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KENYA HUNGER SAFETY NET PROGRAMME MONITORING AND EVALUATION COMPONENT

Quantitative Impact Evaluation Final Report: 2009 to 2012

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Preface / Acknowledgements

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All opinions expressed, and any mistakes, remain the responsibility of the authors.

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Abbreviations

ASAL	Arid and Semi-Arid Lands
CBT	Community-Based Targeting
DFID	Department for International Development
DR	Dependency Ratio
FGD	Focus Group Discussion
HH	Household
HSNP	Hunger Safety Net Programme
IDS	Institute of Development Studies
KII	Key Informant Interview
KES	Kenya Shillings
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MOEST	Ministry of Education, Science and Technology
NGO	Non-Governmental Organisation
OMR	Operational Monitoring Report
OPM	Oxford Policy Management
PMT	Proxy Means Test
PPR	*Peste des Petits Ruminants*
QPS	Qualitative Panel Survey
SRS	Simple Random Sampling
SP	Social Pension
TLU	Tropical Livestock Unit
WFP	World Food Programme

1 Introduction

This chapter introduces the subject of the evaluation, the Hunger Safety Net Programme, and describes the evaluation methodology.

1.1 The Hunger Safety Net Programme

The Hunger Safety Net Programme (HSNP) is an unconditional cash transfer programme that aims to reduce poverty in northern Kenya by delivering regular cash transfers to beneficiary households or individuals in the counties of Mandera, Marsabit, Turkana and Wajir. The programme operates under the Ministry of State for the Development of Northern Kenya and Other Arid Lands and is delivered by several contracted service providers, with financial support from the UK Department for International Development (DFID). The HSNP originally provided KES 2,150 to each beneficiary household (or individual in the case of the social pension) every two months. This was calculated as 75% of the value of the World Food Programme (WFP) food aid ration in 2006 when the value of the transfer was originally set. Over time the value of the transfer has increased and at the end of the evaluation period stood at KES 3,500[1]. Beneficiaries are given a Smartcard which they use to collect their cash at any time from a range of paypoints (mainly small shops called *dukas*) across the four counties.

The overall goal of the Hunger Safety Net Programme (HSNP) project is to reduce poverty, food insecurity and malnutrition, and promote asset retention and accumulation for beneficiary households. It was anticipated that the programme would also have positive impacts on a wider range of indicators of well-being and wealth, such as resilience to shocks, health and education uptake, and access to financial services. During the pilot phase approximately 300,000 beneficiaries (60,000 households) were targeted under three different targeting mechanisms:

- **Community-based targeting (CBT):** the community collectively selects households they consider most in need of cash transfers, up to a quota of 50% of all households
- **Dependency ratio (DR):** households are selected if the proportion of members under 18 or over 55 years old, disabled or chronically ill, exceeds a specified number
- **Social pension (SP):** Any individual aged 55 or over is eligible for cash transfers (so one household could receive multiple transfers).

1.2 The evaluation

A consortium led by Oxford Policy Management (OPM) has been contracted by DFID to undertake a rigorous evaluation of the programme's impact. The impact evaluation is based on quantitative and qualitative information collected over three years between August 2009 and November 2012. The evaluation gathers and presents data on the targeting and operational effectiveness of the HSNP as well as on the following potential impacts:

[1] The value of the HSNP transfer was initially increased from KES 2150 to KES 3000 with effect from payment cycle 16 (Sept/Oct 2011). It was subsequently increased to KES 3,500 with effect from cycle 19 (Mar/Apr 2012). A one off doubling of transfer occurred in Jul/Aug 2011 to support households coping with drought.

Key intended impacts:

1. Increased consumption expenditure and poverty reduction
2. Increased food security (increased food expenditure, reduced reliance on food aid and reduced malnutrition rates)
3. Increased asset retention and accumulation

Secondary intended impacts:

4. Increased uptake of health services
5. Increased uptake of education services
6. Stabilise food prices and supplies of key commodities in local markets
7. Increased diversity of livelihood activities
8. Increased financial saving
9. Decreased vulnerability to shocks
10. Increased empowerment of women
11. Improved well-being of older people and children

Possible unintended impacts:

12. Increases in the prices of key commodities in local markets
13. Disruption of informal transfer systems
14. Changes to households' composition
15. Social tensions, conflict and insecurity
16. Changes to household mobility
17. Dependency

The impact evaluation is underpinned by an experimental quantitative survey design. The HSNP was randomly allocated to 'treatment' sub-locations, in which selected households enter the programme and start receiving the transfer immediately, and 'control' sub-locations, in which selected households will only begin to receive transfers two years later. A sample of just over 5,000 households were randomly selected at baseline (prior to the programme roll-out) for interview on an annual basis in 48 evaluation sub-locations (24 treatment and 24 control), also selected at random. The baseline data collection was completed in November 2010, the first round of follow-up data collection finished in November 2011, while the final round of fieldwork completed in November 2012 (for a more detailed description of the sample design and fieldwork model see Annex A).

The analysis of the baseline data is presented in three separate reports: (1) the main Baseline Report, which provides a situation analysis of the HSNP districts, with a particular focus on the characteristics of the mobile pastoralist population; (2) the Targeting Report, which presents the analysis of targeting effectiveness, based on a comparison of poverty rates and other characteristics between households selected for the programme and those not selected; and (3) the Payments Monitoring Report, which presents analysis relating to the operational performance of the payments system[2].

[2] Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Baseline Report, June 2011; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component HSNP Targeting Effectiveness Evaluation Report,

A subsequent set of reports presents an analysis of programme impact after 12 months of programme operations: (1) a report summarising the findings of the quantitative impact research; (2) a report summarising the findings of the qualitative impact research; (3) an Operational Monitoring Report presenting findings on the operational effectiveness of the programme; and (4) a Synthesis report which summarises the findings from the three larger impact reports and presents conclusions and recommendations for the HSNP that stem from those findings[3].

This report presents the final impact evaluation results after two years of programme operations. It draws on both quantitative and qualitative data and incorporates the consolidated findings of the routine quarterly operational monitoring that the M&E has carried out over the life of the pilot phase.

The measure of programme impact derives from a comparison of baseline and follow-up 2 data, i.e. the change in the situation of beneficiary households across a variety of outcome indicators after two years of programme operations. Put simply, the measure of programme impact is given by comparing the situation of treatment and control households at the time of their selection into the programme (baseline), with their situation 24 months later (year 2 follow-up). Over this 24 month period most of the HSNP beneficiary households covered by the evaluation had received between 10 and 12 bi-monthly transfers (initially KES 2,150, rising to KES 3,500 towards the end of the period). Where relevant, findings from the year 1 impact study are referred to in the text.

The full findings from the follow-up 2 qualitative study and operational monitoring are presented in separate reports[4].

The report is structured as follows: the rest of the introduction outlines the data and analysis methodology. Section 2 describes the evaluation methodology. Section 3 presents analysis of the use of the HSNP cash transfers by programme households in order to provide context to the main impact analysis. Sections 4, 5 and 6 present the results of the analysis of key, secondary and unintended impact areas respectively[5]. Section 7 provides conclusions and recommendations for the HSNP.

A technical annexure is provided detailing the evaluation design and sampling strategy, the econometric methods used in the impact analysis, a summary of the impact heterogeneity analysis results, additional tabulations and data which are referenced in the main body of the report, and information on the precision of impact indicators.

December 2011; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Payments Monitoring Report, June 2011.

[3] Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Quantitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Qualitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Consolidated Operational Monitoring Report, May 2012; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Impact Analysis Synthesis Report, May 2012.

[4] Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Qualitative Impact Evaluation Report: 2009 to 2012, March 2013; Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Consolidated Operational Monitoring Report for follow-up 2, May 2013. All the evaluation reports can be found at http://www.opml.co.uk/projects/kenya-hunger-safety-net-programme-monitoring-and-evaluation-component.

[5] But with some modifications: the analysis of the programme's potential impact on local-level price inflation is considered together with assessing the programme's impact on stabilising food prices and supplies of key commodities in local markets (section 5.3); dependency is covered under section 5.4 as part of the analysis of the programme's impact on livelihood activities.

2 Impact evaluation methodology

2.1 Sample structure

The impact analysis is based on a comparison of treatment and control households. An important feature of the evaluation design, and one that is uncommon in many studies of this kind, is that the household selection process used in treatment areas was replicated exactly in the same way in control areas. We call this 'perfect mimicry'. When it is combined with random allocation of treatment perfect mimicry ensures comparability between selected households in treatment and control areas.

The allocation of the programme to sub-locations was made randomly. A sub-location is an official administrative unit with formally defined geographical boundaries. A detailed explanation of the evaluation survey design and sampling strategy is provided in Annex A.

We consider a household to be 'treated' if it was selected by the programme to be a beneficiary in a treatment sub-location. We refer to these as Group A households – this is the treatment group. Treated households began receiving HSNP cash transfers following the completion of the baseline survey in their specific sub-location. We refer to selected households in control sub-locations as Group B households – this is the control group. Control households will only begin to receive cash upon completion of the final round of data collection (follow-up 2 survey), i.e. two years after the baseline survey.

Figure 1 Evaluation study groups

	Treatment	Control
Selected into HSNP	Group A	Group B
Not selected	Group C	Group D

Detailed information was collected from both treatment and control households. Initially, data was gathered via a baseline survey conducted after targeting but before households began receiving transfers. The same households were then re-interviewed 12 months after baseline, and again after 24 months.

Households that are not selected are those households that were identified as being ineligible for the programme under the targeting process. We refer to these households as groups C and D. We gather information on these households at baseline and follow-up 1 for the purposes of the targeting analysis[6] and in order that an analysis of programme spill-over effects may be conducted—spill-over effects are what we term the impact of the programme on non-beneficiary households. Spill-over effects may occur because of programme impacts on local markets and or sharing of the transfer between beneficiary and non-beneficiary households. An analysis of

[6] Kenya Hunger Safety Net Programme Monitoring and Evaluation Component HSNP Targeting Effectiveness Evaluation Report, December 2011.

programme spill-over effects is not presented in this report, but will follow after in a separate study[7].

Data collection was undertaken continuously over the course of around one year for each survey round, with one sub-location being surveyed in each county each month. This fieldwork model was designed in order to account for seasonal differences. A breakdown of the actual dates of data collection in each sub-location is given in Annex A.

For all outcome indicators presented in this report the statistical significance of all mean differences at baseline between HSNP and control households were tested. Overall these significance tests show the randomisation process was broadly successful in ensuring almost no significant differences between the treatment and control groups at baseline[8].

2.2 Sample size

Table 1 below shows the final sample sizes achieved for each round of the survey[9]. The sample size at follow-up 1 is smaller than at baseline due to sample attrition. In other words some households interviewed at baseline that could not be interviewed at follow-up 1. For follow-up 2, in addition to attrition, the sample size is reduced because the follow-up 2 survey covered eight fewer sub-locations, 40 rather than 48.

The reduction in the number of sub-locations to survey at follow-up 2 was the result of decisions made by the programme and its stakeholders rather than a technical decision by the evaluation team. This reduction in sample size is unfortunate for a number of reasons. Firstly it undermines the study design to the extent that the smaller sample size reduces ability to detect impact with statistical significance. Secondly it affects the balance of the sample, meaning that treatment and control populations are less balanced at baseline than they were with the original sample structure. Lastly, the sample was designed to be seasonally balanced across the whole calendar year, which is no longer the case as sub-locations that would have been surveyed in the latter and early part of the calendar were dropped. Another implication of the reduced sample at follow-up 2 is that the baseline estimates presented in this report differ from those presented in the baseline and follow-up 1 impact reports. This is because the estimates now relate to slightly different populations.

Analysis of the survey data shows that attrition at follow-up 2 is largely driven by Mandera and Wajir, and by fully mobile households. Since these households have particular characteristics it has been necessary to adjust the survey weights used for the analysis. Annex A provides detailed

[7] Information on group C and D households was only collected at baseline and follow-up 1 (that is, after one year of programme impacts). No information on Cs and Ds was collected at follow-up 2.

[8] The only indicators to show statistically significant differences at baseline were: proportion of households containing an orphan (single or double); proportion of households reporting being food insecure in the worst recent period of food shortage; proportion of households going entire days without eating solids; proportion of households receiving food aid; proportion of households owning any livestock; proportion of households owning any goats/sheep; proportion of children aged under five who are stunted; proportion of children aged 6-17 currently attending school; proportion of children aged 6-12 currently attending school; and proportion of children aged 13-17 currently attending school.

[9] Note that a sample of non-selected households in both treatment and control areas were included in the original sample. At baseline these households were crucial because they enabled analysis of the targeting effectiveness of the selection process by comparing poverty rates and other characteristics between selected and non-selected households. They were also covered in the follow-up 1 survey, allowing for potentially confounding cluster-level trends to be identified and accounted for. A comparison of group C and D households over time also enables an assessment of the potential spill-over effects. This analysis will follow in a separate study.

information on attrition rates and the factors associated with it, as well as how the weights are constructed.

The composition of individual households also changed over the life of the survey, largely driven by lifecycle changes for individual household members. These changes are discussed in section **Error! Reference source not found.**, which assesses the impact of the programme on household omposition.

The final impact analysis is therefore based on the comparison of 1,224 treatment group households with 1,212 control group households for which we have observations at both baseline and follow-up 2. The application of sampling weights to all descriptive and impact estimates means the results are representative of all HSNP households in treatment areas covered by the evaluation and the corresponding control households in the control areas. All tables in this report are labelled accordingly. A detailed description of how the sampling weights were calculated and applied is provided in Annex A.

Table 1 Panel sample size by treatment status and survey round

Baseline	Treatment areas	Control areas	Overall
Selected for HSNP	1,571 [Group A] *Treatment households*	1,536 [Group B] *Control households*	3,107
Not selected	968 [Group C]	1,033 [Group D]	2,001
Overall	2,539	2,569	5,108
Follow-up 1	**Treatment areas**	**Control areas**	**Overall**
Selected for HSNP	1,434 [Group A] *Treatment households*	1,433 [Group B] *Control households*	2,867
Not selected	881 [Group C]	889 [Group D]	1,770
Overall	2,315	2,322	4,637
Follow-up 2	**Treatment areas**	**Control areas**	**Overall**
Selected for HSNP	1,224 [Group A] *Treatment households*	1,212 [Group B] *Control households*	2,436
Overall	1,224	1,212	2,436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

2.3 Difference-in-difference impact analysis methodology

The quantitative impact analysis presented in this report is based on the difference-in-difference ('dif-in-dif') methodology. The measure of impact is given by comparing how much beneficiaries improved (or did not improve) across a range of indicators with changes across those same indicators in comparable control households over the same period. The control households, who did not receive the payment, provide a measure of what would have been expected to have happened to beneficiary households had they not received the cash transfer. The 'difference-in-difference' measure thus captures the difference between treatment households at baseline and follow-up (c.24 months later), minus the difference between control households at baseline and follow-up. This constitutes the primary measure of programme impact. A detailed description of the analytical approach, as well as additional econometric methods used, is provided in Annex B.

Box 1 How to read the tables in this report

Most tables in this report follow a standard format. Columns 1 and 2 give the mean levels at baseline and follow-up for each indicator in HSNP households, while column 3 calculates the difference between them. Columns 4, 5 and 6 provide corresponding estimates for control households. Column 7 gives the "dif-in-dif" impact measure – the difference between follow-up and baseline for HSNP households minus the corresponding difference for control households. Column 8 shows the number of observations at follow-up (FU1) which is 2,867 (the sample of households comprising the treatment plus control panel) minus any missing values. Significant differences are denoted in these tables by three (***), two (**) or one (*) asterisks, signifying differences at 99%, 95% and 90% confidence respectively.

2.4 Analysis of impact heterogeneity

In addition to estimating the overall average programme impact, the impact evaluation also assesses the degree to which programme impact varies across different types of households. This is referred to as impact heterogeneity analysis. The impact heterogeneity analysis assesses the variation in programme impact across a number of dimensions[10].

1. By consumption expenditure – *is programme impact stronger for relatively poorer households?*
2. By household mobility status – *does the programme have a differential impact on (either partially or fully) mobile households as compared to fully settled HSNP households*
3. By households size – *since the transfer value is not indexed to household size, the effective per capita value of the transfer is larger for smaller households, therefore is the programme impact stronger for smaller HSNP households?*
4. By total cumulative value of transfers received (per capita) – *in addition to the large household dilution effect, due to delays some HSNP households received fewer transfers than others over the 24 month evaluation period, so is programme impact lower for households that have received less total support per household member over the evaluation period (i.e. adjusting for household size and number of transfers received)?*

[10] Variations in impact between targeting mechanism were also analysed but did not reveal any systematic differences across the targeting mechanisms, and so these results are not presented in this report. This finding is not surprising since the targeting report shows a large degree of overlap in terms of the characteristics of SP, DR and CBT beneficiaries, so it makes sense that the HSNP impact doesn't vary by mechanism.

It must be noted that when disaggregating the data in this way the original randomization no longer ensures comparability (by design) between treatment and control, because this property only applies to the full sample[11]. Controlling for covariates thus becomes essential, as does the assumption of common trends in observable and unobservable characteristics, which is a key hypothesis of diff-in-diff models.

Annex B provides a detailed explanation of the econometric methods employed for the impact heterogeneity analysis. The results are presented in Annex C.

Box 2 Controlling for cumulative value of transfers received per capita

Controlling for the cumulative value of transfers received per capita asks the question: **is receipt of a larger total value of transfers per household member associated with a higher level of programme impact?**

That is to say, using the actual data collected by the impact evaluation it compares the impact of the programme on a household that has received an average total per capita value of transfers, with the impact of the programme on a household that has received an additional KES 2000 total per household member over two years.

2.5 Robustness tests

The key robustness check involves accounting for various factors that could potentially affect each impact indicator of indicator. These are referred to as covariates. In general the randomisation of the treatment over a sufficient number of geographical units (sub-locations in this case), combined with the dif-in-dif methodology, is intended to ensure treatment and control group households are as similar as possible Similar not just in their observable and unobservable characteristics at baseline, but also in terms of observable and unobservable time-varying factors affecting the impact indicators of interest.

As stated above, the randomisation of the programme across treatment and control areas was broadly successful in ensuring treatment and control households were indeed comparable at baseline (the only exceptions being significant differences in a handful of indicators relating to food security, school enrolment and the prevalence of orphans. In other words, the property of balance is maintained after attrition for the panel sample.

However, there are a number of exogenous time varying community-level factors which could have affected treatment and control areas to differing extents. These include: supply of food aid and other aid programmes including emergency support; road access; severity of the drought; and supply of education and health facilities. Although Table 2 below shows that on average there have not been significant differences in the degree to which treatment and control areas have been affected by time-varying factors, there are still substantial differences in the degree to which households in the sample have been affected by the time varying factors and for which it is important to control for in the impact heterogeneity analysis (see section 2.4 above).

To check the robustness of the basic dif-in-dif impact estimates impact is also estimated using a number of alternative approaches: (1) including dummies for each pair of sub-locations over which the treatment randomisation was made; (2) including household-level covariates (and individual-level covariates in the case of household member-level indicators); (3) including household- and community-level covariates; and (4) Controlling for changes in time variant household

[11] In addition, comparability is already compromised somewhat by the fact that eight sub-locations wwere dropped from the sample at follow-up 2 (see section 2.2).

characteristics that are included only as baseline levels in the other specifications (see Annex B for a full description of econometric estimation methods used).

The results of these checks reveal that the findings are generally robust across different specifications[12]. Only the results of models controlling for household- and community-level covariates are presented in this report, alongside the impact heterogeneity results detailed in Annex C.

Table 2 Comparison of non-programme factors affecting treatment and control areas

Proportion of households living in communities:	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
With no road	4.9	0	-4.9	15.4	4.1	-11.3*	6.406	2435
Reporting very bad long rains	22.5	5.4	-17.1*	22.3	2.2	-20.1**	2.995	2435
Reporting very bad short rains	8.5	16.1	7.6	1.7	5.5	3.8	3.791	2435
With primary school	52.5	77.4	24.9**	52	74.9	22.9***	2.049	2435
With health facility	29.8	63.5	33.7**	24.2	57.4	33.3***	-2.542	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

It can be noted that both treatment and control communities show similarly large increases in the availability of primary schools and health facilities between baseline and follow-up 2. Reports from the field suggest that, in the case of health facilities, the increase is driven by a government sponsored mobile clinic programme across the four counties. In the case of primary schools, a partnership programme between the community and the government was established for the construction of classes to start primary schools.

[12] There some exceptions under model (3) where estimates are of the opposite sign than the other specifications but these are almost always insignificant. The only significant exceptions are: ownership of livestock, ownership of goats/sheep, and ownership of camels, which under model (3) are of opposite sign to the other specifications and not significant where the other models are significant, or vice versa.

3 The cash transfer

3.1 Variability in programme exposure

Before we consider the impact of HSNP it is worth considering how different HSNP households benefit from the programme to different extents. This is referred to as variation in *exposure* to the programme. Programme exposure varies for three reasons:

1. Some HSNP households, particularly social pension households, contain multiple beneficiaries (see Table 3 below);
2. Some HSNP households have received more payments cycles than others (Figure 2). This is sometimes due to variations in the lag between targeting and start of payments across different sub-locations, but in some cases it is due to individual households experiencing delays in enrolment, missing payments, or problems accessing payments (e.g. due to missing smart-card or faulty finger-prints).
3. The effective value of the transfer per household member (*per capita*) is smaller for larger households.

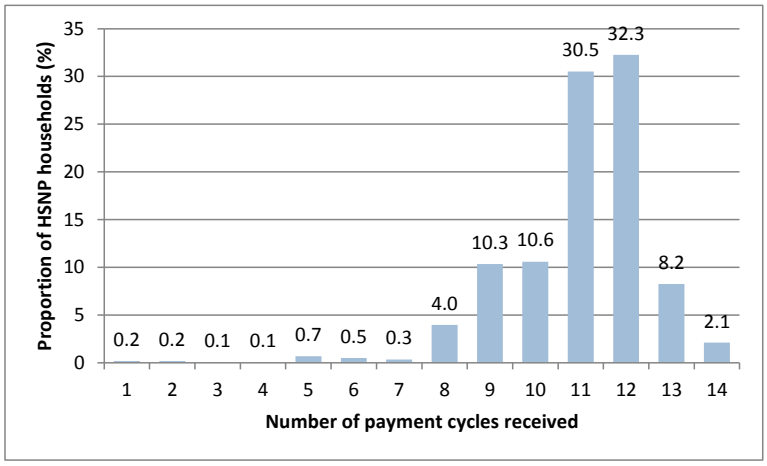
It might be expected that the programme would have a lower impact on households that have received less 'exposure', either as a result of living in a large household (where the effective per capita value of the transfer is lower), having received fewer payment cycles, and/or because they contain just one rather than two or more beneficiaries. These effects are taken into account as part of the impact heterogeneity analysis presented in this report (see Box 2 above).

Table 3 Proportion of households containing multiple beneficiaries and mean number of beneficiaries

Indicator	CBT areas	DR areas	SP areas	All HSNP areas
Proportion of HSNP households containing more than one beneficiary (%)	3.9	2.6	13.4	5.1
Mean number of beneficiaries per household	1.04	1.03	1.13	1.05

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

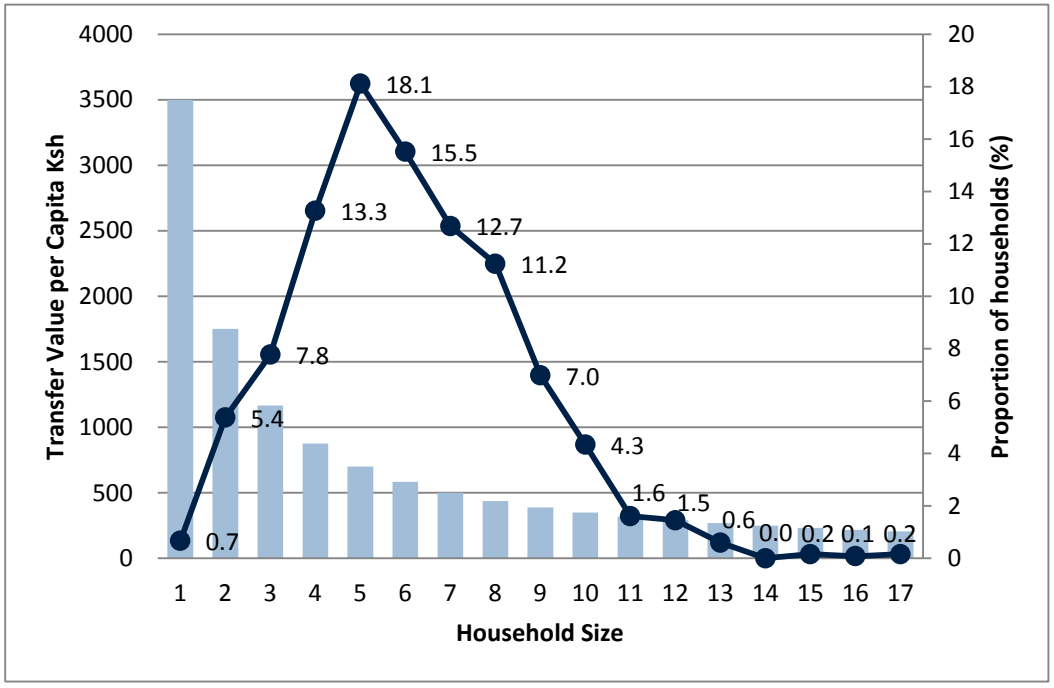
Figure 2 Variation in number of HSNP payment cycles received



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Figure 2 shows that there has been quite a difference in the numbers of transfers individual households have received over the two years the pilot programme has been operating. Around 73% have received more than 11 transfers, with another 25% receiving from 8-10 transfers (accounting for 98% of all households together). Meanwhile, for just over two thirds of beneficiary households, the transfer has a per capita value of between KES 350-700 (Figure 3).

Figure 3 Distribution of HSNP households and per capita transfer value by household size



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Per capita transfer value assumes just one beneficiary per household.

3.2 Control over HSNP transfers

At follow-up 1 in 90% of cases the named beneficiary was also the primary recipient, that is, the recipient named on the front of the card, and in 79% of cases the named beneficiary was also in charge of how the transfer was spent. Table 4 shows that at follow-up 2 in just over half of all cases the person in control of the HSNP transfers remains the primary recipient. This proportion has thus fallen since baseline and follow-up 1, at which times it was 82% and 78% respectively. At the same time, the proportion of persons in control of the transfer who are neither the primary nor the secondary recipient is now much greater than it was at either baseline or follow-up 1, suggesting that control of the transfer is changing within households over time. Interestingly, we see heads of household and main providers (both more likely to be male) increasing control of the transfer between follow-up 1 and follow-up 2, while the share of women controlling the transfer shows slight decline. Similarly the mean age of the person controlling the transfer, and the proportion of people aged over 54 controlling the transfer, is also declining. This suggests that women and older people may be losing control of the transfer in favour of heads of household and main providers, whom are often neither the primary nor secondary recipients of the HSNP.

Table 4 Characteristics of the person that usually decides how the cash transfers from HSNP are used, by sex

Proportion that are…	Baseline[1]	Follow-up 1	Follow-up 2
Primary recipient	82	77.8	52.9
Secondary recipient	15	29.9	14.2
Neither primary nor secondary recipient	4	5	34.7
Household head	-	63.2	71.5
Main provider	-	54.1	61.9
Female	-	63.3	58.7
Mean age	-	51.2	50.6
Aged 55+	-	47.6	42.3

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes (1) Baseline data taken from Hunger Safety Net Programme – M&E Payments Monitoring Report, June 2011.

3.3 Use of HSNP transfers

Table 5 shows the most common items purchased by households using the HSNP transfers. Almost all households use the transfer to purchase food, but debt repayment is also very common.

It has been reported anecdotally that HSNP households tended to spend the first transfer very differently to subsequent transfers: the first transfer might often be used to pay off debts, while other usages would become more important over time. At follow-up 1 this was not supported by the results of the evaluation study, which find almost identical spending patterns between the first and last transfer[13]. However, at follow-up 2, after two years of programme operations, there is some evidence of changes in transfer spending patterns, with slightly fewer households reporting spending money on food, and more households reporting spending the money on debt repayment, clothing and education. While only slight, these findings might be interpreted as the behaviours of households with slightly improved welfare: less needy to spend on immediate foods needs and more able to reduce levels of indebtedness, spend on comfort and wellbeing, and invest in human capital. Though this could be partially explained by receipt of the HSNP, it could also be explained by a global improvement in conditions in follow-up year 2, after the particularly bad drought of 2011.

At follow-up one it was revealed that for most HSNP households the HSNP cash is not treated separately from the rest of the household's money, although a minority (14%) do keep the HSNP separately in this way.

At follow-up 2 we see a similar proportion (17%) reporting that they sometimes hold back some of the HSNP cash to use at a later date, representing a slight improvement on the same data at follow-up 1 (13%). These findings may be indicative of growing trust in the programme: after two years of operations households are beginning to save more, perhaps reflecting more trust in the programme as a reliable source of income.

[13] A comparison of the distribution of main items purchased with the first and most recent transfers respectively also revealed almost no variation.

Table 5 Most commonly reported items purchased HSNP transfer – first versus most recent

Proportion of beneficiary households reporting spending the transfer on (%):	First transfer	Most recent transfer at FU1	Most recent transfer at FU2
Food	88	88	85
Debt Repayment	40	40	45
Clothing	23	25	31
Health	21	22	17
Education	18	21	24
Livestock	11	12	7

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table 6 Saving of HSNP transfers

Proportion of beneficiary households reporting to (%):	HSNP households
Use the HSNP cash transfer separately from the rest of the household's money	14[1]
Sometimes keep some cash from the HSNP transfer to use later	17

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Data from follow-up 1.

The finding that the vast majority of the transfer is spent on food is corroborated by the qualitative research, which showed that for most households food expenditure was the priority.

4 HSNP impact – key impact areas

This chapter reviews the quantitative and qualitative evidence from fieldwork of HSNP impacts on poverty, consumption, food security, food aid dependence, child nutrition, and asset retention and accumulation.

4.1 Poverty and consumption

Cash transfers are expected to reduce poverty directly by raising household incomes. However, incomes are difficult to measure accurately and are subject to short-term variations so surveys tend to estimate consumption instead – 'monthly household consumption expenditure per adult equivalent' is a standard proxy for household welfare.

HSNP cash transfers are expected to raise household spending across a range of goods and services – food, household items, water, health care, education, clothing, transport etc. – and to stabilise consumption of food and other essentials across seasons and years. Some of the transfers might also be invested in income-earning activities or assets, which might further reduce poverty. At the same time, some of the transfers might be allocated to non-consumption transactions such as repaying debts, saving, or providing informal support to vulnerable relatives.

To assess the impact of the programme on household consumption, mean monthly consumption expenditure per adult equivalent is compared pre- and post-transfer for HSNP and control households[14]. The same 'dif-in-dif' comparison is made for poverty rates, with households defined as poor based on the measure of consumption expenditure using two alternative approaches: (i) proportion of households that fall within the poorest 10% of Kenyan households (i.e. bottom national decile); and (ii) proportion of households below the national absolute poverty line[15]. The evaluation also looks at depth of poverty (how far, on average, beneath the poverty line a household lies) and severity of poverty (an aggregate measure that gives more weight to households far below the poverty line).

