Senegal Scenario Analysis 2011-2012

Two Rural Livelihood Zones

FINAL

Assessed Using the Household Economy Approach (HEA)
June 2012

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[1] This report has been adapted from ***"Mauritania Scenario Analysis 2011-12 Report"***, prepared by Alexandra KING, Food Economy Group (FEG) for Save the Children UK, 2012."

CONTENTS

1 SUMMARY

This report presents the results of a scenario analysis exercise carried out in Dakar in the period 19-21 June 2012 for two rural livelihood zones in Senegal. This was carried out as part of the ECHO-funded project "Strengthening Sahelian food security stakeholders in Household Economy Approach in view of crises mitigation 2012". The Secrétariat Exécutif du Conseil National à la Sécurité Alimentaire (SE/CNSA) organised the workshop, which included participants from Commissariat à la Sécurité Alimentaire (CSA), Agence Nationale de la Statistique et de la Démographie (ANSD), Direction de l'Analyse, de la Prévision et des Statistiques agricoles (DAPS), Direction Régionale du Développement Rural (DRDR) de Matam, Direction Régionale du Développement Rural (DRDR) de Tambacounda, Direction de l'Elevage (DIREL), Direction des Eaux, Forêts, Chasse et Conservation des Sols (DEFCCS).

The exercise used HEA (Household Economy Approach) baselines carried out by Save the Children UK in two rural livelihood zones in Senegal in 2011. The baselines and the scenarios analysed cover parts of the following livelihood zones (LZ):

- LZ3: Senegal River Valley/Outmigration and Remittances
- LZ13: Agro-Sylvo-Pastoral/Food crops

The period or consumption year covered by the **current analysis is October 2011 – September 2012** for the two livelihood zones. The analysis is for one department (district) per livelihood zone, the district where the original HEA baseline was carried out: Matam for the LZ3 and Tambacounda for the LZ13.

Official monitoring data on crop production and prices was used for the definition of the current year problem. Where official information was not available, assumptions have been made based on a consensus amongst the workshop participants and their field experience. Each element of the scenarios analysed is clearly outlined in the report below and can be monitored and revised in future as additional information becomes available. In addition, other scenarios can be analysed if decision makers would like to understand vulnerability to different types of shock.

The performance of last year's agricultural season was poor. Staple food prices are high throughout the country in relation to **the reference year (October 2009-September 2010)** for which baselines information was gathered.

The following table summarises the results of the 2011-2012 scenario analysis. In Matam, no wealth group does likely face any deficit. However, in Tambacounda, the very poor and poor households are likely to face a livelihood protection deficit.

Summary of Outcome Analysis Results: Wealth Groups/Livelihood Zones Facing Deficits		
	Matam (LZ3)	**Tambacounda(LZ13)**
Very Poor	No deficits	Livelihood Protection Deficit
Poor	No deficits	Livelihood Protection Deficit
Middle	No deficits	No deficits
Better Off	No deficits	No deficits

In this analysis, a livelihood protection deficit represents an emergency situation whereby households cannot afford many basic things that they spent money on in the reference year, including education, health, inputs for agricultural and livestock production, and small quantities of clothes and non-staple foods. Faced with this situation, they may make a choice to purchase items in the livelihood protection basket in preference to staple food, thereby going hungry.

2 INTRODUCTION

Save the Children UK has received ECHO funding to implement a capacity building project called 'Strengthening Sahelian food security stakeholders in Household Economy Approach in view of crises mitigation 2012'. The project aims to provide quality information for national early warning systems and for NGOs and donors to prevent the food and nutrition situation worsening in households most at risk in 2012. This report presents the results of a scenario analysis workshop held in Dakar as part of this project in the period 19-21 June 2012 for two rural livelihood zones in Senegal. The Secrétariat Exécutif du Conseil National à la Sécurité Alimentaire (SE/CNSA) organised the workshop, which included participants from Commissariat à la Sécurité Alimentaire (CSA), Agence Nationale de la Statistique et de la Démographie (ANSD), Direction de l'Analyse, de la Prévision et des Statistiques agricoles (DAPS), Direction Régionale du Développement Rural (DRDR) de Matam, Direction Régionale du Développement Rural (DRDR) de Tambacounda, Direction de l'Elevage (DIREL), Direction des Eaux, Forêts, Chasse et Conservation des Sols (DEFCCS).

3 THE HEA METHODOLOGY AND THE SENEGAL LIVELIHOODS BASELINES

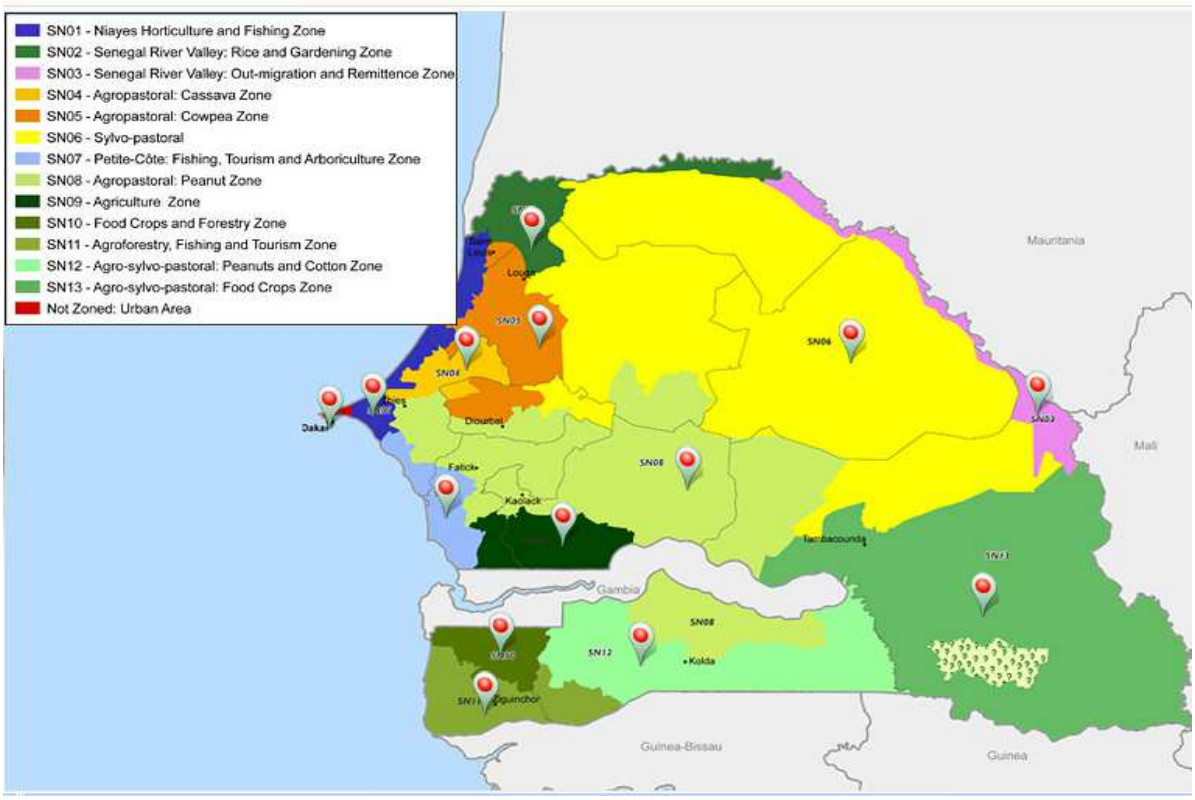
The method used to determine which areas will face deficits in the coming months and the magnitude and timing of these deficits is known as Household Economy Analysis (HEA). This is described briefly in this section, and in more detail in Section7.

An HEA-based current year assessment involves putting together two types of information:				
Livelihoods Baseline Data *(the context)*	+	Monitoring/Seasonal Assessment Data *(the changes)*	→	Analysis of Projected Situation and Intervention Needs *(the outcome)*

3.1 THE LIVELIHOODS BASELINES (THE CONTEXT)

There are three steps to preparing an HEA livelihood baseline. The first is the preparation of a livelihood zone map. In 2010, the United Nations WFP, the United Nations FAO, the Centre de Suivi Ecologique (CSE), the SE/CNSA and FEWSNET carried out a livelihood zoning in Senegal, which produced thirteen (13) rural livelihood zones (see next figure). SCUK, with funding from ECHO, has completed two livelihood baselines in Matam and Tambacounda. The Matam baseline, carried out for the district of Matam and focused in the "Diéri" strip, is included in the LZ3: Senegal River Valley/ Outmigration and Remittances. The Tambacounda baseline is carried out for the district of Tambacounda and is included mainly in the LZ13: Agro-Sylvo-Pastoral/Food crops. These baselines form a key input into this analysis, providing the context against which to evaluate the effects of changes.

Livelihood Zones of Senegal



The following table outlines the estimated rural population in the districts of Matam and Tambacounda in the reference year by the National Statistics and Demography Agency (ANSD). A growth rate of 3.2% per year has been used to estimate the rural population in the current year.

