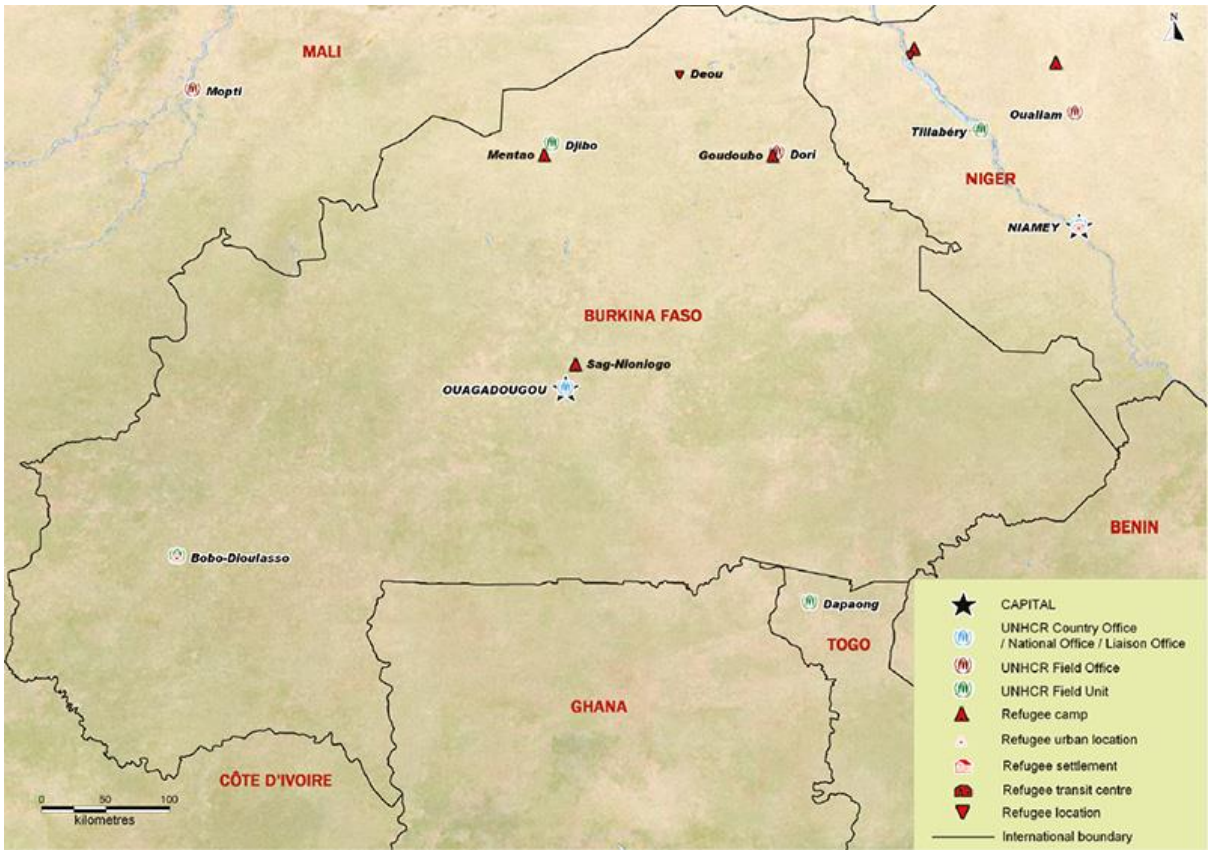
UNHCR
United Nations High Commissioner for Refugees
Haut Commissariat des Nations Unies pour les réfugiés

EVIDENCE FOR DEVELOPMENT

Livelihood baseline assessment of Malian refugees in Burkina Faso: *Quantitative analysis of household economies*



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Acronyms and abbreviations

1. Organisations and states

EfD	Evidence for Development
FEWS NET	Famine Early Warning Systems Network
IEDA	International Emergency and Development Aid (IEDA Relief)
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNHCR	UN High Commissioner for Refugees; the UN Refugee Agency
VSF	Vétérinaires Sans Frontières
WFP	World Food Programme
WHO	World Health Organization

2. Other acronyms and abbreviations

AE	Adult equivalent
CSB	Corn-soya blend cereal
DI	Disposable income
DI/AE	Disposable income per adult equivalent
FCFA	West African CFA franc
HEA	The household economy approach
HH	Household
IHM	The individual household method
NGO	Non-governmental organisation
SoLT	Standard of living threshold

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Executive summary

This assessment was undertaken on behalf of UNHCR to provide baseline information on the livelihoods of Malian refugees in Burkina Faso, to identify opportunities for greater economic self-reliance, and to highlight risks and vulnerabilities of specific groups within the population. The individual household method (IHM) was selected as the most appropriate means of collecting and analysing detailed, disaggregated household-level information and modelling the potential impact of changes in refugee incomes, including aid (both in cash and in kind) and other income sources. The refugees are mainly from pastoralist communities in the north of Mali, from the regions of Tombouctou, Gao and Mopti. As well as livestock herders they include artisans, shopkeepers and traders, teachers, and other professionals. While all these groups are represented in the three official camps, the proportion of artisans is higher in Sag Nioniogo, which has relatively good market access through its proximity to Ouagadougou. The proportion of households maintaining herds is higher in the Sahelian camps of Goudebou and Mentao, where there is better access to pasture.

This report covers the three official refugee camps in Burkina Faso: Sag Nioniogo, located close to the capital city Ouagadougou; Goudebou, located in the Sahel region, close to the town of Dori; and Mentao, also located in the Sahel region but close to the town of Djibo. The assessment was conducted between 8th September and 6th October 2014 and was led by Evidence for Development (EfD), who trained a team from the University of Bobo-Dioulasso, UNHCR, and one UNHCR partner organisation.

In addition to contextual information, collected through focus group discussions and key informant interviews, 256 households participated in detailed individual household interviews in the three camps, representing 8.4% of the total households. Selection was on a systematic sampling basis.

1. Main findings

1.1. Refugee food and income sources

- In all camps, significant proportions of the population are engaged in petty trade and small businesses providing goods and services to the camp population (41.1% of households interviewed in Mentao, 42.4% in Goudebou, and 85.5% in Sag Nioniogo). This includes artisan work, which is particularly prominent in Sag Nioniogo. The camps themselves also provide work opportunities, ranging from an occasional day assisting with refugee registration to full-time jobs with NGOs. 17.4% of the households in Goudebou, 29% in Sag Nioniogo, and 31.6% in Mentao were engaged in work for NGOs and other organisations based in the camp, often on a short-term basis. Livestock are another main source of income, particularly in the Sahel camps. These income sources currently provide some refugees with a degree of economic security independent of relief aid, but many households are still highly reliant on transfers.

- Food rations and cash transfers from the World Food Programme (WFP) are vitally important to many refugee households, making most difference to the livelihoods of the poorest households. Further transfers include relatively small amounts of assistance in money and in kind from other organisations, relatives and neighbours. Altogether, transfers of cash provide an average 48.7% of households' total money incomes, and transfers of food make up an average 61.5% of households' food energy requirements.
- As well as identifying these main sources of income (in the forms of both food and cash) from household data, IHM analytical methods were used to assess the ability of households to access basic food and other, non-food, needs. With current levels of WFP relief and other income sources, an overwhelming majority of refugees in the three official camps can access their basic food energy requirements: with the exception of just 4 households (1.6%), all of the remaining households from the survey population had high enough total incomes to access their basic food energy needs.
- However, income levels were low overall: median cash per person remaining after meeting basic food energy needs is around 299 FCFA ($1.40 at PPP rates) per day[1].
- 56 households (21.9% of the survey population) did not have sufficient income to pay for a minimum set of further expenses (clothes, soap, fuel, etc.) that were identified as necessary to meet basic social inclusion norms.

1.2. Standardisation of income measurement, disposable incomes and population profile

- The figures presented here are derived from the IHM livelihoods and poverty analysis, which measures the cash that remains in a 'household budget' after its members have met their basic food energy requirements. This remaining money is referred to as 'disposable income' (DI). To allow for comparison between households of different size, incomes can be standardised per 'adult equivalent' (AE), based on those food energy requirements – resulting in disposable income per adult equivalent (DI/AE)[2].
- Disposable income per adult equivalent varied both within and between camps. Goudebou camp had the greatest extremes, with both the lowest median DI/AE of all camps in the poorest quintile and the highest median DI/AE in the richest quintile. Overall, levels of disposable income were low in all camps. Taking data for the three sites, the median DI/AE value for the middle quintiles was 107,191 FCFA per year – or 294 FCFA francs ($1.38 at PPP rates) per adult equivalent per day. This figure is reflected in the low levels of cash available to invest in business and relatively low levels of effective demand, limiting the profits that can be made from petty trade and small businesses operating within the camps.
- The ethnic and demographic profile of the sample was: 78.5% Tuareg, 9.4% Arab, 3.9% Fulani, 3.9% Songhai, 0.4% Dogon (1 household), and 3.9% of household descriptions were

[1] FCFA = West African CFA franc. The September 2013 – August 2014 purchasing power parity (PPP) exchange rate for these calculations is 212.8267 FCFA = 1 USD, with a weighted calculation derived from the World Bank's 2013 and 2014 PPP conversion factors for Burkina Faso (available online at http://data.worldbank.org/indicator/PA.NUS.PPP).
[2] For further explanation of these concepts, see the definitions starting on page 14.

ambiguous. 52.3% of interviewed household members were under 18 during the study period, with just 2.8% of members 65 years old or above. 50.8% of household members were female, with 49.2% male. The poorest households in the camps could not be identified consistently on the basis of demographic characteristics such as family size, ethnic group, or elderly- or female-headed status[3]. In Sag Nioniogo, the poorest households were either wholly reliant on relief aid, or their income from petty trade and other work in the camp was extremely low. In Goudebou and Mentao, the poorest households also had no independent income, or very low levels of income from petty trade, work in the camps and livestock sales. Some poor households were paying more in livestock inputs than they received from the sale of livestock products.

1.3. Assets and land access

- Most camp-based refugees have re-established income generating activities with minimal capital and assets. The main productive assets they were able take with them from Mali were the tools of their trade, for artisans, and for herders some livestock. However, reports indicate significant losses in flight[4].
- The refugees have very few consumer goods. These include mobile phones (owned by 78.9% of households) and cooking utensils, but also between one-in-four and one-in-six of households owned motorbikes, solar panels, radios, and bicycles – and five households reported owning a car.
- Livestock – mostly goats – are kept within all sites and provide limited quantities of milk and meat, amounting to an average of 4.1% of food energy requirements for the 59.4% of households that reported food income from their animals. In the Sahel region, 89.3% of households keep livestock within Burkina Faso, either in or around the camp or close to the Malian border. A further 46.5% have livestock both within and outside Burkina Faso. Access to pasture close to the camps was described as a problem by refugees in all sites.

1.4. Livelihood options and constraints

The main livelihood constraints facing refugees in Burkina Faso are:

- Lack of capital. This affects all households that were forced to flee with little cash to invest in business; in both household interviews and focus group discussions, refugee women and men in all camps described lack of investment finance as a major constraint on their trade. One of the main factors restricting the opportunities within camps for small-scale traders and artisans is their limited current ability to invest or purchase more than a small volume of goods to sell on. This applies to both male- and female-headed households. However, as

[3] The only exception in the sample was a couple who both had serious disabilities that required medical attention. This household was among the poorest in Sag Nioniogo and could be easily identified for targeting purposes.
[4] *Evaluation approfondie sur la sécurité alimentaire en situation d'urgence dans les camps de réfugiés Maliens et villages hôtes au Burkina Faso* (2013), World Food Programme. Available online at http://documents.wfp.org/stellent/groups/public/documents/ena/wfp256916.pdf

female-headed households are likely to have less collateral (including livestock in Mali) than their male counterparts, it is possible that they have greater difficulty in accessing credit. This needs further investigation.

- Problems in accessing markets. This is a particular problem for artisans based in the Sahel, but transport costs are also a major problem for artisans in Sag Nioniogo, over 30 km from Ouagadougou.
- Lack of access to grazing. This is a particular problem in Sag Nioniogo but is also a limitation for pastoralists in the Sahel camps, where lack of access to pasture for livestock close to the camps was a major concern.
- Lack of access to further education and skills training for young refugees, and limited opportunities to start their own enterprises or undertake paid work within the camps.
- Lack of opportunities for high-value jobs outside of the camps for skilled refugees.
- Finally, cultural constraints prevent married women from working outside the camp; this limits their income-earning opportunities and in turn may add to domestic tensions.

1.5. Simulations

At the request of UNHCR, three simulations have been produced to separately investigate potential impacts of reduced WFP support, an external food price shock, and one strand of a livelihoods project that UNHCR partners are implementing in the Sahel region.

IHM data was first used to simulate a reduction in the WFP cash transfer and the impacts of this (across the income distribution) on household incomes and capacities to access basic food and non-food needs. **With a 50% reduction in the WFP cash transfer, the disposable incomes of many poor households would fall to a level only just above the food poverty line (i.e. the level at which minimum food energy needs can be met).** Some fall below it, and the households that are already unable to meet their basic food needs drop much further below this threshold. **When other essentials are taken into account as well as basic food costs, many more households fall below the 'standard of living threshold' poverty line.** The average reduction in disposable income per adult equivalent across the camps would be 27,560 FCFA ($129.50 at PPP rates), and 16.8% of the overall population would fall below the standard of living threshold having previously been above it.

Table 1: Summary of simulated changes' implications for the food access and welfare of poorer refugee households

	Sag Nioniogo simulations		Goudebou simulations		Mentao simulations	
	WFP cash cut	**Food price rise**	**WFP cash cut**	**Food price rise**	**WFP cash cut**	**Food price rise**
Implied food energy deficit of lowest DI/AE	47 kg millet	38 kg millet	207 kg millet	129 kg millet	187 kg millet	78 kg millet
% of HHs below SoLT	26.09%	24.64%	52.17%	47.83%	34.74%	30.53%

To further explore the potential impacts of reduced support and to provide estimates for UNHCR advocacy, **a 100% increase in staple food prices was also simulated**. This too had severe impacts on the poorer households, while affecting better-off households less. **With this simulation, the average reduction in disposable income per adult equivalent is 20,837 FCFA ($97.91) and 13.3% of households newly fall below the standard of living threshold – smaller impacts than the withdrawal of 50% of WFP cash aid.**

The potential benefits of the planned milk production strand of the forthcoming 'Sahel Milk' project[5] were simulated by increasing the cash incomes of Goudebou and Mentao households that keep cows in Burkina Faso, based on project staff estimates of (i) the extra income per cow that would be earned through the project and (ii) the reported numbers of cows kept in Burkina Faso that were recorded in this study. This simulation suggested that households with large numbers of cows in Burkina Faso could gain substantial returns. However, households with fewer cows would be unlikely to see much real impact on their livelihoods – and the overall proportion of households with sufficient numbers of Burkina Faso-based cows for this intervention to make a significant additional contribution to their disposable incomes is fairly low. The project is likely to have far wider effects with the involvement of non-cow owning refugees in associated activities such as milk-processing, as set out in the project proposal.

2. Recommendations

- Promote access to pasture where feasible, to allow further investment in livestock and livestock products.
- Consider ways in which access to credit and wider markets might be improved for artisans and petty traders (see the qualitative Part II report[6]).
- Consider the specific problems facing women traders and artisans (see Part II) and facilitate business development initiatives.
- Explore options for safety net programmes to support households currently facing economic difficulties, using information from this report in programme design.
- Use information from simulations presented in this report to assess the impact of possible reductions in aid on poorer households, and to inform policy decisions and advocacy.
- Consider ways of raising potential profits for poorer refugees through the Sahel Milk project by increasing the numbers of dairy cows owned by these households, and supporting non-cow owning refugees to participate as milk processors.
- Create new opportunities for young people to develop vocational and business skills, allowing them both to contribute to current household income and integrate socially and

[5] For more details, see: 'Milk Solutions for the Livelihoods and Self-Reliance of Malian Refugees and Host Communities in Burkina Faso' (2014), UNHCR. Available online at http://data.unhcr.org/SahelSituation/download.php?id=971

[6] Petty, C., Ellis, W., Ngoleka, S., Acidri, J., & Seaman, J. (2014) *Baseline assessment of Malian refugees in Burkina Faso, Part II: Qualitative social and economic study*, Evidence for Development & UNHCR. Available online at http://www.efd.org/reports/Baseline-UNHCR-Burkina-Faso-livelihood-assessment-Malian-refugees-part-II/

economically on return to their home areas.

- Explore options for facilitating the employment of skilled refugees in local towns outside of the refugee camps.

Definition of terms and concepts as used in IHM analysis

- **Household**: A group of people sharing pooled resources and eating from a common pot.

- Household **food energy requirement**: The sum of the food requirement of each individual in the household, which varies according to their sex and age[7] and time present in the household during the study period.

- The **staple diet** (and price per kcal of the staple diet): The staple diet consists of the foods that form the basis of the local diet purchased by poor households after their own food production (and/or rations, in the case of refugee households) has run out. This is identified in consultation with local key informants. A weighted price per kilocalorie is calculated[8] based on the average (or mid-year) local market price of that diet during the study year. After taking account of food energy already derived from the household's consumption of rations or own-produced food, the price per kcal of the staple diet is used to calculate the cost of purchasing the remaining calories needed to make up the household's total annual household food energy requirements. In this study, the staple food identified by poorer refugee households was millet, with the cost varying by location. In Sag Nioniogo, the study year millet price was 200 FCFA per kg, while in Goudebou and Mentao it was 230 FCFA per kg.

- **Cash income**: All cash income from all sources (i.e. crop sales, sale of livestock and livestock products, employment/self-employment, cash transfers, and the sale of wild foods). Note that production and input costs are deducted from cash income. Where income is derived from petty trade, commerce, the sale of livestock or other sources, the amounts recorded represent the profit made by the household after production or input costs are deducted. This means that a 'negative' income can be recorded if, for example, animals are sold at a loss.

- **Food income**: All sources of income as food consumed (e.g. from crops, livestock products, payment in kind, food gifts and transfers and wild foods). Recorded in kilocalories (kcal).

- **Disposable income**: The cash remaining to each household after it has met its total food energy needs, based on WHO reference standards[9]. This can be a negative value, if the household is unable to meet its full food energy needs with its available income.

[7] Food energy requirements derived from 1985 WHO reference standards: 'Energy and protein requirements', *Report of a Joint FAO/WHO/UNU Expert Consultation* (1985), World Health Organization Technical Report Series 724. Available online at http://www.fao.org/docrep/003/aa040e/aa040e00.HTM

[8] For example, if the diet is 90% maize at 20 shillings per kg (with 3,630 kcal per kg) and 10% beans at 50 shillings per kg (with 5,600 kcal per kg), the price of the diet (per kcal) = ((20 / 3,630) x 0.9) + ((50 / 5,600) x 0.1).

[9] Food energy requirements derived from 1985 WHO reference standards (see above).

Equation 1: Disposable income

$$\text{Disposable income} = \text{Sum of all household cash income} - ((\text{Household food energy requirement } [kcal] - \text{Sum of all household food income } [kcal]) \times \text{Price per kcal of staple diet})$$

- The relationship between **food income**, **cash income** and **disposable income**: Disposable income (DI) is an outcome measure. It represents the money that remains to a household after food and cash incomes have been allocated to meet its members' basic food energy (kcal) needs[10]. In the model, cash income is used to 'buy' the required kilocalories not covered by food aid or own production, in order to meet the household's basic food energy needs. The detailed information collected on the different types of food and cash income can be used to model impacts of changes in the prices, production or values of any income source(s) as well as changes to other defined variables.

- **Adult equivalents**: Disposable incomes and other figures can be standardised to take account of variation in household size by dividing them by the number of 'adult equivalents' in each household. The number of adult equivalents is calculated as the total household energy requirement divided by the energy requirement of a young adult (2,600 kcal per day)[11]. The standard IHM income distribution chart shows 'disposable income per adult equivalent' (DI/AE).

- **The food poverty line:** Households that cannot access their basic food energy requirements[12] – either through own production, transfers, food purchase using cash income, or a combination of these – are described as being 'below the food poverty line'. Data for these households appears below the *x* axis (as negative *y* axis values) on the disposable income charts. The income deficit shown on the chart is equivalent to the cost of purchasing the quantity of food required to meet reference food energy standards, based on the cost of the cheapest staple(s) that form the local staple diet, established with key informants.

- **The standard of living threshold:** This is the cost of a basket of goods and services sufficient to achieve a minimum acceptable standard of living, which incorporates the cost of meeting basic food energy needs. The items are established in discussion with poorer residents and typically include clothes, soap, fuel, primary education costs and other items deemed locally-necessary for 'social inclusion'. Personal costs (such as clothes and primary education) are allocated to households on a per-person basis: for example, primary school costs would be allocated to a household only for their children of primary school age. Other, more general costs such as fuel are allocated on a per-household basis. Table 5 shows the annual costs of

[10] Food energy requirements derived from 1985 WHO reference standards (*ibid.*).
[11] Food energy requirements derived from 1985 WHO reference standards (*ibid.*).
[12] Food energy requirements derived from 1985 WHO reference standards (*ibid.*).

the 'standard of living' items identified in discussion with residents in the three refugee camps.

- **Social inclusion**: See 'standard of living threshold' above. A precondition for social inclusion is that households are able to meet their basic needs so they can live in dignity, participate in normal social activities and meet local norms in terms of clothing and personal hygiene.

- **Quantiles:** Data from individual households can be grouped into 'quantiles' (essentially equal-sized data subsets) to allow for grouped analysis and to identify, where possible, trends and characteristics of households at similar income levels. This can be useful for targeting purposes, or to test assumptions concerning a particular section of the community or social category (for example people with disabilities, or female-headed households). To retain a reasonable degree of disaggregation, some of the data in this report is sub-divided into five equal (or almost-equal[13]) '**quintiles**', grouped and presented in ascending order of 'disposable income per adult equivalent' – with the poorest households starting at the bottom of quintile 1, and the richest households located at the top of quintile 5. Within each quintile the **median value** (i.e. the numerical value separating the higher half of the data set from the lower half) is sometimes indicated along with the range of values for that quintile.

- **Open-IHM:** Individual household data is analysed using IHM software developed by Evidence for Development. This has been placed on an open-source platform known as 'open-IHM', which can be downloaded at http://code.google.com/p/open-ihm/

[13] Where total numbers of households do not divide equally between the 5 quintiles, decisions must be made about which quintile(s) should include an extra household. There are no fixed rules, but in general the first extra household has been added to the poorest quintile, with further additions to other quintiles depending on the total number of odd households.

Introduction

This is the first in a series of assessments focusing on the current livelihoods of Malian refugees in Burkina Faso, undertaken on behalf of UNHCR, the UN Refugee Agency, and led by the UK-based research organisation Evidence for Development[14]. The purpose of the assessments is to establish a comprehensive understanding of the livelihoods and economic activities of refugee households living in the three official UNHCR camps in Burkina Faso[15] and among the host population in the city of Bobo-Dioulasso. The baseline assessments will be used to assist the planning and targeting of future programmes aimed at supporting the refugees' own livelihood activities – including a major livestock intervention in the Sahel region which will provide support to the dairy industry, with beneficiaries among both the refugee and host communities – and to monitor changes in food security and income levels across the refugee population as a whole. To ensure that impact monitoring can be sustained over the longer term, a further objective is to build capacity in the research methodology used in the study within the University of Bobo-Dioulasso.

The focus of this report is on the quantitative assessment of household economies in the three official refugee camps, carried out in September – October 2014. A qualitative report (Part II)[16] accompanies this. An assessment of the situation of refugees residing with the host community in Bobo-Dioulasso will be conducted in January 2015.

1. Political and humanitarian context

The current refugee population, numbering around 33,000 people, fled to Burkina Faso in the wake of conflict in the north of Mali in two waves: the first in January 2012 and the second in January 2013, following the Malian-French military intervention in the region. A majority of the refugee population is made up of pastoralists and agro-pastoralists from the Tuareg ethnic group, with a smaller number of Songhai, Arab, Fulani and Dogon households. As well as livestock herders, the refugee population also includes skilled artisans, traders and shopkeepers, many now operating on a small scale in the camps.

UNHCR and its partners have supported the refugee community through protection activities, the provision of basic needs (distribution of WFP food and cash as well as other basic non-food items), and a range of services including primary healthcare, water and sanitation, shelter, education, and animal health services. Some small-scale income-generating projects have also been implemented. Currently, the monthly WFP assistance includes a food ration composed of rice, pulses, corn-soya

[14] For more details of Evidence for Development, see: http://www.efd.org/
[15] Sag Nioniogo, situated close to Ouagadougou (the capital city of Burkina Faso); Goudebou, situated close to the town of Dori in the northern Sahel region; and Mentao, situated close to the town of Djibo and also in the Sahel region.
[16] Petty, C., Ellis, W., Ngoleka, S., Acidri, J., & Seaman, J. (2014) *Baseline assessment of Malian refugees in Burkina Faso, Part II: Qualitative social and economic study*, Evidence for Development & UNHCR. Available online at http://www.efd.org/reports/Baseline-UNHCR-Burkina-Faso-livelihood-assessment-Malian-refugees-part-II/

blend cereal, fortified oil and iodised salt – equivalent to 1,203 kcal per person per day, in total – and a cash transfer of 3,500 FCFA per person[17].

