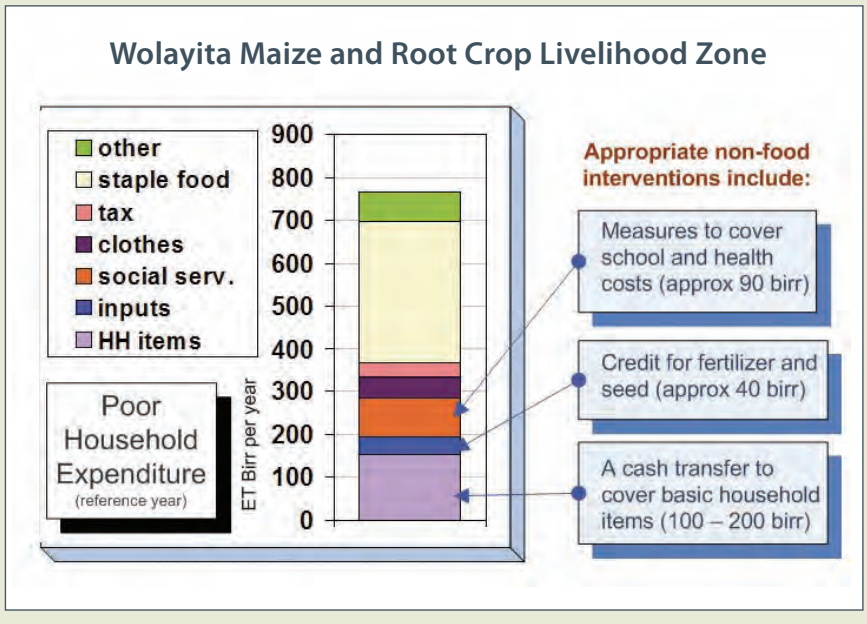
The situation presented in Figure 17 is similar to that in 2008, when there was a near-total failure of the ***belg*** rains. The importance of the seasonal analysis is that it shows why deficits occurred when they did. It also provides an evidence-based approach for programming and scheduling assistance.

What types of assistance are best?

There is a consensus within the wider humanitarian community, and particularly within the Ethiopian government, that emergency needs assessments should identify a broader range of interventions than at present, including interventions that seek to tackle ***chronic*** food insecurity. In practice, this is interpreted to mean that emergency food aid needs to be supplemented with non-food assistance when and where appropriate. The information and analysis produced by the LIU has already demonstrated how the data can be used to identify emergency non-food responses.

Figure 18: Can we use something other than food to respond to emergencies?

The answer to this question is yes. And in many cases, non-food assistance combined with food aid is likely to be the best approach for handling the many and varied needs of a population in crisis. The LIU data provide a good starting point for determining appropriate types and amounts of emergency non-food assistance.



What the LIU information does not, answer, however, is whether food or non-food responses are more cost effective from the view point of the donors and Government. And it does not answer the question of how markets will respond to a cash infusion, or a direct distribution of non-food goods. This requires additional cost-benefit and market analysis.

In the simplest terms, the LIU livelihood baselines can help determine appropriate non-food emergency interventions because they detail the various ways that households meet their basic livelihood requirements. It is therefore possible to identify which of these livelihood strategies can be most usefully supported in a crisis in order to ensure that households maintain access to their minimum survival and livelihood requirements.

How Baselines contribute to the identification of appropriate non-food responses	
Seasonal Calendars	**Seasonal Calendars** identify peak labor, disease, and hunger periods, as well as peaks in food availability - all factors that should influence the type and timing of interventions.
Wealth Breakdowns	These steps identify the main assets households have and how they gain access to how much income, which helps determine the most appropriate means of supporting people.
Sources of Income	
Expenditure Patterns	Understanding **expenditures** for each hh type in the LZ allows planners to see how providing in-kind support (through, for instance, supporting education or basic health services) can free up income for investment in food security or economic growth.
Information on Hazards	The types of **hazard** may also indicate appropriate non-food responses, e.g. measles or malaria would indicate the importance of mid-term development interventions.

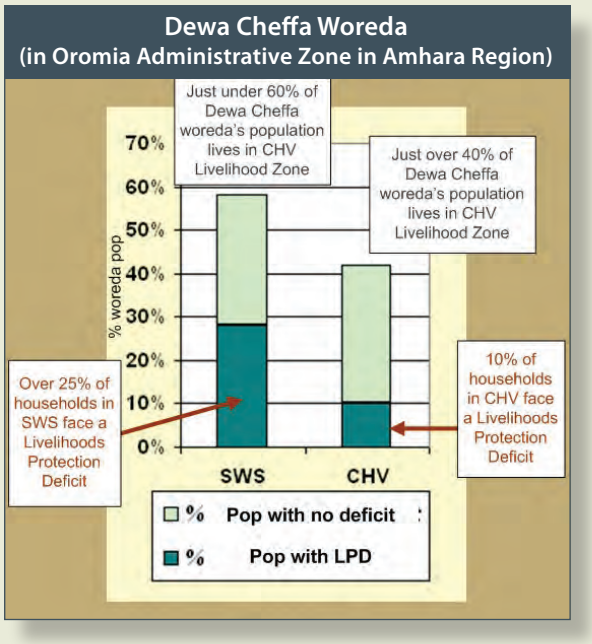
Regional Livelihood Zone Maps provide a geographic representation of areas within which people share similar options for obtaining access to food and cash income. The LIU has developed a national set of livelihood zones which can be used for emergency response and other applications. There are over 170 livelihood zones in Ethiopia, indicative of Ethiopia's geographical complexity.

Nutritional Surveys: Using the LIU information for design and interpretation

Traditionally, nutritional surveys have been a key tool used by humanitarian agencies to determine where food assistance is needed. Access to food and cash income – or pattern of livelihood - is a major determinant of nutritional status. Information on food and cash income can also be used to predict a deterioration in nutritional status. The example presented in Figure 20 is from the Sidama Coffee LZ in Dara Woreda (SNNPR). In this case, the Meher 2005 seasonal assessment predictions for the impending 6 months indicated that the middle wealth group would have increased incomes reflecting the increased coffee prices on the world market; the very poor wealth group, on the other hand, would face a food deficit as coffee production locally had decreased and the very poor depend on coffee labor for part of their income. In addition, the very poor depend on food purchases to meet their food needs and, the loss of labor income in their incomes was exacerbated by an increase in staple food (maize) prices (ie very poor households had less purchasing power than they had in the reference year). Six months after this prediction was made a nutrition status survey conducted by ACF in June 2006 identified "critical" rates of malnutrition in the coffee growing areas.

Figure 19

How assessment data combined with an analysis of livelihoods can facilitate identification of and targeting of alternative interventions

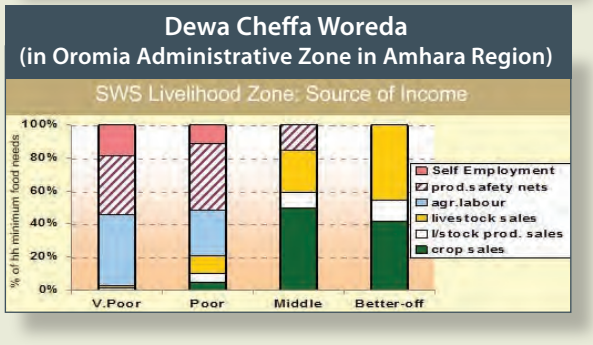


Identifying the deficit....

Two livelihood zones lie in Dewa Cheffa Woreda: Cheffa Valley (CHV) and South Wollo and Oromia Eastern Lowland Sorghum and Cattle (SWS).

The percentage of households with a livelihoods protection deficit varies by livelihood zone.

The Meher 2008 seasonal assessment analysis identified a proportion of households living in both livelihood zones with a deficit. The analysis can enable interventions to be targeted to kebeles in the affected livelihood zones.



Identifying the non-food response…

The poor and very poor are highly dependent on labor (see figure to left). Thus, cash transfers could be an appropriate option for filling food gaps in the short term. In the medium to longer term, other options need to be utilized to address the root causes of low crop production (e.g. lack of oxen, lack of credit, etc.). The middle and the better- off would benefit from interventions that increased income from crop and livestock production.

The LIU Livelihood data was able to distinguish between the wealth groups that had benefited from increased prices and those who suffered due to the loss of labor exacerbated by the increase in staple food (maize) prices prior to the deterioration in nutrition status[10].

Given that access to food and income is a major determinant of nutritional status, it therefore makes sense when designing a nutritional survey to sample by livelihood zone rather than by woreda, and this is beginning to be done in Ethiopia. This is because poor nutritional status in one livelihood zone can be masked or hidden by better nutritional status in a neighbouring livelihood zone within the same woreda.

