KENYA VISION **2030**

HSNP
Hunger Safety Net Programme

Assessment of programme targeting

Dr Sebastian Silva-Leander and Fred Merttens

June 2016

Preface
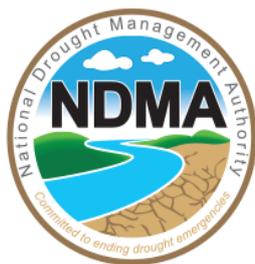
This assessment is being carried out by Oxford Policy Management. The project manager is Fred Merttens. The remaining team members are: Roger Pearson, Caroline Riungu, Alex Hurrell, Clare O'Brien, Vandi Hill, Professor J. Edward Taylor, Dr Michele Binci, Dr Patrick Nolen, Marta Marzi, Molly Scott, Alastair Haynes, Ramla Attah, Sope Otuluna, Chris Hearle, Dr Emma Jones, Shweta Bahri, Claire Simon, Dr Rachel Sabates-Wheeler, Dr Sebastian Silva-Leander, Judith Sandford, Hendrik Lourens Van Nieuwenhuyzen and Laura Giles. For further information contact fred.merttens@opml.co.uk

The contact point for the client is Liz Drake L-Drake@dfid.gov.uk. The client reference numbers for the project are: Call down reference number: PO 6711; Framework reference number: PO 5859.

Acknowledgements

Executive summary

BACKGROUND

The HSNP is an unconditional cash transfer (CT) programme that targets people living in extreme poverty in four counties in northern Kenya: Marsabit, Mandera, Turkana and Wajir. It is currently in its second phase (HSNP2), which aims to provide the poorest 100,000 households in these counties with regular cash payments. As part of an overall evaluation of HSNP2, this report provides the results of an assessment of the strengths and weaknesses of the programme's targeting mechanism, and its performance in reaching its target population of very poor households within the four counties.

HSNP2 is targeted using a combination of a proxy means test (PMT) and community-based wealth ranking (CBWR), a form of community-based targeting (CBT).

MAIN FINDINGS

- Identifying the poorest households in the context of northern Kenya is very challenging. There are no easy solutions to this challenge. This fact raises serious questions about the cost effectiveness of trying to target the poorest.
- Geographic targeting is the most efficient way to target the poor en mass, but pure geographic targeting (i.e. deriving beneficiary quotas based on geographic poverty rates alone) has proved not to be politically feasible. The modified County Resource Allocation formula, by which HSNP2 beneficiary quotas were established for each of the four counties, thus strongly influenced the targeting performance of the HSNP by significantly reducing the degree to which it reached the poorest households.
- CBT has both strengths and weaknesses: it is not especially good at identifying the monetary poor, but is much better at identifying the multidimensional poor.

DETAILED FINDINGS

- Given the extent and uniformity of poverty in areas targeted by HSNP2 it is difficult to accurately identify the poorest households using either the PMT or CBT targeting mechanisms. Exclusion and inclusion errors are very high, and targeted beneficiaries are not considerably worse off than non-beneficiaries in terms of monetary poverty. Importantly, the targeting performance appears to be very close to what would have been achieved if a random targeting rule had been used. This raises serious questions about the cost-effectiveness of the current targeting mechanism.
- It was found that the establishment of county allocations using a modified Commission of Revenue Allocation (CRA) formula (which allocates funds from central government to the counties) negatively affected HSNP2's performance in reaching the poorest because many poor households were excluded due Turkana's allocation being significantly reduced. This indicates that the geographic element of the targeting (at least down to the county level) has a large impact on targeting performance, and suggests that targeting the most extreme areas of poverty could be the best way to achieve progressive targeting results.
- The sub-location-level PMT was found to perform much worse than if a pure pooled PMT had been applied across the whole population, without geographic quotas. However, it is not clear the degree to

which this lack of targeting accuracy is due to a weakness in design or due to implementation errors in the application of the village-level PMT.

- The technical and political challenges of targeting the poorest households in this context mean that HSNP2 has not achieved its logframe target of ensuring 87% of phase 2 beneficiaries fall into the bottom national consumption decile.

- HSNP2's targeting performance in terms of some other indicators of vulnerability – including food security, access to healthcare, disability, and reaching households suffering at least three forms of deprivation – is similar to its performance in terms of monetary poverty.

- In terms of exclusion and inclusion errors the programme's targeting performance is somewhat better for multidimensional poverty (which takes into account non-monetary aspects of wellbeing, including nutrition, education, health, housing and child protection) than for monetary poverty. In particular, the CBT performs better for multidimensional poverty. However, it is unclear whether HSNP2's targeting has missed individuals suffering from the most extreme vulnerability (the 5% of households experiencing deprivation across four or more dimensions).

- The fact that the different targeting mechanisms perform with different levels of success depending on the indicator concerned suggests that there is no single mechanism that is 'best' across all dimensions of vulnerability. More important is to match the targeting mechanism with the objectives of HSNP2.

IMPLICATIONS FOR POLICY

The assessment indicates that while some kind of 'poverty targeting' may be warranted, a PMT is not necessarily required for this purpose: rather, improvements in HSNP's targeting effectiveness could be more efficiently achieved by geographical targeting of the poorest areas. However, it is acknowledged that this form of targeting is not considered political acceptable. There is therefore a tension between social and political acceptability on the one hand, and the ability to prioritise programme resources to the poorest areas on the other.

Within counties geographic poverty targeting is more palatable. One model for doing this is currently being adopted by the National Safety Net Programme (NSNP) registration pilot. It would thus be helpful for an assessment of the NSNP registration pilot to be carried out, to discover if the new NSNP targeting protocol and instrument has improved poverty targeting in comparison to what was achieved by HSNP2; and if so, whether that improvement was worth the cost. In short, to answer the question: How effective is the new harmonised NSNP targeting protocol in reaching the poorest households and does it represent value for money?

