



Oxford Policy Management



# KENYA HUNGER SAFETY NET PROGRAMME

## Monitoring and Evaluation Component

Quantitative Impact Evaluation Report: 2009/10 to  
2010/11

Oxford Policy Management (OPM)

Institute of Development Studies (IDS)

May 2012

## Preface / Acknowledgements

The authors thank all the individuals who have contributed to undertaking the HSNP M&E survey fieldwork and to producing this baseline report.

They include: the HSNP Secretariat and other HSNP management consultants that have provided support and cooperation in the inception and data collection phases; the Ministry of State for the Development of Northern Kenya and Other Arid Lands and DFID for their support in the evaluation design; the staff members of Research Solutions and Research Guide Africa, both past and present, and in particular the M&E survey field teams who undertook the data collection for this baseline report, usually under challenging conditions; and last, but not least, the respondents who generously gave their time for interviews.

The authors would also like to acknowledge DFID's vision in the design of the HSNP. Their generous support in funding the programme and the impact evaluation is deeply appreciated.

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

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## Executive summary

### 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 (for community-based targeting and dependency ratio beneficiaries) or to individuals (for social pensioner beneficiaries) in the greater Mandera, Marsabit, Turkana and Wajir districts. 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).

### Study design

The impact of the Hunger Safety Net Programme (HSNP) has been assessed using rigorous scientific methods. Under the so-called randomised-control trial (RCT) approach, a number of areas are randomly chosen to be assessed by the evaluation. These areas are randomly assigned to be either 'treatment' areas where the programme will operate, or 'control' areas, in which the programme is not operating, and then populations in the two areas are compared. In this way, the evaluation covers 24 treatment and 24 comparison (control) sub-locations, and the impact analysis is therefore based on the comparison of 1,434 HSNP households (the treatment group) with 1,433 control group households. Both the treatment and the control group households were selected under the same HSNP targeting procedures and are therefore fully comparable. The control group will come into the programme two years after they were selected, so they will eventually benefit from the programme.

This report relates to the impact of the programme on HSNP households after 12 months from the point of targeting. It compares the situation of HSNP and control households at the time of their selection into the programme (baseline), with their situation 12 months later (year 1 follow-up). Over this 12 month period most of the HSNP households covered by the evaluation had received 4-5 bi-monthly transfers (KES 2,150). A second round of data collection (year 2 follow-up) is ongoing and next year (2013) this will enable an assessment of HSNP impact after 24 months. After 24 months the HSNP households covered by the evaluation should have received 10-11 bi-monthly transfers, and may have begun to more substantially modify their behaviour (e.g. in terms of investment choices, livelihood activities, etc.) in response to receiving a regular and reliable stream of additional income from HSNP. Therefore the programme may have more pronounced and/or additional impacts after operating for 24 months as compared to the impact findings presented in this report which relate to the impact of the programme on households after 12 months.

This quantitative impact evaluation report is accompanied by two other reports which together give a comprehensive account of the programme's impact on HSNP households after 12 months: (1) a report summarising the findings of the qualitative impact research (Qualitative Impact Evaluation Report); and (2) a synthesis report which draws together the findings of the qualitative and quantitative impact analysis (Impact Evaluation Synthesis Report). An additional Operational Monitoring Report assesses the effectiveness of the implementation of the various components of the programme.

## Key results

The evaluation finds no significant impact on poverty of HSNP households after 12 months. However, control households have seen a statistically significant increases in poverty of around 5% and no such decline is noted in treatment households. This implies that the programme could be providing a cushioning function and thus mitigating the poverty impact of the drought amongst HSNP households. Analysis also shows that there is a statistically significant positive impact on consumption for poor households and on those that are fully mobile<sup>1</sup>.

Moreover, once one controls for the fact that some HSNP households have received more transfers than others, and that the effective per capita value of the transfers is much smaller for larger households, an impact on the poverty is detected. This means that receipt of a larger total value of transfers per household member is associated with a higher level of programme impact.

The programme is having a positive impact on dietary diversity, with beneficiary households able to add more food groups to their diet as a result of the programme. This result appears to be driven by a particularly strong effect on poorer households, and is also most pronounced for fully mobile and partially mobile households.

The programme is not having an impact on households' propensity to receive food aid, either positive or negative, nor in relation to school feeding or (broadly speaking) supplementary feeding for children, indicating that the HSNP is not having a negative substitution effect on other forms of aid for beneficiary households.

The programme is having a significant positive impact on livestock ownership in terms of retention of goat / sheep holdings in the face of the drought. However, once other factors are controlled for this result only persists for large households and mobile households. These results are encouraging but not by themselves conclusive. Findings from the qualitative research support the conclusion that the programme is having a positive impact on livestock ownership amongst HSNP households, by enabling them to avoid selling goats and sheep.

## Secondary impact areas

Although analysis did detect not significant positive impact on average health expenditure for HSNP households, a significant impact is detected when one controls for other factors and for variation in the effective *per capita* cumulative value of the transfers.

Despite not increasing the numbers of children going to school, the programme is having a positive impact on children already in school. Children in beneficiary households attending school show a significantly higher rate of class progression (grade for age). This impact is driven by fully mobile households and poor households in particular. This positive impact on class progression is also reflected in a statistically increase in the average highest class achieved for children aged 6-17.

Analysis of price data on selected commodities in evaluation locations shows that, while there has been considerable inflation for specific items, the programme is having neither an inflationary impact nor a stabilising impact on seasonal price variations.

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<sup>1</sup> Fully mobile households are defined as those where the whole household moves with livestock. Partially mobile households are those where some members move with livestock while others stay together in one fixed place.

The impact of programme on labour supply was assessed by considering the proportion of proportion of adult household members aged 18+ that report their main or secondary activity to be productive work (unpaid domestic work is not considered as productive work)<sup>2</sup>. The data reveal no significant impact on labour supply, suggesting that the programme is not having the feared impact on increased dependency.

A small proportion of HSNP households report positive changes to work patterns due to the programme, and being able to start, expand or improve a business as a direct result of the programme. This happens more amongst beneficiaries than is the case for control households. HSNP households were asked whether these changes were the direct result of the programme and almost all reported that they were due to HSNP.

The programme is having a positive significant impact on HSNP households' ability to purchase food and other household items on credit, although when controlling for other factors this impact only persists amongst poorer households.

Although there is no significant impact on the propensity of HSNP household to borrow cash, either formally or from family or friends, the data do indicate that their ability to access cash in an emergency has increased. This has important implications for HSNP households' ability to smooth consumption in the face of shocks that are endemic to the HSNP districts,

Results show that the programme has not had a significant impact on reducing households' propensity to be affected by shocks that produce a decline in welfare, and that beneficiary households are not less likely to engage in negative coping strategies in response to these shocks. This is a matter for further investigation in the second follow-up.

Interestingly, it does appear that the programme is having a significant impact on female empowerment, at least as measured by control over the household budget and the likelihood that females make the main decisions on matters of importance to the household.

Although the analysis reveals no impact on the health status of old people in particular, there is a significant impact on the proportion of older people engaged in non-domestic work. On average, and all else being equal, people aged 55 or over living in HSNP households are less likely to have their main or secondary activity as paid or unpaid work (excluding domestic work). This is positive in terms of the programme's impact on the well-being of older people, who might otherwise rely on casual labour to cover their basic needs.

Equally, as for old people, analysis reveals no impact on the health status of children. The data suggest some slightly puzzling negative impacts on specific household groups in this regard, such as on smaller households and partially settled households. Encouragingly, however, the programme does appear to reduce the likelihood of children to work. This latter impact is more pronounced for smaller households and poorer households. When unpaid domestic work is not considered, the impact appears to be driven by fully settled and fully mobile households.

## Unintended impacts

The study analysed the proportion of households giving and receiving cash and in-kind support in the past three months, and the mean value given/received. Results show that the programme is having an impact on the value of in-kind support given and received by relatively wealthier HSNP

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<sup>2</sup> 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.

households, with these households less likely to receive informal in-kind support and more likely to give it as a result of the programme. This finding could be interpreted as a positive result to the extent that some HSNP households are no longer in need of support, and therefore are less of a burden, as well as being better able to support other less well-off households. On the other hand it could be interpreted as the programme having a disruptive impact on informal support mechanisms which could have potentially negative consequences in the longer term.

Somewhat in contradiction to the finding that HSNP is not having a significant impact on increasing cash giving, a quarter of HSNP households report that they regularly share the HSNP transfer with others outside the household. This includes sharing out of obligation as well as choice, and includes sharing with wives/co-wives that live in other households, but not sharing that was considered as a loan. Amongst those sharing in this way, the average amount reported shared is just over KES 500, which represents a considerable proportion of the transfer cash.

Somewhat against expectations, the data indicate a significant negative impact on the proportion of households containing children and the mean number of children per household, which goes against a hypothesis that the programme might enable, encourage or even oblige HSNP households to take on more dependents. The programme also appears to be having a positive impact on the proportion of households that contain no-one aged 18-54 (so called 'skip generation' households), perhaps because HSNP is making it more feasible for such households, which are generally amongst the most vulnerable, to exist independently. These findings require further research to fully understand.

The programme has not been a source of tension between beneficiary and non-beneficiary households, although perhaps unsurprisingly non-selected households were slightly more likely than HSNP households to report tension between households.

The qualitative research suggests that the programme has in some cases caused tensions within households, which sometimes resulted in divorces. The quantitative data show that, once other factors are controlled for, there does indeed appear to be 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.

Finally, the study analysed the proportion of households that are fully mobile, partially mobile and fully settled (see footnote 1 above). The results show that, once other factors and variations in the effective value of transfers received (i.e. variations in number of transfers received and household size) are controlled for, the programme is 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 seems to be encouraging partially settled households to become fully settled.

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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	<i>Peste des Petits Ruminants</i>
QPS	Qualitative Panel Survey
SRS	Simple Random Sampling
SP	Social Pension
TLU	Tropical Livestock Unit
WFP	World Food Programme

# 1 Introduction

## 1.1 Evaluation study

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 (for community-based targeting and dependency ratio beneficiaries) or to individuals (for social pensioner beneficiaries) in the greater Mandera, Marsabit, Turkana and Wajir districts. 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 pays KES 2,150 to each beneficiary household (or to each social pensioner) every two months, which was 75% of the value of the World Food Programme (WFP) food aid ration in 2006<sup>3</sup>. 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 districts.

In each of the 150 (out of 433) sub-locations where it operates, HSNP beneficiaries are selected by one of three 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).

The overall goal of the Hunger Safety Net Programme (HSNP) project is to reduce extreme poverty in Kenya by delivering regular guaranteed cash transfers to 300,000 chronically food insecure people (60,000 households) in order to reduce poverty, food insecurity and malnutrition, and promote asset retention and accumulation in these 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 last six months of data collection the Horn of Africa has suffered serious drought which has sparked a severe food crisis and high malnutrition rates. Parts of Kenya and Somalia are experiencing famine conditions with estimates of more than 10 million people now affected in drought-stricken areas of Djibouti, Ethiopia, Kenya, Somalia and Uganda. It is important to keep this context in mind when interpreting the results here.

Oxford Policy Management (OPM) and the Institute of Development Studies (IDS) have been contracted by DFID to undertake a rigorous evaluation of the programme's impact. The impact evaluation is based on the collection of quantitative and qualitative information over three years on the following potential impacts of the HSNP:

<sup>3</sup> Value of HSNP transfer was increased from KES 2150 to KES 3000 with effect from payment cycle 16 (Sept/Oct 2011) and will be increased to KES 3,500 with effect from cycle 19 (Mar/Apr 2012). There was a one off doubling of transfer in Jul/Aug 2011 to support households cope 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 entered the programme and start receiving the transfer immediately – while in 'control' sub-locations 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, and the first round of follow-up data collection finished in November 2011 (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.

This report relates to the findings from the quantitative study on the impact of the programme on HSNP households after 12 months from the point of targeting. It compares the situation of HSNP and control households at the time of their selection into the programme (baseline), with their situation 12 months later (year 1 follow-up). Over this 12 month period most of the HSNP households covered by the evaluation had received 4-5 bi-monthly transfers (KES 2,150). As mentioned above, a second round of data collection (year 2 follow-up) is on-going and next year (2013) this will enable an assessment of HSNP impact after 24 months. After 24 months the HSNP

households covered by the evaluation should have received 10-11 bi-monthly transfers, and may have begun to modify more substantially their behaviour (e.g. in terms of investment choices, livelihood activities, etc.) in response to receiving a regular and reliable stream of additional income from HSNP. Therefore the programme may have more pronounced and/or additional impacts after operating for 24 months as compared to the impact findings presented in this report which relate to the impact of the programme on households after 12 months.

This report is accompanied by three other reports which together give a comprehensive account of the programme's impact on HSNP households after 12 months, the operational performance of the programme, and any recommendations from the Evaluation: (1) a report summarising the findings of the qualitative impact research (Qualitative Impact Evaluation Report)<sup>4</sup>; (2) an Operational Monitoring Report<sup>5</sup> which presents findings on the operational effectiveness of the programme; and (3) a Synthesis report<sup>6</sup> which summarises the findings from the two larger impact reports and presents conclusions and recommendations stemming from those findings for the HSNP<sup>7</sup>.

The report is structured as follows: the rest of the introduction outlines the data and analysis methodology. Section 2 presents results of preliminary analysis on the direct use of the HSNP cash transfers by programme households which provides useful context to the main impact analysis. Sections 3, 4 and 5 present the results of the main impact analysis, and are structured in line with the key, secondary and unintended impact areas listed above respectively.<sup>8</sup> Section 6 summarises the key conclusions to emerge from the quantitative impact analysis results.

There are also a number of detailed technical annexes. Annex A provides a detailed description of the evaluation design and sampling strategy. Annex B describes the econometric methods used in the impact analysis. Annex C give the summary results of the impact heterogeneity analysis. Annex D and Annex E contain some additional impact analysis tabulations and figures which are referenced in the main body of the report. **Error! Reference source not found.** provides information on the precision of all impact indicators.

## 1.2 Data and analysis methodology

### 1.2.1 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

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<sup>4</sup> Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Qualitative Impact Evaluation Report: 2009/10 to 2010/11, March 2012.

<sup>5</sup> Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Consolidated Operational Monitoring Report, May 2012.

<sup>6</sup> Kenya Hunger Safety Net Programme Monitoring and Evaluation Component Impact Analysis Synthesis Report, May 2012.

<sup>7</sup> Upon request from Dfid a Preliminary Impact report was also produced that provided assessments of impact from the first quarter of data from follow-up year 1 (see A preliminary evaluation of the impacts from the Hunger Safety Net Programme, June 2011).

<sup>8</sup> 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 4.3); dependency is covered under section 4.4 as part of the analysis of the programme's impact on livelihood activities.

control areas. This, when combined with random allocation of treatment over a sufficiently high number of geographical units, ensures comparability between selected household in treatment and control areas.

A household is considered “treated” if it was selected as a beneficiary in a treatment sub-location (Group A). These households began receiving HSNP cash transfers following the completion of the baseline survey in their specific sub-location. In control sub-locations the selected households will only begin to receive cash two years after the baseline survey. The selected households in control sub-locations are referred to as control households (Group B). The allocation of the programme to sub-locations was done as a result of a random process that tries to ensure by design full comparability of the two populations, and such that there were an equal number of treatment and control sub-locations. Sub-locations are the geographical unit of programme allocation (‘clusters’). 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.

Detailed information was collected from both treatment and control households, initially in a baseline survey conducted after targeting but before households began receiving transfers. The same households were then re-interviewed one year after baseline (by which time most households in the treatment group have received 4 or 5 bi-monthly transfers). 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<sup>9</sup>.

Table 1.1 below shows the final sample size of the panel sample which is the basis of the impact analysis. The figures correspond to the number of households for which there are both baseline and follow-up observations. In other words, these are the final sample sizes at follow-up 1, after accounting for attrition. Annex A provides detailed information on attrition rates and the factors associated with it (see section A.2). The impact analysis is therefore based on the comparison of 1,434 ‘treatment group’ households, with 1,433 ‘control group’ households. 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, and 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.1.

Also included in the sample were non-selected households both in treatment and control areas. At baseline these households were important 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. For this round of analysis they are less integral but do allow 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, although this is not covered under this report.

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<sup>9</sup> These are: proportion of households containing an orphan (single or double); proportion of households receiving food aid; proportion of children aged 6-17 currently attending school; proportion of male child aged 6-17 currently attending school; and proportion of children aged 6-12 currently attending school.

**Table 1.1 Panel sample size by treatment status**

	Treatment areas	Control areas	Overall
<b>Selected for HSNP</b>	1,434 [Group A] <i>HSNP households</i>	1,433 [Group B] <i>Control households</i>	2,867
<b>Not selected</b>	881 [Group C]	889 [Group D]	1,770
<b>Overall</b>	2,315	2,322	4,637

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

### 1.2.2 Difference-in-difference impact analysis methodology

Almost all the impact analysis presented in this report is based on the difference-in-difference (dif-in-dif) methodology. Under this approach a range of impact indicators are compared at baseline and follow-up for HSNP and control households. The key measure of impact is the dif-in-dif estimate, which is calculated as the difference between follow-up and baseline for HSNP households minus the corresponding difference for control households (group level fixed effects). A detailed description of the econometric methods used is provided in Annex B.

#### Box 1.1 Significance tests for HSNP impact estimates

A key feature of the impact analysis tabulations is the reporting of significance tests of differences between means. Asterisks (\*) in the first column indicate the significance of the difference between the treatment and control group at baseline, i.e. between columns 1 and 4. Asterisks in columns 3 and 6 indicate that the observed change over time is significant for the treatment and control groups respectively. Asterisks in column 7 indicate that the difference between the changes observed over time for the treatment and control groups (the difference-in-difference estimate) is significant. The level of significance is denoted as follows: three asterisks (\*\*\*) indicate the difference is significant at the 99% level of confidence; two asterisks (\*\*) indicate a 95% level of confidence; one asterisk (\*) indicates a 90% level of confidence. All significance tests, including those relating to regression estimates, are based on standard errors calculated taking into account the survey design and clustering by sub-location.

The impact analysis tabulations presented in this report therefore follow a standard format. For each indicator the first two columns give the mean levels at baseline and follow-up respectively for HSNP households. The third column gives the difference or trend in these mean levels. Columns four, five and six provide the corresponding estimates for control households. The seventh column gives the difference between the trend estimate for treatment and control households, i.e. the dif-in-dif impact measure. The final column shows the number of observations over which the estimates are calculated. This is reported as the number of observations at follow-up (FU1) which, due to missing values or the construction of the particular indicator, is sometimes less than the 2,867 households that comprise the treatment and control panel sample. Where household member-level indicators are presented these relate to the relevant population group living in the panel households, but not a specific cohort of

individuals. In other words these estimates are not based on a panel of household members, since many individuals have joined and left the household between baseline and follow-up.

### 1.2.3 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, 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 very comparable at baseline (with the only exceptions being significant differences in a handful of indicators relating to incidence of orphans, food aid and school enrolment); the property of balance is maintained after attrition if one looks at the panel sample only.