Figure 20: Sidama Coffee LZ, Dara Woreda, SNNPR

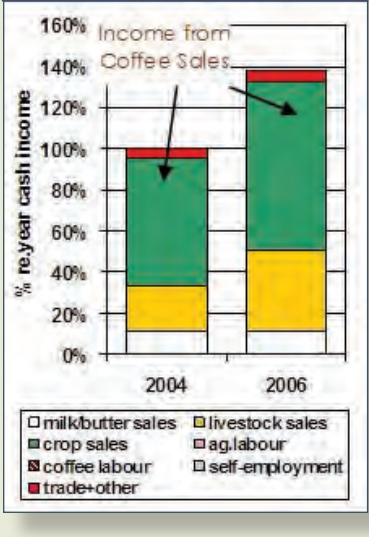
The Household Economy Problem Specification

Changes in Production and Market Conditions (2006 vs. the reference year, 2004)

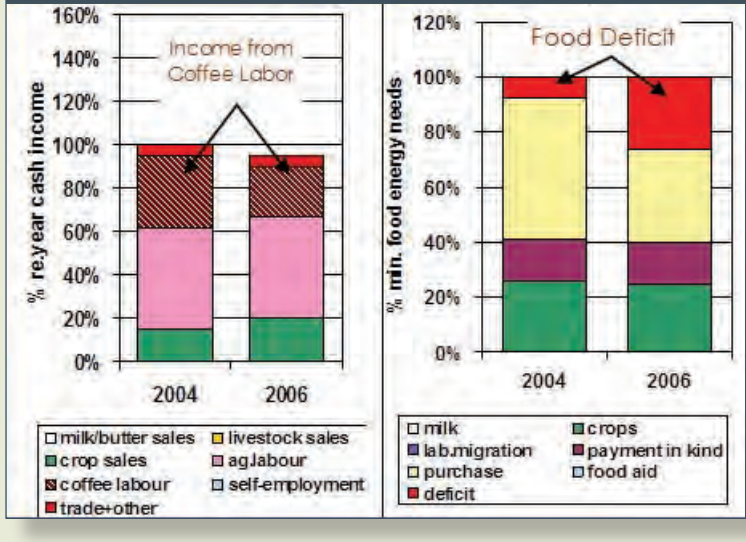
- Coffee production: -30%
- Coffee prices: +115%
- Livestock prices: +70% to +100%
- Staple food prices: +40%

The Household Economy Outcome Analysis

Middle HHs



Very Poor Households



The Nutrition Survey Results

An ACF nutrition survey in June 2006 found the following high levels of malnutrition:

- GAM: 16.5 % (95% CI 12.5%-20.5%)
- SAM: 3.1% (95% CI 1.4%-4.8%)
- 5 oedema cases

Source: ACF Nutrition and Retrospective Morality Survey. Sidama and Coffee Livelihood Zone, Dale and Aleto Wondo Woredas, SNNPR, Ethiopia June 2006.

Social Safety Nets: An alternative to the annual appeal cycle

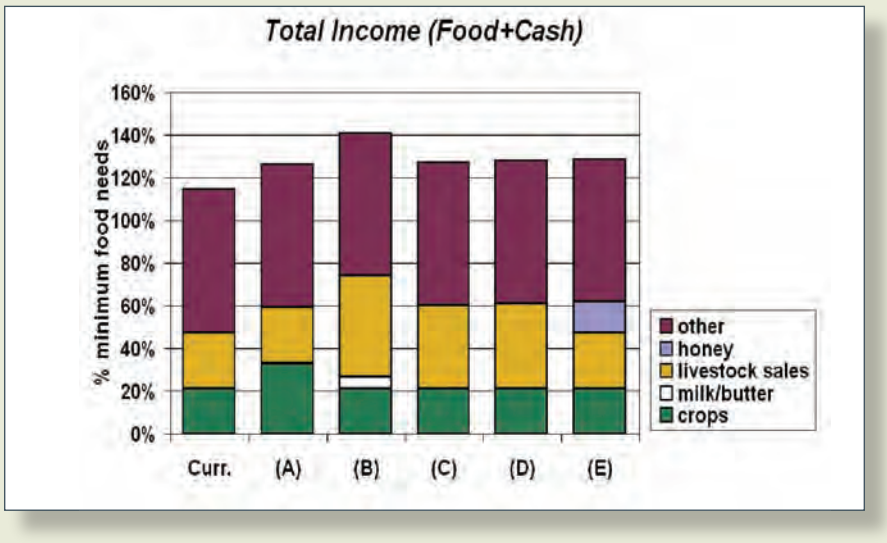
Ethiopia's Productive Safety Nets Programme (PSNP) was started in 2004 as an attempt to get beyond the relentless cycle of annual appeals. It was recognized that a certain proportion of the population required assistance every year, and that these households should be covered under a program not bound to the emergency assistance cycle. The PSNP provides a guaranteed transfer (either food, cash or a mix of food and cash) to these chronically food insecure households. The LIU data and analysis helps answer two crucial questions at the heart of PSNP planning: 1. how can PSNP transfers be targeted to the people who need them most? and 2. what do PSNP beneficiaries need in order to 'graduate'?

Targeting & Scaling Up in Bad Years

In the same way that the LIU data and analysis is used in emergency assessments – by comparing households' access to the survival and livelihood protection thresholds – it can be used to help ensure that targeting of PSNP transfers goes to those who need it most, and that scaling up of PSNP assistance in bad years is based upon an objective assessment of needs. Already, seasonal assessments in Ethiopia using HEA have for some years analyzed total assistance requirements, i.e. the sum of PSNP and emergency assistance

Figure 21: Asset Holdings, Income and Prospects for Graduation Very Poor Households, Central Mixed Crop LZ, Tigray

What the Graph Shows:
The graphs show how the total income of very poor households will change given different types of intervention.



Scenarios:
Curr. Total income in the reference year
Effect of adding:
(A) 1 ox (more land ploughed and increased crop production)
(B) 2-3 cattle (increased milk production and livestock sales)
(C) 7-8 goats/sheep (increased livestock sales)
(D) 10 hens (increased livestock sales)
(E) 1 beehive (increased sale of honey)

In each case, total income can be compared with the livelihoods protection threshold to assess whether or not households will achieve the income required for graduation.

The **Regional Livelihood Databases** and the **Livelihood Mapping Tool** enable users to sum up household data in a number of different ways, providing a powerful tool for looking at livelihoods across Ethiopia through a new and exciting lens.

Graduation

The objective of the PSNP and its associated food security interventions is to enable beneficiaries to accumulate enough assets to graduate from the programme. The livelihoods baseline data can be used to investigate how much income can be generated from different types of asset. This can be done for different livelihood zones (and therefore for different woredas and regions).

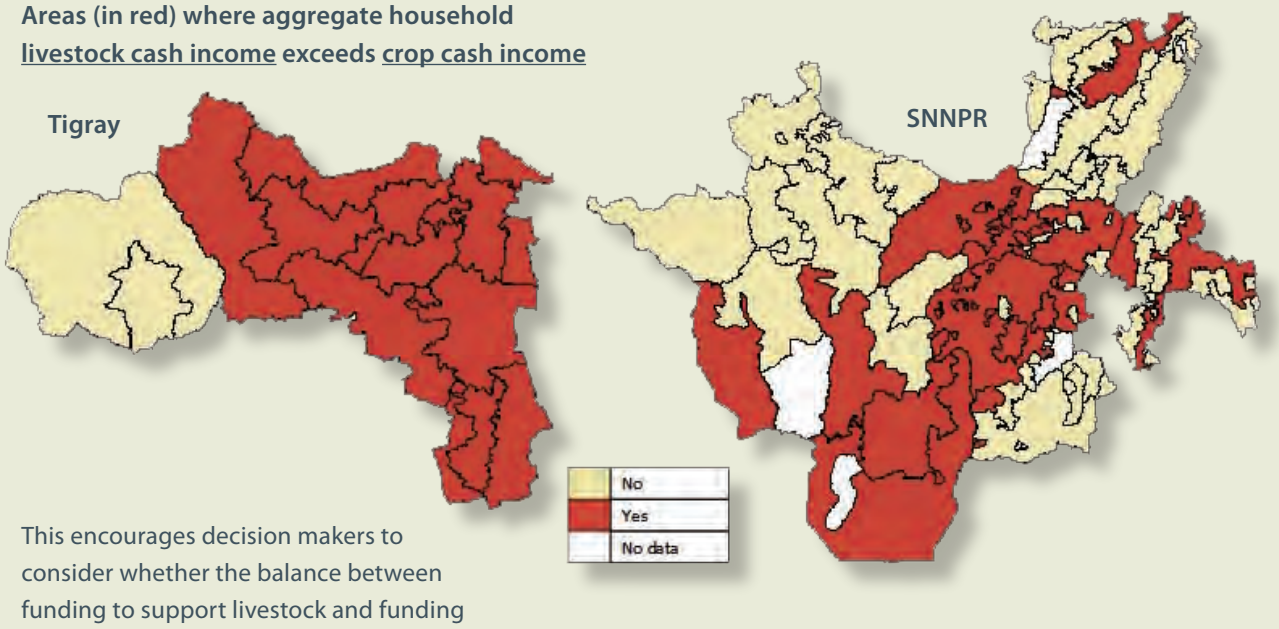
The results can be used in a number of ways:

- to identify the most appropriate types of intervention in each livelihood zone,
- to compare the cost-effectiveness of different interventions,
- to identify the level of asset holding required for graduation in each livelihood zone.