A key conclusion of this assessment is that before making further decisions regarding the design of HSNP, including its approach to targeting, its objectives need to be better defined: is the primary aim of the HSNP to redistribute resources to the poor? Is it a specific effort to combat food insecurity? Is it an attempt to provide income support to labour constrained households? What should be the rights and entitlements of different households suffering multiple forms of deprivation that potentially qualify them for more than one of the four CT programmes being implemented under the NSNP?

In regard to the operational level, consideration should now be given as to how to start moving away from the costly, single event-style mass registration model currently used, and towards a system in which households are aware of the kinds of social protection support available to them, understand their rights and entitlements

in relation to these, and are able to access the application system when those rights and entitlements come into effect. Such a system will require a functioning national registration system and an administrative infrastructure with the capacity to deliver it, and hence can be the objective only of a long-term plan.

NEXT STEPS

The evidence from this report will feed into ongoing discussions around the fitness for purpose of HSNP's targeting, the challenges of targeting for all programmes affecting the four northern counties, and the value for money implications of choices concerning targeting—both individually for each of the four NSNP CT programmes and for the NSNP as a whole. Further research is now needed to understand the performance of the new pilot NSNP targeting protocol and, possibly, the viability of an alternative reduced-form poverty-targeting instrument. The strategic position of the HSNP within the NSNP and the social protection strategy in Kenya more broadly should be further assessed in order to understand how to best formulate HSNP and its objectives and operational processes so as to achieve Kenya's social protection goals.

Table of contents

List of tables and figures

List of abbreviations

CBT	Community-Based Targeting
CBWR	Community-Based Wealth Ranking
CBV	Community-Based Verification
CRA	Commission of Revenue Allocation
CT	Cash Transfer
CT-OVC	Cash Transfer for Orphans and Vulnerable Children Programme
CT-PWSD	Cash Transfer Programme for People with Severe Disability
DDS	Dietary Diversity Score
DFID	Department for International Development (UK)
GoK	Government of Kenya
HSNP	Hunger Safety Net Programme
IE	Impact Evaluation
KES	Kenyan Shilling
KIHBS	Kenya Integrated Household Budget Survey
MIS	Management Information System
MDP	Ministry of Devolution and Planning
MLEAA	Ministry of Labour, and East African Affairs
NDMA	National Drought Management Authority
NSNP	National Safety Net Programme
OPCT	Older Person Cash Transfer Programme
PCA	Principle Component Analysis
PILU	Programme Implementation and Learning Unit
PMT	Proxy Means Test
P4R	World Bank Programme for Results

1 Introduction

1.1 THE HSNP

The HSNP is an unconditional CT programme that targets people living in extreme poverty in four counties in northern Kenya: Marsabit, Mandera, Turkana and Wajir. It is currently in its second phase, in which it aims to provide the poorest 100,000 households with regular cash payments, and reach up to an additional 180,000 households with periodic emergency payments to help mitigate the effects of shocks such as drought.[1] Currently the transfer is worth KES 2,550 per month (approximately £17/$25).[2] The transfers are made directly into recipients' bank accounts every two months.

Under HSNP Phase 2, 374,806 households across the four counties have so far been registered into the HSNP Management Information System (MIS). The registration exercise took place between December 2012 and June 2013, and was intended to be a census of the population of the four counties.[3] It was planned that all households would be registered for bank accounts, with the HSNP providing regular CTs to 100,000 of these. These regular beneficiaries of HSNP are known as 'Group 1'. The rest of the households in the MIS are known as 'Group 2'. At the time of writing, some 292,260 households had active accounts, 84,340 of which were Group 1 beneficiary households.[4] An ongoing effort is in place to finalise account registration and activation for the remaining households. Once this has been achieved, Group 1 households that have not yet received any payments will be paid their full entitlement from the HSNP, dating back to July 2013.

The HSNP is implemented under the NDMA, which reports to the Ministry of Devolution and Planning (MDP). An internationally procured Programme Implementation and Learning Unit (PILU) sits within the NDMA. The PILU manages and monitors the delivery of the HSNP and provides oversight of a rights and grievances mechanism for the programme. The PILU reports to the NDMA and HSNP Steering Committee.

The HSNP is delivered in partnership with implementing partners HelpAge International, which manages the programme rights component, Financial Sector Deepening Trust, which manages the payments component, and the Equity Bank, which delivers the payments.

---

[1] The HSNP first phase ran from 2009 to 2013 and provided around 69,000 households (approx. 496,800 people) with regular electronic CTs every two months.

[2] The original value of the HSNP transfer was KES 2,150 every two months. This was paid to each beneficiary household (or individual in the case of the Social Pension component). The value was calculated as 75% of the value of the World Food Programme food aid ration in 2006, when the value of the transfer was first set. Over time, the value of the transfer has increased: initially from KES 2,150 to KES 3,000 with effect from payment cycle 16 (September/October 2011), then to KES 3,500 with effect from cycle 19 (March/April 2012). A one-off doubling of the transfer occurred in July/August 2011 to support households coping with drought. At the end of the Phase 1 evaluation period, it stood at KES 3,500. At the start of Phase 2, the value was worth KES 4,600. It went up to KES 4,900 in Kenyan financial year 2014/15 and KES 5,100 in 2015/16.

[3] It is known that some settlements were missed from the registration, but not precisely how many households or individuals were missed. There is a plan to register all the missed communities in the next registration exercise, which is currently set to start from July 2016.