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 1.2 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 therefore important to control for in the impact heterogeneity analysis.

Therefore to check the robustness of the basic dif-in-dif impact measures, the measures are 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; (4) Controlling for changes in time variant household characteristics which are included only as baseline levels in the other specifications; (5) controlling for fixed effects at the household-level (i.e. estimate the model in first differences) rather than at the group (treatment or control) level as in the main specification. See Annex B for a description of econometric estimation methods used.

The results of these checks reveal that the findings are generally robust across different specifications, the only exception being the household level fixed effects models which for some indicators give results in the opposite direction, although always insignificant<sup>10</sup>. 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.

<sup>10</sup> There are three indicators (Mean consumption expenditure, Mean monthly household education expenditure per child (KES), and Proportion of households reporting a decline in welfare compared to a year ago (%)), for which the fixed effect estimates are of opposite sign of the ones of the other specifications.

**Table 1.2 Comparison of non-programme factors affecting treatment and control areas**

Outcome	HSNP households			Control households				Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif	Dif-in-dif	
Proportion of households living in communities:								
• With no road	4.5	8.2	3.7	13.5	9.4	-4.1	7.796	2866
• Reporting very bad long rains	10.7	24.5	13.8	5.8	21.5	15.7	-1.930	2866
• Reporting very bad short rains	26.5	24.9	-1.7	22.6	33.5	10.9	-12.54	2866
• With primary school	50.1	60.1	10.0*	50.2	58.6	8.4	1.637	2866
• With health facility	28.8	37.2	8.4	24.2	40.5	16.3**	-7.871	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 1.3 Mean total value of Supply of food aid – Community Level**

Outcome	HSNP areas			Control areas				Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif	Dif-in-dif	
Food aid	594171	681412	87241	664155	662432	-1723	88,964	48
School feeding	502657	271782	-230874	283258	232750	-50508	-180,366	48
Supplementary feeding	41650	29528	-12122	28395	31131	2736	-14,858	48

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 of the weighted sum by sub-location (i.e. weight is 1 for each sub-location).

### 1.2.4 Analysis of impact heterogeneity

In addition to estimating the overall average programme impact, the impact evaluation also attempted to assess the degree to which programme impact varied across different types of households. This is referred to as impact heterogeneity analysis. The impact heterogeneity analysis assessed the variation in programme impact across a number of dimensions<sup>11</sup>.

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 fully mobile households as compared to partially mobile or fully settled HSNP households*

<sup>11</sup> 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.

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)?*

It must be noted that (except for the case of targeting mechanisms) when disaggregating the data this way the original randomization does not ensure comparability by design between treatment and control any more, as this property only applies to the full sample. Controlling for covariates becomes essential, as well as relying on the assumption of common trends in observable and unobservables 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, while the results are presented in a series of summary tabulations in Annex C.

### **Box 1.2 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 1000 total per capita value of transfers over one year.

## 2 Results (1): Variations in programme exposure and control and use of HSNP transfers

### 2.1 Variability in programme exposure

When considering HSNP impact it is important to note that the different HSNP households benefit from the programme to different extents. In impact analysis terminology this is referred to as variations in 'exposure' to the programme. Programme exposure varies for three reasons:

1. Some HSNP households, particularly social pension households, contain multiple beneficiaries (see Table 2.1 below);
2. Some HSNP households have received more payments cycles than others (see Figure 2.1 below). This is often due to variations in the lag between targeting and payments starting across different sub-locations, but in some cases is also due to individual households experiencing delays in enrolment or problems accessing the cash (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 (Figure 2.2).

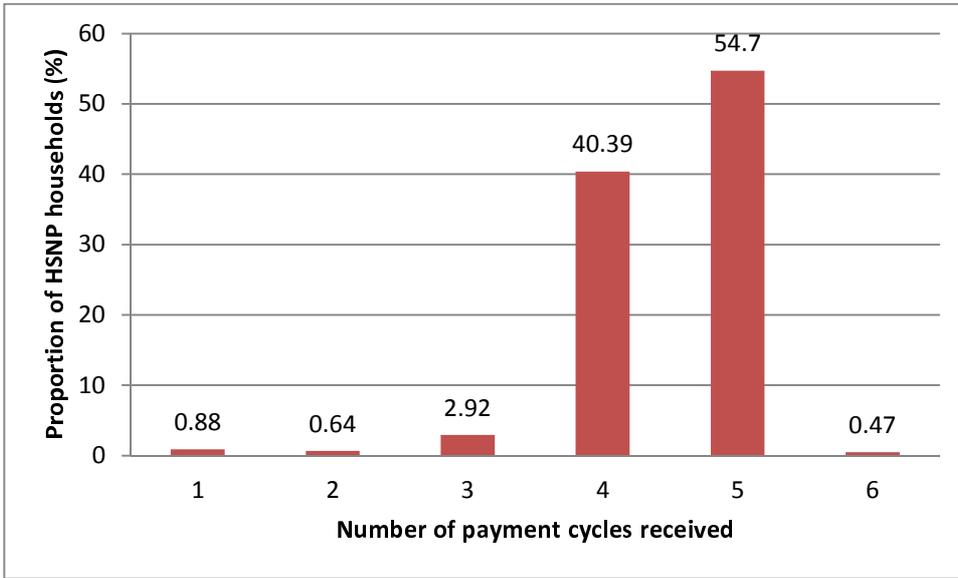
The programme is expected to have a lower impact on households that have received less 'exposure' as a result of living in a large household (where the effective per capita value of the transfer is lower), having received fewer payment cycles, and/or because they contain just one rather than two or more beneficiaries. This effect is taken into account as part of the impact heterogeneity analysis presented in this report.

**Table 2.1 Proportion of households containing multiple beneficiaries and mean number of beneficiaries**

	CBT areas	DR areas	SP areas	All HSNP areas
Proportion of HSNP households containing more than one beneficiary (%)	3.0	1.8	17.5	4.9
Mean number of beneficiaries per household	1.030	1.018	1.175	1.049

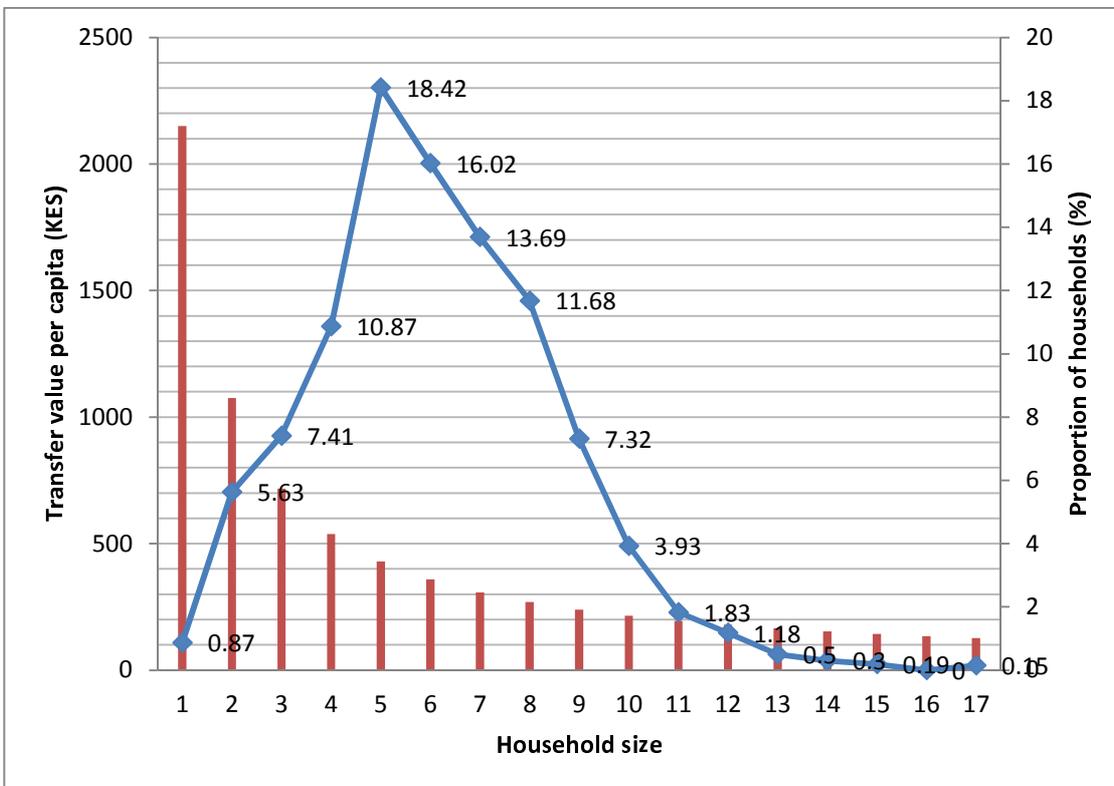
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Figure 2.1 Variation in number of HSNP payment cycles received**



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Figure 2.2 Distribution of HSNP households and per capita transfer value by household size**



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. Notes: Per capita transfer value assumes just one beneficiary per household.

## 2.2 Control over HSNP transfers

The follow-up survey asked about which household member normally decided how the HSNP transfers were spent. Table 2.2 shows that for 79% of HSNP households this person is the named beneficiary, i.e. the person identified by the programme as the main representative of the household (or in the case of social pension, the specific beneficiary of the programme).

Though some seventy per cent of named beneficiaries are indeed female it might be expected that female beneficiaries are less likely to have say over how the transfers are spent. Interestingly, however, this does not appear to be the case; though, where the named beneficiary is not in control of the HSNP cash spending, there are indeed variations between male and female named beneficiaries. Where a female named beneficiary is not in control of the cash this function tends to pass to the household head who is generally male. In the case of male named beneficiaries not in control of the HSNP transfers, it is generally female household members that are neither the household head nor the main provider that decide how the cash is spent.

Table 2.3 below shows the comparative characteristics of the named beneficiary, the person in control of the HSNP transfers and the primary recipient (the person in whose name the HSNP smartcard is held). Since, as mentioned above, most named beneficiaries are in control of the HSNP cash, and since 90% of named beneficiaries are themselves the primary recipient, there is little variation in the characteristics of these three groups.

**Table 2.2 Relationship to named beneficiary of the person that usually decides how the cash transfers from HSNP are used, by sex of named beneficiary (%)**

	Sex of named beneficiary		
	Female	Male	Overall
Proportion of HSNP households where the named beneficiary is the person that normally decides how the HSNP transfer is spent	79.67	77.43	79.0
Characteristics of person controlling HSNP cash spending, if different from the named beneficiary (% that are....):			
Household head	86.87	21.05	65.53
Main provider (who is not also household head)	10.61	7.37	9.56
Other household member	2.53	71.58	24.91
Female	13.64	86.32	37.2

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011

**Table 2.3 Comparative characteristics of named beneficiaries, person in control of HSNP cash and the primary recipient, by targeting mechanism**

	CBT areas			DR areas			SP areas			All HSNP areas		
	Named beneficiary	Person in control of HSNP cash	Primary recipient	Named beneficiary	Person in control of HSNP cash	Primary recipient	Named beneficiary	Person in control of HSNP cash	Primary recipient	Named beneficiary	Person in control of HSNP cash	Primary recipient
Mean age	44.5	45	43.9	45.4	46.8	45.1	65.9	62.3	62.8	51.7	51.2	49.7
Proportion that are (%):												
·Female	81.9	77.8	79.2	73.7	64.7	69.3	51.8	46.3	48.5	69.5	63.3	66.9
·Household head	50.2	58.5	50.5	45.4	57	48.4	72.8	74.7	73.5	55.9	63.2	56.4
·Main provider	43.5	53.1	47	43.7	51.9	46.9	49.9	57.4	51.7	45.6	54.1	48.4
·Aged 55+	28.1	28.2	25.6	26.9	30.3	26.5	98.3	86.2	88.7	50.3	47.6	44.1
·Primary recipient	89.9	80.4	100	92.3	78.4	100	87.7	73.9	100	90.1	77.8	100
·Secondary recipient	16	24	4.5	16.7	24.8	3.9	48.6	45.7	8.8	24.8	29.9	5.2
·Neither primary nor secondary recipient	3.8	6.2	0	1.6	5.4	0	1	3.2	0	2.2	5	0

Source: HSNP M&amp;E Impact Evaluation Survey, Sep 2009-Nov2011.

## 2.3 Use of HSNP transfers

Table 2.4 below shows the most common items purchased by HSNP households. 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. However, this is not supported by the results of the evaluation study, which find almost identical spending patterns between the first and last transfer<sup>12</sup>.

Table 2.5 reveals 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. A similar proportion (13%) report that they sometimes hold back some of the HSNP cash to use at a later date.

**Table 2.4 Most commonly reported items purchased HSNP transfer – first versus most recent**

	First transfer	Most recent transfer
Proportion of beneficiary households reporting spending the transfer on (%):		
Food	88	88
Debt Repayment	40	40
Clothing	23	25
Health	21	22
Education	18	21
Livestock	11	12

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table 2.5 Fungibility and saving of HSNP transfers**

	HSNP households
Proportion of beneficiary households reporting to (%):	
Use the HSNP cash transfer separately from the rest of the household's money	14
Sometimes keep some cash from the HSNP transfer to use later	13

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

<sup>12</sup> A comparison of the distribution of main items purchased with the first and most recent transfers respectively also reveals almost no variation.

## 3 Results (2): HSNP impact – key impact areas

### 3.1 Consumption expenditure and poverty rates

According to the Evaluation's theory of change, it is expected that receipt of cash transfers would directly raise household spending across a range of items – food, groceries, water, assets, health care, education, clothing, transport, assets. Some of this cash will also be allocated to non-consumption transactions – such as repaying debts, saving, or providing informal support to vulnerable relatives. It is anticipated that a regular and predictable cash transfer to a poor household could also stabilise total consumption over time. Cash transfers can reduce poverty directly by raising household incomes. If the additional resources are further invested or used to build assets or savings, the fall in poverty amongst HSNP recipient could be even more pronounced (investment in income generation and possible multiplier effects).

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<sup>13</sup>. The same 'dif-in-dif' comparison is made for poverty rates, with households defined as poor based on this same measure of consumption expenditure using two alternative approaches: (i) proportion of households that fall within the poorest 10% (i.e. bottom national decile) of Kenyan households; and (ii) proportion of households below the national absolute poverty line<sup>14</sup>.

In fact Table 3.1 below shows there has been no significant change in average consumption levels and poverty rates amongst HSNP households between baseline and follow-up. Since reducing poverty is one of the key intended impact areas of the programme this might be interpreted as a somewhat disappointing finding. That is until one considers what has happened to the control households over the same period. In fact control households have seen a statistically significant reduction in their expenditure levels of just under 10%. This is reflected in statistically significant increases in poverty rates of around 5%, in the poverty gap of around 3%. These increases in poverty are likely to reflect the severe drought which affected the HSNP districts between the

<sup>13</sup> 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.

<sup>14</sup> 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).

baseline and follow-up surveys. Although this would be consistent with a finding that the programme is providing a cushioning function, and thus mitigating the poverty impact of the drought amongst HSNP households, the basic dif-in-dif results are not fully conclusive since none of the dif-in-dif impact measures are statistically significant.

However, once one controls for the fact that some HSNP households have received more transfers than others, and that the effective *per capita* value of the transfers is much smaller for larger households, the impact on the poverty measures becomes statistically significant (see Annex C, Table C.2). The implication here is thus that, for those households who on average received an additional KES 1000 total per capita value of transfers, the HSNP did have a significant impact on poverty rates after one year<sup>15</sup>.

Other heterogeneity analysis shows that there is also a statistically significant positive impact on mean consumption for poor households (KES 160) and on those that are fully mobile (KES 277).

**Table 3.1 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	1881.0	1790.3	-90.7	1800.8	1657.5	-143.3***	52.66	2866
Proportion of households (%):								
• in the bottom national decile	57.0	57.1	0.1	60.1	65.4	5.3**	-5.145	2866
• below absolute poverty line	88.4	91.7	3.3	91.4	95.9	4.4***	-1.113	2866
Poverty Gap	43.2	44.5	1.3	44.6	48	3.4**	-2.098	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 1793.978 KSh; (4) A household is below the absolute poverty line if its total monthly per adult equivalent consumption expenditure is below 3127.827 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.

## 3.2 Food security and reliance on food aid

Cash transfers allow additional food to be purchased in households that face food deficits or chronic hunger, and might also be invested in food production activities. Household food acquisition, access and consumption are all therefore expected to improve. It is also expected that

<sup>15</sup> The results indicate that an increase in the total cumulative per capita value of transfers from KES 2000 to KES 3000 (equivalent to increasing the number of transfers received by 50%, or reducing the household size by 33%), is associated with a reduction in the probability of being (absolute) poor by 3.99 percentage points for the median household, and a reduction in the probability of being in the bottom national quintile by 2.07 percentage points.

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, therefore, 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, a dietary diversity index, and whether any household members went entire days without eating solid foods during the worst recent period of food shortage<sup>16</sup>. HSNP households were also asked directly whether they had been able to have more and/or larger meals since receiving HSNP cash transfers.

In fact the programme does appear to be having a significant impact on food security. This is reflected by 71% of HSNP households reporting that since receiving the cash transfers they have been able to have more and/or larger meals, and a positive and statistically significant impact on dietary diversity, as measured by a dietary diversity score based on the number of food groups consumed in the week prior to interview (see Table 3.2 below). Interestingly, the impact on dietary diversity appears to be driven by a particularly strong effect on poorer households (see Annex C, Table C.2). The latter result is intuitive because it is poorer households for whom budget constraints are most likely to restrict dietary diversity, and which are therefore alleviated by the HSNP cash. Unsurprisingly, the impact on dietary diversity is greater for smaller households (for whom the effective per capita value of the transfer is greater). The impact is also most pronounced for fully mobile households, followed by partially mobile households, and with the smallest average (but still significant) impact amongst fully settled households.

**Table 3.2 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	1002.5	1200.2	197.7**	1000.0	1139.0	139.0**	58.68	2866
Mean food share of consumption expenditure (%)	54.7	67.5	12.8***	56.4	70.7	14.3***	-1.511	2866
Mean dietary diversity score	6.6	7.0	0.4***	6.1	6.0	-0.1	0.522***	2866
Proportion of households food insecure in worst recent food shortage period (%)	62.5	55.7	-6.8	72.7	63.9	-8.8	2.029	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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)

<sup>16</sup> 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.

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

The HSNP cash transfers are not intended to be a direct substitute for food aid; the frequency and severity of food shortages in the HSNP districts, combined with the relatively low value of the HSNP transfer, means that many beneficiaries would still be expected to rely on food aid. However, over time there may be a negative impact on the amount of food aid beneficiaries receive. This could happen in two ways. Firstly, entire communities covered by HSNP may be deprioritised for food aid support, e.g. receiving food aid for fewer months each year. Alternatively, even if this doesn't occur, it could be that at the community level HSNP households become less likely to be allocated food aid because they are seen by the community as being less in need of support (either genuinely or simply perceived as such).