Figure 22: Building local realities into development planning

Ensuring a rational allocation of development assistance depends in part on a solid understanding of how people currently live. The LIU data is helping to provide strong evidence to update assumptions about what can be done to help rural households in Ethiopia. There has traditionally been a strong emphasis on investment in crop production as a means of generating rural wealth in Ethiopia. While crop production is quite clearly a central activity in most of rural Ethiopia, it is also true that livestock income has an important, and perhaps growing, role to play. As the maps below illustrate, aggregate livestock income exceeds crop income for households in much of Tigray and SNNPR.

Areas (in red) where aggregate household livestock cash income exceeds crop cash income



This encourages decision makers to consider whether the balance between funding to support livestock and funding to support agriculture should be revisited.

Source of data: LIU Livelihoods baseline data, Tigray and SNNPR

Development Planning

Development planning and poverty reduction analysis aim to inform interventions that help lift people above their current standard of living and out of poverty rather than mitigate the short-term effects of hazards. Many of the elements of poverty analysis are shared by the LIU's livelihoods baselines: a consideration of the defining characteristics of the poor; of the options they have for survival and the seasonal patterns of their survival strategies; and of the economic and social constraints they face year on year and the origins of those constraints.

On a macro level, the LIU information can help direct the distribution of development resources by highlighting what households themselves already do to generate income, and therefore what kinds of development assistance can support existing livelihood strategies. The LIU data, by establishing a comprehensive evidence-based picture of household economies throughout Ethiopia, can help rationalize the prioritization of scarce development resources. An example of this is provided in Figure 22.

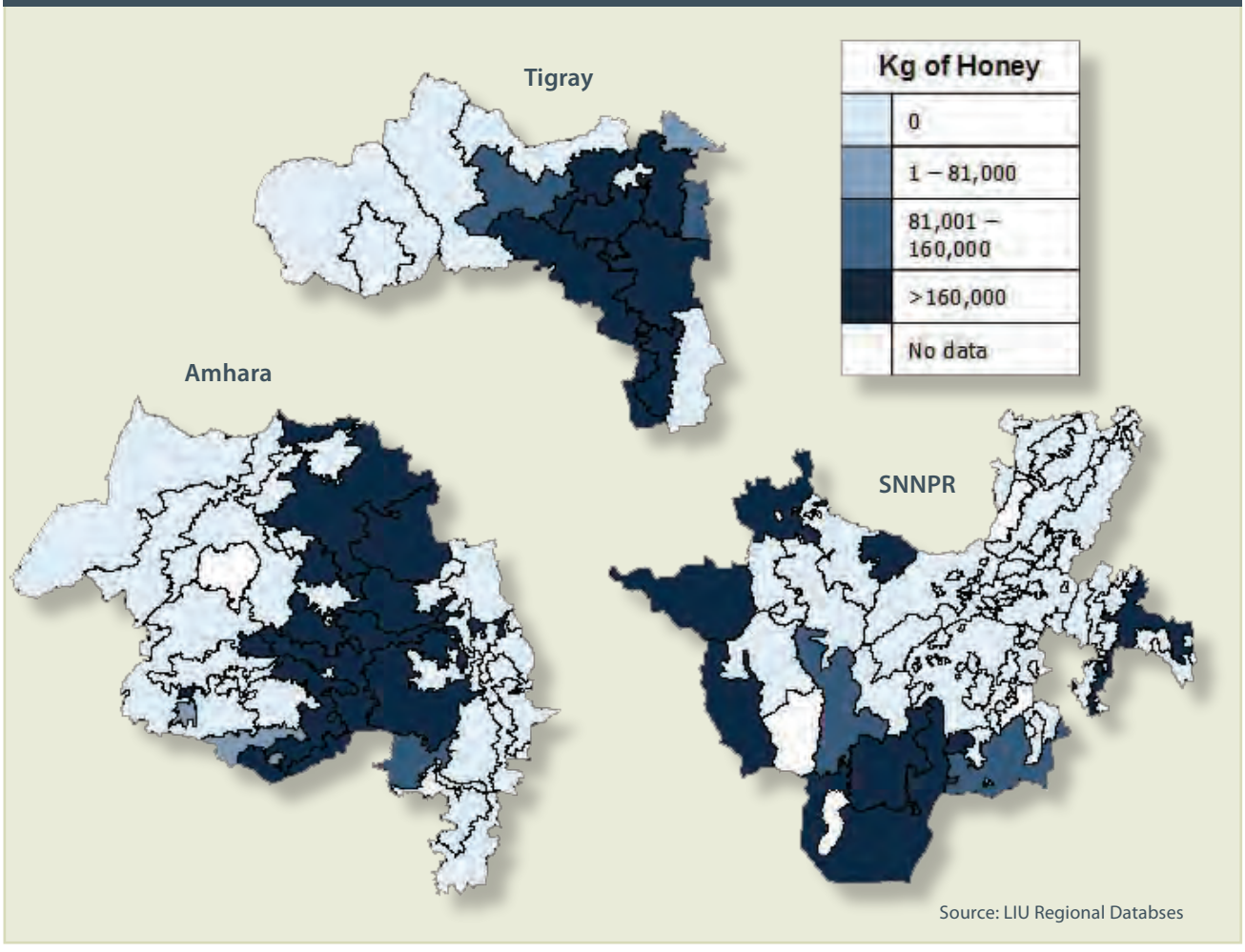
In addition, the LIU data, when summed up, provides an important outreach tool for presenting evidence that otherwise risks becoming lost in the realm of anecdotal reports. One example of this is with honey production, which is often so small in scale at the household level that on its own it represents very little income. However, with domestic honeybee stocks in the United States dying off since 2004, and upwards of 90 percent of commercial hives affected by colony collapse disorder,[11] there is a clear demand for alternative supplies of honey. The LIU regional databases help us understand the aggregate supply of honey, summed up from thousands of household interviews, hinting at the possibility of growth given appropriate technological inputs and highlighting an area of potential development investment. (See Figure 23.)

Reducing vulnerabilities & increasing resilience

It is particularly important in the context of disaster risk reduction to point out that some measures that aim to increase household income can actually put beneficiary households at increased risk in the short term. Many poorer households reduce their overall vulnerability to hazards by relying on a diverse set of smaller income sources. Typically, poverty reduction programs result in a transfer of labor and resources to new, more lucrative sources of income; but these sources may also have higher exposure to hazards, and require a more concentrated focus on fewer options putting households at increased risk should these sources be affected in a bad year. The trick, therefore, is to find options that increase household wealth, while at the same time reducing vulnerabilities to known hazards.

The Livelihood Impact Analysis Sheet (LIAS) enables users to analyze the potential effect on households of different changes in external circumstance. By modelling impacts at the household level, the LIAS can help to evaluate the effectiveness of proposed interventions, encouraging a better fit between problem and solution.

Figure 23: Aggregate Honey Production (kg) per Livelihood Zone



Source: LIU Regional Databses

Considering the household impact of Other Food Security Program (OFSP) Packages

With every new investment there comes a cost; and this cost must be carefully weighed up against the ability of households to pay. In other words, it takes money to make money, and if households are not able to generate the money to develop new livelihood strategies, then this needs to be factored in up front in the design of the program.

A good example of this comes from a recent World Bank analysis of the effectiveness of Other Food Security Program (OFSP) packages. (See Figure 24.) This analysis used LIU Outcome Analysis to compare the income generated by new assets – such as oxen - with the costs required to maintain and sustain them. The analysis highlighted the point that the "cash income required to protect household assets and livelihoods varies across project years (and across packages) according to the inputs required to sustain the OFSP packages. **The cost of protecting liveli-**

hoods is higher, for instance, during years that households must care for oxen while they are fattened before they are sold. This means that households must generate more income during these years than if they had not taken on the packages."[12] What this means is that unless households are provided with the means to cover their pre-package livelihood costs, as well as their post-package costs, they will almost certainly be facing a few very difficult years at best, and substantially increased debt at worst. Add to this [13]the unforeseen effects of a drought or market disruption and 'beneficiary' households may find themselves facing serious food shortages during the years when investment costs are highest.