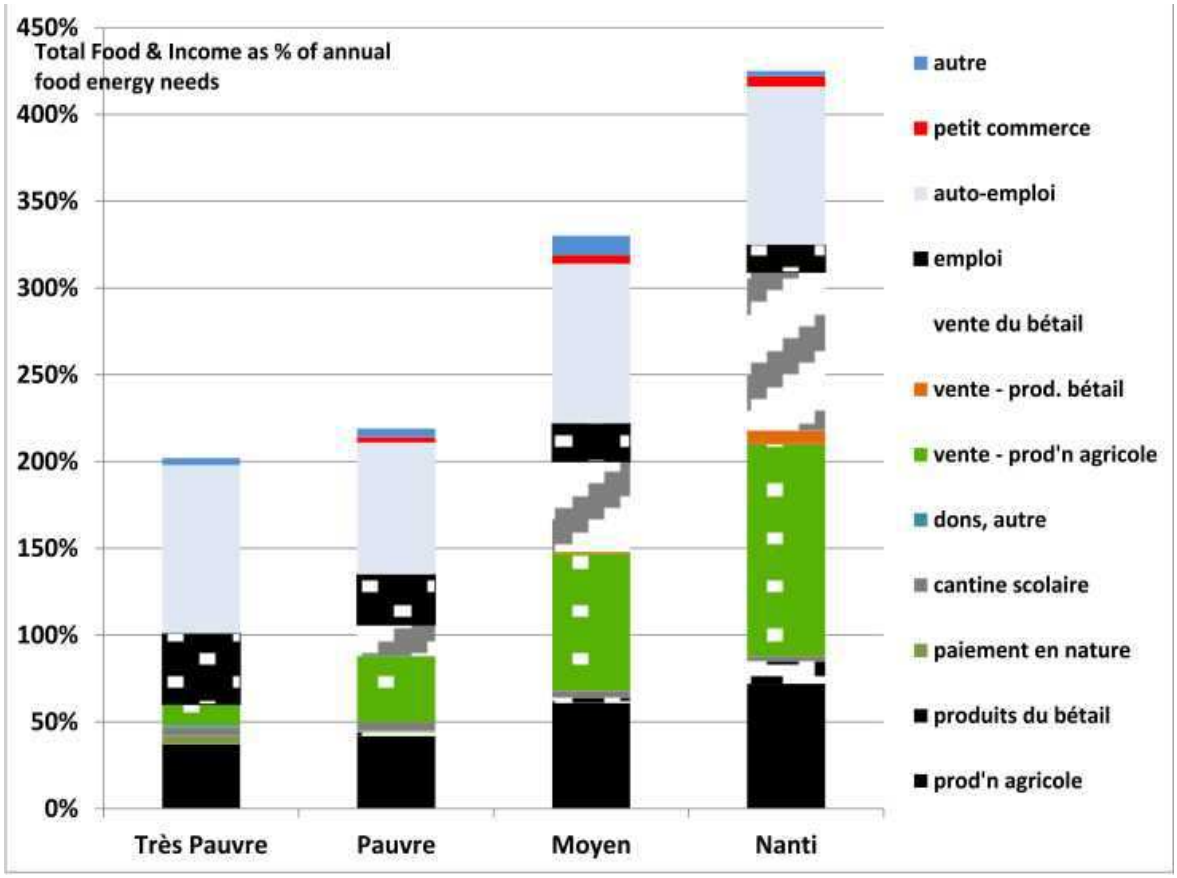
Table 1: Estimated rural population by district in the reference year	
Matam	229,313
Tambacounda	181,822

The second step in an HEA baseline assessment is the preparation of a wealth breakdown, by livelihood zone. The wealth breakdowns for the two livelihood zones fall into the following ranges (percentage of households)[2]: 25-30% very poor, 30-35% poor, 25-30% middle and 10-15% better off.

The third step is the quantification of all sources of food, income and expenditure – for each wealth group in each livelihood zone – for a defined 'reference' year. The reference year is the same for both livelihood baselines: **October 2009-September 2010.**

[2] The corresponding percentages of population are: 15%-20% very poor, 30%-35% poor, 30%-35% middle and 15%-20% better off. The percentage of households and the percentage of population are different because of differing average household sizes by wealth group.

Figure 1: Total Income (Food+Cash) by Wealth Group, Agro-Sylvo-Pastoral/Food Crops Livelihood Zone (LZ13), Reference year (October 2009-September 2010)



Total income for the four wealth groups in the Agro-Sylvo-Pastoral/Food Crops livelihood zone (LZ13) (October 2009-September 2010) is shown in Figure 1 above. For this graphic, total income has been calculated by adding together income from food and income from cash[3].

The following tables provide a brief summary of the characteristics of each livelihood zone.

3 Food income represents the total of food production that is consumed (crops, milk, meat, etc.) plus food payments in kind plus any wild foods that are collected and consumed. Cash income – in food terms – is the total of all sources of cash (e.g. crop sales, livestock sales, and casual labour) converted into its equivalent in food, based upon the prevailing price of staple food. Put another way, cash income is expressed in terms of the amount of staple food that could be purchased, if all available cash were used to purchase staple.

LZ3: Senegal River Valley /Out-migration and Remittances (Matam)		
Products consumed	rice, maize, millet.	The region of Matam, located in the north-eastern Senegal, is vast and encompasses three distinct agro-ecological zones: Walo, Diéri and Ferlo. The livelihood profile focused on households living in the Diéri, which is a slighty border of rainfed agriculture zone. In this area of Matam, staple cereals production furnishes an unusually small part of household food consumption for wealthier and poorer households alike. The most particular feature of the population of Matam-Diéri is their dependence on cash remittances. Very poor and poor households spent respectively 70% and 75% of their income on food in the reference year (2008-2009).
Products sold	sorghum, sorrel, melon grains.	
Types of livestock	goats, sheep, cattle, poultry.	
Food Sources	crop production and market purchase.	
Income Sources	livestock sales, crops sales, remittances, self-employment, casual labour, labour migration, petty trade.	
Hazards/Risks	drought, grain-eating birds, locusts.	

LZ13: Agro-Sylvo-Pastoral /Food Crops (Tambacounda)		
Products consumed	maize, sorghum, rice, millet, peanuts, wild fruit.	The region of Tambacounda is located in Senegal's far east area. The livelihoods profile field research was concentrated in the district of Tambacounda which is part of the vast sahelian belt. Cotton and peanut are the main cash crops, but their cultivation declined slightly over the years. Staple crops are millet, sorghum and maize. For middle and better-off households, livestock are a key form of savings on the hoof. The sale of forestry products is a critical source of income for all wealth groups. Very poor and poor households spent respectively 52% and 51% of their income on food in the reference year (2008-2009).
Products sold	cotton, peanuts and vegetables.	
Types of livestock	goats, sheep, cattle, poultry.	
Food Sources	crop production, wild food collection and market purchase.	
Income Sources	livestock sales, crops sales, self-employment, casual labour, labour migration.	
Hazards/Risks	bush fires, drought, floods and locusts.	

3.2 DEVELOPING PROBLEM SPECIFICATIONS FROM MONITORING DATA (THE CHANGES)

A problem specification is the translation of a shock or other change into economic consequences at household level. They allow you to mathematically link the change (positive or negative) to each relevant livelihood strategy. The process of developing problem specifications is one of critically examining the effects of each type of change on each source of food, income and expenditure. There can be quite a large number of these sources, not all of which are equally important, and it is therefore useful to identify the key sources for each wealth group and each livelihood zone. A key source (or key parameter) is here defined as one that contributes significantly to total food or cash income[4], so that a reduction in access to that one source may have a significant effect on total access. Table 2 below summarises the key parameters for the two livelihood zones in Senegal, based on their food and income sources in the reference year.

Table 2: Key parameters

Key parameters/Livelihood Zones→	**Matam (LZ3)**	**Tamba (LZ13)**
Cow's milk production		x
Cattle sales (herd size and prices)	x	x
Goat sales(herd size and prices)	x	x
Sheet sales(herd size and prices)	x	x
Millet production	x	x
Sorghum production	x	x
Maize production		x
Cowpeas production		x
Peanuts production and sales		x
Cotton sales		x
Vegetables sales		x
Agricultural labour	x	x
Casual labour (construction)	x	x
Labour migration	x	x
Remittances	x	
Self employment	x	x
Petty trade	x	x
Staple food prices	x	x
Livelihood protection basket prices	x	x

In an ideal situation, all of the key parameters are being monitored regularly and problem specifications can easily be developed. In reality, this is rarely the case.

[4] A key parameter is here defined as a source of food or income that contributes at least 10% of one wealth group's total food or income or at least 5% for each of two wealth groups' total food or income.

3.3 ANALYSIS OF PROJECTED SITUATION (THE OUTCOME ANALYSIS)

Outcome analysis is the term used to describe the process of taking information on the current situation (the monitoring data) and combining it with information on the reference year (the baseline) to project total income for the current year. Three types of data are combined: data on baseline access, data on hazard (i.e. factors affecting access to food and cash this year, such as crop production or market prices) and data on coping strategies (i.e. the sources of food and income that people turn to when exposed to a hazard)[5].