To test for the possibility of a substitution effect between cash and food for treated households the dif-in-dif impact measured are estimates for the proportion of households receiving food aid, school feeding and supplementary feeding, 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.

Puzzlingly, it appears that the programme significantly *increases* the likelihood of a household receiving food aid (Table 3.3). However, it appears that this is being driven by changes in food aid allocations patterns across communities which, it can be assumed, are nothing to do with the programme<sup>17</sup>. By chance, at baseline control areas were receiving more food aid than treatment areas, and subsequently food aid levels have fallen for all households, both selected households (Bs) and non-selected households (Ds), in control areas. In fact once one has controlled for other factors, including community-level food aid supply, this apparent positive impact becomes insignificant (see Annex C, Table C.2).

Additional to food aid allocations patterns across communities, it could be that amongst those households that are receiving food aid those benefiting from HSNP households are deprioritised by the community and receive food aid less frequently and/or in lower quantities. In fact, there is no significant impact on mean number of months of food aid received or mean monthly value of food aid received by those receiving HSNP transfers (Table D.1, Annex D). Interestingly, both HSNP and control households have seen a similar, and statistically significant, increase in the mean monthly value of food aid, perhaps reflecting increased supply in response to the drought.

Similar results are observed with regard to school feeding, although in this case the dif-in-dif impact estimate is not significant, with the trends in the proportion of households receiving driven by the supply of feeding programmes across communities, and not due to the programme.

For supplementary feeding the results are a little different. The significant increase in the proportion of control households benefiting is not matched by a similar increase for the non-selected households in the control areas. While the overall dif-in-dif impact estimate is not significant, there is a significant negative impact on large households (-10.0%) and partially settled households (-11.4%), indicating there may be some substitution effects for supplementary feeding with certain types of households being deprioritised in response to the programme.

<sup>17</sup> This assumption is justified by the fact that it is highly improbable that HSNP sub-locations would be systematically prioritised for food aid above non-programme areas.

**Table 3.3 Proportion of households receiving food aid, school feeding and supplementary feeding in the past year (%)**

Outcome	HSNP households			Control households				Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif	Dif-in-dif	
Food aid	69.5*	67.2	-2.3	84.7	74.5	-10.2***	7.892***	2866
School feeding	57.1	43.5	-13.6*	49.0	46.8	-2.3	-11.31	2866
Supplementary feeding	15.5	15.3	-0.3	9.0	15.3	6.3*	-6.519	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

Households in both treatment and control areas were asked about their preference for food or cash support. Cash support or a combination of cash plus food is clearly preferred to food aid, with 67% and 27% of households stating such preferences respectively. Comparing HSNP and control households, the latter appear slightly less likely to prefer cash support or food plus cash, although this result is not statistically significant. Similarly, there are no significant differences between non-selected households in HSNP and control areas.

**Table 3.4 Household preferences for support types: cash versus food support**

Outcome	HSNP households (As)	Control households (Bs)	Non-selected in HSNP areas (Cs)	Non-selected in control areas (Ds)
Proportion of households that (%):				
Prefer cash support	72	62	67	66
Prefer cash + food support	26	29	26	25
Prefer food only support	2	6	5	7

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. Notes: (1) Asterisks in columns 1 and 3 indicate the significance of the difference between the treatment and control group and the non-selected households in treatment and control areas respectively: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; (2) The columns do not sum to 100% because households were also given the option of preferring no support of any type. The specific question asked was: "For a fixed value of support (e.g. Ksh 2150 every two months) which of the following forms of support would you prefer: Cash only; Food plus cash (half cash plus half in food); Food only; Nothing (e.g. no food or cash)."

### 3.3 Asset retention and accumulation

As well as meeting consumption gaps, it is anticipated that over time a regular cash payment should enable households to hold on to and to accumulate assets (including livestock and other productive assets). In other words, it is desirable that cash transfers can provide much 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 also facilitating the investment in productive assets, and hence enabling households to move sustainably out of poverty.

To assess whether households are able to hold on to and accumulate livestock assets dif-in-dif impact measures are estimated for the proportion of households owning livestock, overall and

specifically for goats/sheep, camels and cattle<sup>18</sup>. Table 3.5 below shows that the programme is having a significant positive impact on livestock ownership, with this result unsurprisingly driven by retention of goat / sheep holdings in the face of the drought. However, once other factors are controlled for this result only persists for large households and mobile households (see Annex C, Table C.2), possibly those with more livestock in the first place. Furthermore, controlling for other factors reveals a significant negative impact on camel ownership (-7.75%).

Therefore in terms of retention and accumulation of livestock assets, the overall results are encouraging but not fully conclusive. It is instructive, however, to refer to qualitative research in this regard which presents a very consistent finding that the programme is having a positive impact on livestock ownership amongst HSNP households by enabling them to avoid selling goats and sheep. It is also interesting to consider the analysis of the transfer use presented above in section 2.3, which suggest that it should not be surprising that increased livestock holdings should be driven by increased retention rather than accumulation. Those results showed that very few households (12%) used their most recent transfer to purchase livestock. Furthermore, a similarly low proportion (13%) reported that they ever saved some of the HSNP cash for later use, a result that is consistent with the finding of no significant impact on increased propensity to save or, for those saving, on increased cash savings (see section 6.2.4).

**Table 3.5 Proportion of households owning livestock, by livestock type (%)**

Outcome	HSNP households			Control households				Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif	Dif-in-dif	
Any livestock	61.6*	66.9	5.4	79.6	73.0	-6.6*	11.92**	2863
Goats / sheep	58.4*	63.7	5.4	77.5	73.4	-4.1	9.464*	2788
Camels	28.0	28.4	0.4	31.5	31.9	0.3	0.064	2765
Cattle	15.8	16.7	0.9	20.7	22.3	1.6	-0.708	2746

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 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 3.6 below, except for a puzzling significant negative impact on animal carts (which become insignificant after controlling for other factors) and pick axes.

<sup>18</sup> 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.

**Table 3.6 Proportion of households owning key productive assets (%)**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Animal cart	5.7	6.5	0.8	4.9	7.8	3.0**	-2.180*	2866
Water drum	12.8	14.7	1.9	9.8	10.5	0.7	1.171	2866
Plough	0.7	0.1	-0.5	0.7	0	-0.7*	0.0	2866
Wheelbarrow	6.9	4.3	-2.6	5.5	4.6	-0.9	-1.726	2866
Sickle	3.4	2.2	-1.1**	1.6	0.5	-1.1	-0.00685	2866
Pick axe	11.8	6.6	-5.2	8.9	10.2	1.3	-6.55**	2866
Axe	52.2	61.3	9.0*	59	60	1.0	7.990	2866
Hoe	14.6	16.6	2.0	11.1	10.6	-0.5	2.491	2866
Spade	14.8	16.8	2.0	14	13.4	-0.6	2.593	2866
Machete	48.9	47.8	-1.1	46.8	46	-0.8	-0.353	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 Results (3): HSNP impact – secondary impact areas

### 4.1 Health

According to the theory of change, it is hypothesised that some of the cash transfer income may be allocated to accessing health care for ill household members and other relatives, which is important not only for wellbeing but as an investment in the household's human capital. However, any potential effect on access to treatment, health expenditure and ultimately health status is highly dependent on the state of the supply of health services in the areas of operation of the HSNP.

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<sup>19</sup>.

Table 4.1 below shows that although there has been a statistically significant increase in average health expenditure for HSNP households, the dif-in-dif impact measure is not statistically significant. However, once one controls for other factors, and for variation in the effective *per capita* cumulative value of the transfers received, a significant positive impact is revealed (see Annex C, Table C.3). This latter finding again implies that, for those households receiving on average an additional KES 1000 per capita in programme transfers, we do see a significant impact on health spending. However, it should be noted that this amount is actually so small (around KES 4 per month) it is effectively negligible.

In terms of health outcomes the results in Table 4.1 suggest an overall decline in illness/injury rates for both HSNP and control households, but no significant differences between these two groups. However, once other factors are controlled for there appears to be a significant positive impact on the proportion of population ill or injured in the past three months for smaller households (i.e. HSNP households are *more* likely to report being ill or injured), and those that are partially settled (see Annex C, Table C.3). This is a puzzling result which is not readily explainable.

**Table 4.1 Health expenditure and illness in past three months**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean monthly per capita health expenditure per household (KES)	22.7	29.5	6.7*	21.4	23.4	2.0	4.747	2866
Proportion of population ill or injured in the past 3 months (%)	24.2	17.3	-6.9	23.8	14.5	-9.3	2.413	11558

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

<sup>19</sup> This indicator is calculated over a restricted sample since the question was dropped from the FU1 questionnaire and only reinstated after fieldwork had already been completed in the first four sub-locations in each district. Therefore this indicator does not apply to the 16 sub-locations for which this information was not collected.

These quantitative findings might 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 investing less in nutritional health or drawing down on their assets; as indeed is the case found by this Evaluation.

This interpretation is supported by evidence from the qualitative research which uncovered many testimonies that the HSNP was enabling households to better meet their health needs.

## 4.2 Education

Under the evaluation theory of change it was hypothesised that some proportion of HSNP cash transfers could be allocated to meeting the various expenses associated with educating children in recipient households. These costs are likely to include school fees or 'school funds', transport, boarding fees, uniforms, books and stationery. Also, the HSNP was expected to facilitate higher school attendance and retention rates and lower absenteeism in the face of livelihood and other shocks, although the effect on most of the mentioned school outcomes would depend on the availability and quality of schools in the areas where the programme operates.

However, 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% have not done so due to cost, 2% due to lack of school and 1% because the school is too far. The most common reasons given for having never attended school are domestic duties (49%), working for household own production (13%), and parental attitude that school is unnecessary (15%)<sup>20</sup>. Therefore the programme can only be expected to have an impact on educational outcomes to the extent that it reduces the need for children to perform domestic duties and/or participate in home production. Section 4.8 below reveals that there is a statistically significant impact on child work, but only once other factors (including the supply of education facilities at the community level) are controlled for. It is thus not too surprising to find no significant impact on education expenditure or attendance rates (Table 4.2).

Despite no impact on getting more children into school, the programme is having a statistically significant positive impact for those children already in school. Specifically, the programme is allowing a higher rate of class progression, with 80.5% of children aged 6-17 in HSNP households found to be in a higher class at follow-up compared to 76.5% of children in control households. This is reflected by a strong and significant impact on the proportion of children aged 6-17 that have passed Standard IV. Table C.3 in Annex C reveals that this impact is being driven by fully mobile households and poor households in particular. There is also greater impact on smaller households, for whom the effective value of the transfer is greater.

This positive impact on class progression is also reflected in a statistically significant increase in the average highest class achieved for children aged 6-17, with the dif-in-dif impact estimate significant once other factors are controlled for (see Annex C, Table C.3).

<sup>20</sup> 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.

**Table 4.2 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)	135	123.4	-11.6	115.1	108.4	-6.6	-4.964	1723
Proportion of children currently attending school (%):								
• All children, aged 6-17	61.7*	64.1	2.5	46.8	55.4	8.5	-6.065	6450
• Females, aged 6-17	55.9	59.3	3.4	41.8	50.6	8.8	-5.396	3024
• Males, aged 6-17	66.8*	68.5	1.6	51.2	59.7	8.5	-6.820	3426
• All children, aged 6-12	62.1**	64.9	2.8	45.6	56.3	10.7	-7.825	3836
• All children, aged 13-17	60.9	62.9	2.0	48.9	54.0	5.2	-3.205	2614
Proportion of children aged 10-17 currently in school that have passed Std IV (%)	49.5	60.5	11.0***	51	54.3	3.3	6.985**	2351
Mean highest class achieved for children aged 6-17 currently in school	5.6	5.9	0.3***	5.8	5.8	0.1	0.214	2947

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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.

### 4.3 Stabilise food prices and supplies of key commodities in local markets

HSNP transfers are expected to stimulate the supply of key goods to local markets, which should have the impact of smoothing food price changes and stimulating the creation of new markets. This is because households' purchasing power should be higher and remain more constant than currently. On the other hand, there is a risk that greater purchasing power will have an inflationary effect – increasing prices in the absence of a supply response.

Table 4.3 below shows the average prices of key food commodities at baseline and follow-up for treatment and control areas. These averages are taken at the sub-location level. There are 24 treatment and 24 control sub-locations. The results show that, while there has been considerable inflation for specific items, there are no statistically significant differences in inflation rates between treatment and control areas. In other words the programme is not having an impact on inflation.

Regular monthly price information was also collected for in four sub-locations per district during the follow-up survey in order to analyse whether variability in prices from month to month was reduced by the programme. Plots of the average prices by month are presented in Annex E for ten different items. The plots are disaggregated according to the three types of traders from which the prices were collected: paypoint agents' own shop in treatment areas; non-paypoint shops in treatment areas; non-paypoint shops in control areas. The hypothesis under the evaluation theory of change is that the HSNP may have a stabilising impact on the month-to-month variation in food prices. However, comparing the variations in average prices by month for these three different types of traders does not appear to provide support for this hypothesis. In other words, HSNP does not appear to be having a stabilising impact on seasonal price variations.

**Table 4.3 Average prices of key commodities**

Outcome	HSNP areas			Control areas			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean price of maize grain (kg)	35	47.5	12.5***	36.3	46.9	10.6**	1.921	48
Mean price of beans (kg)	77.5	76.7	-0.8	74	76.3	2.3	-3.125	48
Mean price of milk (l)	48	69.5	21.5***	50.9	64.1	13.2*	8.321	48
Mean price of goat meat (kg)	149.2	205.7	56.5***	152.9	207.3	54.4***	2.129	48
Mean price of cooking oil (l)	131.9	167.1	35.2***	126.3	164	37.7***	-2.530	48
Mean price of sugar (kg)	97.9	129.2	31.3***	99.2	142.5	43.3***	-12.08	48

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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).

### 4.4 Livelihood activities

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'. Dependency refers to households developing patterns of behaviour that rely on a regular cash transfer and are not accumulative, and which are therefore 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.

HSNP and control group households were asked about changes to work patterns and business activities since the baseline survey. The results presented in Table 4.4 below show that 13% of HSNP households reported positive changes to work patterns in this period, compared to just 2% of controls, a difference that is statistically significant. Furthermore, although just 5% of HSNP households reported being able to expand or improve an existing business since baseline, this is still statistically significantly higher than for control households (2%). HSNP households were asked whether these changes were the direct result of the programme and almost all reported that they were due to HSNP.

**Table 4.4 Self-reported changes in work patterns and business activities at follow-up: HSNP vs control households**

Outcome	HSNP households (As)	Control households (Bs)
<b>Work patterns</b>		
% 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
<b>Business activities</b>		
% of households that currently have a business	15	9
% of households able to expand or improve an existing business since BL	5*	2
% of HSNP households able to expand or improve an existing business as a direct result of receiving HSNP cash transfers	4	N/A
% of households started a new business activity since BL	3	1
% of HSNP households that started a new business activity as a direct result of receiving HSNP cash transfers	2	N/A
% of HSNP households that started, expanded or improved a business as a direct result of receiving HSNP cash transfers	5	N/A

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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.

The impact of programme on labour supply was assessed by considering the proportion of proportion of adult household members aged 18+ that report their main or secondary current is productive work. 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. Unpaid domestic work is not considered as productive work.

Table 4.5 below reveals no significant impact on labour supply, suggesting the programme is not having the feared impact on increased dependency. This finding persists even after controlling for other factors (see Annex C, Table C.3).

Programme impact on labour supply of children and the elderly, and thus on the wellbeing of those two groups, is assessed in section 4.8 below.

**Table 4.5 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	61	2.5	62.1	66.1	4	-1.558	5663
% of adults (age 18-54) whose main activity is productive work	54.4	54.5	0.2	57	59	2	-1.830	5663

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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.

## 4.5 Saving, lending, borrowing and credit

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

Table 4.6 below 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. The results show that the programme is having a statistically significant impact on increasing households' uptake of credit, although once controlling for other factors this significant impact only persists amongst poorer households (see Annex C, Table C.3). At the same time the programme is also having a significant negative impact on the average total amount of credit owed, a result that is robust to controlling for other factors and variation in cumulative value of transfers received are controlled for, and which appears to be driven by smaller and relatively better off households (see Annex C, Table C.3).

In other words, HSNP households are now more able to buy on credit, and at the same time have lower credit purchase debts outstanding. This implies the programme is having a significant impact on the ability of HSNP households to smooth consumption, particularly for food the other everyday necessities that can be bought on credit at the local shop.

Table D.4 in Annex D also presents information of average cash savings, proportion of households saving in a bank or other formal institution, proportion of households that have borrowed cash in past 12 months currently in debt and mean debt for households that have borrowed. The programme is not having a statistically significant impact on any of these measures.

**Table 4.6 Saving, borrowing and credit**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>Proportion of households (%):</b>								
currently have cash savings	5.7	7.8	2.1	5.4	5.6	0.2	1.921	2866
have borrowed money in the last 12 months	13.5	12.1	-1.4	10.8	11.0	0.2	-1.584	2866
bought something on credit in last 3 months	61.0	73.5	12.5***	59.5	65.4	5.9**	6.568*	2866
Mean total credit outstanding (KES)	4305.7	3851.7	-454	3314.4	3834.1	519.7	-973.8*	1974

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 total credit outstanding = (for households who bought on credit in past 3 months)

The increased ability to access credit, 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, in addition to asking whether they had *actually* borrowed cash or bought items on credit, HSNP households were also asked about their potential access to credit. Table 4.7 shows that almost a third of HSNP households report that they would be able to borrow a substantial amount of cash in an emergency situation (considerably higher than the 12% who actually did borrow in the last 12 months), and almost all of these households report that it is now easier to borrow emergency cash specifically because they are receiving the cash transfers. Similarly, nearly 80% of HSNP households reported being able to purchase food and other provisions on credit (again higher than the 74% that actually did buy on credit in past three months), with almost all of those credit worthy households reporting that it is now easier to buy on credit specifically because of the programme.

**Table 4.7 Beneficiaries' perception of impact of HSNP on emergency borrowing and credit**

Outcome	HSNP households (As)
<b>Emergency borrowing:</b>	
Proportion of households reporting they are able to borrow a large amount of cash (eg KES 2000 or more) from a non-family member in an emergency situation if they needed to	30
Of those currently able to borrow cash in an emergency situation, proportion reporting it is now easier to borrow cash specifically because of HSNP	94
<b>Buying food and provisions on credit:</b>	
Proportion of households reporting they would normally be able to buy food and provisions on credit from usual supplies	79
Of those currently able to buy on credit, proportion reporting it is now easier to buy on credit specifically because of HSNP	95

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

## 4.6 Vulnerability to shocks

The HSNP is intended to reduce households' vulnerability to shocks by providing them with the means both to mitigate their exposure to certain types of shocks, and to deal with the consequences of any shocks that are suffered. Clearly the HSNP will not prevent many types of shocks (droughts, conflict, disease, etc.), but it may reduce households' exposure to (or mitigate) particular shocks (such as livestock disease) if it allows beneficiaries to diversify their livelihood and asset portfolios, or engage in risk prevention activities (e.g. have livestock immunised). Moreover, the HSNP may allow households to cope with shocks without resorting to actions with long-term negative consequences (such as selling productive assets, restricting consumption, or not paying for health care), which would otherwise leave the household even more susceptible to, and unable to cope with, any future shocks.