[14] Monthly household per adult equivalent consumption expenditure is a standard proxy for household welfare. Variation in this measure is easier to measure than income, less prone to measurement error and less subject to short-term economic effects. Consumption expenditure also provides an indirect measure of permanent income. The evaluation questionnaire collected information on households' consumption and expenditure in the recent past, including both food and non-food consumption. Households were asked to estimate the quantities and value of food consumed over the preceding seven days, including food that was purchased, home-produced, or received as a gift or as food aid. Expenditure on non-food items was collected using longer recall periods of between one and 12 months, depending on the item. The estimates of average monthly total consumption are adjusted for the regional and time variation in prices as well as for the demographic composition of the household using the number of 'adult equivalents'. It thus provides a standard money-metric measure which is widely used across the world (including in Kenya) to assess household welfare and national poverty rates. While collecting this data has its challenges, particularly in the context of the HSNP districts (where consumption levels are generally very low and households are often very reliant on food aid and home production, both of which can be hard to value), it is generally regarded as the most reliable money-metric welfare measure in low income countries.

[15] The poverty rates were calculated using adjusted KIHBS poverty lines. The adjustment was made by first taking the proportion of households in the HSNP districts below the absolute poverty line / in the bottom national decile according to the 2005/06 KIHBS data. The adjusted poverty lines are then defined using the evaluation dataset such that the proportion of households at baseline matches the KIHBS 05/06 poverty rates (calculated as 85% and 54% respectively according to authors' calculations based on KIHBS 2005/06 data).

4.1.1 Poverty context at baseline and after one year of programme operations

In order to understand the impact of HSNP on poverty it is important first to consider what contribution the HSNP makes to households resources relative to their consumption expenditure prior to receiving the benefit. In this regard the M&E baseline survey found that HSNP cash transfers constituted on average 12% to the total monthly consumption expenditure of beneficiary households, though this contribution was higher (28%) for households in the poorest quintile (Table 7). Since the poorest households spent KES 500 per month on food per adult equivalent (AE), the transfer of KES 235 per AE amounted to 47% of their monthly food consumption.

Table 7 Mean monthly consumption expenditure and HSNP transfer values at baseline

Outcome	Quintile					Overall
	Q1	Q2	Q3	Q4	Q5	
Mean total monthly HH consumption expenditure per AE (price adjusted)	846	1,324	1,777	2,369	3,752	1,903
Mean total monthly HH food expenditure per AE (price adjusted)	500	741	953	1,240	1,900	1,014
Mean number of adult equivalents (AE) per household	4.6	4.7	4.8	4.7	4.1	4.6
Mean value of the transfer per AE (assuming 1 transfer per household)	235	227	222	229	263	233
Transfer as a proportion of total HH consumption (%)	28	17	12	10	7	12
Transfer as a proportion of food consumption (%)	47	31	23	18	14	23
Proportion of HSNP beneficiaries falling in this quintile	23	21	22	17	17	100

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2010. Notes: This table refers to beneficiary households only.

Overall, given that it was not especially targeted at poor households[16], the HSNP was making a small but significant contribution to household consumption, and especially to food consumption, which is more significant the poorer the household is to begin with. Given this it would be expected that the HSNP should have an impact on consumption expenditure, especially for the poorest households, and thus in turn might impact poverty rates of beneficiaries.

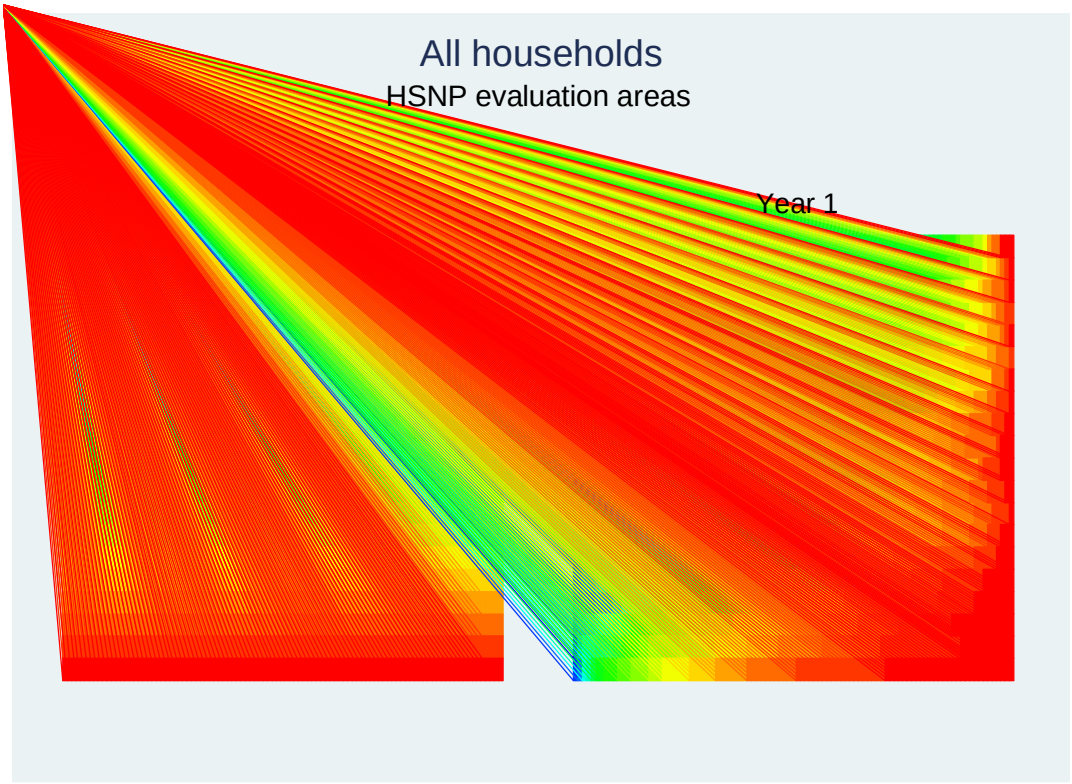
So what did we find after one year of programme operations? One point to take into consideration is that in 2011 the Horn of Africa suffered serious drought (even by its own standards), which sparked a severe food crisis and high malnutrition rates. It was in this context that beneficiary households received HSNP transfers for the first 12 months, a situation that at least partially determined the overall impact of the programme after one year.

What we found was that, although the programme did not register a statistically significant impact on either consumption or poverty rates after 12 months, the trends did point towards it fulfilling its function as a safety net by having a stabilising effect for beneficiaries. The study found that, while treatment households remained stable, control households showed a statistically significant

[16] Kenya Hunger Safety Net Programme Monitoring and Evaluation Component HSNP Targeting Effectiveness Evaluation Report, December 2011.

reduction in their expenditure levels of just under 10%, which was reflected in statistically significant increases in poverty rates of around 5%, and in the poverty gap of around 3%. Figure 4 and Figure 5 below provide a visual representation of the consumption dynamics of the population during this period[17].

Figure 4 Change in household consumption expenditure between baseline and follow-up 1



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2011.

Figure 4 describes the population of all households in evaluation areas at baseline and follow-up 1. Households are divided up into 20 equal quantiles (rows) depending on their consumption expenditure, with the richest households at the bottom and the poorest households at the top. The colours represent the consumption of each household at baseline. Thus at baseline we see the consumption rainbow of richest households, coloured red, ascending through yellow and green to the poorest households, coloured blue.

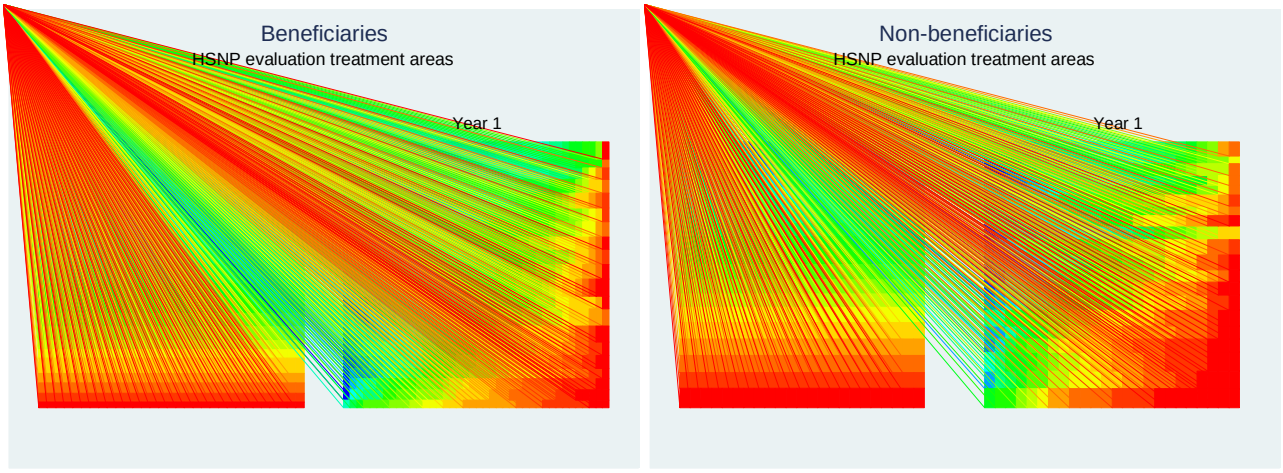
At follow-up year 1 we can see that there has been some movement in terms of where households reside on the consumption expenditure distribution compared to where they were at baseline. Some of the red and yellow households have fallen down the distribution while some of the blue and green households have moved up; some of this latter is due to the programme, with poor beneficiary households improving their welfare. This being said, we also see that the amount of movement across the whole population has not been too radical. The majority of blue and green households still reside in the bottom half of the distribution and the majority of the red and yellow households still reside in the top half.

[17] We are indebted to Philippe Van Kerm and Professor Stephen Jenkins for developing and sharing the transcolorplot Stata modules that produced the following figures.

That was the situation for the entire population across all evaluation areas. If we look at the situation in treatment areas for beneficiaries and non-beneficiaries independently a different picture emerges for each group (Figure 5 below).

In Figure 5 the consumption quantile for households in each group is calculated across the entire population in treatment and control areas independently. Because of this the width of the rows now reflect the relative number of households in each quantile for beneficiaries and non-beneficiaries separately. We thereby see that, in both treatment and control areas, the beneficiary group was marginally poorer at baseline, with thicker rows at the blue and green end of the spectrum and thinner rows at the red and yellow end, while the opposite is the case for non-beneficiaries.

Figure 5 Change in consumption quantile between baseline and follow-up 1 in treatment areas by beneficiary status



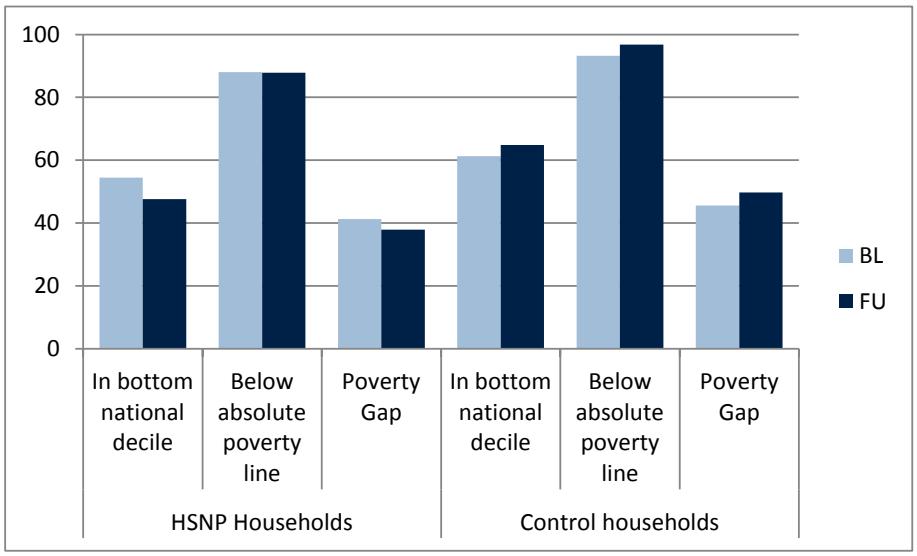
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2011.

At follow-up, for beneficiaries in treatment areas we then see less negative and more positive movement in comparison to non-beneficiaries, with fewer households tumbling down the distribution and more households climbing up. This is consistent with the analysis that the HSNP was having a cushioning effect in its first year, successfully mitigating the negative impact of the drought on beneficiary households. In contrast, we see many more non-beneficiaries falling down the consumption distribution and fewer climbing up, indicating that, in the absence of the transfer, non-beneficiary households were struggling to maintain their level of consumption. This is opposed to the situation in control areas where we see slightly less movement of each group against the other.

4.1.2 Impact on consumption and poverty after two years of programme operations

So what is the situation one year on? Has the programme been able to accumulate its effects to have a positive impact on household consumption and poverty?

Figure 6 Household poverty rates at baseline and follow-up 2 by treatment status



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

After two years of programme operations we do indeed find that the programme is having a significant impact on consumption expenditure and poverty, with HSNP households some 10% less likely to fall into the bottom national decile. The poverty gap and severity of poverty has also decreased for HSNP households, each by 7% respectively (Table 8 below).

As implied by the trends observed at follow-up 1, this impact is being driven by significant decreases in consumption among control households, which did not occur for HSNP households (Figure 6). In other words, we find that the programme is still having a vital cushioning effect, acting as a safety net and mitigating the negative impact of drought and other adverse shocks for HSNP households. Importantly, these results are robust against controlling for community and household-level factors (see Table C.2).

In addition we find a larger significant impact on poorer and smaller households, as would be expected given the greater size of the transfer relative to consumption expenditure for these (Table C.2). In other words, the impact on poverty is being driven by HSNP households that are relatively poorer, smaller or have received a larger cumulative per capita value of transfer. This is consistent with the trends observed at follow-up 1, where although the impacts on consumption and poverty were not significant overall, HSNP households that were poorer, mobile, smaller, or had received a greater cumulative per capita value of transfers, did experiences impact.

Table 8 Household consumption expenditure and poverty

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean consumption expenditure	1941.1	2023.8	82.7	1753.1	1588.5	-164.6**	247.3**	2435
Proportion of households (%):								
in the bottom national decile	54.4	47.6	-6.8*	61.3	64.8	3.4	-10.25**	2435
below absolute poverty line	88	87.8	-0.3	93.2	96.8	3.7***	-3.925	2435
Poverty Gap	41.2	37.9	-3.3	45.6	49.7	4.1**	-7.470**	2435
Severity of poverty	22.7	19.4	-3.3	25.7	29.3	3.6*	-6.907**	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. (2) Consumption expenditure is defined as mean total monthly inflation-adjusted household consumption expenditure per adult equivalent (KES); (3) A household is in the bottom national decile if its total monthly per adult equivalent consumption expenditure is below 1794 KSh; (4) A household is below the absolute poverty line if its total monthly per adult equivalent consumption expenditure is below 3128 KSh. This cut-off value is the total monthly per adult equivalent consumption expenditure of the household at the 85th percentile of the cumulative distribution of total monthly per adult equivalent consumption expenditure at baseline. (5) Poverty gap is defined as the mean shortfall of the population from the poverty line, expressed as a percentage of the poverty line.

The qualitative research at follow-up 1 produced multiple testimonies to the fact that many respondents perceive the HSNP as having raised beneficiaries out of extreme poverty, or as lifting them to a higher wealth category. However, it was also recognised that these positive impacts were constrained by contextual factors beyond the control of the HSNP.

> *"The gap has been narrowing since the HSNP began. Poor HSNP beneficiaries are now meeting their needs just like rich people in the community. There are, however, some natural factors like drought, hunger, animal diseases or human diseases which hinder the rapid and quick positive changes for the poor beneficiaries." [Male elder, Turkana].*

Other respondents noted that it would be unrealistic to expect major impacts from the HSNP, given the small value of the transfer.

> *"You don't expect any immediate change because the amount HSNP is paying is small and cannot make an abrupt big change." [Male elder, Wajir].*

According to this view, substantial impacts on poverty could be achieved only if the transfer amount was raised.

> *"The best way is to reduce the payment duration to one month instead of two months. Also the amount should be increased to at least KES 5,000 so the livestock are saved from being sold. In this way at the end of at least two years the livestock numbers will increase, and one would be able to accumulate and save good money to enable him start a business" [Male elder, Wajir].*

This statement is shown as prescient, as after two years and a raising of the transfer value the HSNP does indeed show a positive impact on reducing poverty and enabling households to retain livestock.

4.2 Food security and reliance on food aid

Cash transfers might allow additional food to be purchased by households facing food deficits or hunger, and might also be invested in food production and income-generating activities. Household food security is therefore expected to improve, especially among poorer households, which typically spend higher proportions of their income on food than do wealthier households.

Many respondents referred to reduced hunger as the most fundamental impact the HSNP has had on their wellbeing, with 87% of HSNP households reporting at follow-up 2 that since receiving the cash transfers they have been able to have more and/or larger meals (an increase of 16 percentage points from follow-up 1).

> *"The HSNP has brought many benefits, the first being that it has satisfied the hunger in the community." [Male elder, Mandera].*

> *"Hunger is the worst thing in this world so this money has really saved us from hunger." [Beneficiaries focus group, Wajir].)*

Household food acquisition, access and consumption are all therefore expected to improve as a result of the programme. It is also expected that the transfers will enable beneficiary households to afford a wider range of food items. Provided there are no significant supply-side constraints in local food markets, a regular transfer of cash should substantially reduce food insecurity. Poorer households are likely to use more of the cash payment on food purchase than wealthier households. In economic terms, since food and other basic needs are 'normal' goods, households are expected to increase their consumption of these items as their income increases. However, the share spent on these items will generally decrease as income increases (this is known as Engel's law – where the income elasticities of food items are less than one).

The impact of the programme on food (in)security is assessed by estimating the dif-in-dif impact measure for mean monthly food consumption expenditure (per adult equivalent), the share of food spending in total household expenditure, dietary diversity (as measured by a food diversity index), and whether any household members went entire days without eating solid foods during the worst recent period of food shortage[18].

[18] The dietary diversity index is a simple count of the number of 12 food groups that the household consumed in the past week. The 12 food groups are: cereals; eggs; fish; fruits; meat; milk and milk products; oils and fats; pulses, legumes and nuts; roots and tubers; salt and spices; sugar: vegetables.

Table 9 Food security

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean food consumption expenditure	1445.7	1537	91.3	1385	1263.5	-121.5**	212.8**	2435
Mean food share of consumption expenditure (%)	76.5	77.3	0.8	79.8	81	1.2	-0.369	2435
Mean dietary diversity score	6.7	7.2	0.4	6.1	6.2	0.1	0.337	2435
Proportion of households food insecure in worst recent food shortage period (%)	61.8**	42.1	-19.7**	74.8	38.1	-36.7***	16.96	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. (2) Food consumption = Mean monthly inflation-adjusted food consumption expenditure per adult equivalent (KES). Food insecure in recent food shortage period = HHs that went entire days without eating in the worst recent period of food shortage.

In fact Table 9 shows the programme is having a significant impact on food consumption. Like the poverty results, this is driven by a significant fall among control households rather than improvements for HSNP beneficiaries – again illustrating the safety-net function of the programme. Unlike at FU1, we find no significant impact on dietary diversity. This is a slightly odd result, but it might be explained either by control households reinvigorating their diets after a particularly harsh year in 2011, and/or by increased availability of diverse food stuffs in local markets (see section 5.3.2); control households consuming less volume of food but equally diverse diets as HSNP households.

Heterogeneity analysis at follow-up 1 revealed that the impact on dietary diversity was most marked for households that were poorer, smaller or mobile, and here we do find a positive impact on dietary diversity for relatively poorer households at follow-up 2, though not for any other group. As with consumption expenditure above, we also find an increased impact on food expenditure for poorer households, smaller households, and for households receiving a higher cumulative per capita value of transfer over the last year.

These findings need to be put into context. The situation in Northern Kenya and in the evaluation areas is one characterised by high levels of food insecurity. As is reported below (section 5.6), the quantitative data show that, even though there has been some improvement between baseline and follow-up, a high portion of households remain very vulnerable and adopt coping strategies that in particular relate to poor food security. These include borrowing food, selling livestock to buy food, reducing the number and size of meals consumed, up to going whole days without eating (Table 20). Data from the qualitative research supports these findings, indicating that skipping meals is still a prevalent practice amongst households. These findings imply that, despite the many interventions providing food or cash in Northern Kenya, the problem of pervasive food insecurity persists.

"Sometimes when the food prepared at home seems to be scarce, we normally eat breakfast and lunch and forget about dinner, or sometimes we don't take food at all during the day and take dinner." [FGD with Children, Wajir Township, Wajir].

And although most respondents seem to prefer the fungibility of the HSNP cash transfer in comparison to food aid (see Box 3 below), they also insist that food aid is crucial in maintaining an adequate level of food intake.

"Our families mostly rely on food aid." [FGD with children, Lafaley, Wajir]

Despite these conditions, the quantitative survey findings on the HSNP poverty impact are supported by the qualitative fieldwork. Many households reported that they were able to sustain their food consumption thanks to HSNP, despite the drought, as well as spending on food items they would not normally consume, such as milk, sugar and meat.

"Food insecurity has been reduced by a great margin. We no longer borrow much from our neighbours. We are sure of our own safety in terms of hunger." [QPS with female beneficiary, Lonyaripichau, Marsabit]

"Before HSNP we cooked only maize. But since HSNP has started we are able to buy beans, kale, potatoes, meat and oil." [FGD with female beneficiaries, Badasa, Marsabit]

Several traders confirmed that HSNP beneficiaries spent most of their cash transfers on food, and a health worker observed an improvement in children's nutrition status thanks to HSNP.

"When the mothers receive payment they buy a lot of nutritious foods for their children, like vegetables. … in my observation, I have seen that the nutritional level among young children has risen." [Health worker, Wajir].

Other beneficiaries were slightly less convinced, making the point that cash transfers were used to buy items they had previously received as food aid, so there was no increase in dietary diversity.

"Food aid is basically maize, peas and beans. We still buy these foods with the HSNP cash, so there are not many changes" [Female beneficiaries focus group, Marsabit].

The qualitative fieldwork also articulated some of the linkages between food security impacts and other factors that are not so immediately apparent from the quantitative survey. For instance, the notion that HSNP households are able to use their receipt of regular cash transfers to buy food and other commodities on credit from local shopkeepers (section 5.5), or that many households also mention that they are able to sustain their consumption without selling livestock as a result of the HSNP – which is a 'normal' but costly coping strategy, as livestock are always sold at low prices during a drought (see section 4.4 below).

4.2.1 HSNP and food aid

Although the HSNP is intended to reduce household dependence on food aid, the frequency and severity of food shortages in northern Kenya and the low purchasing power of HSNP transfers mean that regular cash transfers and food aid should be seen as complementary interventions, not substitutes for each other. However, it is possible that HSNP beneficiaries could receive less food

aid (including school feeding and supplementary feeding) over time, either because they genuinely need less assistance or because they are perceived as needing less assistance due to receipt of the HSNP transfers.

To test for the possibility of a substitution effect between cash and food for treated households we measure the proportion of households receiving food aid, school feeding and supplementary feeding (Table 10), as well as the mean total number of months for which support was received and the mean estimated monthly value for each type of support (Annex Table D.1).

Box 3 Preference for cash support

Despite food price inflation and the drought, at follow-up 1 both HSNP and control households indicated a strong preference for receiving support in cash (72% and 62% respectively) rather than food (2% and 6%), with some preference for a combination of cash and food (26% and 29%). The main advantage mentioned being the flexibility of cash, which allows beneficiaries to meet a wider range of needs than food aid can.

At follow-up 2 we find very similar preferences being expressed, with 71% of all households preferring cash support, 28% preferring food plus cash, and just 1% claiming to prefer food only. Amongst beneficiaries 94% of households prefer cash.

The results are positive, and suggest that HSNP households have not been deprioritised for food aid and other support such as school and supplementary feeding programmes. In fact the only significant result is a puzzling positive impact on the mean number of months of school feeding received by those receiving it. Annex Table C.2 indicates that this surprising result persists even after other factors are controlled for, and the heterogeneity analysis suggests the effect is most pronounced among less poor, smaller and settled households. However, the analysis at follow-up 1 showed that it is very important to take into account supply-side factors when analysing these food aid reliance indicators. Unfortunately it was not possible to control for community-level food aid supply at follow-up 2 because the non-beneficiary households (sample groups C and D) were dropped from the sample. In other words, it is possible that this puzzling result is simply being driven by community-level variations in food aid supply that are unrelated to HSNP.

Taken together with the FU1 results, it seems reasonable to conclude that the HSNP is not having a negative substitution effect on other forms of aid for beneficiary households.

Table 10 Proportion of households receiving food aid, school feeding and supplementary feeding in the past year (%)

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Food aid	70.5**	66.2	-4.3	88.7	79.4	-9.3***	5.015	2436
School feeding	57.2	54.3	-3	53.7	58.4	4.7	-7.713	2436
Supplementary feeding	16.5	4.7	-11.8**	10.6	5.3	-5.2	-6.586	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

4.3 Child nutrition

Child nutrition is dependent on a variety of exogenous factors such as public health and sanitation conditions and cultural feeding practices. However, by improving food consumption and dietary

diversity it is possible that HSNP could have an impact on child nutrition. To assess this we gather anthropometric data for all children under five years of age to measure stunting, wasting and children classed as underweight (a description of the methodology for the analysis of anthropometrical data is given in Annex E).

- Stunting: identifies past or present chronic under-nutrition, but cannot measure short-term changes in under-nutrition.
- Wasting identifies children suffering from current or acute under-nutrition, with weight significantly below the weight expected of a child of the same length or height in the standard population.
- Underweight: is a composite measure of stunting and wasting. As such, it measures both past (chronic) and present (acute) under-nutrition, although it is not possible to distinguish between the two.

Table 11 Nutritional status of children (% of children under five)

Outcome	HSNP households			Control households			Dif-in-dif	Number of observation (at FU2)
	BL	FU2	Dif	BL	FU2	Dif		
Stunting								
Moderate: HAZ<-2SD	26.7**	29.6	2.9	35.6	31.5	-4.1	6.991	1062
Severe: HAZ<-3SD	11.6	13.4	1.8	15.2	15.1	-0.1	1.915	1062
Wasting								
Moderate: HAZ<-2SD	25.3	23.1	-2.2	24.2	17.3	-6.9	4.722	1062
Severe: HAZ<-3SD	6.8	6.2	-0.6	8	3.5	-4.5	3.921	1062
Underweight								
Moderate: HAZ<-2SD	30.7	24.9	-5.8	33.7	24	-9.7**	3.901	1062
Severe: HAZ<-3SD	9.8	8.9	-0.9	10.9	6.9	-4.1	3.188	1062

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. Measures of malnutrition are disaggregated into two cases, moderate (below -2 SD) and severe (below -3 SD).

Table 11 above suggests the HSNP is not having a significant impact on child nutrition. However, there are a number of important caveats surrounding the data used to construct these indicators.

Firstly, the evaluation team has some reservations about the overall quality of the anthropometric data gathered at both baseline and follow-up. The challenges associated with gathering these data are widely acknowledged, especially in the case of age data, and in an environment where around four out of five children don't have any date of birth documentation such challenges are exacerbated. A full description of the quality of the anthropometric data is given in Annex E.

Despite these reservations the evaluation findings closely corroborate the results of other anthropometric studies conducted in these areas. We see stunting rates of around 30%, which is similar to the rates found by DHS 2008/09 for North Eastern region; wasting rates of 17-23%, as compared to DHS' 18.4%; and rates of children underweight around 25% compared to DHS estimate of 31%. More recent studies conducted in various sub-regions of Mandera, Wajir and Turkana produce similar findings, with moderate wasting rates ranging from 10% to 31%, and severe wasting rates between 2% and 8% (see E.1 and Table E.9), as against severe wasting in

the study population of 4%-6%. These rates of malnutrition would be described as poor by WHO (1995) standards.

Child nutrition is also an area where time-varying external factors (e.g. severity of drought, supply of food aid, etc.) may have been experienced to different extents by HSNP and control areas. However, the sample size is relatively small here so the heterogeneity analysis does not show up conclusive patterns.

In conclusion we do not find evidence that HSNP has impacted child malnutrition rates, but consider this unsurprising given the variety of exogenous factors that affect nutrition, which a cash transfer by itself is unlikely to influence.

The qualitative research produced instructive results in this regards. While there is some evidence to indicate that the quantity of food consumed by beneficiaries had increased, it is hard to ascertain if the cash transfer had any effect on feeding or hygiene practices. In the qualitative research locations, health workers noted that malnutrition was highly seasonal in nature, and severe cases of malnutrition were being treated under programmes run by the government and NGOs in various locations. Supplementary feeding in health centres (using Ready-to-Use-Therapeutic Foods) and schools (porridge provided to younger children), as well as medical treatment of children with severe acute malnutrition, was recorded in all research areas. Programmes on nutrition behaviour change and WASH were also being run in several locations.

Respondents felt that, in general, people's eating habits have changed over time, mainly due to the severe drought in 2010 and the general trend of settling and depending less on livestock keeping. At the same time, perceptions of what constitutes nutritious food or a balanced diet vary. Some respondents perceive sweeter foods to have more vitamins and minerals, whilst others thought that meat and milk were nutritious food as they contained vitamins. In some areas health workers insisted that local dietary practices and perceptions made it difficult to convince households to consume a balanced diet.

> *"If you tell them to eat something like ugali (maize) and sukuma wiki (kale) they will tell you that it is goat's food. In fact it's difficult to convince them that they need to eat a balanced diet." [KII with health worker, Badasa, Marsabit]*

Even where a general awareness of a balanced diet existed, the unavailability and inaccessibility of varied ingredients like meat, milk or fresh vegetables meant that people relied mostly on a diet of beans, maize and rice to sustain them.

> *"I take tea in the morning; I take maize and beans for lunch and the same for supper." [FGD with male beneficiaries, Mado, Mandera]*

> *"That kind of (nutritious) food like vegetables is not available locally, we don't have them here." [KII with health worker, Mado, Mandera]*

4.4 Asset retention and accumulation

In addition to covering consumption gaps, cash transfers may allow beneficiaries to hold onto livestock and other assets that otherwise they might have been forced to sell in times of distress. Cash transfers may even allow households to invest in accumulating more assets over time as a

potential pathway out of poverty. In other words, it is possible that cash transfers could provide more than just a safety net, on the one hand protecting from the loss of assets at times of hardship, but on the other hand facilitating investment in productive assets, and hence enabling households to move out of poverty in a sustainable way.

4.4.1 Livestock assets

To assess whether households are able to retain and accumulate livestock assets in this way, dif-in-dif impact measures are estimated for the proportion of households owning livestock, both overall and specifically for goats/sheep, camels and cattle[19].

Table 12 Proportion of households owning livestock, by livestock type (%)

Livestock	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Any livestock	61.5**	63.8	2.4	85.1	81.4	-3.8	6.130*	2436
Goats / sheep	58.3**	62.1	3.8**	83	79.6	-3.3	7.133**	2436
Camels	31	30.1	-0.9	37.2	37.1	0	-0.861	2436
Cattle	16.5	12.1	-4.4**	20.1	17.6	-2.5	-1.848	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table 12 indicates that the programme is having a significant impact on livestock ownership, driven by increased likelihood of HSNP households to own goats and sheep. However, as at follow-up 1, these livestock retention and accumulation results, while seemingly encouraging, are not fully conclusive.

At follow-up 1 when we controlled for other factors, the positive impact on livestock ownership persisted only for large households and fully mobile households, and actually showed a negative impact on camel ownership. Similarly, at follow-up 2 the positive impacts on goat and overall livestock ownership do not persist once other factors are controlled for, nor for any specific categories of households under the heterogeneity analysis (Table C.2). Once again, controlling for other factors reveals a surprising significant (but small) negative impact on camel ownership. It is possible that these rather puzzling findings could be influenced by households' reluctance to accurately report livestock holdings (particularly given that camels are especially associated with wealth).