The LIU analysis shows that the productivity of any one asset (e.g. and ox) varies by livelihood zone; credit repayment terms should take these differences into account.

Evaluating Credit Packages

These same issues of balancing increased risk with expanding income are central to designing safe and effective credit programs. This is especially true when one considers the fact that credit given is really debt received. Repayment of debt in a world of complex shifting natural and man made hazards and in the context of multiple livelihood systems, each with its own productivity level, can create an unfortunate cycle of impoverishment if not managed carefully.

Information on the amount of income that can be derived from different types of investment (the rate of return) is essential for the design of practical and low risk credit programmes. The LIU data and analysis is useful in this regard because it helps set out just what income can be expected from different types of inputs given different livelihood systems. (See Figure 25.) In the example below, LIU Scenario Analysis was used to compare the rates of return from an investment in small stock for three livelihood zones in Tigray. The effect of rainfall failure during the repayment period was factored in as an additional analysis parameter. The main conclusions are that:

- Each livelihood zone needs its own repayment schedule, because every livelihood zone has its own level of productivity (and therefore timetable for repayment);
- Repayment periods may need to be extended if production and or/market conditions change as a result of one or other hazard (e.g. rain failure);
- Careful assessment and monitoring of livestock production and market conditions is required to assess the ability of borrowers to repay their loans.

Conclusion

The LIU's livelihood databases contain the most comprehensive and extensive set of national household economy data in the world. They have been developed through an intensive and

dedicated effort on the part of the Government of Ethiopia. Because of this data and its increasing integration into the Government's early warning system, it is now possible to provide highly sophisticated and accurate early warning of food and livelihood crises in Ethiopia. As discussed throughout this document, the nature of this information is broad enough to encourage numerous development, social protection, and emergency planning uses of the data and analysis in addition to its proven early warning function. Continued investment in capacity building and the development of wider sets of applications is essential now to ensure that the great strides made in this project continue to make an important difference in the lives of people in Ethiopia.

Figure 24: Estimating the Household Impact of OFSP Packages

Scenarios modelling the impact of different combinations and types of Other Food Security Program (OFSP) household package have been developed for selected livelihood zones in Amhara, Oromiya, Tigray, and SNNP regions using LIU baseline data and data collected through interviews with OFSP beneficiaries in November to December of 2008.

The impact of a range of different combinations of OFSP packages is summarized in the figure above. What the figure shows is that the income gained from a package is not a straight forward calculation. This is because what is 'netted' by a household depends on both:

1. the amount of income generated by that package, which varies by livelihood zone, and associated productivity levels. (This is where the LIU data can help.)

2. the amount of money that needs to be spent in order to maintain that package. So, for instance, cattle cost significantly more to maintain than goats or sheep. If the investments are not made to maintain the cattle, productivity declines, and the risk of death increases.

Thus, a poor household in Arsi Barley and Wheat (ABW) Livelihood Zone in Oromyia who takes on a single ox fattening package sees only marginal gains and arguably little chance to build assets. Households who take on an ox and complementary packages, such as shoat production or irrigation, see greater increases in total income, and more chance to build assets because the complementary packages help them earn the cash they need in the medium term to maintain the ox.

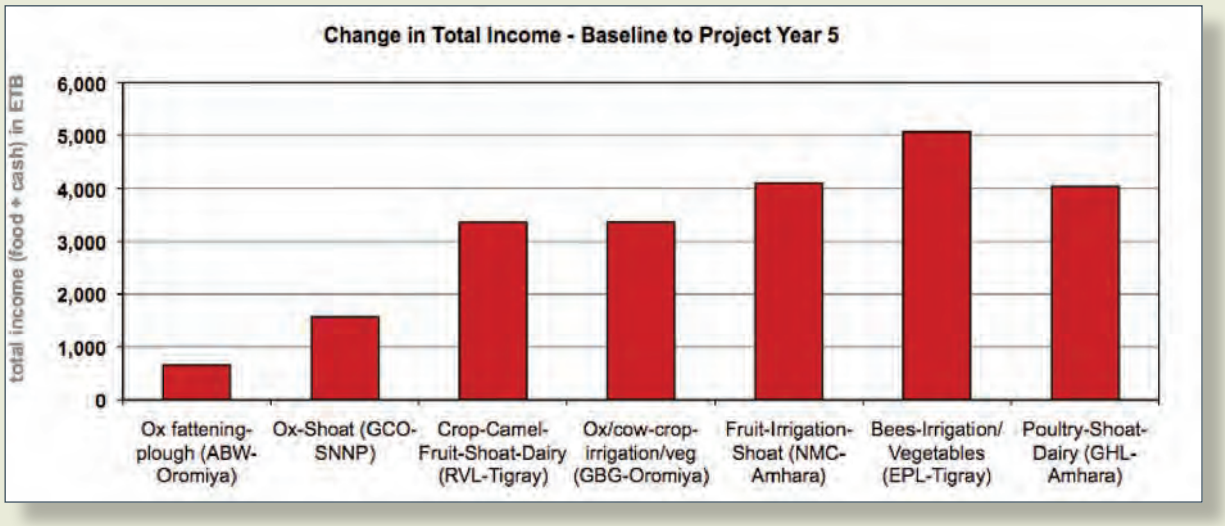
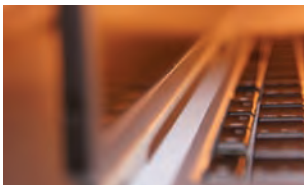


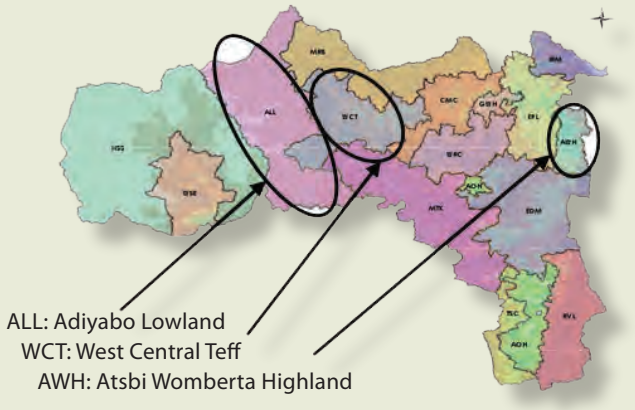
Figure 25: Credit Given is Debt Received

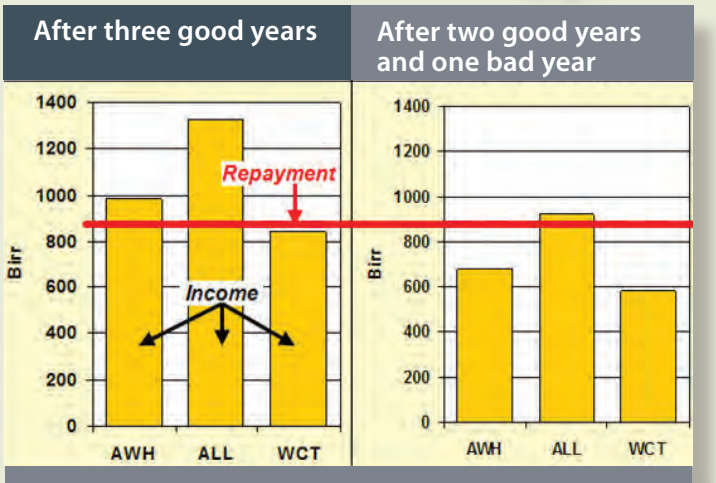
This example shows that the ability to repay credit varies by livelihood zone, and by year type.

The graphs below show a scenario in which a poor household in each of the three zones analyzed takes an 800 birr loan to purchase 4 female goats/sheep. The total repayment period is 3 years, and interest is 9% of the initial loan. This is similar to the type of loan offered to poor households in the LIU baseline reference year.



Livelihood Zones Included in this Analysis





What is being graphed?
Total income from sale of goats /sheep over the 3-year loan period compared with the total loan repayment amount

The results of the analysis show that the ability to repay varies significantly by livelihood zone (see graph on left). For some zones nearly all the income earned in 3 years is required to repay the loan – indicating that the repayment period is too short. In addition, just one bad year in three will make it very difficult for households in many livelihood zones to repay their loans (see graph on right). In this case, the repayment period will need to be extended.