Table 4.8 below shows the proportion of households reporting a decline in welfare compared to one year ago (at the time of interview), as well as the proportion of households that engaged in various coping strategies over the 30 days prior to interview. The fall in welfare appears to be severe and widespread, but the results show the programme to have had no significant impact on reducing the likelihood of HSNP households experiencing a decline in welfare compared to a year ago, and no significant impact on reducing the need to engage in coping strategies, at least after 12 months of programme operation.

**Table 4.8 Welfare shocks and coping strategies**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>Welfare shocks</b>								
Proportion of households reporting a decline in welfare compared to a year ago (%)	39.4	42.9	3.5	41.3	50.3	9.0	-5.484	2866
<b>Coping strategies</b>								
Proportion of households that in the last 30 days have had to (%):								
Borrow food or rely on help from family or relatives	58.7	37.1	-21.6**	62.7	40.6	-22.1***	0.513	2866
Sell any of your animals to buy food	29.2	24.8	-4.4	39.7	36.1	-3.6	-0.782	2866
Sell other assets (not animals)	2.5	0.9	-1.6*	3	1.1	-1.9**	0.367	2866
Buy food on credit from a shop	61.4	58.9	-2.6	59.2	56.2	-3.1	0.491	2866
Collect and eat wild foods and/or animals	13.3	6.1	-7.2**	18.5	11	-7.5***	0.241	2866
Reduced number of meals	79.3	61.8	-17.6**	85.4	69.1	-16.3***	-1.286	2866
Eaten smaller meals	76.8	51.6	-25.1***	84.9	57.7	-27.2***	2.067	2866
Skipped entire days without eating	60.6	44.3	-16.3	71.3	52.7	-18.6**	2.292	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

## 4.7 Empowerment of women

HSNP cash transfers are intended to contribute significantly to household spending on food. This may improve the standing of women in the household and community, to the extent that they are primarily responsible for providing food. Furthermore, during implementation transfers have often been targeted towards female household members, even though this was not a specific programme policy, which 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 2.2 above). 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.

Table 4.9 below shows the proportion of household budget decision makers (for entire household budget, not just the HSNP transfers) that are female, for all households, female-headed households and male-headed households. Interestingly there are statistically significant increases in the proportion of decision makers that are female for both male- and female-headed households.

However, the proportion has also increased for control households, although only statistically significant for female-headed households. The basic dif-in-dif impact estimates are not statistically significant, but becomes so (for all households) once other factors are controlled for (see Annex C, Table C.3). The impact appears to be particularly pronounced for partially settled households. Therefore it appears that the programme is having a significant impact on female empowerment, at least as measured by control over the household budget.

**Table 4.9 Proportion of main budget decision makers that are female, by sex of household head**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>% of main budget decision makers that are female, for...</b>								
All households	45.0	60.4	15.4***	46.8	54.0	7.3	8.121	2866
Female-headed households	85.3	96.4	11.1***	83.3	91.6	8.3**	2.764	907
Male-headed households	24.3	42.1	17.8**	28.9	35.7	6.8	10.96	1959

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

## 4.8 Well-being of older people and children

HSNP transfers are expected to have positive impacts on the well-being of older people and children. Children are expected to benefit from improved nutrition, better school attendance, and not needing to work. Older people may gain directly (especially in the social pension), or indirectly (through the increase in wealth of the household). Experience from other cash transfer programmes suggests that in households headed by older people, children may benefit particularly. On the other hand, there the optimal use of the transfer for children and for older people may conflict.

To assess the potential impact on health outcomes the same indicator presented in section 4.1 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 the sub-groups of focus here (children aged 0-17; and those aged 55 and over.<sup>21</sup> The analysis of the impact on children's education is presented in section 4.2 above.

To assess the impact on labour requirement of older people and children, 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.

The results presented in Table 4.10 below show the programme is having no statistically significant impact on the health status of older people. It also suggests there is no impact on the proportion

<sup>21</sup> This indicator is calculated over a restricted sample since the question was dropped from the FU1 questionnaire and only reinstated after fieldwork had already been completed in the first four sub-locations in each district. Therefore this indicator does not apply to the 16 sub-locations for which this information was not collected.

engaged in paid or unpaid work. However, once other factors are controlled it appears the programme is having a statistically significant impact on reducing the need for older persons to engage in non-domestic work (see Annex C, Table C.3).

In other words, although the majority of older people (around 80%) are still reporting their main activity as work (paid or unpaid), for those in HSNP households there has been a shift to doing more unpaid domestic work, and away from other types of work (e.g. casual labour for subsistence). This impact appears to be being driven by older people in poorer households, and in smaller households (where the effective value of the transfer is higher).

**Table 4.10 Health status and labour supply for people aged 55 and over**

Outcome	HSNP households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
Proportion of people aged 55+ ill of injured in past 3 months (%)	37.1	31.1	-6.0	36.9	24.1	-12.9*	6.856	1676
Proportion of people aged 55+ whose main activity is paid or unpaid work (%):								
• Including unpaid domestic work	76.8	81.1	4.3	77.5	81.9	4.3	-0.0418	1714
• Excluding unpaid domestic work	63.0	70.0	7.0**	59.0	72.8	13.8***	-6.860	1714

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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)

Table 4.11 below reveals no statistically significant impact on child health status. This finding persists (in aggregate) once other factors are controlled for. However, there appear to be puzzling impacts on specific household groups (see Annex C, Table C.3). Specifically the programme appears to be having a negative impact on the health status of children in smaller households and partially settled households, with children in these types of HSNP households significantly *more* likely to be ill or injured in the three months prior to interview as compared to control households. This puzzling finding for these specific household groups mirrors that found for health status impact across all individuals (see section 4.1 above).

Encouragingly, the programme appears to be having a significant negative impact on child work, both including and excluding unpaid domestic work, although this result is only apparent once other factors are controlled for (see Annex C, Table C.3). The impact is more pronounced for smaller households and poorer households. When unpaid domestic work is not considered, the impact appears to be driven by fully settled and fully mobile households.

**Table 4.11 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 (%)	21.5	15.7	-5.8	20.7	13.4	-7.3	1.468	6140
Proportion of children (5-17) whose main activity is paid or unpaid work (%):								
- Including unpaid domestic work	24.0	26.3	2.3	28.4	30.6	2.2	0.0805	7091
- Excluding unpaid domestic work	16.3	17.2	0.9	17.3	20.4	3.1	-2.178	7091

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

## 5 Results (4): HSNP impact – unintended impacts

### 5.1 Informal transfers and sharing

Informal transfers are currently extremely significant in northern Kenya. The HSNP is expected to affect the informal transfer system. This may be positive – households may rely less on informal transfers because they are more resilient, or informal systems may be strengthened by the additional resources from HSNP. It may also be negative – the HSNP may crowd out informal transfers that form important components of reciprocity systems, with negative consequences in the long-term<sup>22</sup>.

HSNP households were asked specifically whether they regularly shared any of the HSNP transfer with anyone outside the household. This includes sharing out of obligation as well as own choice, and includes sharing with wives/co-wives that live in other households, but not sharing that was considered as a loan. Table 5.1 shows that a quarter of HSNP households report sharing in this way, and the mean amount shared with others is just over KES 500, which represents a considerable proportion of the transfer cash.

**Table 5.1 Sharing of the HSNP transfer**

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-Nov2011.

Table 5.2 below shows the proportion of households giving and receiving cash and in-kind support in the past three months, and the mean value given/received. It reveals the programme is having a statistically significant negative impact on the value of in-kind support received by HSNP households. This result becomes insignificant once other factors are controlled for, but reappears when variations in the total cumulative per capita value of all HSNP transfers received are accounted for, and is being driven by the relatively better off HSNP households (see Annex C, Table C.5). Once other factors are controlled for, it also appears that relatively better off HSNP households are more likely to give informal in-kind transfers.

In other words, it seems that relatively better off HSNP households are now less likely to be receiving informal in-kind support and more likely to be giving it. On the one hand this could be interpreted as a positive results to extent that some HSNP households are no longer in need of support, and therefore are less of a burden. 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.

<sup>22</sup> The assessment of a 'positive' impact of the HSNP on networks of informal transfers is complicated. For instance, in and of themselves informal sharing obligations, whilst providing mechanisms for redistribution and a potential social safety net, may also hinder accumulation and investment.

**Table 5.2 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		
<b>Receiving cash support</b>								
Proportion receiving informal cash transfers (%)	42.1	36.5	-5.6	37.8	36.7	-1.1	-4.475	2866
Mean amount received for those receiving (KES)	3473.1	2100.9	-1372.3	2553.1	2144.1	-409	-963.3	1042
<b>Receiving in-kind support</b>								
Proportion receiving informal in-kind transfers (%)	40.4	34.6	-5.8	39.9	34.6	-5.3	-0.520	2866
Mean value received for those receiving (KES)	593.6**	642.1	48.4	364.7	663.6	298.9***	-250.5**	964
<b>Giving cash support</b>								
Proportion giving informal cash transfers (%)	19.5	21.1	1.6	17.7	13.5	-4.2	5.853	2866
Mean amount given for those giving (KES)	2262.3	665.9	-1596.3	3119.8	708	-2411.8	815.4	482
<b>Giving in-kind support</b>								
Proportion giving informal in-kind transfers (%)	22.9	17.8	-5.1	22.9	19.6	-3.3	-1.832	2866
Mean value given for those giving (KES)	283.1	259.9	-23.2	294.6	297.7	3.1	-26.35	503

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

## 5.2 Household composition

The HSNP will make transfers to some households and individuals, but not others. It is possible that households will reorganise in response to this. For example, older people receiving the transfer may be encouraged to enter other households, or find others trying to enter their household. Households may reorganise to qualify for the dependency ratio transfers, although the community basis for the targeting should prevent this. So too should one-off targeting, which will preclude rearrangements made to qualify for a transfer, rather than those made to benefit from existing transfers.

It is important to note that the apparently significant negative impact on household size is spurious, caused by inaccuracies in the household roster data at baseline (see discussion in Annex A.2). The dif-in-dif impact measure becomes insignificant for this indicator once the baseline data is adjusted to correct for these inaccuracies. Note, that all the other results discussed here are robust to this adjustment.

The programme appears to be having some rather counterintuitive impacts on household composition, with a significant negative impact on the average number of children per household and proportion of households containing children. These results are surprising because the programme might be expected to enable households to take on more dependents and/or retain their children within the household.

The programme is also having a significant impact on the proportion of households containing no-one aged 18 to 54 – so called ‘skip generation’ households. Whilst the proportion of these households is decreasing for both HSNP and control households, it is decreasing by less for the HSNP households.

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. Similarly it is as expected that amongst a panel of households that the proportion of households containing no-one aged 18 to 54 (skip generation households) should decrease, since in some of these households children will turn 18.

However, one trend that is not so easy to explain is the fact that, for both HSNP and control households, the proportion of households where the main provider is not a household member is decreasing<sup>23</sup>. In other words, it is becoming more likely that the household’s main provider will be a household member.

Table D.3 in Annex D shows how these impacts on household composition are reflected in changes in the characteristics of the study population. It also shows that the programme has had no impact in the proportion of adults aged 18 and over with no national ID card. Although having a national ID card was a condition for being a programme recipient (named card holder able to collect the HSNP cash) it is likely that this increased incentive to register for a national ID has not been matched by efforts to increase civil registration. Worryingly, the proportion of children with no birth certificate (already over 90% at baseline) has increased amongst the study population, suggesting that birth registration processes have weakened between baseline and follow-up in the

<sup>23</sup> 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.

HSNP areas. The population age-sex structure at follow-up is shown in Table D.2, which unsurprisingly follows a similar pattern to baseline.

**Table 5.3 Household composition**

Outcome	H SNP households			Control households			Dif-in-Dif	N (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean household size	6.0	6.1	0.2**	5.5	5.9	0.4***	-0.218**	2866
Mean dependency ratio	0.7	0.7	0.0	0.7	0.7	0.0	-0.00212	2866
Mean number of children (<6) per HH	1.0	0.9	-0.1***	0.9	0.9	0.0	-0.0825**	2866
Mean number of children (<18) per HH	3.4	3.4	0.0	3.0	3.2	0.2***	-0.150***	2866
Mean number of elderly (age 55+) per HH	0.6	0.7	0.0***	0.7	0.8	0.0***	0.00442	2866
Proportion of households containing at least one (%):								
Child (<18)	91.8	92.0	0.2	89.2	91.1	2.0**	-1.784**	2866
Elderly (age 55+)	52.7	55.6	3.0***	60.7	62.2	1.5***	1.455	2866
Orphan (single or double)	23.2**	29.3	6.1***	18.3	24.5	6.2***	-0.0888	2866
Chronically ill member	11.7	15.6	3.9***	14	16.9	2.9***	0.955	2866
Disabled member	8.6	11.4	2.8	7.7	11.3	3.6*	-0.792	2866
Proportion of households (%):								
Containing only one member (i.e. single person household)	1.4	0.9	-0.6	1.6	0.7	-0.9**	0.293	2866
Are 'skip generation' household (no-one aged 18-54)	6.4	5.6	-0.8**	7.4	5.5	-1.8***	1.078*	2866
Proportion of households (%):								
with female household head	34	33.7	-0.3	32.9	32.8	-0.1	-0.139	2866
with child household head	0.2	0.1	0.0	0.1	0.0	-0.1	0.0723	2866
with elderly household head	43.1	45.8	2.7**	49.3	52.6	3.2***	-0.596	2866
with main provider that is not a household member	9.4	6.3	-3.0*	12	8.6	-3.4*	0.631	2866

Source: H SNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

### 5.3 Social tensions

The HSNP may lead to increased tension or conflict by introducing divisions in the community between beneficiaries and non-beneficiaries. This is especially true where conflict is already split along clan lines. Using a sub-location approach (rather than a clan approach) for targeting could exacerbate these tensions. Moreover, beneficiary households and communities may suffer greater insecurity as others are aware of their increased cash holdings and increase attacks that are already common across much of the HSNP districts. This tension may also manifest itself against programme staff or more generally between population groups across the districts.

In HSNP areas (but not control areas), the household questionnaire at follow-up collected some limited information about social tension resulting from the HSNP, but the most significant source of information on conflict and tension was the qualitative fieldwork. Table 5.4 below shows the proportion of households reporting the programme has caused tensions between households, between beneficiary and non-beneficiary households specifically and between sub-locations. The results suggest that the programme has not been a source of tension, although perhaps unsurprisingly non-selected households were significantly more likely than HSNP households to report tension between households as a result of the programme.

**Table 5.4 Proportion of households reporting the programme has caused tensions between households and with other communities (%)**

Outcome	HSNP households (As)	Non-selected households in treatment areas (Cs)
Between households	0.1*	4.2
Between beneficiary and non-beneficiary households specifically	0.3	2.3
With other sub-locations	0.0	1.1

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

The qualitative findings suggested that the programme had in some cases caused tensions within households, which was sometimes resulting in divorce. Obviously these findings need to be interpreted with caution, given the number of determining factors contributing to the break-down of a relationship between two people, but there is some small evidence from the quantitative data to support these respondents' assertions. **Error! Reference source not found.** shows that, while the proportion of males that are divorced has significantly increased, the dif-in-dif impact measures are insignificant. However, once other factors are controlled for there appears to be 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 (see Annex C, Table C.5).

**Table 5.5 Proportion of individuals that are divorced**

Outcome	Treatment areas			Control areas			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>Proportion of individuals that are divorced (%):</b>								
Overall	3.9	4.2	0.3	3.3	3	-0.3	0.627	8724
Females	6.6	6.8	0.2	5.4	5.0	-0.4	0.581	4195
Males	1.3	1.8	0.4**	1.3	1.1	-0.3	0.703	4529

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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%.

## 5.4 Household mobility

The HSNP requires households to be present in their home sub-locations to participate in targeting processes, and to send a representative to collect a transfer from fixed paypoints. It may be that this leads normally mobile households to change their mobility patterns. This could have disruptive effects on their livelihoods.

Table 5.6 below shows the proportion of households that are fully mobile, partially mobile and fully settled. Fully mobile households are defined as those where the whole household moves with livestock. Partially mobile households are those where some members move with livestock while others stay together in one fixed place. Fully settled households are those where 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 between baseline and follow-up surveys. Specifically, the proportion of households that are fully settled has reduced, while the proportion partially settled has increased. In other words households have become more mobile on average. The qualitative research suggests that these changes are related to the drought, which necessitated some of those households that were previously fully settled to send household members away with livestock in search of pasture.

Although the dif-in-dif impact measures shown in Table 5.6 are not significant, analysing heterogeneity of programme impact across relatively poor and non-poor households reveals a significant negative impact on the proportion of households that are fully mobile amongst relatively poorer households. Equally, once variations in the effective value of transfers received (i.e. variations in number of transfers received and household size) are controlled for the impact on the proportion of households that are partially mobile becomes negative and significant, while the proportion of households fully settled becomes positive and significant (see Annex C, Table C.5). This implies that, the larger total value of per capita transfer received, the more the HSNP encourages households to become less mobile.

Thus, overall, there is some evidence to suggest that the programme is causing some households to become less mobile.

**Table 5.6 Household mobility status**

Outcome	Treatment areas			Control areas			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>Proportion of households that are (%):</b>								
Fully mobile	6.1	6.8	0.7	7.2	8.2	1.0	-0.312	2866
Partially mobile	16.8	25.7	8.8***	25.1	31	5.9***	2.928	2866
Fully settled	77.1	67.6	-9.5**	67.7	60.8	-6.9***	-2.616	2866

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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).

## 6 Conclusions

### 6.1 Key impact areas

#### 6.1.1 Consumption expenditure and poverty

Overall the programme is not having an impact on reducing poverty rates amongst HSNP households. However, once one controls for other factors and the fact that some HSNP households have received more transfers than others, and that the effective *per capita* value of the transfers is much smaller for larger households, a significant impact is detected. A positive impact on mean consumption for poor households and on fully mobile pastoralist households is also discovered.

#### 6.1.2 Food security and reliance on food aid

The programme is having a positive impact on dietary diversity, with beneficiary households able to add more food groups to their diet as a result of the programme. Increased dietary diversity is often associated with improved nutritional status and the impact of the programme on child nutrition will be assessed under the second impact evaluation report by comparing anthropometric measures collected in the year 2 follow-up survey with those collected at baseline. It is hoped that the programme's impact on dietary diversity will be reflected in improved nutritional status for children living in HSNP households.

This result appears to be driven by a particularly strong effect on poorer households. The latter result is intuitive because it is poorer households for whom budget constraints are most likely to restrict dietary diversity, and which are therefore most alleviated by the cash transfer. Unsurprisingly, the impact on dietary diversity is greater for smaller households (for whom the effective per capita value of the transfer is greater). The impact is also most pronounced for fully mobile households, followed by partially mobile households, and with the smallest average impact amongst fully settled households.