The approach can be summarised as follows:

Baseline + Hazard + Coping = Outcome

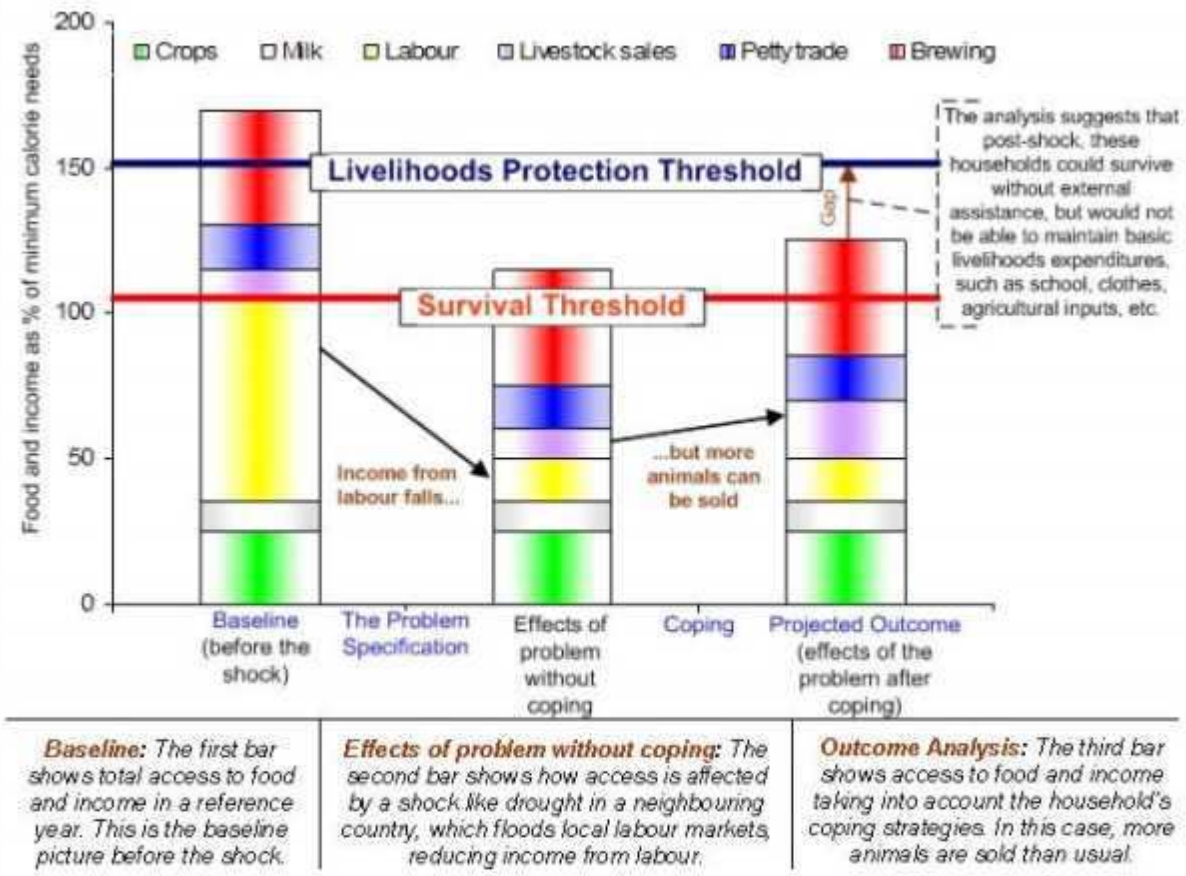
In this context, the purpose of this analysis is to utilise available information on current hazards and their likely effects on baseline sources of food and cash income. The output from an outcome analysis is an estimate of total food and cash income for the current year, once the effects of current hazards and income generated from coping strategies have been taken into account. No negative or damaging coping strategies are included in the analysis.

The next step is to compare projected total income against two clearly defined thresholds to determine whether an intervention of some kind is required. This is explained further in the figure 2 below. Total food income in the reference year is shown in the left-hand bar, while total food income in the analysis year after the inclusion of coping strategies is shown in the right-hand bar. This is then compared against two thresholds.

Where total income falls below the livelihoods protection threshold an emergency intervention is required to sustain livelihoods in the short and medium terms (so that people can continue to pay for health, education, productive inputs, etc.). Where total income falls below the survival threshold, intervention is required to maintain food intake at a minimum acceptable level (2100 kcals per person per day) in addition to sustaining livelihoods. Given the current emphasis on preserving livelihoods in addition to saving lives, deficits – and therefore intervention needs – are usually calculated in relation to the livelihoods protection threshold, not the survival threshold.

[5] Information on coping strategies is collected as part of the baseline assessment

Figure 2: The Household Economy Analytical framework: a simplified illustration



The Survival threshold: The income required to cover 100% of minimum food needs plus survival non-food.[4]

The Livelihoods Protection Threshold: The income required to cover additional expenditure on health, education, inputs, etc.[5]

[4] The survival threshold is set at slightly above 100% of minimum food needs to allow for expenditure on survival non-food items. These are items associated with food preparation (e.g. salt, soap, cooking fuel) and water for human consumption, where these were paid for in the reference year.

[5] The 'livelihood protection basket' includes 100% of expenditure by each wealth group on productive inputs for crop and livestock production, health and education costs. Other items (related to standard of living) have been included at 25-100% of the level of poor household expenditure (e.g. clothes, non-staple food items, basic non-food items etc).

4 SCENARIOS (PROBLEM SPECIFICATIONS)

Official monitoring data on crop production and prices has been used for the definition of the current year problem. Where official information was not available, assumptions have been made based on a consensus amongst the workshop participants and their field experience. Each element of the scenarios analysed is clearly outlined below and can be monitored and revised in future as additional information becomes available. In addition, other scenarios can be analysed if decision makers would like to understand vulnerability to different types of shock.

The analysis is for the two districts of Matam and Tambacounda. In sum, the performance of last year's agricultural season was poor. Staple food prices are high throughout the country in relation to the reference year for which baseline information was gathered.

The period analysed in the current year is **October 2011 –September 2012**. The current year continues to September 2012. As part of the scenario in the two livelihood zones, it has been assumed that the 2012 rainy season will be normal and that agricultural labour opportunities for land preparation and weeding will be normal in the coming months.

Price data for the current year is currently available up to May 2012 for both markets of Matam and Tambacounda. In the absence of a reliable means of projecting forward, the same months from the current year and reference year are compared in the following scenarios for each zone (Table 3). The change in price is indicated (e.g. +10% indicates a 10% increase in price in the current year compared to the reference year). For staple food (rice, sorghum, millet and maize) and peanuts, the comparison was between average prices in October-May of each year (current and reference). For cotton, the official annual price has been used for the problem specification in Tambacounda. For livestock prices, an increase of 10% in price in the current year has been estimated for both livelihood zones. For non-food items in the survival and livelihood protection expenditure baskets, the inflation rate has been used to estimate the change in price.

Table 3: Price scenario and inflation[6]

	Matam (LZ3)	Tambacounda(LZ13)
Staple food basket	+19%	+35%
Peanuts		+58%
Cotton		+38%
Livestock	+10%	+10%
Agricultural labour	+16%	+13%
Casual labour (construction)	+10%	+10%
Remittances	+1%	
Inflation	+4.6%	4.6%

[6]An empty box indicates that the item is not a key parameter in the livelihood zone.

Crop production official monitoring data for the reference year and for the current year are compared in the following table. The change in production is indicated (e.g. -50% indicates a 50% reduction in production in the current year compared to the reference year).

Table 4: Crop production scenario		
	Matam (LZ3)	**Tambacounda (LZ13)**
Sorghum	-93%	-37%
Millet	-93%	-63%
Maize		-59%
Cowpeas		-91%
Peanuts		-59%

The problem specification for the herd size is the change in herd size at the start of the current year in relation to herd size at the start of the reference year. For herd size, official monitoring data have been used. Monitoring data on milk yields is not available. The following table summarises the problem specifications that have been used in the analysis, largely developed through participant consensus. Any of these assumptions can be changed if better information becomes available or if decision makers would like to see the results of a different scenario.

Table 5: Livestock production scenario		
	Matam (LZ3)	**Tambacounda (LZ13)**
Cattle size	+1.6%	+1.6%
Shoats size	+3.5%	+3.5%
Excess deaths in current year for cattle	+/-0%	+/-0%
Excess deaths in current year for shoats	+/-0%	+/-0%
Cow's milk production (next rainy season)	+/-0%	+/-0%

For other elements of the scenario related to agricultural labour, casual labour (construction), migration, remittances, self-employment and petty trade, the following problem specifications were used.

Table 6: Scenario for other sources of food and income		
	Matam (LZ3)	**Tambacounda (LZ13)**
Agricultural labour	-50%	-37%
Casual labour (construction)	+/-0%	+/-0%
Migration	+/-0%	+/-0%
Remittances	+/-0%	
Self-employment	+/-0%	+/-0%
Petty trade	+/-0%	

5 PROJECTED FOOD SECURITY PROSPECTS FOR 2011-2012

The results of the outcome analysis are presented in this section. These illustrate how the changes outlined in section 4 are expected to impact upon total income for households in different wealth groups in the two districts (Matam and Tambacounda) analysed in the two livelihoods zones. This is followed by a summary of likely duration of any resulting livelihood protection deficits.

5.1 THE PERIOD COVERED BY THE CURRENT ANALYSIS

The period or consumption year covered by the current analysis is **October 2011-September 2012** for both livelihood zones**.** For agricultural areas, the consumption year runs for the beginning of one harvest until the start of the following year's harvest.