[4] Data taken from www.hsnp.or.ke/index.php/dashboards/at-a-glance [accessed 10 February 2016].

HSNP Phase 2 will run from July 2013 to March 2017. It is funded by the DFID to the value of £85.6 million. The Government of Kenya (GoK) is expected to contribute funding as part of the NSNP. It is envisaged that by 2017, 49% of total programme costs and 54% of the caseload will be met by the GoK.

An independent evaluation of the HSNP has been commissioned, of which this report is a part. The objective of the evaluation is to provide evidence on programme performance and impact for use by all programme stakeholders, including the PILU, NDMA, DFID, NSNP and GoK, plus other national and international stakeholders. The evaluation will inform future decision-making and accountability for funding, as well as the wider community interested in CTs, both nationally and internationally.

1.2 THE NSNP

There are four main CT programmes in Kenya. These are implemented by two ministries: the Ministry of Labour, and East African Affairs (MLEAA; formerly the Ministry of Labour, Social Security and Services) and the MDP. The three programmes housed in the MLEAA are: the Cash Transfer for Orphans and Vulnerable Children Programme (CT-OVC) in the Department of Children's Services; the Older Person Cash Transfer Programme (OPCT); and the Cash Transfer Programme for People with Severe Disability (CT-PWSD), both in the Department of Social Development. The HSNP sits in the NDMA within the MDP.

The three MLEAA CTs currently operate in 47 counties across Kenya, including the four HSNP counties. Within these four counties, there is currently not much overlap between the various programmes, though each of the MLEAA CTs have defined expansion plans that are due to be met in 2015/16 and 2016/17.[5]

Following the Kenya National Social Protection Strategy (2011), the government has established the NSNP. The aim is to create a framework around which the four main CT programmes (CT-OVC, OPCT, CT-PWSD and HSNP) will be increasingly coordinated and harmonised. The NSNP has three objectives that aim to improve the efficiency and effectiveness of safety net support to poor and vulnerable populations in Kenya:

1. Create robust and transparent systems for targeting, registration, payments, case management and monitoring, and strengthen the overall governance of the programmes;
2. Harmonise the four CT programmes to improve the coherence of the sector; and
3. Expand the coverage of the four programmes in a coordinated manner to progressively realise the right to safety net support.

The NSNP is thus the first step in a longer-term reform agenda that aims to establish a national safety net system as part of an integrated approach to delivering social protection services nationally. The Social Protection Secretariat, a body created by the National Social Protection Policy, provides sector-wide oversight and coordination.

The NSNP is supported by the World Bank Programme for Results (P4R). Some of the indicators that trigger payments to the GoK under the P4R rely on data from the HSNP programme and its evaluation.

---

[5] In total, the NSNP seeks to expand by some 546,299 beneficiaries over these periods, including 55,043 in HSNP counties. These include: 250,000 for CT-OVC, 45,143 in HSNP counties; 246,299 for OPCT, 2,329 in HSNP counties; and 50,000 for PWSD-CT, 7,571 in HSNP counties (data provided by NSNP).

1.3   HSNP TARGETING

1.3.1   Distribution of HSNP beneficiaries between counties

Under Phase 2 the HSNP was targeted using a combination of a PMT[6] and CBWR. According to the original conception of Phase 2, HSNP would be distributed to the counties according to the share of the poor population identified by the PMT (Pinney, 2013). This approach indicated that, of the 100,000 Group 1 households to be selected, 77.5% would be located in Turkana, 10.1% in Mandera, 9.4% in Marsabit and 3.0% in Wajir.

This division partially reflected the distribution of extremely poor households in the counties. The Kenya Integrated Household Budget Survey (KIHBS) 2005–2006 showed that, of the four HSNP counties (which the KIHBS identified as the poorest counties in Kenya), Turkana was the poorest with a poverty rate of 94% and an extreme poverty rate of 83%, Marsabit the second poorest with a poverty rate of 92% and an extreme poverty rate of 64%, Mandera the third poorest with a poverty rate of 88% and an extreme poverty rate of 61%, and Wajir the fourth poorest with a poverty rate of 84% and an extreme poverty rate of 58%.[7]

Because of the disparity of the HSNP beneficiary quota allocations between the four counties, the NDMA opted to allocate the Group 1 county quotas using a modified version of the CRA formula. The CRA is a parliamentary-approved formula for allocating funds from central government to the counties on the following bases: 45% population, 25% equal share, 20% poverty, 8% land area and 2% fiscal responsibility. The CRA formula was modified by removing land area and fiscal responsibility and increasing the weight of the poverty count to 30%, resulting in the following weighting: 25% equal share, 30% poverty and 45% population. The poverty line calculating the poverty headcount rate component of the modified CRA formula was taken as the HSNP eligibility threshold, i.e. the PMT score of the 100,000th household, which was equal to a per adult equivalent monthly consumption of KES 442.6.

On this basis, Turkana was allocated 39.9% of HSNP Group 1 (39,918 households), Mandera 22.2% (22,231 households), Wajir 19.2% (19,201 households), and Marsabit 18.7% (18,649 households; the Marsabit allocation was then increased to 20,450 due to an additional 1,800 households funded by GoK). The impact of the application of the modified CRA on beneficiary allocations between counties is illustrated in Figure 1 below.

A county-specific PMT threshold was then derived by taking the PMT score of the nth household in each county, depending on the number of Group 1 allocations. So in Turkana it was the PMT score of the 39,918th

---

[6] A PMT is a statistical method by which household consumption is estimated in terms of known predictors of wealth and poverty such as ownership of assets, demographic characteristics and location of residence.