The analysis discovers that the programme is having no significant impact on households' propensity to receive food aid, either positive or negative. This finding is repeated in relation to school feeding, and broadly speaking for supplementary feeding for children too. This implies the HSNP is not having a negative substitution effect on beneficiary households.

#### 6.1.3 Asset retention and accumulation

The programme is having a significant positive impact on livestock ownership, with this result driven by retention of goat / sheep holdings in the face of the drought. However, once other factors are controlled for this result only persists for large households and mobile households. Somewhat puzzling is the finding that, controlling for other factors, there is a negative impact on camel ownership.

Therefore in terms of retention and accumulation of livestock assets, the overall results are encouraging but not conclusive. Findings from the qualitative research support the conclusion that the programme is having a positive impact on livestock ownership amongst HSNP households, by enabling them to avoid selling goats and sheep.

The programme is not having any significant impact on ownership of non-livestock productive assets.

## 6.2 Secondary impact areas

### 6.2.1 Health

Although the dif-in-dif measure did not reveal a statistically significant increase in average health expenditure for HSNP households, once one controls for other factors, and for variation in the effective *per capita* cumulative value of the transfers received, a significant positive impact is revealed.

### 6.2.2 Education

Despite no impact on getting more children into school, the programme is having a positive impact on those children in school. Specifically, the programme is allowing a higher rate of class progression, with 80.5% of children aged 6-17 in HSNP households found to be in a higher class at follow-up compared to 76.5% of children in control households. This is reflected on a strong and significant impact on the proportion of children aged 10-17 that have passed Standard IV. This impact is driven by fully mobile households and poor households in particular. There is also greater impact on smaller households, for whom the effective value of the transfer is greater.

This positive impact on class progression is also reflected in a statistically increase in the average highest class achieved for children aged 6-17.

### 6.2.3 Livelihoods

A small proportion of HSNP households report positive changes to work patterns due to the programme. Furthermore, 5% of HSNP households have been able to start, expand or improve a business as a direct result of the programme, more than is the case for control households. Under the year 2 impact evaluation the direct (rather than self-reported) impact of HSNP on livelihoods and business activities will be measured and analysed.

HSNP and control group households were also asked about changes to work patterns and business activities since the baseline survey. Some 13% of HSNP households do report positive changes to work patterns in this period, compared to just 2% of controls. HSNP households were asked whether these changes were the direct result of the programme and almost all reported that they were due to HSNP.

The impact of programme on labour supply was assessed by considering the proportion of proportion of adult household members aged 18+ that report their main or secondary activity is productive work (unpaid domestic work is not considered as productive work)<sup>24</sup>. The data reveal no significant impact on labour supply, suggesting that the programme is not having the feared impact on increased dependency. This finding persists even after controlling for other factors.

### 6.2.4 Saving, lending, borrowing and credit

The programme is having a positive significant impact on HSNP households' ability to purchase food and other household items on credit, although when controlling for other factors this impact only persists amongst poorer households. Not only are HSNP households better able to purchase on credit, but they are also have lower outstanding credit debts. This is consistent with the finding

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<sup>24</sup> 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.

that almost all beneficiary households reporting that it is easier to buy on credit specifically as a result of HSNP.

Although there is no significant impact on the propensity of HSNP household to borrow cash, either formally or from family or friends, 30% of HSNP households report they are able to borrow a large amount of cash (eg KES 2000 or more) from a non-family member in an emergency situation if they needed to, and almost all of these report that such emergency borrowing is now easier specifically due to HSNP. This indicates that even if HSNP households are not increasing their actual cash borrowing, their perceived ability to access cash in an emergency has increased. This has important implications for HSNP households' ability to smooth consumption in the face of shocks that are endemic to the HSNP districts and more generally to other arid regions such as northern Kenya.

### **6.2.5 Vulnerability to shocks**

The results show the programme has not had a significant impact on reducing households' propensity to be affected by shocks that produce a decline in welfare. Additionally we find that beneficiary households still need to engage in negative coping strategies in response to these shocks.

### **6.2.6 Empowerment of women**

Once other factors are controlled for, there are statistically significant increases in the proportion of decision makers that are female. This impact appears to be particularly pronounced for partially settled households. Therefore it appears that the programme is having a significant impact on female empowerment, at least as measured by control over the household budget.

### **6.2.7 Well-being of older people and children**

#### **6.2.7.1 Older people**

Although the analysis reveals no impact on the health status of old people, there is a significant negative impact on the proportion of older people engaged in non-domestic work. On average, and all else being equal, people aged 55 or over living in HSNP households are seven percentage points less likely to have their main or secondary activity being paid or unpaid work (excluding domestic work). This is a very positive in terms of the programme's impact on the well-being of older people.

#### **6.2.7.2 Children**

As with old people, analysis reveals no statistically significant impact on child health status. This finding persists (in aggregate) once other factors are controlled for. However, there were some slightly puzzling negative impacts detected on specific household groups, such as on smaller households and partially settled households, with children in these types of households more likely to be ill or injured in the three months prior to interview as compared to control households. This puzzling finding for these specific groups mirrors that found for health status impact across all individuals.

Encouragingly, the programme does appear to be having a significant negative impact on child work, both including and excluding unpaid domestic work. The impact is more pronounced for smaller households and poorer households. When unpaid domestic work is not considered, the impact appears to be driven by fully settled and fully mobile households.

## **6.3 Unintended impacts**

### **6.3.1 Informal transfers and sharing**

The study analysed the proportion of households giving and receiving cash and in-kind support in the past three months, and the mean value given/received. Results show that the programme is having an impact on the value of in-kind support given and received by wealthier HSNP households, with these households less likely to receive informal in-kind support and more likely to give it as a result of the programme.

This result is difficult to interpret due to the inherent complexity of informal transfer systems and their relation to public social interventions. On the one hand, this result could be interpreted as a positive result to the extent that some HSNP households are no longer in need of support, and therefore are less of a burden, as well as being better able to support other less well-off households. On the other hand it could be interpreted as the programme having disruptive impact on informal local support mechanisms which could have potentially negative consequences in the longer term.

Somewhat in contradiction to the finding that HSNP is not having a significant impact on increasing cash giving, a quarter of HSNP households report that they regularly share the HSNP transfer with others outside the household. This includes sharing out of obligation as well as own choice, and includes sharing with wives/co-wives that live in other households, but not sharing that was considered as a loan. Amongst those sharing in this way, the average amount reported shared is just over KES 500, which represents a considerable proportion of the transfer cash.

### **6.3.2 Household composition**

Somewhat puzzlingly, the results show a significant negative impact on the proportion of households containing children and the mean number of children per household. This goes against the hypothesis that the programme would enable, encourage or even oblige HSNP households to take on more dependents. The programme also appears to be having a positive impact on the proportion of households that contain no-one aged 18-54 (so called 'skip generation' households), perhaps because HSNP is making it more feasible for such households, which are generally amongst the most vulnerable, to exist independently. These results require further analysis to unpick.

### **6.3.3 Social tensions**

The results suggest that the programme has not been a source of tension between beneficiary and non-beneficiary households, although perhaps unsurprisingly non-selected households were significantly more likely than HSNP households to report tension between households.

The qualitative findings suggested that the programme had in some cases caused tensions within households, sometimes resulting in divorces. The data show that, once other factors are controlled for, there appears to be 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. This latter finding could be a reflection of increased empowerment for women in poorer households, who may have become less dependent on others for their welfare as a result of the transfer.

### **6.3.4 Household mobility**

The study analysed the proportion of households that are fully mobile, partially mobile and fully settled. Fully mobile households are defined as those where the whole household moves with livestock. Partially mobile households are those where some members move with livestock while others stay together in one fixed place. Fully settled households are those where no household members move with livestock. The results show that, once other factors and variations in the effective value of transfers received (i.e. variations in number of transfers received and household size) are controlled for, the programme is 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 seems to be encouraging partially settled households to become fully settled.

## 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.<sup>25</sup> 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.<sup>26</sup> 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.<sup>27</sup> 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-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.

<sup>25</sup> 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.

<sup>26</sup> Due to various contingencies baseline fieldwork actually took place over 14 months.

<sup>27</sup> 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.

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 Sibuni') 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 Administration 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.<sup>28</sup> 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.

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:

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<sup>28</sup> In two of sub-locations this was not possible due to insufficient numbers of beneficiaries in the programme records.

**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
<b>TOTAL</b>	<b>36</b>	<b>8</b>	<b>44</b>

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 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)
	<b>Total</b>	<b>1,440</b>	<b>1,440</b>	<b>2,880</b>	<b>(4×720)</b>
		[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)
	<b>Total</b>	<b>960</b>	<b>960</b>	<b>1,920</b>	<b>(4×480)</b>
		[Group C]	[Group D]		
<b>Total</b>		<b>2,400</b>	<b>2,400</b>	<b>4,800</b>	<b>(4×1,200)</b>

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. The actual number of households interviewed by population group and district in the baseline survey are presented in Annex of the HSNP M&E Baseline Report.

Ultimately a total of 5,108 households were interviewed and included in the baseline sample for analysis, corresponding to 97% of the intended sample. At baseline this sample included a total of 28,069 individuals, of whom 11,856 were children under 18. The most frequent reasons that households were not interviewed at baseline included: that they absent for an extended period; the household was known but not found; the household was unknown and not found; the beneficiary has already been interviewed as a member of another household; and 'Other reason'.

## A.1.8 Specification of survey weights

### A.1.8.1 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  $i^{\text{th}}$  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:

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

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  $i$

### A.1.8.2 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 Final sample size and attrition

Table A.4 below shows the final sample size achieved at follow-up, 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) is 4,637. This represents a sample attrition rate of 9%. Table A.5 below shows how the sample attrition rate varies by treatment status, district and targeting mechanism areas.

Table A.6 below shows the breakdown of the reasons for non-interview at follow-up, while Table A.7 below presents the results of a probit model which identifies the baseline factors associated with non-response at follow-up. It shows that non-response at follow-up is associated with the following baseline characteristics: being fully mobile; smaller households; higher levels of household head education; containing children under 18; containing members aged 55+; younger household heads.

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.8 below shows that 4.4% of household members in the baseline sample are no longer in the household at follow-up, and gives 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.9 below shows that 9.8% of household members in the follow-up sample were not in the baseline sample, and provides the distribution of reasons for joining.

Unfortunately a considerable proportion of the cases of members apparently leaving or joining the household were actually the result of inaccuracies in the baseline data collection: 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 therefore who constitutes a household member. While these errors are unfortunate they represent a very small proportion of the overall sample of beneficiaries at baseline (1.2% and 4.5% respectively). 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.4 Actual sample size achieved at follow-up**

Beneficiary status	Targeting method	Mandera			Marsabit			Turkana			Wajir			Overall		
		Treatment	Control	Total												
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
<b>Total</b>		588	541	1129	610	610	1,220	615	638	1253	502	533	1,035	2,315	2,322	4,637

Source: HSNP M&amp;E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table A.5 Sample attrition – proportion of households interviewed at baseline but not at follow-up**

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

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table A.6 Reason for non-interview**

	Proportion of households interviewed at baseline (%)
HH known but beyond tracking limits	6.15
HH within agreed tracking limits but not found	0.92
HH not known	0.43
HH already interviewed (FU roster the same as another FU roster)	0.37
HH found but no competent member available	0.33
HH refused interview	0.33
All BL HH members passed on	0.12
Household was interviewed twice in the BL	0.10
<b>Total</b>	<b>8.77</b>

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table A.7 Non-response factors**

<b>Explanatory Variables</b>	<b>Odds Ratios</b>
HSNP Beneficiary	-0.288 (0.284)
FullyMobile	1.072*** (0.267)
PartialSettled	0.102 (0.170)
HHSize	-0.343* (0.179)
HHHeadAge	-0.00961* (0.00530)
FemaleHeadedHH	0.189 (0.165)
HHHeadEducation	0.0409*** (0.0127)
HHGenderRatio	-0.0471 (0.0586)
LabourCapacityIndex	0.252 (0.161)
HasUnder15	-0.251 (0.225)
NumUnder18	0.231* (0.138)
HasOver54	0.471** (0.221)
Mandera	-0.367 (0.265)
Marsabit	-1.042** (0.413)
Turkana	-1.881*** (0.501)
somali	-0.429 (0.329)
Constant	-0.523 (0.460)
Observations	4,881

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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). The dependent variable is a dummy variable equal to one if the household has not been interviewed at follow-up and to zero if the household is present at both baseline and follow-up.

**Table A.8 Proportion of household members interviewed at baseline that had left household by follow-up and reason for leaving (%)**

	Overall)
Proportion of household members at baseline not present at follow-up	4.4
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
• Marriage	25.5
• Died	11.2
• Moved with parents	7.1
• Moved to set up new HH	4.7
• Never moved: ben moved to new HH	4.4
• Moved to get support (food, shelter, care)	4.2
• Moved to work elsewhere	3.6
• Moved for schooling (not boarding school)	2.5
• Divorce/separation	2.5
• Moved to follow the animals (herding)	2.4
• Moved to assist with domestic duties	1.6
• Moved to live with other wife	0.8
• To take care of relative	0.6
• Conflict	0.5
• 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

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table A.9 Proportion of household members interviewed at follow-up that had joined household since baseline and reason for joining (%)**

	Overall)
Proportion of household members at follow-up not present at baseline	9.8
Reason for joining household:	
• Missed in baseline survey	45.80
• Newly born	31.28
• Moved to get support (food,shelter,care)	8.15
• Always been here (ben moved into this HH)	4.20
• Marriage	3.37
• Moved for schooling	1.70
• New main provider (not in baseline roster)	1.70

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• To take care of household member	1.05
• To work for the household	0.72
• Death/Illness of parents	0.69
• Conflict	0.51
• Divorce/separation	0.43
• Break up of former HH	0.29
• To work in Sublocation	0.07
• Death of husband/wife	0.04

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Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

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

#### Turkana

Month #	BL (actual)	FU1 (actual)	FU2 (planned)	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 (planned)	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 (planned)	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 (planned)	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:

$$ATT = E[Y_i | T_i=1, S_i=1] - E[Y_i | T_i=0, S_i=1] \quad (1)$$

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:

$$Y_{it} = a + b_1T_i + b_2t + b_3T_i *t + c_t(X_{it}) + e_{it} \quad (2)$$

where the indicator for treatment or control for household  $i$  ( $T_i$ ) is interacted with a dummy indicating the follow-up round (period 1). The equation incorporates a population time trend (captured by parameter  $b_2$ ), and a group fixed effect indicated by the parameter  $b_1$ . The difference in difference estimator is provided by parameter  $b_3$ . The outcome  $Y$  can be either an individual level, or a household level variable. In the case of binary outcomes, model specification (2) is to 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:

$$Y_{it} = a + b_1t * P_{1i} + b_2T_i * P_{1i} + b_3T_i * t * P_{1i} + b_4t * P_{0i} + b_5T_i * P_{0i} + b_6T_i * t * P_{0i} + c(X_{it}) + e_{it} \quad (3)$$

where  $b_3$  and  $b_6$  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. Households 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:

$$Y_{it} = a + b_1t + b_2T_i + b_3T_i * CM_i + b_4t * T_i * CM_i + c(X_{it}) + e_{it} \quad (4)$$

where  $b_4$  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  $b_4$  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 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 there is no hypothesis as to why HSNP impact should vary by 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			Dif-in-dif	Number of obs (at FU)
		BL	FU	Dif	BL	FU	Dif		
<b>COMMUNITY LEVEL</b>									
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.	10.7	24.5	13.8	5.8	21.5	15.7	-1.930	2865
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.	26.5	24.9	-1.7	22.6	33.5	10.9	-12.54	2866
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	4.5	8.2	3.7	13.5	9.4	-4.1	7.796	2866
q410acce_BL	Dummy variable equal to one if household located in a community with has access to formal institution to save money (at baseline)	10.3			0.9				2866
SL_totfoodaidvalue	Total value of food aid received in the sublocation where the household is located.	734552	801689.9	67138	778665.4	742084.3	-36581.2	103,719	2866
SL_totschfeedvalue	Total value of food aid received in the sublocation where the household is located.	909957.8	387891.7	-522066.1	321241.5	257010.2	-64231.3	-457,835	2866

Variable	Description	HSNP households			Control households				Number of obs
SL_totsupfeedingvalue	Total value of supplementary feeding received in the sublocation where the household is located.	66498.8	39821.1	-26677.7	28432.8	37047.4	8614.6	-35,292	2866
<b>HOUSEHOLD LEVEL</b>									
HHSize	Household size at baseline.	6			5.5				
HHHeadAge	Age of the household head.	50.9	52	1.2***	52.5	54.3	1.9***	-0.717	2865
HasOrphan	Dummy variable equal to one if there are one or more orphans in the household.	23.2**	29.3	6.1***	18.3	24.5	6.2***	-0.0888	2866
NumOrphans	Number of orphans in the household.	0.6*	0.7	0.1***	0.4	0.6	0.1***	0.00541	2866
FemaleHeadedHH_BL	Dummy variable equal to one if the household head is female at baseline.	34			32.9				2866
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.	3			2.8				2866

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.	0.7			0.7			2866
NoNationalID_BL	Dummy variable equal to one if no-one in the household has a national ID card at baseline.	37.5			35.6			2866
NoRepresentation_BL	Dummy variable equal to one if the household does not have any representation in this sublocation.	4.9			7.4			2866
AmtSavings_BL	Dummy variable equal to one if the household has any savings at baseline.	5.7			5.4			2866
HasSavings_BL	Amount of savings at baseline.	643.4			571.1			2866
Fully Mobile_BL	Dummy variable equal to one if household reports to be fully mobile at baseline.	6.1			7.2			2866
Partially Settled_BL	Dummy variable equal to one if household reports to be partially settled at baseline.	16.8			25.1			2866

Variable	Description	HSNP households			Control households				Number of obs
Fully Settled_BL	Dummy variable equal to one if household reports to be fully settled at baseline.	77.1			67.7				2866
pov1	Dummy variable equal to one if household belongs 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.	9.9			6.4				2866
T7JQ09	Dummy variable equal to one if anyone in the household receives other cash transfers.	0	0	0.0*	0	0.1	0.1	-0.0190	2866
Mandera	Dummy variable equal to one if household located in the district of Mandera.	0.2			0.2				2866
Marsabit	Dummy variable equal to one if household located in the district of Marsabit.	0.2			0.2				2866
Turkana	Dummy variable equal to one if household located in the district of Turkana.	0.2			0.2				2866
<b>INDIVIDUAL LEVEL</b>									
age	Age of the individual.	22.3	22.7	0.5***	23.8	23.9	0.1	0.370**	17101

Variable	Description	HSNP households			Control households				Number of obs
marital_status_BL	Dummy variable equal to one if the individual is married at baseline.	24.1**			27.2				17101
gender	Dummy variable equal to one if the individual is male.	49.8	50.2	0.4	51	51.3	0.3	0.0898	17101
disability	Dummy variable equal to one if the individual has any disability.	2.2	2.8	0.6***	2.7	3.2	0.5**	0.156	17101
chronic_illness	Dummy variable equal to one if the individual has any chronic illness.	1.6	2.2	0.6	1.6	2.1	0.5	0.0945	17101