5.2 OUTCOME FOR TWO LIVELIHOOD ZONES

The following figures present the results of the outlined scenario for very poor and poor households in the district of Tambacounda. Middle and better off households do not face any deficit (survival or livelihood protection) in the district of Tambacounda. No wealth group does face any deficit (survival or livelihood protection) in the district of Matam.

Figure 3a: Outcome Analysis for Very Poor Households in Tambacounda

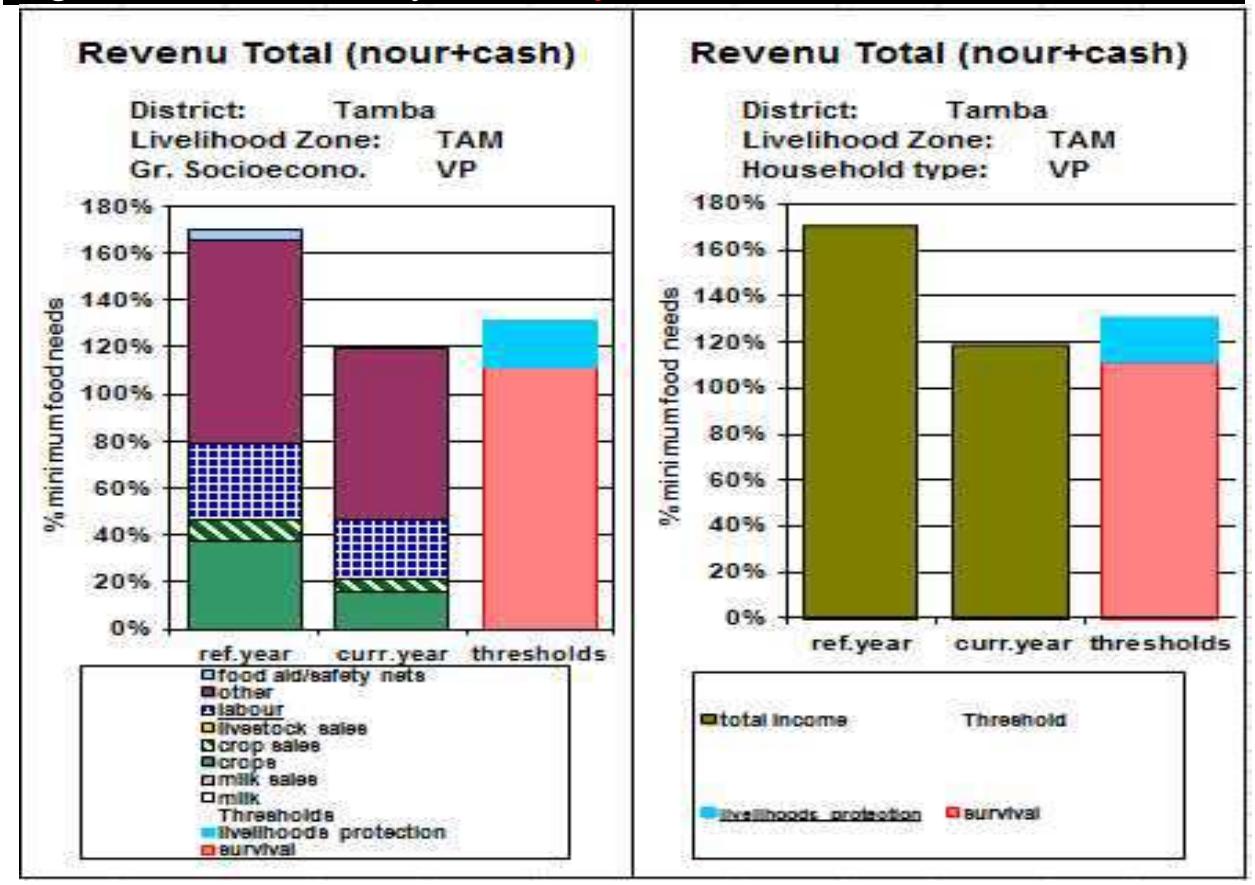
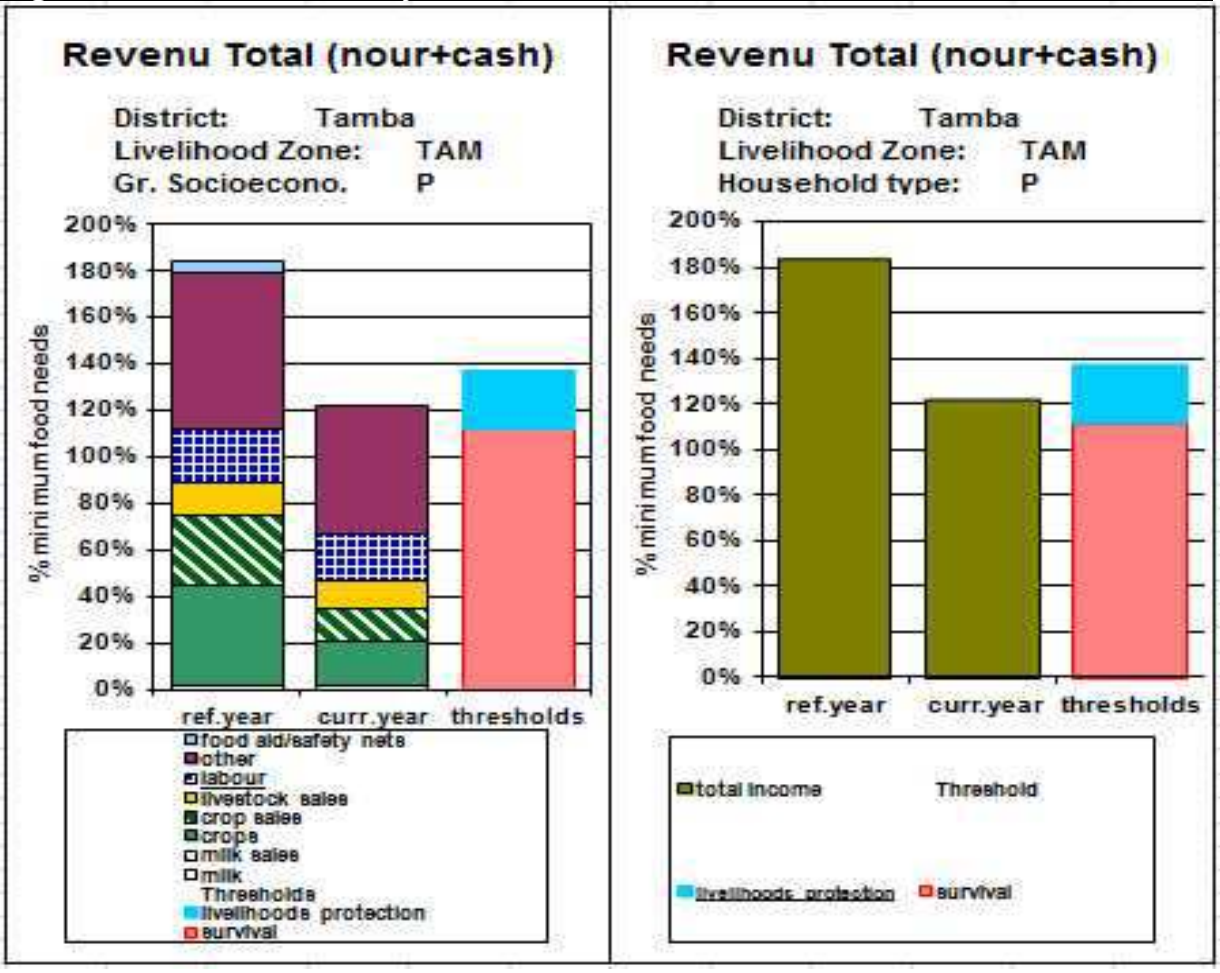


Figure3b: Outcomes Analysis for Poor Households in Tambacounda



The charts above show estimates of total income (food plus cash) for the current and reference years. These may be compared with the intervention thresholds (in the right-hand bar) to determine whether there is a deficit this year. The pink section represents the survival threshold, while the pale blue section represents the livelihood protection threshold.

The main sources of income for very poor and poor households in the reference year (October 2009- September 2010) was self-employment (mostly firewood and charcoal sales), crops sales and agricultural labour. With decreased crops production and high increase of the staple food basket in the current year, projected total income for 2011-2012 is expected to be less to that in the reference year (in terms of its food equivalent) and above the survival threshold but under the livelihood protection threshold.

Figure 3a on the left presents the outcome analysis for very poor households. Food and cash income is combined into one bar and compared to the two thresholds. For the scenario outlined in Section 4, very poor households (17% of the population in the district of Tambacounda) will most likely face livelihood protection deficit.

Figure 3b presents the same outcome analysis for poor households (34% of the population in the district of Tambacounda). They are also likely to face livelihood protection deficit.

The following table summarises the population facing deficits in the districts of Matam and Tambacounda in the two livelihood zones, plus the quantity of food or the amount of cash that would fill the deficits.

Table 7: Population facing survival and livelihood protection deficits in the two LZ

					Monnaie pour le cash FCFA					x1000
		DEFICIT DE SURVIE			DEFICIT PROTECTION DE MOYEN			TOTAL		
Region	District	Beneficiaires	Soit t	Ou Cash	Beneficiaires	Soit t	OU Cash	Beneficiaires	Soit t	OU Cash
-	Matam	-	-	-	-	-	-	-	-	-
-	Tamba	-	-	-	98 653	2 959	829 889	98 653	2 959	829 889
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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Pour plus de details. Voir tal		A	C	E	B	F	D	B	G	H

Summary of results

The following table summarises the results of the 2011-2012 scenario analysis. In Matam, no wealth group does likely face any deficit. However, in Tambacounda, the very poor and poor households are likely to face livelihood protection deficit.