ANNEX: Tools for Using the Livelihood Baseline Data

The LIU has developed three tools to facilitate various types of analysis using the livelihoods baseline data. These are:

1) **The Livelihoods Baseline Databases.** There is one database per region. Data are presented by sector or theme (e.g. crop data, livestock data), by livelihood zone and by wealth group.
2) **The Baseline Data Mapping Tool.** This tool facilitates the mapping of the livelihoods baseline data. Map preparation involves three steps:
   a) Extract the data from the database (uses MS Excel)
   b) Prepare the map (uses the ESRI ArcView program)
   c) Publish the map (uses MS Word)
3) **The Livelihoods Impact Analysis Spreadsheets (LIASs).** These can be used to analyse the impact of various hazard on local livelihoods. The spreadsheet makes use of the household economy analytical framework (HEA) to estimate hazard impacts at household level. Three types of data are used for the analysis:
   a) Livelihoods baseline data, i.e. data on baseline food, income and expenditure
   b) Coping strategy data, i.e. estimates of the amounts of additional food and cash income that can be accessed to help deal with a hazard,
   c) Hazard data, i.e. data that defines the problem, including changes in crop and livestock production compared to the baseline, changes in market prices, etc.

Over a period of three decades there has been a series of initiatives to improve the system and its information, several with long-term donor support

a) The Regional Livelihood Databases

The regional databases prepared by the LIU project contain all the livelihoods baseline data collected by the project for each region. There is one database per region. The database is stored in an MS-Excel spreadsheet that also contains the procedures for preparing the data for mapping (see section b)). The database contains two types of sheet:

- **Sheets beginning 'DB_'** contain the livelihoods baseline data for crops (DB_Crops), livestock (DB_livestock) etc.
- **Sheets beginning 'Map_'** contain the procedures for preparing the data for mapping (e.g. Map_Crops) etc. (see section b)).

Annex Table 1: Types of Data Stored in the Database	
Sheet title	**Contents**
DB_WB	**Wealth breakdown & asset data.** Percentage of house-holds in each wealth group. Data on land, livestock and other asset holdings, by wealth group. The focus is on productive assets, so items such as ownership of radios, type of housing, sanitary facilities etc. are not included. 'Other' assets in the database include beehives, trees and perennial crops..
DB_Summ	**Summary of food, cash income and expenditure.** Total income/expenditure, with a breakdown by source. Further details of each source can be found in the sheets on next page.
DB_Crops	**Crop production & sales.** Detailed information for each crop.
DB_Livestock	**Livestock production & sales.** Detailed information for each type of livestock and livestock product.
DB_Other Food	**Other food income (payment in kind, food aid, etc.).** Detailed data for each food source..
DB_Other Cash Income	**Other cash income (labour, self-employment, etc.).** Detailed data for each income source.
DB_Expenditure	**Expenditure.** Detailed data for each item of expenditure.

Types of Data Included in the Database

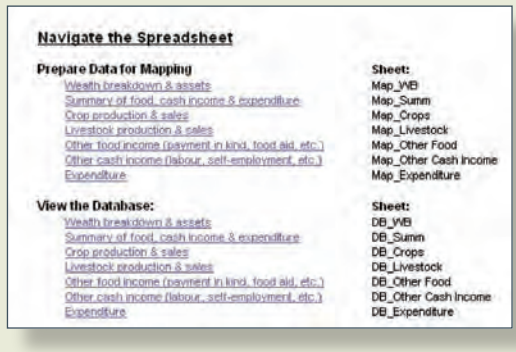
The types of data collected, and where they can be found in the database, are listed in Table 1. Table 1 also provides guidance on how to interpret a blank cell or blank data in the database. In the first two sheets (DB_WB and DB_Summ), a blank cell means that a particular item of data is missing, whereas in the remainder of the sheets, a blank cell can be interpreted as meaning zero.

ML: this is too much detail – I deleted the column from the table too.

Over a period of three decades there has been a series of initiatives to improve the system and its information, several with long-term donor support

An easy way of navigating around the database is to go to the 'Guide' sheet, which provides hyperlinks that will help you find your way around.

Clicking on the blue hyperlink will take you directly to the sheet indicated to the right of the hyperlink.



Navigate the Spreadsheet

Prepare Data for Mapping	**Sheet:**
Wealth breakdown & assets	Map_WB
Summary of food, cash income & expenditure	Map_Summ
Crop production & sales	Map_Crops
Livestock production & sales	Map_Livestock
Other food income (payment in kind, food aid, etc.)	Map_Other Food
Other cash income (labour, self-employment, etc.)	Map_Other Cash Income
Expenditure	Map_Expenditure
View the Database:	**Sheet:**
Wealth breakdown & assets	DB_WB
Summary of food, cash income & expenditure	DB_Summ
Crop production & sales	DB_Crops
Livestock production & sales	DB_Livestock
Other food income (payment in kind, food aid, etc.)	DB_Other Food
Other cash income (labour, self-employment, etc.)	DB_Other Cash Income
Expenditure	DB_Expenditure

There are two sets of hyperlinks. The first (top) set of links will take you to the sheets used to prepare the data for mapping. The second (lower) set of links will take you to the database itself. On each of the sheets you will find a further hyperlink labelled 'Return to Guide'. Clicking on this will take you back to the 'Guide' sheet.

The figure to the right shows the top left-hand section of the 'DB_WB' (wealth breakdown and assets) sheet for Tigray. All the sheets are laid out in the same way. Each column contains one variable. Each rows contains data for one wealth group in one livelihood zone.

	B	C	D	E	F	G
2	**Wealth breakdown & assets**				**Assets**	
3	Return to Guide				**Land**	
4	**LZ**	**WG**	**%HHs**	**HH size**	**owned**	**cult.**
5	ALL	VP	17.5%	5	8.5	4
6	AOH	VP	15.0%	5	0.7	0.1
7	AWH	VP	25.0%	6.5	2	1.5
8	CMC	VP	17.5%	5	1.75	0.5
9	EDM	VP	20.0%	6	3.5	0.5
10	EPL	VP	20.0%	5.5	2	0.5
11	GWH	VP	17.5%	5	1	0.6
12	HSS	VP	20.0%	5	1.75	1.75
13	IRM	VP	17.5%	5.5	0.2	0.1
14	MRB	VP	20.0%	6	5	1
15	MTK	VP	20.0%	8	5	2
16	RVL	VP	17.5%	4.5	5.5	1.5
17	TSC	VP	25.0%	5.5	2.5	0.75
18	WCT	VP	20.0%	6	4	1
19	WRC	VP	22.5%	5.5	3	1
20	WSE	VP	20.0%	5	1	1.5
35	**Wealth breakdown & assets**				**Assets**	
36					**Land**	
37	**LZ**	**WG**	**%HHs**	**HH size**	**owned**	**cult.**
38	ALL	P	30.0%	5	6.5	6.5
39	AOH	P	27.5%	6	0.7	0.3
40	AWH	P	32.5%	6	2	1.75
41	CMC	P	30.0%	6	2.25	2.25

Data for the 'very poor' is grouped together at the top of the sheet, with data for the 'poor', the 'middle' and the 'better-off' listed below . [2]

An overall average across all wealth groups is given at the bottom of the sheet. This is a weighted average of results for all four wealth groups, and is labelled 'WA' .[3]

	B	C	D	E	F	G
134	**Wealth breakdown & assets**				**Assets**	
135					**Land**	
136	**LZ**	**WG**	**%HHs**	**HH size**	**owned**	**cult.**
137	ALL	WA		6.1	8.8	8.9
138	AOH	WA		6.4	0.8	0.7
139	AWH	WA		6.1	2.2	2.2
140	CMC	WA		6.0	2.6	2.6

2 Note: For a number of LZs in SNNPR, data are available for 3, not 4, wealth groups. For these LZs, it is the 'very poor' group that is missing, and the 'poor' therefore represents a combination of 'very poor' and 'poor' households. For this reason, data for 'poor' households are listed at the top of SNNPR sheets, and data for the very poor at the bottom.
3 The weighted average takes into account the different percentage of households in different wealth groups, in particular the lower percentage of households in the 'very poor' and 'better-off' compared to the 'poor' and 'middle'.