[7] In fact, at the time of the KIHBS 2005–2006, the counties were classified as districts. At that time, Moyale was a distinct district from Marsabit. When the administrative classifications were changed from districts to counties in March 2013, in line with restructuring the national administration to fit with the devolved government system brought in by the 2010 Constitution, Moyale district was incorporated into Marsabit county. The poverty rate for Moyale district was 67%, and the extreme poverty rate 30%. The incorporation of Moyale district into Marsabit county theoretically reduces the poverty rates of Marsabit (although these rates are now quite old so conditions may have changed within and between the four counties).

household (which was equal to KES 320.4) and in Mandera the PMT score of the 22,231st household (KES 600.1), while in Wajir it was KES 708.4 and in Marsabit KES 576.3.

Figure 1: HSNP Group 1 allocations before and after the application of the modified CRA by county

Impact of modified CRA on allocations of beneficiaries by county

Source: HSNP MIS (October 2015)
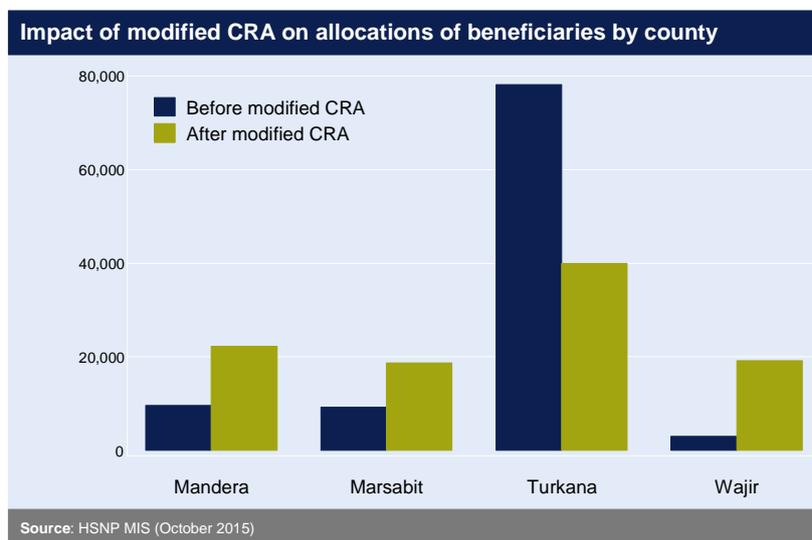
1.3.2 Distribution of HSNP beneficiaries within counties

Within counties, allocations were established for each sub-location by counting the numbers of households within those that fell below the county-specific PMT eligibility threshold. This could be three, 30 or 300 households depending on whatever happened to be the case.

1.3.3 Selection of HSNP beneficiary households

In order to identify the specific households within each sub-location that would benefit from the programme, PMT scores and CBWR scores were combined for each household to produce a single score.

The CBWR is comprised of four wealth groups, 1 being the poorest and 4 being the wealthiest. These wealth groups are not split evenly within each sub-location, but may be distributed so that, for example, 40% of households are in wealth Group 1 (very poor), 34% in wealth Group 2 (poor), 18% in wealth Group 3 (middle) and 8% in wealth Group 4 (better off).

The distributions of PMT scores within each sub-location were then divided into the same size groups as the CBWR scores. So, as per the above example, the bottom 40% of PMT scores in that sub-location would be PMT Group 1, the next 34% PMT Group 2, and so on.

The CBWR wealth groups and PMT groups were then combined by adding them together and dividing by two for each household, to achieve a combined CBWR/PMT group score (Pinney, 2013).[8] Because the combined CBWR/PMT score is a discrete variable (meaning that it comes in defined units of 1, 1.5, 2, 2.5, 3, 3.5 or 4), and

---

[8] There are some finer points of detail to this brief description; these can be found in Pinney, 2013.

there may be a many households within each of these discrete scores, households within each discrete combined group score are ranked by PMT score. If the PMT eligibility threshold falls in the middle of a combined group score, e.g. Group 2, all households up to the threshold are selected for HSNP and those above it are not, even if they fall within the same CBWR wealth group or combined group score.

1.3.4 Targeting of HSNP emergency payments

Households situated above the PMT threshold may be entitled to emergency HSNP payments in the case of severe or extreme drought. If the emergency payments are triggered, all households up to the allocation for emergency payments established in a particular sub-location are selected in the same way as HSNP Group 1 households; that is, on the bases of the combined CBWR/PMT group scores and PMT scores. The mechanism for establishing emergency payments quotas by sub-location is explained in the *Hunger Safety Net Programme Scalability Guidelines – Guidance for Scaling Up HSNP Payments* Annex to the HSNP Operations Manual.

1.4 RATIONALE FOR THE ASSESSMENT OF HSNP TARGETING

This document presents the results of a targeting assessment carried out as part of the independent evaluation of the HSNP in order to explore the strengths and weaknesses of the targeting mechanism currently used by the programme.

1.4.1 Findings from HSNP Phase 1 targeting analysis

Phase 1 of the HSNP piloted three separate types of targeting mechanism: a social pension (paid to individuals aged 55 years and above); CBT; and Dependency Ratio (households with a dependency ratio above a certain threshold were eligible). A targeting assessment of these three mechanisms was undertaken to assess which was the most successful at targeting the poor (OPM and IDS, 2011). The assessment found that, in the context of an absolute poverty rate of around 85%, the programme covered 51% of households in those parts of the districts where HSNP was then operating.[9] It showed that, across the three targeting mechanisms, HSNP targeting was pro-poor, but only mildly so: beneficiary households were 13 percentage points more likely to be among the poorest households (bottom 51%) as compared to non-beneficiaries (57% vs. 44%). Of the three targeting mechanisms, CBT was the most effective mechanism at identifying the poorest:[10] CBT beneficiary households were 17 percentage points more likely to be among the poorest as compared to non-beneficiaries (51% vs. 34%). A simulation analysis was conducted which showed that a PMT could potentially out-perform the three targeting mechanisms. This said, it was acknowledged that the performance of PMT depended on the degree of implementation accuracy, given that it is not possible to achieve complete accuracy (see section 1.4.2 below).