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

Outcome	Dif-in-dif with household- and community-level control variables	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity						
			By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
<b>Consumption expenditure and poverty rates</b>									
Mean consumption expenditure(KES)	27.28					160.3*		276.5*	
Proportion of households in the bottom national decile (%)	-5.17	-0.0399**			n/a	n/a		-20.1**	
Proportion of households in below absolute poverty line (%)	-1.87	-0.0207**			n/a	n/a			
<b>Food security and reliance on food aid</b>									
Mean food consumption expenditure (KES)	78.26								
Mean food share of consumption expenditure (%)	-0.897								
Mean dietary diversity score	0.823***	0.338***	1.104***	0.658**		1.297***	0.740**	1.008***	1.133**
Proportion of households food insecure in worst recent food shortage period (%)	2.17								
Proportion of households receiving food aid (%)	1.44								
Proportion of households receiving school feeding (%)	-0.847								
Proportion of households receiving supplementary feeding (%)	-6.46			-10.0*				-11.4**	
<b>Asset retention and accumulation</b>									
Proportion of households owning any livestock (%)	4.25			11.4**				4.73***	
Proportion of households owning goats / sheep (%)	0.796								
Proportion of households owning camels (%)	-7.75**	-0.483**	-10.3**	-6.36*	-7.00**	-9.28*	-9.40**	-15.4**	
Proportion of households owning cattle (%)	3.50								

Outcome	Dif-in-dif with household- and community-level control variables	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity							
			By household size		By poverty status		By households mobility status			
			Small	Large	Non- poor	Poor	Settled	Partially settled	Fully mobile	
<b>Proportion oh household owning key productive assets (%)</b>										
Animal cart	-0.007		-0.029**							
Water drum	0.019					0.058***				
Plough	-0.001	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wheelbarrow	-0.014	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sickle	-0.0003	-0.029**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pick axe	-0.091***				-0.13***	-0.06*	0.09***			-0.22**
Axe	0.075									-0.16*
Hoe	0.047									
Spade	0.026		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Machete	-0.003		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity						
			By household size		By poverty status		By households mobility status		
			Small	Large	Non-poor	Poor	Settled	Partially settled	Fully mobile
<b>Health</b>									
Mean monthly per capita health expenditure per household (KES)	6.391	4.410**							
Proportion of population ill or injured in the past 3 months (%)	5.11		9.05*					9.30**	
<b>Education</b>									
Mean monthly household education expenditure per child (KES)	12.71								
Proportion of children currently attending school (%): All children, aged 6-17	-1.66								
Proportion of children currently attending school (%): Females, aged 6-17	-1.62								
Proportion of children currently attending school (%): Males, aged 6-17	-1.87								
Proportion of children currently attending school (%): All children, aged 6-12	-3.24								
Proportion of children currently attending school (%): All children, aged 13-17	0.861								
Proportion of children aged 6-17 currently in school that have passed Std IV (%)	10.9***	3.33**	9.03***	5.73**		6.60***	6.15**		25.4***
Mean highest class achieved for children aged 6-17 currently in school	0.287*								
<b>Livelihood activities</b>									
% of adults (age 18-54) whose main activity is productive work (%)	-2.26								
% of adults (age 18-54) whose main activity or secondary activity is productive work (%)	-0.851								
<b>Saving, borrowing and credit</b>									
Proportion of households that currently have cash savings (%)	1.39								

Outcome	Dif-in-dif with household- and community-level control variables	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity				By households mobility status		
			By household size		By poverty status		Settled	Partially settled	Fully mobile
			Small	Large	Non-poor	Poor			
Proportion of households that have borrowed money in the last 12 months (%)	-2.58								
Proportion of households that have bought something on credit in last 3 months (%)	5.23						11.4**		
Mean total credit outstanding (KES)	-627.2	-255.8**	-600.6*		-1242**				
<b>Vulnerability to shocks</b>									
Proportion of households reporting a decline in welfare compared to a year ago (%)	-0.436								
<b>Empowerment of women</b>									
Proportion of main budget decision makers that are female – all households (%)	8.38*							19.7**	
Proportion of main budget decision makers that are female – female-headed households (%)	1.63								
Proportion of main budget decision makers that are female – male-headed households (%)	11.1							20.0**	
<b>Well-being of older people and children</b>									
Proportion of people aged 55+ ill of injured in past 3 months (%)	10.4								
Proportion of people aged 55+ whose main activity is paid or unpaid work – Including unpaid domestic work (%)	-0.231								
Proportion of people aged 55+ whose main activity is paid or unpaid work – Excluding unpaid domestic work (%)	-7.25*		-8.22*			-9.66**			
Proportion of children (0-17) ill of injured in past 3 months (%)	4.71				13.0**			7.85*	
Proportion of children (5-17) whose main activity is paid or unpaid work – Including unpaid domestic work (%):-6.93*	-5.75*	-2.41*	-8.56*	-5.19*		-9.29**			

Outcome	Dif-in-dif with household- and community-level control variables	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity				By households mobility status		
			By household size		By poverty status		Settled	Partially settled	Fully mobile
			Small	Large	Non- poor	Poor			
Proportion of children (5-17) whose main activity is paid or unpaid work – Excluding unpaid domestic work (%):	-6.93**	-1.73**	-9.45**	-6.22**	-3.33*	-10.1**	-5.45**		-2.36*

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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.5 Impact heterogeneity analysis results – unintended impact areas**

Outcome	Dif-in-dif with household- and community-level control variables	By cumulative total per capita value of all HSNP transfers received	Impact heterogeneity					
			By household size		By poverty status		By households mobility status	
			Small	Large	Non-poor	Poor	Settled	Partially settled
<b>Informal transfers and sharing</b>								
Proportion receiving informal cash transfers (%)	-0.501							
Mean amount received for those receiving informal cash support (KES)	-977.4							
Proportion receiving informal in-kind transfers (%)	0.722							
Mean value received for those receiving informal in-kind support (KES)	-125.9	-39.9*			-351.3**			
Proportion giving informal cash transfers (%)	5.87							
Mean value given for those giving informal cash support (KES)	1312							
Proportion giving informal in-kind transfers (%)	-1.07							
Mean value given for those giving informal in-kind support (KES)	23.21				235.0*			
<b>Household composition</b>								
<b>Social tensions</b>								
Proportion of individuals that are divorced – Overall (%)	0.680			0.839*				
Proportion of individuals that are divorced – Females (%)	0.969				1.22**			
Proportion of individuals that are divorced – Males (%)	0.218							
<b>Households mobility</b>								
Proportion of households that are fully mobile (%)	-4.28				-7.5**	n/a	n/a	n/a
Proportion of households that are partially mobile (%)	-2.36	-5.45*				n/a	n/a	n/a
Proportion of households that are fully settled (%)	5.68	6.74*				n/a	n/a	n/a

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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**

Outcome	Treatment areas			Control areas				Number of observations (for both BL & FU)
	BL	FU	Dif	BL	FU	Dif	Dif-in-dif	
<b>Food aid</b>								
Mean number of months food aid being received	6.5	7.5	1	6.8	7.1	0.4	0.687	2232
Mean monthly value of food aid (as reported by respondents)	1131.6	1524.1	392.5***	1209.8	1524.3	314.5**	77.98	2231
<b>School feeding</b>								
Mean number of months of receiving school feeding	7.6	8.3	0.8	8.3	7.9	-0.3	1.100	1272
Mean monthly value of school feeding programme (as reported by respondents)	1207.1	1008.5	-198.6	857.4	879.6	22.2	-220.8	1268
<b>Supplementary feeding</b>								
Mean number of months of receiving supplementary feeding	4.2	6.2	1.9	4.2	5.5	1.3	0.676	489
Mean monthly value of supplementary feeding (as reported by respondents)	458.5	274.7	-183.8	331.6	361.5	29.8	-213.6	489

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. 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 Population age-sex distribution by gender (%)**

Age cohort	Males	Females	Total	M/F
0-9	31	31	31	1.01
10-19	29	26	28	1.11
20-29	13	14	13	0.91
30-39	8	9	9	0.87
40-49	6	6	6	0.98
50-59	5	6	6	0.87
60-69	5	5	5	1.02
70+	4	3	3	1.13
55+	11	11	11	1.02

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

**Table D.3 Demographic characteristics of study population**

Outcome	HSNP Households			Control Households			Dif-in-Dif	N (at FU)
	BL	FU	Dif	BL	FU	Dif		
Mean age	22.3	22.7	0.5***	23.8	23.9	0.1	0.371**	17099
Proportion of population (%):								
Male	49.8	50.2	0.4	51.0	51.3	0.3	0.0735	17099
Disabled	2.2	2.8	0.6***	2.7	3.2	0.5**	0.157	17099
Chronically ill	1.6	2.2	0.6	1.6	2.1	0.5	0.0952	17099
Proportion of children (age 18+) (%):								
Orphaned (single or double)	17	21.1	4.1***	14.8	18.1	3.3***	0.822	9151
Orphaned (double)	1.6	2.9	1.3**	1.3	2.1	0.8**	0.477	9555
Disabled	0.8	0.9	0.2	0.8	1	0.2	0.0170	9555
Chronically ill	0.4	0.5	0.0	0.5	0.6	0.1	-0.0548	9555
Proportion of adult males (age 18+) currently married or in consensual union (%)	56.7	56.0	-0.7	60	57.9	-2.1*	1.385	4028
Proportion of adult males (age 18+) currently married or in consensual union and with more than one wife	17.5	17.9	0.4	17.1	15.5	-1.6	2.015	2248
Mean number of wives for married adult males (aged 18+) with more than one wife	2.3	2.2	-0.1	2.3	2.2	-0.1*	0.0132	388
Proportion of children aged 11-18 that have ever been married or in a consensual union (%)	0.6	1	0.4	0.5	0.5	0.1	0.370	3752
Proportion of adults (age 18+) with no national ID card	21.3	21.3	0.0	21	20.7	-0.3	0.295	7948
Proportion children <6 with no birth certificate	93.5	97.5	4.0**	96.9	99.5	2.6*	1.402	2526

Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. Notes: Asterisks (\*) indicate that an estimate is significantly different to the relevant comparator, as explained in Section 1 of the report: \*\*\* = 99%; \*\* = 95%; \* = 90%.

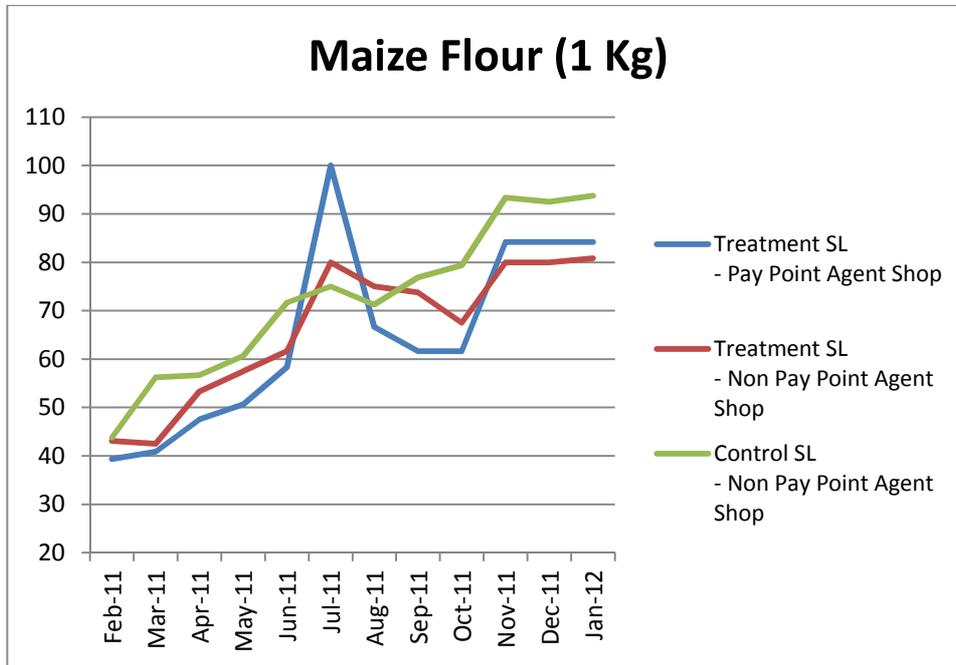
**Table D.4 Saving, borrowing and credit**

Outcome	Treatment households			Control households			Dif-in-dif	Number of observations (at FU)
	BL	FU	Dif	BL	FU	Dif		
<b>Saving</b>								
Mean total household cash savings, among households that currently have cash savings (KES)	8936.4	4261.2	-4675.2	10591.8	4675.1	-5916.7	1,242	164
Proportion of households with cash savings who save their money with a bank or formal institution	22.9	22.1	-0.8	24	16.4	-7.6	6.791	164
<b>Borrowing</b>								
Proportion of households that have borrowed in last 12 months that are in debt	68.5	63.7	-4.8	77.5	80.7	3.3	-8.109	321
Mean household debt at time of interview, among households who have borrowed in the last 12 months (KES)	2756.4	2296.8	-459.6	3002	3059.8	57.8	-517.5	321

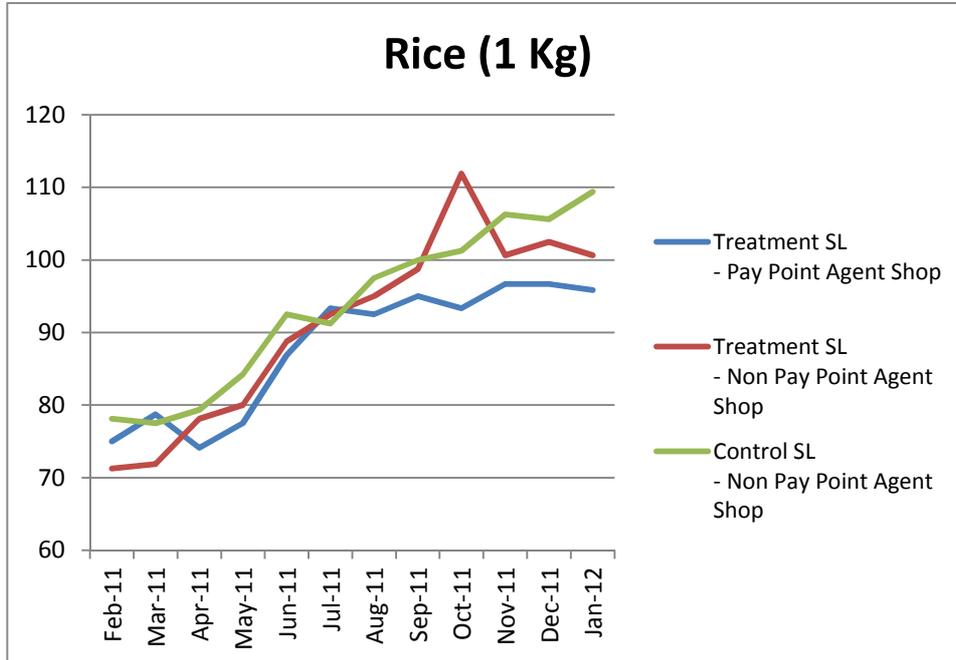
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011. Notes: Asterisks (\*) indicate that an estimate is significantly different: to the relevant comparator, as explained in Section 1 of the report: \*\*\* = 99%; \*\* =95%; \* = 90%.

## Annex E Monthly food price monitoring graphs

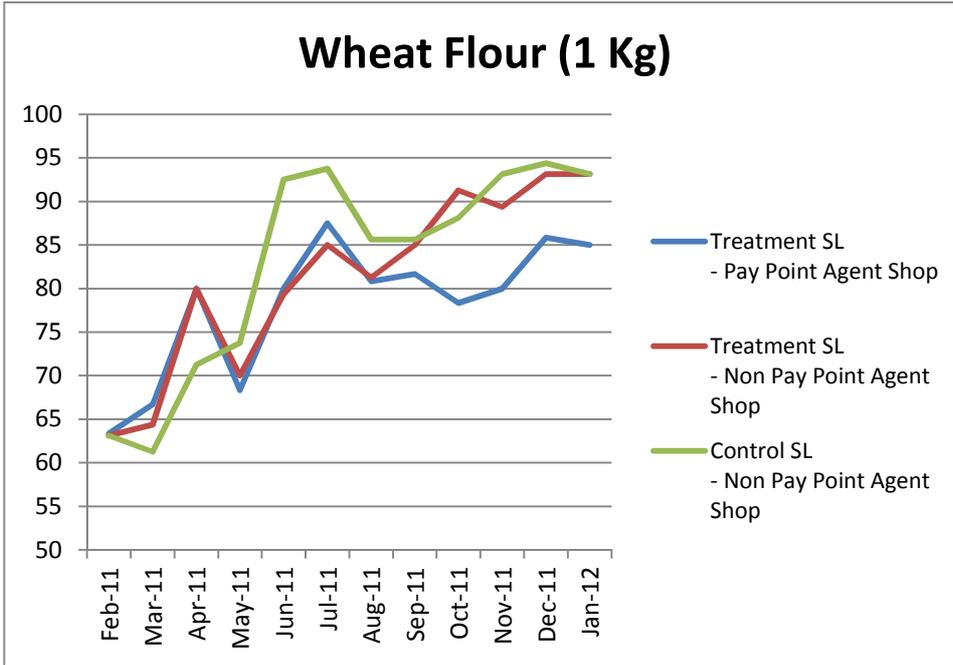
Figure E.1 Variation in price of key commodities by month



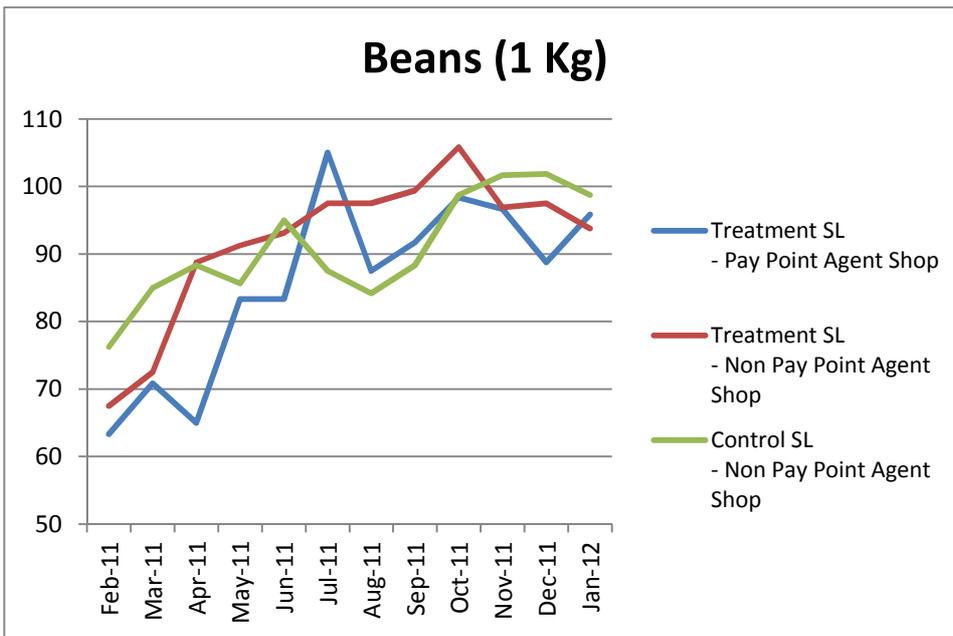
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