UNHCR will support voluntary repatriation for refugees who decide to return to Mali when it is considered safe to do so. However, for the present time UNHCR aims to build on the skills and resources of the various population groups within the refugee community, including the most disadvantaged. The objective is to promote greater economic independence, to ensure that vulnerable groups are not adversely affected by a focus on 'self-reliance' and, where possible, to stimulate key sectors in the local economy – benefitting the host population as well as refugees.

Evidence for Development was asked to lead the assessments that will inform this work, based on its expertise in both large- and small-area household economy analysis, and its organisational focus on national-level capacity building.

2. Background to the camps

Sag Nioniogo refugee camp is sited 45 km (approximately 45 minutes' drive) north of Ouagadougou, Burkina Faso's capital city. It was first established in the 1990s to host refugees fleeing an earlier conflict in Mali, and was reopened in 2012. Refugees currently living in Sag Nioniogo were relocated there in October 2012 from Somgande, a temporary schoolyard site located in Ouagadougou. Sag Nioniogo covers approximately 1,200,000 m^2 of land. The current population is made up of Tuaregs (81%), Songhai (11%), Peul/Fulani (3%) and others (5%), who mainly originate from Gao, Mopti and Tombouctou regions of Mali[18].

The camp is situated in the Ouagadougou peri-urban livelihood zone, where the local population grow millet, maize, sorghum, groundnuts, okra and market garden produce, and keep livestock (cattle and goats)[19]. The population density is high, and there are few agricultural labour opportunities for the refugee community, who do not have access to land for either cultivation or keeping livestock. Most refugees are engaged in either artisanal work or trade, with a small number of livestock kept within the camp.

Goudebou refugee camp was established in October 2012, when refugees who had initially settled in camps close to the border with Mali were relocated to ensure their safety and security. Goudebou has a capacity to host 21,000 refugees, on approximately 1,260,000 m^2 of land. The current camp population is made up of Tuaregs (93%), Arabs (2%), Peul/Fulani (2%) and others (3%), who mainly

[17] At purchasing power parity (PPP) rates for September 2013 – August 2014, 3,500 FCFA was equivalent to (US) $16.45. With a more basic direct currency exchange rate, 3,500 FCFA was worth $7.35 at the mid-point (February-March 2014) in our study period.
[18] 'Camp Profiles: Sag-Nioniogo Refugee Camp' (October 2013), UNHCR. Available online at http://data.unhcr.org/SahelSituation/settlement.php?id=169&country=501&region=68
[19] *Livelihood Zoning and Profile Report: Burkina Faso* (2010), FEWS NET. Available online at http://www.fews.net/sites/default/files/documents/reports/bf_profile_en.pdf

originate from Gao and Tombouctou regions of Mali[20].

Goudebou is located in Oudalan Province in Burkina's northern Sahelian zone, close to the town of Dori. This is a low rainfall area (less than 400 mm per year), with high levels of poverty and food insecurity. The local population mainly relies on livestock-rearing (mostly cattle, goats and sheep), with some rain fed cultivation (mostly millet and sorghum)[21]. In contrast to the population in Sag Nioniogo, the mainly pastoralist refugees in Goudebou have been able to maintain larger herds than those close to Ouagadougou, but opportunities for other livelihood activities (notably artisan work) are far fewer in the Sahel.

Mentao refugee camp was originally established in 1994, following earlier conflicts in Mali. In 2012 it expanded to accommodate the new influx of refugees, and in addition to the original northern and central sectors of the camp, four more administrative units were added: 'Mentao East', 'Centre South', 'South' and 'South South'. Tuareg households mainly reside in the North, East, Centre South and South South sectors, while the majority of Arab households are located in the Centre South sector. Other minority ethnic groups (including the Songhai and Fulani) are dispersed among all six sectors of the camp. Sectors continue to expand due to relocation of refugees from the unofficial camps of Gangafabou and Damba along the Mali - Burkina Faso border.

Mentao camp is located 5 km south of Djibo[22], the main town of Soum Province in the Sahel region. Djibo has a population of 30,000 and is located 200 km north-west of Ouagadougou. Mentao is located in the same Sahelian livelihood zone as Goudebou, with annual rainfall of around 400 to 500 mm. It is an agro-pastoral area, with rain-fed production mainly comprising millet, sorghum and cowpeas, and livestock including cattle, sheep and goats and poultry.

3. Objectives and approach

3.1. Objectives

The assessment was designed to meet the following objectives:

- To develop in-depth livelihood baselines of the refugee population – producing profiles for the official camps covering livelihood assets and strategies, food and cash income sources and levels, expenditure patterns, and assets, disaggregated by wealth group.
- To assess livelihood options and constraints of different groups of the refugee population.
- To explore gender and diversity issues and identify potential risk factors that influence the refugee population's vulnerability to livelihood insecurity.
- To provide quality data to inform the design and review of livelihood projects.

[20] 'Camp Profiles: Goudebou Refugee Camp' (October 2013), UNHCR. Available online at http://data.unhcr.org/SahelSituation/settlement.php?id=132&country=501&region=68
[21] *Livelihood Zoning and Profile Report: Burkina Faso* (2010), FEWS NET (see above).
[22] 'Camp Profiles: Mentao Refugee Camp' (October 2013), UNHCR. Available online at http://data.unhcr.org/SahelSituation/settlement.php?id=90&country=501&region=68

- To provide a robust basis for making estimates of the impacts of contextual changes and programmatic decisions on refugees' livelihood security, which will feed into future advocacy and appeal efforts and programme design.

3.2. Approach

In discussion with UNHCR Burkina Faso, and in the light of the available studies of the refugee population (see bibliography), the individual household method (IHM) was identified as the most appropriate research tool for use in this assessment. The IHM is a refinement of the household economy approach (HEA), which is widely used across all regions of Africa for national and sub-national food security assessments. The IHM was created to extend the use of HEA techniques to urban and other areas – such as refugee camps – where the standard HEA method of collecting information on 'typical' households with access to a similar range of assets and livelihood opportunities cannot be applied. The more detailed economic and social information collected in IHM studies can be used for a range of development, project-planning and research activities: for example, understanding variation between households at similar levels of income, which may be necessary for targeting purposes; gaining insight into livelihood patterns such as transfers between households, and the uses of wild foods and other resources; and, as with the simplified HEA dataset, for modelling the impacts of actual or hypothetical changes in household income and sources of income. This approach has been used in many local and larger-scale rural studies, randomised-sample surveys, a longitudinal study of resettlement in Uganda, and in an urban study. In Burkina Faso the assessment protocol was adapted to include additional focus group discussions, providing insights into wider issues affecting the livelihoods of Malian refugees.

Survey team

The assessment was led by five experienced IHM practitioners from Evidence for Development: three from EfD's London headquarters and two EfD Associates based in Malawi and Uganda respectively. Trainees included five postgraduate students from the University of Bobo-Dioulasso, headed by Professor Patrice Toe of the Institute for Rural Development (Department of Sociology and Rural Economy), two staff from UNHCR's implementing partner, IEDA, and two staff from UNHCR's food security and livelihoods section in Ouagadougou. Five experienced refugee translators accompanied the team throughout the assessment and took part in classroom-based training, and at each of the survey sites a further five camp-based translators were identified. This meant that once basic classroom- and field-based training had been completed, 10 teams could carry out individual household and focus group interviews simultaneously.

Training

Training was classroom and field-based. Initial classroom-based training, conducted over two days, included a theoretical introduction to livelihoods analysis using household economy methods, the classification of food and cash income used in household economy measurement and modelling, and principles of data collection using semi-structured interview techniques. Interview forms were

reviewed in detail and the translation of key concepts and terminology discussed with translators.

Training continued throughout the assessment period. EfD staff provided individual mentoring in the field, and supervised data-checking and entry of consolidated interview information onto Excel spreadsheets prior to uploading them into the open-IHM software. As this combined training and assessment exercise was conducted over a relatively short period (around five days were available for data collection at each site), time was allocated to regular plenary feedback sessions where points that could be covered only briefly in the initial classroom sessions were discussed in depth, in the light of practical field experience. At the end of the field research period, all trainee members of the team were assessed against IHM Level I certification criteria: this covers basic household interview skills and competence in data checking and consolidation. More advanced skills – including use of the open-IHM analytical software and conducting interviews to establish context information – will be covered in future assessments.

Timeline

The assessment was conducted between 8th September and 6th October 2014. Initial training in Ouagadougou and the assessment in Sag Nioniogo camp took place between 8th and 18th September. On 19th September the team travelled to Dori, where they spent 6 days in Goudebou camp, followed by 6 days in Mentao camp, working out of Djibo. The baseline assessment of refugees living among the host community in Bobo-Dioulasso will be conducted in January 2015, together with further baseline data to be collected from households targeted for the Seeds for Solutions milk and micro-enterprise dairy project in the Sahel region.

Limitations and constraints

The main constraint facing this study was a shortage of time. As the IHM has not previously been used in Burkina Faso, it was necessary to conduct the study with a team of field researchers who were new to the IHM methodology. This meant that training had to be combined with data collection; ideally, initial training would be undertaken separately from a major assessment activity. Language and translation issues also had to be addressed, as none of the field researchers spoke the local languages of the refugee population. In terms of data collection, the limited time available for field work had to be organised around food aid distributions in the Sahel camps, increasing pressures on the core team responsible for training, data input and data checking. The team was also hampered by long power outages in the Sahel.

Some problems were encountered in recording the exact quantities that households received in ad hoc, non-WFP food and cash distributions, but perhaps the most difficult aspect was in establishing households' livestock herd sizes. It is widely assumed that respondents understate the number of livestock they hold, although this assumption cannot be verified without counting the actual number of animals in an individual's herds. Several households also reported that they had lost contact with the people looking after their animals kept in Mali, and so were unsure whether they had any livestock remaining there.

While gifts and exchanges between households were documented in the study, establishing a more detailed understanding of systems of gift exchange, reciprocity and other forms of support was outside the present study. This could be explored in future research.

Finally, although the sale of livestock in markets within and outside Burkina Faso was discussed and both market prices and transaction costs were recorded, the assessment does not include a detailed study of markets. Similarly, information on the main markets for artisanal goods was recorded but did not extend to wider questions such as the total volume and value of this trade.

4. Protocol

The IHM protocol involves the following steps:

- Selection of the survey sample;
- Data collection, including context information and individual household interviews;
- Data checking and consolidation;
- Entering data in the open-IHM software, and producing initial output analysis;
- Follow-ups where information appears to be incomplete or inaccurate.

Data is collected for a defined period, usually the most recent 'consumption' year. For refugee populations where food aid provides a large proportion of annual nutritional needs, the 12-month period immediately prior to the study may be used. For this assessment, the period was September 2013 to August 2014. Additional contextual data is collected to inform household data collection and to identify the local staple diet and costs of purchases such as soap, clothes and fuel required to meet the norms for 'social inclusion'. Next, individual household data is collected through semi-structured interviews conducted with both male and female household members; young and elderly people who may have relevant information are also included in the interview. This method of collecting and analysing individual household incomes and income sources allows for very precise disaggregation of results, where social or demographic household characteristics can also be identified. Finally, income data can be used to model the impact of major shocks or changes across the population as a whole or among a defined subset of the population.

4.1. Sampling

Survey sample sizes are usually calculated on the basis of the required precision of the result, for example to provide an estimate of average weight for height, or the proportion of children in some category +/- an error estimate. To date, however, IHM surveys have not been collected with the objective of establishing averages such as average household income, as this is often of limited practical value for operational agencies. The interest (as is the case in the present study) has been more in the distribution of income within a population, the various sources of income at different income levels and the factors that determine these – such as household membership, ethnicity and other household characteristics – all of which are useful in guiding operational decision making. In practice, the distribution of income and income sources tends to be stable from quite small sample

sizes (e.g. 30-40 households). Nevertheless, for any sample of households it is possible to estimate confidence intervals across the income distribution by 'bootstrapping'. The size of the error tends to be smallest in the poorer part of the distribution, where there is least variation in income between households, and greatest for better-off households. Confidence intervals can be attached to grouped output (such as data grouped by quintiles) in the ordinary way.

At the time of the study, Sag Nioniogo had a population of approximately 1,500 people. A total of 206 households were identified, spread over six blocks (A, B, C, D, E and F). Each third household was selected for the study interviews, with 35% of all households selected for interview. Data from 69 households is included in this report[23].

In Goudebou camp, 21 blocks were identified and used as a framework for sampling. Systematic sampling was used to select households, based on the number of households in each block. A sample of 120 households was drawn out of the recorded 1,975 households in the camp. Data from 92 households is included in this analysis[24].

In Mentao camp, due to the size and complexity of the camp and the amount of time available, maps of the different camp sectors were commissioned through UNHCR from residents with relevant skills and in-depth knowledge of their sector. The block boundaries and names for each sector were cross-checked, and the number of households within each block and sector counted with the assistance of the map-makers. A systematic sample of 120 households was drawn from the recorded 883 households, based on the proportion of the total population in each sector. Every 8th household on the sector maps was selected (sampling interval of 7.358 households), with the additional households required to complete the sample selected from areas that were least-well represented. Data from 95 individual household interviews is included in the report[25].

The sampling methodology used in the assessment for all camps was as follows:

- A sketch map was drawn, showing the camp's key features including the main administrative *blocs* (blocks), *îlots* (islets) and *parcelles* (plots), block access roads, pit latrines, water points, playgrounds, pre-primary schools, solar pump facilities, mosques and churches.
- The number of households that could be interviewed in the available time was estimated. Next, the number of households in each section were counted, with the sections then allocated proportionate numbers of households for interview. After this, the actual households to be interviewed were selected – either by systematic sampling (for example, taking every 8th household) – or if that was not practical due to the lay-out of tents, using transects.
- Households were defined as economic units within which members "contribute resources to and consume from a common pool of resources". In many cases, households in the camps

[23] 3 households have been excluded from the analysis pending further data checks. Some or all of these may be included in a later report.
[24] Further checks are required on data from a further 8 households. Some or all of these may be included in a later report.
[25] 8 households require further checks to their data and may be included in a later report.

occupy more than one tent; for this reason, households were identified with the assistance of key informants.

- In cases where the adult head of a household was found by an interview team to be absent temporarily (for example, working outside the camp), teams were instructed to visit the next selected household and to revisit the initial household on another day.

4.2. Preliminary information relevant to the IHM data set

Before individual household interviews were undertaken, the following basic contextual information was collected:

- Sources of food and cash income available to the population, including information on livestock and crop production and returns, employment and self-employment, informal and formal transfers (including food aid), and access to wild foods. The purpose is to provide interviewers with basic information that will allow them to judge whether a response in an individual household interview is plausible. If a response seems implausible, the interviewer is then well-placed to seek further explanation.
- The annual costs of basic items required to meet local norms for 'social inclusion', established through discussion with poorer female community members.
- A 'staple diet', based on the average/mid-year market price of the cheapest available foods a poorer household would buy after its own food production – or in the case of a refugee community, its rations – had run out. The open-IHM software uses this staple diet to calculate the cost of purchasing the calories needed to make up households' total annual food energy requirements, after taking account of the food energy derived from rations and own production. Again, the staple diet was established through discussion with poorer female community members.
- Conversion of local weights and measures to standard units. This sometimes requires weighing items measured locally in units such as 'plates' or 'sacks' at local markets. Conversion tables are drawn up to allow for consistent conversion of local units into the standard international units used in IHM analysis.

4.3. Household interviews

For individual household interviews, the group was divided into 8-10 interview teams, including a lead interviewer and a translator. Additional supervision was provided by EfD trainers until they were satisfied that individuals could work independently, probe with confidence and produce consistently accurate data. Households were allocated to each team at the start of each day, and teams aimed to interview two households per day – with each interview lasting on average 1 hour 30 minutes. This allowed time later in the day for rigorous data checking, consolidating survey information on spreadsheets, and uploading data into the open-IHM software.

Care was taken at the beginning of each interview to establish the exact composition of the household. In some cases, family groups sleeping in three or more tents cooked and ate together. In

these cases, detailed income data was collected from all appropriate members of the group, which was analysed as a single household unit.

The basic IHM dataset is conventional and includes household demography (with the age and sex of all household members), livestock and other asset holdings, and all sources and levels of food and cash income during the 12-month study period (September 2013 to August 2014) preceding the survey. In addition to this core data, the study also established the following household-level information:

- The costs of all inputs used in livestock production, artisan work, petty trade and other commercial activities.
- The location of livestock owned by the household, in both Burkina Faso and Mali, and the value of livestock and livestock products sold in the previous year. Input and marketing costs were deducted, to establish the overall profit (or loss) on sales.
- Food and cash given by refugee households in the camps to others in the camps or elsewhere, as well as food and cash similarly received by those households.
- The household's place of origin in Mali.
- The household's own description of its ethnicity and social group.
- The highest level of education achieved by adults, and primary or secondary school attendance among children.

4.4. Data checking and data entry

Household interview data recorded on the IHM interview forms was consolidated by the person who conducted the interview, checked by their supervisor, and transferred onto spreadsheets on return from the field. If any anomalies were noted, a short follow-up visit to the household was scheduled for the following day. Further checks on each household were carried out once the data had been uploaded to the open-IHM software. Where open-IHM output appeared to show implausibly low (or high) levels of disposable income or other irregularities, interview forms and spreadsheets were checked again – and where necessary, household revisits were carried out.

4.5. Data analysis

IHM data from all three study sites was analysed to establish the ways in which refugees currently access food and cash income, and how these differ across the wealth distribution. Potential impacts on different sections of the population from defined changes in food or cash income were also simulated. In addition to individual household interviews, focus groups examined the ways in which factors such as gender, ethnicity and age can affect both individual and household exposure to poverty and insecurity; specific challenges facing artisans, livestock owners, traders, and others who are establishing businesses and other enterprises in Burkina Faso were also explored. These interviews inform the report's recommendations, and feature more fully in the Part II report, which covers qualitative social and economic aspects of the Malian refugee experience in Burkina Faso.

Assessment findings

Findings for all sites are presented together under the following themes:

- Population demographics.
- Income distributions in the study populations, with breakdowns of disposable income per adult equivalent by income quintiles.
- The expenditure items required to meet basic local needs, and the capacities of households in different sections of the income distribution to purchase these. Analysis of standard of living thresholds here (in the quantitative Part I report) is complemented in the more qualitative Part II report[26] by additional information on food expenditure patterns, initial business capital investment costs and recurrent input costs.
- The main sources of food income across the study population, from poorer to better-off households.
- The main sources of cash income across the study population, including the types of employment and self-employment and their returns among different households.
- Assets, focusing on livelihood asset holdings and the main tradable goods.
- Simulations of the likely (separate) effects of a reduction in WFP cash support, a food price shock, and one strand of the forthcoming livestock and dairy project.

1. Demography

Key points:

- In all three camps, around 50% of the population is made up of people under 18 years old (with as many as 56.2% in Goudebou), and around 3% of people are over 64.
- The ratio of males to females is more or less equal in Sag Nioniogo and Mentao – with roughly 50% of each sex in each camp. In Goudebou there are almost three times as many women as men in the 15-29 age range, and 53% of the total surveyed camp population there were female.
- Across the three camps, female-headed households make up 18.8% of those interviewed; the proportion is greatest in Sag Nioniogo (23.2%).

The ethnic self-descriptions of households were as follows:

- Tuareg: 78.5%

[26] Petty, C., Ellis, W., Ngoleka, S., Acidri, J., & Seaman, J. (2014) *Baseline assessment of Malian refugees in Burkina Faso, Part II: Qualitative social and economic study*, Evidence for Development & UNHCR. Available online at http://www.efd.org/reports/Baseline-UNHCR-Burkina-Faso-livelihood-assessment-Malian-refugees-part-II/

- Arab: 9.4%
- Fulani: 3.9%
- Songhai: 3.9%
- Dogon: 0.4%
- 3.9% of households' descriptions were ambiguous.

Tuaregs formed the majority of interviewed households in all three camps. Mentao was the least ethnically-diverse camp in terms of the variety of wider ethnic groups represented in the sample (all households were Tuareg, Fulani or Arab), but it also contained by far the highest proportion of Arab households.

Most of the interviewed refugees fled from their home areas in the north and east of Mali, with Tombouctou (56.7%), Gao (30.1%) and Mopti (10.9%) by far the most-represented regions. The samples did not appear to include any refugee households from Kidal or Kayes regions, however, and there were solitary households (0.4% each of the total number of households interviewed) from the regions of Bamako, Koulikoro, Ségou and Sikasso, as well as two households whose place of origin was unclear. Within these overall totals, there were significant variations by camp, with Sag Nioniogo by far the most regionally-diverse; the surveyed households in both Goudebou and Mentao were exclusively from Tombouctou, Gao and Mopti. While by far the largest proportion of households in Mentao came from Tombouctou (with just one from Gao), the majority of households in Goudebou came from Gao.

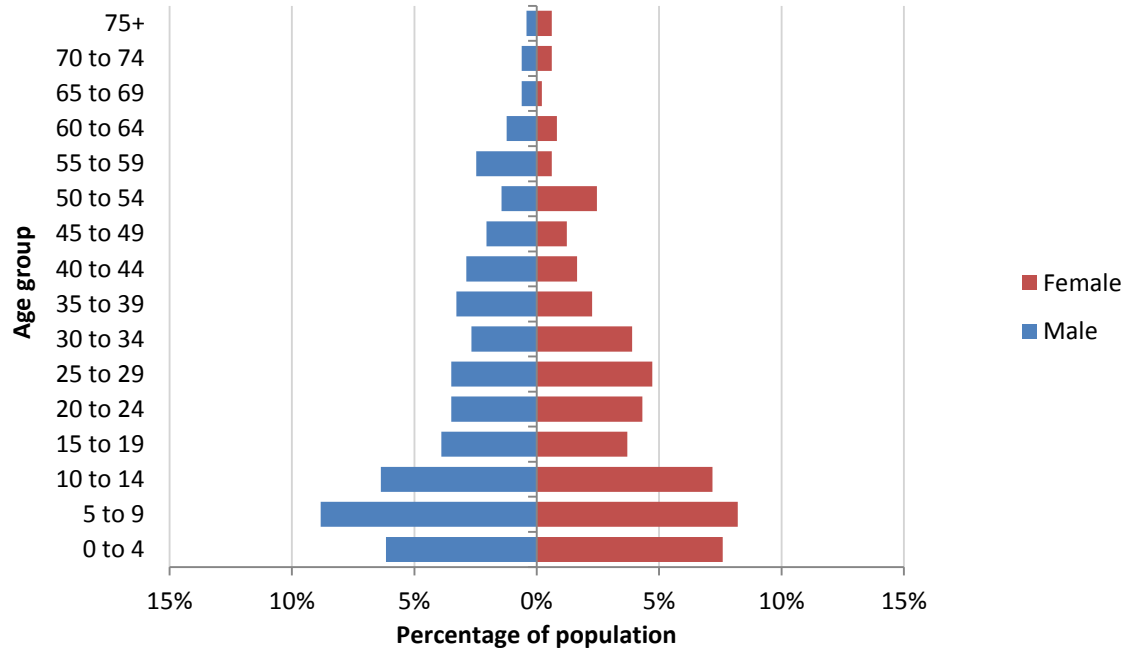
The proportion of elderly people over 64 years was small (less than 3%). Only 1 household in the sample was unable to work due to the disability of both a man and his wife. However, establishing rates of disability that results in impaired ability to work would require further in-depth study.

1.1. Sag Nioniogo

In Sag Nioniogo (Fig. 1), 48.5% of the sample population is under 18 years old, and just 3.1% of the population is 65 years of age or older; these are both respectively the lowest proportion of under-18s and the highest proportion of over-64s among the three camps. There are approximately the same overall numbers of males (243) and females (244) overall, although the proportion does vary with age group. The average household size was 7.1 people, ranging from one single-member household to a household of 23. Sag Nioniogo had the highest proportion of female-headed households: 23.2%.