---

[9] This estimate of the coverage rate should be slightly qualified because, due to insecurity, a number of sub-locations covered by the programme were excluded from the evaluation sample frame (77 out of 433). The evaluation sample was thus representative of all sub-locations covered by the HSNP, except those few excluded for security reasons at the time of sampling.

[10] Although this did depend somewhat on context – see section 1.4.2 below.

Acknowledging the various implementation challenges, alongside the strengths of CBT in terms of social and political acceptance, the targeting assessment made three recommendations:

1. Devise a system for determining sub-location quotas to ensure they reflect variations in poverty and food security across sub-locations.
2. Provide more advance warning of the targeting process to ensure all households can participate. Also, ensure all households and villages in each sub-location are informed of and participate in the targeting process, with effective grievance procedures in place in the event that any households are missed.
3. Either: (a) monitor CBT implementation to ensure consistency and prevent capture by local elites; or (b) complement CBT with a simple PMT-type mechanism to screen out relatively better-off households and thereby reduce inclusion errors.

1.4.2 Rationale for HSNP Phase 2 targeting analysis

As described in section 1.3 above, under Phase 2 the HSNP uses a combination of CBWR and PMT to target beneficiaries.

CBWR is a form of CBT. In a CBT, community members are asked to categorise or rank different households on pre-determined criteria of vulnerability and/or poverty. CBTs have the advantage of being participatory and thus generally yielding understandable and acceptable outcomes for community members. On the other hand, studies have shown that CBTs can suffer from a subjective interpretation of eligibility criteria, which can lead to a lack of uniformity in the application of the target across communities. Furthermore, in some cases, CBT can suffer from elite capture or other distortions whereby influential members of the group are able to influence the allocation process, or marginalised households are excluded. Indeed, indications of both these drawbacks to CBT were found by the targeting assessment carried out for HSNP Phase 1 (OPM and IDS, 2011).[11]

A PMT, by contrast, builds on a statistical model in which household consumption is estimated in terms of known predictors of wealth and poverty (e.g. asset ownership, demographic characteristics, etc.). In cases where it is too costly or complicated to collect detailed data on household consumption, PMTs can be used to approximate actual household consumption, and thus predict poverty status. There are two main sources of errors that often hamper the efficacy of PMT-based targeting schemes:

1. Design errors resulting from a misspecification of the PMT model; and
2. Implementation errors resulting from the way in which the PMT is applied by programme implementers to select beneficiaries.

The former may result, for instance, from the use of outdated or poor quality data when calibrating the PMT estimation, or from the use of data that is not representative of the geographic regions and/or livelihoods contexts in which the programme is implemented.

---

[11] The Phase 1 targeting assessment found that the success of CBT in reaching the poor was dependent on context. In Turkana, the households in the poorest half of the distribution were in fact less likely to be selected for the programme by CBT, while in Marsabit the likelihood of being selected into the programme by CBT increased as household assets increased. Fully or partially mobile pastoralist households were also less likely to be selected by CBT in Marsabit than households that were fully settled. See OPM and IDS, (2011), p. 38.

The latter may result, for instance, when beneficiaries are able to under-report their assets in order to appear poorer than they are, and thus increase the likelihood that they will be selected for the programme. More broadly, there are also always complications associated with collecting some types of information (definitional issues, the manner in which information must be probed, etc.), which mean PMTs are prone to be implemented with relatively higher errors.

Both types of design errors are likely in this case, due to the fact that: (a) the PMT model is based on an analysis of the KIHBS survey, which is now 10 years old (eight years old at the time the PMT for Phase 2 was designed); and (b) the quality checks carried out on the MIS data for this analysis showed significant irregularities on certain indicators in the MIS, pointing to possible misreporting or measurement errors (see 0).

The results of these data quality checks corroborate the findings of an assessment of the HSNP Phase 2 targeting process (Fitzgibbon, 2014), which suggested that a multitude of factors could lead to significant errors of implementation. These include:

- Lack of understanding of the targeting mechanisms being deployed by all stakeholders to the registration process, including the implementers of that process;
- Lack of consistency of approach to the registration exercise from the different implementing partners (four non-governmental organisations, each contracted separately);
- Numerous problems suffered by the registration software during registration;
- Little or no quality assurance checks conducted on the data gathered; and
- Scant attention paid to the political consequences of the application of the targeting model until very late in the process.

In light of these considerations, the analysis presented below attempts to assess the performance of the HSNP under Phase 2 in reaching its target population of very poor households within the four counties. Because poverty rates are so high, it also attempts to assess the performance of the HSNP Phase 2 targeting mechanism in relation to other dimensions of vulnerability, captured via the notion of multidimensional poverty (see section 2.3.3 below).

It is hoped that this information can be used in upcoming reviews of the HSNP and wider NSNP harmonisation agenda to improve the targeting performance and cost-effectiveness of the HSNP and other NSNP programmes in the future.