Table 8: Summary of Outcome Analysis Results: Wealth Groups/Livelihood Zones Facing Deficits

	Matam (LZ3)	Tambacounda (LZ13)
Very Poor	No deficits	Livelihood Protection Deficit
Poor	No deficits	Livelihood Protection Deficit
Middle	No deficits	No deficits
Better Off	No deficits	No deficits

Table 9: Level of Deficits by wealth group in the district of Tambacounda	
Very Poor	LPD: 12% (~ 1 ½ months food for 50,259 FCFA per household and per year)
Poor	LPD: 15% (~ 2 months food for 99,243 FCFA per household and per year)

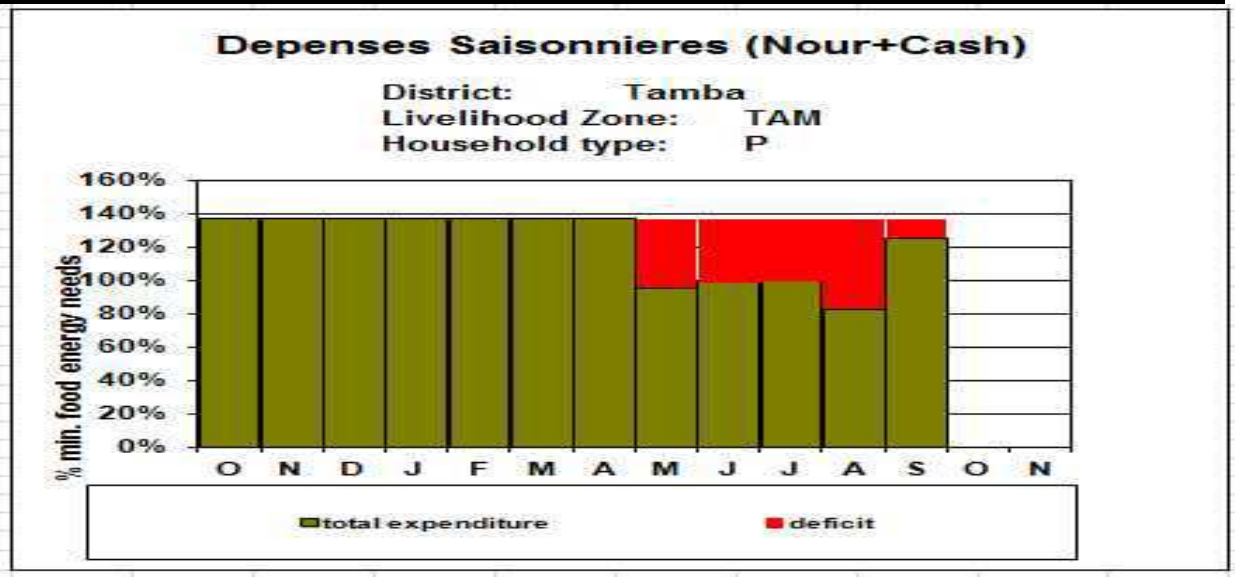
LPD: Livelihood Protection Deficit. A LPD represents an emergency situation whereby households cannot afford many basic things that they spent money on in the reference year, including education, health, inputs, clothes and non-staple foods. Faced with this situation, they may make a choice to purchase some items in the livelihood protection basket in preference to staple food, thus also going hungry.

5.3 TIMING OF DEFICITS

The seasonal consumption/expenditure analysed in Figure 4a and Figure 4b below have been generated by combining information on total income with seasonal calendar data showing when different sources of food and cash become available. The charts above show projected pattern of consumption/ expenditure, by month, from **October 2011 to September 2012**. The period when households are unlikely to be able to cover their livelihood protection needs is shown in red.

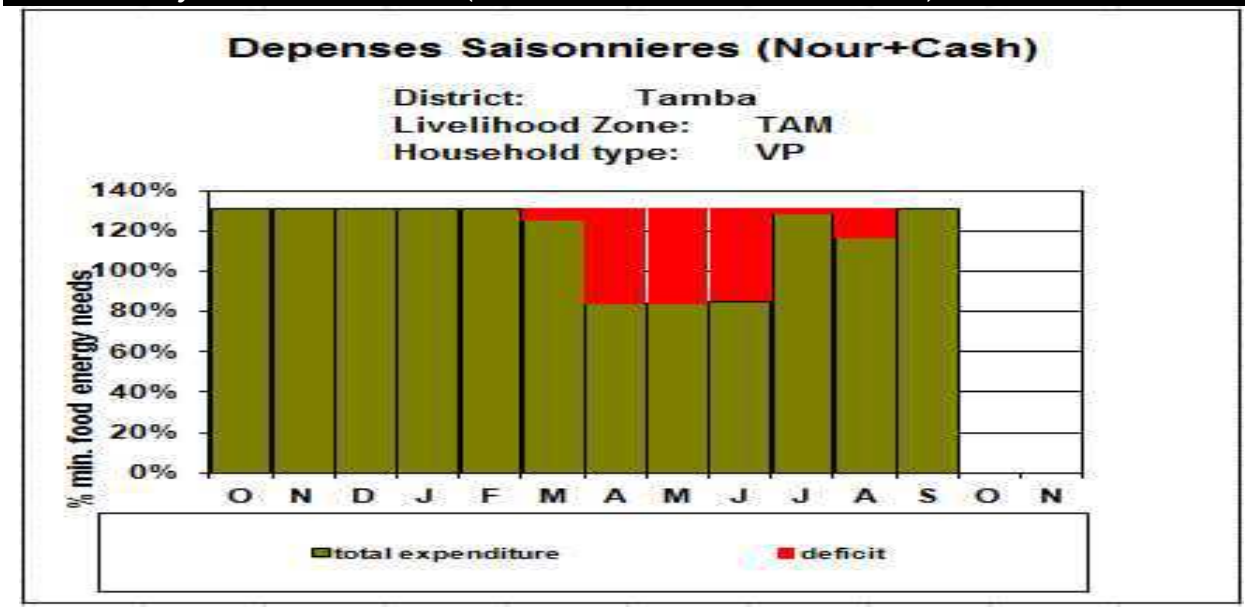
The results in **Figure 4a** suggest that deficits for **the poor** in the Agro-Sylvo-Pastoral/Food Crops Livelihood Zone (LZ13, District of Tambacounda) are likely to occur mainly from **May through September 2012**.

Figure 4a: Seasonal Pattern of Consumption/ Expenditure and Timing of Deficits for the Poor Households (LZ13, District of Tambacounda)



The results in **Figure 4b** suggest that deficits for the **very poor** in the Agro-Sylvo-Pastoral/Food Crops Livelihood Zone (LZ13, District of Tambacounda) are likely to occur from **March through August 2012**, so earlier than for the poor. However, this deficit is more pronounced during the period **April to June 2012**.

Figure 4b: Seasonal Pattern of Consumption/ Expenditure and Timing of Deficits for the Very Poor Households (LZ13, District of Tambacounda)



5.4 SENSITIVITY TO STAPLE FOOD PRICE SCENARIO

The results of this analysis are very sensitive to the scenario specified for staple food prices in the coming months for the district of Tambacounda.

Under a scenario in which staple food prices increase by on average of 50% in the current year in relation to staple food prices in the reference year in the district of Tambacounda, **a slightly survival deficit of 1% occurs for very poor households**.

Under a scenario in which staple food prices double (Figure 5a and Figure 5b) on average in relation to staple food prices in the reference year in the district of Tambacounda, important **survival deficit occurs for very poor and poor households of about 20% and 19% respectively**.

Figure 5a: Seasonal Pattern of Consumption/ Expenditure for the Very Poor under a scenario of staple food prices increase by on average of 100%