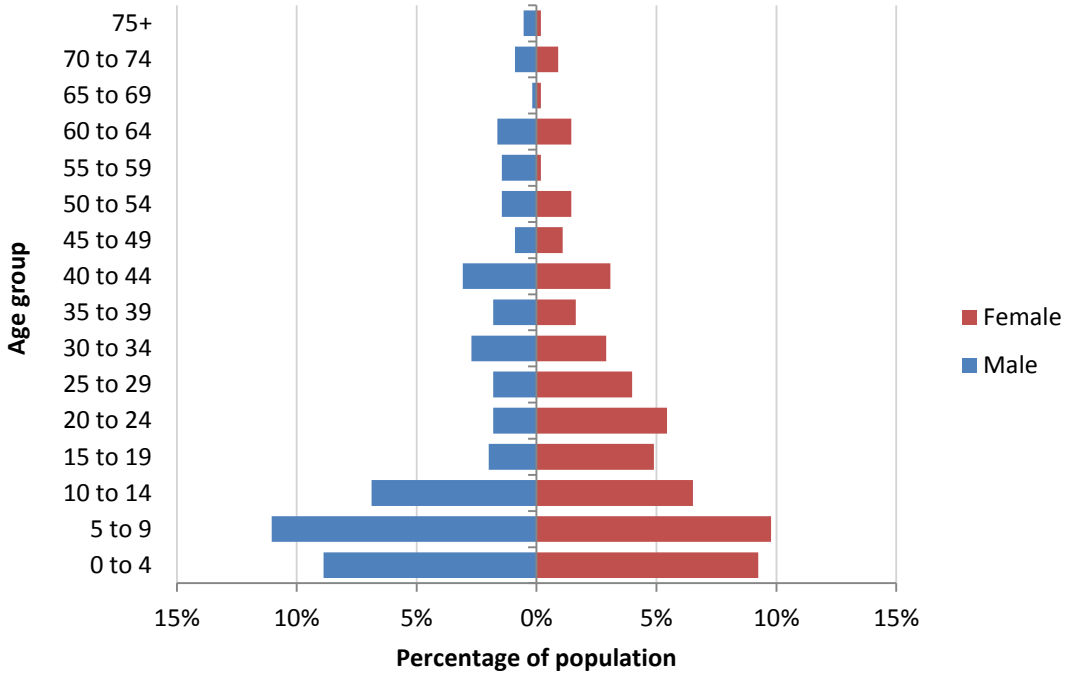
Tombouctou was the most-represented region of origin in Sag Nioniogo, accounting for 60.9% of the sample of interviewed households. 21.7% of households came from Gao, 10.1% from Mopti, and just under 1.5% (one household) from each of Bamako, Koulikoro, Ségou and Sikasso, while a further household's place of origin was unclear. 75.4% of the households were of Tuareg ethnicity, with 10.1% Songhai, 4.4% Fulani, 2.9% Arab, and 1.5% Dogon (one household); another 5.8% of households' self-description of their ethnic origin was ambiguous.

Figure 1: Sag Nioniogo population pyramid



1.2. Goudebou

Figure 2: Goudebou population pyramid

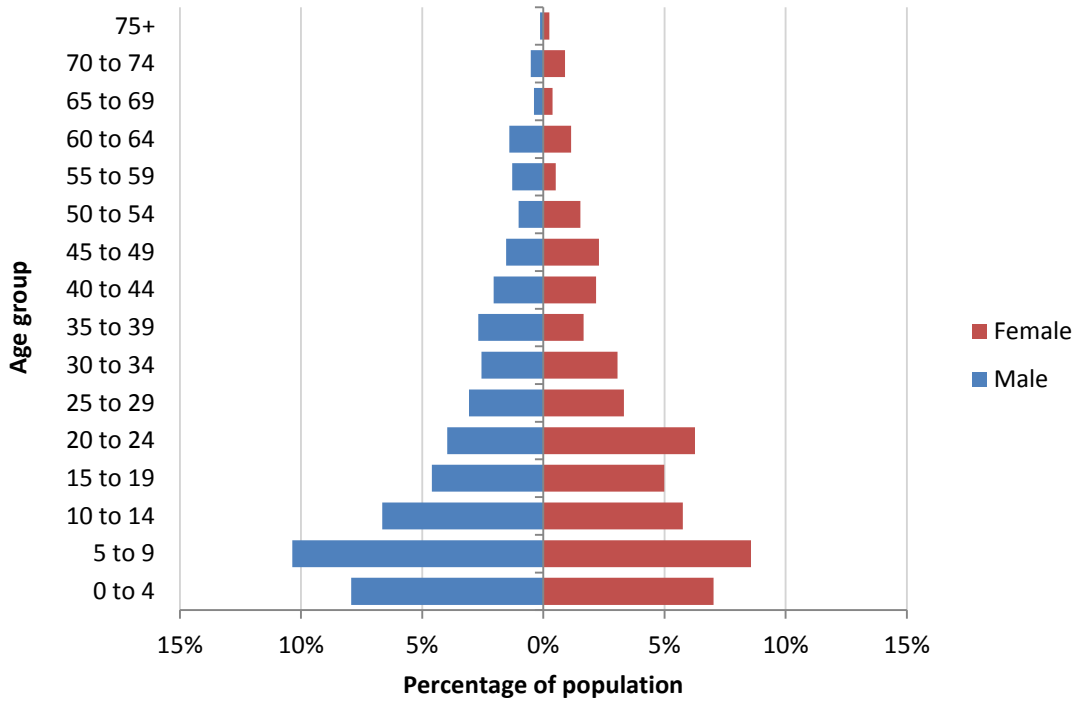


As in Sag Nioniogo, much of the population in Goudebou (Fig. 2) is younger than 18 years old – 56.2%, the largest proportion from any of the camps – and 2.9% are over the age of 64. The survey population included 255 males and 288 females. While the ratio of males to females was more or less equal in Sag Nioniogo, in Goudebou there are far more women than men in the 15 to 29 age range – just 28.2% of this age group are male, with two-and-a-half females to every male – and the overall gender proportions are the least equal of the three camps, with 47% male and 53% female. This is consistent with information collected in focus group discussions, where it was clear that many young men are living away from the camp throughout the year, guarding livestock on the border between Mali and Burkina Faso. However, of the three camps Goudebou had the lowest proportion of female-headed households: 15.2%. The average household size – 6 people (ranging from three single-member households to a household of 16) – is smaller than in Sag Nioniogo, which may also reflect the smaller number of adult males.

66.3% of households interviewed in Goudebou originally came from Gao region (the most of any camp from Gao), with 28.3% from Tombouctou, 4.35% from Mopti, and 1.1% (one household) whose place of origin was unclear. Ethnically, 80.4% of households were Tuareg (the highest proportion of Tuaregs in any of the three camps, although the other two camps both had more than 75% as well), with 5.4% Fulani, 4.4% Arab, and 3.3% Songhai; a further 6.5% of households gave ambiguous ethnic self-descriptions.

1.3. Mentao

Figure 3: Mentao population pyramid



In Mentao (Fig. 3), the proportion of the sample population aged 65 years or more is the lowest of the three camps, at 2.6%. As in the other two camps, many of the population are under 18 years old: the 0-17 age range accounts for 51.9% of household members in Mentao. The ratio of males to females is roughly equal, with 392 males and 390 females overall. The average household size is 8.2 members (ranging from seven 3-member households to a household of 23), the largest of the three camps. 19% of households were female-headed.

The most common region of origin of households interviewed in Mentao was Tombouctou, from where 81.1% of households had come. 17.9% of households were from Mopti (the largest proportion among the three camps), and there was just one household (1.1%) from Gao – with far fewer households from there than was the case in Goudebou or Sag Nioniogo. Tuaregs were the most represented ethnic group, at 79% of the households, and Mentao had by far the highest proportion of Arab households: 19%, in contrast to the next highest 4.4% in Goudebou. 2.1% of households in Mentao were of Fulani origin.

2. Disposable income

Key points:

- 98.4% of all surveyed households could meet their food energy needs.
- Overall disposable incomes were highest in Sag Nioniogo, followed by Mentao and Goudebou.
- Income was unevenly distributed in all sites. The gap between the poorest and richest household was greatest in Goudebou.

In IHM analysis, 'disposable income' is the money remaining after the household has met its basic food energy needs[27] from all its sources of food and cash income. To allow households of different size and demographic characteristics (age and sex) to be compared, income is standardised by 'adult equivalents'[28].

Across the three camps, the median disposable income per adult equivalent (DI/AE) was an annual 109,030 FCFA – or 299 FCFA per day. If purchasing power parity (PPP) rates are used, taking into account differences in costs across countries, the median DI/AE is equivalent to $1.40 per day; with a more basic direct exchange rate, this falls to $0.63 per day[29].

[27] Food energy requirements derived from 1985 WHO reference standards: 'Energy and protein requirements', *Report of a Joint FAO/WHO/UNU Expert Consultation* (1985), World Health Organization Technical Report Series 724. Available online at http://www.fao.org/docrep/003/aa040e/aa040e00.HTM

[28] For further explanation of these and related concepts, see the definitions starting on page 14.

[29] FCFA = West African CFA franc. The September 2013 – August 2014 purchasing power parity (PPP) exchange rate for these calculations is 212.8267 FCFA = 1 USD, with a weighted calculation derived from the World Bank's 2013 and 2014 PPP conversion factors for Burkina Faso (available online at http://data.worldbank.org/indicator/PA.NUS.PPP).

From the three camps, 98.4% of the surveyed households were able to meet their basic food energy needs from income during the study year. Only four households fell below the 'food poverty line'. In each case this was due to losses made on livestock, and the three households furthest below the food poverty line appear to have partially compensated for these losses with loans that were yet to be fully repaid at the end of the study period. Overall disposable income levels were highest in Sag Nioniogo, followed by Mentao and finally Goudebou. Although Goudebou had the lowest individual disposable income recorded in any site, the highest recorded individual disposable income also came from Goudebou – from a household whose main income came from a shop, with supplementary laundry and *condiment*-selling activities and several milk-producing goats.

2.1. Sag Nioniogo

Figure 4: Sag Nioniogo annual disposable income per adult equivalent

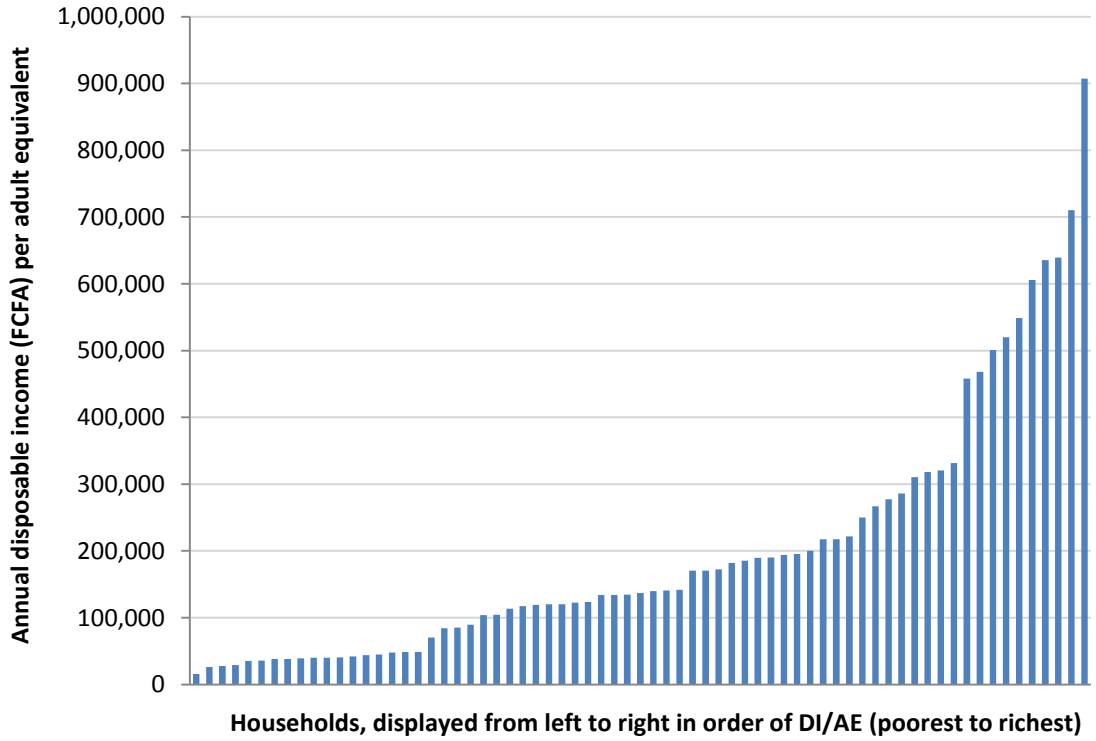


Fig. 4 shows the disposable income per adult equivalent (DI/AE) for each surveyed household in Sag Nioniogo. Each bar represents a household, with the poorest household on the extreme left and the richest on the extreme right – giving an indication of the distribution of wealth. Disposable income is shown on the *y* axis; negative values here would indicate that a household had insufficient income to meet its basic food energy needs, with the *x* axis acting as a food poverty line. Table 2 shows the DI/AE statistics by quintile for the camp, together with the total number of households in each quintile and the number of these that were female-headed.

Table 2: Sag Nioniogo annual disposable income per adult equivalent, by income quintile[30]

	DI/AE quintile				
	1 (poorest)	**2**	**3**	**4**	**5 (richest)**
Median DI/AE	38,057 FCFA	84,969 FCFA	136,767 FCFA	217,323 FCFA	510,352 FCFA
Lowest DI/AE	*15,359 FCFA*	*44,697 FCFA*	*120,305 FCFA*	*185,304 FCFA*	*318,236 FCFA*
Highest DI/AE	*43,819 FCFA*	*119,968 FCFA*	*181,985 FCFA*	*310,459 FCFA*	*907,299 FCFA*
No. of HHs	14	14	14	14	13
No. of female-headed HHs	4	5	4	2	1

All surveyed households in Sag Nioniogo were able to meet their food energy needs during the study year, at least before non-food costs are taken into consideration. There are female-headed households across the wealth distribution, but they are more prominent in the poorer quintiles.

2.2. Goudebou

Fig. Figure 5 and Table 3 (on the next page) show the disposable incomes and distribution of wealth in Goudebou camp. The gap between the poorest quintiles and the very richest households is greater than in the other two camps: incomes across quintiles 1-3 are substantially lower than in either Sag Nioniogo or Mentao, and Goudebou has the steepest rise in disposable incomes after the quintile 5 median, including the three richest households surveyed in any of the camps.

Two households had negative disposable incomes that put them below the food poverty line, with incomes that were lower than those needed to meet their food energy requirements[31]. Both of these households spent large amounts on inputs for their livestock, and appear to have borrowed money or food to help cover the shortfall.

The median disposable income of the poorest quintile in Sag Nioniogo was 38,057 FCFA per adult equivalent, compared with 14,285 FCFA in Goudebou. Median disposable incomes in quintiles 2 and 3 in Sag Nioniogo (84,969 FCFA and 136,767 FCFA respectively) were around double those of Goudebou. It is only in the better-off two quintiles that disposable incomes are more closely aligned (Sag Nioniogo medians are 217,323 FCFA in Q4 and 510,352 FCFA in Q5). The main reasons for these lower disposable incomes in Goudebou are the lack of employment opportunities compared with Sag Nioniogo and the limited access to pasture for livestock compared with Mentao.

[30] DI/AEs rounded to no decimal places.
[31] The annual food energy deficits of these households were equivalent to 82 kg and 36 kg of millet respectively.

Figure 5: Goudebou annual disposable income per adult equivalent

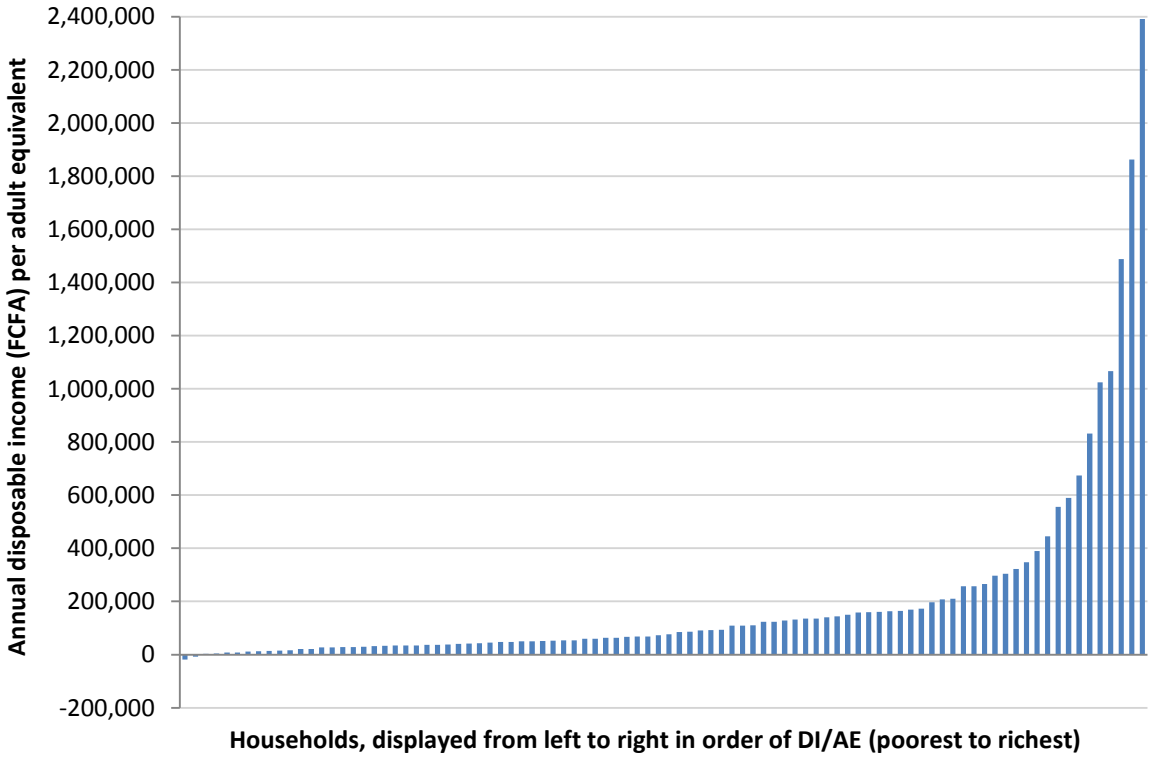


Table 3: Goudebou annual disposable income per adult equivalent, by income quintile[32]

	DI/AE quintile				
	1 (poorest)	**2**	**3**	**4**	**5 (richest)**
Median DI/AE	14,285 FCFA	42,080 FCFA	73,021 FCFA	149,879 FCFA	417,182 FCFA
Lowest DI/AE	*-18,895 FCFA*	*33,486 FCFA*	*54,114 FCFA*	*123,354 FCFA*	*210,456 FCFA*
Highest DI/AE	*32,083 FCFA*	*53,449 FCFA*	*110,524 FCFA*	*207,653 FCFA*	*2,391,202 FCFA*
No. of HHs	19	18	18	18	19
No. of female-headed HHs	3	1	2	5	3

While all quintiles in the Goudebou sample include female-headed households, the largest number of female-headed households is found in Q4. This may reflect the practice of some larger livestock owners to 'split' their households, with men leaving their wives and children in the camp throughout the year to tend to their herds along the border with Mali. These households generally define themselves as 'female-headed' while in the camp, giving the wife's name as the head of the

[32] DI/AEs rounded to no decimal places.

household.

However, not all female-headed households are well-off. At the other extreme, information from focus groups highlighted the problems many poorer female-headed households face when their husbands migrate to countries including Ivory Coast and Algeria in search of manual work. Many of these women have lost contact with their husbands and fear they have been permanently abandoned (see the Part II report). Only one of the female-headed households in the poorest two quintiles was able to earn cash income from employment. This was a lone middle-aged woman basket weaver, who made less than 13,000 FCFA profit in the study year. The fact that so few female-headed households were able to earn cash from employment underlines the problems they face in accumulating capital to invest in small business.

2.3. Mentao

Fig. 6 and Table 4 show the disposable incomes and distribution of wealth in Mentao. As in Goudebou, two surveyed Mentao households had negative disposable incomes that put them below the food poverty line[33]. Both of these households also spent large amounts on livestock inputs, and the poorer of the two households appears to have borrowed money to help cover the shortfall.

Mentao's median disposable income levels in quintiles 1 to 4 are lower than in Sag Nioniogo, but higher than in Goudebou. The reason for this appears to be the larger livestock holdings kept by the population in Mentao and their higher levels of cash income from the sale of livestock and livestock products than in Goudebou, as a result of better access to herds and livestock markets. However, median quintile 5 disposable incomes in Mentao are lower than in Goudebou (where the median Q5 income is 417,182 FCFA).

Female-headed households are evenly distributed across the wealth distribution in Mentao, with the exception of quintile 5, which has only one female-headed household. As in Goudebou, there is no single economic characteristic that can define these households. While better-off female-headed households may be benefitting from livestock held on the Malian border and tended by their husbands, poorer female-headed households lacking livestock and without capital to invest in business or artisan work are highly-dependent on WFP cash and food relief.

[33] The annual food energy deficits of these households were equivalent to 62kg and 14 kg of millet respectively.

Figure 6: Mentao annual disposable income per adult equivalent

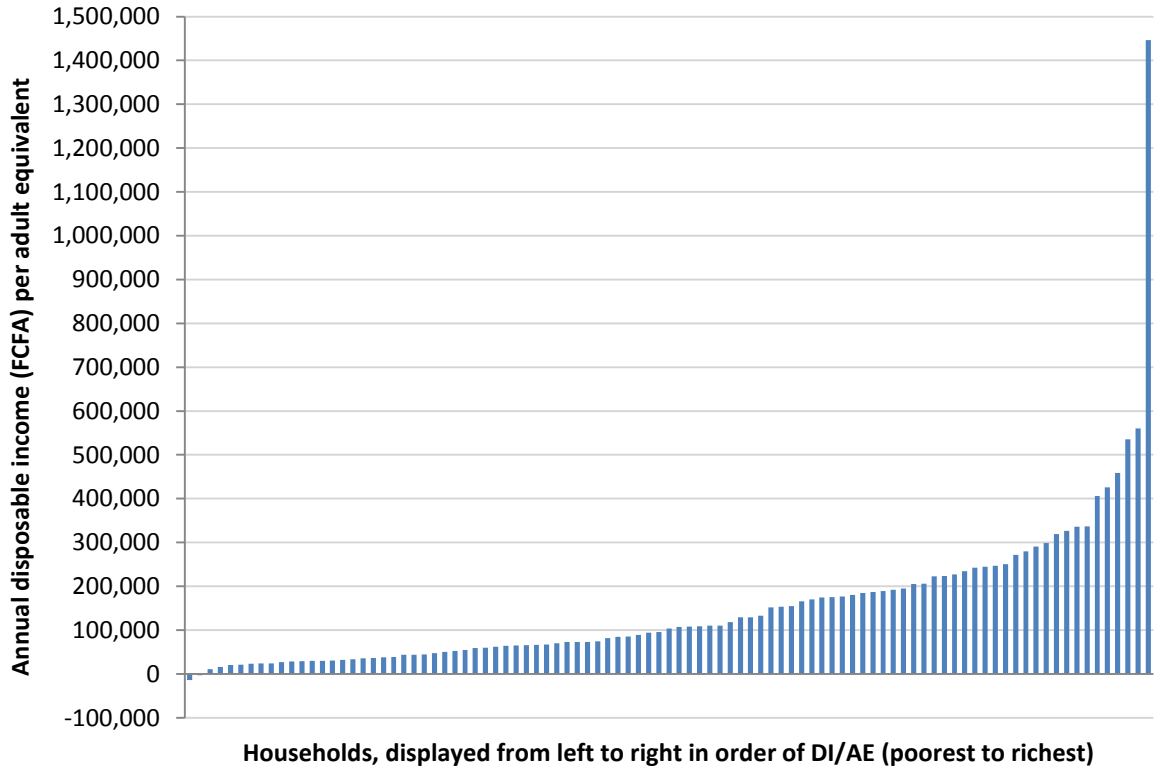


Table 4: Mentao annual disposable income per adult equivalent, by income quintile[34]

	DI/AE quintile				
	1 (poorest)	**2**	**3**	**4**	**5 (richest)**
Median DI/AE	25,352 FCFA	57,210 FCFA	99,836 FCFA	182,472 FCFA	308,921 FCFA
Lowest DI/AE	*-14,164 FCFA*	*38,006 FCFA*	*72,746 FCFA*	*152,163 FCFA*	*234,368 FCFA*
Highest DI/AE	*36,598 FCFA*	*72,704 FCFA*	*132,818 FCFA*	*226,848 FCFA*	*1,446,660 FCFA*
No. of HHs	19	19	19	19	19
No. of female-headed HHs	4	4	5	4	1

[34] DI/AEs rounded to no decimal places.

3. Standard of living threshold

Key points:

- The cost of items required to meet the standard of living threshold is highest in Goudebou, followed by Mentao and Sag Nioniogo.
- The proportion of households falling below the standard of living threshold could be seen as a proxy for the prevalence of poverty. The proportion of households below the standard of living threshold is as follows:
    - Goudebou: 35%
    - Mentao: 20%
    - Sag Nioniogo: 7%

In IHM terms, households are below the local 'standard of living threshold' if, after meeting their food energy requirements[35], their remaining incomes are too low to purchase a set of other essential items necessary for social inclusion. This set of items is developed through discussions with poorer residents; items apply either to all households equally (such as with fuel) or on the basis of the age and sex of households' members (such as with clothes).

Across the refugee camps, the following items were identified as essential for social inclusion by focus groups with poorer people: clothes, soap, lotion, batteries, charcoal, matches, milk (powdered and/or fermented), sugar, tea, *condiments* (groceries and seasonings), salt, and transport to nearby markets. The focus groups' consensus was that poor refugee households did not need to pay for mobile phone usage to stay in contact with relatives elsewhere, as they are generally able to borrow the phones of better-off neighbours, while primary education and basic healthcare are free to Malian refugees in Burkina Faso and so do not impact on households' abilities to meet the locally-defined basic needs.