1.5   STRUCTURE OF THE REPORT

The remainder of this report is structured as follows. Section 2 describes the methodology used to conduct the analysis. Section 3 gives a brief overview of the characteristics of the relevant populations under consideration. Section 4 presents the results of the HSNP's targeting performance in relation to reaching the poorest households based on a monetary definition of poverty. Section 5 presents the findings on programme performance in relation to targeting different dimensions of poverty, including nutrition, health, education, housing, child protection, and a composite multidimensional poverty index. Section 6 describes the recent NSNP registration pilot and discusses the implications of the proposed targeting protocol for the NSNP in terms of the twin goals of reaching the poorest and most vulnerable households and achieving value for money.

Section 7 concludes by summarising the analysis and relating the findings to the ongoing policy debate in Kenya around targeting of CTs and social protection, the harmonisation and consolidation agenda of the NSNP, and the broader international context for these issues. The annexes provide supplementary technical detail.

2   Methodology

2.1   KEY RESEARCH QUESTIONS

As identified in the evaluation inception report (OPM, 2015), the key research questions that the targeting analysis seeks to answer are:

- What are the characteristics of HSNP (Group 1) beneficiary households from a poverty and welfare perspective?
- How do beneficiary households compare to non-beneficiary households in this regard?
- How do Phase 2 beneficiaries compare to Phase 1 beneficiaries in terms of welfare status?
- To what extent did the PMT and CBWR elements of the Phase 2 targeting process select the same households, and to what extent were the poorest and/or most food insecure selected?

2.2   THE CHALLENGE

For the Phase 1 targeting analysis, we used data from the baseline Impact Evaluation (IE) survey to conduct analysis of the targeting effectiveness of the three different mechanisms employed by the programme (see section 1.4.1 above). Using these data, we were able to distinguish between design errors and implementation errors.

Figure 2: Implementation and design errors
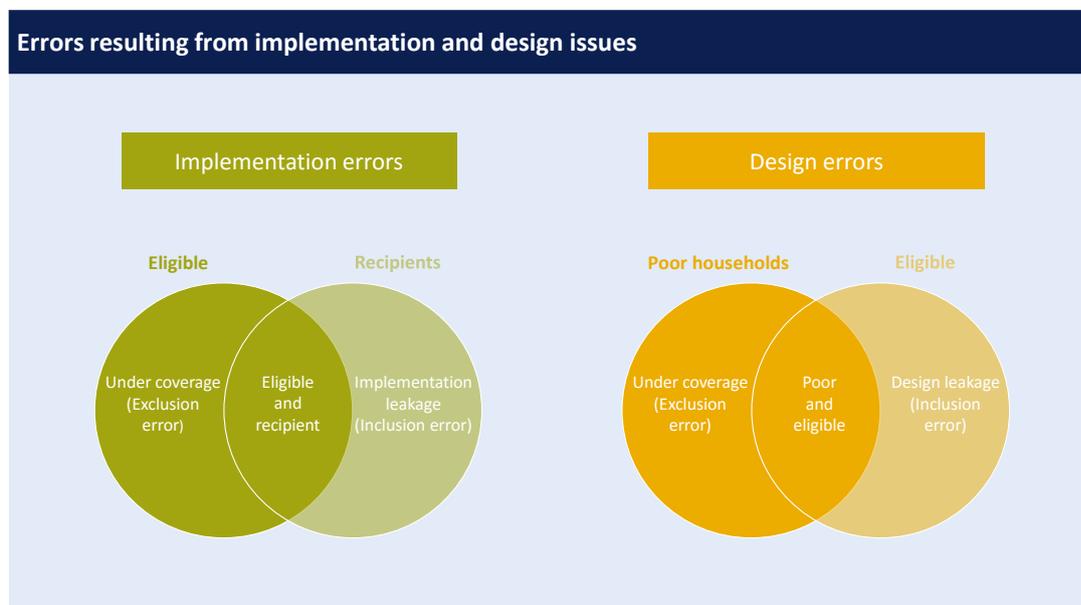
For the Phase 2 targeting analysis, we face an important constraint: the MIS represents a 'baseline' for HSNP Phase 2, that is, a set of household data from before the programme was implemented. However, the MIS

does not contain consumption expenditure data, which is the data by which poverty status is measured. Such data is required for a 'classic' targeting analysis that assesses the average pre-intervention consumption expenditure and poverty status among those selected to be programme beneficiaries compared to those not selected (non-beneficiaries).

We are collecting consumption data for a representative sample of the MIS population for our IE survey (data collection is ongoing at the time of writing of this report). However, these data will represent the situation of households after the HSNP Phase 2 has been operating, so will reflect the poverty situation of households *including* all the transfers they have received as a result of benefiting from the programme. The consequence is that any comparison of poverty rates among beneficiaries and non-beneficiaries based on the Phase 2 IE survey data will be difficult to interpret. If beneficiaries appear to be significantly better off than non-beneficiaries, it may indicate that the programme has reduced poverty among beneficiaries (a key finding from the evaluation of Phase 1), such that they are now generally better off than those not selected. Alternatively, it may mean that the targeting process did not select poorer households on average. Conversely, if beneficiary households are poorer on average, it would suggest that targeting was effective in selecting poorer households, because we can be reasonably confident (given the Phase 1 evaluation findings) that HSNP will not have made beneficiaries worse off. The hardest results to interpret would be if there is no significant (or very small) difference in average consumption expenditure and poverty levels among beneficiary and non-beneficiary households, as this could indicate either the programme's poverty reduction effect or poor targeting performance, both of which are plausible.

2.3 THE METHOD

2.3.1 Linking datasets

To overcome the challenge described above, we decided to link two different datasets, one containing detailed consumption data from the HSNP Phase 1 evaluation, and one (the HSNP MIS from 2014) containing information on the HSNP targeting mechanisms and beneficiary status of households.