Analysis of households' use of the transfer (section 3.3) suggests that we should not necessarily be surprised that the programme may not have significantly increased accumulation of livestock

[19] For some households in the HSNP districts, some proportion of the household's livestock holdings are considered to be owned by the main provider separately from the rest of the household's livestock. However, for the purposes of defining the livestock impact indicators these 'main provider' owned livestock are still attributed to the household and considered as part of the household's total livestock holdings. In this evaluation the main provider of a household is defined as the person whose income provides the main source of support for the household. This person is not necessarily resident in the household (although most are), for example if they are the son of an elderly mother who lives alone or in polygamous households where the husband spends more time in the household of one wife than another.

assets. Those results showed that very few households (7%) used their most recent transfer to purchase livestock (Table 5). Furthermore, though increased since follow-up 1, a relatively low proportion (17%) reported that they ever saved some of the HSNP cash for later use.

It is instructive, however, to refer to qualitative research in this regard which presents consistent findings at both follow-up 1 and follow-up 2 that the programme is having a positive impact on livestock ownership amongst HSNP households by enabling them to avoid selling goats and sheep in the face of drought.

> *"I had some goats and whenever I was faced by a problem that requires a financial solution, I had to sell a goat. However, I have not sold a single goat since this programme started" [Beneficiary, Wajir].*

> *"We no longer sell our own livestock but rather embark on using this HSNP money to buy a goat or sheep to substitute the selling of our livestock. When we need money we resell them to get a profit." [FGD with female beneficiaries, Marsabit]*

For others, the HSNP cash has provided at least partial protection, allowing fewer animals to be sold.

> *"We have reduced the number of animals we sell" [Beneficiary, Marsabit].)*

Others who did have to sell animals to meet immediate needs – given that HSNP disbursements are made only every two months – claimed they were able to buy them back with subsequent HSNP transfers.

> *"When I have a problem I sell one of my goats and take care of that problem, and when I receive money next time I replace that goat that I sold and life goes on." [Beneficiary, Turkana]*

Therefore, in terms of retention and accumulation of livestock assets, the overall results are encouraging but not fully conclusive.

4.4.2 Non-livestock productive assets

In terms of the retention and accumulation of non-livestock productive assets, the programme is having no significant impact on the proportion of households owning any of the items listed in Table 13 below. This result is consistent with the findings at follow-up 1.

However, the qualitative findings did reveal some beneficiaries reported buying consumer goods ('non-productive assets'), such as housing materials, clothing, or basic household items.

> *"Each time I get the cash I buy building materials to build my house" [Beneficiary, Turkana]*

> *"When I get the payment I buy myself clothes and food" [Beneficiary, Mandera]*

> *"The only change that has happened over the past one year is that we were short of stuff but now we bought more stuff like utensils, and sleeping materials like mattresses" [Beneficiary, Wajir].*

The capacity to buy basic necessities also reduced the need for poor households to share or borrow these items from neighbours.

> *"Before we used to share clothes, and borrow utensils from neighbours but since the HSNP payment began we can buy everything" [Beneficiary, Mandera].*

Table 13 Proportion of households owning key productive assets (%)

Asset	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Animal cart	6	9	3.0*	6	11.3	5.3**	-2.304	2435
Water drum	12.5	17.4	4.9	6.2	8.9	2.7	2.201	2435
Plough	0.6	0.1	-0.5	0.2	0.2	-0.1	0	2435
Wheelbarrow	6	12.9	7	4.7	5.1	0.4	6.606	2435
Sickle	2.7	2.6	-0.1	1.6	1.8	0.2	-0.273	2435
Pick axe	13.5	3.1	-10.4**	10.6	2.2	-8.5**	-1.931	2435
Axe	51.3	50.9	-0.4	60.2	49.8	-10.4	10.02	2435
Hoe	13.1	11.6	-1.6	10.2	11.1	0.9	-2.460	2435
Spade	14	10.6	-3.5	11.5	13.5	2	-5.475	2435
Machete	49.8	67.7	17.9*	48.7	65	16.3**	1.517	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Similarly, and unsurprisingly given that there was no impact on the ownership of key productive assets, we find no impact on the average value of the non-livestock productive assets owned by HSNP households (Table 14). Likewise there has been no impact on the proportion of HSNP households that own agricultural land; this latter is not surprising given the relative scarcity of agricultural land in evaluation areas – only a few sub-locations in Marsabit contain arable land.

Table 14 Mean value of non-livestock productive assets owned and proportion of households owning agricultural land

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU2)
	BL	FU2	Dif	BL	FU2	Dif		
Mean value of non-livestock productive assets (KES)	1006.9	1855.4	848.5**	1080	2148.2	1068.2**	-219.8	2436
% HHs currently owning agricultural land	9.5	10.7	1.2	7.1	10.3	3.2**	-1.975	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. Notes: assets included in the index are: animal cart, water drum, plough, wheelbarrow, sickle, pick axe, axe, hoe, spade, machete.

5 HSNP Impact – Secondary impact areas

This chapter presents M&E evidence on secondary outcomes of the HSNP, such as: uptake of health and education services, food prices and supplies, livelihood diversification, ability to save, and lend and access to credit, resilience against shocks, empowerment of women, and well-being of older people and children.

5.1 Health

Evaluations of cash transfer programmes often find that some proportion of the benefit is allocated to accessing health care, both as a basic need and as an investment in the household's human capital. How much money is spent on health care depends not only on the health status of the beneficiary population but also on the supply, perceived quality and cost of health services in programme areas.

To assess whether beneficiaries are using the HSNP transfers to access health care the dif-in-dif impact measures are estimated for the mean monthly health expenditure, adjusted to take into account varying household size. The potential impact on health outcomes is assessed by considering the proportion of the population reported as suffering from any illness or injury in the three months prior to interview.

Table 15 below shows that the programme is having a small but significant impact on the average expenditure spent on health care per household member per month. This result is driven by increased spending on health by HSNP households rather than falling expenditure among controls.

This result persists once other factors are controlled for, and once variation in the effective *per capita* cumulative value of the transfers received is accounted for (Table C.3). However, it should be noted that the magnitude of this impact on health expenditure in the latter case is very small: for every additional KES 2000 received per household member in programme transfers over the evaluation period, average spending on health expenditure is increased by just KES 5 per household member per month. The heterogeneity analysis reveals this impact is being driven by poorer households.

In terms of health outcomes, there appears to have been a considerable decline in illness/injury rates for both HSNP and control households (though only significant for the latter), but no significant differences between these two groups.

Overall, although not fully conclusive these results suggest the programme may be having a positive but relatively limited impact on the health status of HSNP beneficiaries. The quantitative findings should be interpreted in the light of the fact that cash is a fungible asset and that health spending confronts households as a necessity. When faced with a health shock households often face little choice but to meet the required expenditure to cope with that shock regardless of whether they can 'afford' it. This implies that, though both treatment and control households inevitably meet that expenditure, treatment households are able to do so without adopting more destructive coping strategies, such as reducing food consumption or drawing down on their assets; two areas where the HSNP does show a positive impact (see sections 4.2 and 4.4 above).

Respondents in the qualitative research pointed out that spending the transfer on healthcare often depended on whether disbursement coincided with a member of household being sick, or whether a beneficiary suffered a chronic illness which required regular medication.

> *"When cash transfer is delayed, family members of beneficiaries keep waiting for the transfer to take sick people to medical services." [Female elders focus group, Turkana]*

> *"I spend the whole of my HSNP money on medication since I am disabled. I also have a kidney condition, so I spend my transfer on kidney drugs that costs KSh 1,350 each month." [QPS with male beneficiary, Wajir]*

Table 15 Health status and health-seeking behaviour

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU2)
	BL	FU2	Dif	BL	FU2	Dif		
Proportion of people ill/injured in the past 3 months (excluding chronic illness)	22.5	12.1	-10.4	23.1	11.7	-11.4**	1.046	14342
Proportion of people ill/injured in past 3 months that did not consult formal health care provider	42.6	15.5	-27.0***	48.7	20.9	-27.8***	0.763	1708
Mean monthly per capita health expenditure per household (KES)	23	39	16.0**	18.6	22.2	3.7	12.32*	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Qualitative research carried out at follow-up 1 also revealed both how the cost of health care can be a deterrent to poor families, as can the cost of transport to access health care, producing testimonies demonstrating that the HSNP is helping to remove these barriers for some households.

> *"For me things have changed because I have money to pay for my transport and also to pay for my treatment" [Beneficiary, Mandera].*

For others, the HSNP cash allowed households to preserve their assets rather than sell them, with asset depletion being a common response to health shocks by poor households.

> *"I spend KES 500 out of the HSNP money to pay for healthcare. Without HSNP it would have been very hard to get medicine. I would have sold one goat to buy medicine." [Beneficiary, Mandera].*

Qualitative fieldwork also revealed a possible link between the HSNP and the type of health care that beneficiaries choose, because cash transfers give people access to more expensive health care providers than were previously unaffordable.

> *"We used to slaughter a goat and treat the person using the intestines of the goat. … Sometimes we had to choose another treatment like going to the native doctor and using herbal treatment. Now if you have the money you take you patient to the hospital to seek treatment from there" [Beneficiary, Turkana].)*

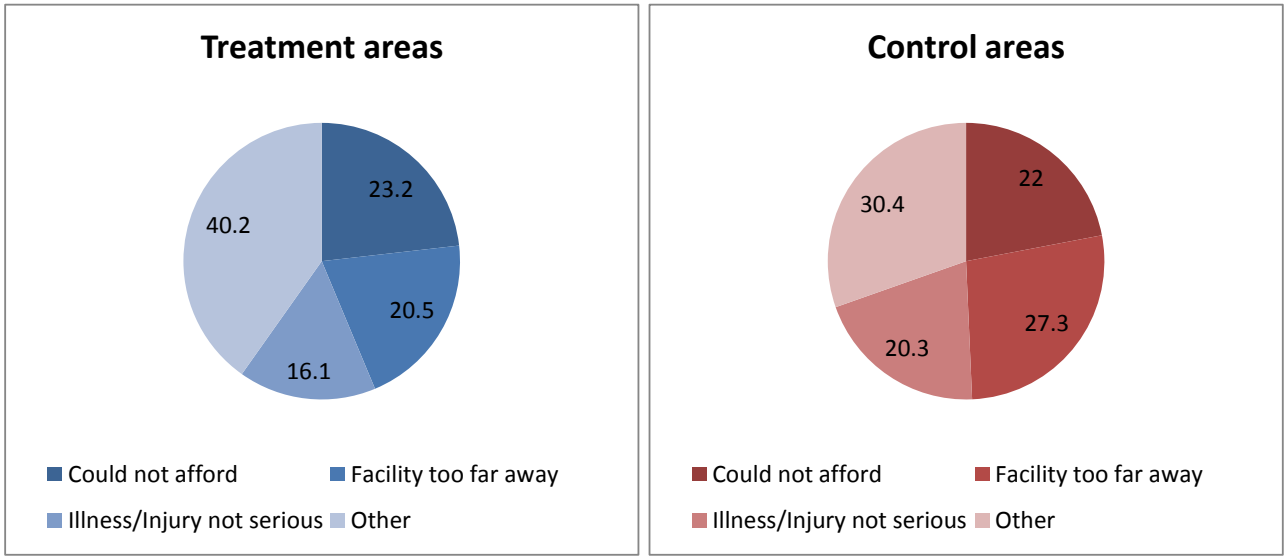
Some health workers also reported an increase in the number of people coming to health facilities soon after the day of HSNP payment. This highlights one of the key challenges that households face, mentioned above. This is that HSNP payments are made once every two months, whereas illness is unpredictable. Despite this, sometimes households were able to alleviate this cash flow constraint by borrowing against the security of the HSNP transfer.

> *"When I have no money, I borrow to go to hospital and when I get the HSNP payment I pay back the debt" [Beneficiary, Mandera]*

> *"When children become sick and you do not have money to pay the medical fees, you get credit from the pharmacy and pay later through HSNP money" [Beneficiary, Wajir].*

Between baseline and follow-up there was a marked increase for those who suffered an illness or injury in the past three months to seek healthcare (Table 15; as registered by the decline in those not seeking healthcare when ill or injured). This was the case in both treatment and control areas so is not attributable to HSNP. For those who did seek healthcare they did so overwhelmingly at government health facilities (Table D.5). For those that did not seek healthcare the single most common reasons were not being able to afford the cost of healthcare, the health facility being too far away, and the illness or injury not being considered serious enough. Between treatment and control areas in this regard the biggest distinction was in the proportion of people not seeking healthcare because of the facility being too far away. This was greater in control areas, reflecting the lower supply of health services in those areas (Table 2).

Figure 7 Reasons for not seeking healthcare for those ill or injured in last three months by treatment status at follow-up 2



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Other category includes perception of treatment quality, long waiting times, unfriendly staff, availability of medicine, too busy/no time, non-one to cover home duties, no transport, and cultural reasons.

5.2 Education

Often some proportion of cash transfers are allocated to the costs associated with educating children, which include school fees or 'school operating costs', transport, boarding fees, uniforms,

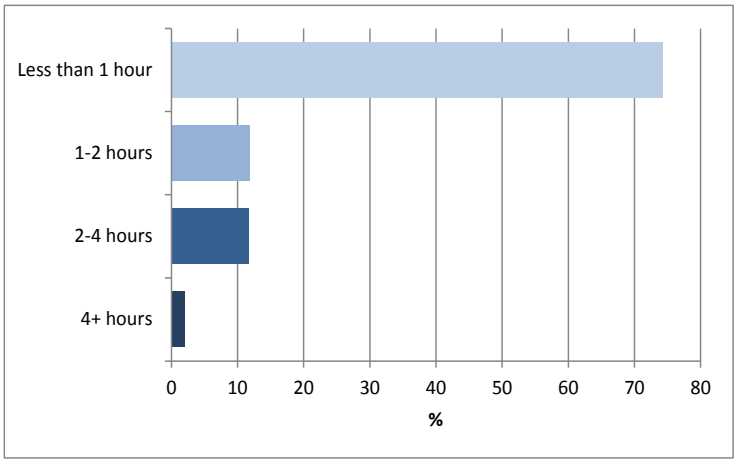
books and stationery, pens and other school equipment such as revision materials. One indicator of impact on education is thus increased spending on school-related costs. A second possible impact is on education uptake – increased enrolment or retention in school (lower absenteeism) – given that, in the absence of any transfers, households facing expenditure constraints may be forced to withdraw children from school (a common coping strategy). These impacts also depend on the availability and perceived quality of schools in the areas where the programme operates, as well as cultural attitudes towards education that may be much harder to transcend than simple financial barriers.

To contextualise the evaluations findings on HSNP impact on education it is important to note that the baseline report revealed that cost and access are not the key barriers to schooling in the HSNP districts. In fact amongst children aged 6-17 who have never attended school, only 6% claimed not to have done so due to cost; 2% due to lack of school; and just 1% because the school was considered too far. In fact, the most common reasons given for having never attended school were domestic duties (49%), working for household own production (13%), and parental attitudes (15%)[20]. Qualitative research also revealed other barriers to education, beyond the ability of the programme to transcend, such as security and education supply-side constraints. The programme can therefore be expected to have an impact on educational outcomes only to the extent that it reduces the need for children to perform domestic duties and/or participate in home production. In fact, section 5.8 below reveals that there is no statistically significant impact on the proportion of children whose main activity is paid or unpaid work (including unpaid domestic work)[21]. In others words, overall, children are no less likely to be engaged in domestic or productive work as a result of the programme, which obviously limits the extent to which the programme can be expected to have an impact on educational attendance.

If then, rather than cost, it is cultural attitudes and the imperative for children to help with domestic and productive work that form the biggest barriers to education it is not surprising that we find the programme having no impact on education expenditure. This finding is consistent with results at follow-up 1.

What is surprising, however, is the apparent significant *negative* impact on the proportion of children currently attending schools; even more so when the availability of primary schools in evaluation areas appears to have dramatically increased (Table 2). However, looking carefully, the results reveal that there have been significant increases in school attendance for both

Figure 8 Walking distance to nearest primary school as reported by households with children currently attending school at baseline



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Dec2010.

[20] It should be noted that these findings represent respondents own perception of the barriers to accessing education services, rather than reflecting an objective measure of access.
[21] Note that, once we control for other factors, we do find a significant impact on the proportion of children whose main activity is paid or unpaid work but excluding domestic work. In other words, children are less likely to be engaged in non-domestic productive work, but this appears to have been offset by an increase in domestic work.

treatment and control households (Table 16). Furthermore, the attendance rates were significantly lower among control households at baseline, so the apparent negative programme impact may simply reflect control households 'catching up' with HSNP households in terms of school attendance rates. This could occur, for example, if some of the control areas were particularly underserved by schools initially at baseline, and as a result have subsequently been specifically targeted for investment in school facilities. In fact, once we control for community-level and other factors we do indeed find that the negative impact disappears (Table C.3).

Table 16 Education expenditure, school attendance and primary school completion rate

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean monthly household education expenditure per child (KES)	121.1	134.2	13.1	75.1	106.3	31.2	-18.19	2058
Proportion of children currently attending school (%):								
All children aged 6-17	63.2**	70.3	7.1***	42.6	61.6	19.0***	-11.96**	5563
Females aged 6-17	57.5**	66.6	9.1***	37.5	58.1	20.6***	-11.53*	2589
Males aged 6-17	68.3**	73.7	5.3**	47.1	64.8	17.8***	-12.44*	2974
All children aged 6-12	63.9**	71.6	7.7**	42	62.2	20.1***	-12.42*	3386
All children aged 13-17	62.0**	68.1	6.1**	43.4	60.7	17.3***	-11.17*	2177
Proportion of children aged 6-17 in school that have passed Std IV (%)	33.2	39	5.9**	36	34.8	-1.2	7.066*	3543
Mean highest class achieved for children aged 6-17 currently in school	5.6	5.9	0.3**	5.8	5.7	0	0.369*	2738
Proportion of children whose main activity is education (%)	69.1	70	0.9	58.3	62.5	4.1*	-3.287	5674

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. (2) Mean monthly household education expenditure per child (KES) includes only those households with at least one child between 6 and 17 currently attending school.

While the finding of no significant impact on attendance rates may be disappointing (if not surprising for the reasons outlined above), this should not detract from the positive story of rapidly rising attendance rates in the HSNP districts. In addition, once other factors are controlled for, the programme does seem to be having a small positive impact on the proportion of children whose main activity is education, so can be seen to be at least minimally assuaging the barriers to accessing education for some.

5.2.1 Non-financial barriers to education

There are a series of barriers to education beyond financial barriers. These include livelihood practices, cultural beliefs and attitudes toward education, and particularly girls education, and supply-side constraints.

The dominant livelihood strategy of people living in the Arid and Semi-Arid Lands (ASAL) of Northern Kenya is livestock rearing. This revolves around a nomadic / semi-nomadic life that entails travelling long distances in search of pastures for the animals. Children in many of these households are expected to participate in this livelihood and thus are unable to attend school.

> *"Our main livelihood activity is livestock keeping, therefore some children drop from school to go and look after the animals." [FGD with male beneficiaries, Marsabit]*

In addition to livestock herding, children, and especially girls, are also expected to support the household with domestic chores, and in some cases participate in casual work to supplement household income.

> *"Those families who are poor tell their daughters to go and work as house girls in order to get some money or do domestic work like washing clothes for people. Each and every house for the rich has a girl as a house help and you cannot get boys there." [KII with teacher, Wajir]*

As the quantitative results show, these economic imperatives are reinforced by the ambivalent attitudes of many households towards the value of education, with parents' lack of education affecting their perceptions in this regard.

> *"As a teacher I can also say ignorance [is a barrier to education] since most parents do not know the value of education, so they send their children to graze the livestock instead of going to school." [KII teacher, Turkana]*

Such attitudes are gradually changing due to wider socio-economic changes. Primary education has been made compulsory since 2004, and Government actors and traditional authorities have been sensitising communities and enforcing the law since then. Community members are aware that it is illegal not to send their children to school and that if they do not that they will be fined. This policy has been complimented with civil society engagement to encourage school attendance and education more generally, specifically for girls. These policies have resulted in more children enrolling in schools.

> *"There is difference [in enrolment] because when you are not taking your child to school you will be arrested by the government, since primary level is free and it's the right of the child to be in school." [FGD with female beneficiaries, Marsabit]*

> *"Compared to the last five years enrolment has increased for both boys and girls. This has come following the government's policy that that education should be free and compulsory to all Kenyan children." [FGD with male beneficiaries, Wajir]*

The severe recent famine and resultant loss of livestock has also led to households questioning the wisdom of relying on livestock as the sole means of current and future income. The need to diversify away from this livelihood strategy has thus put more emphasis on children's education as

a pathway to more secure livelihoods. This has been further cemented for some by directly witnessing the benefits of education to fellow community members in the form of better jobs working for the Government and NGOs.

> *"Parents are happy with us going to school because other households are leading a better life because their children went to school and are now working in NGOs and as civil servants." [FGD with children, Turkana]*

> *"A long time ago we would not take the children [to school]. May be they would look after the animals and farm. But now since there is no animal and farm because of prolonged drought there is no reason why we should not take them to school." [FGD with female beneficiaries, Marsabit]*

Beneath these attitudes towards education, that are formed upon the basis of individuals' experiences or lack of education, are more entrenched cultural norms that form another barrier, especially to girls education. These particularly revolve around marriage, which can be viewed as an essentially economic transaction between the bride and groom's households. The transaction takes the form of a negotiated bridal price (dowry) given to the family of the daughter based on certain social, economic and cultural expectations such as the family's standing in the community, household wealth, and the girl's chastity. Once the transaction has taken place the future benefits of the marriage accrue to the husband's household. In this context girls' education is seen as a threat to the value of the bride due to the girl's exposure to other males and the consequent risk of dishonouring the family, for example through unwanted pregnancies. Although education potentially results in the possibility of improved future incomes, the fact that any benefits do not accrue to the bride's household means that the education of the girl is not seen as a positive investment; i.e. there are perceived to be low returns to girls' education, putting the emphasis on education of boys instead. Exacerbating this cultural constellation is the idea that the future economic opportunities of woman are also perceived to be more limited for girls, given the entrenched stereotyped gender roles in these communities.

5.2.2 Financial barriers to education

Households face both direct and indirect costs to education. Direct costs include school fees, examination fees, and expenditures on books, stationary and other school supplies and events. Indirect costs, as mentioned above, include the opportunity cost of attending school and forgoing contributions to domestic chores (fetching water, collecting firewood, etc.) or household's livelihood, such as herding livestock, petty trading or other casual work that the children may engage in.

Both of these costs act as barriers to education in terms of enrolment but also in terms of attendance. Primary education has been free since 2004, thus reducing some of the direct costs of education. However there are additional costs of primary education that many households are unable to afford. These include the costs of uniforms, examination fees, contributions to teacher salaries, text book fees, and other related costs such as mock exams, prize money, school events, building maintenance, etc. Those who cannot afford these expenses may not attend school as regularly as they otherwise might, and might even drop out of education all together.

Although the quantitative data did not produce definitive evidence of HSNP having a positive impact on school attendance or expenditure, the qualitative research at both follow-up 1 and

follow-up 2 produced much respondent testimony that the programme was aiding households to meet the financial costs of accessing education.

> *"Can parents afford to take their children to school these days? Yes because the government has made primary education free and they are getting HSNP cash as well so I think they can afford to pay school fees for their children." [FGD with male non beneficiary, Wajir]*

> *"Previously, they missed or dropped out of school because of the lack of uniforms, books, pens. This has changed since the HSNP cash transfer." [FGD with male beneficiaries, Turkana]*

Although primary education at public schools is 'free', the costs of secondary education are significant. These costs are largely beyond the capacity of a transfer like HSNP to really make a difference towards, though some do claim that the transfers have helped to send their children to secondary school. Although the HSNP amount is not sufficient for the entire school fee, it can contribute to a down payment towards the fees. It is also claimed that teachers are more likely to accept students from HSNP households because they are deemed as being more credit worthy.

> *"Fees, especially to secondary school children was a big problem previously, increasing drop outs from school. But now, since HSNP beneficiaries are credit worthy, they can borrow some cash for this and pay in number of instalments." [FGD with male beneficiary, Turkana]*

> *"My children are in secondary school and each term I pay KES 7,000. When I get the HSNP payment I pay school fees for my children." [Beneficiary, Mandera]*

There are thus several kinds of education-related expenses that can be prohibitive for poor parents or carers of children, which the HSNP is claimed to contribute towards. These include fees, transport to school, educational materials such as books and pens, and uniforms.

Again, as in relation to health expenditure, the qualitative research suggests that, for some households at least, the HSNP saves households from selling livestock in order to pay for these costs.

> *"If I did not have the payment then I would have been forced to sell my small stock to buy my children uniform, books and pens. But due to the programme I am able to send both my boys and girls to school." [Beneficiary, Marsabit]*

The fact of being registered for the HSNP also allows some parents to negotiate a deferred payment of education expenses, by persuading school authorities to allow their children to continue with classes until the next cash transfer arrives.

> *"Since HSNP started I can talk to the teacher and tell him that I'll pay the fees when I get paid so he doesn't send the children home." [Beneficiary, Wajir]*

Some respondents claimed that the HSNP even allowed them to access better quality education, or that they used the transfers to pay for tutors. If true, such claims could help explain the improved educational attainment recorded in the quantitative survey by children in HSNP households (see section 5.2.3 below).

These points being made, we do find that in both treatment and control areas the proportion of children never having attended school due to reasons of cost has declined with statistical significance (Table D.6). This is not due to the HSNP but may reflect the increased supply of education services, particularly primary schools, in evaluation areas between baseline and follow-up 2 (see Table 2).

5.2.3 Performance in school

Although not getting more children into school, the HSNP is having a positive effect on those children already in school. We find a significant positive impact on the proportion of children aged 6-17 that have passed Standard IV, as well as on the mean highest grade achieved for children aged 6-17 (Table 16 above). These results continue the trend observed at follow-up 1 and persist even after other factors are controlled for (Table C.3).

As was the case at follow-up 1, this impact is again being driven by poorer and smaller households. While these impacts don't appear to be driven by increased educational expenditure, the qualitative research suggests that, by enabling children to eat better and improve their psycho-social experience of education (e.g. through coming to school with adequate uniform and school supplies), the HSNP is improving children's performance at school.

Increased attendance and less disruption to schooling lessons would naturally be expected to result in better performance of children at schools. But children who pay their fees and come properly equipped to class may also elicit more favourable treatment by teachers which could additionally contribute to improved performance. In addition, the psychological and social impacts of owning fit and proper education materials, and being well-presented in school, can also boost children's confidence, helping to explain their improved performance.

> *"These children who are coming from homes where they are getting this money, there is a difference. They look smart, they are smiling, because they can automatically tell the teacher that got the money and I have bought this and this, in fact they enjoy it very much." [KII with teacher, Mandera]*

> *"They have improved in performance because they are fully equipped with learning materials and they are doing more assessment exams. They also feel confident because they have uniforms." [KII with teacher, Turkana]*

> *"Before children were chased from school when their shirts were dirty. Since the shirt is not dirty as there is soap for washing uniforms, children are taken to school." [FGD with children, Mandera]*

> *"Where parents are able to buy their children school materials, their performance increases. The child who has an essential textbook that was required by the school will improve his or her performance. I think as a teacher I can also contribute to a child's happiness." [KII with teacher, Marsabit]*

National school feeding programmes, coupled with HSNP impact on increased food intake and dietary diversity, also help children better concentrate in schools.

"When [a child] has those basic needs, and for example he has eaten lunch, he is not hungry, he is then motivated to learn and therefore there is improvement in terms of mean scores in exams." [KII, teacher, Marsabit]

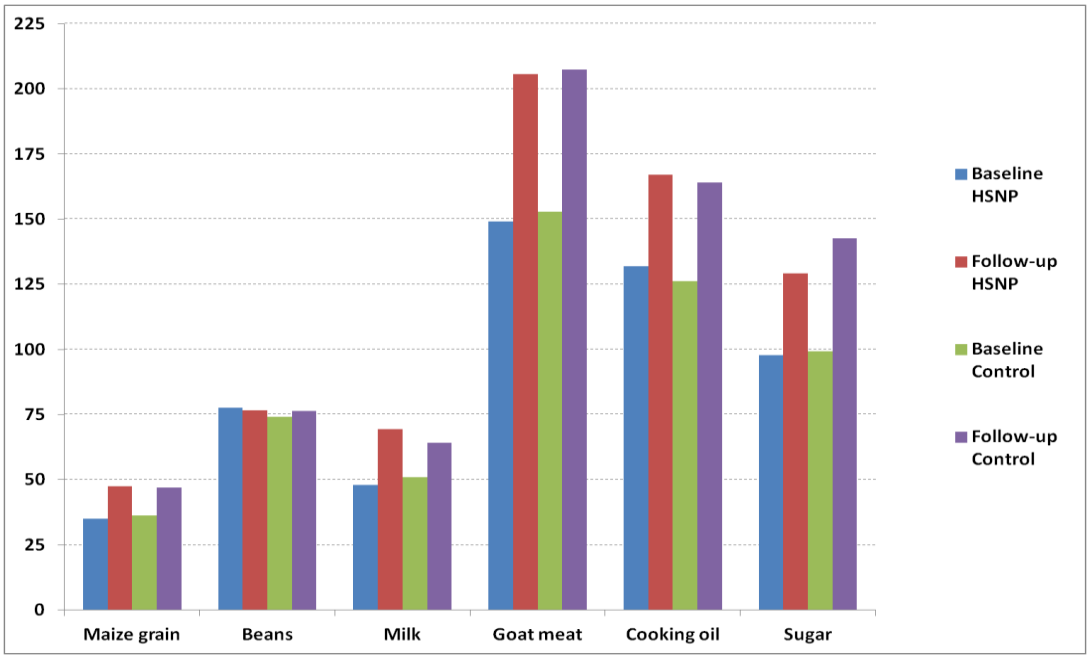
5.3 Local markets, food prices and supply of key commodities

Cash transfers increase the demand for goods and services, which should provoke a response by traders and result in increased supplies to local markets, stabilising both supplies and prices over time. But these effects will be moderated if cash transfers are small and have limited coverage, if markets are fragmented and transaction costs facing traders are high, and if traders do not have confidence that the injections of cash will continue over a protracted period of time. There is also a risk that cash transfers will have an inflationary effect – driving up prices in the absence of a supply response – especially if markets are weak. For the HSNP, which aims to provide a safety net against hunger and food insecurity, monitoring these effects is especially important in relation to staple foods such as cereals.

5.3.1 Local prices

Between baseline and follow-up 1 prices of key food commodities were thus monitored in order to assess whether the HSNP was having an inflationary impact. Figure 9 below reveals that there was indeed substantial food price inflation in the HSNP operational areas during this period, for five out of six key commodities monitored (all except beans), but that no statistically significant differences were observed in inflation rates between treatment and control areas. This meant that the HSNP did not appear to be contributing to food price inflation in the evaluation areas.

Figure 9 Average prices of key food commodities (KES per kilogram or litre)



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2011.

Similarly, a comparison of monthly price changes revealed no evidence that HSNP cash transfers were contributing to food price stabilisation over time (e.g. between seasons), implying that the

scale of the HSNP was not sufficient to substantially affect trading patterns, food prices or supplies in local markets. Instead, it was seen that price inflation was eroding the value of HSNP cash transfers[22]. Subsequently, the HSNP has increased the value of the transfer on successive occasions (see footnote 1) but the impact of inflation on the purchasing power of the transfer remains an important area of consideration.