Similar sets of essential items were listed by poor people at each site, but the prices of several items varied. Clothes were cheapest in Sag Nioniogo, for example, presumably due to its proximity to Ouagadougou – and fuel/charcoal costs were highest in Goudebou due to restrictions on the usage of wood in the surrounding area. The consolidated lists for the different camps are as follows in Table 5.

The different costs in Table 5 result in some inter-camp variation in the levels of 'disposable income' required for households to meet the standard of living threshold. The threshold is highest in Goudebou, largely due to the high costs of charcoal. In Mentao, larger households will incur greater costs than in Sag Nioniogo due to the higher cost of clothes, whereas in Sag Nioniogo overall standard of living costs are higher than in Mentao for single-member households, due to higher total

[35] Food energy requirements derived from 1985 WHO reference standards: 'Energy and protein requirements', *Report of a Joint FAO/WHO/UNU Expert Consultation* (1985), World Health Organization Technical Report Series 724. Available online at http://www.fao.org/docrep/003/aa040e/aa040e00.HTM

'per household' item costs.

Table 5: Items essential for social inclusion, all camps

		Cost per year, Sag Nioniogo	Cost per year, Goudebou	Cost per year, Mentao
Per-person items	Girls' clothes [ages 3-14]	6,000 FCFA	7,500 FCFA	7,500 FCFA
	Boys' clothes [ages 3-14]	4,000 FCFA	7,500 FCFA	7,500 FCFA
	Women's clothes [ages 15-101]	10,000 FCFA	18,000 FCFA	18,000 FCFA
	Men's clothes [ages 15-101]	10,000 FCFA	20,000 FCFA	20,000 FCFA
Per-household items	Soap	12,000 FCFA	6,360 FCFA	6,360 FCFA
	Body lotion	6,000 FCFA	1,000 FCFA	1,000 FCFA
	Batteries	3,000 FCFA	3,000 FCFA	3,000 FCFA
	Charcoal	5,400 FCFA	40,000 FCFA	10,000 FCFA
	Matches	2,500 FCFA	2,500 FCFA	2,500 FCFA
	Milk (powdered and/or fermented)	12,600 FCFA	15,000 FCFA	15,000 FCFA
	Sugar and tea	42,000 FCFA	42,000 FCFA	42,000 FCFA
	Condiments	6,600 FCFA	6,600 FCFA	6,600 FCFA
	Salt	8,400 FCFA	3,000 FCFA	3,000 FCFA
	Transport to nearby markets	42,000 FCFA	42,000 FCFA	42,000 FCFA
Total[36]		*170,500 FCFA*	*214,460 FCFA*	*184,460 FCFA*

Table 6 below shows the proportions of households from each site and quintile that were above and below the standard of living threshold for their camp. The highest proportion of households unable to meet the cost of all items required to meet the local standard of living threshold was in Goudebou, as might be expected given that income levels among the poorer quintiles here are the lowest of all camps and the costs are highest. However, it is notable that all households within Goudebou's poorest quintile are below the threshold and that Goudebou is the only camp in which some households from the middle quintile are unable to afford the full criteria for social inclusion with their incomes. Harmonising the costs of all essential items between Goudebou and Mentao (i.e. reducing the Goudebou charcoal costs by 30,000 FCFA) would reduce the total proportion of Goudebou households below the threshold from 34.8% to 28.3%, but this would still leave the Goudebou with the highest overall proportion of households below the standard of living threshold.

Households below the standard of living threshold rely on neighbours and social networks to access the items they need to meet social norms for participation, hospitality and personal hygiene. Understanding systems of gift exchange, reciprocity and other forms of support was outside the present study, but could be explored in future research. As a starting point, households currently below the standard of living threshold could be interviewed to explore these issues. This would also

[36] Each 'per-person' item counted once.

help to establish the characteristics of households that do not benefit from informal social support networks, and how they might best be assisted.

Table 6: Percentages of households above and below the standard of living threshold, all camps and quintiles

	DI/AE quintile					*Overall*
	1 (poorest)	2	3	4	5 (richest)	
% of HHs below SoLT, Sag Nioniogo	35.71%	0.00%	0.00%	0.00%	0.00%	***7.25%***
% of HHs below SoLT, Goudebou	100.00%	50.00%	22.22%	0.00%	0.00%	***34.78%***
% of HHs below SoLT, Mentao	89.47%	10.53%	0.00%	0.00%	0.00%	***20.00%***
% of HHs above SoLT, Sag Nioniogo	64.29%	100.00%	100.00%	100.00%	100.00%	***92.75%***
% of HHs above SoLT, Goudebou	0.00%	50.00%	77.78%	100.00%	100.00%	***65.22%***
% of HHs above SoLT, Mentao	10.53%	89.47%	100.00%	100.00%	100.00%	***80.00%***

Further discussion of food expenditure patterns and input costs can be found in the Part II report which accompanies this document.

4. Food and cash income

Key food income points:

- Overall, households met an average of 64.2% of their food energy requirements from food income[37].
- For households needing to buy food to meet their energy requirements, the average cost for the year of this remaining food was 21,645 FCFA per adult equivalent, at the local price of the basic staple diet, millet (230 FCFA per kg in Mentao and Goudebou and 200 FCFA per kg in Sag Nioniogo).
- In all sites, as would be expected, WFP food aid provides the largest proportion of household 'food income'. Smaller quantities of food aid are received from local relief agencies, for example around the time of religious festivals. Food transfers provide an overall average 96.1% of household food income per adult equivalent (and 61.5% of their food energy

[37] This calculation allowed households' food incomes to exceed 100% of their food energy requirements.

requirements).

- Very little food is collected from the wild, and there are very few instances of work paid for in food. Similarly, with almost no land available to refugees for crop production, virtually no cultivation takes place.
- Refugees at all three sites do keep livestock. However, lack of access to pasture close to the camp limits the opportunities for milk production and consumption. For the 59.4% of households that derive food income from their own livestock, mostly in the form of milk, this livestock produce contributes an average 4.1% of food energy requirements.

Key cash income points:

- In all three camps, households in the poorest two quintiles are highly dependent for cash income on cash transfers from WFP, which exceed income from employment/self-employment. Across all households interviewed, transfers provided an average 48.7% of cash incomes per adult equivalent.
- In Sag Nioniogo, income from artisan work, trade and commerce and camp-based employment provides the most important source(s) of independent income, whereas in Mentao income from livestock is the main additional source of cash. In Goudebou, incomes from livestock and from employment/self-employment were of roughly equal importance – with great variation between households, as in all camps.

4.1. Sources of food income

'Food income', in IHM terms, is food that is received as food relief or gifts of food, or generated by the household (from their own livestock or crop production, gathering of wild food, or payment in kind received for work), and retained for consumption[38] rather than being sold, given away or kept for other uses. All households reported food income in the study year, reflecting the fact that all households interviewed had received WFP food aid.

Across all camps, the average total annual food income from all sources was 608,946 kcal per adult equivalent, or 64.2% of food energy requirements (based on a standard 949,000 kcal per year per adult equivalent). For those households that did not meet their food energy requirements through their food income alone – and therefore needed to buy the remaining amount from the market – the average annual cost of this for the study year was 21,645 FCFA per adult equivalent, at the basic staple diet millet price (230 FCFA per kg in Mentao and Goudebou, and 200 FCFA per kg in Sag Nioniogo).

3.1% of the sample population (8 households) across the camps were able to meet their food energy

[38] Food income does *not* include food purchased by the household. The cash income chart indicates the amount of cash the household has available for discretionary purchases, which may, of course, include food. Notes on food expenditure are included in the Part II report.

requirements through their food income alone.

Tables 7 and 8 compare the food incomes received from the two main sources – transfers (consumption of foods received from the World Food Programme and other organisations, or gifted by relatives and neighbours), and products from households' own livestock – across the quintiles of the three different camps.

Table 7 confirms the extremely important role of food transfers as the primary source of food income among the refugee populations of all camps. Across the camps, transfers make up an average 96.1% of households' food incomes and 61.5% of their food energy requirements[39], providing the majority of food income for all households in all camps.

All refugee households receive the same basic ration from WFP for each registered person, with this food the largest source of food income "transfers". Differences in the amounts of transfers received by each household (and analysed per adult equivalent) can be explained as follows:

- Ad hoc food distributions are made by local organisations, where not every household is targeted;
- Some households receive gifts of food from neighbours or relatives (including those living away from the camps), while others do not;
- Some households sold food that they received as transfers, instead of consuming it – with this income therefore counted as cash – and there were some cases where households did not always receive or collect food aid for all of their members or for every month;
- WFP food aid is allocated per person and intended to provide 1,203 kcal per person per day, with the rations covering roughly half of people's food energy requirements based on average household composition (and the WFP cash transfers intended to cover the remaining requirements through market purchases). The IHM analysis here is based on requirements 'per adult equivalent', however, using the standard daily requirement for a young adult (2,600 kcal) as a reference point and standardising households' incomes according to their members' total food energy requirements in proportion to this 2,600 kcal figure. For example, this means that a household of 6 people including 4 young children or elderly people (whose average food energy requirement per person is less than 2,100 kcal per day) will, on the same total income, appear to be relatively better-off when compared to a household with 6 young adults and no children or elderly people.

There is considerable variation between households in the underlying data on food income from transfers, and full explanation would require further enquiry into both the social networks and demography of households across the income distribution in all three camps. Investigations of this kind could be led by social anthropologists in the team in future assessments.

[39] These average figures include percentages of over 100% where they occur.

When kilocalories are converted into kilograms of millet, the highest mean income from transfers among the camps (in Goudebou) is just less than 8 kg more than the lowest (in Sag Nioniogo). Goudebou has the largest difference in mean income between quintiles within the same camp, and Sag Nioniogo the smallest.

Table 7: Food income from transfers (primarily WFP food rations, but also from other organisations, and informal transfers), all camps and quintiles (main category, per AE)[40]

		DI/AE quintile					*Overall*
		1 (poorest)	**2**	**3**	**4**	**5 (richest)**	
Sag Nioniogo	Mean annual food income (kcal) per AE from transfers	551,340	578,153	569,194	603,615	553,152	*571,351*
	Proportion of HHs with food income from transfers	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual food income (kcal) per AE	*559,603*	*600,387*	*581,963*	*607,574*	*561,976*	*582,595*
Goudebou	Mean annual food income (kcal) per AE from transfers	488,115	576,499	658,744	656,041	624,669	*599,848*
	Proportion of HHs with food income from transfers	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual food income (kcal) per AE	*520,299*	*595,015*	*684,789*	*675,380*	*645,405*	*623,279*
Mentao	Mean annual food income (kcal) per AE from transfers	563,650	585,848	600,078	589,046	543,795	*576,484*
	Proportion of HHs with food income from transfers	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual food income (kcal) per AE	*577,031*	*614,625*	*642,357*	*614,665*	*622,339*	*614,203*

As Table 8 shows, households' own livestock products are the next biggest source of food income in the camps after transfers, accounting for overall averages of 3.5% of household food income and 2.4% of household food energy requirements. Around 40% of households do not have access to food income from livestock products: among the households that do have livestock food income, these

[40] All means here and in Table 8 are taken from households already standardised per adult equivalent, and all means are per household (within each quintile) rather than per activity. All kcal figures displayed are rounded to no decimal places.

figures increase to averages of around 6% of food income and 4% of food energy needs. This food income is mostly in the form of milk, which has a high nutritional value.

Table 8: Food income from own livestock products, all camps and quintiles (main category, per AE)[41]

		DI/AE quintile					*Overall*
		1 (poorest)	**2**	**3**	**4**	**5 (richest)**	
Sag Nioniogo	Mean annual food income (kcal) per AE from livestock products, HHs involved	14,460	35,080	11,411	18,478	23,653	*19,569*
	Proportion of HHs with food income from own livestock products	57.14%	42.86%	57.14%	21.43%	30.77%	*42.03%*
	Mean overall annual food income (kcal) per AE, all HHs	*559,603*	*600,387*	*581,963*	*607,574*	*561,976*	*582,595*
Goudebou	Mean annual food income (kcal) per AE from livestock products, HHs involved	37,744	20,948	45,553	45,398	26,726	*34,407*
	Proportion of HHs with food income from own livestock products	84.21%	66.67%	50.00%	38.89%	47.37%	*57.61%*
	Mean overall annual food income (kcal) per AE, all HHs	*520,299*	*595,015*	*684,789*	*675,380*	*645,405*	*623,279*
Mentao	Mean annual food income (kcal) per AE from livestock products, HHs involved	21,093	30,238	57,187	37,439	87,773	*49,370*
	Proportion of HHs with food income from own livestock products	63.16%	73.68%	73.68%	68.42%	89.47%	*73.68%*
	Mean overall annual food income (kcal) per AE, all HHs	*577,031*	*614,625*	*642,357*	*614,665*	*622,339*	*614,203*

In Sag Nioniogo and Goudebou, smaller proportions of households in the richer two quintiles generate food income from their livestock than in the poorer three quintiles. It is possible that some better-off households in these camps choose not to keep livestock in the camp, as they have the

[41] "HHs involved" indicates that these statistics only relate to households with food income from livestock products, whereas "all HHs" signifies that the statistics refer to the whole quintile or survey population (according to the column).

cash to purchase milk and other livestock products, whereas poorer households may keep goats in the camp to ensure that they have milk – part of the normal pastoralist diet – at all times, including periods when they would have insufficient cash to buy it.

The situation is very different in Mentao, where the richest quintile has by far the highest proportion of households with food income from their own livestock: nearly 90% of households from this quintile use their own livestock as a source of food. This may be explained by the better access Mentao's refugees have to pasture closer to the camp. However, further enquiry would be needed to verify this explanation.

Wild foods, own crops and food payments for employment combined made up just 0.4% of overall food income and 0.3% of food energy requirements across the camps, rising to 2.1% of food energy requirements if only those households reporting food income from at least one of these sources are taken into consideration. For refugees living in Sag Nioniogo, Goudebou and Mentao these are not major sources of food income.

The following charts demonstrate further variation in the relative importance of the different categories of food income across the income distribution, as well as variation in the total amounts of food income at individual household level.

Sag Nioniogo

Figure 7: Sag Nioniogo sources of food income (per AE, from categories)

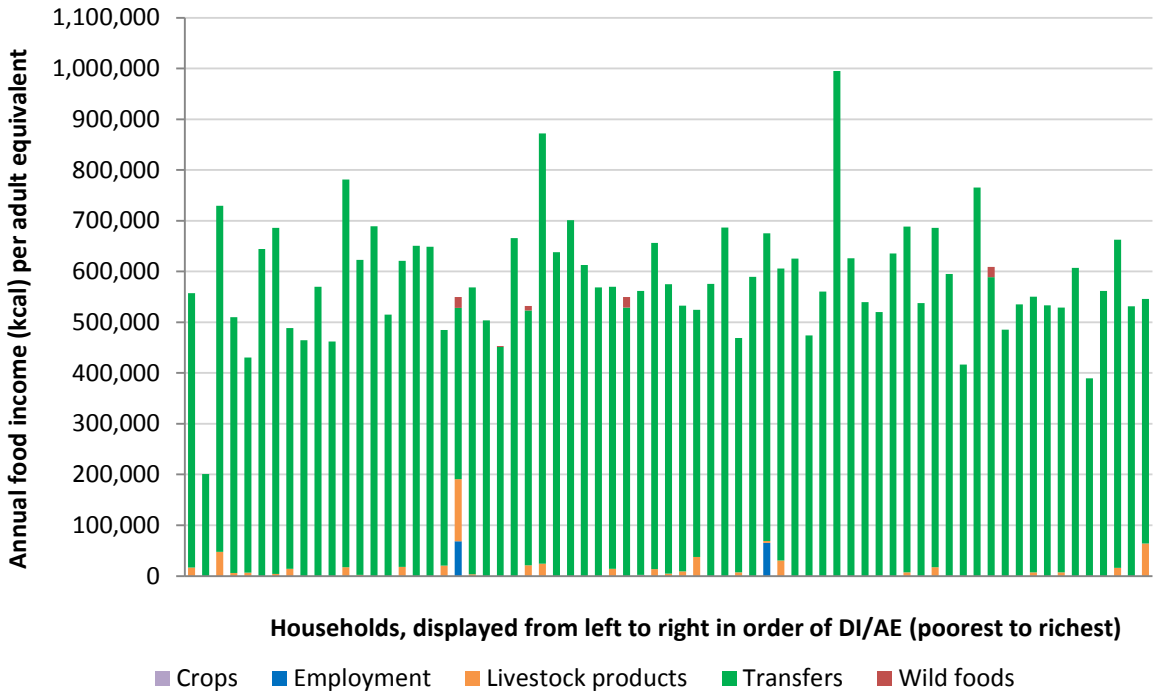


Fig. 777 shows the food income of households in Sag Nioniogo from consumption of foods received through transfers or employment (if they were paid in kind with food), and/or produced from their own livestock, crops or collected wild foods.

Only one household (1.5% of the sample) met or exceeded its 'adult equivalent' annual food energy requirement (949,000 kcal) from their food income – all other households would have needed to buy food from the market to reach WHO-recommended food energy consumption levels. Excluding the household which met its food energy requirement from its food income, households in Sag Nioniogo met on average 60% of their requirements through food income. The average cost of purchasing the remaining food needed to meet requirements was approximately 20,523 FCFA per adult equivalent in the study year, at the staple diet price.

Transfers (of all kinds combined) accounted for the major part of all households' annual food incomes: on average, 571,351 kcal per adult equivalent (60.2% of energy requirements). 29 households out of the 69 consumed livestock products that they produced, generating relatively small amounts of food income in most cases – an average of 19,569 kcal per adult equivalent over the course of the year (2.1% of their food energy requirements) – and mainly among poorer households.

Wild foods were consumed by five households, two households received food income as payment for employment, and one household produced some food income from crops.

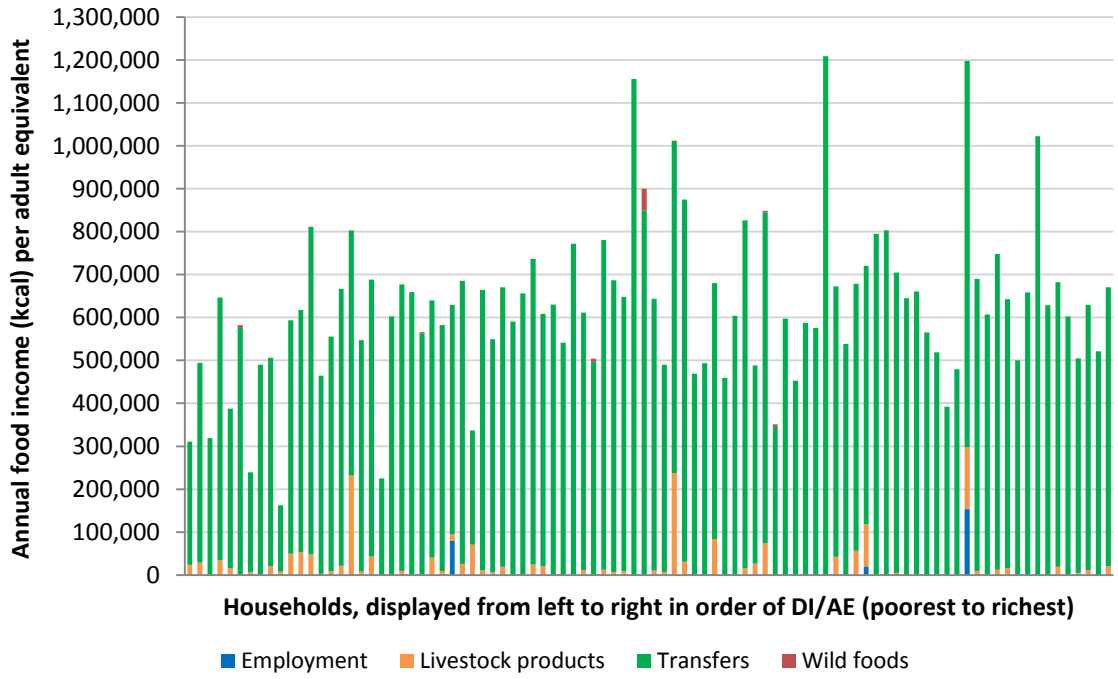
Goudebou

In Goudebou (Fig. 8), the food incomes of five households (5.4% of the sample) were sufficient to meet or exceed their food energy requirements without the need for market purchases, the highest number and percentage from any of the camps. The higher than expected food incomes recorded for these households may be due to the absence for a significant part of the year of household members who are registered to receive rations. With considerable variation, the households whose food incomes were below this level met an average 62.7% of their requirements through food income – slightly more than in Sag Nioniogo – with a 22,4445 FCFA average cost per adult equivalent to buy the remaining food at the staple diet price. This cost is slightly higher than in Sag Nioniogo, mainly due to the higher millet price in Goudebou.

Transfers provide by far the highest proportion of the annual food incomes of all Goudebou households, giving an average 599,848 kcal per adult equivalent and 63.2% of food energy requirements overall. Livestock products provided 53 households (57.6% of the sample) with food income, at an average annual 34,407 kcal per adult equivalent (3.6% of their energy requirements).

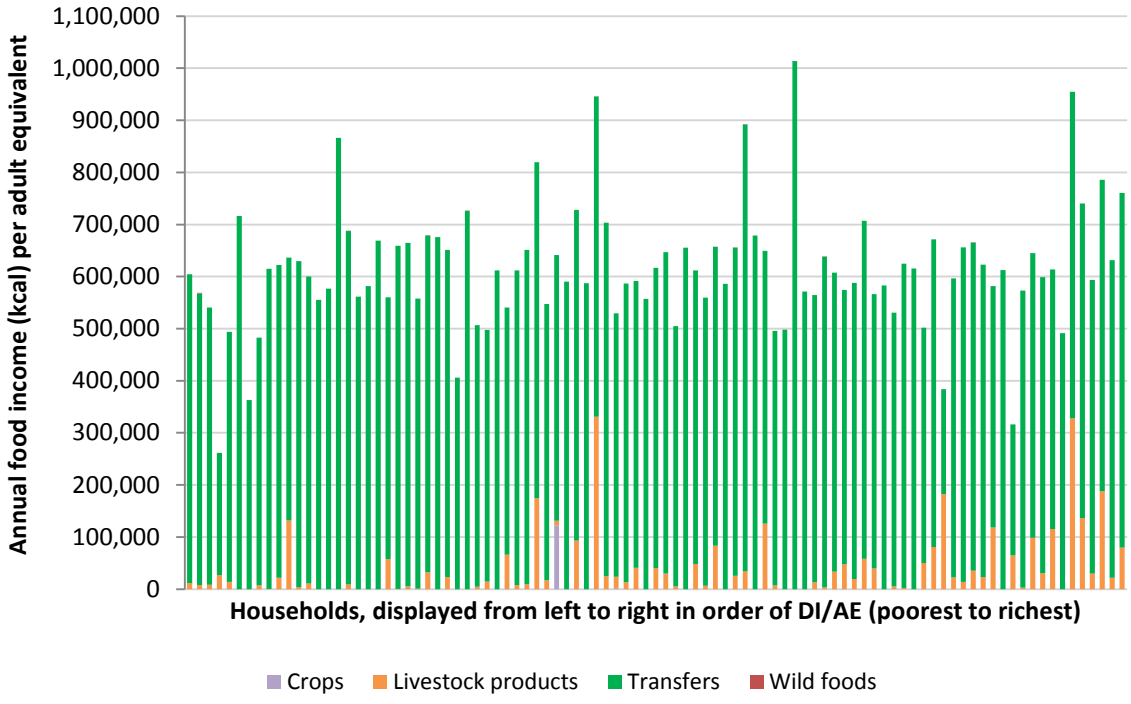
13 households collected small amounts of wild foods, and three households received food income as payment for employment. No households consumed any own-produced crops.

Figure 8: Goudebou sources of food income (per AE, from categories)



Mentao

Figure 9: Mentao sources of food income (per AE, from categories)



Two households in Mentao (2.1% of the sample) were able to meet their food energy requirements through their food incomes alone (Fig. 9). The other households met an average 63.9% of their food energy requirements through food income; this proportion is higher than in either of the other two camps, although the overall average is highest in Goudebou, where more households met their total food energy requirements through food income (i.e. without requiring market purchases). The average annual cost for Mentao households of purchasing the remaining food at the staple diet price was 21,717 FCFA per adult equivalent.

Transfers once more provided the highest proportion of food income for all households, with an average 576,484 kcal per adult equivalent (60.8% of annual energy requirements) over the year. Livestock generated food income for 70 households (73.7% of the sample), at an average annual 49,370 kcal per adult equivalent (5.2% of their energy requirements), and unlike in Sag Nioniogo or Goudebou, livestock food income was more prominent among richer households.

Nine households collected very small amounts of wild foods, and two households consumed crops that they produced. No households in the Mentao sample received food as payment for employment.

4.2. Sources of cash income

The following section explores sources of cash income: cash that is generated as profit from selling livestock or own-produced food products, through self-employment and paid employment for others, or received as cash transfers or gifts. All households received WFP cash transfers, and all reported cash income in the study year. The average total annual cash income from all sources across all camps was 242,535 FCFA per adult equivalent, ranging from 46,490 FCFA per adult equivalent for the household with the lowest amount of cash income to 2,441,342 FCFA per adult equivalent for the household with the highest.