Unfortunately, the two datasets do not use a common unique household identifier. Consequently, the linking of the two datasets had to be done using the reclink command in Stata, which builds on a probabilistic technique exploiting similarities in household characteristics and household members' names between the two datasets. The idea is that since the MIS is a census, it should contain all the households sampled in the HSNP Phase 1 evaluation, insofar as these have not dissolved or changed their composition beyond all recognition in the intervening years.

Through this method, we were able to link a total of 3,101 out of a total sample of 5,108 households from the HSNP1 evaluation baseline. In the HSNP1 endline survey, only a subsample of 2,436 households was surveyed, all of which were active beneficiaries of the HSNP1 programme. Of these, we were able to link 1,790 households to the MIS dataset.

We carried out robustness tests in order to check that the subsample of matched households was representative of the whole population and did not bias the conclusions of our analysis. The results are reported in 0 below. They show that, with few exceptions, the direction of the ratios (above or below 1) for

given indicators were unchanged when using the matched subsample as compared to when we ran the analysis for the whole population. This suggests that the matched sample did not significantly bias our results.

Given that consumption data can fluctuate from year to year, it is desirable to minimise the lag between the collection of the consumption data and the assessment of the household's beneficiary status in the HSNP2. From this point of view, it would have been best to use endline data from HSNP Phase 1 evaluation, which were collected in 2012, two years before the MIS data. However, given that this dataset used a reduced sample of households, we also report results obtained using baseline and midline data from 2010 and 2011 respectively.

In spite of inevitable fluctuations in consumption levels from year to year, we assume that a household's relative position in society will remain fairly stable over time. Consequently, we assume that a household in the poorest quartile is unlikely to radically change its poverty status in the two years between the HSNP1 endline survey and the registration of beneficiaries for HSNP2. This is a strong assumption, but one that is necessary given the constraints of the study (see section 2.4 below for further discussion of this issue).

Unless otherwise stated, all results reported below are based on individual-level analysis and not household level analysis; that is, we report poverty and other deprivation rates across individuals, not households. The rationale for reporting at the individual level is that beneficiary welfare ultimately accrues at the individual level. Furthermore, our analysis shows that beneficiary households tend to be larger than non-beneficiary ones (see Table 2 below), meaning that the number of beneficiaries would be underestimated if the analysis were carried out at the household level.

Since the MIS is essentially a census of all households in areas where the HSNP is currently being implemented, it does not usually require statistical significance tests. These are reported here for consistency, but are almost always statistically significant given the large number of observations in the MIS.

2.3.2 Monetary poverty

Monetary poverty was estimated in the conventional manner, building on the measurement of standardised consumption aggregates, taking into account food and non-food consumption, self-production and durable goods. It should be noted that the consumption module used in the HSNP1 IE built on a reduced module based on the most frequently consumed items identified in the KIHBS 2005 (representing 90% of average household consumption). Consequently, the poverty rate obtained using this module is likely to slightly over-estimate poverty rates. Furthermore, the sampling of the HSNP1 IE was not designed to be statistically representative of the geographic areas in which it was carried out (see footnote 9 above). Consequently, the poverty estimates presented here should not be taken as representing official poverty rates for the areas covered by the survey.

Three national poverty rates were calculated:

1. **The national rural poverty rate**, using the official 2005 poverty line for rural areas (KES 1,549);
2. **The national rural food poverty rate**, using the lower poverty rate representing the minimum consumption basket required in rural areas to reach 2,100 kcal per day (KES 998); and
3. The poverty line that distinguishes **the bottom national consumption decile** (KES 738).

These poverty lines were adjusted for the national inflation rate between 2005 and the survey year. Again, they are approximations and should not be considered official poverty lines for these years, since they do not take into account the particular consumption patterns of poor household in the areas surveyed.

2.3.3   Multidimensional poverty

In addition to a classical income poverty indicator, we construct a multidimensional poverty index that takes into account non-monetary aspects of wellbeing. The advantage of assessing targeting accuracy in terms of multidimensional poverty in addition to monetary poverty is that it provides an additional angle of analysis and thus a way to confirm or challenge the results obtained using monetary poverty.

When assessing targeting performance in terms of monetary poverty we usually find that PMTs perform better than other targeting mechanisms (even if not remarkably well themselves). This is a property of the way that PMTs are constructed to mimic monetary consumption. Yet monetary poverty is only one indicator of vulnerability, and may in some cases be less salient than other dimensions, such as nutritional or health outcomes, depending on the specific objectives of the programme and the nature of the challenges faced by beneficiaries.

In this study, we have chosen to look at a number of dimensions of vulnerability separately (e.g. food security, health, etc.), as well as looking at the overlap of these deprivations among beneficiaries. In other words, we try to identify individuals that suffer from multiple deprivations simultaneously. The rationale for this is that an individual suffering from multiple deprivations will be more vulnerable to shocks and less able to respond than one suffering only from one deprivation.

The multidimensional poverty index used here applies the Alkire-Foster method for counting indices (Alkire and Foster, 2011). The index comprises the following dimensions and indicators:

- **Nutrition**: An individual is considered deprived in nutrition if s/he lives in a household that has a Dietary Diversity Score (DDS) of four or less.
- Education:
  - A child aged 6–17 years is considered deprived in education if s/he has never been enrolled in school.
  - An adult is considered deprived in education if s/he has not completed primary school.
- Health:
  - An individual that is chronically ill.
  - An individual who has been sick in the past two weeks but has not visited a doctor.
- Housing:
  - Inadequate walls: walls not made of stone/brick/block/cement/mud/dung.
  - Inadequate floors: floor not made of cement.
  - Inadequate sanitation: toilet is either an uncovered pit latrine, bucket or pan, or in the bush.
  - Inadequate water: water source is dam/pan/river/lake/rainwater catch.
  - No electricity: those households with electricity not stated as cooking or lighting fuel.
- Child protection:

- Child labour: child aged 5–17 who is currently working.
- Birth certificate: Child aged 0–18 that does not have a birth certificate.