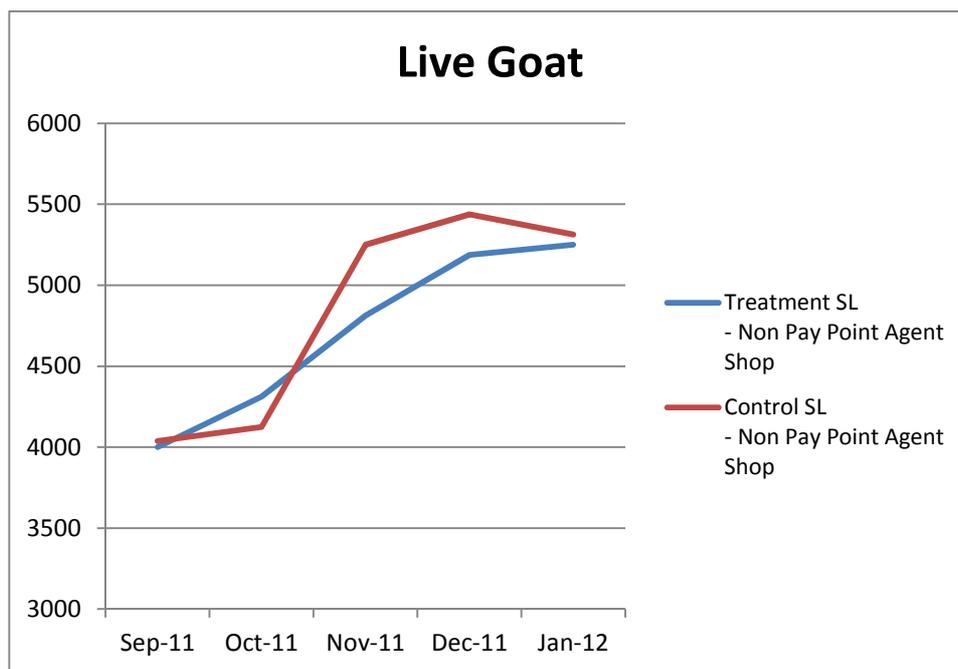
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



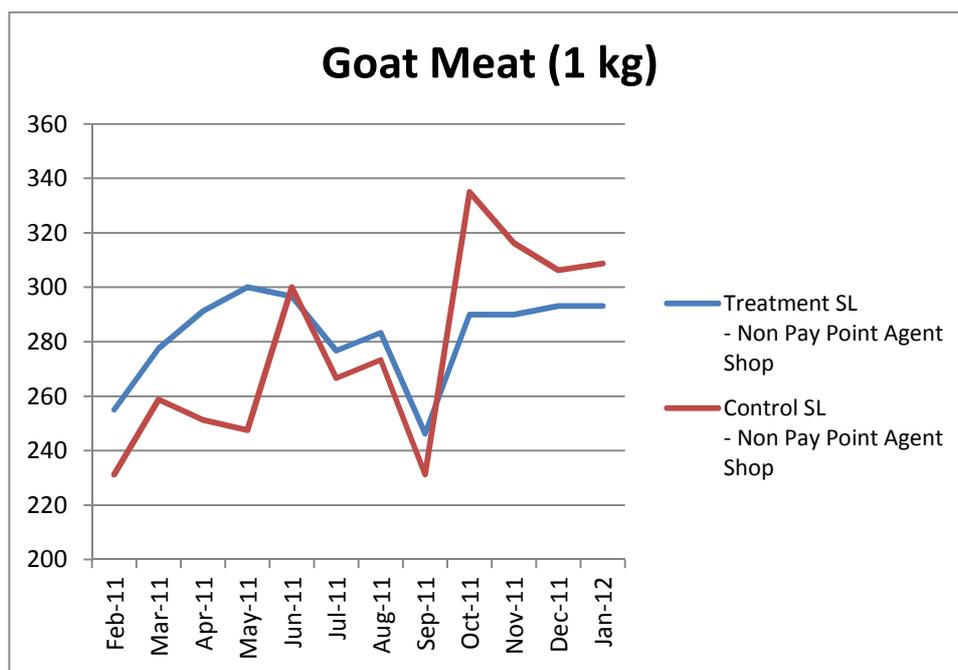
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



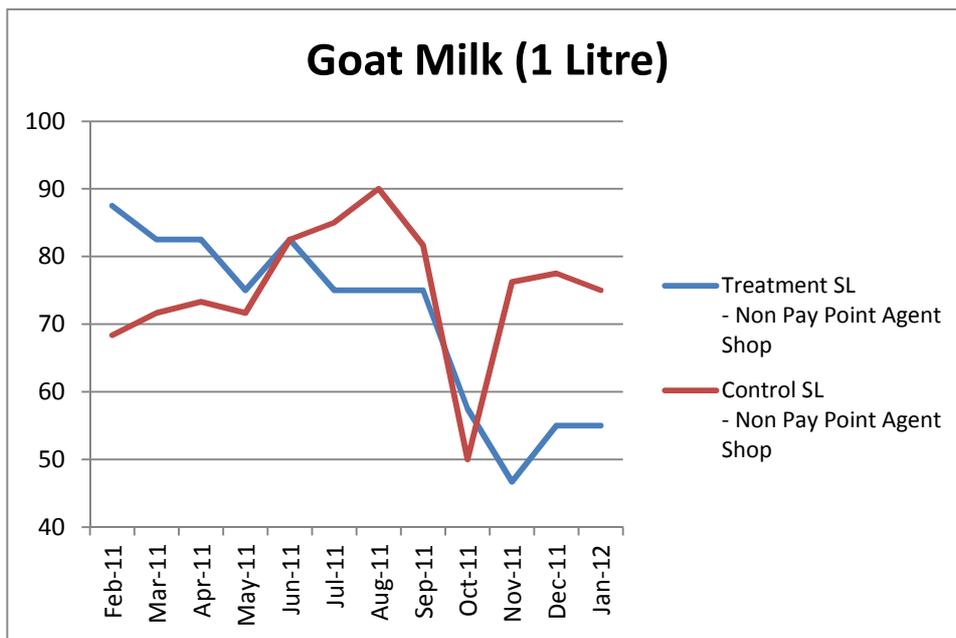
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



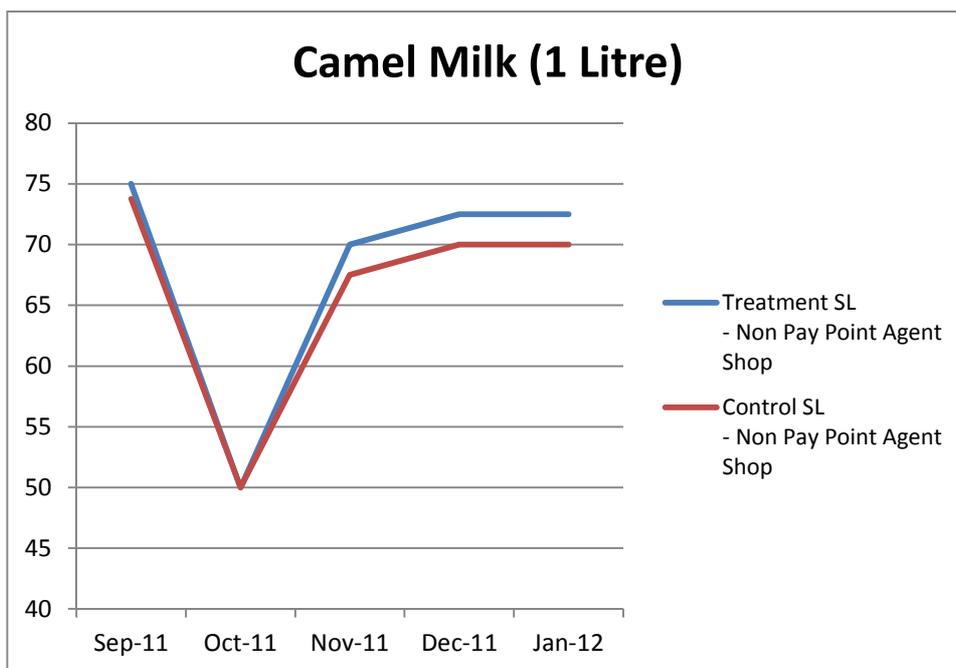
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



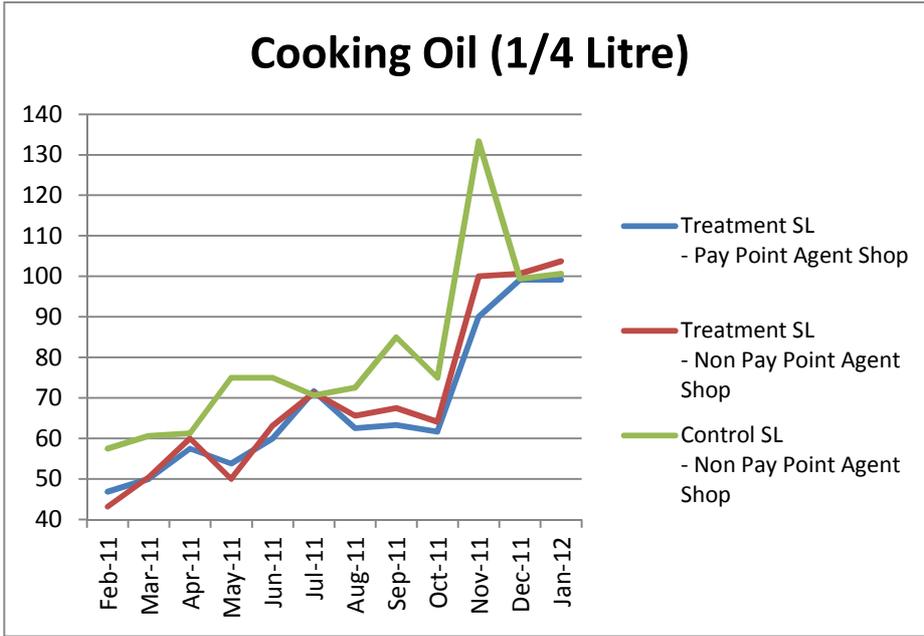
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



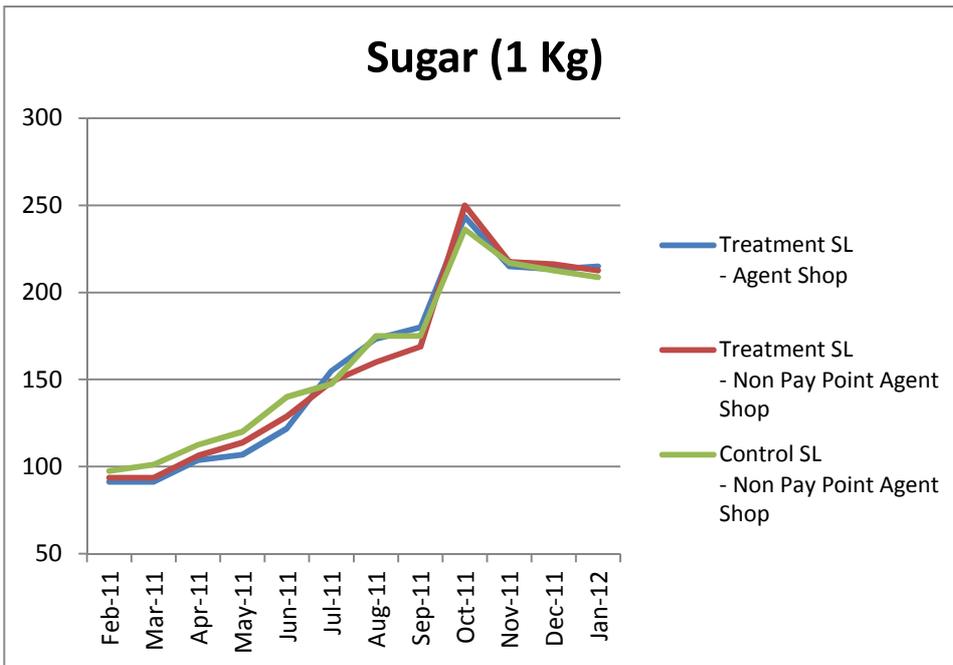
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



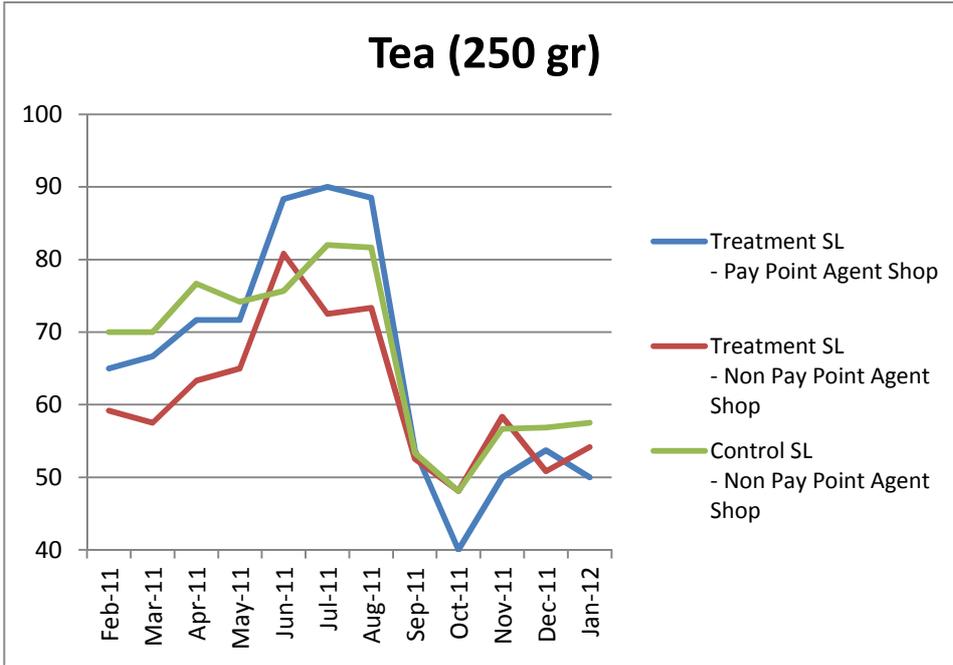
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



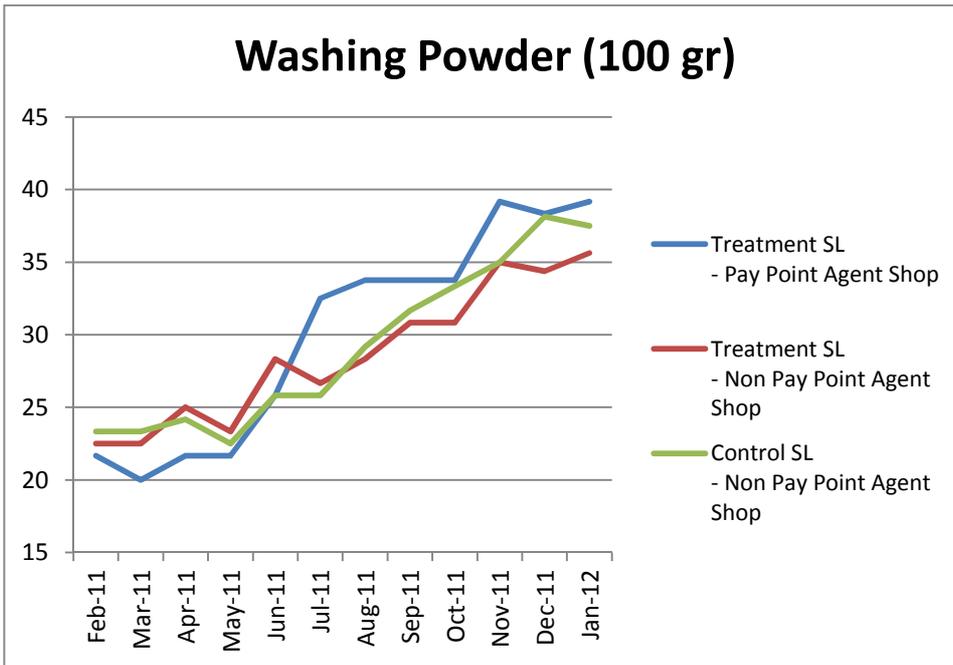
Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.



Source: HSNP M&E Impact Evaluation Survey, Sep 2009-Nov2011.

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

Table A.1 below 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<sup>29</sup>. The weights have been adjusted in order to make the samples representative of the full sample frame population at baseline.