Findings from the follow-up 1 qualitative research agreed with the quantitative results. Respondents testified that food prices have risen dramatically in recent years, but that this trend started before HSNP and could not be blamed on the cash transfers. In addition, it was felt that the scale and coverage of the HSNP were too limited to affect local markets. Traders insisted that they had not raised their prices as an opportunistic response to the extra cash injected by HSNP, with local people corroborating this by pointing out that their poverty makes them price-sensitive: if prices rise they shop around. Indeed, traders felt that they were secondary beneficiaries of the programme, owing to the increased cash being spent by HSNP beneficiaries[23]; from the quantitative data there is very little evidence of HSNP agents forcing beneficiaries to purchase something from their shop or charging extra for goods the sell (section **Error! Reference source ot found.**).

5.3.2 Local markets

Respondents across all sub locations mentioned an increase in business activity in recent years. This was evident from the increased number of shops and business start-ups and expansion of existing traders. The increased trading activity could also be seen in the increased volume and quantities of commodities being traded.

The most obvious feature of this increased market activity is the increased variety of products being traded and new services being sold.

> *"Now they sell variety of goods. There different types of soda that we didn't know before, like mango juice. Because people demand it, that's why they bring variety of goods." [FGD with female beneficiaries, Marsabit]*

> *"These days we even have a matatu that operates between Lafaley and Wajir Township and is mostly used by business people who bring goods from Wajir." [FGD with female beneficiaries, Wajir]*

> *"We have noted new commodities like phones and phone banking services introduced in this area by people from other places."[FGD with male non-beneficiaries, Kalemongorok, Turkana]*

According to respondents, the increased market activity was mainly linked to an increasing process of sedentarization, which was viewed as a response to multiple factors such as loss of livestock (and therefore livelihood) due to drought, increased competition for land due to population increases, violence between ethnic groups (over grazing rights etc.), and also the programmes and

h[22] For more detailed analysis see Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Quantitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012.
[23] See Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Qualitative Impact Evaluation Report: 2011 to 2012, March 2013; and Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Qualitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012.

polices of government and development agencies, that have encouraged sedentarization as solutions to food insecurity and poor access to education and health services. Because households have settled mostly around market towns, this has stimulated market activities to meet the increased demand. Where previously needs were met by relying on livestock and farm produce, recent droughts, in which harvests were low and animals were lost, meant that these needs are now met through the market. In addition, as pastoral households settle so they diversify into non-pastoral activities. Particularly women are perceived to diversify incomes by adopting new town-based activities such as petty trade[24].

> *"We used to depend on our farm produce but now since there is no farm people start to buy things they need from the market." [FGD with male beneficiaries, Badasa, Marsabit]*

As previously pastoral households settle in market towns so there is a parallel development in community infrastructure such as schools, health centres, fuel stations and so forth. Especially important are the development of new roads as these are perceived to facilitate market activities. In Badasa, for example, causal labourers working on a nearby dam increased demand for goods and services and shop keepers responded accordingly by bringing additional stock and increasing the variety of products they sold.

In addition to these broader factors, which no doubt a largely responsible for the development and expansion of local markets, the HSNP was also perceived to contribute to the increase in market activities. Local traders explained that beneficiaries' increased purchasing power resulted in increased demand to which they could respond with increased supply of a variety of goods and services. New traders had entered the market since the establishment of the programme, and existing traders, particularly HSNP paypoint agents, had increased stock levels and the variety of goods they sold. This was especially evident in the period immediately following the disbursement of the cash.

> *"This money is also assisting the business men. Why? Beneficiaries buy foods, clothes, and in this way, they boost the traders within the area. They can buy from the traders because they have the cash." [KII with trader, Marsabit]*

> *"Yes, markets have developed mostly because of the purchasing power of beneficiaries. Without them there could be no business and without HSNP there wouldn't be so much improvement of this shop."[KII with trader, Wajir]*

The reliability of the HSNP transfers had also increased traders ability to sell produce on credit, by guaranteeing sales when payments arrived. Traders mentioned that increased sales and profits from HSNP beneficiaries in turn enabled them to better service their debts to wholesalers, buy in larger quantities for retail, thus benefiting from lower prices, and increase credit-worthiness with suppliers. In this way, HSNP can be perceived to be helping to reduce supply-side credit constraints for traders as well as demand-side credit constraints for consumers.

The HSNP was also cited as causing temporary markets to arise on payment days, with external traders coming in especially to sell at more competitive prices.

[24] These findings corroborates those of previous studies. See Nduma I, Krisjanson P, McPeack J., (2001), Diversity in income generating activities for sedentarized pastoral women in Northern Kenya, *Human Organization* Vol 60 No 4

All this said it is important to note that the extent of market development is not consistent across all sub-locations. The main barriers to market development that were cited were liquidity constraints and poor market integration, as well as generalised poverty which suppressed demand.

> *"Business here doesn't do well. Instead people go and invest in other locations like Lodwar Town. This is because money circulation here is too low, and there are no jobs being created and no expansion of business. Businesses do not prosper because the area is poor… we rely on charcoal burning." [FGD with male beneficiaries, Turkana]*

These findings indicate that the potential for positive local economy impact of the HSNP cash transfer is dependent on the degree of development and integration of markets which in turn allow supply to respond to increased demand.

In summary, the evidence points to much a more dynamic market situation in recent years, illustrated by the increase in the number of shops, variety of goods offered, increased sales and competition, and new trading and market structures. While it appears that HSNP is contributing to this process, larger social and economic factors outside the programme are the primary determinants. Therefore, while there is some testimony from community members as to the HSNP's positive impact on local markets, it is difficult to definitively attribute this to the programme.

5.4 Livelihood activities

The main livelihood activity in the HSNP operational area is livestock rearing. But droughts, as well as economic, social and political changes, have disrupted pastoralist livelihoods and led to increasing reliance on other sources of income, such as casual labour and collecting bush products for sale. Cash transfers are expected to give recipients the means to invest in their livelihood activities, or to engage in new and more productive livelihood activities, not only because the extra cash provides working capital but because receiving regular cash transfers potentially gives recipients the confidence to take moderate risks.

According to the evaluation theory of change the HSNP transfers are expected to enable people to engage in new and more productive livelihood activities. Regular cash incomes may allow beneficiaries to take greater risks or invest in new capital that allows them to expand and improve their portfolio of livelihoods. Conversely, there is concern that the HSNP could create 'dependency', referring to households developing patterns of behaviour that rely on a regular cash transfer and are not accumulative and therefore are not sustainable without the transfer. For example, households might forsake productive opportunities because they know that they will receive a transfer or because collecting the transfer prevents them from engaging in other activities. Although it is suggested that there is little evidence of dependency arising in similar programmes, if it occurred dependency would have a serious impact on the potential for households to graduate from the programme.

At Follow-up 1, HSNP and control group households were asked about changes to work patterns and business activities since the baseline survey. Table 17 shows that 13% of HSNP households reported positive changes in their work patterns during this period, compared to just 2% of control households, a statistically significant difference.

> *"I used to fetch water for people with a donkey cart, but since the HSNP started I now own a butchery" [Beneficiary, Mandera]*

Also at follow-up 1, 5% of HSNP households reported being able to expand or improve their existing business in the last year, and almost all attributed these changes to HSNP. At follow-up 2 we see a similar trend, with some two thirds of households with businesses in treatment areas reporting that they had expanded or improved their business in the last 12 months. Again, the vast majority of these ascribe their ability to do this to HSNP; this is itself an improvement on the previous year, where less than one third of those improving an extant business attributed doing so to HSNP. Overall, some 5% of households had either been able to start, expand or improve a business due to HSNP at both follow-up 1 and follow-up 2.

> *"Since the coming of the programme things have changed, beneficiaries are now getting into business because they are now settled around here… those who were herding and lost their livestock are now doing small business." [KII with trader, Wajir]*

These numbers reflect the small portion of the community that own their own businesses. Moreover, respondents interviewed during the qualitative fieldwork at both follow-up 2 and follow-up 1 felt that the HSNP cash transfers were too small even to meet household needs, let alone finance existing livelihoods or diversification into alternative activities.

> *"The money is not enough to start a business. They need to eat, take transport with this money and so on, so the money cannot go far. And it comes after two months and not every month. The people who start something are those who don't have children in schools." [KII with trader in Marsabit]*

> *"Since you last visited me, we still gather wild produce for food, we burn charcoal to get money to buy food, because HSNP cash can never sustain the household food supply for more than a week." [Beneficiary, Turkana]*

On the other hand, the qualitative research also produced evidence that the injection of HSNP cash generated demand not only for goods but also for services. As discussed above (section 5.3.2), traders take advantage of the increased circulation of money in the local economy through increased sales. But another spill-over effect comes from beneficiaries buying labour. Some non-beneficiaries report that HSNP money is used to purchase casual work, especially by the elderly or those households that the transfer has enabled to engage in more productive activities.

> *"When they get the money they call us and we build for them." [FGD with male non-beneficiaries, Mandera]*

> *"With the introduction of HSNP some casual work is available for the non-beneficiaries. Beneficiary households now give out money for people to work in their farms."[KII with chief, Turkana]*

A form of labour exchange thus seems to have emerged that benefits non-beneficiaries who earn income through causal labour paid for by HSNP transfers. Given the undesirable nature of casual labour, it is possible that beneficiaries' social status could increase over time, as they become regarded as channels and sources of community livelihoods. At the same time, these changing social dynamics present a potential for resentments and new antagonism.

All this said, for the majority of beneficiaries the transfer was deemed inadequate to significantly affect local labour markets, constraining the ability of individuals to completely disengage from casual labour, even if they wished to do so.

Table 17 Self-reported changes in household work patterns and business activities by treatment status

Outcome	Follow-up 1		Follow-up 2	
	HSNP households	Control households	HSNP households	Control households
Work patterns				
% of households reporting changes to work patterns since BL	21	14	-	-
% of households reporting positive changes to work patterns since BL	13***	2	-	-
% of HSNP households reporting positive changes to work patterns since BL as a direct result of the HSNP cash transfers	14	N/A	-	-
Business activities				
% of households that currently have a business	15	9	9	7
% of households able to expand or improve existing business in last 12 months	5*	2	6	3
% of HSNP households able to expand or improve an existing business as a direct result of receiving HSNP cash transfers	4	N/A	5	N/A
% of households started a new business activity since BL	3	1	0	0
% of HSNP households that started a new business activity as a direct result of receiving HSNP cash transfers	2	N/A	0	N/A
% of HSNP households that started, expanded or improved a business as a direct result of receiving HSNP cash transfers	5	N/A	5	N/A

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Asterisks in column 1 indicate the significance of the difference between the treatment and control group: *** p<0.01, ** p<0.05, * p<0.1. BL = baseline survey.

Among policy makers there is a worry that unconditional cash transfers could cause ‘dependency’, meaning that people will change their behaviour in order to become or remain eligible for the programme, and thus that beneficiaries will not be incentivised to work. If the value of the transfer is generous enough, for instance, beneficiaries might stop working, making them dependent on the programme for survival.

This potential impact of HSNP on labour supply is assessed by considering the proportion of adult household members that report their main or secondary current activity as ‘productive work’ (livestock herding; farming; collecting bush products for sale or consumption; self-employment; paid work including casual labour; helping in family business; and fishing). Unpaid domestic work is not considered as productive work.

Table 18 Proportion of adults (aged 18-54) engaged in productive work

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
% of adults (age 18-54) whose main or secondary activity is productive work	58.5	64.4	5.9**	63.5	68.1	4.6*	1.295	4761
% of adults (age 18-54) whose main activity is productive work	53.8	58.9	5.0**	58.5	61	2.5	2.578	4761

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%; (2) Productive work is defined as being the following activities: herding / livestock production; farming / agricultural production; collection bush products for sale; collecting bush products for own consumption; self-employment; paid work including casual labour; help in family business; and fishing.

Table 18 reveals no significant impact on labour supply between baseline and follow-up, either in HSNP or control households, suggesting the programme is not creating dependency among beneficiaries. This finding persists after controlling for other factors (Table C.3). Given the low value of the transfer and the fact that there are no graduation criteria – i.e. households are not removed from the programme once they reach a certain level of income or assets – this result is not unexpected.

> *"We still perform the work activities. The money cannot satisfy all your needs, that is why they we still perform such activities…it can only buy food stuff, you cannot even extend it to your other needs that is why people still do casual labour." [FGD with female beneficiaries, Marsabit]*

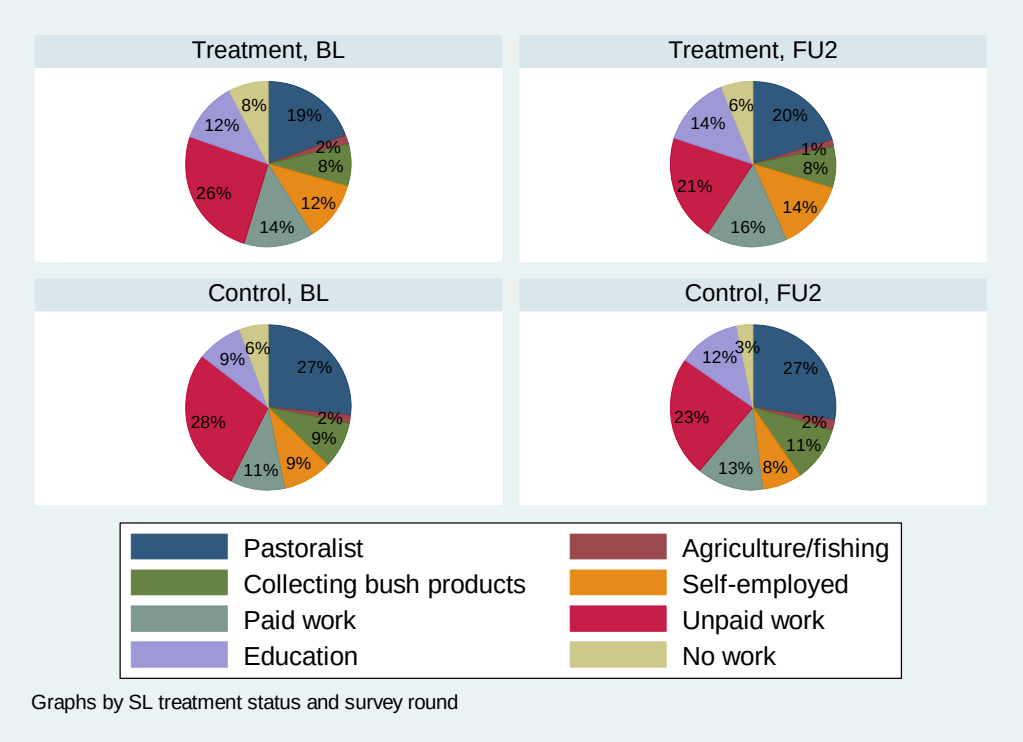
As well as not creating dependency, the HSNP has not affected the sources of livelihood pursued by households. Figure 10 shows the livelihood activities undertaken by households were broadly similar in treatment and control areas at baseline, and remain so after two years of programme operations—although there appears to be a higher portion of households engaged in pastoral livelihoods in control areas this difference is not significant. The two main livelihood activities undertaken by households are pastoralism and unpaid work (which includes domestic duties).

This situation has not changed over time, but two interesting trends can be discerned in the two groups individually (treatment and control). One is that, in treatment areas, the proportion of household members aged 18-54 years whose main activity is unpaid work has fallen with statistical significance, indicating that more household members of working age are being required to engage in income producing activities. Similarly, in control areas, we see a significant increase of similar magnitude in the proportion of working age adults engaging in paid work such as casual labour. While these trends do not result in statistically significant dif-in-dif measures (Table D.8), they do tend to corroborate the general picture of increased market activity and labour opportunity (see above and section 5.3.2).

Figure 11 shows the mean share of total household income from each livelihood source. It testifies to the significance of pastoralism as a source of household income in these areas. Sales also forms a significant share of overall households income, including activities such as selling firewood, charcoal and other bush products, petty trading, local brewing, selling prepared food and drinks, wholesales, and selling food aid. Employment is the third most important slice of the income pie, and includes activities such as casual labour as well as employment in trades,

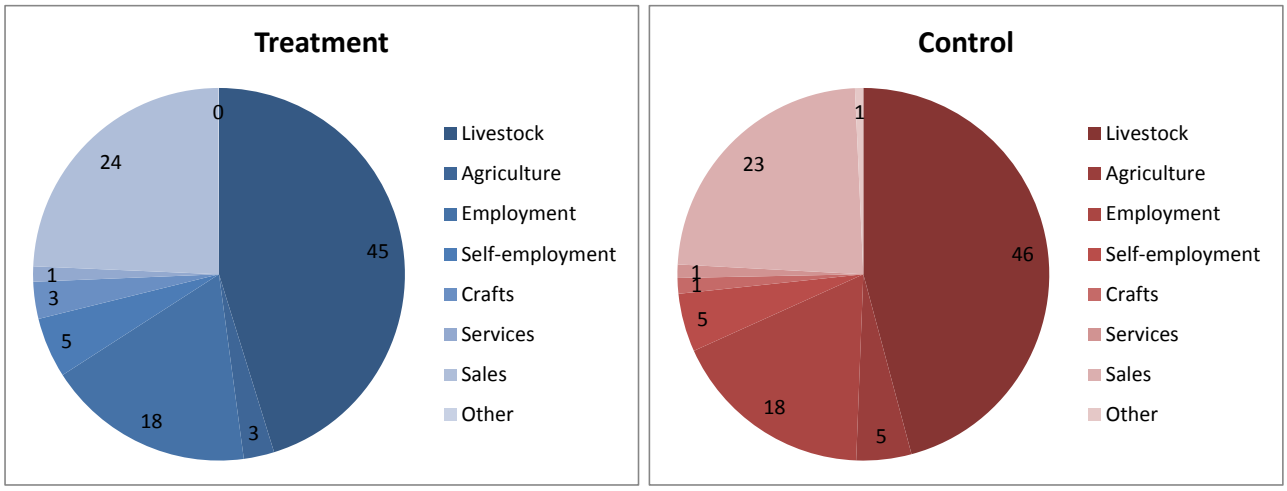
domestic services (cleaner, maid, nanny), professions (teacher, health worker), and salaried and public-sector workers. Agriculture and self-employment make up only a small portion of overall income.

Figure 10 Household members aged 18-54 years main livelihood activities by treatment status at baseline and follow-up



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: the data in these charts differs slightly from the data presented in Table D.8 because of the way the two sets of figures are calculated. The columns in Table D.8 do not total 100% because a tiny number of households with livelihood activities that are not included in the given categories are excluded. In this chart, the percentages are calculated based on the sum of all livelihoods that are included, hence they do total 100% (before rounding to one decimal place for presentation purposes).

Figure 11 Mean share of total household income by livelihood, by treatment status



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Other includes begging and collecting bush products (such as fire, water, wild food etc.) for domestic use.

5.5 Saving, lending, borrowing and credit

Cash transfers can have an ambivalent impact on borrowing behaviour. On the one hand, the extra cash may allow beneficiaries to avoid having to borrow and thus becoming dangerously indebted – they may even allow them to pay off old debts. On the other hand, knowledge that cash transfers will be coming regularly allows beneficiaries to borrow with confidence, and gives traders and moneylenders the confidence to lend to them. If the cash transfers are sufficient, some of this money can be saved or even lent to non-beneficiaries.

Households in rural northern Kenya have little access to credit from formal institutions like banks, because their incomes are low and volatile, and because they lack assets for collateral.

> *"In banks you have to pledge your assets and since we don't have assets to pledge, we cannot access credit there." [Beneficiary, Marsabit)*

Local people therefore tend to borrow from shops, relatives and neighbours. Informal lenders do not generally charge interest on loans, which are often made in kind rather than cash – e.g. buying food or fuel on credit rather than borrowing money.

> *"For credit, people may give you food but not money." [Beneficiary, Mandera]*

HSNP transfers are expected to allow households to improve their management of cash flows by providing a predictable and regular income. This could allow households to take loans (either directly, using the HSNP transfer acts as collateral, or indirectly, with the increased financial security encouraging loan-taking). The transfer may also reduce households' need to borrow at adverse interest rates because they have HSNP cash available. HSNP transfers could also increase household savings and thus enable households to loan out money to friends or family in need. Non-beneficiary households may also thus have access to transfers through borrowing from beneficiaries. Households receiving the HSNP transfer may also be seen as more creditworthy by shop keepers (in particular HSNP paypoint agents) because the cash transfer provides a regular income, increasing their ability to purchase on credit and thus helping to smooth consumption.

As discussed above, there is much qualitative evidence that the HSNP has improved the credit-worthiness of beneficiary households in relation to food, education and livelihood expenditures (see sections 4.2, 5.2, 5.3 and 5.4). But what is the evidence from the quantitative survey?

Table 19 presents the dif-in-dif impact measures for the proportion of households currently saving, that have borrowed cash in the past 12 months, and that have bought something on credit in the last three months. As was found at follow-up 1, the programme is having a statistically significant impact on increasing households' uptake of credit, although at follow-up 2 this result is only apparent once we control for other factors and variation in cumulative value of transfers (Table C.3). This result is being driven by poorer HSNP households.

There are also significant positive impacts on the proportion of HSNP households that have cash savings and the proportion that have borrowed cash in the last month. This result persists once we control for other factors and variation in cumulative value of transfers, although the magnitude of the impact becomes much smaller. The heterogeneity analysis reveals that the savings impact appears to be driven by larger households, which is surprising since impact in most other areas tends to be driven by smaller households for whom the effective value of the transfer is higher.

However, the impact on borrowing is stronger for smaller households, which may reflect their generally poorer status. Another surprising result is that both impacts are stronger for better off households, although this might reflect the fact that, all things equal, these households are more able to both save and borrow.

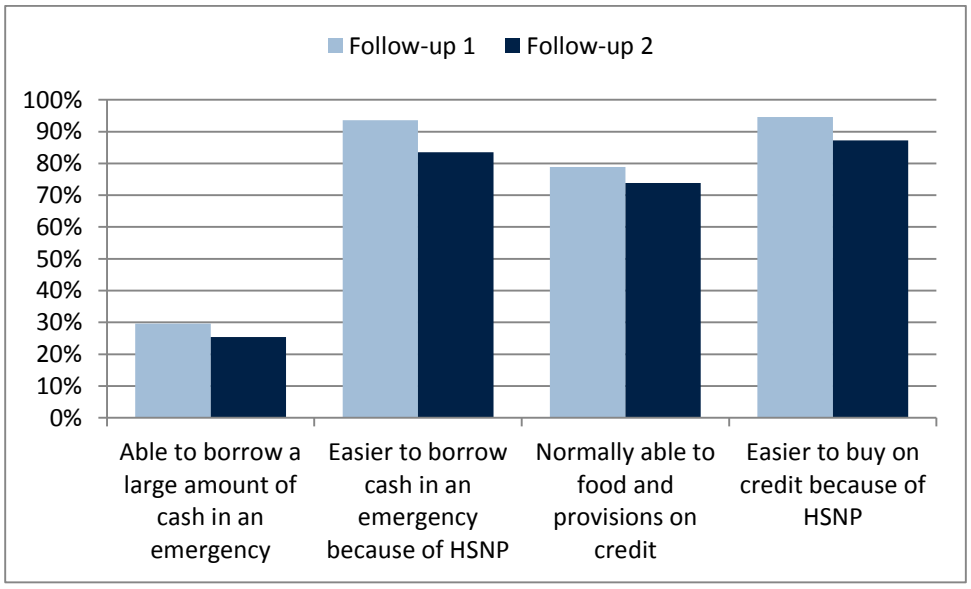
Table 19 Saving, borrowing and credit

Proportion of households (%) that…	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
currently have cash savings	4.8	14.5	9.7***	5.3	7.7	2.4	7.293*	2436
have borrowed money in the last 12 months	12.9	22.2	9.2*	10.2	9.7	-0.5	9.717*	2436
bought something on credit in last 3 months	63.4	72.3	9	60.6	63.5	2.9	6.084	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

The increased ability to access credit or loans, either with shop keepers or family and friends, will not necessarily mean that households will take up this opportunity, since it is normally not sensible to get into debt unless there is a specific need. Thus at follow-up 1, in addition to questions about actual borrowing behaviour, HSNP households were also asked about changes in their potential access to credit. Figure 12 shows that almost one-third of HSNP households report that they would be able to borrow a substantial amount of cash in an emergency (considerably higher than the 22% who actually did borrow cash in the last 12 months). Almost all of these households report that it is now easier to borrow cash specifically because they are receiving HSNP cash transfers. Similarly, nearly 80% of HSNP households reported being able to purchase food and other provisions on credit (again higher than the 72% that actually did buy on credit in past three months), and almost all of these households attributed this easier access to credit purchases to the HSNP.

Figure 12 HSNP impact on emergency borrowing and credit after one and two years



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

However, some caution that beneficiaries are apt to be overly optimistic about the extent to which HSNP cash could finance their borrowing and thus put themselves at risk of getting into debt.

> *"The beneficiaries' borrowing mostly exceeds their expectations and there are always recurring balances being taken forward." [Paypoint agent, Wajir]*

> *"I take credit from shops and when the HSNP money comes I have already used a lot of credit. Sometimes the credit I use is more than the HSNP cash." [Beneficiary, Mandera]*

5.6 Vulnerability to shocks

Cash transfers potentially give vulnerable households the means to 'cope' with the consequences of adverse shocks, for example to buy food if their harvest fails or their livestock die because of a drought. Using cash is preferable to adopting damaging coping strategies such as distress sales of productive assets like livestock, which would leave the household even more vulnerable to future shocks. Cash transfers could also allow investment in risk management behaviour, such as immunising livestock against disease. These are basic 'safety net' functions that the HSNP is intended to provide.

Two severe covariate shocks, that is, shocks that affect many households in a community, affected communities in northern Kenya during the period covered by this evaluation: drought and inflation. The long rains in March-May 2011 were poor in Mandera, Marsabit and Wajir, causing many livestock deaths and compromising the livelihoods and nutrition of the local people. Price inflation between the baseline and follow-up surveys was 41% for a basket of 29 essential items (mainly food and kerosene). This combination of drought plus inflation magnified the impact of each shock, because prices of goods that people have to buy were rising while prices of assets they have to sell were falling.

> *"Yes, there has been a change in the price of goods and services in our local shop and in the market. Prices have shot up and living conditions have become very hard. Costs of transport have doubled making it even impossible for the household to move and access goods and services at cheaper prices. Households that lead nomadic lives are affected because livestock market still fetches low prices. Livestock health has affected the price in a negative way." [Beneficiary, Turkana]*

At follow-up 1 the programme was found to have no significant impact on the proportion of households reporting a decline in their wellbeing compared to one year ago (at the time of interview). Although there were a high proportion of households reporting a severe decline in their welfare (clearly due to the drought which occurred in this period), this affected both HSNP and control households. Similarly, while there was a significant decline in five of the strategies reported for HSNP households, a similar set of findings was recorded for control group households, indicating that the positive trend in terms of coping strategy adoption among beneficiary households could not be attributed to the HSNP. These declines were surprising given the stresses that households were facing over the period covered, but may be explained in part by the inherent difficulties in capturing these types of data using quantitative means.

Table 20 shows that at follow-up 2 the programme continues to have limited impact on reducing the need for negative coping strategies. Reflecting the fact that the programme has increased HSNP households' access to credit (see section 5.5), there has been a significant impact on the proportion of HSNP households that had to buy food on credit in the 30 days prior to interview. However, this result is not robust, with the impact becoming significantly negative (but small in magnitude) once we control for other factors (Table C.3). This could indicate that, although HSNP households now have better access to credit, the programme has made them less vulnerable and therefore they do not actually need to take up this credit as a necessity in the face of shocks. The heterogeneity results suggest this impact is being driven by poorer and smaller HSNP households, whom are less likely to purchase items on credit as a result of the transfer.

The only other significant coping strategy result is a positive impact on the proportion of HSNP households that had to sell non-livestock assets in the 30 days prior to interview. However, this impact again becomes significantly negative once we control for other factors. The heterogeneity analysis suggests that this impact on reducing the need to sell assets is driven by smaller and relatively better off HSNP households. These findings are corroborated by the qualitative research results analysed in section 4.4 above).

Table 20 Coping strategies

Proportion of households (%) that in the last 30 days have had to…	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Borrow food or rely on help from family or relatives	57.9	43.9	-14	65.7	37.5	-28.2***	14.24	2435
Sell any of your animals to buy food	28.4	43.1	14.8*	42.6	52.1	9.4	5.321	2435
Sell other assets (not animals)	2.1	3.4	1.3	3	1.2	-1.8*	3.113*	2435
Buy food on credit from a shop	61.9	80	18.1***	61	66.8	5.8	12.31**	2435
Collect and eat wild foods and/or animals	11.4	4.3	-7.1**	18.5	6.9	-11.6**	4.467	2435
Reduced number of meals	77.5	66.1	-11.4	89	62.3	-26.7***	15.29	2435
Eaten smaller meals	74.5	56.3	-18.2	87.8	55.2	-32.6***	14.48	2435
Skipped entire days without eating	57.7*	44.9	-12.7	72.7	41.6	-31.1***	18.38	2435

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

It is worth noting that, due to the sub-locations that were dropped at follow-up 2 the balance of the sample at baseline has been affected in relation to the proportion of households who skipped entire days without eating. However, the dif-in-dif estimate or programme impact remains insignificant.

Qualitative fieldwork suggests that even if drought-affected households could not avoid adopting damaging coping strategies, they were partly protected by HSNP cash, which enabled them to sell fewer livestock, better maintain food consumption, and borrow less than they would otherwise have been forced to do.

"The food we eat from home is sometimes not enough. We are content with what we eat now although it is not enough. I can say (though) that it is better than before the HSNP programme started. This is because now our parents can buy for us using the HSNP money when the relief food is finished." [FGD with children, Wajir]

5.7 Empowerment of women

Cash transfer programmes can be economically and socially empowering for women. This can happen, for instance, if women are designated as recipients of the cash, or if transfer income is intended to be spent on acquiring food, where women are primarily responsible for providing food within their households. Targeting cash transfers at women is assumed to increase their control of household resources, leading to improvements in various indicators of wellbeing for women, children and households. Conversely, there may be a risk that insensitively designed programmes will disempower women, for instance if targeting women as cash recipients generates intra-household tensions over how the money should be shared and spent, possibly provoking gender-based violence against women.

In fact, HSNP transfers did tend to be targeted towards female household members, even though this was not a specific programme policy. This is reflected in the fact that 70% of named beneficiaries are women (rising to 82% and 74% for CBT and DR respectively), with the person in that normally decides how the HSNP transfers are spent being female for 63% of HSNP households (see also section 3.2 above). Furthermore, anecdotal evidence shows that HSNP has been labelled as 'women's money' in some places.

"They say this is the money for women. We were advised by the programme staff to consider women as primary beneficiaries because they know the problems of the household." [Young women focus group, Marsabit]

To the extent that this represent a change in women's relative control over household resources, it is therefore possible that the programme could influence broader gender relationships within the household. The evaluation investigated whether the fact that HSNP income is controlled by more women than men is influencing women's wider decision-making power over household resources in general.

Table 21 Proportion of main budget decision makers that are female, by sex of household head

% of main budget decision makers that are female, for…	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
All households	46.2	52.5	6.2	44.1	44.1	7.9	-1.674	2436
Female-headed households	86	98	12.0***	81.8	81.8	10.6***	1.421	738
Male-headed households	25.7	29.4	3.6	26.6	26.6	7.3	-3.681	1698

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

In the evaluation survey each household was asked to identify the household member that was the main person to who decides how the overall household budget (not just the HSNP transfers) used. This person was defined as the *main budget decision maker*. **Error! Reference source not**

ound. above shows the proportion of the main budget decision makers that are female for different kinds of households: for all households, female-headed households and male-headed households.