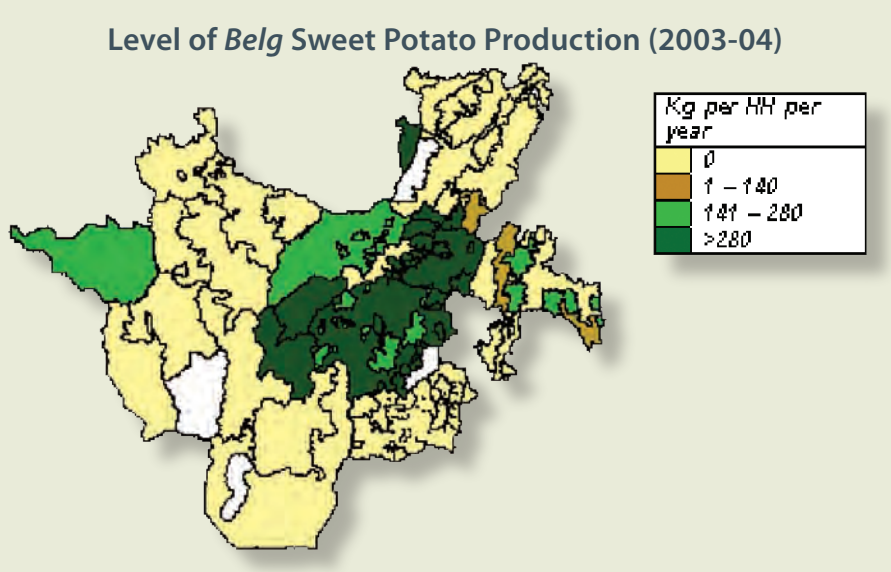
b) The Livelihood Mapping Tool

The mapping tool was developed to provide a simple procedure for mapping the livelihoods baseline data collected by the LIU. Large amounts of data are available and mapping is a useful way of presenting the results in a simple fashion that allows comparison of different areas. The geographical unit at which the LIU collects data is the livelihood zone. The maps generated by the mapping tool are therefore maps by livelihood zone, not by administrative unit (e.g. woreda), although there is an option to overlay administrative boundaries upon the livelihood zone results.

The idea behind the development of the mapping tool was that:

- It should be as simple as possible (i.e. not requiring a detailed knowledge of GIS software), and therefore of use to technicians working at various levels in government and other organisations
- It should allow these technicians to quickly generate answers to questions about livelihoods that may arise from time to time in Ethiopia and other countries for which household economy baseline data exist.

Annex Figure 1: Mapping *Belg* Sweet Potato Production in SNNPR



Note: Blank shapes - no data (e.g. National parks, HMZ LZ, ORF LZ)

An example of the types of map that can be prepared using this mapping tool is given in **Annex Figure 1**. This uses belg season sweet potato production in the SNNP Region of Ethiopia as an example. It was prepared in order to better understand which areas of SNNPR would be most affected by a failure of sweet potato production in 2008.

There are two types of map. The first indicates the existence of belg season sweet potatoes. The second indicates the level of production in the baseline or reference year (2003-04).

Three computer programs are required for the procedures described here to work. These are:

- MS Excel (to analyse the data in the livelihoods baseline database)
- ArcView GIS 3.2 (to map the results).
- MS Word (to publish the results, e.g. to include them in a report).

A separate database and map is being developed for each of the regions of Ethiopia. The The databases and maps for SNNPR, Tigray, Amhara, Somali and Afar have been completed.[4] The LIU Database and Mapping Tool Training Manual includes – simple step step-by by-step instructions. A similar mapping tool is also being developed to map current seasonal assessment hazards and results.

Over a period of three decades there has been a series of initiatives to improve the system and its information, several with long-term donor support

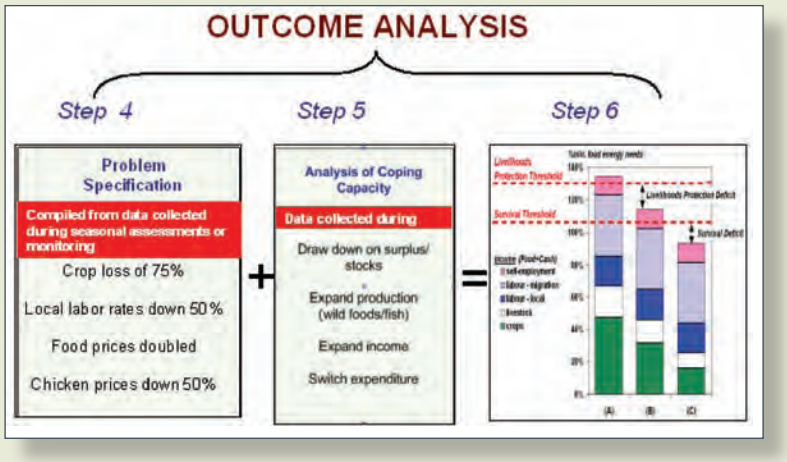
b) The Livelihoods Impact Analysis Sheet (LIAS)

The livelihoods impact analysis spreadsheet (LIAS) is the basic tool used for outcome analysis. This is the process by which data on a current problem is 'filtered' through the baseline and coping strategy data to estimate its likely impact on local livelihoods. The problem is defined primarily in terms of changes in production (e.g. of crops and livestock) and changes in market conditions (market prices). Since the objective of the outcome analysis is to provide practical answers to practical questions, outcome is measured in terms of the number of people facing a deficit (either a survival deficit or a livelihoods protection deficit) and the size of that deficit. This is critical information to help decision-makers decide ***what*** type of assistance is required, ***how much*** and for ***how many*** people. Answers to questions about ***where*** assistance is required and ***who*** requires it come from the analysis of which livelihood zones (LZs), which wealth groups and which districts have the largest deficits. And the question of ***when*** assistance is required is addressed by the seasonal analysis generated by the LIAS.

Outcome Analysis represents the last 3 steps in HEA analysis (Annex Figure 2). Three types of quantitative data are combined to predict outcome; data on baseline sources of food and cash, data on the hazard (or problem) and data on coping strategies.

4 Data for Somali and Afar regions were collect by SC-UK in collaboration with the DPPA.

Annex Figure 2: The Livelihoods Impact Analysis Spreadsheet (LIAS) - the Tool used to Perform the Outcome Analysis



Baseline + Hazard + Coping = Outcome

A single LIAS can be used to run the outcome analysis for up to 20 woredas and 12 LZs, and for a maximum of 4 wealth groups per LZ. Because of the large number of woredas in Ethiopia, more than one LIAS is required per region. Two are required for Tigray and nine for SNNPR, for example. In practice this is not too serious a problem, since several assessment teams are required to cover each region, and each team works with the 1-2 LIASs that are specific to the parts of the region they are assessing.

Crop production and market price data are typically available by woreda, and this is the level at which data are entered into the LIAS. Outputs are also generated by woreda, since this is the primary level both for geographical targeting and for practical implementation. Within the LIAS, however, the actual analysis is always done by livelihood zone within each woreda. This means that – where disaggregated data are available - a separate problem can also be specified for each LZ within each woreda. And – if required – separate outputs can be generated by LZ and by woreda.

The main strengths of the LIAS are that:

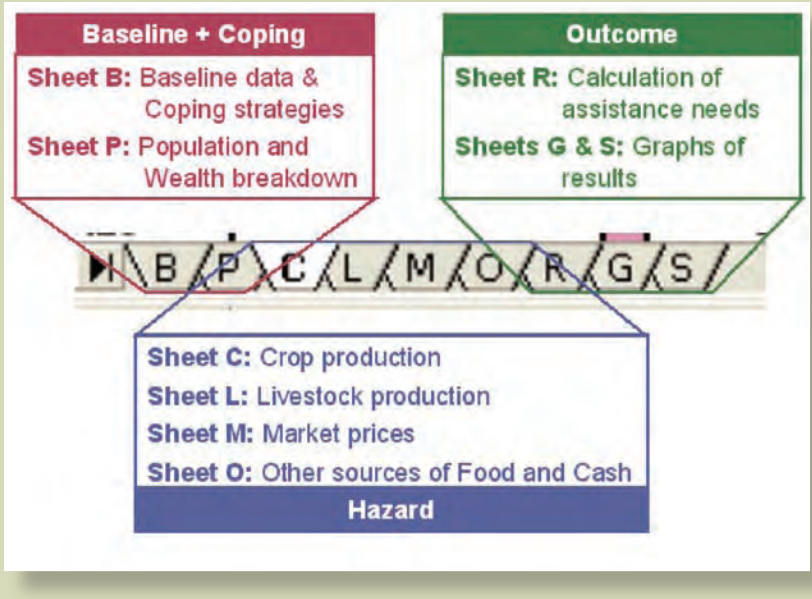
1) It provides a standardised and objective method for estimating needs down to woreda level (and below, if required),

2) It facilitates multi-factorial analysis, taking proper account of all the various aspects of an existing problem,

3) It generates a transparent analysis that is open to pier review and revision, if necessary.