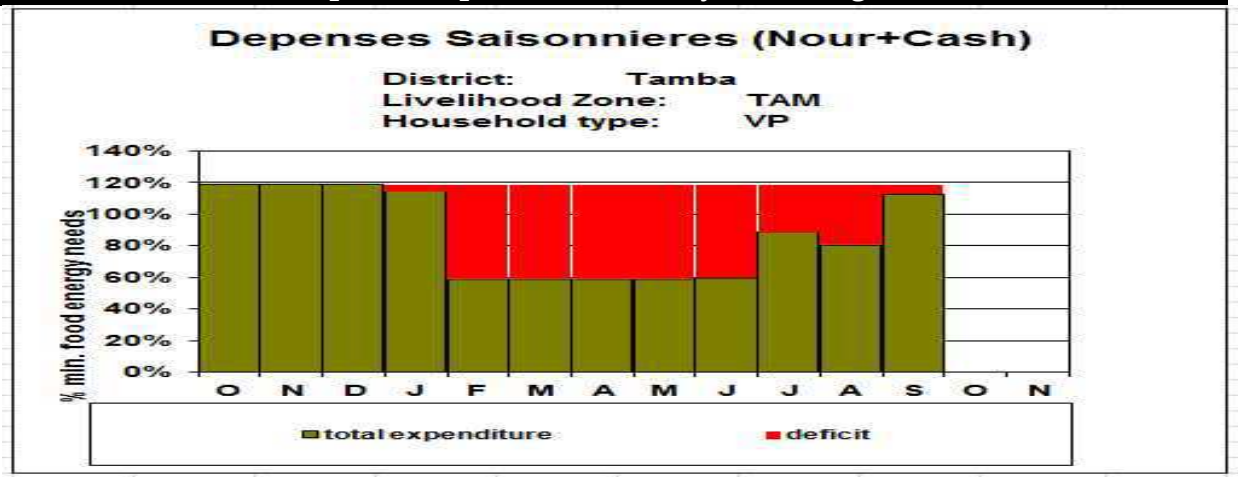
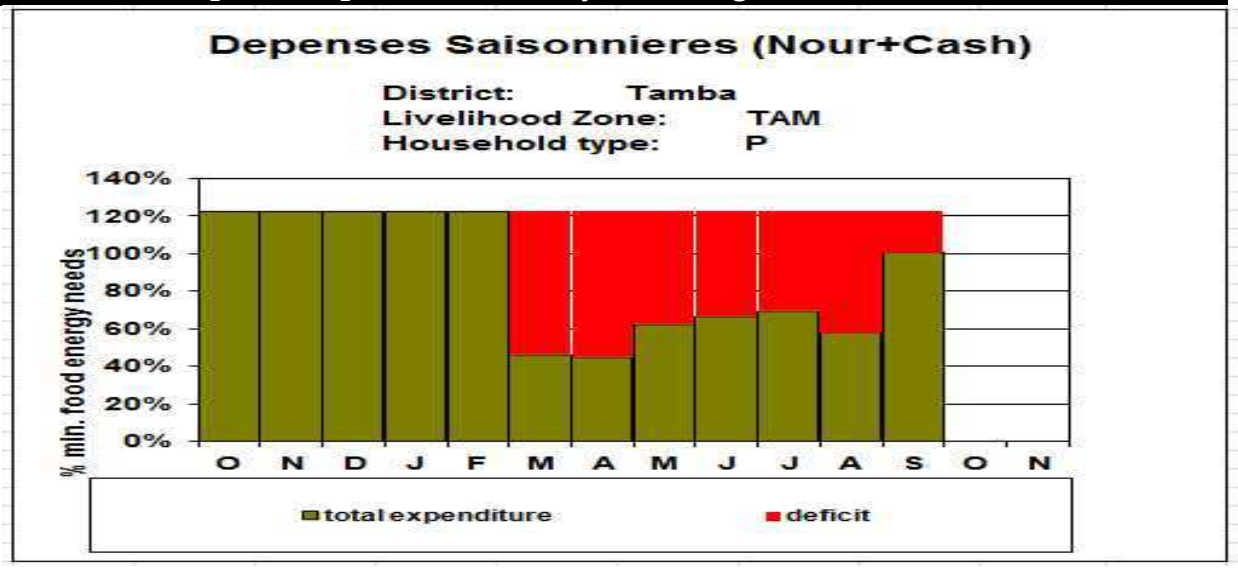


Figure 5b: Seasonal Pattern of Consumption/ Expenditure for the Poor under a scenario of staple food prices increase by on average of 100%



Projecting staple food prices is difficult. Very careful monitoring of cereal prices in relation to the evolution of income sources is critical to understanding the situation this year in the district of Tambacounda.

However, even staple food prices double on average in relation in staple food prices in the reference year in the district of Matam, no wealth group should likely face any deficit.

6 FINAL COMMENTS

The results of this analysis for the district of Matam do not seem reflect the current situation on the field, where WFP and NGOs are providing food assistance to many vulnerable households. The economy of Matam is substantially different of the economy of Tambacounda. The villages surveyed during the baseline lay in the "Diéri" strip, away from the Senegal River to the east but still to some extent using land in the revering flood retreat cultivation area of the "Walo" strip. In this area of Matam, staple cereals production furnishes an unusually small part of household food consumption for wealthier and poorer households alike. The most particular feature of the population of Matam-Diéri is their dependence on cash remittances from family members settled and working abroad, often for decades. The effect is to skew the economy towards commerce and substantial investment in cattle for the wealthier- who receive most of the remittances- and labour and services for these provided by the poorer. In this way, there is in effect a redistribution of cash remittances which puts the poorer households as well as the wealthier households at an income level far above their fellows in Tambacounda.

The results of this analysis are very sensitive to the scenario specified for staple food prices in the coming months for the district of Tamabacounda. Careful monitoring of cereal prices in relation to the evolution of income sources is critical to understanding the situation this year in the district of Tambacounda.

Although workshop participants didn't formally discuss about response options for the district of Tambacounda, the following actions should be undertaken:

1. To ensure access to immediate essential needs for the remainder of the current consumption year (**up to September 2012**) in the short term ;

2. To support rehabilitation or protection of livelihoods the next consumption year (2012-13), in the medium term;

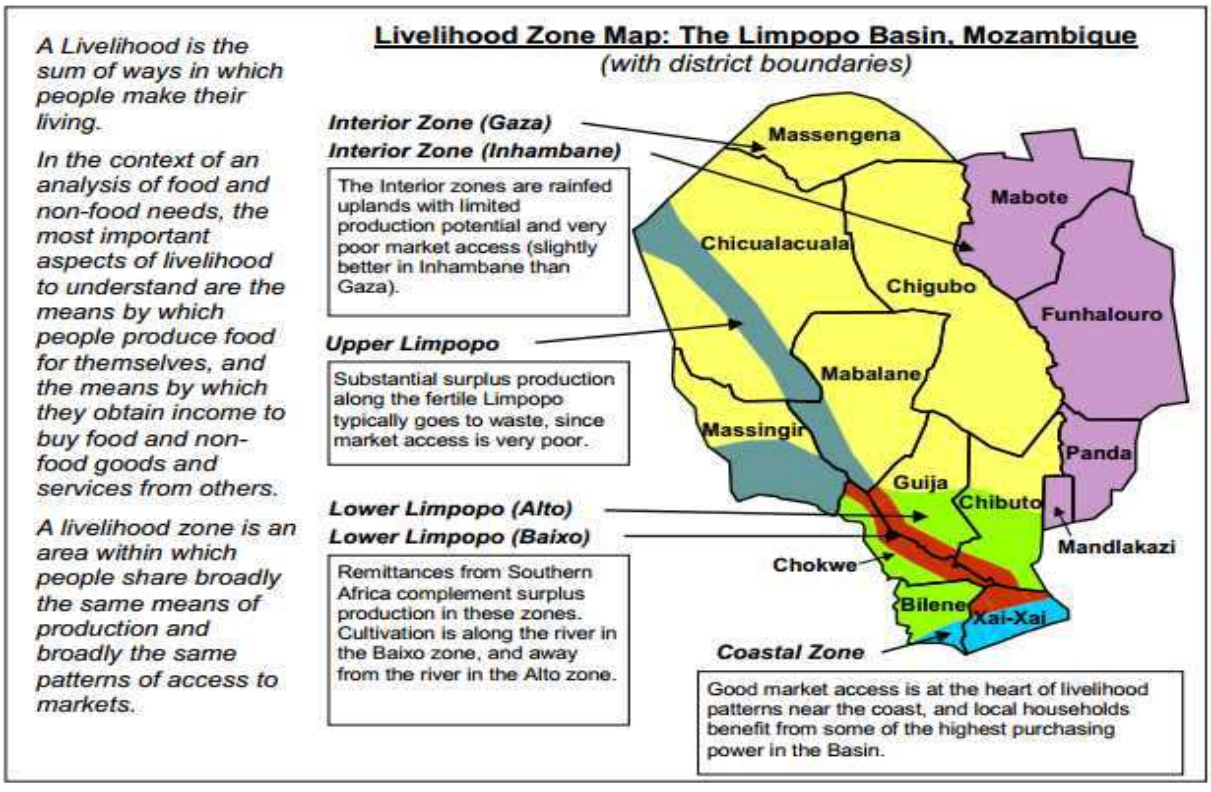
3. To promote development and livelihoods in the longer term.

Other scenarios can be analysed as additional information becomes available or if decision makers would like to understand vulnerability to different types of shock.

7 APPENDIX – THE HEA FRAMEWORK

7.1 THE HOUSEHOLD ECONOMY BASELINE

The Household Economy Approach (HEA) to analysing livelihoods and assessing food security has been used widely in Africa and elsewhere over the past decade. The basic principle underlying the approach is that an analysis of local livelihoods is essential for a proper understanding of the impact– at household level - of hazards such as drought or conflict or market dislocation. Total crop failure may, for example, leave one group of households destitute because the failed crop is their only source of staple food, while another group may be able to cope because they have alternative food and income sources that can make up the production shortfall (e.g. they may have livestock to sell or relatives living elsewhere that can provide assistance). The idea of the household economy baseline is to capture this essential information on local livelihoods and coping strategies, making it available for the analysis of hazard impacts.



Patterns of livelihood clearly vary from one area to another, according to local factors such as climate, soil, access to markets etc. The first step in a household economy analysis is therefore to prepare a livelihood zone map, i.e. a map delineating 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 and to sources of cash income. An example of a livelihood zone map based on information gathered from southern Mozambique is presented above.