At follow-up 1, we found the programme was having a significant but limited impact on women's control over the household budget in both male- and female-headed households (although this impact was only apparent once we controlled for other factors). At follow-up 2 we get similar results for female-headed households, but this time find no impact on male-headed households. As was the case at follow-up 1, while we find a statistically significant increase in the proportion of decision makers that are female for female-headed households, this trend is observed for both treatment and control households and the basic dif-in-dif impact estimate is not statistically significant. However, once we control for other factors we do find that the programme is having a small but statistically significant impact on the proportion of main budget decision makers that are female, with this impact being driven by smaller and poorer households (Table C.3).

Therefore, in terms of women's control over their household budgets, for female-headed households HSNP does appear to be having a limited positive impact on female economic empowerment.

Furthermore, as we have already noted in regard to the programme's impact on livelihood activities and local economies, more evidence of women's economic empowerment comes from the fact that petty trade activities and retail businesses are more likely to be undertaken by women than men (who are more likely to be involved in livestock trading). At follow-up 1 it was noted that:

> *"Most of the businesses are run by women. If there are 30 shops in town at least 20 would be run by women" [Trader, Marsabit]*

And that some HSNP cash was being used as working capital for women's trading enterprises.

> *"There are so many people, mostly women, who have set up tables where they sell vegetables and other smaller stuff and they have started these tables after this programme. In fact most of them are people who are beneficiaries of the HSNP. There are also others, mostly younger women, who started running small restaurants after the HSNP started" [Trader, Wajir]*

At follow-up 2 this trend is still observed, and even broadened in scope perhaps, with testimony as to women's business groups being set up between beneficiaries and even non-beneficiaries.

> *"Some have created groups with non-beneficiaries, like women groups, working together in different businesses. They have employed several persons." [FGD with male non beneficiaries, Wajir]*

While the programme does appear to be having some positive impact on women's economic and social empowerment by enabling some women to take more control of the household budget and to increase their potential for undertaking income generating activities, it is also possible that delivering cash transfers to women in male-headed households might generate tensions between men and women, especially between husbands and wives. Conflict could also develop over how cash transfers are spent, even if the cash is collected by men on behalf of the household. This was reportedly an issue among polygamous households, if male recipients failed to distribute the cash equally among all wives.

In fact the qualitative findings suggest that the programme may indeed have had just such unintended consequences in exacerbating tensions within households. At follow-up 1 some respondents, mainly men and mainly in Mandera, claimed that the HSNP was increasing levels of conflict and tension between men and women, as men felt that their role and status as household heads were being undermined.

> *"The programme has made many people fight and disagree, mostly between the husbands and wives. I am saying this because most of the beneficiaries are women so they have become very rude and are not listening to their husbands." [Male elder, Mandera]*

> *"Before, the women were taking orders from their husbands, the husbands used to pay the bills and used to be in charge of the household, but since the HSNP started women are more powerful than men because they are the primary beneficiaries, they tell you that you have to beg since it's their money, and the men are complaining about their wives because they are not taking orders from them." [Male non-beneficiary, Mandera]*

One interpretation of these statements is that the HSNP is empowering women to claim more equality with their husbands. However, it is also clear that men do not all share this interpretation. Their tone is derogatory and they complain about women becoming more assertive and challenging their dominance in the home. In extreme cases, according to some respondents, the end result was divorce.

> *"There are some cases where the husbands and wives disagree and divorce each other. The wife is the primary recipient while the husband is the secondary recipient. The husband usually wants the money to be divided into two. But then the wife thinks the money comes in her name and so it belongs to her. But then the husband insists that the money must be shared." [Male non-beneficiary, Mandera]*

> *"Previously the man used to pay for everything. But now when the woman gets the money and she is being told to pay for some things, and when she refuses and they start arguing. These arguments can lead to break up in families. The number of divorces has reached 20 cases" [Male elder, Mandera]*

Indeed, here is some evidence for this from the quantitative survey (see section 6.3 below).

Overall there is some evidence that the programme is having an impact on women's economic and social empowerment by enabling some women (specifically those in female-headed households) to take more control of the household budget and to increase their potential for undertaking income generating activities. However, there is a lso some evidence, particularly from the qualitative research, that in some cases this is having the unintended consequence of creating tensions within households, especially between female HSNP recipients and their husbands.

5.8 Well-being of older people and children

Cash transfer programmes can be beneficial for the well-being of vulnerable groups such as older persons and children. Older persons can benefit directly (e.g. from the HSNP social pension) or indirectly (by being a member of a beneficiary household). Expected benefits for children include improved food consumption and nutrition, enhanced access to education, and reduced child labour. Two indicators of well-being are assessed for both groups: a health indicator (the

proportion of the population suffering an illness or injury in the three months prior to interview) and a labour indicator (the proportion of people whose main activity is paid or unpaid work). The analysis of the impact on children's education is presented separately in section 5.2 above.

5.8.1 Older people

To assess the potential impact on health outcomes one of the health indicators presented in section 5.1 above (proportion of the population reported as suffering from any illness or injury in the three months prior to interview) is used, but this time restricted to those aged 55 years and above.

To assess the impact on labour requirement, the dif-in-dif impact measure is estimated for the proportion whose main activity is paid or unpaid work, both including and excluding unpaid domestic work. Paid or unpaid work is defined as covering the following activities: herding/livestock production; farming/agricultural production; collecting bush products (for sale or consumption); self-employed; paid work including casual labour; help in family business; fishing; unpaid domestic work; unpaid other work.

Table 22 Health status and labour supply for people aged 55 and over

Proportion of people aged 55+…	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Ill of injured in past 3 months (%)	36.6	25.7	-10.8	36.6	22.5	-14.1**	3.278	2017
Whose main activity is paid or unpaid work (%):								
Including unpaid domestic work	77.2	79.3	2.1	76.9	80.9	4	-1.910	2017
Excluding unpaid domestic work	62.8	70.8	8.0**	60.2	71.7	11.5**	-3.556	2017

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table 22 shows that the HSNP is not having a statistically significant impact on the health status of people aged over 55 years in HSNP beneficiary households, a result which persists even after we control for other factors (Table C.3). This finding is consistent with results at follow-up1, and is not entirely surprising; the path from cash transfers to improved health is complex and indirect (unlike, say, spending on health care). The reporting of illness can also be subject to a variety of factors, which might explain the declines reported in both HSNP and control households.

In terms of labour supply, at follow-up 1 the programme was found to have a statistically significant impact on reducing the need for older persons to engage in non-domestic work, although this impact was only apparent once other factors were controlled for. Although the majority of older people (around 80%) reported their main activity as work (paid or unpaid), for those in HSNP households there was a shift to doing more unpaid domestic work, and away from other types of work (e.g. casual labour for subsistence). This impact was driven by older people in poorer households, and in smaller households (where the effective value of the transfer is higher).

However, at follow-up 2 this impact on shifting older people away from non-domestic work is no longer apparent, even once we control for other factors (Table C.3). Interestingly, the proportion of older people engaged in non-domestic work (paid or non-paid) has increased significantly for both

treatment and control households, and now stands at just over 70% for both groups. This increase could reflect a response to the generally adverse economic and climatic conditions in the HSNP areas, which have increased the need for older people to find paid employment.

At follow-up 1 the qualitative fieldwork found no impact of HSNP on inter-generational relations. The dominant response was that older persons are treated with respect and the HSNP had made little or no difference to this. One positive effect mentioned was that community elders are appreciated for their leadership role in HSNP rights committees. Only one complaint was recorded about tensions created by the social pension, which targets people over 55, where younger relatives are often nominated as secondary recipients in case the primary beneficiary is too old or sick to collect the payment themselves.

> *"This programme brought problems between the elders and the young men. Elders have made the young men secondary recipients, the young men assume that whenever they collect the money, they are entitled to 500 shillings at least. But the elders are not willing to give out money so there is always a problem between the old men and their secondary recipients" [Male elder, Marsabit]*

However, this statement should be set in the context of very small portions of beneficiaries complaining that they had any problems with alternative recipients collecting the cash transfer on their behalf[25].

Overall, therefore, it seems the programme does not seem to be having a significant impact on two specific aspects of the well-being of older people: health status and labour supply. However, neither has it appeared to increase tensions between older and younger people, a possible unintended consequence that was feared, especially in social pension areas.

5.8.2 Children

The same indicators were used to assess the impact of HSNP on the health status and labour supply of children. As we found at follow-up 1, Table 23 reveals no statistically significant impact on child health status, a finding that persists once we control for other factors (Table C.3).

In terms of child work, at follow-up 1 we did find that the programme was having a significant negative impact on labour supply, both including and excluding unpaid domestic work, although this result was only apparent once we controlled for other factors. One year on and we no longer find any impact on the proportion of children engaged in paid or unpaid work *including* unpaid domestic work, but the significant negative impact on non-domestic work (paid or non-paid) persists. As at follow-up 1, this impact is only apparent once we control for other factors (Table C.3). This impact is being driven by poorer and larger households.

In summary, as well as the positive impacts on education set out in section 5.2 above, the programme does seem to be having additional positive impacts on children's well-being. While the programme does not appear to be improving the health status of children, it is having a significant, albeit small, impact on the proportion of children engaged in non-domestic work (paid or unpaid).

[25] Kenya Hunger Safety Net Programme Consolidated Operational Monitoring Report for Follow Up 2 (Feb–Nov 2012), March 2013.

Table 23 Health status of children and child work

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Proportion of children (0-17) ill of injured in past 3 months (%)	20	11	-9	20.1	10.2	-9.8**	0.841	7572
Proportion of children (5-17) whose main activity is paid or unpaid work (%):								
Including unpaid domestic work	22.4	19.7	-2.7	29.2	25.7	-3.5	0.768	6030
Excluding unpaid domestic work	15.1	14.7	-0.4	19.5	18.6	-0.9	0.445	6030

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

6 HSNP Impact – Unintended impacts

This chapter reports on possible unintended impacts of the HSNP, including on informal transfers, household composition, household mobility and social tensions.

6.1 Informal transfers and sharing

The impact of cash transfers on informal transfers could be either positive or negative. Beneficiary households may reduce their dependence on informal transfers, which also alleviates the pressure on family and friends who were providing support (and are often almost as poor and vulnerable). Alternatively, formal transfers such as the HSNP could crowd out informal transfers and undermine reciprocity systems, which could be dangerous in the long-term, especially if cash transfer programmes ultimately prove financially or politically unsustainable and are eventually phased out.

'Informal safety nets' refers to support received from other households or individuals, based on norms of reciprocity and solidarity. In northern Kenya these norms of sharing and mutual support are strong and grounded in cultural practices and religious obligations. When asked whether they regularly share any of their HSNP cash transfers with anyone outside the household (including sharing out of obligation, and sharing with wives or co-wives who live in other households, but not lending), one in four HSNP beneficiaries reported that they do share in this way. The self-reported mean amount shared with others from the most recent transfer received was about KES 500, representing a considerable proportion of the HSNP transfer (see Table 24 below).

Table 24 Sharing of the HSNP transfer (at follow-up 1)

Outcome	HSNP households (As)
Proportion of households regularly sharing/giving some of the HSNP cash transfers with anyone outside of the household (not as a loan) (%)	25
Mean amount out of last transfer shared with others outside of household (KES)	501

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

To further understand the impact of HSNP on informal transfers and sharing, households were asked about the extent to which they had given and/or received informal cash and in-kind support. Table 25 shows the proportion of households giving and receiving cash and in-kind support in the three months prior to interview, and among those giving/receiving the mean value given/received.

At follow-up 1 we found that HSNP households had become less likely to be receiving informal in-kind support and more likely to be giving it, with this impact being driven by relatively better off HSNP households. On the one hand this could be interpreted as a positive result, to extent that some HSNP households were no longer in need of support and therefore less of a burden on other households in the community. On the other hand this could be interpreted as the programme having disruptive impact on informal local support mechanisms, which could have potentially negative consequences in the longer term.

Results at follow-up 2 indicate that the only significant impact is a negative one on the value of in-kind support received. However, this result becomes insignificant once we control for other factors. Conversely, once other factors are controlled for the only significant impact is on the value of in-

kind transfers given (Table C.4). This result is driven by smaller households, and most pronounced for relatively better off households. Furthermore, once the effective per capita cumulative value of the transfers received is accounted for, there is also a significant positive impact on the proportion of households giving informal transfers, driven by poorer and larger households. It also appears that there may be some substitution effects, with relatively better-off HSNP households experiencing a small negative impact on the proportion receiving informal cash support.

So the relatively high prevalence of self-reported sharing of HSNP transfers indicated by Table 24 above is only weakly reflected in the limited impact on the proportion of HSNP households that have given informal cash support to other households in the three months prior to interview. This suggests that some of the HSNP transfer sharing might simply reflect sharing that would have occurred in any case. On the other hand, the programme does appear to be having a much stronger (positive) impact on the value of in-kind sharing. In other words, it is in-kind rather than cash sharing that the programme is promoting. This is broadly consistent with the findings of the qualitative research. HSNP beneficiaries are apparently providing more support to others than before.

> "Non-beneficiaries livelihoods have changed in that whenever it is pay day we normally go to our brothers and sisters who are beneficiaries and they give us something small, we then use the amount given to settle our debts… When there are fundraising events for wedding ceremonies, beneficiaries help raise that money. So I can say we are benefiting in one way." [FGD with male non beneficiaries, Wajir]

This ability of beneficiaries to support others, and even purchase their labour (see section 5.4 above) is possibly seen to increase their social status.

> *"Generosity is exercised by the beneficiaries when they share cash transfer money with members of households, neighbours and friends. The poor and needy people in our community are now commanding respect since the HSNP started." [Male elder, Turkana]*

At follow-up 1 the study also found limited evidence of substitution effect, with only a small negative impact on the proportion receiving informal cash support observed for relatively better off HSNP households, but no apparent impact on the prevalence and level of in-kind support received.

> *"The HSNP has not affected the way we help one another because we understand that the cash transfer is just a help for a short time. And we will be left behind with our friends, so we should not stop supporting one another at all." [Beneficiary, Marsabit]*

Only a few cases were mentioned where beneficiaries felt that their participation in the HSNP had 'crowded out' the support they previously received from others, or from other programmes.

In summary, while a quarter of the beneficiaries reported regularly sharing some of their HSNP transfers, much of this may reflect sharing that would have occurred in any case. Informal transfer systems are inherently complex, as is their relation to public social interventions. This said, the evidence suggest that the programme does appear to be having a positive impact on the value of in-kind sharing. Furthermore, the programme does not appears to be having significant substitution effects, with only a small impact negative impact on the proportion receiving informal

cash support observed for relatively better off HSNP households, and no apparent impact on the prevalence and level of in-kind support received.

Table 25 Proportion of households giving and receiving informal cash or in-kind transfers in past three months and mean value given/received

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Receiving cash support								
Proportion receiving informal cash transfers (%)	45.6	39.1	-6.5	39.1	34.8	-4.3	-2.120	2436
Mean amount received for those receiving (KES)	3632.5	3566.9	-65.6	2416.6	3043	626.4	-692.0	984
Receiving in-kind support								
Proportion receiving informal in-kind transfers (%)	41.3	23.7	-17.7***	42.4	25.8	-16.6***	-1.056	2436
Mean value received for those receiving (KES)	616.4**	626.1	9.8	362.7	645.2	282.5***	-272.7***	634
Giving cash support								
Proportion giving informal cash transfers (%)	21.1	21	-0.1	19.7	13.8	-5.9	5.825	2436
Mean amount given for those giving (KES)	2363.3	824.2	-1539.1	2482.1	584.1	-1898.1	358.9	446
Giving in-kind support								
Proportion giving informal in-kind transfers (%)	25	13.6	-11.4	25	12	-13.0**	1.599	2436
Mean value given for those giving (KES)	270.2	261.5	-8.6	281.1	189.1	-92.0**	83.35	317

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

6.2 Household composition

The fact that cash transfer programmes target some individuals and households but not others could have indirect effects on household composition. For instance, relatives might move in with someone receiving a cash transfer to share the benefits (e.g. a child may move to her grandmother when she registers for a social pension), or families might reconfigure their living arrangements if eligibility criteria are related to household composition (e.g. the HSNP targets households with a high dependency ratio) – though this strategic behaviour becomes more likely with multiple rounds of targeting and re-targeting.

Table 26 below shows there are some counter-intuitive results in terms of HSNP impact on household composition, such as reduced household size, falling dependency ratio and falling numbers of children per household amongst beneficiaries. The impact on number of children was also apparent at follow-up 1 and is surprising because typically, you might expect a cash transfer programme to attract more children in beneficiary households. However, given the complexity of factors determining household composition in these areas, especially given the mobile nature of the predominant livelihood activity, these findings need further research to unpick.

At follow-up 1 the qualitative research provided one possible explanation for the effect of the HSNP on social pensioners:

> *"The old man who is the beneficiary is left behind with the children who are in school, and the mother and the other family members shift to the bush to minimise the expenses." [Male elder, Mandera]*

It could thus be that, given that the transfer is not indexed to household size, beneficiary households are reducing in size in order to ensure the efficacy of the transfer is maintained, instead of being diluted to the point of not making a difference.

It is worth noting that the positive trends observed for both HSNP and control households in the proportions of households containing elderly members, orphans and an elderly household head are as expected for a panel cohort of households in which household members are aging or can become orphaned.

Table D.2 shows how these impacts on household composition are reflected in changes in the characteristics of the study population. Interestingly, the programme appears to be having a positive impact on the proportion of adult males (aged 18 and over) that are married or consensual union. This result is especially odd as we also find a positive impact on the number of males who are divorced (see section 5.7 above). The increase in marriage rates could be a result of households consolidating in response to the transfer, or they could be part of broader trends that just happen to have affected evaluation areas in non-random ways.

There is also a significant positive impact on the average age among those living in HSNP households. As above, it is unclear what might be driving this puzzling results.

However, the programme has had no impact in the proportion of adults aged 18 and over with no national ID card, although there has been a significant (but small) decrease in treatment areas. Having a national ID card was a condition for being a programme recipient (i.e. the named card holder able to collect the HSNP cash), but this increased incentive to register for a national ID appears not to have been fully matched by efforts to increase civil registration.

In summary there are some puzzling findings in terms of programme impact on household composition that are difficult to explain, even counterintuitive. There is a significant negative impact on household size, dependency ratio score and the mean number of children per household. There is also a slightly puzzling positive impact on the average age of individuals living in HSNP households. However, the programme is also having a significant positive on the proportion of adult males living in HSNP households that are married or in consensual union. Interestingly, there is no impact on civil registration, despite the additional incentive to have a national ID card as a result of the programme.

Table 26 Household composition

Outcome	HSNP households			Control households			Dif-in-Dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean household size	6	6.1	0.1	5.5	5.9	0.3***	-0.261**	2436
Mean dependency ratio	0.7	0.7	-0.0***	0.7	0.7	0	-0.0148*	2436
Mean number of children (<6) per household	1	0.8	-0.2***	1	0.9	0	-0.121**	2436
Mean number of children (<18) per household	3.4	3.3	-0.1	3	3.2	0.1**	-0.216**	2436
Mean number of elderly (age 55+) per household	0.6	0.7	0.1***	0.7	0.8	0.1***	0.00347	2436
Proportion of households containing at least one (%):								
Child (<18)	91.9	92.3	0.4	90.2	91.5	1.3	-0.887	2436
Elderly (age 55+)	53.2	55.3	2.2**	60.7	62.8	2.1*	0.0556	2436
Orphan (single or double)	21.6*	26.7	5.1***	16.1	22.7	6.7***	-1.543	2436
Chronically ill member	11.7	12.3	0.6	14.5	15.4	1	-0.330	2436
Disabled member	8.4	9.3	0.8	7.9	9	1.2	-0.347	2436
Proportion of households (%):								
Containing only one member (i.e. single person household)	1.3	0.7	-0.6	1.3	0.6	-0.7*	0.0889	2436
Are 'skip generation' household (no-one aged 18-54)	7.1	5.9	-1.2	7.4	6.1	-1.2*	0.0266	2436
Proportion of households (%):								
with female household head	34	33.7	-0.4	31.7	30.9	-0.8	0.397	2436
with child household head	0.3	0.1	-0.2	0.2	0.1	-0.1	-0.0944	2436
with elderly household head	43.1	46	2.9**	50.5	53.6	3.1***	-0.211	2436
with main provider that is not a household member	9.8	7.4	-2.4	12.6	9	-3.6*	0.631	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

6.3 Social tensions

Targeted cash transfer programmes could generate tensions or conflict either within or between communities. Tensions could arise between beneficiaries and non-beneficiaries within communities, between communities that are part of the programme and those that are not, even within households tensions could arise between household members, over issues such as control of the transfer. Risk of conflict within and between communities is further exacerbated where tensions already exist along clan lines. Moreover, beneficiary households and communities could potentially suffer greater insecurity if others it is perceived that beneficiary communities have increased cash holdings and are thereby worthy of plunder. Banditry and raids on community resources such as livestock are common across many HSNP areas. Such tension may also manifest itself against programme staff if the programme is perceived to be unfair or provoking unrest.

These negative social outcomes are easier to capture in qualitative rather than quantitative fieldwork. The year 1 follow-up household survey asked only one question about this issue (which was not repeated at follow-up 2). At follow-up 1, only very small numbers of households reported that the HSNP was causing tensions between beneficiary and non-beneficiary households. Not surprisingly, non-beneficiaries were more likely to report this, but again, the numbers were so small that it cannot be concluded that HSNP has been a source of tension, either within HSNP communities or between HSNP operational areas and other sub-locations.

As discussed in section 5.7 above, the qualitative findings suggested that in some cases the programme had caused tensions within households, which were sometimes resulting in divorce. There is evidence from the quantitative data to support these respondents' assertions.

At follow-up 1 the quantitative data were not fully conclusive, but did hint at such an impact on intra-household relations between spouses, with the heterogeneity finding a significant impact on the proportion of individuals that are divorced amongst individuals living in larger households, and a significant impact on the proportion of females that are divorced amongst those living in poorer households. At follow-up 2 this trend is observed directly in the dif-in-dif estimate for males, which shows men in HSNP households more likely to be divorced than those in control households (Table 27). Obviously such findings need to be interpreted with caution, given the number of determining factors contributing to the break-down of a relationship between two people.

In summary, therefore, we can say that the programme does not appear to have had the negative impact on social tensions within or between communities that might have been feared. And while there has been a small but significant increase in the proportion of males that are divorced, the qualitative research suggests that this may reflect increased economic and social empowerment of women as a result of the programme, and therefore should not necessarily be interpreted as a negative finding.

Table 27 Proportion of individuals that are divorced

Proportion of individuals that are divorced (%):	Treatment areas			Control areas			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Overall	4	3.6	-0.4	2.9	2.4	-0.5	0.0858	9829
Females	6.8	5.6	-1.1	5	4.1	-0.9	-0.249	4698
Males	1.2	1.6	0.4**	0.9	0.8	-0.1	0.474*	5136

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

6.4 Household mobility

Because the HSNP requires households to be present in their home sub-locations for targeting and registration, and to collect their cash transfers from fixed paypoints, pastoralist households may be forced to change their mobility patterns, which could disrupt their livelihoods. On the other hand, the HSNP was designed with the intention of allowing mobile pastoralists to remain mobile – one reason why transfers are made in cash rather than food, and why beneficiaries can collect their cash transfers at any time, from a number of payment points; a flexibility of the design that was overtly appreciated by some beneficiaries.

> *"You can get this money any time so you will only come for the payment when you have finished your business. Besides the secondary beneficiary can collect the money if the primary beneficiary is away. This programme does not interfere with our other activities." [Beneficiary, Wajir]*

An important question for this evaluation, therefore, is whether and how the HSNP has affected household mobility and patterns of sedentarisation. To assess this possible impact, the evaluation survey recorded household mobility status. Households were asked to classify their mobility status as either fully mobile (the whole household moves with livestock), partially mobile (some members move with livestock while others stay in one place), or fully settled (no household members move with livestock).

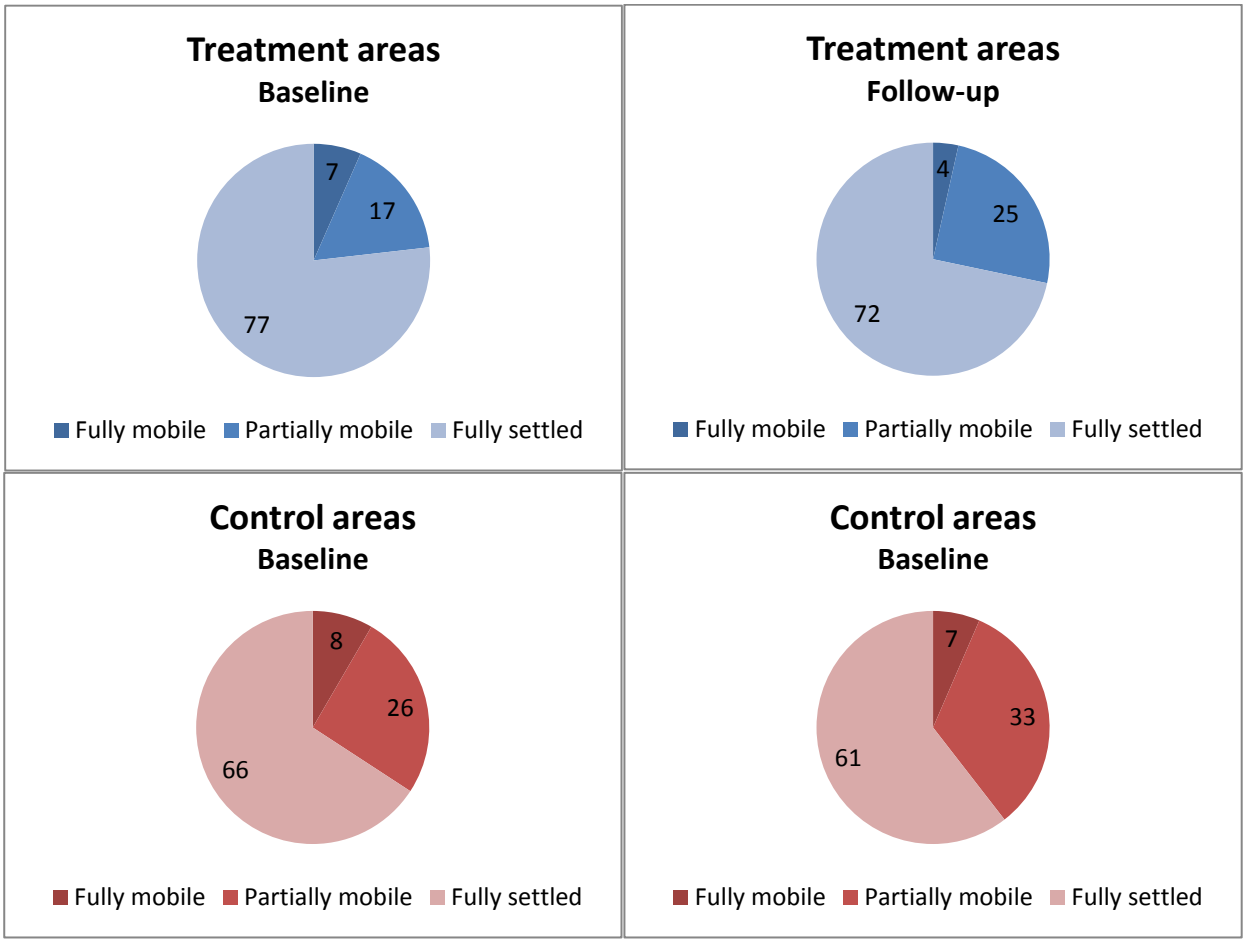
The results show that there have been considerable, and statistically significant, changes in the mobility status for both HSNP households and control households over the evaluation period. Specifically, the proportion of households that are fully settled has reduced, as has the proportion fully mobile, while the proportion partially settled has increased. In other words there has been a significant shift towards partial mobility, with fewer households fully settled or fully mobile (Figure 13 below). The fall in fully mobile households is perhaps at least partially due to a general trend towards sedentarisation among these households.

At follow-up 1 the research suggested that, once other factors and variations in the cumulative per capita value of transfers received were controlled for, the programme was having a significant negative impact on the proportion of households that are partially mobile, and a positive impact on the proportion of households that are fully settled. In other words, the programme seemed to be encouraging partially settled households to become fully settled. These changes were related to the drought, which through the destruction of livestock drove households to settle.

"We always lived in the bush. But now due to the droughts, most of our animals have died and could not sustain us there anymore. So we came here to settle in the town so that we can at least benefit from the relief programmes that are conducted in the town." [Non-beneficiary, Wajir]

At follow-up 2, on the other hand, we see a move away from fully settled and fully mobile households to more partially mobile households. This is the case for both HSNP and control households so could be the generalised result of improved conditions for livestock after the severe drought of 2011, so that once again some household members are required to move about tending to herds. Indeed, at follow-up 2, the dif-in-dif impact estimates are insignificant, suggesting that the programme is not having an impact household mobility.

Figure 13 Proportion of households by mobility status at baseline and follow-up



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Fully mobile = (whole household moves with livestock); Partially mobile = (some members move with livestock); Fully settled = (no household members move with livestock).

In fact for partially mobile households, where women are nominated cash transfer recipients and men are moving with animals, the HSNP seems to fit well with existing mobility behaviour.

In summary, it seems reasonable to conclude that the programme is not having an impact on household mobility. Household mobility dynamics appear to be driven by broader forces such as drought and the trend towards sedentarisation which appears to be occurring in the HSNP districts.

7 Conclusions and recommendations

7.1 Evaluation methodology

The HSNP M&E unit conducted an extensive impact evaluation of the HSNP cash transfer pilot phase over three years using mixed methods approach. The evaluation was conducted in all four counties (Mandera, Marsabit, Turkana, Wajir) in which the programme operates. The quantitative component of the evaluation was conducted based on a randomised controlled trial design using a panelled household survey. The impact evaluation data was collected over the course of three rounds comprising a baseline round (August 2009 – November 2010), follow-up 1 round (November 2010 – November 2011), and follow-up 2 (February 2012 – November 2012). The final round was conducted on a reduced sample size, with two sub-locations in each county dropped.

The findings in this report represent impact results after two years of programme operations.

7.2 Context

The evaluation took place during a period in which HSNP areas, and the Horn of Africa region more broadly, suffered a particularly harsh drought, even by its own standards. At the same time HSNP areas, and within those the evaluation areas, were also subject to periodic periods of localised violence and social unrest, including significant population displacements and a national armed conflict between Kenya and Somalia.

7.3 The transfer

The level of exposure to the programme for different households can vary for variety of reasons: households can contain multiple beneficiaries; they may have received fewer of more payment cycles; and the per capita value of the transfers may be higher or lower. Almost three quarters of beneficiary households have received 11 or more transfers after 24 months of programme operations. A further 25% have received 8-10 transfers (accounting for 98% of beneficiary households altogether). For just over two thirds of beneficiary households, the transfer has a per capita value of between KES 350-700.

The study finds that heads of household and main providers (both more likely to be male) increasing exercise control of the transfer between follow-up 1 and follow-up 2, while the share of women controlling the transfer shows slight decline. Similarly the mean age of the person controlling the transfer, and the proportion of people aged over 54 controlling the transfer, is declining. This suggests that women and older people may be losing control of the transfer in favour of heads of household and main providers, whom are often neither the primary nor secondary recipients of the HSNP.

Households overwhelmingly spend the transfer on food. This reflects the predominant priority of tackling pervasive food insecurity in these areas. There is some evidence of changing spending patterns, however, which might be interpreted as the behaviours of households with slightly improved welfare: beneficiary households perhaps being slightly less needy to spend on immediate foods needs and thus more able to reduce levels of indebtedness, spend on comfort and wellbeing, and invest in human capital.