The following tables compare, across the quintiles of the three different camps, the cash incomes received from the three largest sources overall – transfers (including cash transfers from WFP and other organisations, sales of food aid, and gifts from relatives and neighbours), 'employment' (including 'self-employment' such as artisan work, petty trade and other commerce, work for NGOs in the camp, and other salaried employment), and the sale of households' livestock or livestock products.

On average across the camps, transfers provided 48.7% of household cash income per adult equivalent. This is the highest average proportion here from the five income source categories used in household economy analysis[42]. All households received cash income from transfers, with the majority coming from WFP cash transfers.

[42] These five income source categories are crops, employment/self-employment, livestock products, transfers, and wild foods.

Table 9: Cash income from transfers (primarily WFP support, but also from other organisations, and informal transfers), all camps and quintiles (main category, per AE) [43]

		DI/AE quintile					*Overall*
		1 (poorest)	**2**	**3**	**4**	**5 (richest)**	
Sag Nioniogo	Mean annual cash income (FCFA) per AE	51,723	55,840	66,134	80,489	65,458	*63,907*
	Proportion of HHs with transfers cash income	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual cash income (FCFA) per AE	*63,820*	*112,457*	*175,878*	*254,087*	*570,176*	*230,430*
Goudebou	Mean annual cash income (FCFA) per AE	57,721	62,343	62,847	86,121	74,352	*68,619*
	Proportion of HHs with transfers cash income	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual cash income (FCFA) per AE	*72,960*	*98,520*	*115,576*	*235,261*	*803,804*	*268,988*
Mentao	Mean annual cash income (FCFA) per AE	57,005	62,490	58,348	74,630	66,577	*63,810*
	Proportion of HHs with transfers cash income	100.00%	100.00%	100.00%	100.00%	100.00%	*100.00%*
	Mean overall annual cash income (FCFA) per AE	*89,112*	*95,224*	*146,974*	*263,699*	*533,542*	*225,710*

Table 9 shows a trend towards higher cash income from transfers in the middle and better-off quintiles, with better-off households in Goudebou receiving the most income from transfers. The poorer quintiles in Goudebou also received on average slightly more than their peers in the other camps. However, differences between the quintiles' average cash incomes from transfers are far smaller than the differences between their overall cash incomes. This highlights the importance of cash income from other sources among middle and better-off households in all camps, while poorer households are still highly dependent on WFP cash transfers.

[43] All means here and in Table 10 and Table 11 are taken from households already standardised per adult equivalent, and all means are per household (within each quintile) rather than per activity. All incomes displayed are rounded to no decimal places.

After transfers, the next largest average proportion of households' cash income per adult equivalent across the camps came from employment and self-employment such as trade, artisan work or other small businesses.

Table 10: Cash income from artisan work, petty trade, commerce and other employment and self-employment, all camps and quintiles (main category, per AE)

		DI/AE quintile					*Overall*
		1 (poorest)	**2**	**3**	**4**	**5 (richest)**	
Sag Nioniogo	Mean annual cash income (FCFA) per AE from employment / self-employment, HHs involved	13,364	54,924	94,521	164,162	484,081	*168,669*
	Proportion of HHs with employment / self-employment cash income	78.57%	85.71%	92.86%	100.00%	100.00%	*91.30%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*63,820*	*112,457*	*175,878*	*254,087*	*570,176*	*230,430*
Goudebou	Mean annual cash income (FCFA) per AE from employment / self-employment, HHs involved	19,097	30,006	49,474	117,122	549,024	*184,983*
	Proportion of HHs with employment / self-employment cash income	26.32%	50.00%	66.67%	72.22%	68.42%	*56.52%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*72,960*	*98,520*	*115,576*	*235,261*	*803,804*	*268,988*
Mentao	Mean annual cash income (FCFA) per AE from employment / self-employment, HHs involved	38,019	27,474	58,504	104,093	181,308	*93,345*
	Proportion of HHs with employment / self-employment cash income	36.84%	52.63%	78.95%	78.95%	84.21%	*66.32%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*89,112*	*95,224*	*146,974*	*263,699*	*533,542*	*225,710*

As shown in Table 10, the number of households with cash income from employment or self-employment rises from the poorer to the better-off quintiles across all camps (with the exception of

the richest two quintiles in Goudebou), as do the average returns on those activities per adult equivalent for all quintiles (with the exception of the poorest two quintiles in Mentao). The employment and self-employment income category is a major determinant of the relative wealth or poverty of refugee households. A far higher proportion of households are involved in employment or self-employment in Sag Nioniogo than in Goudebou or Mentao – presumably due to the greater opportunities that come from their location near Ouagadougou – and Sag Nioniogo has the highest average cash incomes from employment/self-employment for all but the richest quintile.

Superior access to markets for artisan products was one of the major advantages that Sag Nioniogo's location gave its inhabitants, and artisanal activities undertaken by blacksmiths, jewellers and other craftspeople working with wood and leather are far more prominent in Sag Nioniogo than in the Sahelian camps. 46.4% of the Sag Nioniogo households surveyed generated income from artisanal activities, with average incomes of 183,588 FCFA per adult equivalent for the households involved, but in Goudebou and Mentao just 14.1% and 5.3% of households were active artisans, with average incomes from artisan work of 111,524 FCFA and 39,207 FCFA respectively per adult equivalent.

The proportion of households involved in camp-based employment – covering a wide range of jobs related to the running of the refugee camps – ranged from 17.4% in Goudebou to 31.6% in Mentao, with average incomes per adult equivalent from those households ranging from 83,173 FCFA in Sag Nioniogo to 157,416 FCFA in Goudebou.

Teaching was the only recorded type of salaried employment not directly linked to the running of the camps (although the government primary schools in Sag Nioniogo and Goudebou are supported by UNHCR); six households across the three camps (2.3% of the total sample population) generated average annual incomes from teaching of 94,590 FCFA per adult equivalent. Note that these figures are standardised for household size (i.e. showing income 'per adult equivalent' rather than the direct salaries) to allow for comparison of the overall value of cash incomes between households of different demography.

Livestock trading and other livestock-related employment activities such as herding and fattening (not including sales of households' own livestock or their produce, which are covered in Table 11) were carried out by between 5.4% of households in Goudebou and 11.6% of households in Mentao, with average cash incomes from these activities for the households involved of between 33,903 FCFA per adult equivalent in Mentao and 60,440 FCFA per adult equivalent in Goudebou. For Sag Nioniogo, these figures were 7.3% of households and an average 54,103 FCFA per adult equivalent among these households.

Other trade, services and small businesses (encompassing a wide range of skilled and unskilled activities and both petty and more substantial trade, but here excluding livestock- and artisan-related trade, services and businesses) provided the remaining cash income from employment and self-employment. These activities involved 50.7% of households in Sag Nioniogo (average income of 76,123 FCFA per adult equivalent), 32.6% of households in Goudebou (average income of 177,742

FCFA per adult equivalent), and 37.9% of households in Mentao (average income of 65,268 FCFA per adult equivalent).

Sales of households' own livestock and their produce (Table 11) accounted for an average 20.8% of households' cash income per adult equivalent across the camps – or an average 34.8% of cash income per adult equivalent for the households with such sales.

Table 11: Cash income from sales of own livestock and livestock products, all camps and quintiles (main category, per AE)

		DI/AE quintile					*Overall*
		1 (poorest)	**2**	**3**	**4**	**5 (richest)**	
Sag Nioniogo	Mean annual cash income (FCFA) per AE from livestock and livestock products, HHs involved	4,469	44,516	38,455	44,035	67,074	*37,563*
	Proportion of HHs with livestock products cash income	35.71%	21.43%	57.14%	21.43%	30.77%	*33.33%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*63,820*	*112,457*	*175,878*	*254,087*	*570,176*	*230,430*
Goudebou	Mean annual cash income (FCFA) per AE from livestock and livestock products, HHs involved	19,407	34,648	39,493	82,995	395,428	*144,506*
	Proportion of HHs with livestock products cash income	52.63%	61.11%	50.00%	77.78%	89.47%	*66.30%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*72,960*	*98,520*	*115,576*	*235,261*	*803,804*	*268,988*
Mentao	Mean annual cash income (FCFA) per AE from livestock and livestock products, HHs involved	38,212	31,478	47,432	135,394	351,259	*137,664*
	Proportion of HHs with livestock products cash income	47.37%	57.89%	89.47%	78.95%	89.47%	*72.63%*
	Mean overall annual cash income (FCFA) per AE, all HHs	*89,112*	*95,224*	*146,974*	*263,699*	*533,542*	*225,710*

Table 11 shows that cash income from households' own livestock is generally far more significant in Goudebou and Mentao than in Sag Nioniogo – with higher numbers of households from richer quintiles deriving cash income from their livestock, and this income increasing greatly across the DI/AE distribution in the Sahelian camps. In Sag Nioniogo, average cash incomes per adult equivalent from livestock products across the three middle quintiles are relatively stable, rising slightly in the richest quintile. The overall average cash income from livestock products for households involved is considerably lower in Sag Nioniogo than in Goudebou or Mentao, but it is notable that the average livestock product cash incomes of the camp's second and third quintiles are similar to those of their quintile counterparts in Goudebou and Mentao. Most of this is likely to be derived from sales of livestock kept away from Sag Nioniogo camp.

Just two households (0.7% of the sample population) generated cash income through the sale of crops or wild foods, at an average of 472 FCFA per adult equivalent between them. Both households were in Mentao, with one selling the crops and the other the wild foods. Wild foods and crops' combined overall average proportion of households' cash income per adult equivalent was less than 0.01%, and the average proportion for these two households was still just 0.5%.

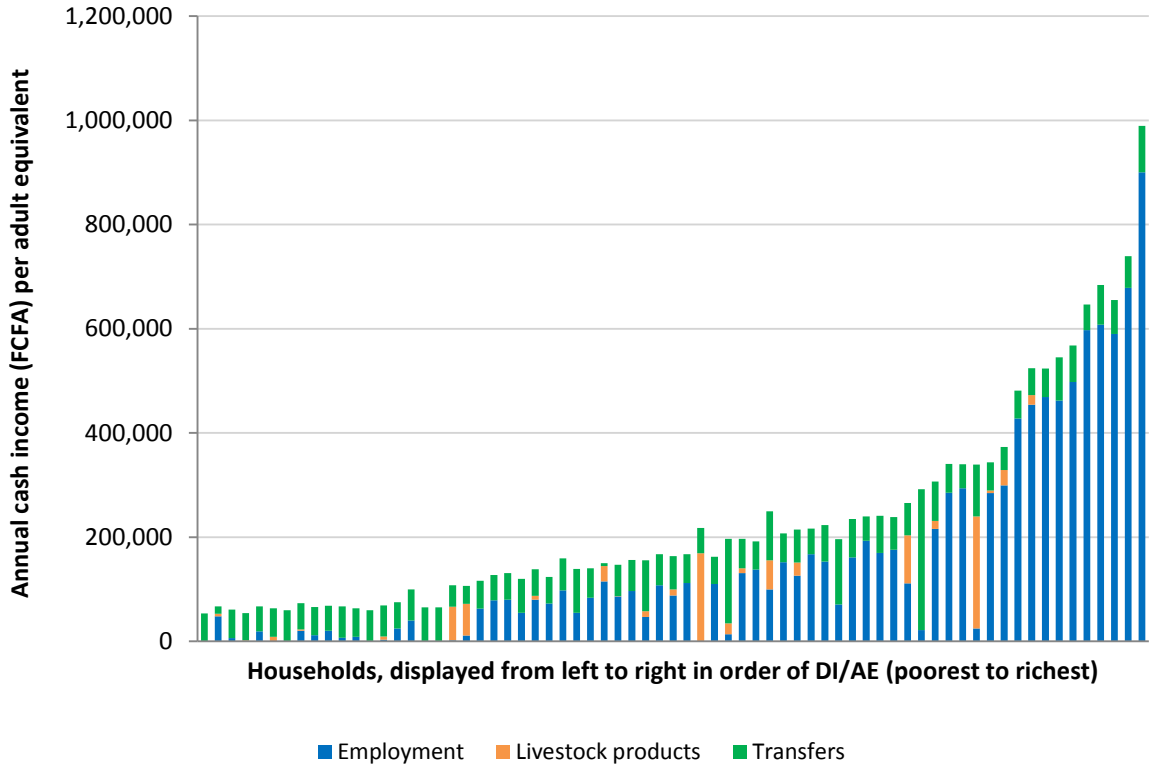
More detailed breakdowns are shown in the next charts for the three camps, which more clearly demonstrate inter-household variation in cash income sources and overall cash incomes.

Sag Nioniogo

Fig. 10 shows the main sources of cash income for the Sag Nioniogo study population. None of the households included in the sample earned any cash income from the sale of crops or wild foods. A small number of households gained some income from the sale of livestock and livestock products, but most households relied on cash income either from employment (including self-employment) or from cash transfers. Note that although WFP cash transfers are by far the most important source of money income through transfers, transfers in the chart also include transfers from other organisations and cash gifts from relatives and neighbours.

In the poorest quintile, only a very small proportion of cash income is derived from employment, trade or other types of work. This section of the population is highly dependent on cash transfers to buy food when rations run out, and when essential non-food items such as soap and clothes are needed. They lack the capital to invest in petty trade, and (with one exception) are not engaged in camp-based work. This may partly reflect poor access to formal education in their places of origin and their lack of French language skills, as training for higher-paid work in the camps (such as community mobilisation and health work) is generally conducted in French. The very poor group does include households with artisan skills. However, the low income levels of these households can be attributed to their lack of capital to secure inputs, and problems accessing markets. Low turnover and reduced profit levels also make it difficult to replace worn-out tools.

Figure 10: Sag Nioniogo sources of cash income (per AE, from categories)[44]



The four female-headed households in the poorest quintile all had their own sources of cash income in addition to transfers: one of these households sold two goats, another pursued leather artisan activities and sold a sheep, the third sold charcoal and vegetables, and the fourth sold *gari* (cassava flour). However, with the exception of the leather crafts, these are all low-capital investment activities providing low returns – the artisan activity was the only one to generate more than 32,000 FCFA of profit for these households during the study year.

Cash transfers are less important in the better-off three quintiles, where most money income is derived from artisan work, trade or other forms of employment, including more work for NGOs and other camp-based activities that often require higher levels of literacy.

This 'employment' income data in Fig. 10 combines separate figures for the numerous (around 50) discrete individual types of employment and self-employment that were recorded among the Sag Nioniogo households included in this analysis, many involving different types of petty trade. Many of the households (46.4%) have income from more than one type of employment. For some households with multiple employment types, these are within the same sub-category – for example, they may be involved in multiple types of petty trade within the camp, or do a mixture of artisanal leather work, metal work and jewellery-making. However, just under 40% of all households in Sag

[44] No cash income was reported from crops or wild foods.

Nioniogo had more diverse livelihoods, generating cash income from more than one of the following sub-categories:

- Artisan work
- Camp-based employment
- Livestock trade and livestock-related employment
- Other trade, services and small businesses
- Salaried work (not camp-based).

Cash income from multiple employment sub-categories was far more prominent in better-off quintiles, and involved a wide variety of combinations.

Overall, around 90% of households in Sag Nioniogo had cash income from at least one type of employment or self-employment. Of the sub-categories listed above, 'other trade, services and small businesses' and 'artisan work' (independently of each other) involved the most households. There were very few opportunities for manual day labour.

For the 51% of households engaged in 'other trade, services and small businesses', these often included multiple types of informal commercial trade – for example, selling cooked food while also selling *condiments* (groceries and seasonings) from a small table. Incomes from these activities were generally low, with the median combined household income per adult equivalent from this sub-category only 26,288 FCFA during the study year. However, 20% of the households involved generated over 100,000 FCFA per adult equivalent in the year from larger-scale trade such as selling clothes or operating restaurants, and the wealthiest household in Sag Nioniogo during the study year was that of a butcher who made 900,000 FCFA per adult equivalent. Richer households were also more likely to earn money by providing skilled or asset-reliant services such as live music or charging mobile phones, although such activities were not widespread.

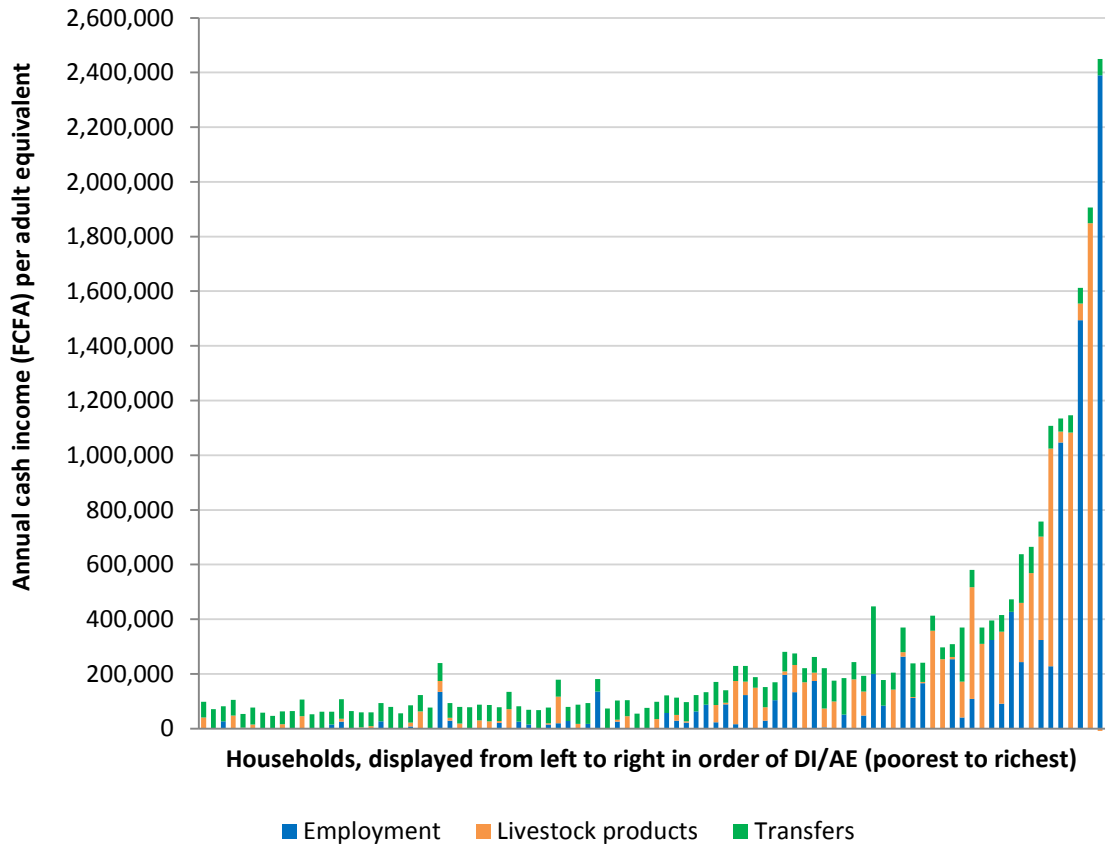
Artisan work was undertaken by 46.4% of households, including a relatively high proportion of households from the poorer quintiles but more households from the better-off end of the income distribution overall. The median annual household income from artisan work – 104,143 FCFA per adult equivalent – was the highest from all sub-categories, and artisan work also generated the next nine highest sub-category household cash incomes per adult equivalent after the butcher's 900,000 FCFA per adult equivalent.

30% of households had at least one household member engaged in camp-related jobs. Camp-based employment ranged from irregular, lower-paid work such as cleaning camp facilities to more skilled employment including health assistants, community mobilisers and translators, and this variety of roles and also of time commitments is reflected in households' levels of (non-standardised) cash income ranging from 5,000 FCFA to 720,000 FCFA per year. Most households engaged in camp-based employment were in the middle to upper quintiles; just three households out of 28 in the poorest two quintiles reported income from this employment type.

Beyond employment and transfers, cash income from the sale of own livestock and livestock products was relatively insignificant for most households in Sag Nioniogo. However, a small number of better-off households maintain herds on the Mali-Burkina Faso border or in their home areas – and for 4 households in Sag Nioniogo (just under 6% of the sample), livestock product sales make up over 50% of household cash income.

Goudebou

Figure 11: Goudebou sources of cash income (per AE, from categories)[45]



As in Sag Nioniogo, the vital contribution of cash transfers to the incomes of poorer refugees in Goudebou can be seen in Fig. 11. Households highly dependent on cash transfers make up a higher proportion of the population in Goudebou than in either of the other two camps, with significant levels of other cash income sources not appearing regularly until much further along the income distribution. It is mainly only among better-off households that income from livestock sales and from trade, self-employment and salaried work provides the main source of income, and where cash transfers become proportionately less important.

[45] No cash income was reported from crops or wild foods.

By far the largest contribution to transfers is provided by the World Food Programme; WFP cash transfers give households an average 57,491 FCFA per adult equivalent. Other organisations make significant contributions to 31.5% of households, at an average of 17,557 FCFA per adult equivalent. Cash gifts from relatives (mostly outside Burkina Faso) and from neighbours provide a similar proportion of cash in total (with large amounts going to several households in the better-off quintiles): overall, 16.3% of households receive such gifts, at an average 33,730 FCFA per adult equivalent.

The main types of employment in Goudebou fall into a similar set of categories as in Sag Nioniogo, including camp-based employment, artisan work, and trade and services. There are very few opportunities for either on-farm or off-farm manual work, and no households were engaged in agricultural labour.

Five of the 19 households in the poorest quintile generated cash income through employment or self-employment, with a fairly broad spread of different activities within these categories. However, the income gained by these poorest-quintile households was very low – 27,154 FCFA per adult equivalent the highest – and significantly higher incomes do not start to appear until the upper end of the middle quintile. Reasons for the lack of significant employment income for poorer households are likely to be similar to those discussed in relation to Sag Nioniogo, compounded by Goudebou's more isolated location (although the increased size of the camp itself may compensate for this to some extent, through more employment/self-employment opportunities within the camp). Social networks, including links with the camp hierarchy, also seem likely to play a role in access to higher-paid work (see the Part II report). However, this area of enquiry would require a separate study of social systems and structures. Among the better-off households, self-employment included artisan work, livestock trading and a range of commercial enterprises – all with high rates of return – as well as NGO and other camp-based employment.

Sales of livestock and livestock products are the other major source of cash income in Goudebou. These involve a higher overall proportion of households (66.3%) than employment and self-employment (56.5%), but with lower average cash incomes per adult equivalent for the households involved (144,506 FCFA, against 184,983 FCFA for households with cash income from employment or self-employment).

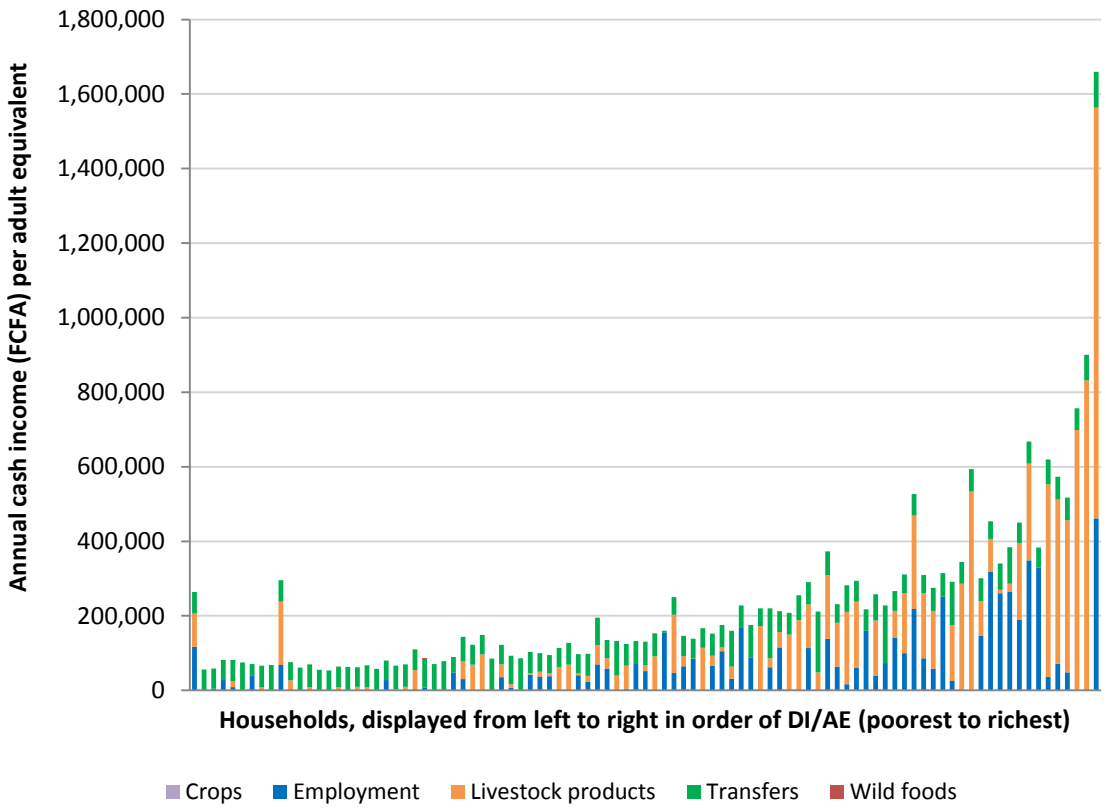
It is only in the richest two quintiles that average cash incomes from livestock or employment/self-employment exceed the value per adult equivalent of the WFP cash transfers, highlighting the importance of this income source for a majority of the refugee population.