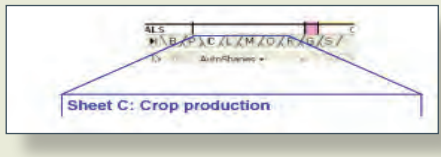
Over a period of three decades there has been a series of initiatives to improve the system and its information, several with long-term donor support

Annex Figure 3: How Different Sheets of the LIAS Relate to Various Steps in the Outcome Analysis

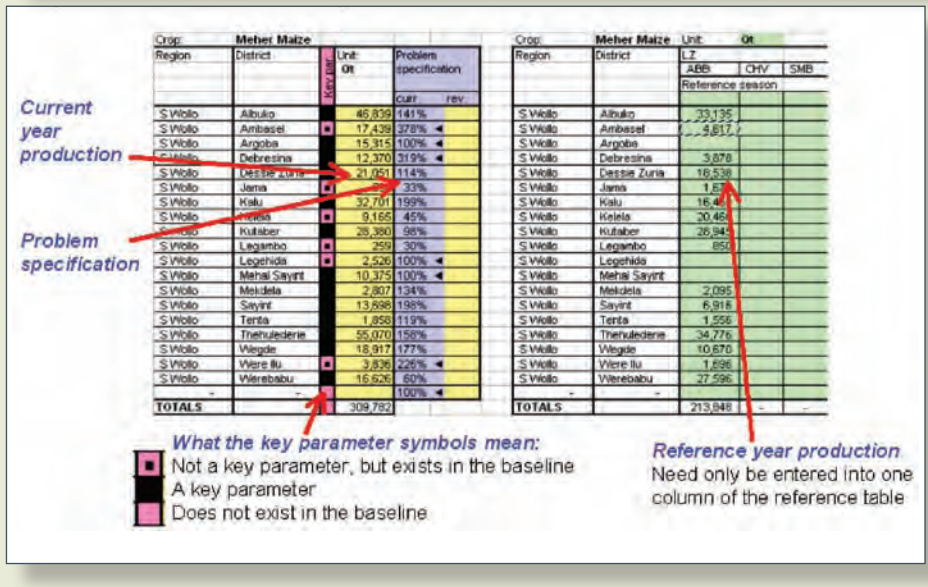


Baseline + Hazard + Coping = Outcome

Entering Crop Production Problem (Sheet C)



On **Sheet C**, crop production data is entered for the current and reference years, and the IS calculates the problem specification automatically



The remainder of this section is devoted to a brief tour of the LIAS. The LIAS has 9 individual sheets. Two of these contain the baseline and coping strategy data, 4 are used to enter data on the hazard (or problem) and 3 provide different types of output.

Crop Production and Market Price Data (Sheets C & M)

On Sheet C, crop production data is entered for the current and reference years, and the LIAS calculates the problem specification automatically (see previous page)

The LIAS is designed to help the user to focus on the most important data (i.e. data on key parameters[5]) and to cross-check and verify the data as much as possible. For example, key parameters are identified for each district, and indicated by a large black square in the pink-shaded key parameter column (see previous page).

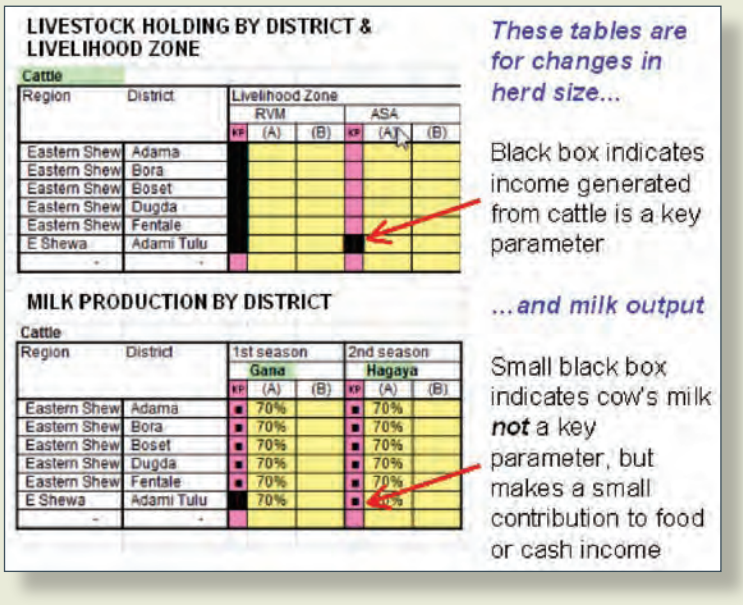
The problem specification is calculated by comparing current with reference year production. Figure 4 indicates how this is done, and how the problem specification is used to estimate changes in food and/or cash income at household level.

5 A key parameter is a source of food or cash income that contributes significantly to the total, so that a reduction in access to that one source may have a significant effect on total income.

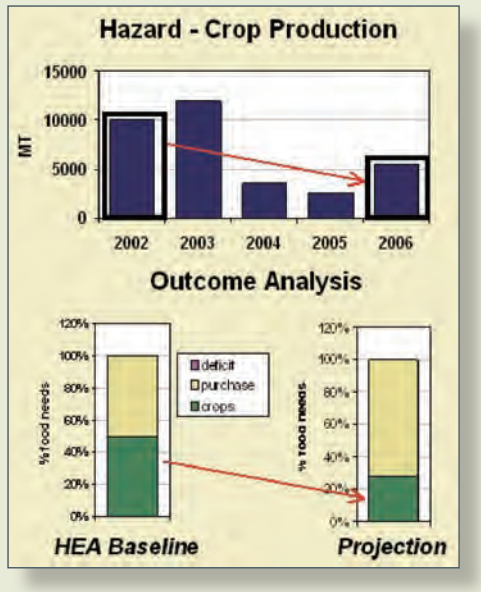
Livestock Production Data (Sheet L)

Estimates of changes in herd size and in milk production are entered into the LIAS on Sheet L (see figure to the right).

Because current and reference year data are rarely available for livestock, estimates of the problem specification are entered directly into the sheet in percentage terms.



Annex Figure 4: How Current and Reference Year Data are Used to Project Outcome

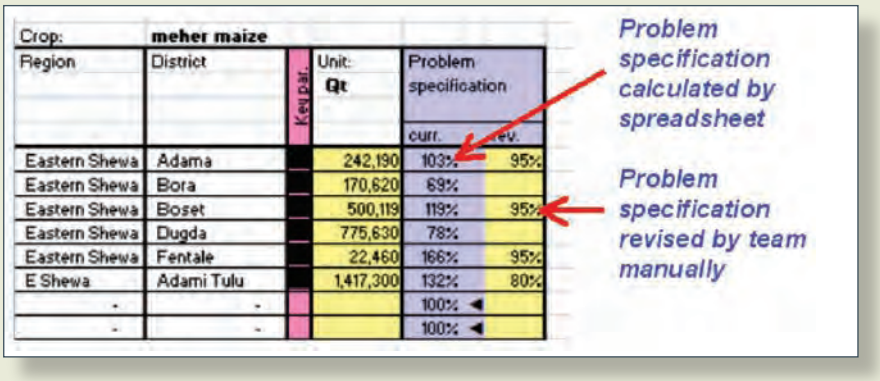


Changes at woreda-level are used to estimate changes in crop production at household level.

In this example, poor households derive 50% of their annual food needs from their own production. This is assumed to drop to 25% if woreda-level production falls to half of what it was in the reference year.

Whether or not they face a deficit depends upon their ability to increase purchases. In this case, the analysis indicates they have access to other income sources and can make up the deficit via purchase.

Using the blue-shaded 'problem specification' column, the user can compare the results for neighbouring woredas and revise one or more figures where this is considered necessary (e.g. if the result for one district is very inconsistent with that of its neighbours (see figure below).



Current and reference year price data are used to calculate the market price problem in a very similar way to the crop production problem. The layout of Sheet M is therefore very similar to that of Sheet C.

Seven different categories of market price data can be entered into the LIAS (see list to the right).

Categories of Market Price Data entered into the LIAS:

- Staple foods
- Crops sold
- Livestock & livestock products
- Labour
- Firewood, charcoal, etc.
- Non-food items
- Inflation

Other Aspects of the Problem (Sheet O)

Information on changes in access to other sources of food and cash (e.g. remittance income, local or migratory labour, firewood sales etc.) are entered into Sheet O. The format is similar to that for Sheet L, with the estimated problem specification being entered directly into the spreadsheet.