7.4 Key impact areas

7.4.1 Consumption expenditure and poverty

After one year of programme operations it was found that the HSNP was not having an impact on reducing poverty rates amongst beneficiary households. However, the observed trends suggested that the programme was fulfilling its function as a safety net, stabilising welfare for beneficiary households in treatment areas whilst control counterparts were observed to suffer declines. After two years of programme operations these trends are found to have consolidated, translating into significant positive impact on consumption expenditure and poverty. HSNP households are some 10% less likely to fall into the bottom national consumption decile. The poverty gap and severity of poverty has also decreased for HSNP households, by 7% respectively.

As implied by the trends observed at follow-up 1, this impact is being driven by significant decreases in consumption among control households, which did not occur for HSNP households. In other words, we find that the programme is still having a vital cushioning effect, acting as a safety net and mitigating the negative impact of drought and other adverse shocks for HSNP households. Importantly, these results are robust against controlling for community and household-level factors. In addition, we find a larger significant impact on poorer and smaller households, as would be expected given the greater size of the transfer relative to consumption expenditure for these households. In other words, the impact on poverty is being driven by HSNP households that are relatively poorer, smaller or have received a larger cumulative per capita value of transfer.

7.4.2 Food security and reliance on food aid

Many respondents referred to reduced hunger as the most fundamental impact that the HSNP has had on their wellbeing, with 87% of HSNP households reporting at follow-up 2 that since receiving the cash transfers they have been able to have more and/or larger meals (an increase of 16 percentage points from follow-up 1). This is reflected in a positive programme impact on food consumption expenditure, which, like the poverty results, is driven by a significant fall among control households rather than improvements for HSNP beneficiaries. As with consumption expenditure above, we also find an increased impact on food expenditure for poorer households, smaller households, and for households receiving a higher cumulative per capita value of transfer over the last year.

Unlike at follow-up 1, we find no significant impact on dietary diversity. However, the heterogeneity analysis at follow-up 1 revealed that the impact on dietary diversity was most marked for households that were poorer, smaller or mobile, and at follow-up 2 we do find a positive impact on dietary diversity for poorer households though not for any other group. These findings are slightly puzzling, but they may be explained either by control households reinvigorating their diets after a particularly harsh year in 2011, and/or by increased availability of diverse food stuffs in local markets (see section 7.5.3), with control households consuming less volume of food but equally diverse diets as HSNP households.

These findings need to be put into context. The situation in Northern Kenya and in the evaluation areas is one characterised by high levels of food insecurity. The data show that, despite some improvement between baseline and follow-up, a high portion of households remain very vulnerable

and adopt coping strategies that in particular relate to poor food security. These include borrowing food, selling livestock to buy food, reducing the number and size of meals consumed, up to going whole days without eating. This implies that, despite the many interventions providing food or cash in Northern Kenya, the problem of pervasive food insecurity persists.

Given this situation of pervasive food insecurity, another positive finding is that HSNP households have not been deprioritised for food aid and other support such as school and supplementary feeding programmes. In other words, the HSNP is not having a negative substitution effect on receipt of emergency or other forms of food aid.

7.4.3 Child nutrition

Confirming the above situation of food insecurity, the evaluation rates of malnutrition that would be described as poor by WHO standards. The data are corroborated by other recent studies in these areas, which show very similar results.

The results do not show that the HSNP is having an impact on child nutrition. This is not surprising given the number of exogenous factors that affect child nutrition, such as eating habits and hygiene, which a cash transfer by itself is unlikely to influence.

7.4.4 Asset retention and accumulation

The programme is having a significant impact on livestock ownership, driven by increased likelihood of HSNP households to own goats and sheep. However, the positive impacts on goat and overall livestock ownership do not persist once other factors are controlled for, nor for any specific categories of households under the heterogeneity analysis. Once again, as at follow-up 1, controlling for other factors reveals a surprising significant (but small) negative impact on camel ownership. It is possible that these latter findings could be influenced by households' reluctance to accurately report livestock holdings, given that camels are especially associated with wealth.

The qualitative research did produce lots of testimony that the programme is having a positive impact on livestock ownership amongst HSNP households, by enabling them to avoid selling goats and sheep in the face of drought, which is consistent with findings after one year of programme operations.

Given the value of the transfer, and the way in which it is largely spent (on food), it is not surprising that there is no positive programme impact on accumulation of livestock, but only on retention. Thus, as at follow-up 1, the results in terms of programme impact on livestock retention and accumulation are encouraging but not conclusive.

The programme is not having a significant impact on the retention and accumulation of non-livestock productive assets. However, there is evidence to suggest the programme is allowing beneficiaries to increase purchases of 'non-productive assets', such as housing materials, clothing, or basic household items.

7.5 Secondary impact areas

7.5.1 Health

The programme is having a small but significant impact on the average expenditure spent on healthcare per household member per month. This result is driven by increased spending on health by HSNP households rather than falling expenditure among controls. Again, this appears to consolidate trends discerned at follow-up 1, where a very faint positive impact on health expenditure was detected by the heterogeneity analysis.

In terms of health outcomes, there appears to have been a considerable decline in rates of illness or injury for both HSNP and control households (though only significant for the latter), but no significant differences between these two groups.

At the same time, between baseline and follow-up, there was a marked increase for those who did suffer an illness or injury in the past three months to seek healthcare. This was the case in both treatment and control areas so is not attributable to HSNP. For those who did seek healthcare they did so overwhelmingly at government health facilities. For those that did not seek healthcare the single most common reasons were not being able to afford the cost of healthcare, the health facility being too far away, and the illness or injury not being considered serious enough.

7.5.2 Education

There are many barriers to education beyond financial barriers. These include livelihood practices, cultural beliefs and attitudes toward education (particularly girls education), and supply-side constraints. Indeed, at baseline the evaluation found that cost and access were not the key barriers to schooling reported by households in HSNP areas. Amongst children aged 6-17 who have never attended school, only 6% claimed not to have done so due to cost; 2% due to lack of school; and just 1% because the school was considered too far. In fact, the most common reasons given for having never attended school were domestic duties (49%), working for household own production (13%), and parental attitudes (15%). Given this context the programme can be expected to have an impact on educational outcomes only to the extent that it reduces the need for children to perform domestic duties and/or participate in home production; in these regards the evaluation found that children are no less likely to be engaged in domestic or productive work as a result of the programme. The extent to which the programme can be expected to have an impact on educational attendance is thus limited.

Given this context it is not surprising that the programme is not having an impact on education expenditure. This finding is consistent with results at follow-up 1. We do find an apparent significant *negative* impact on the proportion of children currently attending schools, but this result is founded on significant increases in school attendance for both treatment and control households. Given that attendance rates were significantly lower among control households at baseline, this result may simply reflect control households 'catching up' with HSNP households in terms of school attendance rates.

Although the quantitative data did not produce definitive evidence of HSNP having a positive impact on school attendance or expenditure, the qualitative research at both follow-up 1 and follow-up 2 produced much respondent testimony that the programme was aiding households to

meet the financial costs of accessing education. In addition, once other factors are controlled for, the programme does seem to be having a small positive impact on the proportion of children whose main activity is education, so can be seen to be at least minimally assuaging the barriers to accessing education for some.

One encouraging result is that the HSNP is having a positive effect on those children already in school. We observe a significant positive impact on the proportion of children aged 6-17 that have passed Standard IV, as well as on the mean highest grade achieved for children aged 6-17. These results continue the trend observed after one year of programme operations and persist even after other factors are controlled for. As was the case at follow-up 1, this impact is again being driven by poorer and smaller households.

While these impacts don't appear to be driven by increased educational expenditure, the qualitative research suggests that, by enabling children to eat better and improve their psycho-social experience of education (e.g. through coming to school well-fed and with adequate uniform and school supplies), the HSNP is improving children's performance at school.

7.5.3 Local markets and prices

The HSNP does not appear to be contributing to food price inflation in the evaluation areas. Similarly, there is no evidence that the transfers are contributing to food price stabilisation over time, implying that the scale of the HSNP was not sufficient to substantially affect trading patterns, food prices or supplies in local markets. Instead, it is seen that price inflation is eroding the value of HSNP cash transfers[26]. Recognising this, the HSNP has increased the value of the transfer on successive occasions, but the impact of inflation on the purchasing power of the transfer remains an important area for consideration.

There is evidence of an increase in business activity in evaluation areas in recent years. This is exemplified by a reported increase in the number of shops and business start-ups, and expansion of existing traders' operations, as well in an increased volume and quantity of commodities being traded. While it appears that HSNP is contributing to this process, larger social and economic factors outside the programme are the primary determinants.

Primarily, this dynamic is driven by the process of sedentarization. Sedentarization is viewed as a response to multiple factors, including loss of livestock (and therefore livelihood) due to drought, increased competition for land due to population increases, violence between ethnic groups (over grazing rights etc.), and the programmes and polices of government and development agencies that have encouraged sedentarization as solutions to food insecurity and poor access to education and health services. Because households have settled mostly around market towns, this has stimulated market activities to meet the increased demand. Where previously needs were met by relying on livestock and farm produce, recent droughts, in which harvests were low and animals were lost, meant that these needs are now met through the market. In addition, as pastoral households settle so they diversify into non-pastoral activities. Particularly women are perceived to diversify incomes by adopting new town-based activities such as petty trade.

[26] For more detailed analysis see Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Quantitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012.

This said, the HSNP is perceived to be contributing to the increase in market activities. Beneficiaries' increased purchasing power results in increased demand to which traders respond by increasing supply of goods and services, both in terms of quantity and variety. The reliability of the HSNP transfers has also increased traders ability to sell produce on credit by guaranteeing sales when HSNP payments arrive. In turn, increased sales and profits from HSNP beneficiaries enable traders to better service their own debts to wholesalers, purchase larger quantities for retail (thus benefiting from lower prices), and increase credit-worthiness with suppliers. In this way, HSNP can be perceived to be helping to reduce supply-side credit constraints for traders as well as demand-side credit constraints for consumers.

It is important to note the barriers to market development, such as liquidity constraint and poor market integration, as well as generalised poverty which suppresses demand. The potential for positive local economy impact of the HSNP is dependent on alleviating these barriers, because the degree of development and integration of markets is what enables supply to respond to the increased demand created by the HSNP.

7.5.4 Livelihoods

After one year of programme operations 13% of HSNP households reported positive changes in their work patterns, compared to just 2% of control households, a statistically significant difference. Also at this time, 5% of HSNP households reported being able to expand or improve their existing business in the last year, and almost all of those attributed the changes to HSNP. At follow-up 2 we see a similar trend, with some two thirds of households with businesses in treatment areas reporting that they had expanded or improved their business in the last 12 months. Again, the vast majority of these ascribe their ability to do this to HSNP. These numbers are small, but this reflects the small portion of the community that own their own businesses. Moreover, respondents interviewed during the qualitative fieldwork at both follow-up 2 and follow-up 1 felt that the HSNP cash transfers were too small even to meet household needs, let alone finance existing livelihoods or diversification into alternative activities.

At the same time, the qualitative research also produced evidence that the injection of HSNP cash generated demand not only for goods but also for services. A certain spill-over effect was detected on non-beneficiaries who earn income through causal labour paid for by HSNP transfers; labour is purchased especially by the elderly, or those households that the transfer has enabled to engage in more productive activities. Given the undesirable nature of casual labour, it is possible that beneficiaries' social status could increase over time, as they become regarded as channels and sources of community livelihoods. At the same time, these changing social dynamics present a potential for resentments and new antagonism that should be monitored.

No significant impact on labour supply was detected between baseline and follow-up, suggesting that the programme is not creating dependency among beneficiaries. This finding persists after controlling for other factors. Given the low value of the transfer and the fact that there are no graduation criteria – i.e. households are not removed from the programme once they reach a certain level of income or assets – this result is not unexpected.

As well as not creating dependency, the HSNP has not affected the sources of livelihood pursued by households. The two main livelihood activities undertaken by households are pastoralism and unpaid work (which includes domestic duties), a situation that has not changed over time. The significance of pastoralism as a source of household income is shown by the share of total

household income it commands, at close to half. Sales form the next most significant share of overall households income, followed by employment (including casual labour). Agriculture and self-employment make up only a small portion of overall household income.

7.5.5 Saving, lending, borrowing and credit

There is much qualitative evidence that the HSNP has improved the credit-worthiness of beneficiary households in relation to food, education and livelihood expenditures. And indeed, the evaluation finds that the programme is having a statistically significant impact on increasing households' uptake of credit, although this result is only apparent once we control for other factors and variation in cumulative value of transfers. This result is being driven by poorer HSNP households.

There are also significant positive impacts on the proportion of HSNP households that have cash savings and the proportion that have borrowed cash in the last month. This result persists once we control for other factors and variation in cumulative value of transfers, although the magnitude of the impact becomes much smaller.

Savings impact appears to be driven by larger households, which is surprising since impact in most other areas tends to be driven by smaller households for whom the effective value of the transfer is higher. However, the impact on borrowing is stronger for smaller households, which may reflect their generally poorer status. Another surprising result is that both impacts are stronger for better off households, although this might reflect the fact that, all things equal, better-off households are more able to both save and borrow.

The increased ability to access credit or loans, either with shop keepers or family and friends, does not necessarily mean that households take up the opportunity, since it is normally not sensible to get into debt unless there is a specific need. However, almost all beneficiary households report that it is now easier to borrow cash specifically because they are receiving HSNP cash transfers.

7.5.6 Vulnerability to shocks

Two severe covariate shocks, that is, shocks that affect many households in a community, affected communities in northern Kenya during the period covered by this evaluation: drought and inflation. This combination of drought plus inflation magnified the impact of each shock, because prices of goods that people have to buy were rising while prices of assets they had to sell were falling.

In this context the programme appears to be having limited impact on reducing the need for negative coping strategies. Reflecting the fact that the programme has increased HSNP households' access to credit, there has been a significant impact on the proportion of HSNP households that had to buy food on credit in the 30 days prior to interview. However, this result is not robust, with the impact becoming significantly negative (though small in magnitude) once we control for other factors. This could indicate that, although HSNP households now have better access to credit, the programme has made them less vulnerable and therefore they do not actually need to take up this credit as a necessity in the face of shocks. Again, this impact is being driven by poorer and smaller HSNP households, whom are less likely to purchase items on credit as a result of the transfer.

There is also a positive impact on the proportion of HSNP households that had to sell non-livestock assets in the 30 days prior to interview. However, this impact again becomes significantly negative once we control for other factors. This suggests that the impact on reducing the need to sell assets in the face of shocks is driven by smaller and relatively better off HSNP households.

7.5.7 Empowerment of women

Overall, the programme does appear to be having an impact on women's economic and social empowerment by enabling some women (specifically those in female-headed households) to take more control of the household budget and to increase their potential for undertaking income generating activities. However, there is also some evidence, particularly from the qualitative research, that in some cases this is having the unintended consequence of creating tensions within households, especially between female HSNP recipients and their husbands.

7.5.8 Well-being of older people and children

7.5.8.1 Older people

The programme does not seem to be having a significant impact on the well-being of older people, as measured by two specific aspects: health status and labour supply. However, neither has it appeared to increase tensions between older and younger people, which was a possible unintended consequence some feared, especially in social pension areas.

7.5.8.2 Children

In addition to the positive impacts on education set out above, the programme is having additional positive impacts on children's well-being. While the programme does not appear to be improving the health status of children, it is having a small but significant impact on the proportion of children engaged in non-domestic work (either paid or unpaid).

7.6 Unintended impacts

7.6.1 Informal transfers and sharing

A quarter of the beneficiaries report regularly sharing some of their HSNP transfers. While much of this may reflect sharing that would have occurred in any case, the programme does appear to be having a positive impact on the value of in-kind sharing. Furthermore, the programme does not appear to be having significant substitution effects, with only a small negative impact on the proportion receiving informal cash support observed for relatively better off HSNP households, and no apparent impact on the prevalence and level of in-kind support received.

7.6.2 Household composition

The programme appears to be having some counterintuitive impacts on the household composition. There is a significant negative impact on household size, dependency ratio score and the mean number of children per household. There is also a slightly puzzling positive impact on the average age of individuals living in HSNP households. The programme is also having a

significant positive on the proportion of adult males living in HSNP households that are married or in consensual union. Given the complexity of factors governing dynamics of demographic characteristics, these findings need to be interrogated further.

Interestingly, there is no impact on civil registration, despite the additional incentive to have a national ID card as a result of the programme.

7.6.3 Social tensions

The programme does not appear to have had any negative impact on social tensions within or between communities that might have been feared. And while there has been a small but significant increase in the proportion of males that are divorced, the qualitative research suggests that this may well reflect increased economic and social empowerment of women as a result of the programme, and therefore should not necessarily be interpreted as a negative finding.

7.6.4 Household mobility

After one year of programme operations the research suggested that, the programme seemed to be encouraging partially settled households to become fully settled. These changes were related to the drought, which through the destruction of livestock drove households to settle.

At follow-up 2, on the other hand, we see a move by households away from being fully settled and fully mobile to being partially mobile. This is the case for both HSNP and control households so could reflect the generalised result of improved conditions for livestock after the severe drought of 2011, so that once again some household members are required to move about tending to herds. Indeed, the quantitative data at follow-up 2 shows no significant estimates here, suggesting that the programme is not having an impact on household mobility.

7.7 Recommendations

[To follow]

Annex A Evaluation design and sampling strategy

A.1 Evaluation design

A.1.1 Random selection of sub-locations to be covered by the evaluation

The evaluation is taking place over the four former districts of Mandera, Marsabit, Turkana and Wajir, in 12 randomly selected sub-locations in each district. The sub-locations that are covered by the evaluation are referred to as the *evaluation sub-locations*.

The HSNP Programme applied a staggered roll-out, with sub-locations being brought into the Programme on a month by month basis. The evaluation was also staggered, with the baseline survey taking place just after targeting in each sub-location every month, e.g. sub-location 1 (District 1) was surveyed in month 1, sub-location 2 (in District 1) in month 2, etc.[27] The sequence in which the sampled evaluation sub-locations are targeted and surveyed was determined randomly. As a result of this staggered roll-out approach, the baseline survey was designed to take place over the course of 12 months.[28] This design allows seasonal variations to be both analysed and, for the targeting and impact analysis, averaged out across the sample of households covered by the quantitative survey. The sequence in which the sampled evaluation sub-locations are targeted and surveyed was determined randomly (see below for more details). The quantitative survey was carried out simultaneously in all four districts, in order to allow targeting and impact to be reliably compared across districts.

The evaluation sub-locations were selected from a sample frame of all secure sub-locations in each district. The original intention was to make the sample representative of all secure sub-locations across the HSNP districts.[29] Sub-locations were implicitly stratified by population density (households per square km), to ensure the sample was spread across both populous and sparsely populated sub-locations, and explicitly stratified by 'old' (greater) district. In this manner, in each district 12 sub-locations were selected with PPS (Probability Proportional to Size) with implicit stratification by population density such that there is an even number of selected sub-locations per new district.

A.1.2 Random allocation of treatment by sub-location

The evaluation sub-locations were sorted within new districts by population density and paired up, with one of the pair being control and one being treatment. The reason sub-locations were sorted (within each new district) by population density before pairing them up was to ensure that similar sub-locations were matched together. This measure is designed to reduce as far as possible significant variations between the characteristics of the control and treatment groups. The sub-

[27] During the course of the study design the official designation of the administrative area known as 'district' in Kenya changed. For the purposes of simplicity, we use 'district' to refer to the 'old' designation, and 'new district' to refer to the new designation.
[28] Due to various contingencies baseline fieldwork actually took place over 14 months.
[29] During analysis it was discovered that sub-location weights were arbitrarily confounding study results due to differing population sizes and poverty levels between districts. For this reason it was decided to exclude sub-location selection probabilities from the construction of the household weights. This means that the sample is representative of all evaluation sub-locations only, and not of all secure sub-locations across the four districts. The rationale for this decision is elaborated in detail in the HSNP M&E Baseline Report.

location pairs were then sorted randomly and assigned a two month slot. For each pair the order within the two month slot was also sorted randomly.

In all the evaluation sub-locations the HSNP Admin component implemented the targeting process. In half the sub-locations the selected recipients started receiving the transfer as soon as they were enrolled on the programme – these are referred to as the *treatment sub-locations*. In the other half of the evaluation sub-locations the selected recipients will not receive the transfer for the first two years after enrolment – these are referred to as the *control sub-locations*.

The allocation of treatment or control status to sub-locations was done randomly within each pair. This was done following completion of targeting in that pair of sub-locations. The selection was done at an official event ('Bahati na Sibu') facilitated by the HSNP Secretariat and attended by officials from the district and the two sub-locations in question. At each event a specially designed scratch cards were given to the chief of each sub-location, which would either reveal the word 'NOW' or 'LATER'. The sub-location whose chief held the 'NOW' card would begin receiving HSNP transfers immediately. For the other sub-location the HSNP transfers would commence in two years, i.e. following completion of the M&E impact evaluation survey.

A.1.3 Random assignment of targeting mechanisms

The sampling strategy for the quantitative survey was designed in order to enable a comparison of the relative targeting performance of three different targeting mechanisms. These are:

- Community-based targeting (CBT)
- Social Pension (SP)
- Dependency Ratio (DR)

For both the treatment and control sub-locations there are an equal number of community-targeting, social pension and dependency ratio sub-locations. Assignment of targeting mechanisms to sub-locations was done randomly across the same pairs that were defined to assign treatment and control status.

In non-evaluation areas the targeting mechanism was chosen non-randomly by the Adminisation Component (Oxfam).

A.1.4 Definition of the population groups to sample

The households in the treatment sub-locations that are selected for the programme are referred to as the treatment group. These households are beneficiaries of the programme. In control sub-locations the households that are selected for the programme are referred to as the control group. These households are also beneficiaries of the programme but will only begin to receive payments two years after registration. Note that the targeting process was identical in the treatment and control sub-locations.

The following population groups can thus be identified and sampled:

- ***Group A:*** Households in the treatment sub-locations selected for inclusion in the programme.
- ***Group B:*** Households in control sub-locations selected for inclusion in the programme but with a delayed payments.

- ***Group C:*** Households in treatment sub-locations that were not selected for inclusion in the programme.
- ***Group D:*** Households in control sub-locations that were not selected for inclusion in the programme.

The comparison of trends in groups A and B over time provides the basis for the analysis of programme impact.

The sample included units from groups C and D, primarily to provide information on the population as a whole and in order to assess the extent to which the programme's targeting process had selected the poorest households. However, the comparison of trends in groups C and D over time can also provide the basis for an analysis of spill-over effects (not covered in this report).

A.1.5 Selection of HSNP and control households

Because targeting was conducted in both treatment and control areas, households were sampled in the same way across treatment and control areas. Selected households (groups A and B) were sampled from HSNP administrative records. Sixty-six beneficiary households were sampled using simple random sampling (SRS) in each sub-location.[30] In cases of household non-response replacements were randomly drawn from the remaining list of non-sampled households. This process was strictly controlled by the District Team Leaders (DTLs).

Up to sixteen households were also randomly sampled for qualitative household interviews from the programme beneficiary lists. In cases of scarcity of beneficiary households the quantitative sample was prioritised over the qualitative sample.

A.1.6 Selection of non-selected households

Non-selected households (groups C and D) were sampled from household listings undertaken in a sample of three settlements within each sub-location. These settlements were randomly sampled. The settlement sample was stratified by settlement type, with one settlement of each type being sampled. Settlements were stratified into three different types:

1. Main settlement (the main settlement was defined as the main permanent settlement in the sub-location, often known as the sub-location centre and usually where the sub-location chief was based. As there was always one main settlement by definition, the main settlement was thereby always selected with certainty.
2. Permanent settlements (permanent settlement is defined as a collection of dwellings where at least some households are always resident, and/or there is at least one permanent structure).
3. Non-permanent settlements.

If there was no non-permanent settlement a second permanent settlement was sampled. If there was no other permanent settlement (apart from main settlement) then a second non-permanent settlement was sampled. If there were neither enough permanent nor non-permanent settlements then all remaining households were listed from the Main Settlement. Note that, by definition, the main settlement can never be missing and there can only be one main settlement per sub-location.

[30] In two of sub-locations this was not possible due to insufficient numbers of beneficiaries in the programme records.

Large settlements (over approximately 300 households) were segmented into segments of approximately 100-150 households, and segments were then sampled using SRS. Within settlements or segments, all households were listed.

During the listing, beneficiary households were identified and then dropped from the sample frame. Non-beneficiary households were then identified as being either residents of the sub-location or non-residents. The non-beneficiary sample was then stratified as follows:

Table A.1 Stratification of non-beneficiary sample per sub-location

Settlement type	Residency status		Total
	Resident	Non-resident	
Main settlement	18	2	20
Permanent	13	1	14
Non-permanent	5	5	10
TOTAL	**36**	**8**	**44**

Note: An additional three non-beneficiary households were randomly selected per sub-location for the qualitative study. In cases of scarcity of non-beneficiary households, the quantitative sample was prioritised over the qualitative sample.

If there was an insufficient sample frame for any of the above strata the following rules were observed:

Table A.2 Rules for substituting non-beneficiary sample strata

If there is no:	Replace with:	Split sample between two new settlements:	Number of non-residents (out of total) in each new settlement
Non-permanent settlement	Permanent settlement	12 in each permanent settlement	Two out of 12 in each permanent settlement
Permanent settlement	Non-permanent settlement	12 in each non-permanent settlement	Six out of 12 in each non-permanent settlement
Non-permanent settlement and there is no other permanent settlement to replace it with (only two settlements in sub-location)	Share sample between main settlement and permanent settlement	26 households in main settlement and 18 households in permanent settlement	Three out of main settlement and two out of permanent settlement
Permanent settlement and there is no other non-permanent settlement to replace it with (only two settlements in sub-location)	Share sample between main settlement and non-permanent settlement	26 households in main settlement and 18 households in non-permanent settlement	Three out of main settlement and six out of non-permanent settlement
Other permanent or non-permanent (both missing)	Main settlement	Only one settlement: total 44 households	Four non-residents total

In total, 44 non-beneficiaries should have been sampled in each sub-location; however, in a couple of sub-locations this was not possible due to insufficient numbers of non-beneficiaries being present in the sub-location.

The remaining households for each group were placed on a replacement list and used in cases of household non-response. For non-beneficiary households, the replacement list was stratified by

settlement and residency and replacement households were drawn from the same 'category' as the households that were being replaced. Where this was not possible (due to insufficient households per category) the alternative replacement options were prioritised as follows:

1. Same residency status, same settlement
2. Same settlement, different residency status
3. Same residency status, different settlement
4. Different settlement, different residency status

A.1.7 Specification of survey weights

A.1.7.1 Households weights

The sampling weights produce estimates for all households living in sub-locations covered by the evaluation (i.e. the study population). They do not provide estimates for any larger population.

The decision not to make study results representative of the entire population of secure sub-locations within each district was taken once it was established at the analysis stage that differences in population sizes and poverty rates between districts were complicating the interpretation of the study results. In particular, weighting up sub-locations to represent entire districts (with quite different total populations) was making it difficult to interpret differences across targeting mechanisms, as it was impossible to separate the element of the difference that was caused by district-level factors and that which was caused by factors actually pertaining to the targeting mechanism. Because a key element of the study was to report on the effectiveness of the three different targeting mechanisms, it was decided to exclude sub-location selection probabilities from the construction of the weights, and thereby prevent district-level factors from impinging on results. The result of this is to make the sample representative of the evaluation sub-locations, i.e. the study population, rather than trying to use it to provide estimates for whole districts.

This decision was further augmented by the consideration that the HSNP has been operating in a different way outside of the evaluation areas. Due to this, results in any case would not have shown how the programme was performing across all secure sub-locations across all four districts, but only how the programme would have performed had it been operating in all programme sub-locations as it was in evaluation sub-locations.

Weights are given by the inverse probability of being selected by strata. For selected households (groups A and B), the weights are given by:

$$w_i = N_i / n_i$$

where n_i is the number of beneficiary households interviewed in the i^{th} sub-location, and N_i is the number of beneficiaries listed in the HSNP administrative data for that sub-location.

For non-selected households (groups C and D), the weights are given by:

$$wijk = 1 / [(aijk/A_{ijk}) *(1/b_{ij})*(1/c_{ij})]$$

Where:

- A_{ijk} is the total number of non-beneficiary households of residency status k in the selected segment of the selected type j settlement in sub-location i
- a_{ijk} is the number of households of residency status k in the selected segment of the selected type j settlement in sub-location i that were interviewed
- b_{ij} is the total number of segments in the selected type j settlement in sub-location i (often b_{ij}=1)
- c_{ij} is the total number of settlements of type j in sub-location i

The weights were adjusted at follow-up 2 to account for attrition as it was seen that attrition was slightly skewed in favour of households from Wajir and fully mobile households. A regression estimated the probability of retention and the weights were adjusted by the inverse of the retention probability.

A.1.7.2 Community weights

The communities interviewed in the sample were a function of the settlements to which households declared they were closest to at time of interview, and the extent to which they were geographically clustered. As such, defining weights for community-level data is difficult. In practice, community information has often been read down to household level and analysed with household weights. Where community-level indicators have been estimated directly community weights were applied, equal to the sum of the household weights across the households linked to that community.

A.2 Sample size

The intended evaluation survey sample sizes are presented in Table A.3 below. (with the letters in the cells matching groups A–D as listed above), broken down by targeting Mechanism, treatment and control areas, and district. They were based on the expected sampling error for point estimates, differences and the difference-in-differences estimates for key indicators. Note that due to the risk of sample attrition a 10% buffer was factored in, i.e. an additional 480 households were sampled to give a total intended sample of 5,280 in total, spread evenly across sub-locations.

Table A.3 Intended sample size by population group (excluding attrition buffer)

	Targeting mechanism	Treatment Sub-Location	Control Sub-Location	Total	(by district)
Selected Households	CBT	480	480	960	(4×240)
	SP	480	480	960	(4×240)
	DR	480	480	960	(4×240)
	Total	**1,440**	**1,440**	**2,880**	**(4×720)**
		[Group A]	**[Group B]**		
Not selected Households	CBT	320	320	640	(4×160)
	SP	320	320	640	(4×160)
	DR	320	320	640	(4×160)
	Total	**960**	**960**	**1,920**	**(4×480)**

	[Group C]	[Group D]		
Total	**2,400**	**2,400**	**4,800**	**(4×1,200)**

Notes: Due to the risk of sample attrition a 10% buffer was factored in, i.e. an additional 480 households were sampled (5,280 in total), spread evenly across sub-locations.

Inevitably, not all sampled households could be identified and/or interviewed. Some households could not be found, whilst others refused to be interviewed. Many of these households were replaced from a randomly selected replacement list in each sub-location. A breakdown of the actual number of households interviewed are presented in section A.2.2 below.

A.2.2 Final sample size and attrition

Table A.4 Panel sample size by treatment status and survey round

Baseline	**Treatment areas**	**Control areas**	**Overall**
Selected for HSNP	1,571 **[Group A]** ***HSNP households***	1,536 **[Group B]** ***Control households***	3,107
Not selected	968 **[Group C]**	1,033 **[Group D]**	2,001
Overall	2,539	2,569	5,108
Follow-up 1	**Treatment areas**	**Control areas**	**Overall**
Selected for HSNP	1,434 **[Group A]** ***HSNP households***	1,433 **[Group B]** ***Control households***	2,867
Not selected	881 **[Group C]**	889 **[Group D]**	1,770
Overall	2,315	2,322	4,637
Follow-up 2	**Treatment areas**	**Control areas**	**Overall**
Selected for HSNP	1,224 **[Group A]** ***HSNP households***	1,212 **[Group B]** ***Control households***	2,436
Overall	1,224	1,212	2,436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table A.4 shows the panel sample size achieved for all survey rounds. It should be noted that at follow-up 2 the large decrease in sample size is accounted for by the dropping of C and D type households from the sample and, in the case of A and B type households, the dropping of eight sub-locations. The reduction in the number of sub-locations to survey at follow-up 2 was the result of decisions made by the programme and its stakeholders rather than a technical decision by the evaluation team.