Mentao

In Mentao (Fig. Figure 12**Error! Reference source not found.**), the majority of poor households are again largely reliant on WFP cash transfers for their money income. While poorer households may own livestock in Mentao, the values of average livestock sales again only exceed WFP cash transfers

by a clear margin in the top two quintiles. In contrast to Goudebou (where levels of employment and livestock income are more equal), sales of livestock and livestock products in Mentao are clearly the most significant non-transfer source of household income, with over 72% of households involved in these activities and generating average incomes per adult equivalent of 137,664 FCFA. The main livestock sold include sheep and goats, also with higher-value camels and cows at the top end of the income distribution. This data includes animals sold within and outside of Burkina Faso.

Figure 12: Mentao sources of cash income (per AE, from categories)[46]



Employment and self-employment provided an annual average 93,345 FCFA per adult equivalent to the 66.3% of households involved in these activities in Mentao, but there was very little income from these types of work in the lower half of the wealth distribution. Income from employment increases in the better-off quintiles, but is substantially lower than in Sag Nioniogo. For both Sag Nioniogo and Goudebou, the richest quintile is where average cash income from employment among households

[46] Fig. Figure 12 shows gross cash income from livestock sales and products per adult equivalent. In this study, input costs were deducted from the final disposable income calculation. This explains the two apparent anomalies towards the bottom of the DI/AE income distribution here, which have far higher cash income than the adjacent households. The interviewer's notes for the first household record that "5 sheep and 1 donkey in Burkina Faso died during the drought from a lack of food (although many more remained). Input costs for Burkina Faso livestock: 4 x 7,000F feed sacks = 21,000F; 7 x 8,500F feed sacks = 59,500F; 10 x 150F deworming tablets per month for 3 months = 4,500F. Input costs for Mali livestock: 20 x 10,000F feed sacks = 200,000F; *berger* [herder]'s salary = 100,000F per month = 1,200,000F". While these households made over 100,000 FCFA from livestock sales, their overall livestock input costs were considerably higher.

soars; the rise in average employment cash income is considerably less steep between Mentao's second-richest and richest quintiles.

Further analysis of the main types of employment show broadly similar patterns in Goudebou and Mentao. Far smaller proportions of households are involved in artisan employment than the 46.4% in Sag Nioniogo (5.3% of households in the Mentao sample and 14.1% of the Goudebou sample), and average incomes from the sale of artisanal products are also lower than in Sag Nioniogo (39,207 FCFA per adult equivalent for the households involved in Mentao, in comparison to 183,588 FCFA in Sag Nioniogo and 111,524 FCFA in Goudebou). In all three sites, camp-based employment is generally associated with higher overall household income per adult equivalent, although there are some exceptions. Finally, in Mentao, as in Sag Nioniogo and Goudebou, very little unskilled manual work is available.

5. Assets

Key points:

- The most commonly owned assets are mobile phones, artisan tools and kitchen utensils.
- Car ownership is rare, but motorbikes and bicycles are owned by between one in four and one in six households.
- Livestock holdings vary. Poorer households tend to keep some as insurance in times of economic difficulty and to provide milk for children, while livestock provide more cash income for better-off households.
- Many refugee households maintain livestock both in Burkina Faso and in Mali.

During individual household interviews, households were asked to list any assets they possessed, focusing on items used in the production or marketing of income-generating work. The refugee artisans had generally arrived from Mali with the tools of their trade, and some of the better-off households had a motorcycle or car. In total, five households out of the 256 reported owning a car, while between one in four and one in six households owned motorbikes, solar panels, radios and bicycles respectively. Generators, televisions and other electronic goods were not widely owned, although mobile phone ownership was very common (at 78.9% of households). Other than artisan tools and mobile phones, the most commonly-owned assets were cooking pots, knives and bowls.

Just as artisans fled with their tools, most pastoralists attempted to bring some or all of their livestock with them. It is difficult to ascertain the size of the refugees' livestock holdings, but it is clear that there have been significant losses due to the conflict, drought and disease[47]. In this section

[47] These were frequently mentioned anecdotally in focus groups and household interviews. For more detail on losses due to the conflict, see: *Evaluation approfondie sur la sécurité alimentaire en situation d'urgence dans les camps de réfugiés*

we summarise the information we have been able to establish through household interviews. While this information cannot be confirmed with certainty, we have where possible cross-checked reported input costs (including fodder other needs)[48] with the number of livestock owned.

5.1. Sag Nioniogo

Livestock holdings vary considerably across the income distribution in Sag Nioniogo, although richer households tend to have larger numbers of camels, cattle and sheep in relation to lower-value goats. Goats and sheep are the two most commonly-owned animals across all quintiles. Better-off households generally spend slightly more on livestock maintenance and production input costs than poorer households.

More poor households than richer household own some livestock, but those rich households owning livestock have larger herds and/or animals of greater economic value, including cattle and camels kept on the Mali-Burkina Faso border. In Sag Nioniogo, poor households are more likely to keep goats in the camp on a small scale as a form of insurance against unexpected expenses and to provide children with milk, even though the costs and risks are relatively high.

Of the 23 households with cash income from livestock in Sag Nioniogo, the average annual cash income is 37,560 FCFA per adult equivalent – much less than the mean 168,504 FCFA per adult equivalent from employment (for the 63 households with cash income from employment). Only seven of the 69 households sampled have more cash income from livestock products than from employment, and of those only one is in the richest two quintiles; conversely, 57 of the 69 households sampled have more cash income from employment than from livestock products. This underlines the contrast between the population of Sag Nioniogo and the camps in the Sahel. Households that practised pastoralism in Mali appear to have settled mainly in the Sahel, while more urban households were more likely to settle near the bigger urban areas of Ouagadougou and Bobo-Dioulasso (there are of course exceptions to this general pattern).

5.2. Goudebou

In Goudebou, households across the income distribution own livestock, although the numbers vary both within and across wealth groups. Only a small number of households do not hold any livestock, and none of these households are in the poorest quintile. This is consistent with findings at the other camps. Animals are held both within Burkina Faso and outside its borders, in Mali; with the exception of one outlier in quintile 4, however, households in Goudebou keep more animals in Burkina Faso than in Mali.

Goats are the most commonly-owned animals across all quintiles. The reported pattern of

Maliens et villages hôtes au Burkina Faso (2013), World Food Programme. Available online at http://documents.wfp.org/stellent/groups/public/documents/ena/wfp256916.pdf

[48] Most animal health needs are provided free of charge in the camps, but coverage is organised at specific times of the year.

ownership is consistent with interview observations that generally livestock are kept locally by poorer households to provide milk for domestic use and as a source of cash for urgent domestic needs. It is only among the two wealthiest groups that they provide a primary source of (cash) income.

As observed in Sag Nioniogo, input costs per household livestock-holding vary widely. The reasons are similar across all sites: differences in the costs associated with different types of animals, and differences in the herding and guardianship arrangements made by individual households. In some cases, significant transfers of money were made to relatives, friends, neighbours and/or shepherds or herders overseeing animals outside Burkina Faso, while in other cases livestock were kept at no direct cost to the refugee household. In these latter cases, guardians usually kept proceeds from the herds.

5.3. Mentao

The pattern of livestock-holding in Mentao is similar to that in Goudebou. Households across the income distribution have livestock-holdings both within Burkina Faso and across the border in Mali. Average reported herd sizes are lower in Mentao than in Goudebou for most income quintiles. However, households in Mentao appear to hold on average a larger proportion of their livestock in Mali than in Burkina Faso, whereas in Goudebou most households keep more livestock in Burkina Faso than in Mali. Households in the richest two quintiles in Mentao have on average larger herds of cattle and goats both in Burkina Faso and outside Burkina Faso than households do in the poorer quintiles.

Average input costs are slightly cheaper in Goudebou than in Mentao, but with similar patterns. In each camp, the reported numbers of animals and annual input costs per household clustered below 100 animals and below 300,000 FCFA per year respectively. As might be expected, overall costs increase in relation to the number of livestock held – although again the same factors as elsewhere impact on the input costs paid by households, including the types of animals kept and the terms on which animals are overseen away from the camps.

6. Simulations

Key points:

- The 50% cut in WFP cash transfers simulation and the 100% increase in staple diet price simulation each have severe impacts on poorer households, but affect better-off ones less. Both simulations produce extreme food energy deficits for some households (particularly in Mentao and Goudebou), push others into situations of grave food insecurity, and would reduce all households' capacity to invest in businesses.
- A halving of WFP cash transfers would cause 16.8% of all households that had previously

been above the standard of living threshold to fall below it.

- A doubling of staple food prices causes 13.3% of all households that had previously been above the standard of living threshold to fall below it.
- Different households experience slightly different impacts from each simulation. However, the greater severity of the cut in WFP cash transfers illustrates both the reliance of many households on this as a main source of income, and the level of insulation from food price rises provided by the WFP food rations.
- Extra 'Seeds for Solutions' project income varies widely by household, on the basis of the current simulation which models income from cows kept in Burkina Faso. Some households gain large amounts of disposable income that lift them substantially above the standard of living threshold, but others are unlikely to see much real impact on their livelihoods.
- Based on the reported numbers of cows in Burkina Faso, the overall proportion of households with large enough herds of Burkina Faso-based cows for this intervention to make a substantial extra contribution to their disposable incomes is fairly low. However, the involvement of a wider group of refugees in milk processing activities (not included in the simulation) should increase the impact of the project across the refugee population.

The detail provided by IHM data allows for modelling of changes in prices, production and incomes and the resulting household-level effects. To support UNHCR programme work and advocacy, three initial simulations have been produced to separately investigate potential impacts of reduced WFP support, an external food price shock, and one strand of a livelihoods milk value chain project (Seeds for Solutions) that will be starting shortly.

6.1. Simulated 50% reduction in WFP cash transfers

During the study year (September 2013 – August 2014), refugee households in the official UNHCR camps in Burkina Faso were eligible for 42,000 FCFA of cash transfers per registered member from the World Food Programme (WFP), in monthly payments of 3,500 FCFA per member.

The potential consequences of a blanket 50% reduction in WFP cash transfers are simulated below for each household. The model assumes no other changes in household circumstances or livelihoods activities, and uses each household's actual reported income from WFP cash transfers (standardised per adult equivalent) as the starting point[49].

With the simulated reduction in WFP cash transfers, the ability of the richest households to meet their basic needs is not significantly affected. However, this reduction would cause several of the poorest households to have extreme food energy deficits unless they were able to acquire additional income from elsewhere, and many more are pushed down into food poverty or below the standard of living threshold – with an extra 16.8% of households falling below this level after the simulation.

[49] Although all registered household members qualify for the payment, there were occasional cases where some members were not registered or where not all registered people were able to collect their payments in some months, hence the use of 'actual reported' data as this may be more likely to reflect the actual impacts of the cash transfer.

The actual effect on all households would be likely to be more severe than those simulated, as the cuts to WFP aid would reduce the amount of cash circulating in the camp economies, thereby also reducing demand, investment and incomes from employment and self-employment activities.[50]

Camp-wide impacts

At the aggregate level, a simulated 50% cut in income from WFP cash transfers has a fairly consistent absolute impact on the incomes of households across the income distribution (Figs. 13, 14 and 15), and the richest households are relatively unaffected, other than having less money available to invest in businesses. The overall average reduction in disposable income per adult equivalent is 27,560 FCFA, with little variation between camps but the biggest average impact on DI/AE in Goudebou, and the smallest in Sag Nioniogo (Table 12). Overall, an extra 16.8% of the households fall below the standard of living threshold than during the study year[51].

Table 12: Average reductions in disposable income per adult equivalent and standard of living threshold-meeting after simulated 50% reduction in WFP cash aid, all camps

	Sag Nioniogo	Goudebou	Mentao	*Overall*
Mean reduction in DI/AE after simulated 50% reduction in WFP cash aid	26,385 FCFA	28,746 FCFA	27,266 FCFA	*27,560 FCFA*
Extra proportion of households below SoLT after simulated 50% reduction in WFP cash aid	18.84%	17.39%	14.74%	*16.80%*

[50] Further differences in actual effects include the possibility that if a household has under-reported their income from WFP cash transfers, the real impact of any cut would be greater than those modelled here (if partially cancelled-out by a higher real initial disposable income). Conversely, for households with high numbers of 'adult equivalents' relative to actual numbers of people – i.e. households with a larger proportion of members who have higher food energy needs, and/or are present throughout the year – the impacts from all changes in 'per person' transfers will be less, in comparison to simulated changes in 'per adult equivalent' transfer incomes.

[51] Inter-camp variation in this figure is due partly to differences in the proportion of households that were only just above the standard of living threshold in the three camps during the study year.

Figure 13: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Sag Nioniogo

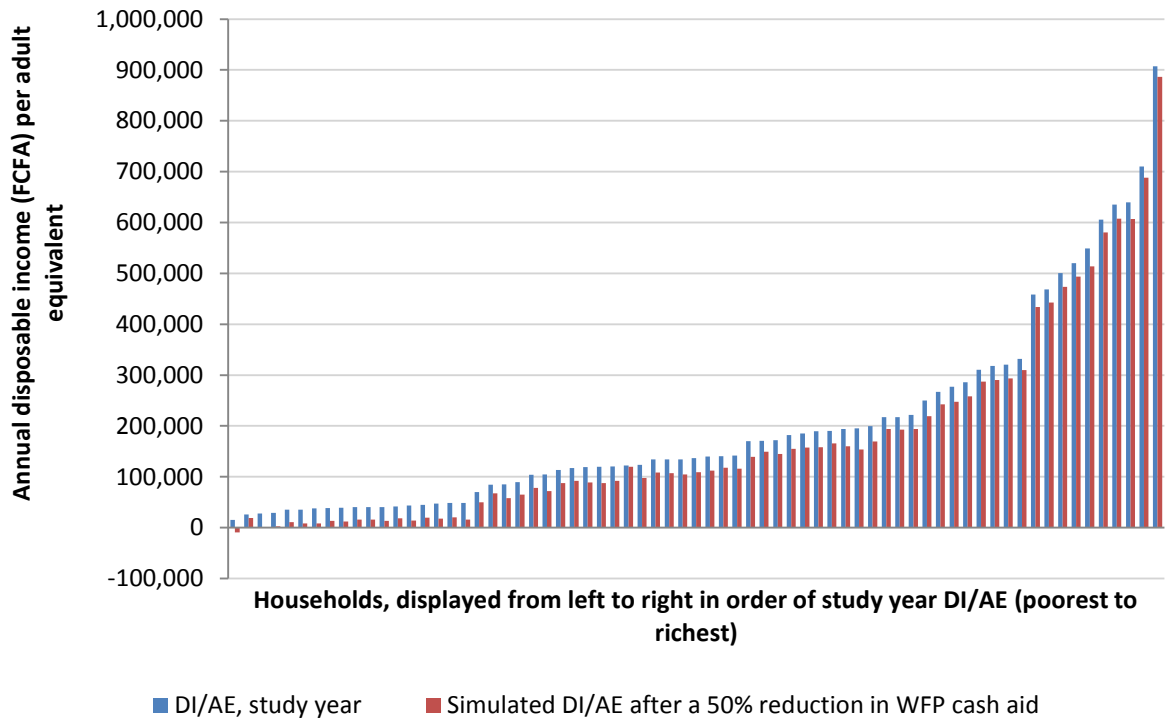


Figure 14: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Goudebou

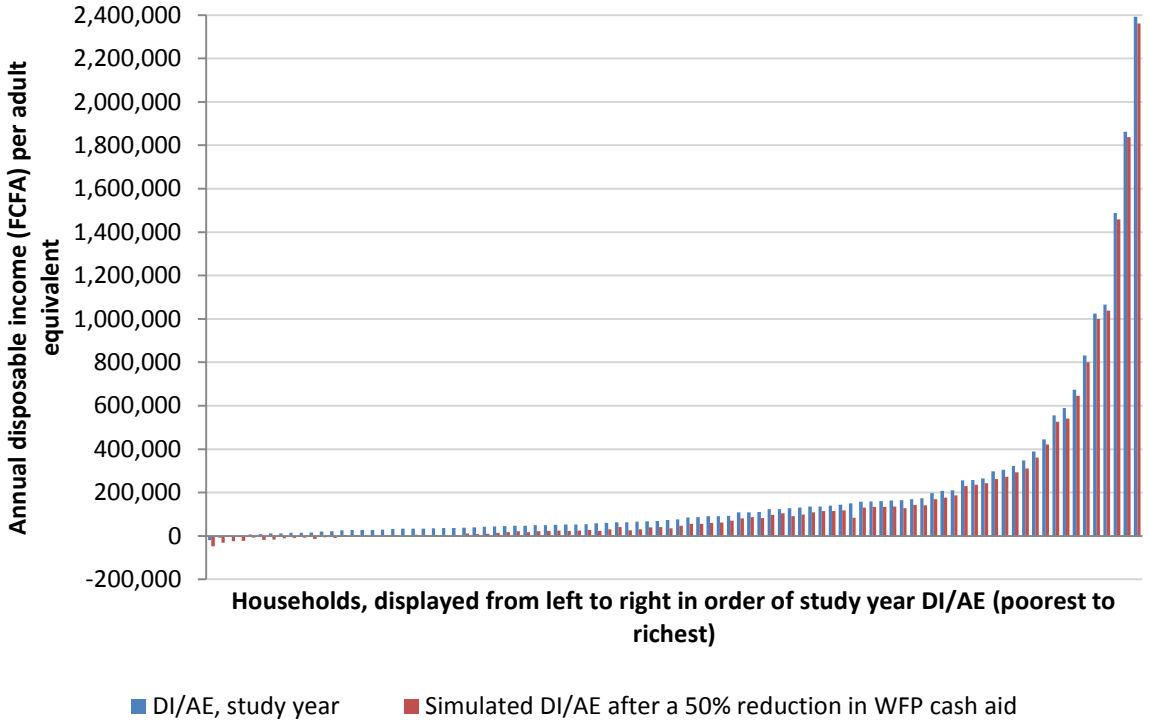
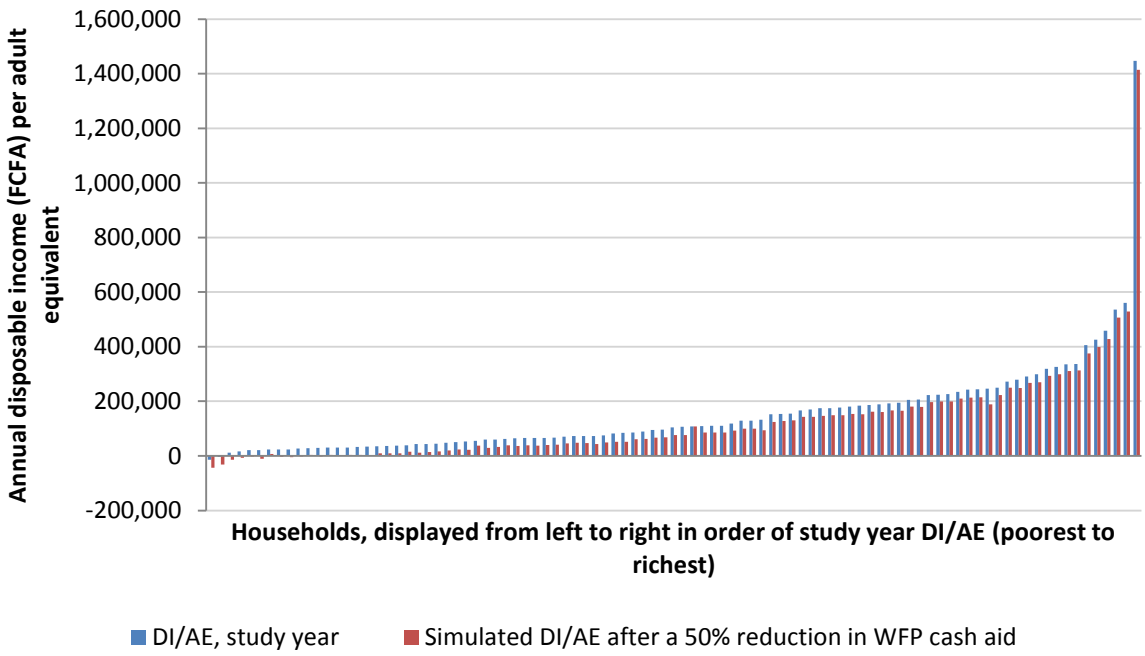


Figure 15: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Mentao



Impacts on poorer households

The poorest households clearly suffer the largest proportional reduction in both their overall and disposable incomes after the simulated halving in income from WFP cash transfers.

In Sag Nioniogo (Fig. 16), while just one of the 69 sampled households would be unable to meet its basic food needs (even before any other costs have been taken into consideration), many other households drop down to being only just above the food poverty line[52] separating positive and negative disposable incomes.

The poorest households also suffer the greatest impact in Goudebou (Fig. 17). The two households that already had negative disposable incomes in the study year would fall much further below the food poverty line, to an extreme deficit corresponding to 207 kg of millet per adult equivalent for the poorest household. 12 other households from the poorest and second-poorest quintiles would also now suffer from food energy deficits, while many others come very close to doing so.

[52]The food poverty line is indicated by the *x* axis (or '0' on the *y* axis) in the DI/AE charts.