In nearly all developing countries, the household is the basic unit of economic operation in rural areas in terms of the ownership of land and livestock and equipment, of stocking and consuming food, and of sharing cash income. The household is therefore taken as the basic unit of reference in household economy analysis.

Where a household lives is one factor determining its options for obtaining food and generating income. Another is wealth, since this is the major factor determining the ability of a household 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 neighbours. Land is just one aspect of wealth, however, and wealth groups are typically defined in terms of their land holdings, livestock holdings, capital, education, skills, labour availability and/or social capital. Defining the different wealth groups in each zone is the second step in a household economy analysis, the output from which is a **wealth breakdown**.

Having grouped households according to where they live and their wealth, the next step is to generate **household economy baseline** information for typical households in each group for a defined reference or baseline year[7]. Access to food and to non-food goods and services is determined by investigating the sum of ways households obtain food and cash — what food they grow, gather or receive as gifts, how much food they buy, how much cash income is earned in a year, and how other essential needs are met with income earned.

Once this baseline is established, an analysis can be made of the likely impact of a shock or hazard in a bad year. This is done by assessing how access to food and cash income will be affected by the shock, what other food and cash sources can be added or expanded to make up initial shortages, and what final deficits emerge.

Once the baselines have been compiled, the idea is that they can be used repeatedly over a number of years - until significant changes in the underlying economy render them invalid. Rural economies in developing countries tend not to change all that rapidly however, and a good household economy baseline will generally be valid for between 5 and 10 years. What varies is the prevailing level of access to food and non-food goods and services, but this is a function of variations in hazard, not variations in the baseline. Put another way, the level of maize production may vary from year to year (hazard), but the underlying pattern of agricultural production does not (the baseline).

[7] The baseline or reference year can be the last 12 months or a 'normal' or typical year. In terms of data collection and the ability of interviewees to recollect details (including quantities and prices), it is usually best to choose a recent year. The most recent 12 month period is ideal (beginning at the start of the harvest for agricultural communities), provided there wasn't an unusually large amount of food aid or other assistance distributed and provided it wasn't a very good year. If any of these situations applies then it can be very difficult to understand coping strategies and it makes sense to choose an earlier year.

7.2 PREDICTING FUTURE ACCESS TO FOOD AND NON-FOOD GOODS AND SERVICES

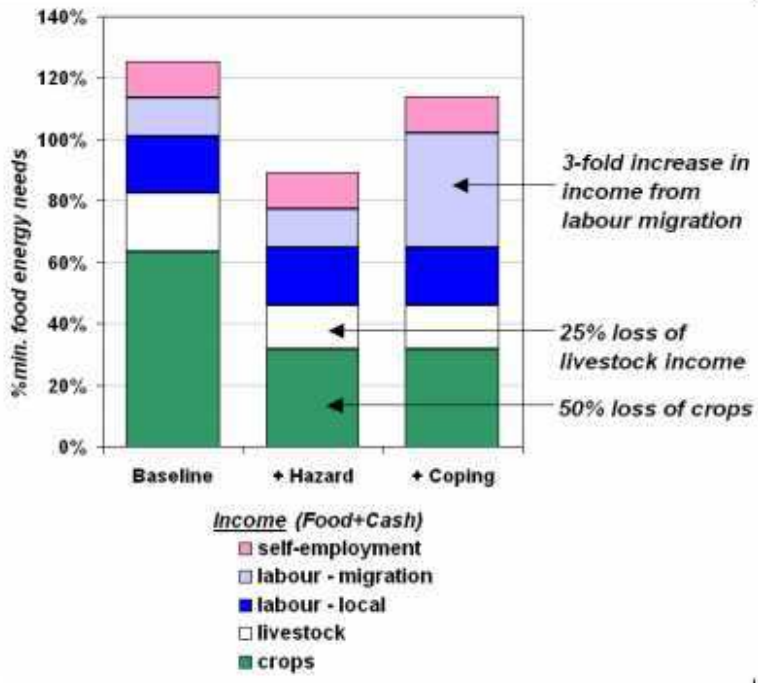
One objective of HEA is to investigate the effects of hazards on future access to food and income, so that decisions can be taken about the most appropriate types of intervention to implement. The rationale behind the approach is that a good understanding of how people have survived in the past provides a sound basis for projecting into the future. Three types of information are combined for the analysis; information on baseline access, information on hazard (i.e. factors affecting access to food/income, such as crop production or market prices) and information on coping strategies (i.e. the sources of food and income that people turn to when exposed to a hazard). The approach can be summarised as follows:

Baseline + Hazard + Coping = Outcome

The output from an outcome analysis is an estimate of total food and cash income for the current year, once the cumulative effects of current hazards and income generated from coping strategies have been taken into account. The next step is to compare projected total income against two clearly defined thresholds to determine whether an intervention of some kind is required.

An Example of an Outcome Analysis for Poor Households from the Wolayita Maize and Root Crop Livelihood Zone in Southern Ethiopia

Three types of quantitative data are combined to predict outcome; data on baseline sources of food and cash, data on the hazard and data on coping strategies.
First of all, the effects of the hazard on baseline sources of food and cash income are calculated (middle bar in the chart).
Then the effect of any coping strategies is added in (right-hand bar).
The result is an estimate of maximum total food and cash income for the current year.
Note: *In this graphic, food and cash income have been added together and, in this case, expressed in food terms. (The results could also be expressed in cash terms – see* ***Figure 1****).*

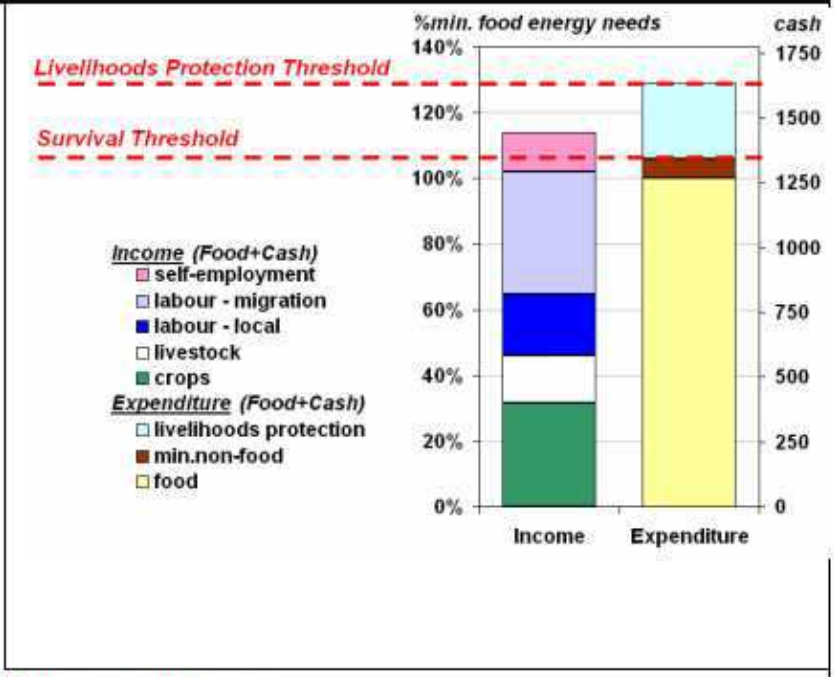


The two thresholds – the Livelihood Protection Threshold and the Survival Threshold – are described in the figure below. The Survival Threshold is the amount of food and cash income required to ensure survival in the short-term, i.e. to cover minimum food and non-food needs. Minimum non-food needs will generally include the costs of preparing and consuming food plus any cash expenditure on water for human consumption. Shelter and clothing are also basic requirements for survival, and it may on rare occasions be appropriate to include these in the minimum non-food basket. The point to bear in mind here is that the items included in the minimum non-food basket should be those required to ensure survival in the short term. In most settled rural situations, expenditure on shelter and clothing can be forgone in a bad year, with repairs to housing and replacement of clothes being postponed until better times. Situations in which failure to spend money on shelter and clothing could be life-threatening might include war (where shelters are destroyed and clothing looted), and sudden onset disasters such as earthquake, hurricane or flood.

Figure 1: Comparison of Projected Income against Two Clearly Defined Thresholds

Projected total income (including income from coping) is compared against two thresholds defined on the basis of local patterns of expenditure.

The Survival Threshold represents the total income required to cover:
- 100% of minimum food energy needs (2100 kcals per person), plus
- the costs associated with food preparation and consumption (i.e. salt, soap, kerosene and/or firewood for cooking and basic lighting), plus
- any expenditure on water for human consumption.



The Livelihoods Protection Threshold represents the total income required to sustain local livelihoods. This means total expenditure to:
- ensure basic survival (see above), plus
- maintain access to basic services (e.g. routine medical and schooling expenses), plus
- sustain livelihoods in the medium to longer term (e.g. regular purchases of seeds, fertilizer, veterinary drugs, etc.), plus
- achieve a minimum locally acceptable standard of living (e.g. purchase of basic clothing, coffee/tea, etc.)

The Livelihood Protection Threshold is the amount of food and cash income required to protect local livelihoods. This means a level of income that gives people the option to maintain expenditure on basic non-food goods and services at the levels prevailing in the reference year (assuming the reference year was neither especially good nor especially bad). This does not mean that people will have exactly the same standard of living as in the reference year (since the livelihoods protection basket excludes non-essential items such as beer and cigarettes), nor that they will pursue exactly the same activities as in the reference year (since the Livelihoods Protection Threshold is set at a level that assumes additional income can be generated from coping strategies). But it does mean that – provided they prioritise these items – people can continue to spend similar amounts of money on inputs and on health and education as in the reference year.