Table A.5 below shows the final sample size achieved at follow-up 2, broken down by targeting mechanism, treatment status, district and HSNP selection status. The final size of the panel sample (i.e. those households for which there are observations at both baseline and follow-up 2) is 2,436. This represents a sample attrition rate of 6% from follow-up 1 (accounting for the dropped sub-locations). Table A.6 shows how the sample attrition rate varies by treatment status, district and targeting mechanism areas.

Table A.7 shows the breakdown of the reasons for non-interview at follow-up, while Table A.8 presents the results of a probit model which identifies the baseline factors associated with non-response at follow-up 2. It shows that non-response at follow-up is associated with the following baseline characteristics: being fully mobile; being from Mandera; and being from Wajir (constant).

Attrition also occurs at the household-member level, with some members who were present at baseline no longer in the household at follow-up. Table A.9 shows that 4.4% of household members in the baseline sample were no longer in the household at follow-up 1, and that 9.5% of the sample at follow-up 1 were no longer in the sample at follow-up 2. It also provides the distribution of the reasons for baseline members to no longer be present follow-up. Conversely, some household members present at follow-up have joined the household since the baseline. Table A.10 shows that 9.8% of household members in the follow-up 1 sample were not in the baseline sample, and 3.9% of members at follow-up 2 were not present at follow-up 1. It also provides the distribution of reasons for joining.

A certain proportion of the cases of members apparently leaving or joining the household between rounds were actually the result of inaccuracies in the baseline or follow-up 1 data collection rounds: some household members were only recorded at follow-up but were reported to have in fact been present at baseline. Similarly some household members were recorded only in baseline but were in fact never present in the household. Some of these errors must have been due to interviewer error, but many will be due to inaccurate reporting by respondents resulting from confusion over the definition of a household and who constitutes a household member. While these errors are unfortunate they represent a very small proportion of the overall sample of beneficiaries at baseline. Moreover, adjusting the household composition impact indicators (e.g. mean household size, number of children, etc.) for the errors by back-correcting the baseline data reveals that these errors do not affect the impact estimates for these estimates (with the exception of the apparent significant negative impact on household size, which becomes insignificant once the baseline data is adjusted for roster errors).

Table A.5 Actual sample size achieved at follow-up by district, treatment status and targeting method

Survey Wave	Beneficiary status	Targeting method	Mandera			Marsabit			Turkana			Wajir			Overall		
			Treatment	Control	Total	Treatment	Control	Total	Treatment	Control	Total	Treatment	Control	Total	Treatment	Control	Total
Baseline	Selected	CBT	133	131	264	133	131	264	136	131	267	198	67	265	600	460	1,060
		DR	117	97	214	132	132	264	131	131	262	132	132	264	512	492	1,004
		SP	132	121	253	128	133	261	133	132	265	66	198	264	459	584	1,043
		Total	382	349	731	393	396	789	400	394	794	396	397	793	1,571	1,536	3,107
	Not selected	CBT	88	87	175	86	79	165	84	89	173	53	44	97	311	299	610
		DR	88	83	171	87	85	172	88	85	173	88	88	176	351	341	692
		SP	87	88	175	88	86	174	87	87	174	44	132	176	306	393	699
		Total	263	258	521	261	250	511	259	261	520	185	264	449	968	1,033	2,001
	Total		645	607	1,252	654	646	1,300	659	655	1,314	581	661	1,242	2,539	2,569	5,108
Follow up 1	Selected	CBT	126	126	252	130	130	260	135	129	264	106	113	219	497	498	995
		DR	115	89	204	120	122	242	124	127	251	116	118	234	475	456	931
		SP	111	107	218	124	128	252	130	131	261	97	113	210	462	479	941
		Total	352	322	674	374	380	754	389	387	776	319	344	663	1,434	1,433	2,867
	Not selected	CBT	73	74	147	76	76	152	73	87	160	47	42	89	269	279	548
		DR	84	64	148	82	76	158	75	80	155	75	72	147	316	292	608
		SP	79	81	160	78	78	156	78	84	162	61	75	136	296	318	614
		Total	236	219	455	236	230	466	226	251	477	183	189	372	881	889	1770
	Total		588	541	1129	610	610	1,220	615	638	1253	502	533	1,035	2,315	2,322	4,637
Follow up 2	Selected	CBT	64	65	129	61	65	126	130	127	257	109	122	231	364	379	743
		DR	115	95	210	121	124	245	63	65	128	122	114	236	421	398	819
		SP	128	117	245	121	130	251	130	127	257	60	61	121	439	435	874
	Total		307	277	584	303	319	622	323	319	642	291	297	588	1224	1212	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table A.6 Sample attrition – proportion of households interviewed at baseline but not at follow-up1 and follow-up 2

	FU1			FU2
	Selected households	Non-selected households	Overall	Selected households
By sub-location treatment status:				
Treatment areas	10%	15%	12%	6%
Control areas	7%	10%	8%	5%
By district:				
Marsabit	4%	9%	6%	2%
Mandera	8%	13%	10%	6%
Turkana	4%	9%	6%	3%
Wajir	2%	8%	5%	11%
By targeting mechanism:				
CBT	6%	10%	8%	7%
DR	7%	12%	9%	6%
SP	10%	12%	11%	4%
Overall	8%	12%	9%	6%

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) FU2 column reports the percentage of selected household interviewed at Baseline and not and FU2, excluding households that belong to sub-locations 1010, 1011, 2023, 2022, 3035, 3034, 4046, 4047 because they were dropped from the sample at follow up 2.

Table A.7 Reason for non-interview

	FU1	FU2
HH known but beyond tracking limits	6.15	4.3%
HH within agreed tracking limits but not found	0.92	0.4%
HH not known	0.43	0.3%
HH already interviewed (FU roster the same as another FU roster)	0.37	0.2%
HH found but no competent member available	0.33	0.2%
HH refused interview	0.33	
All BL HH members passed on	0.12	0.04%
Household was interviewed twice in the BL	0.10	
Total	**8.77**	**5.4%**

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) FU1 column reports reasons of attrition as a percentage of the overall sample at Baseline. (2) FU2 column reports reasons of attrition as a percentage of the relevant sample at Baseline, which excludes non selected households and households that belong to sub-locations 1010, 1011, 2023, 2022, 3035, 3034, 4046, 4047 because they were dropped from the sample at follow up 2.

Table A.8 Non-response factors

Explanatory Variables	FU1	FU2
HSNP Beneficiary	-0.288	
	(0.284)	
FullyMobile	1.072***	1.276***
	(0.267)	(0.253)
PartialSettled	0.102	0.170
	(0.170)	(0.279)
HHSize	-0.343*	-0.364*
	(0.179)	(0.191)
HHHeadAge	-0.00961*	5.82e-05
	(0.00530)	(0.00741)
FemaleHeadedHH	0.189	-0.183
	(0.165)	(0.200)
HHHeadEducation	0.0409***	0.00278
	(0.0127)	(0.0139)
HHGenderRatio	-0.0471	-0.0353
	(0.0586)	(0.118)
LabourCapacityIndex	0.252	0.153
	(0.161)	(0.170)
HasUnder15	-0.251	0.111
	(0.225)	(0.295)
NumUnder18	0.231*	0.211
	(0.138)	(0.193)
HasOver54	0.471**	0.179
	(0.221)	(0.284)
Mandera	-0.367	-1.419***
	(0.265)	(0.215)
Marsabit	-1.042**	0.453
	(0.413)	(0.826)
Turkana	-1.881***	-0.0811
	(0.501)	(0.850)
somali	-0.429	1.022
	(0.329)	(0.843)
Constant	-0.523	-2.573***
	(0.460)	(0.906)
Observations	4,881	2,530

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%; (2) The table reports the result of a logistic regression investigating non-response factors (the regression is weighted and clustered by CLID). (3) For FU1 column, the dependent variable is a dummy variable equal to one if the household has not been interviewed at follow-up 1 and to zero if the household is present at both baseline and follow-up 1. (4) For FU2 column, the dependent variable is a dummy variable equal to one if the household has not been interviewed at follow-up 2 and to zero if the household is present at both baseline and follow-up 2. The dependent is missing for non-beneficiary households and for households that belong to sub-locations 1010, 1011, 2023, 2022, 3035, 3034, 4046, 4047 because they were dropped from the sample at follow up 2.

Table A.9 Proportion of household members interviewed at baseline that had left household by follow-up 1 and by follow-up 2 and reason for leaving (%)

	FU1	FU2
Proportion of household members at baseline not present at follow-up	4.4	9.49
Reason for leaving household (proportion of those that left):		
• Error in baseline survey (individual should not have been recorded as a member at baseline)	26.9	21.0
• Marriage	25.5	33.6
• Died	11.2	10.1
• Moved with parents	7.1	7.1
• Moved to set up new HH	4.7	11.0
• Never moved: ben moved to new HH	4.4	3.1
• Moved to get support (food, shelter, care)	4.2	4.6
• Moved to work elsewhere	3.6	2.9
• Moved for schooling (not boarding school)	2.5	1.4
• Divorce/separation	2.5	2.0
• Moved to follow the animals (herding)	2.4	0.7
• Moved to assist with domestic duties	1.6	0.4
• Moved to live with other wife	0.8	0.6
• To take care of relative	0.6	0.7
• Conflict	0.5	0.2
• Moved back to parents HH	0.3	
• Death of parent(s)	0.2	
• Illness/Mental Disability	0.2	
• Left without informing the HH	0.1	
• No longer the main provider	0.1	
• Other		0.4

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) The first row of the FU1 column reports the percentage of household members at Baseline that left at FU1. (2) The first row of the FU2 column reports the percentage of household members at baseline belonging to selected household and not belonging to sub -locations 1010, 1011, 2023, 2022, 3035, 3034, 4046, 4047 that left at FU2.

Table A.10 Proportion of household members interviewed at follow-up 1 that had joined household since baseline and proportion of household members interviewed at follow-up 2 that had joined household since follow-up 1

	FU1 (% of FU1 sample)	FU2 (% of FU2 sample)
Proportion of household members at follow-up not present at baseline	9.8	3.92
Reason for joining household:		
• Missed in baseline survey	45.80	25.4
• Newly born	31.28	40.8
• Moved to get support (food,shelter,care)	8.15	13.5
• Always been here (ben moved into this HH)	4.20	7.6
• Marriage	3.37	5.2
• Moved for schooling	1.70	1.9
• New main provider (not in baseline roster)	1.70	2.6
• To take care of household member	1.05	1.5
• To work for the household	0.72	0.3
• Death/Illness of parents	0.69	0.5
• Conflict	0.51	0.2
• Divorce/separation	0.43	
• Break up of former HH	0.29	0.3
• To work in Sublocation	0.07	0.2
• Death of husband/wife	0.04	

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

A.3 Quantitative fieldwork schedule for baseline and follow-up rounds

Turkana

Month #	BL (actual)	FU1 (actual)	FU2 (actual)	Sub-location	SL code	Targeting mechanism	Treatment /Control
1	Aug-Sep-09	Dec-10-Jan-11	Dropped	Kalem	1011	DR	T
2	Oct-Nov-09	Nov-Dec-10	Dropped	Kaitede	1010	DR	C
3	Nov-09	Jan-11	Feb-12	Lowerengak	1012	Pension	C
4	Dec-09-Jan-10	Feb-Mar-11	Mar-12	Kokiselei	1013	Pension	T
5	Feb-10	Mar-Apr-11	Apr-12	Napetet	1014	CBT	T
6	Mar-10	Apr-May-11	May-12	Kapus	1015	CBT	C
7	Apr-May-10	May-Jun-11	Jun-12	Lopii	1016	DR	C
8	May-Jun-10	Jun-Jul-11	Jul-12	Kalemungorok	1017	DR	T
9	Jun-Jul-10	Jul-Aug-11	Aug-12	Lorengelup	1018	Pension	T
10	Aug-10	Sep-11	Sep-12	Eliye	1019	Pension	C
11	Sep-10	Oct-11	Oct-12	Lokore	1020	CBT	C
12	Oct-Nov-10	Nov-11	Nov-12	Kangapur	1021	CBT	T

Marsabit

Month	BL (actual)	FU1 (actual)	FU2 (actual)	Sub-location	SL code	Targeting mechanism	Treatment /Control
1	Aug-Sep-09	Nov-Dec-10	Dropped	Badasa	2022	CBT	T
2	Oct-09	Dec-10-Jan-11	Dropped	Mata Arba	2023	CBT	C
3	Nov-09	Jan-Feb-11	Mar-12	North Horr	2024	DR	T
4	Dec-09-Jan-10	Feb-Mar-11	Feb-12	Maikona	2025	DR	C
5	Feb-10	Mar-11	Apr-12	Laisamis	2026	Pension	C
6	Mar-10	Apr-May-11	May-12	Kamboye	2027	Pension	T
7	Apr-10	May-11	Jun-12	Hulahula	2028	CBT	C
8	May-Jun-10	Jun-Jul-11	Jul-12	Majengo	2029	CBT	T
9	Jun-Jul-10	Jul-Aug-11	Aug-12	Lonyoripichau	2030	DR	T
10	Aug-10	Sep-11	Sep-12	Korr	2031	DR	C
11	Sep-10	Oct-11	Oct-12	Marsabit Township	2032	Pension	T
12	Oct-Nov-10	Oct-Nov-11	Nov-12	Wabera	2033	Pension	C

Mandera

Month #	BL (actual)	FU1 (actual)	FU2 (actual)	Sub-location	SL code	Targeting mechanism	Treatment /Control
1	Aug-Sep-09	Nov-Dec-10	Dropped	Kamor	3034	CBT	T
2	Oct-09	Dec-10-Jan-11	Dropped	Bulla Power	3035	CBT	C
3	Nov-09	Jan-11	Feb-12	Mado	3036	DR	T
4	Dec-09-Jan-10	Feb-Mar-11	Mar-12	Quramadow	3037	DR	C
5	Feb-10	Mar-Apr-11	Apr-12	Chir Chir	3038	Pension	T
6	Mar-10	Apr-May-11	May-12	Dabacity	3039	Pension	C
7	Apr-May-10	May-Jun-11	Jun-12	Wangai Dahan	3042	CBT	C
8	May-Jun-10	Jun-Jul-11	Jul-12	Eldanaba	3043	CBT	T
9	Jul-10	Jul-Aug-11	Aug-12	Eymole	3044	DR	T
10	Aug-10	Sep-11	Sep-12	Lulis	3045	DR	C
11	Sep-10	Sep-Oct-11	Oct-12	Central Mandera	3040	Pension	T
12	Oct-Nov-10	Oct-Nov-11	Nov-12	Libehia	3041	Pension	C

Wajir

Month	BL (actual)	FU1 (actual)	FU2 (actual)	Sub-location	SL code	Targeting mechanism	Treatment /Control
1	Oct-Nov-09	Dec-10-Jan-11	Dropped	Sala	4046	Pension	C
2	Aug-Sep-09	Nov-Dec-10	Dropped	Dagahaley	4047	Pension	T
3	Nov-09	Jan-Feb-11	Feb-12	Lafaley	4048	CBT	T
4	Dec-09-Jan-10	Feb-Mar-11	Mar-12	Tarbaj	4049	CBT	C
5	Feb-10	Feb-Mar-11	Apr-12	Lag Bogol North	4050	DR	T
6	Mar-10	Mar-Apr-11	May-12	Garse Koftu	4051	DR	C
7	Apr-May-10	Apr-May-11	Jun-12	Griftu	4052	Pension	T
8	May-Jun-10	Jun-Jul-11	Jul-12	Wagalla	4053	Pension	C
9	Jul-10	Jul-11	Aug-12	Ingirir	4054	CBT	C
10	Aug-10	Sep-11	Sep-12	Godoma	4055	CBT	T
11	Sep-Oct-10	Oct-11	Oct-12	Wajir Township	4056	DR	T
12	Oct-Nov-10	Oct-Nov-11	Nov-12	Mokoror	4057	DR	C

Annex B Econometric methods

The quantitative analysis of Programme impact is based on the comparison of a range of indicators between households in treatment sub-locations and in 'control' sub-locations. The key impact measure is the Average Treatment Effect on the Treated (ATT) which is estimated using a difference-in-difference approach. The ATT estimator for the direct effects of a social cash transfer on selected households is defined as:

$$ATT = E[Yi \mid Ti=1, Si=1] - E[Yi \mid Ti=0, Si=1] \quad (1)$$

where Y is the outcome variable and 'i' indexes households. T is the treatment indicator, with a value of 1 if it a household is treated, 0 if in a control household. S indicates whether a household has been selected for programme inclusion, with a value of 1 if a household is selected and 0 if not selected. The ATT compares the outcome variable for selected households in treatment areas and control areas. Equation (1) shows the expected outcome for selected households in locations where the HSNP has been implemented minus the expected outcome among selected households in communities where the HSNP has not been implemented. The estimates exploit the comparability between households in treatment and control communities that is achieved by design through a combination of: (a) random allocation of communities to treatment or control; (b) perfect mimicking of the targeting methods in control areas. This combination of approaches provides a credible counterfactual comprising of selected households in control communities ('would-be' beneficiaries), that are fully comparable by design to selected households in treatment communities (beneficiaries).

The experimental community-randomised design of the evaluation enables a very robust impact evaluation design. Randomization of treatment over a sufficient number of geographical units (24 treatment and 24 control) ensures a high degree of comparability between actual treated households (A) and controls (B). An important feature of the evaluation approach, that is uncommon to most studies of this kind, is that the household selection process used in treatment areas was replicated exactly in the same way in control areas (perfect mimicking), including the prioritization amongst eligible households to obtain the final list of ('would-be') beneficiaries. Moreover, programme take up amongst the selected beneficiaries is very high in treatment areas , ruling out concerns of non-completion with the randomization. This is in contrast to most other similar studies available in the literature which generally compare eligible households in treatment and control areas, rather than actual beneficiaries with would be beneficiaries, and thus rely on Intention to Treat (ITT) estimators and on an instrumental variable approach to produce meaningful estimates of impact (ATT). To the best knowledge of the authors, this is the first completed study in the region that provides a fully robust measure of the ATT that is directly originating from the randomization process.

The panel structure of the data is exploited to condition out time invariant unobservable differences which could have affected outcome variables post the introduction of the programme. The 'before and after' nature of difference-in-difference estimates implies that any non-varying household-specific characteristics (averaged at the group level) which might, in addition to the cash transfer, have a potential influence on the impact indicators being measured, are controlled for (in expectation) in the difference-in-difference estimates of impact. In an attempt to avoid any attrition bias, all models have been estimated on the restricted sample containing only households that were surveyed both at baseline and at follow-up.

The difference in difference model is estimated by OLS in the following functional form:

$$Yit = a + b1Ti + b2t + b3Ti *t + ct (Xit) + eit \quad (2)$$

where the indicator for treatment or control for household i (Ti) is interacted with a dummy indicating the follow-up round (period 1). The equation incorporates a population time trend (captured by parameter b2), and a group fixed effect indicated by the parameter b1. The difference in difference estimator is provided by parameter b3. The outcome Y can be either an individual level, or a household level variable. In the case of binary outcomes, model specification (2) is be estimated using a probit model, though the coefficients on the treatment and interacted dummy respectively cannot be directly interpreted as the marginal treatment effect on probability without the necessary transformation of the probability function (as has been done for the impact analysis presented in this report).

A number of robustness checks are performed on this basic model: (1) including dummies for each pair of sub-locations over which the treatment randomisation was made; (2) including household-level covariates (and individual-level covariates in the case of household member level indicators; (3) including household- and community-level covariates; (4) Controlling for changes in time variant household characteristics which are included only as baseline levels in the other specifications. In addition to the basic specification (i.e. difference in difference with group fixed effects), as a further robustness check the measures are also estimated controlling for fixed effects at the household-level (i.e. estimate the model in first differences), which fully exploits the panelled nature of the sample. The results of these checks reveal that the findings are generally robust across different specifications, the only exception being the fixed effects models which for some indicators give results in the opposite direction, although almost always insignificant. Only the results of models controlling for household- and community-level covariates are presented in this report, alongside the impact heterogeneity results in Annex D.

In order to assess impact heterogeneity across different types of households the following model specification is used:

$$Yit = a + b1t*P1i + b2Ti*P1i + b3Ti*t*P1i + b4t*P0i + b5Ti*P0i + b6Ti*t*P0i + c(Xit) + eit \quad (3)$$

where b3 and b6 give the average treatment effect for the two different groups of households. The model is run to explore two dimensions of heterogeneity, by poverty status and household size. Household are assigned to one or the other group depending on whether: (a) they fell below the poverty line at baseline; or (b) they had higher than median household size at baseline.

The same model is adapted to analyse heterogeneity by: (c) targeting method (CBT, DR and SP); and (d) household mobility status (settled, partially mobile, fully mobile). The only difference here is that there is a separate set of simple and interacted dummies for each of the three groups

Treatment effects can be also mediated by a number of factors that relate to programme implementation. In particular the variation in impact according to the total per capita cumulative value of all HSNP transfers received to date is assessed. In this case the model specification is as follows:

$$Yit = a + b1t + b2Ti + b3Ti*CMi + b4t* Ti*CMi\ i + c(Xit) + eit \quad (4)$$

where b4 gives the marginal effect of an additional unit of currency received over the life of the project. In fact for the analysis presented in this report t has been rescaled so that b4 gives the marginal effect of an additional KES 1000 received over the life of the project, calculated at the point in the distribution corresponding to households that have received a cumulative total of KES 2000 per capita – these households in turn correspond to the median HSNP household.

Annex C Impact heterogeneity analysis results

The impact heterogeneity analysis assessed the variation in programme impact across a number of dimensions:

1. By consumption expenditure – *is programme impact stronger for poorer households?*
2. By household mobility status – *does the programme have a differential impact on fully mobile households as compared to partially mobile or fully settled HSNP households*
3. By households size – *since the transfer value is not indexed to household size, the effective per capita value of the transfer is larger for smaller households, therefore is the programme impact stronger for smaller HSNP households?*
4. By total cumulative value of transfers received (per capita) – *due to delays some HSNP households have received fewer transfers than others, so is programme impact lower for households that have received very fewer transfers (adjusting for household size)?*
5. By targeting mechanism – *three alternative targeting mechanisms were randomly allocated across the evaluation areas, so does the programme impact vary by targeting mechanism?*

In relation to the latter, variations in impact between targeting mechanism were analysed at follow-up 1 but did not reveal any systematic differences across the targeting mechanisms and so are not presented in this report. This finding was not surprising since the targeting report shows a large degree of overlap in terms of the characteristics of SP, DR and CBT beneficiaries, so there is no hypothesis as to why HSNP impact should vary by mechanism. At follow-up 2 the dropping of eight sub-locations meant that the sample is no-longer to viable to give robust results by targeting mechanism.

The econometric estimation methods are described in Annex B above. Included in the regression specifications are a range of control variables which are listed and described in the following table.

Table C.1 Description of control variables included in the impact heterogeneity analysis regression models

Variable	Description	HSNP households			Control households				Number of obs
COMMUNITY LEVEL		BL	FU	Dif	BL	FU	Dif	Dif-in-dif	(at FU)
Short rains very bad	Dummy variable equal to one if household located in a community for which the short rains were reported to be very bad.								
Long rains very bad	Dummy variable equal to one if household located in a community for which the long rains were reported to be very bad.								
No Road	Dummy variable equal to one if household located in a community for which the main road is either a livestock track or there is no road								
q410acce_BL	Dummy variable equal to one if household located in a community with has access to formal isntitution to save money (at baseline)								
SL_totfoodaidvalue	Total value of food aid received in the sublocation where the household is located.								
SL_totschfeedvalue	Total value of food aid received in the sublocation where the household is located.								

Variable	Description	HSNP households			Control households				Number of obs
SL_totsuppfeedingvalue	Total value of supplementary feeding received in the sublocation where the household is located.								
HOUSEHOLD LEVEL									
HHSize	Household size at baseline.								
HHHeadAge	Age of the household head.								
HasOrphan	Dummy variable equal to one if there are one or more orphans in the household.								
NumOrphans	Number of orphans in the household.								
FemaleHeadedHH_BL	Dummy variable equal to one if the household head is female at baseline.								
LabourCapacityIndex_BL	Mean labour capacity index at baseline. This index assigns a value 0-1 to the labour contribution of each household member, and sums these to obtain an index value per household: child<6=0, working child (6-14)=0.3, adult assistant (15-17)=0.6, adult (18-54) able to work=1, elderly (>54) able to work=0.5, ill/disabled unable to work=0.								

Variable	Description	HSNP households			Control households				Number of obs
HHDependencyRatio_BL	Dependency Ratio at baseline. This is the ratio of the number of dependents (children<18, people aged over 54, chronically ill or disabled people (18-54)) per HH over household size.								
NoNationalID_BL	Dummy variable equal to one if no-one in the household has a national ID card at baseline.								
NoRepresention_BL	Dummy variable equal to one if the household does not have any representation in this sublocation.								
AmtSavings_BL	Dummy variable equal to one if the household has any savings at baseline.								
HasSavings_BL	Amount of savings at baseline.								
Fully Mobile_BL	Dummy variable equal to one if household reports to be fully mobile at baseline.								
Partially Settled_BL	Dummy variable equal to one if household reports to be partially settled at baseline.								
Fully Settled_BL	Dummy variable equal to one if household reports to be fully settled at baseline.								

Variable	Description	HSNP households			Control households				Number of obs
pov1	Dummy variable equal to one if householdbelongs to the bottom 54% of consumption expenditure distribution at baseline.								
T7JQ04_BL	Dummy variable equal to one if anyone in the household participates in employment programs giving food or cash for work.								
T7JQ09	Dummy variable equal to one if anyone in the household receives other cash transfers.								
Mandera	Dummy variable equal to one if household located in the district of Mandera.								
Marsabit	Dummy variable equal to one if household located in the district of Marsabit.								
Turkana	Dummy variable equal to one if household located in the district of Turkana.								
INDIVIDUAL LEVEL									
age	Age of the individual.								
marital_status_BL	Dummy variable equal to one if the individual is married at baseline.								
gender	Dummy variable equal to one if the individual is male.								
Disability	Dummy variable equal to one if the individual has any disability.								

Variable	Description	HSNP households			Control households				Number of obs
chronic_illness	Dummy variable equal to one if the individual has any chronic illness.								

Table C.2 Impact heterogeneity analysis results – key impact areas

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity							
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Consumption expenditure and poverty rates									
Mean consumption expenditure(KES)	224.8**	0.0412*	361.1***	102.9	245.5	372.3***	248.5**	291.5**	-131.8
Proportion of households in the bottom national decile (%)	-0.0973*	-0.0516***	-0.158**	-0.0500			-0.114*	-0.135	0.111
Proportion of households in below absolute poverty line (%)	-0.0480**	-0.0335***	-0.119***	0.00903			-0.0402*	-0.0480	-0.0265
Poverty gap	-6.806**	-2.964***	-10.80***	-3.413	-6.746	-11.52***	-7.789**	-8.000**	4.694*
Squared poverty gap	-6.521**	-2.510***	-8.940***	-4.602	-5.596*	-10.82***	-7.430**	-7.668**	4.271*
Food security and reliance on food aid									
Mean food consumption expenditure (KES)	158.5**	57.18*	241.4**	85.60	185.9	260.0***	172.2**	229.2*	-116.6
Mean food share of consumption expenditure (%)	-2.140		-3.858**	-0.615					
Mean dietary diversity score	0.412				0.219	0.707*			
Proportion of households food insecure in worst recent food shortage period (%)	0.120								
Proportion of households receiving food aid (%)	-0.0159								
Mean number of months food aid being received	0.591								
Mean monthly value of food aid (as reported by respondents)	-32.37								
Proportion of households receiving school	-0.0229								

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity						
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
feeding (%)									
Mean number of months of receiving school feeding	1.032**	0.381**	1.327**	0.829**	1.512***	0.670	1.142**	0.873**	0.832
Mean monthly value of school feeding programme (as reported by respondents)	520.6						666.7	-138.6	1,473*
Proportion of households receiving supplementary feeding (%)	-0.0163								
Mean number of months of receiving supplementary feeding	0.399								
Mean monthly value of supplementary feeding programme (as reported by respondents)	156.7		-26.52	366.4**					
Asset retention and accumulation									
Proportion of households owning any livestock (%)	-0.00364								
Proportion of households owning goats / sheep (%)	-0.00626								
Proportion of households owning camels (%)	-0.117**	-0.0455**	-0.160***	-0.0805*	-0.137***	-0.113*	-0.138***	-0.0638	-0.127**
Proportion of households owning cattle (%)	-0.00877								
Proportion of household owning key productive assets (%)									
%HH owning any productive assets	0.0575		0.0132	0.0998**	0.0727**	0.0449	0.0462	0.0880**	-0.0369
Animal cart	-0.0238		-0.0558***	0.00929					
Water drum	0.0140								
Plough	N/A								
Wheelbarrow	0.0523								
Sickle	-0.00425								
Pick axe	-0.00611								
Axe	0.0943				0.171*	0.0121	0.132*	-0.00959	-0.137
Hoe	0.0247						0.0307	-0.0247	0.0994*
Spade	N/A								
Machete	N/A								

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) for impact heterogeneity results only significant coefficients are shown; (2) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. (3) n/a signifies too few observations.