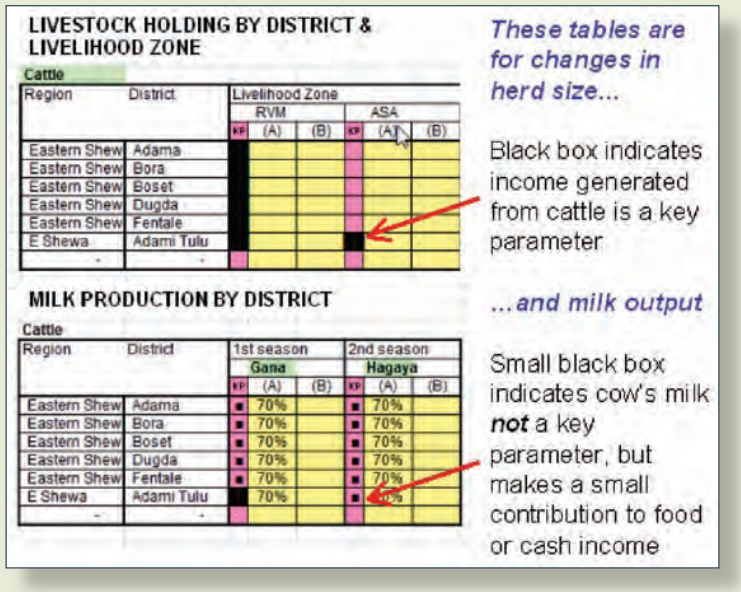
- provide results by livelihood zone within the woreda
- distinguish between the survival deficit (which is essentially a food deficit) and the livelihoods protection deficit (mainly a shortage of cash to cover non-food expenditures), and can therefore help to identify the purpose of the intervention
- analyse how many people require different amounts of assistance (i.e. the duration of assistance).

In conclusion, the LIAS is a user-friendly tool that allows the analyst to carry out complex livelihoods-based analysis simply and quickly, making the best use of available hazard data, and generating information that feeds directly into decision-making at regional and woreda levels.

Results (Sheet R)

Sheet R presents tables of results. The most basic result is the number of people facing a deficit, by woreda (see figure to the right).

At present, data from Ethiopia are summarised to conform to the traditional appeal process, i.e. results are expressed in terms of the population requiring food for 6 months, by woreda. However, the LIAS can be used to provide more detailed information than this.



It can:

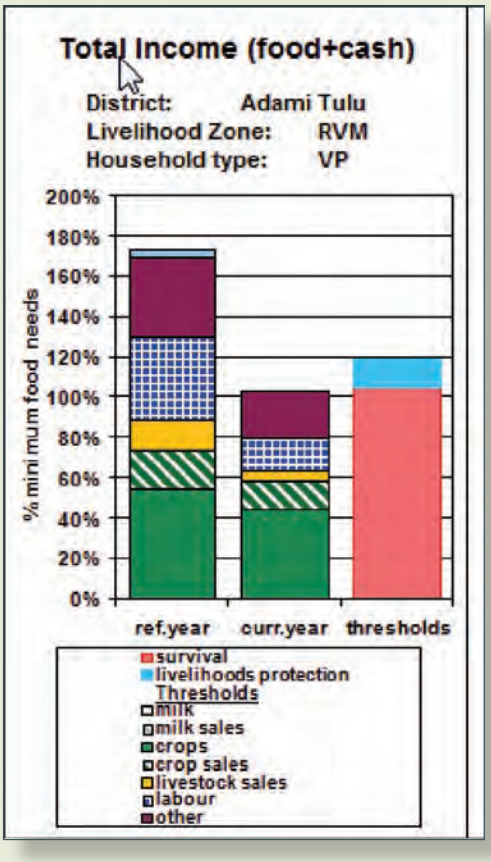
- provide results by livelihood zone within the woreda
- distinguish between the survival deficit (which is essentially a food deficit) and the livelihoods protection deficit (mainly a shortage of cash to cover non-food expenditures), and can therefore help to identify the purpose of the intervention
- analyse how many people require different amounts of assistance (i.e. the duration of assistance).

Graphs (Sheet G)

This provides the user with an opportunity to view selected results graphically. The first step is to select the district, livelihood zone and wealth group to be graphed. A range of graphs is then displayed. These provide a detailed analysis of changes in total income between the baseline and the current year.

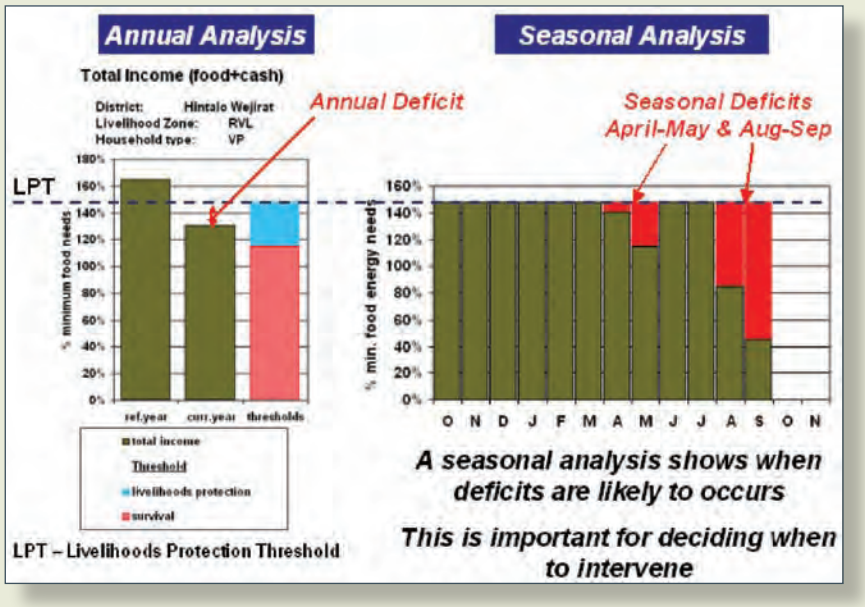
The example to the right shows an analysis of total income (i.e.food plus cash) for very poor households from one LZ of Adami Tulu district. These households face a livelihoods protection deficit, i.e. their total income is currently below the livelihoods protection threshold (in light blue), but not below the survival threshold (in pink). What the graphs show is that the main reason for this is not a failure of crop production (shaded green), but a loss of purchasing power, with large reductions noted in total income from livestock sales, from labour and from other sources.

The importance of the graphs is therefore that they provide the story behind the statistics.



Seasonal analysis (Sheet S)

The final sheet of the LIAS provides a seasonal analysis of deficits, showing when deficits are likely to occur. This is obviously important in terms of helping decide when it is best to intervene.



ENDNOTES

1 See "UN/ISDR & UN/OCHA, 2008. Disaster Preparedness for Effective Response Guidance and Indicator Package for Implementing Priority Five of the Hyogo Framework. United Nations secretariat of the International Strategy for Disaster Reduction (UN/ISDR) and the United Nations Office for Coordination of Humanitarian Affairs (UN/OCHA), Geneva, Switzerland, 51+iv pp

2 For more information on each of these steps, and what is entailed in obtaining the required information, please see the Practitioners' Guide to HEA, which can be found at **http://www.feg-consulting.com/resource/practitioners-guide-to-hea**

3 The year selected to be the reference year is a year in the recent past that was not bad and not exceptionally good.

4 The SNNPR baselines were completed in the FEWSNET pilot using the same methodology.

5 See Information Sheet Number 6: Livelihood Integration Unit. Baseline data collection methodology for further details on cross-checks and the LIU Guide to Baseline Analysis and the Baseline Storage Spreadsheet prepared by FEG Consulting. December 2006.

6 This is different from the statistical average of all poor households. If a small number of poor households grow vegetables for sale, then, statistically, the average poor household would have a small amount of income from vegetable sale. The problem with a statistical average is that it adequately represents neither the majority of households (that have no vegetable income) nor the minority that have a considerable amount of vegetable income.

7 The difference in reference years from one region to another should be borne in mind when comparing the situation in the different regions. This applies particularly to market price data, because there have been large increases in prices in recent years. Prices in the SNNPR database are therefore lower than those for other regions. In the outcome analysis, these kinds of differences in baseline year are 'smoothed' through the application of current year hazard information, which is relative to the reference year. So, for instance, the percentage difference in prices between the reference year and now will be greater in SNNPR than it is in Amhara, where the baseline work was conducted more recently.

8 The CSA 2007 following the recent census puts the population at 74 million people.

In 1968 the population was only 25 million.

9 Source: LIU Tigray Regional Overview and Livelihood Zone Summaries

10 Deterioration in nutrition status is usually an outcome indicator, except where an effective nutrition surveillance system permits small changes in nutrition status to be detected early enough to provide an early warning. Nutrition status deterioration may reflect reduced access to food, ill-health or reduced caring eg in poor years when additional family members have to migrate in search of work.

11 **www.baltimoresun.com/news/nationworld/nation/wire/sns-ap-disappearing-bees**

12 Assessing the Impact of Other Food Security Program (OFSP) Household Packages on Household Livelihoods: LIU Database Scenario Analysis, Lorraine Coulter, FEG Consulting, December 2008