Figure 16: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Sag Nioniogo: poorest three quintiles

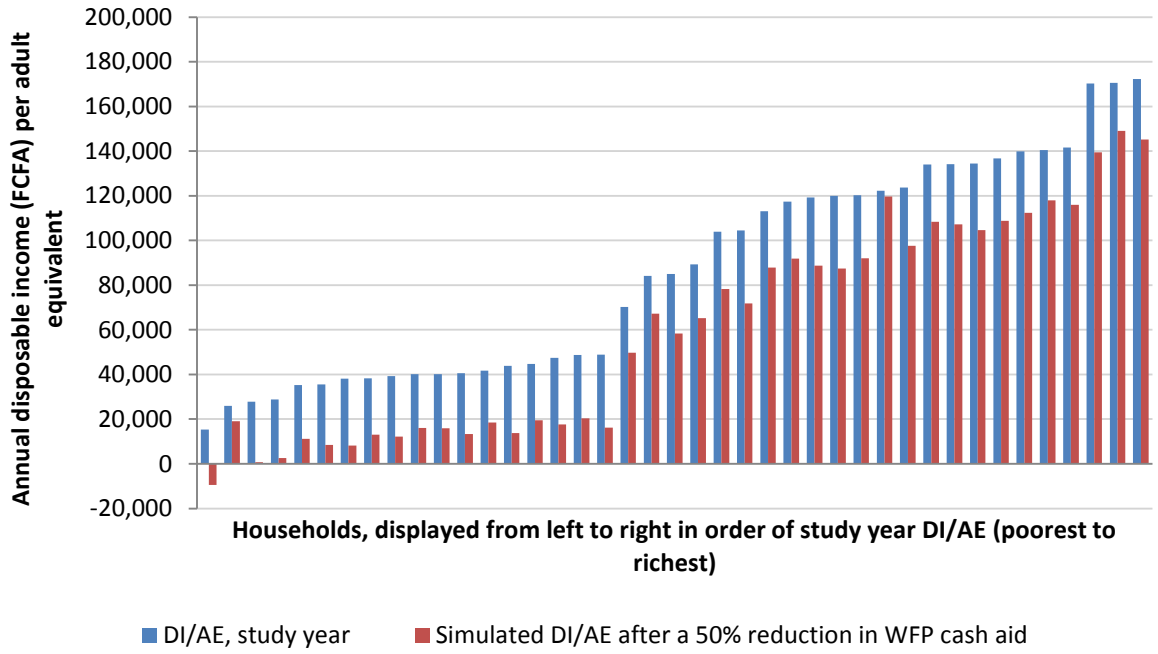


Figure 17: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Goudebou: poorest three quintiles

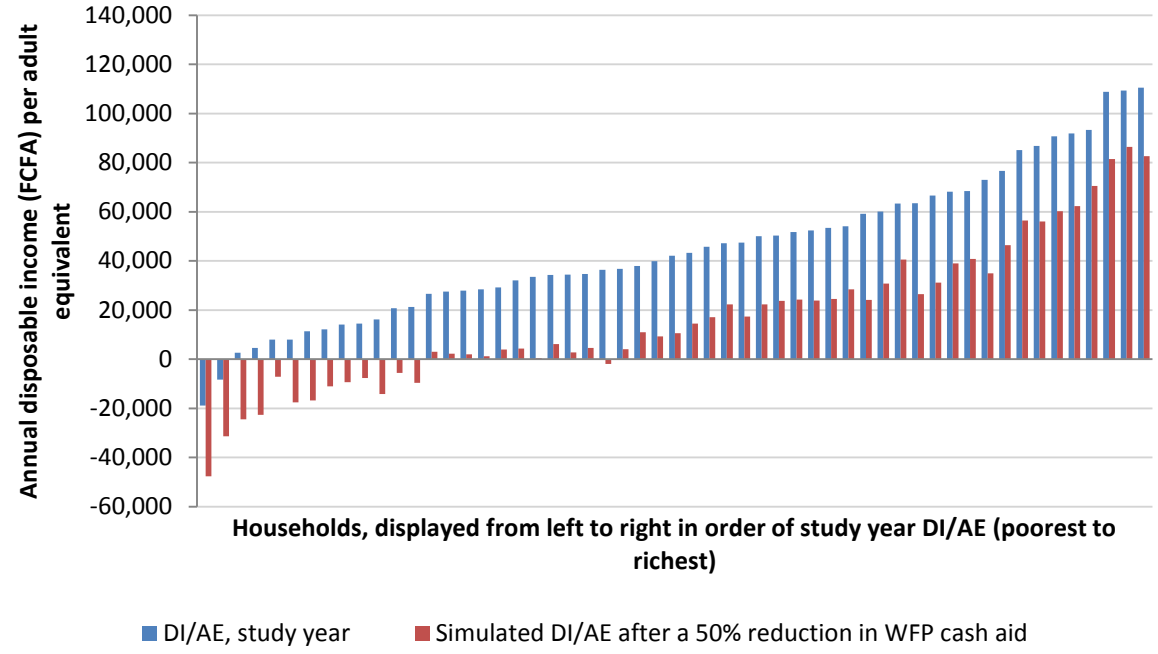
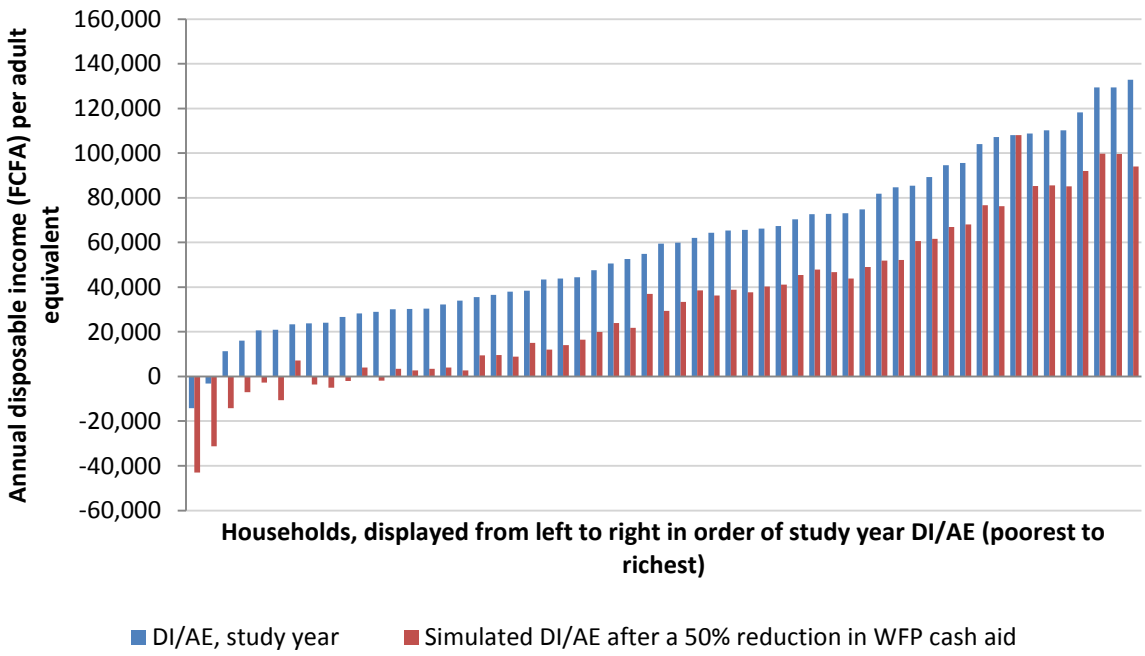


Figure 18: Simulated impact on DI/AE of 50% reduction in WFP cash aid, Mentao: poorest three quintiles



In Mentao, again many of the poorest households move from a precarious situation to a crisis in food access (Fig. 18). With the 50% reduction in WFP cash transfers, the two poorest households would have severe food energy deficits equivalent to 187 kg of millet (for the poorest household) and 136 kg of millet (second-poorest household) per adult equivalent, while others also fall below the food poverty line or are only just able meet their basic food needs. However, more of the middle-income households remain further above the food poverty line after the cash transfer cut than in Goudebou.

The poverty impacts across the camps of the simulated 50% cut in WFP cash transfers are clearer when the essential costs required for local social inclusion (beyond meeting basic food energy needs) are also factored into the model:

- In Sag Nioniogo, during the study year around a third of households in the poorest quintile were below the standard of living threshold, with all other households above the threshold. After the simulation, all of the poorest quintile and almost one-third of households in the next poorest quintile fall below this poverty line. Meanwhile, the overall percentage of households below the threshold increases from 7.3% in the study year to 26.1% with the simulation.
- In Goudebou, the impact of the 50% cut in WFP cash transfers would result in a significant reduction in welfare for all but the very well-off. As well as resulting in even deeper poverty for the poorest households, 52.2% of all sampled households – including one from the fourth-richest quintile during the study year – would be below the standard of living

threshold, a significant increase on the 34.8% of households during the study year.

- A halving in WFP cash transfers in Mentao also pushes a far higher proportion of households below the standard of living threshold than was the case during the study year. With the simulated cut, the total proportion of households below the standard of living threshold increases from 20% during the study year to 34.7%, with much higher numbers of households in quintiles 2 and 3 (as well as all households from the poorest quintile) now unable to meet the locally-defined level of purchases needed for social inclusion.

The severity of these impacts suggests that while better-off households would be relatively less affected by reduced incomes from WFP cash transfers, any such cuts in cash transfers or food rations would require a safety net to support poorer households – many of whom are already in need of greater support or increases to other income streams.

6.2. Simulated 100% increase in staple diet price

In focus groups with poor women, millet was identified as the staple food that poorer refugee households would buy after their rations ran out. Average mid-year prices for millet during the study year (September 2013 – August 2014) were 200 FCFA per kg in Sag Nioniogo, and 230 FCFA per kg in Goudebou and Mentao.

The potential consequences of a 100% increase in the price of this staple diet (to 400 FCFA per kg in Sag Nioniogo, and 460 FCFA per kg in Goudebou and Mentao) are simulated below for each household. The model assumes no other changes in household circumstances or livelihoods activities, and that other local food prices would increase at the same rate as those of millet (i.e. that the doubled millet price would not merely lead to the households buying other foods that might become relatively cheaper). In these circumstances, households selling food would benefit from the higher market prices.

The simulated 100% increase in the staple diet price has relatively small impacts on richer households, with all households insulated to some extent by food aid from WFP. However, the overall average reduction in disposable income following the doubling of the staple diet price – 20,837 FCFA per adult equivalent – is enough to impact severely on the poorest households already struggling to meet their basic needs. While the effect on living standards is less severe than that produced by the simulated reduction in cash transfer it still causes an additional 13.3% of households to fall below the standard of living threshold.

Camp-wide impacts

At the aggregate level (Figs. 19, 20 and 21), the simulated doubling of the staple diet price again has a fairly consistent absolute impact on the incomes of households across the income distribution, reducing disposable incomes per adult equivalent by an overall average of 20,837 FCFA (Table 13). This figure is slightly lower than the average reduction in disposable income caused by the simulated halving of WFP cash transfers. Overall, an extra 13.3% of the camps' households fall below the

standard of living threshold than was the case during the study year[53]; again this is slightly fewer than in the previous simulation.

The main reason for differences in the DI/AE reductions this time largely stem from the different amounts of food per adult equivalent that households need to purchase at the new price in order to meet their food energy requirements, after their food incomes have been subtracted. The simulation will increase the disposable incomes of the few households whose food incomes exceed their food energy requirements.

Table 13: Average reductions in disposable income per adult equivalent and standard of living threshold-meeting after simulated 100% increase in staple diet price, all camps

	Sag Nioniogo	Goudebou	Mentao	*Overall*
Mean reduction in DI/AE after simulated 100% increase in staple diet price	20,188 FCFA	20,935 FCFA	21,213 FCFA	*20,837 FCFA*
Extra proportion of households below SoLT after simulated 100% increase in staple diet price	17.39%	13.04%	10.53%	*13.28%*

Once more, the disposable incomes of the better-off households are proportionately much less affected by the change in the staple diet price than the poorest households' disposable incomes.

[53] Inter-camp variation in this figure is likely to come partly from differences in the camps' respective proportions of households that were only just above the threshold during the study year.

Figure 19: Simulated impact on DI/AE of 100% increase in staple diet price, Sag Nioniogo

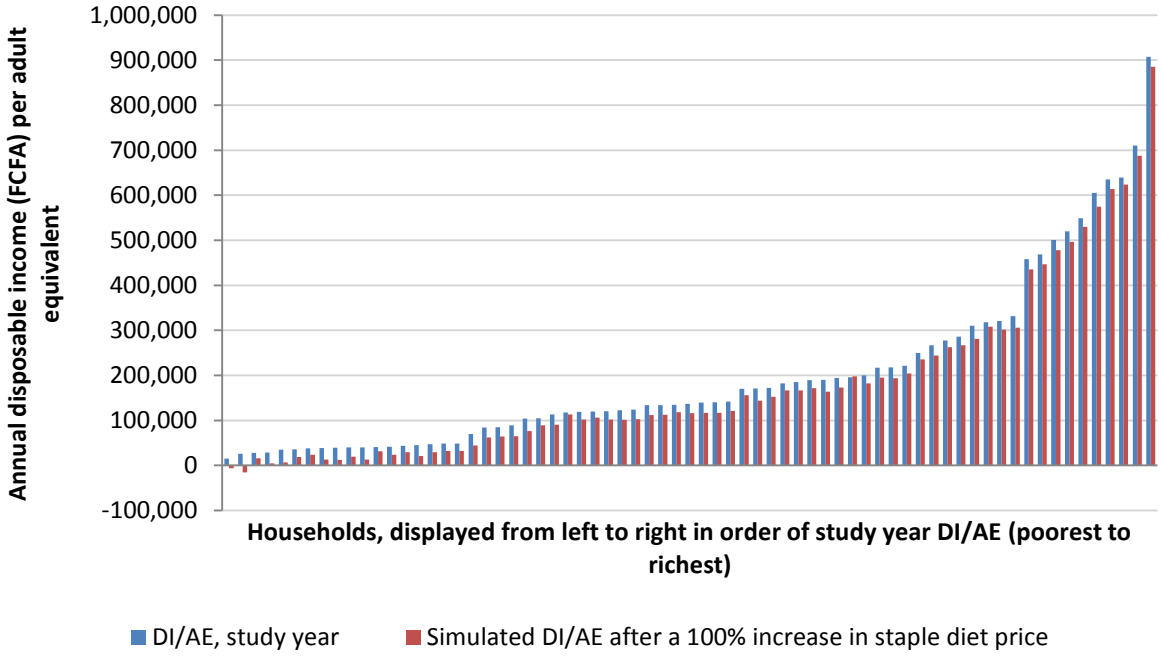


Figure 20: Simulated impact on DI/AE of 100% increase in staple diet price, Goudebou

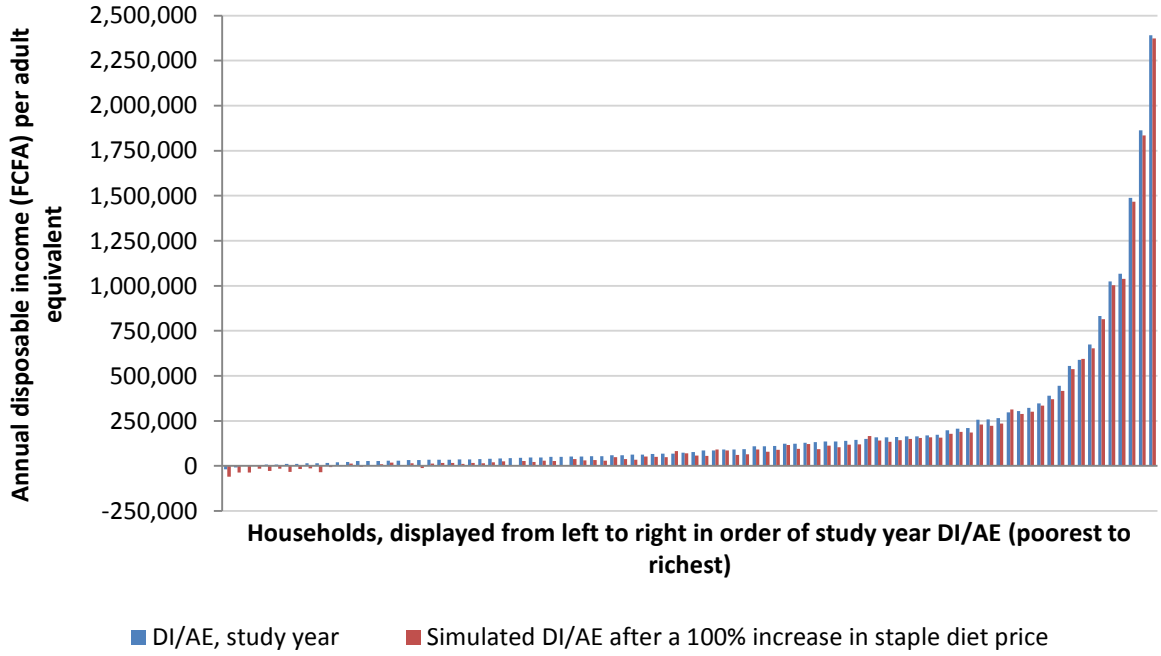
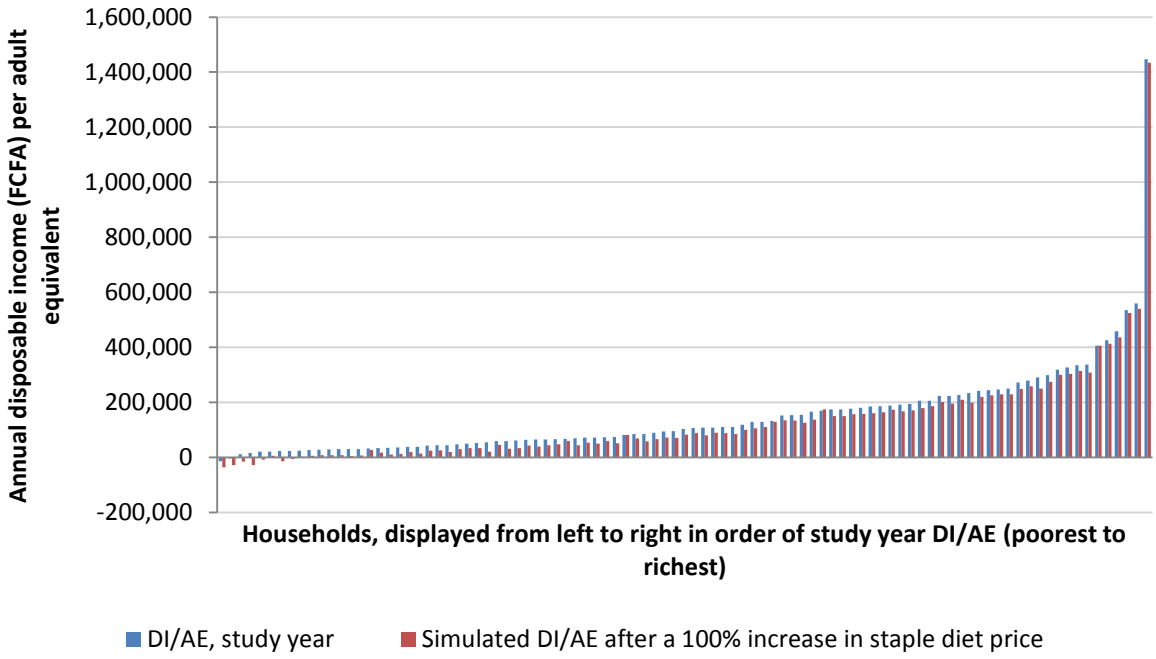


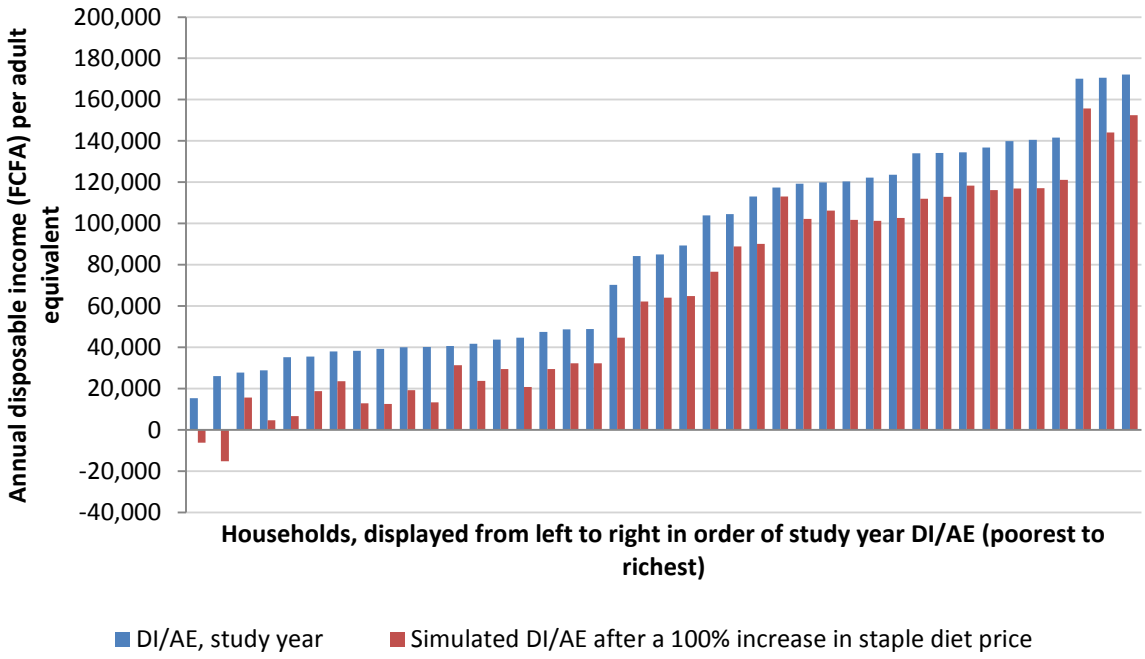
Figure 21: Simulated impact on DI/AE of 100% increase in staple diet price, Mentao



Impacts on poorer households

With the doubling of the staple food price and consequent decreases in disposable income, the ability of poor households to meet their basic food energy needs is again considerably reduced, but with some differences in the households worst-affected.

Figure 22: Simulated impact on DI/AE of 100% increase in staple diet price, Sag Nioniogo: poorest three quintiles



In Sag Nioniogo (Fig. 22), 2 of the 69 households fall below the food poverty line as a result of the change in the staple food price[54]. Many other households fall much closer to the food poverty line, but slightly fewer overall than with the WFP cash transfer reduction.

In Goudebou (Fig. 23, on the next page), the doubled staple diet price again has a major impact on the poorest households: existing food energy deficits greatly increase, 12 households that were able to meet their food energy needs in the study year fall into food poverty, and several more drop to very insecure levels of disposable income[55]. Food insecurity stretches much further across the income distribution, and the disposable income per adult equivalent of the poorest household drops to -59,342 FCFA, corresponding to a food energy deficit of 129 kg of millet.

[54] Because the staple diet food price has doubled, the exact negative disposable incomes (which essentially indicate the extra money households would need to meet their food energy needs) from these simulations are not directly comparable with those from the study year or the first simulation of WFP cash transfer cuts. With the doubled staple diet food price, a negative DI/AE of -10,000 FCFA (for example) from this simulation will involve half the implied food deficit of a -10,000 FCFA negative DI/AE from the previous simulation.

[55] The disposable incomes of the 45th- and 49th-poorest households rise slightly (together with those of three other households in Goudebou) because their food incomes exceed their food energy requirements.

Figure 23: Simulated impact on DI/AE of 100% increase in staple diet price, Goudebou: poorest three quintiles

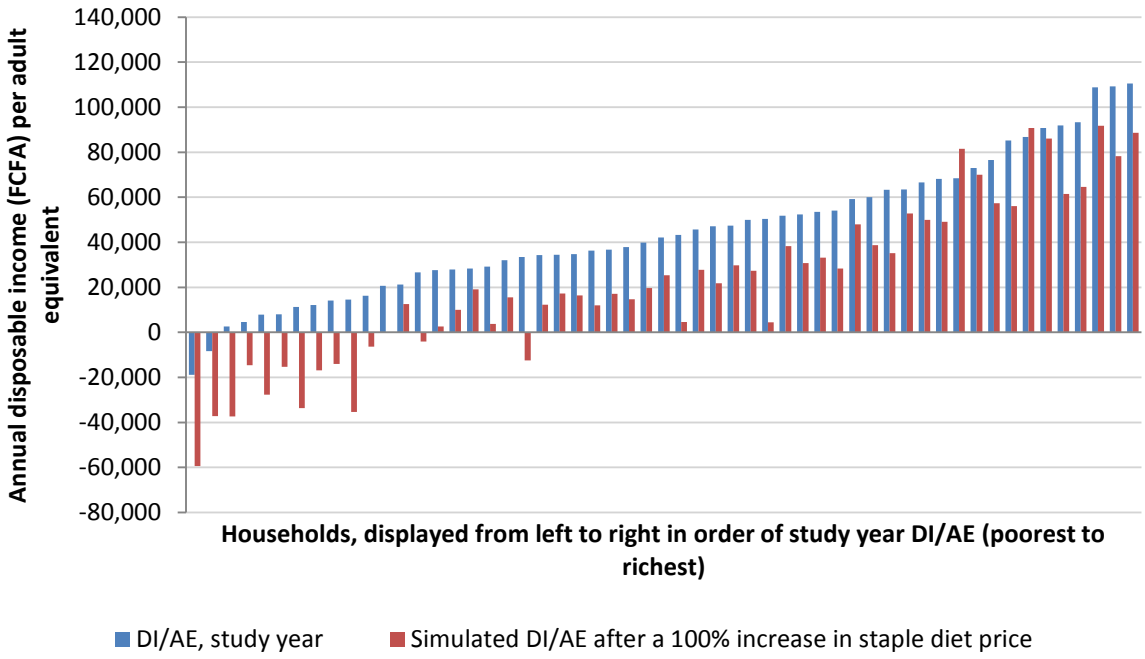
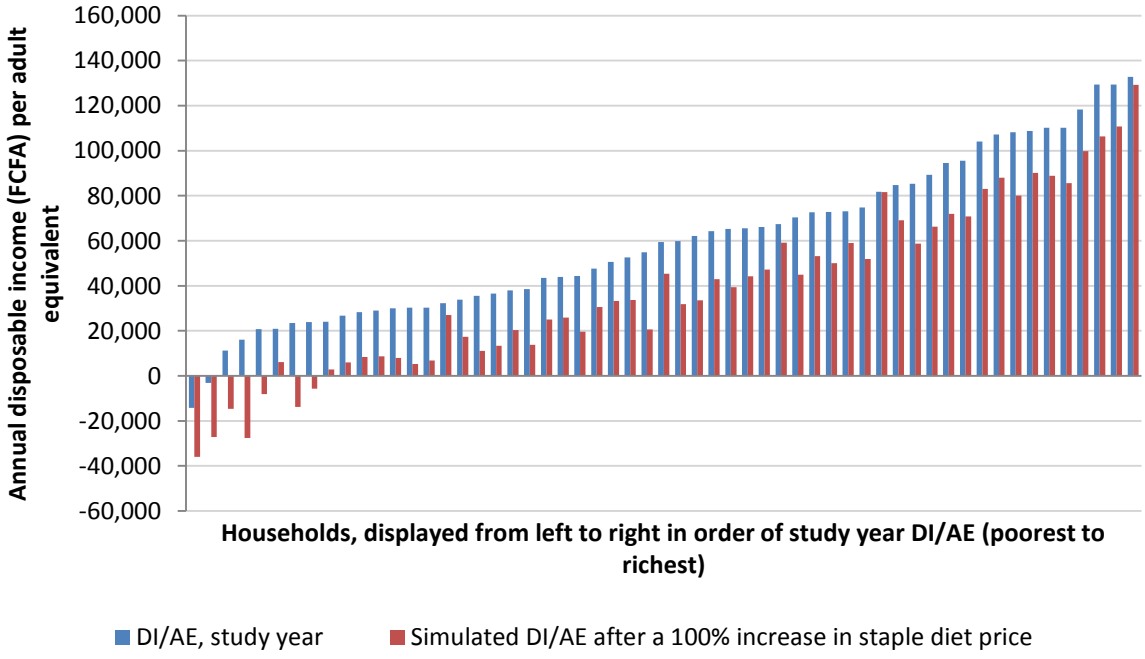


Figure 24: Simulated impact on DI/AE of 100% increase in staple diet price, Mentao: poorest three quintiles



In Mentao (Fig. 24), once more the poorest households fall even further below a position where they could meet their food energy needs, and the basic food security of others also becomes far more

precarious. The poorest household's disposable income per adult equivalent after the simulated doubling of the staple diet price is -35,996 FCFA, or a 78 kg millet deficit.