Table C.3 Impact heterogeneity analysis results – secondary impact areas

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity							
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Health									
Mean monthly per capita health expenditure per household (KES)	11.66*	4.956*			9.439	16.10**	13.00	12.41**	-11.00
Proportion of population ill or injured in the past 3 months (%)	0.0580				0.0636*	0.0376	0.0490	0.0811	0.0706*
Education									
Mean monthly household education expenditure per child (KES)	20.81						25.56	21.14	-49.30**
Mean monthly education expenditure per child (KES) only for HH with attending child	20.88						26.44	11.58	-66.06*
Proportion of children currently attending school (%): All children, aged 6-17	-0.0598								
Proportion of children currently attending school (%): Females, aged 6-17	-0.0661								
Proportion of children currently attending school (%): Males, aged 6-17	-0.0590								
Proportion of children currently attending school (%): All children, aged 6-12	-0.0586								
Proportion of children currently attending school (%): All children, aged 13-17	-0.0658						-0.0382	-0.113**	-0.228*
Proportion of children aged 10-17 currently in school that have passed Std IV (%)	0.0740**	0.0189**	0.0768	0.0733**	0.0626	0.0927*	0.0869***	0.0156	0.239**
Proportion of children aged 6-17 currently in school that have passed Std IV (%)	0.404*	0.00671***	0.0622**	0.0328	0.0379	0.0467*	0.0535**	0.0232	0.0139
Proportion of children aged 9-17 currently in school that have passed Std IV (%)	0.0770***	0.0265***	0.0887**	0.0736**	0.0724*	0.0904**	0.0866***	0.0274	0.279***
Mean highest class achieved for children aged 6-17 currently in school	0.342**	0.160**	0.381**	0.335**	0.217	0.489***	0.306**	0.419	0.813
Was child enrolled in an education facility this academic year?	0.00414								
Average number of days absent from school in the last 12 months	-1.047								
Child currently attending school and receiving school feeding	0.0412				0.0972*	-0.0163	0.0637*	-0.0832	0.00797
Child has never attended school due to belief that education is not important	-0.00136								

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity							
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Child has never attended school due to cost	0.00868								
Child has never attended school due to household labour requirement	-0.0279								
Livelihood activities									
% of adults (age 18-54) whose main activity is productive work (%)	0.0195		0.0425*	0.00816					
% of adults (age 18-54) whose main activity or secondary activity is productive work (%)	0.00665						0.0233	-0.0497	0.122*
% of adults (age 18-54) whose main activity or secondary activity is paid work	0.0180				-0.0183	0.0419*			
% of adults (age 18-54) whose main activity or secondary activity is productive work	0.00798								
% of adults (age 18-54) whose main activity is productive work	0.0237		0.0454*	0.0194					
Saving, borrowing and credit									
Proportion of households that currently have cash savings (%)	0.0661**	0.0107**	0.0708	0.0625**	0.0800**	0.0609*	0.0998**	-0.0303	0.0347***
Proportion of households that have borrowed money in the last 12 months (%)	0.124***	-0.0127***	0.145***	0.104*	0.167***	0.0877**	0.139***	0.0522	0.104
Proportion of households that have bought something on credit in last 3 months (%)	0.0390	0.0246***			-0.0765	0.135**			
Empowerment of women									
Proportion of main budget decision makers that are female – all households (%)	0.0273								
Proportion of main budget decision makers that are female – female-headed households (%)	0.0380**	0.0122**	0.0374***	0.0297	-0.00491	0.0751**			
Proportion of main budget decision makers that are female – male-headed households (%)	0.0158								
Labour supply for people aged 55 and over									
Individual 55+ doing paid or unpaid work (incl. unpaid domestic work)	0.0187								
Individual 55+ doing paid or unpaid work (excl. domestic work)	0.00385								
% children 5-17 whose main activity is paid or unpaid work (incl. unpaid domestic work)	-0.0662		-0.0727	-0.0643*					
% children 5-17 whose main activity is paid or unpaid work (excl. unpaid domestic work)	-0.0420*	-0.00598*	-0.0450	-0.0397**	-0.0217	-0.0560*			

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity							
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Main activity children 5-17									
Herding/Livestock production	-0.0450**	-0.0124*	-0.0606*	-0.0387**	-0.0240	-0.0610**	-0.0339	-0.0479	-0.119*
Farming/Agricultural production	0.00245								
Collecting bush products: for sale	0.00159				0.00525**	0.000415			
Self-employed	-0.000558								
Paid work including casual labour	0.00630**								
Unpaid domestic and other work	-0.0203								
Education	0.0811*		0.0920	0.0788*	0.0646*	0.0949	0.0834*	0.0550	0.0610
Not working (no specific duty, too old, too young, unable, no opportunity)	-0.00591				-0.0240	-0.0610			
Main activity adults 18-54									
Herding/Livestock production	-0.0202		-0.0639*	-0.00345					
Farming/Agricultural production	0.00800								
Collecting bush products: for sale	-0.0113				0.0400*	-0.0407			
Self-employed	0.0168	0.0172***			-0.0153	0.0526**			
Paid work including casual labour	0.0211								
Unpaid domestic and other work	-0.0312								
Education	-0.0129				0.0196	-0.0305*	-0.00330	-0.0185*	-0.0235
Not working (no specific duty, too old, too young, unable, no opportunity)	0.0342**		0.00639	0.0340*	0.00855	0.0364*			
Coping strategies									
Proportion of HHs borrowing food or relying on help from family	-0.0886								
Proportion of HHs selling animals to buy food	0.0342						0.0132	0.0462	0.327*
Proportion of HHs selling any other assets	-0.0203*	0.00788**	-0.0441***	-0.00418	-0.0309**	-0.00820			
Proportion of HHs buying food on credit	-0.108***	-0.00742***	-0.145**	-0.0831*	-0.0594	-0.148***	-0.0993**	-0.103	-0.101
Proportion of HHs collecting/eating wild food/animals	0.0131		0.0485*	0.0163			0.06	-0.0279	-0.0357***
Proportion of HHs having reduced number of meals	-0.14								
Proportion of HHs eating smaller meals	-0.133								
Proportion of HHs going entire days without eating solids	-0.104						-0.0968	-0.054	0.279*
Well-being of older people and children									
Proportion of people aged 55+ ill of injured in past 3 months (%)	0.0732								

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity							
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Proportion of people aged 55+ whose main activity is paid or unpaid work – Including unpaid domestic work (%)	0.0187								
Proportion of people aged 55+ whose main activity is paid or unpaid work – Excluding unpaid domestic work (%)	0.00385								
Proportion of children (0-17) ill of injured in past 3 months (%)	0.0518				0.0598*	0.0239	0.0457	0.0659	0.0664**
Proportion of children (5-17) whose main activity is paid or unpaid work – Including unpaid domestic work (%):-6.93*	-0.0662								
Proportion of children (5-17) whose main activity is paid or unpaid work – Excluding unpaid domestic work (%):	-0.0420*	-0.00598*	-0.0450	-0.0397**	-0.0217	-0.0560*			

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: for impact heterogeneity results only significant coefficients are shown. Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table C.4 Impact heterogeneity analysis results – unintended impact areas

Outcome	Dif-in-dif with household- and community-level control variables	Impact heterogeneity						
		By cumulative total per capita value of all HSNP transfers received	By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
Informal transfers and sharing									
Proportion of HHs receiving informal cash transfers (%)	0.0190				-0.0909**	0.0240		-0.0855	-0.270**
Mean amount received for those receiving informal cash support (KES)	-630.0						0.0230		
Proportion of HHS receiving informal in-kind transfers (%)	-0.0173								
Mean value received for those receiving informal in-kind support (KES)	-55.32								
Proportion of HHs giving informal cash transfers (%)	0.0741	0.00733*	0.0212	0.123*	0.00106	0.139***			
Mean value given for those giving informal cash support (KES)	656.2								
Proportion of HHs giving informal in-kind transfers (%)	0.00952						0.0263	0.0265	-0.155**
Mean value given for those giving informal in-kind support (KES)	189.7*		234.6**	127.6	385.5*	111.9*	221.8*	72.70	289.6
Social tensions									
Proportion of individuals that are divorced – Overall (%)	N/A								
Proportion of individuals that are divorced – Females (%)	N/A								
Proportion of individuals that are divorced – Males (%)	N/A								
Households mobility									
Proportion of households that are fully mobile (%)	-0.0144								
Proportion of households that are partially mobile (%)	0.00717								
Proportion of households that are fully settled (%)	0.0168								

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: for impact heterogeneity results only significant coefficients are shown. Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Annex D Additional tables

Table D.1 Food aid, school feeding and supplementary feeding – mean number of months received and monthly value

	Treatment areas			Control areas				Number of observations
Outcome	**BL**	**FU2**	**Dif**	**BL**	**FU2**	**Dif**	**Dif-in-dif**	**(FU2)**
Food aid								
Mean number of months food aid being received	6.8	5.7	-1.1*	7	5.3	-1.7***	0.583	1900
Mean monthly value of food aid (as reported by respondents)	1106.3	1886.7	780.4***	1222.6	1958.4	735.9***	44.52	1900
School feeding								
Mean number of months of receiving school feeding	7.6	7.9	0.3	8.3	7.3	-1.1***	1.408*	1342
Mean monthly value of school feeding programme (as reported by respondents)	1159.9	1640.8	480.9	850.9	1584.5	733.6*	-252.7	1342
Supplementary feeding								
Mean number of months of receiving supplementary feeding	4.1	4.7	0.5	4.2	4.9	0.8	-0.235	121
Mean monthly value of supplementary feeding (as reported by respondents)	434.1	588.1	154	322.4	866.6	544.2**	-390.2	121

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.2 Demographic characteristics of study population

Outcome	HSNP Households			Control Households				
	BL	FU2	Dif	BL	FU2	Dif	Dif-in-Dif	N (at FU2)
Mean age	22.2	23.3	1.0***	23.7	24.1	0.5**	0.566**	14340
Proportion of population (%):								
Male	50.2	50.7	0.5*	51.2	51.9	0.7**	-0.170	14340
Disabled	5.3	.	.	7.7	.	.		14340
Chronically ill	2.2	2.2	0.1	2.8	2.8	0	0.0379	14339
Proportion of children (age 18+) (%):								
Orphaned (single or double)	15.8	19.8	4.0***	12.3	16.4	4.2***	-0.153	7567
Orphaned (double)	1.5	3.2	1.7**	0.9	1.6	0.7**	1.031	7942
Disabled	0.7	0.8	0.1	0.9	1	0.2	-0.0901	7941
Chronically ill	0.3	0.4	0.1	0.6	0.3	-0.3	0.371	7941
Proportion of adult males (age 18+) currently married or in consensual union (%)	56.2	55.1	-1.1	61.6	57.8	-3.8***	2.705*	3458
Proportion of adult males (age 18+) currently married or in consensual union and with more than one wife	17.1	18.7	1.6	17.5	22.3	4.8	-3.245	1934
Mean number of wives for married adult males (aged 18+) with more than one wife	2.2	2.2	0	2.3	2.2	-0.1**	0.107	407
Proportion of children aged 11-18 that have ever been married or in a consensual union (%)	0.6	0.6	0	0.5	0.7	0.2	-0.231	3054
Proportion of adults (age 18+) with no national ID card	19.3	17	-2.3**	19.3	16.4	-2.9	0.521	6772
Proportion children<6 with no birth certificate	94.2	92.9	-1.3	97.9	96.3	-1.7	0.337	2004

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.3 Proportion of households owning livestock, by livestock type (%)

	HSNP households			Control households				Number of observations
Outcome	**BL**	**FU2**	**Dif**	**BL**	**FU2**	**Dif**	**Dif-in-dif**	**(at FU2)**
% of HHs owning/rearing livestock								
% HHs owning livestock	61.5**	63.8	2.4	85.1	81.4	-3.8	6.130*	2436
TLU for livestock owned by HH and main provider								
Mean TLU *per capita* for livestock owned currently by HH and main provider	16.5	12.1	-4.4**	20.1	17.6	-2.5	-1.848	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.4 Health status and health-seeking behaviour

	HSNP households			Control households				Number of observations
Outcome	**BL**	**FU2**	**Dif**	**BL**	**FU2**	**Dif**	**Dif-in-dif**	**(at FU2)**
Proportion of people who did not consult a formal health care provider because they could not afford it	26.3	23.2	-3.1	22.5	22	-0.6	-2.503	363
Proportion of people who did not consult a formal health care provider because facility too far away	16.8	20.5	3.7	19.9	27.3	7.4*	-3.650	363
Proportion of people who did not consult a formal health care provider because illness not severe enough	21.1	16.1	-5	13.7	20.3	6.6*	-11.68	363
Proportion of people who did not consult a formal health care provider because self-treated	22.2	19.3	-2.9	35.7	16.9	-18.9*	15.98	363

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.5 Supply of health care facilities

Outcome	HSNP households BL	HSNP households FU2	HSNP households Dif	Control households BL	Control households FU2	Control households Dif	Dif-in-dif	Number of observations (at FU2)
Of those consulting, proportion of people who choose to use a non-governmental health facility (private doctor/nurse, private hospital, NGO/faith-based organisation facility, pharmacist)	20	7.8	-12.2**	21.4	8.9	-12.5	0.262	1345
Of those consulting, proportion of people who choose to use a government health facility (government hospital, health centre or dispensary)	77.6	78.6	1	71.4	85.4	14.0*	-12.92	1345

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.6 Proportion of children that have ever attended school and reasons for having never attended

Outcome	HSNP households BL	HSNP households FU2	HSNP households Dif	Control households BL	Control households FU2	Control households Dif	Dif-in-dif	Number of observations (at FU2)
Proportion of children who have never attended school due to belief that education is not important	10.7	13.9	3.2	12.8	14.6	1.9	1.358	1755
Proportion of children who have never attended school due to cost	3.2	0.5	-2.7*	3.7	0.6	-3.2**	0.442	1755
Proportion of children who have never attended school due to HH labour requirement	56.3	66.9	10.6*	56	65	9	1.609	1755

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%; (2) Estimates are an unweighted average by sub-location (i.e. weight is 1 for each sub-location).

Table D.7 Household members aged 5-17 years main livelihood activities (%)

	HSNP households			Control households				Number of observations
Outcome	**BL**	**FU2**	**Dif**	**BL**	**FU2**	**Dif**	**Dif-in-dif**	**(at FU2)**
Proportion of HH Members engaging in different activities								
Herding/Livestock production	14.6	14.3	-0.4	18.9	18.2	-0.7	0.292	5674
Farming/Agricultural production	0.1	0.4	0.2	0.1	0.1	0	0.246	5674
Collecting bush products: for sale	0.4	0.5	0.1	0.5	0.6	0.1	0.0175	5674
Self-employed	0.3	0.1	-0.2	0.2	0.2	0	-0.182	5674
Paid work including casual labour	0.3	0.4	0.2	0.3	0.2	-0.1	0.294	5674
Unpaid domestic and other work	8.5	5.5	-3.0*	11.2	7.7	-3.5	0.498	5674
Education	69.1	70	0.9	58.3	62.5	4.1*	-3.287	5674
Not working	6.6	8.7	2.1	10.2	10.2	0	2.102	5674

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%.

Table D.8 Household members aged 18-54 years main livelihood activities (%)

Proportion of HH Members engaging in different activities	HSNP households			Control households				Number of observations
	BL	**FU2**	**Dif**	**BL**	**FU2**	**Dif**	**Dif-in-dif**	**(at FU2)**
Herding/Livestock production	18	20.1	2.1	28.4	27.5	-0.9	3.049	4737
Farming/Agricultural production	1.5	1.4	-0.1	0.4	0.5	0.1	-0.267	4737
Collecting bush products: for sale	8	7.5	-0.6	10	10	-0.1	-0.497	4737
Self-employed	11.5	13	1.5	7.1	7.6	0.5	0.966	4737
Paid work including casual labour	13.9	15.9	2.0**	10.5	13.1	2.6**	-0.588	4737
unpaid domestic and other work	25.3	20.7	-4.6***	26.5	23.5	-3.1	-1.583	4737
education	12.6	13.8	1.2	9	12.1	3.1***	-1.905	4737
not working	8.1	6.2	-1.9	5.6	3.2	-2.5**	0.563	4737

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%. Note: the columns do not total 100% because a tiny proportion of households are excluded on the basis of livelihood activities that do not fit into the given categories.

Table D.9 Household mobility

Proportion of households that are (%):	Treatment areas			Control areas			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Fully mobile	6.6	3.5	-3.1**	8.4	6.5	-1.9*	-1.214	2436
Partially mobile	16.6	24.8	8.2***	25.8	33	7.2**	1.019	2436
Fully settled	76.8	71.7	-5.1**	65.8	60.5	-5.3*	0.195	2436

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: (1) Asterisks (*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: *** = 99%; ** =95%; * = 90%; (2) Fully mobile = (whole household moves with livestock); Partially mobile = (some members move with livestock); Fully settled = (no household members move with livestock).

Annex E Methodology for analysis of anthropometrical data

E.1 Calculation of child malnutrition measures

The anthropometric measures presented in Section 4.3 of the this report to assess a child's nutritional status have been measured using the z-score system. The z-score system allows for the standardisation of anthropometric data with reference to an international standard. In this case, the international standard is the WHO Multicentre Growth Reference Study (*WHO 2006*). These new standards were developed *in accordance with the idea that children, born in any region of the world and given an optimum start in life, all have the potential to grow and develop within the same range of height and weight for age* (*Mei and Grummer-Strawn,* 2007). This allows for the WHO 2006 child growth standards to be used worldwide and to thus provide a common basis for the analysis of growth data.

The z-score system expresses anthropometric values as several standard deviations above or below the reference median value taken from the WHO MGRS and is calculated following the equation below:

$$zscore_i = \left\{ \frac{x_i - median(x)}{standard\ deviation(x)} \right\}$$

That is, for each indicator *i* of interest, including height-for-age, weight-for-age and weight-for-height, the z-score is calculated as the difference between the child's indicator and the median value in the reference population, divided by the standard deviation of the indicator.

Three standard indices of physical growth that describe the nutritional status of children are presented in this report, as defined in *Cogill* (2003):

- Height-for-age
- Weight-for-height
- Weight-for-age

Each indicator is expressed in standard deviation units (z-scores) from the median of the standard population. Each of the indices provides different information about growth and body composition, which is used to assess nutritional status:

- **Stunting (length-height-for-age** – length is measured for children below 2 years of age, height is measured for children aged 2**):** identifies past or present chronic undernutrition, but cannot measure short-term changes in undernutrition, i.e. it is not responsive to recent changes in dietary intake or health status. Stunting in a child occurs when growth falters or stops altogether, resulting in a failure to achieve expected height-for-age compared to a healthy well-nourished child. It is associated with a number of long-term factors, often in combination, including chronic insufficient protein, energy and micro-nutrient intake, frequent infection/disease, sustained inappropriate feeding practices and poverty.

  Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the standard population are considered to be **stunted** and are chronically undernourished. Children below minus three standard deviations (-3 SD) from the standard population are considered to be **severely stunted**.

- **Wasting (weight-for-height/length):** identifies children suffering from current or acute undernutrition, with weight significantly below the weight expected of a child of the same length or height in the standard population. Causes include inadequate current food intake, incorrect feeding practices, disease and infection or, more frequently, a combination of these factors. Wasting in individual children can change rapidly and shows marked seasonal patterns associated with changes in food availability or disease prevalence.

  Children whose z-score is below minus two standard deviations (-2 SD) from the median of the standard population are considered **wasted** for their height and are acutely undernourished. Children whose z-score is below minus three standard deviations (-3 SD) from the median of the standard population are considered to be **severely wasted**.

- **Underweight (weight-for-age)**: is a composite measure of stunting and wasting. As such, it measures both past (chronic) and present (acute) undernutrition, although it is impossible to distinguish between the two.

  Children with z-scores below minus two standard deviations (-2 SD) from the median of the standard population are considered to be **underweight**. Children whose z-score is below minus three standard deviations (-3 SD) from the median of the standard population are considered to be **severely underweight**.

Table E.1 gives the seriousness of malnutrition from a public health perspective as defined by the prevalence of malnutrition of different types within a population.

Table E.1 WHO classification of public health importance of prevalence of malnutrition[31]

	Acceptable	Poor	Serious	Critical
Wasted	<5%	5-10%	10-15%	>15%
Stunted	<20%	20-30%	30-40%	>40%
Underweight	<10%	10-20%	20-30%	>30%

E.2 Quality of anthropometric data

Table E.2 to Table E.5 show a small but progressive drop in proportions of children in the sample between baseline, follow-up 1 and follow-up 2. These trends are especially marked in Mandera and Wajir, which both saw serious and sustained insecurity over the life of the multi-round survey.

[31] *WHO, 1995*

Table E.2 Age distribution, by survey round and district (%) for beneficiary household only

Age/survey round	Mandera	Marsabit	Turkana	Wajir	Total	*N*
Baseline						
0-1	2.7	3.6	4.2	5.4	4	*585*
2-5	12.8	9.9	10.3	14.6	12	*1,762*
6	4.6	3.4	3.1	3.3	3.6	*524*
>6	80	83.2	82.5	76.7	80.4	*11,755*
	3,620	*3,470*	*3,348*	*4,188*	*14,626*	
Follow-up 1						
0-1	3.4	3.4	3.5	5.8	4	*574*
2-5	11.7	8.6	10.4	13.2	11	*1,564*
6	4.1	3.2	3.1	3.9	3.6	*510*
>6	80.8	84.7	83	77.1	81.4	*11,563*
	3,425	*3,388*	*3,687*	*3,711*	*14,211*	
Follow-up 2						
0-1	1.3	2.4	2.5	4.6	2.8	*402*
2-5	10.8	8.5	11.8	13.1	11.2	*1,604*
6	3.4	2.3	3	3.2	3	*426*
>6	84.5	86.7	82.7	79.1	83.1	*11,918*
	3,429	*3,348*	*3,593*	*3,980*	*14,350*	

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Baseline and follow-up 1 data exclude sub-locations not visited at follow-up 2.

Table E.3 New-born household members and household members aged below three years at baseline no longer in the household by follow-up round for beneficiary households

Age	Mandera	Marsabit	Turkana	Wajir	Total
Follow-up 1					
New-born	82	66	94	124	366
Movers (<3 at BL)	20	4	8	20	52
Follow-up 2					
New-born	38	41	53	120	252
Movers (<3 at BL)	29	1	4	15	59

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012. Notes: Baseline and follow-up 1 data exclude sub-locations not visited at follow-up 2.

Table E.4 Sample size by age group, by survey round

Age in months	Baseline	Follow-up 2
0-23		
N	411	311
%	34%	29%
24-60		
N	781	751
%	66%	71%
Total	**1192**	**1062**

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table E.5 Sample size by age group, by survey round and district

Age in months	Baseline	Follow-up 2	Age in months	Baseline	Follow-up 2
Mandera					**Marsabit**
0-23					0-23
N	24	30	N	107	72
%	14%	16%	%	33%	32%
24-60					24-60
N	145	154	N	217	155
%	86%	84%	%	67%	68%
Total	**169**	**184**	**Total**	**324**	**227**
Turkana			**Wajir**		
0-23					0-23
N	129	87	N	151	122
%	41%	33%	%	41%	35%
24-60					24-60
N	189	179	N	230	263
%	59%	67%	%	60%	68%
Total	**318**	**266**	**Total**	**381**	**385**

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table E.6 and Table E.7 show that the proportion of outliers found in the sample also increased between survey rounds. This is particularly driven by Mandera and Turkana. This is likely due to a combination of factors including:

- Age data between baseline and follow-up two for individual household members present in both survey rounds did not always match. This is despite the best efforts of the survey teams using detailed locally constructed event calendars[32]. This is due to the widespread lack of knowledge by respondents as to their own ages and those of their young children, alongside a widespread lack of reliable documentary evidence as to date of birth for household members.

[32] A detailed event calendar was constructed in each sub-location by the field team supervisors in conjunction with sub-location chiefs and a collection of elders and other informed community members such as teachers and health workers.

- Insecurity in the four districts, and especially in Madera and Wajir, meant that survey supervision by international expertise was more limited in follow-up 2 as compared to baseline.

Table E.6 Proportion of outliers among beneficiaries, by survey round and age group (weighted)

Age in months		BL	FU2
0-23	Overall	15%	26%
	Underweight	2%	2%
	Stunting	8%	23%
	Wasting	9%	12%
24-60	Overall	8%	14%
	Underweight	2%	1%
	Stunting	4%	8%
	Wasting	5%	8%

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

Table E.7 Percentage of outliers among beneficiaries, by survey round, age group, and district (weighted)

Age in months		BL	FU2	Age in months		BL	FU2
Mandera				**Marsabit**			
0-23	Overall	30%	54%	0-23	Overall	26%	21%
	Underweight	4%	1%		Underweight	3%	3%
	Stunting	20%	48%		Stunting	12%	17%
	Wasting	11%	25%		Wasting	18%	10%
24-60	Overall	15%	15%	24-60	Overall	10%	7%
	Underweight	0%	1%		Underweight	3%	0%
	Stunting	8%	14%		Stunting	3%	5%
	Wasting	7%	1%		Wasting	7%	3%
Wajir				**Turkana**			
0-23	Overall	7%	18%	0-23	Overall	11%	33%
	Underweight	0%	0%		Underweight	3%	4%
	Stunting	5%	18%		Stunting	6%	26%
	Wasting	3%	8%		Wasting	7%	15%
24-60	Overall	3%	3%	24-60	Overall	10%	33%
	Underweight	0%	1%		Underweight	3%	1%
	Stunting	2%	3%		Stunting	5%	15%
	Wasting	1%	0%		Wasting	5%	26%

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov 2012.

E.3 Child nutrition estimates from other studies

Table E.8 Nutrition indicators by province

	Stunting			Wasting			Underweight		
	2000	2003	2008-09	2000	2003	2008-09	2000	2003	2008-09
Nairobi	29.6	18.7	22.7	3.1	4.5	2.6	12.4	6.3	10
Central	27.4	27	25.7	4.6	4.4	4.5	15.4	14.6	16.7
Coast	33.7	34.9	34	6.4	5.7	11.2	21.1	25.4	28.5
Eastern	42.8	32.5	32.8	7.8	4.2	6.7	29.6	21.4	25.2
Nyanza	35.9	31.1	26.9	5.2	2.3	3.2	19.9	15.6	13.7
Rift Valley	36.8	31.6	30.9	7.6	7.7	6.7	24.9	24	23.7
Western	38.1	30.2	28.4	5.5	4.5	2.6	21.5	19	14.8
North Eastern	**na**	**24.3**	**31.1**	**na**	**26.5**	**18.4**	**na**	**33.7**	**31.1**

Source: DHS (2008-09).

Table E.9 Acute Malnutrition Rates by District (%)

		GAM	SAM	GAM (MUAC)
Mandera Central	April-May 2012	17.9	3.5	10.1
Wajir East	Nov-11	30.6	7.6	5.1
Wajir North and Wajir West	Nov-11	27.9	5.6	7.6
Wajir South	Jan-12	23.1	4.6	9.4
Turkana Central	Dec-11	16.9	3.1	10.7
Turkana South	Dec-11	15.5	2.2	10.6
Turkana North East	Dec-11	13.7	3.2	18.4
Turkana North West	Dec-11	9.7	2.6	14.3

Source: Various surveys published on the OCHA Kenya page[33]. Note: Global Acute Malnutrition (GAM) is Weight-for-Height <-2 and/or Oedema. Severe Acute Malnutrition (SAM) is Weight-for-Height <-3 and/or Oedema. Mid-Upper Arm Circumference (MUAC) GAM is <= 125mm.

[33] http://ochaonline.un.org/kenya/FieldCoordination/tabid/6428/language/en-US/Default.aspx

Annex F Standard errors and design effects for baseline and follow-up samples

Table F.1 provides measures of the standard errors and design effects for the baseline and follow-up samples for a number of sample characteristics. It also provides data on intra-cluster correlation at baseline and follow-up, and temporal correlation between the two surveys.

The samples upon which these metrics have been calculated are comprised of household types As, Bs, Cs and Ds (see section A.1.4 in Annex A above). The means have been calculated using different weights to those that are used in the impact analysis featured in this report[34]. The weights have been adjusted in order to make the samples representative of the full sample frame population at baseline.

[34] The reason the impact evaluation estimates are weighted only to represent only the population in the 48 evaluation sub-locations is that the programme operated differently in evaluation areas than it did in non-evaluation areas. This means that the beneficiary groups in those areas are different, making it not viable to draw inferences about programme impact for a wider population than the 48 evaluation sub-locations.

Table F.1 Means, standard errors, confidence intervals, design effects and intra-cluster correlations for baseline and follow-up samples, and temporal correlation between baseline and follow-up

	Baseline sample						Follow-up 2 sample						
Indicator	**Mean**	**Sampling error**	**Confidence intervals @ 95%**		**DEFF**	**DEFT**	**ICC**	**Mean**	**Standard error**	**Confidence intervals @ 95%**		**DEFF**	**DEFT**	**ICC**	**temp corr**
			Lower Limit	**Upper Limit**						**Lower Limit**	**Upper Limit**				
Mean consumption expenditure															
Proportion of households (%):															
absolute poverty line															
in the bottom national decile															
Poverty Gap															
Mean food consumption expenditure															
Mean food share of consumption expenditure (%)															
Mean dietary diversity score															
Proportion of households food insecure in worst recent food shortage period (%)															
Food aid															
School feeding															
Supplementary feeding															
Proportion of households owning…															
Any livestock															
Goats / sheep															
Camels															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Cattle															
Proportion of households owning…															
Animal cart															
Water drum															
Plough															
Wheelbarrow															
Sickle															
Pick axe															
Axe															
Hoe															
Spade															
Machete															
Mean monthly per capita health expenditure per household (KES)															
Proportion of population ill or injured in the past 3 months (%)															
Mean monthly household education expenditure per child (KES)															
Proportion of children currently attending school (%):															
All children, aged 6-17															
Females, aged 6-17															
Males, aged 6-17															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
All children, aged 6-12															
All children, aged 13-17															
Proportion of children aged 10- 17 currently in school that have passed Std IV (%)															
Mean highest class achieved for children aged 6-17 currently in school															
% of adults (age 18-54) whose main or secondary activity activity is productive work															
% of adults (age 18-54) whose main activity is productive work															
Proportion of households (%):															
currently have cash savings															
have borrowed money in the last 12 months															
bought something on credit in last 3 months															
Mean total credit outstanding (KES)															
Proportion of households reporting a decline in welfare compared to a year ago (%)															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Proportion of households that in the last 30 days have had to (%):															
Borrow food or rely on help from family or relatives															
Sell any of your animals to buy food															
Sell other assets (not animals)															
Buy food on credit from a shop															
Collect and eat wild foods and/or animals															
Reduced number of meals															
Eaten smaller meals															
Skipped entire days without eating															
% of main budget decision makers that are female, for…															
All households															
Female-headed households															
Male-headed households															
Proportion of people aged 55+ ill of injured in past 3 months (%)															
Proportion of people aged 55+ whose main activity is paid or unpaid work (%):															
Including unpaid domestic work															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Confidence intervals @ 95% Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Confidence intervals @ 95% Upper Limit	DEFF	DEFT	ICC	
Excluding unpaid domestic work															
Proportion of children (0-17) ill of injured in past 3 months (%)															
Proportion of children (5-17) whose main activity is paid or unpaid work (%):															
Including unpaid domestic work															
Excluding unpaid domestic work															
Receiving cash support															
Proportion receiving informal cash transfers (%)															
Mean amount received for those receiving (KES)															
Receiving in-kind support															
Proportion receiving informal in-kind transfers (%)															
Mean value received for those receiving (KES)															
Giving cash support															
Proportion giving informal cash transfers (%)															
Mean amount given for those giving (KES)															
Giving in-kind support															
Proportion giving informal in-kind transfers (%)															
Mean value given for those giving (KES)															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Mean household size															
Mean dependency ratio															
Mean number of children (<6) per HH															
Mean number of children (<18) per HH															
Mean number of elderly (age 55+) per HH															
Proportion of households containing at least one (%):															
Child (<18)															
Elderly (age 55+)															
Orphan (single or double)															
Chronically ill member															
Disabled member															
Proportion of households (%):															
Containing only one member (i.e. single person household)															
Are ‘skip generation’ household (no-one aged 18-54)															
Proportion of households (%):															
with female household head															
with child household head															
with elderly household head															
with main provider that is a household member															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Proportion of individuals that are divorced (%):															
Overall															
Males															
Females															
Proportion of households that are (%):															
FullyMobile															
PartialSettled															
FullySettled															
Food aid															
Mean number of months food aid being received															
Mean monthly value of food aid (as reported by respondents)															
School feeding															
Mean number of months of receiving school feeding															
Mean monthly value of school feeding programme (as reported by respondents)															
Supplementary feeding															
Mean number of months of receiving supplementary feeding															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Mean monthly value of supplementary feeding (as reported by respondents)															
Mean age															
Proportion of population (%):															
Male															
Disabled															
Chronically ill															
Proportion of children (age 18+) (%):															
Orphaned (single or double)															
Orphaned (double)															
Disabled															
Chronically ill															
Proportion of adult males (age 18+) currently married or in consensual union (%)															
Proportion of adult males (age 18+) currently married or in consensual union and with more than one wife															
Mean number of wives for married adult males (aged 18+) with more than one wife															
Proportion of children aged 11-18 that have ever been married or in a consensual union (%)															

Indicator	Baseline sample						Follow-up 2 sample						temp corr
	Mean	Sampling error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95% Lower Limit	Upper Limit	DEFF	DEFT	ICC	
Proportion of adults (age 18+) with no national ID card															
Proportion children<6 with no birth certificate															
Saving															
Mean total household cash savings, among households that currently have cash savings (KES)															
Proportion of households with cash savings who save their money with a bank or formal institution															
Borrowing															
Proportion of households that have borrowed in last 12 months that are in debt															
Mean household debt at time of interview , among households who have borrowed in the last 12 months (KES)															