Besides these essential non-food goods and services, the Livelihoods Protection expenditure basket can also contain a number of items that – while not absolutely essential for survival –can nonetheless be considered essential in terms of sustaining a minimum locally acceptable standard of living. It is usually quite easy to identify these items through discussions with local key informants. Tea and sugar, for example, are considered essential among Somalis, and it is appropriate to include these in the Livelihoods Protection basket in Somali areas. For highland Ethiopians, on the other hand, tea and sugar will be replaced in the Livelihoods Protection basket by coffee and berberi (a mix of spices based on chilli pepper). Clearly, the exact composition of the Livelihoods Protection Basket will vary from livelihood zone to livelihood zone, depending upon local circumstances. This applies not only to items such as tea and coffee, but also to inputs (e.g. veterinary drugs in pastoral areas verses fertilizer in agricultural areas) and to health expenditures (e.g. expenditure on anti-malarials in lowland but not highland areas).

Another important point about the Livelihoods Protection Threshold is that, as defined here, it is set relative to local conditions rather than relative to international standards, such as Sphere. This is an area for further debate and further work, i.e. should the Livelihoods Protection Threshold be set relative to international standards, and if so, which standards should be adopted for those items not covered by, for example, Sphere (which does not include standards for firewood or for fertilizer, for example).

7.3 ANALYSING COPING STRATEGIES

It is not usual to include every possible coping strategy in the calculation of outcome. This would have the effect of minimising and almost certainly under-estimating the need for assistance as measured by the deficit[8].

Type of Coping Strategy[14]
Low Cost *(included in outcome analysis)*
Reduced expenditure on non-essential items (beer, cigarettes, ceremonies, festivals, expensive clothing, meat, sugar, more expensive staples, etc.)
Harvesting of reserve crops (e.g. cassava, enset)
Consumption rather than sale of any crop surplus
Medium Cost *(included in outcome analysis)*
Increased sale/slaughter of livestock (sustainable)
Intensification of local labour activities
Short-term/seasonal labour migration
Intensification of self-employment activities (firewood, charcoal, building poles, etc.)
Increased remittance income
Increased social support/gifts
Borrowing of food/cash
Sale of non-productive assets (jewellery, clothing, etc.)
Collection of wild foods
High Cost *(excluded from outcome analysis)*
Unsustainable sale/slaughter of livestock
Long-term/permanent migration (including distress migration of whole households)
Excessive sale of firewood/charcoal (e.g. because of its effect on the environment)
Sale/mortgaging of productive assets (land, tools, seeds, etc.)
Prostitution
Reduced expenditure on productive inputs (fertilizer, livestock drugs etc.)
Reduced expenditure on health and education
Reduced expenditure on water
Decreased food intake

[8]This is because the inclusion of a strategy in the outcome analysis has the effect of reducing the deficit, effectively delaying any intervention until that strategy has been fully utilised. It would not, for example, make sense to include the sale of all livestock in the outcome analysis, as this would delay intervention until all livestock had been sold – rendering pastoral households destitute, for example. Likewise it makes no sense to include undesirable stress-induced activities such as prostitution in the calculation of outcome, since this would reduce the estimated assistance requirement by an amount equivalent to the income that can be earned from prostitution.

Instead, only those strategies that are appropriate responses to local stress are included. In this context, appropriate means both 'considered a normal response by the local population' and 'unlikely to damage local livelihoods in the medium to longer term'. In a pastoral setting, for example, it is usual to increase livestock sales in a bad year. This is an appropriate response to economic stress - provided the increase in sales is of the effect on livelihood assets, on future production by the household, and on the health and welfare of individual household members.

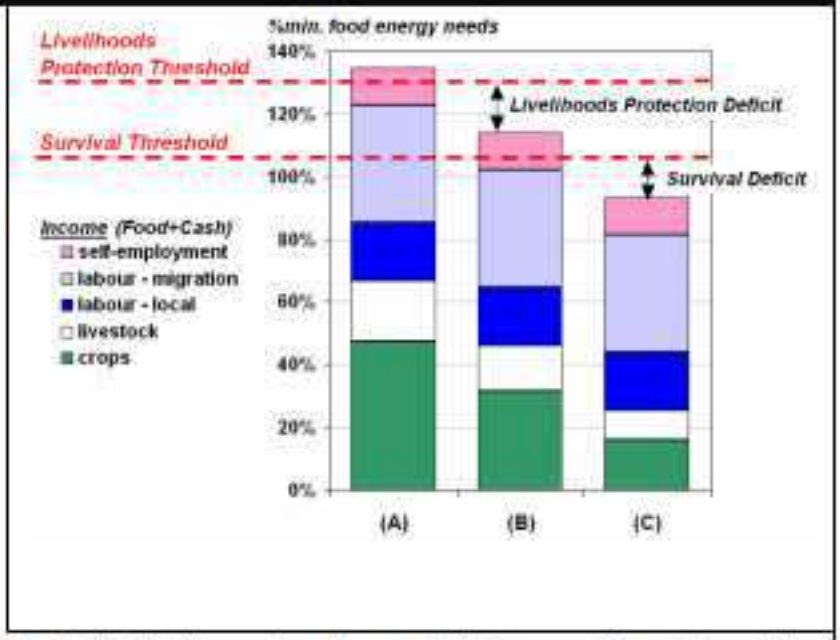
The table above presents a basic categorisation of coping strategies according to cost. Note that cost is not just a function of the type of activity, but the extent to which it is utilised (as in the livestock sale and labour migration examples described above) not excessive. Similarly, in many agricultural areas, it may be usual for one or more household members to migrate for labour when times are hard. Provided the response is not pushed too far (i.e. too many people migrating for too long a period of time), this can also be considered an appropriate response to stress. In HEA, therefore, the most important characteristic of a coping strategy is its cost, where cost is measured in terms of the effect on livelihood assets, on future production by the household, and on the health and welfare of individual household members. The table presents a basic categorisation of coping strategies according to cost.

Note that some strategies usually included in lists of coping strategies are not included here, e.g. strategies that maintain primary production in the face of a hazard (e.g. re-planting of crops, replacement of long-cycle by short-cycle crops, long distance grazing of livestock). This is because in household economy analysis these aspects of coping are captured in the 'hazard'. Replanting of crops and replacement of long- by short-cycle crops are captured through the crop production 'problem' and the effects of long-distance grazing are captured through the livestock production 'problem'.

What it Means if Total Income Falls below One or Other Threshold

The figure compares three different situations, of progressively greater severity and urgency.

(A) – No deficit: In this situation, total income (including income from low and medium-cost coping strategies) is sufficient to ensure basic survival and to protect existing patterns of livelihood. There is therefore no pressing need for an emergency intervention.



(B) – Livelihoods Protection Deficit: Total income is no longer sufficient to cover the cost of survival plus the expenditure required to protect local livelihoods, and an intervention of some kind is required to cover the deficit. At this level, local people can still cover expenditure on survival (including the consumption of 2100 kcals per person per day), provided they accord these needs a high enough priority. In other words, people should not have to go hungry at this level[1], although they will have to resort to other high-cost strategies including a reduction in expenditure on productive inputs, on health and on education. The primary objective of intervention at this level is to protect livelihoods, both in the current year and for the future.

(C) – Survival Deficit: At this level, total income is insufficient to cover the cost of survival, even if full use is made of all the available low- and medium-cost coping strategies, and all the money usually used to protect livelihoods is switched to the purchase of staple foods. It is very probable that people facing this type of deficit will go hungry, unless they resort to other undesirable high-cost coping strategies (see **Error! Reference source not found.** for a description of these). The primary objective of intervention at this level is to protect health and life in the short-term.

[1] Although they may opt to do so, if, for example, not increasing livestock sales or not migrating for labour has a higher priority than maintaining food intake.

7.4 HOW HEA HELPS ADDRESS CORE DECISION MAKER QUESTIONS

If total income falls below one or other threshold, this implies the existence of a deficit and the need for an intervention of some kind. HEA helps to distinguish clearly between situations according to their severity and urgency. The existence of a Livelihoods Protection Deficit indicates the need for interventions to protect livelihoods, while a Survival Deficit indicates the need for an intervention to ensure survival in the short term.

There is a range of options that can be used to fill a deficit, from food and cash transfers, through non-food interventions to market price interventions. Information on patterns of local livelihood (collected during the household economy fieldwork) will help to identify the most appropriate intervention in any particular situation. The only point to bear in mind in relation to the type of deficit is that the intervention selected must be commensurate with the scale and urgency of the problem. There is little point, for example, in proposing a distribution of soap to fill a survival deficit. Something much larger in scale will generally be required, which will usually mean a distribution of food or cash, or a market intervention on a relatively large scale.

The output from a Household Economy Analysis is quantitative. That is HEA provides quantitative estimates of how many people will face a deficit, how big that deficit is, and therefore the scale of intervention required to address the problem. Besides answering the critical question of how much? HEA also generates answers to the other core questions posed by decision-makers in relation to emergency interventions, as outlined below.

How HEA 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.