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<sup>29</sup> 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**

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Mean consumption expenditure	2181.3	21.451	2139.25	2223.34	2.6	1.2	0.03	1917.4	14.678	1888.59	1946.12	2.2	1.1	0.02	0.527
Proportion of households (%):									0.000						0.00
absolute poverty line in the bottom national decile	82.6	0.497	81.65	83.60	1.7	0.9	0.01	90.2	0.294	89.64	90.79	0.9	0.7	0.00	0.364
Poverty Gap	47.3	0.814	45.66	48.85	2.6	1.2	0.03	54.6	0.748	53.15	56.08	2.0	1.0	0.02	0.389
	36.9	0.453	35.97	37.74	3.2	1.3	0.04	41.3	0.382	40.57	42.07	2.4	1.1	0.02	0.534
Mean food consumption expenditure	1160.3	9.019	1142.61	1177.96	1.8	1.0	0.01	1268.6	8.811	1251.31	1285.85	1.9	1.0	0.01	0.386
Mean food share of consumption expenditure (%)	54.6	0.147	54.28	54.86	3.7	1.4	0.05	67.5	0.269	66.98	68.03	5.0	1.6	0.07	0.238
Mean dietary diversity score	6.9	0.037	6.81	6.96	4.1	1.5	0.05	6.9	0.032	6.84	6.96	3.4	1.3	0.04	0.488
Proportion of households food insecure in worst recent food shortage period (%)	59.0	0.651	57.71	60.26	1.7	0.9	0.01	44.0	0.826	42.34	45.58	2.5	1.1	0.03	0.331
Food aid	75.3	0.752	73.82	76.77	3.0	1.2	0.03	71.2	0.752	69.71	72.66	2.5	1.1	0.03	0.443
School feeding	6.7	0.043	6.60	6.77	2.0	1.0	0.02	7.5	0.051	7.45	7.65	2.0	1.0	0.02	0.124
Supplementary feeding	11.7	0.425	10.89	12.56	1.7	0.9	0.01	11.6	0.368	10.90	12.34	1.2	0.8	0.00	0.027
Proportion of households owning...															
Any livestock	63.6	1.051	61.55	65.67	4.7	1.6	0.06	64.4	1.087	62.31	66.57	4.7	1.5	0.06	0.510
Goats / sheep	60.3	1.082	58.19	62.43	4.8	1.6	0.06	62.1	1.130	59.90	64.33	4.7	1.6	0.06	0.571
Camels	32.6	0.914	30.85	34.43	3.8	1.4	0.05	29.8	0.824	28.14	31.37	2.8	1.2	0.03	0.648

Indicator	Baseline sample							Follow-up 1 sample							temp corr
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF	DEFT	ICC	
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Cattle	19.6	0.401	18.80	20.37	1.0	0.7	0.00	20.1	0.450	19.26	21.03	1.1	0.7	0.00	0.524
Proportion of households owning...															
Animal cart	5.2	0.259	4.68	5.70	1.3	0.8	0.01	6.0	0.345	5.34	6.69	1.9	1.0	0.02	0.456
Water drum	18.9	0.615	17.68	20.09	2.4	1.1	0.02	19.1	0.636	17.87	20.36	2.4	1.1	0.02	0.410
Plough	0.8	0.068	0.70	0.97	0.6	0.5	-0.01	0.2	0.017	0.17	0.23	0.1	0.3	-0.01	0.223
Wheelbarrow	11.4	0.441	10.57	12.30	1.9	1.0	0.02	8.3	0.302	7.68	8.86	1.1	0.7	0.00	0.360
Sickle	2.5	0.163	2.13	2.77	1.1	0.8	0.00	1.3	0.097	1.16	1.53	0.6	0.6	-0.01	0.161
Pick axe	9.7	0.388	8.89	10.41	1.7	0.9	0.01	9.0	0.278	8.46	9.55	0.9	0.7	0.00	0.137
Axe	50.5	1.126	48.26	52.67	5.0	1.6	0.07	60.1	0.954	58.20	61.94	3.4	1.3	0.04	0.426
Hoe	12.8	0.594	11.64	13.97	3.1	1.3	0.04	15.8	0.786	14.30	17.38	4.2	1.5	0.05	0.384
Spade	15.4	0.414	14.63	16.26	1.3	0.8	0.01	16.3	0.447	15.47	17.22	1.3	0.8	0.01	0.225
Machete	45.3	0.778	43.76	46.81	2.4	1.1	0.02	47.9	0.801	46.30	49.44	2.3	1.1	0.02	0.240
Mean monthly per capita health expenditure per household (KES)															
	26.1	0.419	25.27	26.91	0.4	0.5	-0.01	29.1	0.452	28.23	30.00	0.3	0.4	-0.01	0.135
Proportion of population ill or injured in the past 3 months (%)															
	15.5	0.525	14.45	16.51	7.0	2.0		12.2	0.199	11.79	12.57	1.2	0.8		0.130
Mean monthly household education expenditure per child (KES)															
	135.6	5.668	124.48	146.70	1.601	0.917	0.01	134.6	4.873	125.07	144.17	1.1	0.8	0.00	0.403
Proportion of children currently attending school (%):															
All children, aged 6-17	58.8	0.792	57.28	60.38	4.9	1.6		64.3	0.568	63.16	65.38	2.6	1.2		0.531
Females, aged 6-17	62.5	0.748	61.01	63.95	2.5	1.1		67.2	0.514	66.19	68.21	1.2	0.8		0.522
Males, aged 6-17	54.8	0.871	53.11	56.52	2.7	1.2		61.1	0.666	59.82	62.43	1.6	0.9		0.531

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
All children, aged 6-12	57.8	0.794	56.28	59.39	3.1	1.3		65.3	0.635	64.07	66.56	2.0	1.0		0.467
All children, aged 13-17	60.5	0.827	58.83	62.08	2.1	1.0		62.6	0.591	61.46	63.78	1.1	0.8		0.633
Proportion of children aged 10- 17 currently in school that have passed Std IV (%)	55.2	0.597	54.01	56.35	0.8	0.7		61.4	0.466	60.49	62.31	0.6	0.6		0.636
Mean highest class achieved for children aged 6-17 currently in school	3.6	0.040	3.51	3.67	3.2	1.3		4.2	0.042	4.10	4.27	1.4	0.8		0.735
% of adults (age 18-54) whose main or secondary activity is productive work	59.3	0.319	58.67	59.92	0.8	0.6		61.6	0.456	60.75	62.53	1.6	0.9		0.465
% of adults (age 18-54) whose main activity is productive work	55.2	0.286	54.60	55.72	0.6	0.6		53.0	0.284	52.44	53.55	0.6	0.6		0.574
Proportion of households (%):															
currently have cash savings	12.4	0.429	11.54	13.22	1.7	0.9	0.01	12.7	0.422	11.87	13.52	1.5	0.9	0.01	0.184
have borrowed money in the last 12 months	12.7	0.348	12.05	13.42	1.1	0.7	0.00	13.6	0.463	12.65	14.46	1.7	0.9	0.01	0.143
bought something on credit in last 3 months	57.5	0.655	56.19	58.75	1.7	0.9	0.01	62.6	0.734	61.17	64.05	2.1	1.0	0.02	0.330
Mean total credit outstanding (KES)	3547.7	79.901	3391.08	3704.29	1.6	0.9	0.01	3812.3	76.142	3663.07	3961.54	1.9	0.9	0.02	0.321
Proportion of households reporting a decline in welfare compared to a year ago (%)	39.2	0.762	37.73	40.72	2.4	1.1	0.02	47.3	0.761	45.82	48.80	2.1	1.0	0.02	0.036

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Proportion of households that in the last 30 days have had to (%):															
Borrow food or rely on help from family or relatives	43.8	0.615	42.62	45.03	1.5	0.9	0.01	67.0	0.676	65.70	68.35	1.9	1.0	0.01	0.033
Sell any of your animals to buy food	65.3	1.003	63.38	67.31	4.4	1.5	0.06	73.3	0.669	72.01	74.63	2.1	1.0	0.02	0.190
Sell other assets (not animals)	97.6	0.086	97.39	97.72	0.3	0.4	-0.01	99.1	0.053	98.95	99.16	0.3	0.4	-0.01	0.018
Buy food on credit from a shop	41.3	0.631	40.10	42.58	1.6	0.9	0.01	48.7	0.781	47.19	50.25	2.2	1.1	0.02	0.194
Collect and eat wild foods and/or animals	93.2	0.242	92.75	93.70	0.9	0.7	0.00	96.1	0.168	95.76	96.42	0.7	0.6	-0.01	0.472
Reduced number of meals	25.5	0.934	23.69	27.35	4.5	1.5	0.06	40.5	0.925	38.73	42.36	3.2	1.3	0.04	0.253
Eaten smaller meals	26.1	0.930	24.33	27.97	4.4	1.5	0.06	50.9	0.850	49.21	52.54	2.6	1.2	0.03	0.219
Skipped entire days without eating	43.1	0.848	41.46	44.78	2.9	1.2	0.03	62.2	0.742	60.77	63.68	2.1	1.0	0.02	0.191
% of main budget decision makers that are female, for...									0.000						
All households	45.9	0.651	44.63	47.18	1.7	0.9	0.01	52.5	0.408	51.68	53.28	0.6	0.6	-0.01	0.328
Female-headed households	87.4	0.323	86.73	88.00	0.2	0.4	-0.01	95.2	0.166	94.91	95.56	0.1	0.3	-0.01	0.189
Male-headed households	30.8	0.746	29.33	32.25	1.9	1.0	0.02	37.2	0.488	36.25	38.16	0.7	0.6	-0.01	0.052
Proportion of people aged 55+ ill of injured in past 3 months (%)	22.9	0.534	21.90	23.99	0.8	0.6		24.8	0.459	23.92	25.72	0.5	0.5		0.151
Proportion of people aged 55+ whose main activity is paid or unpaid work (%):															
Including unpaid domestic work	78.1	0.250	77.59	78.57	0.3	0.3		82.7	0.328	82.04	83.33	0.4	0.4		0.449

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Excluding unpaid domestic work	59.4	0.371	58.64	60.10	0.4	0.4		69.7	0.389	68.90	70.43	0.4	0.4		0.459
Proportion of children (0-17) ill of injured in past 3 months (%)	14.7	0.569	13.56	15.79	4.7	1.6		11.9	0.228	11.42	12.32	0.9	0.7		0.114
Proportion of children (5-17) whose main activity is paid or unpaid work (%):															
Including unpaid domestic work	15.5	0.386	14.75	16.26	2.4	1.1		15.4	0.400	14.61	16.18	2.6	1.2		0.483
Excluding unpaid domestic work	21.8	0.403	21.03	22.61	2.0	1.0		23.3	0.469	22.38	24.22	2.6	1.2		0.590
Receiving cash support															
Proportion receiving informal cash transfers (%)	37.4	0.427	36.57	38.24	0.8	0.6	0.00	33.2	0.353	32.52	33.91	0.5	0.5	-0.01	0.093
Mean amount received for those receiving (KES)	2879.0	109.475	2664.45	3093.60	1.2	0.8	0.00	1919.9	38.473	1844.45	1995.26	0.7	0.6	-0.01	0.340
Receiving in-kind support															
Proportion receiving informal in-kind transfers (%)	36.7	0.810	35.13	38.30	2.8	1.2	0.03	29.1	0.530	28.04	30.12	1.2	0.8	0.00	0.238
Mean value received for those receiving (KES)	1216.8	33.132	1151.82	1281.70	0.4	0.4	-0.01	1341.7	31.195	1280.56	1402.84	0.6	0.6	-0.01	0.358
Giving cash support															
Proportion giving informal cash transfers (%)	24.5	0.544	23.44	25.57	1.6	0.9	0.01	22.3	0.535	21.28	23.38	1.5	0.9	0.01	0.131
Mean amount given for those giving (KES)	1821.8	82.238	1660.66	1983.03	0.6	0.6	-0.01	1338.4	48.057	1244.21	1432.59	0.1	0.3	-0.01	0.562
Giving in-kind support															
Proportion giving informal in-kind transfers (%)	24.4	0.691	23.00	25.71	2.6	1.2	0.03	22.5	0.543	21.48	23.61	1.5	0.9	0.01	0.069
Mean value given for those giving (KES)	336.5	7.163	322.48	350.56	0.4	0.5	-0.01	446.4	8.851	429.10	463.80	0.2	0.3	-0.01	0.492

Indicator	Baseline sample							Follow-up 1 sample							temp corr
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF	DEFT	ICC	
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Mean household size	5.6	0.021	5.52	5.61	0.9	0.7	0.00	5.9	0.019	5.82	5.89	0.7	0.6	-0.01	0.825
Mean dependency ratio	1.0	0.006	1.00	1.03	0.4	0.5	-0.01	1.0	0.008	1.01	1.05	0.6	0.6	-0.01	0.768
Mean number of children (<6) per HH	1.0	0.006	1.00	1.03	0.4	0.5	-0.01	1.0	0.008	1.01	1.05	0.6	0.6	-0.01	0.768
Mean number of children (<18) per HH	3.1	0.017	3.03	3.10	0.7	0.6	0.00	3.2	0.017	3.19	3.25	0.6	0.6	-0.01	0.856
Mean number of elderly (age 55+) per HH	0.5	0.005	0.47	0.49	0.5	0.5	-0.01	0.5	0.005	0.51	0.53	0.4	0.5	-0.01	0.921
Proportion of households containing at least one (%):															
Child (<18)	91.8	0.139	91.53	92.08	0.3	0.4	-0.01	92.6	0.118	92.32	92.78	0.2	0.3	-0.01	0.702
Elderly (age 55+)	39.9	0.354	39.20	40.59	0.5	0.5	-0.01	42.4	0.333	41.76	43.06	0.4	0.5	-0.01	0.921
Orphan (single or double)	18.1	0.221	17.71	18.58	0.3	0.4	-0.01	23.2	0.234	22.70	23.62	0.3	0.4	-0.01	0.727
Chronically ill member	12.6	0.171	12.22	12.89	0.3	0.4	-0.01	15.2	0.215	14.79	15.64	0.3	0.4	-0.01	0.688
Disabled member	7.9	0.199	7.49	8.27	0.5	0.5	-0.01	10.1	0.173	9.74	10.42	0.3	0.4	-0.01	0.175
Proportion of households (%):															
Containing only one member (i.e. single person household)	1.3	0.043	1.22	1.39	0.1	0.3	-0.01	0.8	0.035	0.69	0.82	0.1	0.3	-0.01	0.625
Are 'skip generation' household (no-one aged 18-54)	4.4	0.076	4.25	4.55	0.1	0.3	-0.01	3.3	0.072	3.12	3.41	0.2	0.3	-0.01	0.728
Proportion of households (%):															
with female household head	26.7	0.229	26.27	27.17	0.3	0.4	-0.01	26.3	0.201	25.92	26.71	0.2	0.3	-0.01	0.826
with child household head	0.2	0.013	0.15	0.20	0.1	0.2	-0.02	0.0	0.003	0.04	0.05	0.0	0.1	-0.02	0.234
with elderly household head	33.1	0.302	32.47	33.65	0.4	0.5	-0.01	35.9	0.314	35.29	36.52	0.4	0.4	-0.01	0.873
with main provider that is a household member	91.5	0.160	91.19	91.82	0.3	0.4	-0.01	92.9	0.144	92.58	93.14	0.3	0.4	-0.01	0.470

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Proportion of individuals that are divorced (%):															
Overall	2.9	0.065	2.75	3.01	0.5	0.5		3.1	0.094	2.90	3.27	0.7	0.6		0.570
Males	0.8	0.027	0.74	0.84	0.2	0.3		1.0	0.038	0.90	1.05	0.2	0.3		0.474
Females	5.1	0.112	4.88	5.32	0.4	0.5		5.3	0.160	5.03	5.65	0.6	0.6		0.590
Proportion of households that are (%):															
FullyMobile	7.7	0.458	6.80	8.59	2.9	1.2	0.03	7.0	0.409	6.19	7.79	2.3	1.1	0.02	0.655
PartialSettled	18.5	0.688	17.15	19.84	3.1	1.3	0.04	25.9	0.787	24.38	27.46	2.9	1.2	0.03	0.532
FullySettled	73.8	0.816	72.21	75.41	3.4	1.3	0.04	67.1	0.905	65.29	68.84	3.4	1.3	0.04	0.637
Food aid															
Mean number of months food aid being received	6.7	0.043	6.60	6.77	2.0	1.0	0.02	7.5	0.051	7.45	7.65	2.0	1.0	0.02	0.124
Mean monthly value of food aid (as reported by respondents)	1034.5	13.884	1007.25	1061.68	3.1	1.3	0.04	1409.5	13.641	1382.78	1436.26	2.2	1.0	0.02	0.308
School feeding															
Mean number of months of receiving school feeding	8.1	0.028	8.07	8.18	1.0	0.7	0.00	7.8	0.030	7.76	7.88	1.1	0.8	0.00	0.007
Mean monthly value of school feeding programme (as reported by respondents)	876.6	19.611	838.13	915.00	1.2	0.8	0.00	713.6	19.691	675.05	752.24	1.3	0.9	0.00	0.151
Supplementary feeding															
Mean number of months of receiving supplementary feeding	3.8	0.064	3.72	3.97	0.9	0.7	0.00	5.4	0.097	5.25	5.63	2.6	0.8	0.03	0.065

Indicator	Baseline sample							Follow-up 1 sample							
	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 monthly value of supplementary feeding (as reported by respondents)	375.3	10.388	354.94	395.66	0.8	0.6	0.00	281.6	7.968	265.99	297.22	2.6	0.8	0.03	0.233
Mean age	21.6	0.050	21.54	21.73	0.4	0.4		21.8	0.052	21.71	21.92	0.4	0.4		1.000
Proportion of population (%):															
Male	51.2	0.058	51.13	51.36	0.1	0.2		51.3	0.063	51.14	51.38	0.1	0.2		1.000
Disabled	2.4	0.034	2.36	2.50	0.3	0.4		2.9	0.046	2.78	2.96	0.4	0.5		0.750
Chronically ill	1.6	0.043	1.49	1.66	0.6	0.6		2.0	0.039	1.96	2.11	0.4	0.5		0.165
Proportion of children (age 18+) (%):															
Orphaned (single or double)	14.4	0.141	14.17	14.72	0.5	0.5		17.9	0.215	17.45	18.29	0.9	0.7		0.813
Orphaned (double)	1.3	0.041	1.19	1.35	0.4	0.5		2.3	0.075	2.11	2.40	0.7	0.6		0.696
Disabled	1.2	0.035	1.09	1.23	0.3	0.4		1.3	0.053	1.24	1.45	0.6	0.6		0.704
Chronically ill	0.7	0.032	0.66	0.78	0.4	0.5		0.6	0.018	0.52	0.59	0.2	0.3		0.164
Proportion of adult males (age 18+) currently married or in consensual union (%)	28.7	0.138	28.45	29.00	0.5	0.5		25.7	0.164	25.38	26.03	0.6	0.6		0.968
Proportion of adult males (age 18+) currently married or in consensual union and with more than one wife	11.4	0.229	10.91	11.80	0.4	0.5		10.5	0.286	9.89	11.01	0.6	0.6		0.346
Mean number of wives for married adult males (aged 18+) with more than one wife	2.2	0.006	2.20	2.22	0.3	0.3		2.2	0.010	2.21	2.25	0.7	0.4		0.746
Proportion of children aged 11-18 that have ever been married or in a consensual union (%)	1.1	0.047	1.04	1.22	0.2	0.3		1.2	0.042	1.11	1.28	0.2	0.3		0.706

Indicator	Baseline sample						Follow-up 1 sample						temp corr		
	Mean	Sampling error	Confidence intervals @ 95%		DEFF	DEFT	ICC	Mean	Standard error	Confidence intervals @ 95%		DEFF		DEFT	ICC
			Lower Limit	Upper Limit						Lower Limit	Upper Limit				
Proportion of adults (age 18+) with no national ID card	17.0	0.262	16.46	17.49	1.2	0.8		17.1	0.232	16.63	17.54	0.9	0.7		0.650
Proportion children<6 with no birth certificate	93.8	0.280	93.26	94.36	1.3	0.8		98.5	0.067	98.37	98.64	0.3	0.4		0.174
Saving									0.000						
Mean total household cash savings, among households that currently have cash savings (KES)	47146.7	2894.622	41473.27	52820.19	1.1	0.9	0.00	29076.5	1590.893	25958.38	32194.68	0.2	0.4	-0.01	0.009
Proportion of households with cash savings who save their money with a bank or formal institution	63.2	1.645	59.98	66.43	0.7	0.7	0.00	41.3	1.477	38.36	44.15	0.4	0.6	-0.01	0.289
Borrowing															
Proportion of households that have borrowed in last 12 months that are in debt	71.1	0.892	69.38	72.88	0.5	0.5	-0.01	81.5	1.066	79.37	83.54	0.7	0.6	0.00	0.092
Mean household debt at time of interview , among households who have borrowed in the last 12 months (KES)	3897.1	173.920	3556.2	4237.9	0.3	0.4	-0.01	7032.8	404.517	6239.93	7825.64	0.8	0.7	0.00	0.659