As with the simulated effects of a 50% reduction of WFP cash transfers, a 100% increase in the price of the staple diet pushes many more poor households below the standard of living threshold than in the study year:

- In Sag Nioniogo, the increased staple diet price leads to a rise in the overall percentage of households below the standard of living threshold from 7.3% to 24.6%.
- All of the households from the poorest quintile in Goudebou were below the standard of living threshold in the study year, and remain so after the staple diet price simulation. More significantly, all of the households from the second-poorest quintile are now below the threshold (an increase from 50% in the study year), as are 38.9% from the middle quintile (an increase from 22.2% in the study year). In total, 47.8% of households in Goudebou would be below the threshold in this simulation, a significant increase on the 34.8% during the study year.
- In Mentao, the 100% increase in the staple diet price pushes below the standard of living threshold the two households from the poorest quintile that were above it in the study year, and the proportion of households from the second-poorest quintile that are below the threshold greatly increases from 10.5% to 52.6%. The overall proportion of households below the threshold more than doubles with the doubled staple diet price, going up from 20% to 30.5%.

If the cost of the staple diet were to double, this would have a have a serious impact on the well-being of many households across the refugee camps, requiring additional targeted assistance to households unable to meet basic food and non-food needs.

However, as Table 14 shows, these simulated impacts are on the whole less severe than those of the 50% reduction in WFP cash transfers (accounting for differences in interpretation of the negative disposable incomes from the two simulations[56]). With 50% less income from WFP cash transfers, a larger proportion of households from all camps fall below the standard of living threshold than they do with a 100% increase in the staple diet price, more households have (more extreme) food energy deficits, and the average disposable incomes of the poorest households are slightly lower.

[56] Whereby the doubled staple food price of the second simulation makes the equivalent food energy deficit twice as expensive as in the study year or in the first simulation.

Table 14: Compared simulation impacts of 50% reduction in WFP cash aid and 100% increase in staple diet price

	Sag Nioniogo simulations		Goudebou simulations		Mentao simulations	
	WFP cash cut	Food price rise	WFP cash cut	Food price rise	WFP cash cut	Food price rise
No. of HHs with negative DI/AEs	1	2	14	14	10	7
Lowest DI/AE	-9,492 FCFA	-15,230 FCFA	-47,632 FCFA	-59,342 FCFA	-42,996 FCFA	-35,996 FCFA
Implied food energy deficit of lowest DI/AE	47 kg millet	38 kg millet	207 kg millet	129 kg millet	187 kg millet	78 kg millet
Mean DI/AE of poorest HHs[57]	12,052 FCFA	16,971 FCFA	-1,323 FCFA	-13 FCFA	-344 FCFA	3,862 FCFA
% of HHs below SoLT	26.09%	24.64%	52.17%	47.83%	34.74%	30.53%

The greater severity of the reduction in WFP cash transfers illustrates both the reliance of many households on this cash support as a main source of income, and the level of insulation from food price rises provided by the WFP food rations. These findings reinforce the conclusion that any cuts to WFP aid would need to be mitigated by appropriate alternative support for poorer households.

6.3. Simulated income from potential 'Sahel Milk' producers

The 'Sahel Milk' project to be implemented by Vétérinaires Sans Frontières (VSF) aims to contribute to the self-reliance and socioeconomic well-being of both the refugee and host populations in the Sahel region, building capacities to produce, collect, process and market milk as part of a wider 'Seeds for Solutions' UNHCR programme.

At the time of writing this report, project participants had not been selected. The simulation therefore looks at the potential impact of the milk production element of the project, if all of the households from the two camps who reported keeping cows (not including bulls or calves) in Burkina Faso became milk producers for the project, and if all of their cows were involved[58].

The simulation adds an extra 27,000 FCFA to each household's initial cash income for every such cow that is a potential producer for the project. This is in accordance with estimates supplied by VSF, whereby for each cow total production is expected to be around 72 litres (Equation 2), and where the producer-level sale price varies between 250-500 FCFA per litre – giving an average 375 FCFA per

[57] For this purpose, the poorest households are defined as those below the point in the DI/AE distribution where no households fall below a DI/AE of 20,000 FCFA in either of the simulations. This includes the poorest 18 households in Sag Nioniogo, the poorest 34 households in Goudebou, and the poorest 24 households in Mentao.
[58] We recognise that this may overestimate the number of cows providing milk at any one time.

litre. As with the previous simulations, the model assumes no other changes in household circumstances or livelihoods activities.

Equation 2: VSF milk production estimate per cow

$$\begin{aligned} &180 \text{ production days } \times 2 \text{ litres per day} \\ &\quad \times 40\% \text{ remaining for sale (after household consumption)} \\ &\quad \times 50\% \text{ losses due to transhumance } = 72 \text{ litres per year} \end{aligned}$$

The simulated participation of their Burkina Faso-based cows in the 'Sahel Milk' project adds a wide range of additional income for the households involved[59]. While some households derive relatively little benefit from their involvement, it makes significant differences to others – with one household moving above the food poverty line, and a further three households rising above the standard of living threshold. However, the overall proportion of households with enough cows kept in Burkina Faso for this to make significant extra contributions to their disposable incomes is fairly low.

Camp-wide impacts

The simulated extra income from cows in Burkina Faso only affects the 23% of Goudebou and Mentao households sampled that keep cows in Burkina Faso (Table 15), but adds an average 62,838 FCFA per adult equivalent to their disposable incomes. This additional income is enough to lift three households from the sample population above the standard of living threshold.

Table 15: Average increases in disposable income per adult equivalent and standard of living threshold-meeting after simulated 27,000 FCFA extra income per cow in Burkina Faso, all Sahel camps[60]

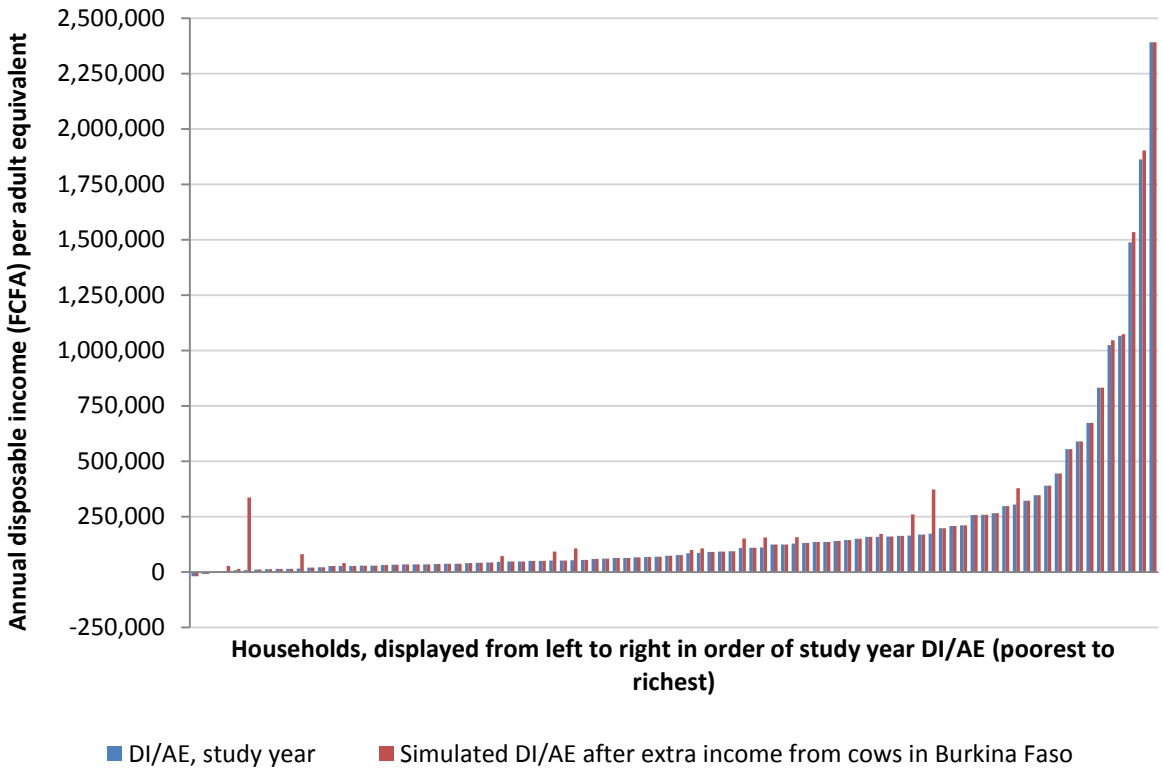
	Goudebou	Mentao	*Overall*
% of HHs with cows in Burkina Faso	22.83%	23.16%	*22.99%*
Mean increase in DI/AE after simulated extra income from cows in Burkina Faso, HHs involved	57,317 FCFA	68,109 FCFA	*62,838 FCFA*
Extra proportion of households above SoLT after simulated 50% reduction in WFP cash aid	2.17%	1.05%	*1.60%*

The spread of these impacts across the income distribution (Figs. 25 and 26) reflects the variation in the reported number of cows kept in Burkina Faso. Several of the poorest households keep cows

[59] The extra income varies according to households' relative sizes and their numbers of cows kept in Burkina Faso.
[60] Note that this table shows ***increases*** in disposable income and households above the standard of living threshold, in contrast to the equivalent tables for the previous simulations which show reductions.

within the country, but such activity is more prevalent among the richer households, particularly in Mentao.

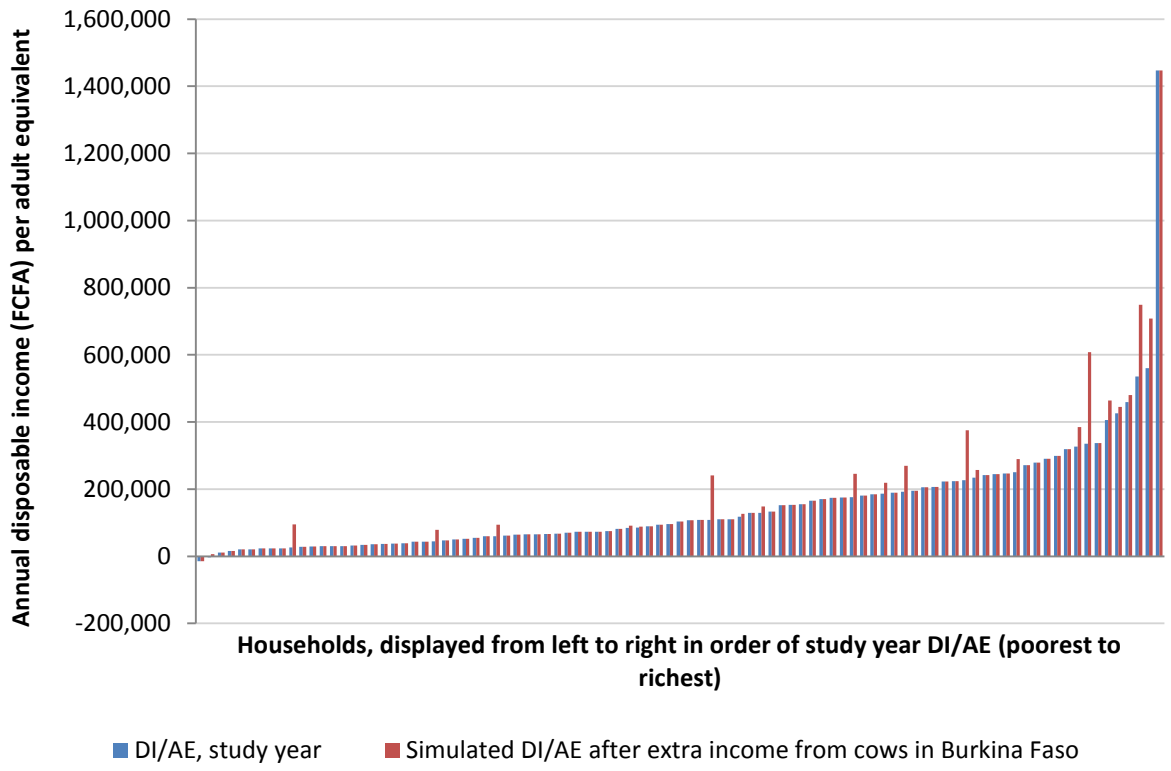
Figure 25: Simulated impact on DI/AE of 27,000 FCFA extra income per cow in Burkina Faso, Goudebou



In Goudebou (Fig. 25), the largest increase in disposable income per adult equivalent (327,782 FCFA) comes from one of the poorest households. Other, less significant increases – only one other household gains more than 100,000 FCFA per AE – occur across the income distribution, but slightly more frequently among the richer households.

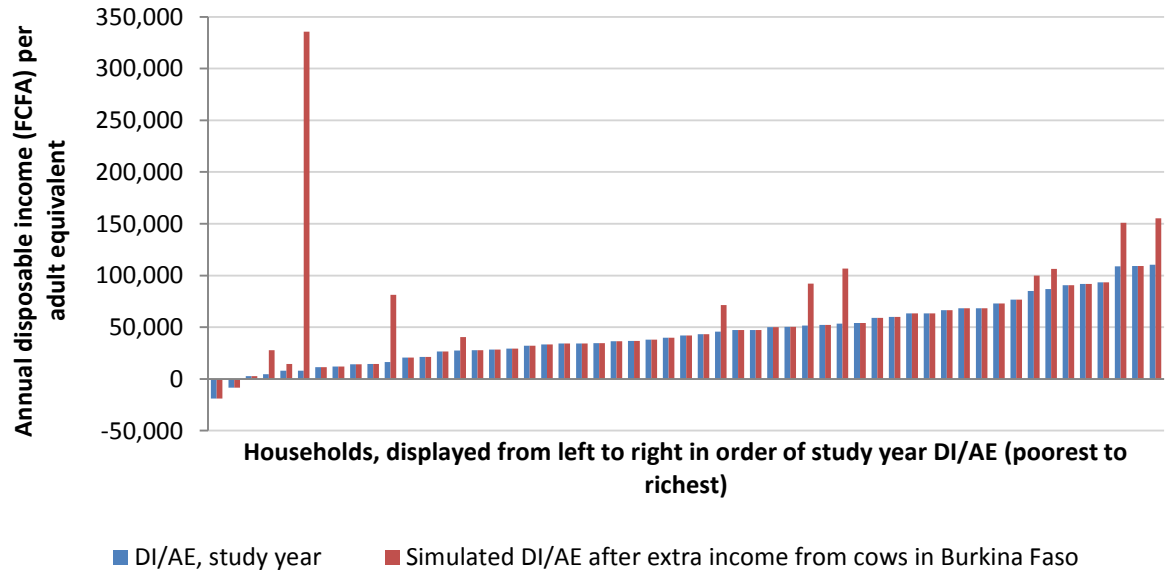
In Mentao (Fig. 26), Burkina Faso-based cow-ownership is considerably more prevalent among the richer households, for whom there are more and generally higher DI/AE increases. Five households' disposable incomes rise by more than 100,000 FCFA per adult equivalent; all of these households are in the top half of the income distribution, with four in the richest quintile or just one place outside it.

Figure 26: Simulated impact on DI/AE of 27,000 FCFA extra income per cow in Burkina Faso, Mentao



Impacts on poorer households

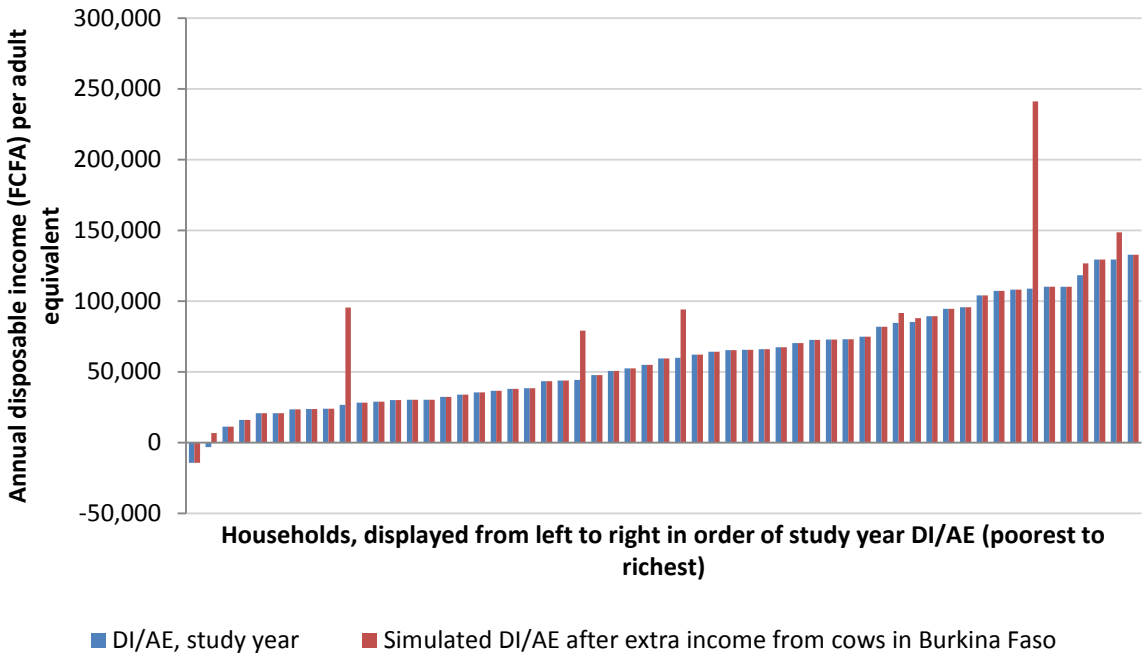
Figure 27: Simulated impact on DI/AE of 27,000 FCFA extra income per cow in Burkina Faso, Goudebou: poorest three quintiles



In Goudebou (Fig. 27), none of the households below the food poverty line kept any cows in Burkina Faso, but the 3rd to 6th-poorest households all did – and of these the 6th poorest household benefitted by far the most, with the additional income catapulting them into a post-simulation position in the richest quintile. The other households from the poorest three quintiles that benefit from the project simulation gain an average 31,713 FCFA per adult equivalent of disposable income[61] to improve their well-being (if less spectacularly so), and both the 6th- and the 11th-poorest household rise above the standard of living threshold as a result of the simulation.

In Mentao (Fig. 28), fewer households from the poorest three quintiles benefit from the additional simulation income, but the 2nd-poorest household from the study year moves just above the food poverty line, and the disposable income of the 10th-poorest also rises significantly – enough to lift this household above the standard of living threshold. The average increase in disposable income for households benefitting in these three quintiles is 35,193 FCFA per adult equivalent.

Figure 28: Simulated impact on DI/AE of 27,000 FCFA extra income per cow in Burkina Faso, Mentao: poorest three quintiles



For a greater impact on refugee households in the Sahel camps – especially the poorest households – the project would need to involve a higher proportion of households in its activities than are included in this simulation. In addition to milk production, the processing and other strands should provide opportunities for this. Also note that these figures should be treated with caution, as it was

[61] This average does not include the 6th-poorest household.

not possible to verify the actual number of cows held in Burkina Faso by households included in the sample.

Recommendations

Key points:

- Improve access to pasture to allow further investment in livestock and livestock products.
- Consider ways in which access to credit and wider markets might be improved for artisans and petty traders (see the Part II report).
- Consider the specific problems facing women traders and artisans (see Part II) and facilitate business development initiatives.
- The simulated 50% cut in WFP cash transfers and the simulated 100% increase in the staple diet price would each have severe impacts on poorer households. Any reduction in cash transfers or food rations would therefore require a safety net programme to support these households, some of whom may also currently need further support.
- Explore ways of raising potential profits for poorer refugees through the Sahel Milk project by increasing their numbers of dairy cows owned, or supporting these households to participate as milk processors.
- Create new opportunities for young people to develop vocational and business skills, allowing them both to contribute to current household income and integrate socially and economically on return to their home areas.
- Explore options for facilitating the employment of skilled refugees outside the refugee camps.

This baseline analysis report has covered many aspects of the household economies of Sag Nioniogo, Goudebou and Mentao refugee camps; additional qualitative documentation of social and economic aspects of the refugees' experiences within the camps is covered in the Part II report. Recommendations made on the basis of these findings might be strengthened by further market and value-chain analysis, and in some areas by additional social-anthropological studies.

The total incomes of more than 20% of households (including relief assistance and income from all other sources) are currently insufficient to meet a minimum set of food and non-food needs necessary for social inclusion (the 'standard of living threshold'). It is essential that any decision to reduce food aid or cash transfers should consider the potential impacts on the living standards of these households. If any reduction in relief assistance does take place, alternative mechanisms should be found to provide appropriate support for these households. Ways of increasing the value of income-generating activities for these households currently below the standard of living threshold should also be considered.

Households face greatest hardship when their monthly food aid rations run out and cash reserves are low. Additional short-term assistance at this time would be particularly useful to households that are already heavily-indebted, and could help to avert domestic problems. Local NGOs working closely with community groups would be best-placed to target these households. Other

interventions that may benefit poorer households include family-tracing that might reconnect households with relatives who are able to send remittances, and finding ways to reduce the costs of food items bought locally by refugees. Agencies could also consider ways of providing appropriate camp-based employment for poorer households, and work to identify and alleviate specific social and economic needs of widows, orphans, people with disabilities, and elderly people.

Many households are constrained by low returns from their own businesses and other economic activities: in all camps, each of the three poorer quintiles' mean annual total profits per adult equivalent from artisan work, petty trade, commerce and other employment and self-employment are less than 100,000 FCFA for households involved – and the same is true for cash income from livestock. Poor access to credit for investment was described by many households as a main factor limiting their business activities. However, higher returns are being achieved by households in the better-off quintiles. Any decisions to reduce universal relief assistance should take into account the likely impacts both on investment in commercial activities and livestock and on overall levels of demand within the camps for the goods and services provided by refugee businesses, as well as the more immediate impacts on living standards.

Households with livestock expressed a need for greater access to land for pasture. Agencies should continue to engage with the host population on this problem – and the benefits to the local population that are likely to arise from the Seeds for Solutions milk value chain project might provide an entry point. This project could greatly benefit refugee households, although to realise its full impact on refugee livelihoods, the number of refugees keeping cows will need to increase substantially (as shown in the simulations in this report). Supporting vulnerable households to participate as processors and sellers could also lead to significant improvements in their income levels and standard of living. To secure sustainable long term benefits for the host community, development of the milk collection and marketing infrastructure will be needed. Improved access to capital could also help refugees to rebuild and maintain livestock enterprises, which might additionally benefit poorer pastoralists among the host community.

Women specifically requested greater consultation by agencies before introducing projects – especially from organisations currently aiming to help women but working through men – and a stronger focus on promoting existing businesses. Meanwhile, both men and women considered assistance in setting-up businesses and in restocking to be the most important interventions that agencies could make. However, for households involved in small-scale trade, returns are unlikely to improve unless bulk buying arrangements can be organised. While better access to credit for business development would assist many refugees, it is important that lending is responsible and refugees do not burden themselves with debts that cannot be repaid.

The large number of artisans is one of the most notable characteristics of the refugee population – particularly in Sag Nioniogo, where 46.4% of households are involved in artisan work, but also (to lesser degrees) in the other camps. While preliminary market research would be required to ensure that sales of more expensive items could be secured and input loans repaid, such activities appear to

be among the more promising areas of enterprise opportunity, with six households in Sag Nioniogo and one in Goudebou generating incomes above 400,000 CFA per adult equivalent during the study period. Credit assistance could be targeted at skilled craftspeople currently unable to purchase high-quality inputs or renew their tools, to enable them to improve their profit margins, and there is scope to improve marketing – for example through collective organisation and contact with regional suppliers of retail goods. Ouagadougou is an international centre for both traditional and innovative artisanal work, and new products could be introduced to the regional and international tourist market promoting unique items produced by skilled craftsmen and women that are of a higher quality than those made in factories. New markets could also be sought out among potential middle-class consumers in West and North Africa.

Demand for other trades such as dyeing, mechanics and construction appears to be low within the camps, but a boost to the refugee economy – possibly from the livestock and dairy project – might generate more demand for skilled tradespeople. Agencies could work with NGOs operating in the camps to identify existing skills and skills gaps among the refugee community (including young people, and women as well as men), and develop an investment plan to extend relevant vocational skills. This would widen the pool of expertise and enhance human resources over the longer-term, ideally in areas that would also benefit refugees if and when they returned to their home areas. Agencies might also identify potential local employment opportunities outside the camps where relevant skills could be acquired alongside young people from host communities, or where those with existing skills could work.

Finally, around 2% of the refugee households that participated in IHM interviews contain at least one person with tertiary education, and almost 20% contain members with secondary education. To make better use of their skills and knowledge and prevent career stagnation, agencies should seek to recruit from within the refugee population where possible and explore employment options in local towns with local organisations.

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