All deprivations are defined at the household level, so that a household is considered deprived if at least one household member presents the stated deprivation.

We use a nested weighting system, whereby each of the five dimensions receives equal weight (1/5), as does each of the indicators within the dimensions.

The Alkire-Foster class of multidimensional poverty indices have the particularity that they require the researcher to set two different sets of poverty/deprivation cut-offs. First, a threshold has to be defined in each dimension to determine who is considered deprived in each dimension, as described above. Secondly, an overall poverty cut-off has to be set for the multidimensional poverty index, determining how many deprivations an individual must suffer in order to be considered multidimensionally poor. The multidimensional poverty index for individual i is then defined as:

$$MPI_i = A_i \times H_i$$

Where A_i describes the weighted number of deprivations suffered by individual i (normalised between 0 and 1, with 1 = deprived in all four dimensions, and 0 = not deprived in any dimension), and H_i is a poverty headcount indicator, taking the value 1 if the individual suffers more deprivations than the minimum required to be considered poor, and 0 otherwise. Here, we report poverty levels for various different cut-offs, including two dimensions equivalent or more, 2.5 or more, three or more. These can be a variety of deprivations in different dimensions adding up to the equivalent of 2, 2.5 or 3 full dimensions of deprivations.

2.3.4 Assessing targeting performance

For the purposes of our analysis, we define the bottom 26.7% of the consumption distribution as 'eligible' for the HSNP under Phase 2. This threshold is based on the coverage rate of the actual eligible households in the MIS and the assumption that the programme aims to target the poorest of the poor.

We thus look at how well the poorest households according to the consumption data have been included in or excluded from the programme. However, in this regard, we are not able to distinguish between implementation and design errors, so our results represent the conflation of the two.

The other method of assessing targeting performance is to look at the ratio of poverty rates, or other indices of welfare status, between HSNP2 beneficiary households (Group 1) and non-beneficiaries (Group 2). A ratio above one means that the poverty rate (or other index of poor welfare) is higher among beneficiaries than non-beneficiaries, thus implying that the programme is relatively well targeted at poorer (or more vulnerable by other measures of welfare) households. Significance tests show whether the ratio is statistically different from one (if there are stars the estimate is statistically significant). A ratio of one (i.e. all non-significant estimates) means that the programme is effectively random in terms of targeting – it reaches the poor and non-poor with equal probability.

2.4   LIMITATIONS OF THE APPROACH

The above methodology contains a number of limitations and assumptions. These are:

- The assumption that the poverty status of the linked households (i.e. whether they are in the bottom 26.7% of the distribution) has not changed in the year or two between Phase 1 evaluation data collection and registration for Phase 2 (Ministry of Labour, Social Security and Services, 2015).[12]
- We cannot say that our sample 'represents' the Phase 2 population because our study sample is just those households we happened to be able to successfully link to the MIS.
- We cannot distinguish between design errors and implementation errors, which our estimates of targeting performance combine.

Taking these in turn, we can say with regard to the first limitation that, while it is true that the poverty status for poor households tends to be relatively stable over time, and it is therefore unlikely that many of these households will have radically altered their welfare status, this is nevertheless a strong assumption, especially because Phase 1 beneficiaries continued to be in receipt of HSNP between the programmes.

With regard to the second limitation we assess how far it has a bearing on our results by analysing the characteristics of the study sample alongside the MIS population overall. This analysis shows that the study sample appears likely to be somewhat poorer, with a slightly higher prevalence of other vulnerabilities such as food insecurity and disability within households.

With regard to the final limitation we acknowledge that part of the explanation of any poor performance of the PMT instrument in identifying the poor undoubtedly comes from implementation errors. This is confirmed by separate assessments of the HSNP Phase 2 targeting implementation process. Although this means that the PMT might have performed better by some degree that we cannot quantify, had it been perfectly implemented, this does not imply that perfect implementation is ever possible. The nature of data collection and the type of data to be collected mean that implementing a PMT is challenging and will inevitably result in some minimal degree of implementation error. Even if the implementation errors suffered by HSNP Phase 2 were categorically shown to be especially high, and though they may be significantly improved with a more robust approach to targeting implementation (fieldwork model, improved PMT tool etc.), it will never be possible to eliminate them completely.

---

[12] This is also an assumption acknowledged by the Ministry in its recent draft methodology for a harmonised targeting approach for the NSNP: 'Despite the fact that the latest KIHBS was carried out over a decade ago, it may still be valid for the development of a PMT that attempts to predict household consumption, since consumption patterns, especially for the poor and the poorest, barely change in a dramatic manner over time.' See Ministry of Labour, Social Security and Services (2015), p. 3.

3 Household characteristics

3.1 COMPARING THE STUDY SAMPLE TO THE POPULATION IN THE MIS

For the targeting analysis conducted below we rely on a small subsample of households from the MIS which had also been surveyed as part of the HSNP Phase 1 evaluation. The table below compares the beneficiary status of the sample in Phases 1 and 2.

Table 1: HSNP beneficiary status (number of individuals) at Phase 1 and Phase 2

	Phase 1 beneficiary status in 2011		Phase 1 beneficiary status in 2012
Phase 2 ben. status	Beneficiary	Non-beneficiary	Beneficiary[†]
Beneficiary	6,775	3,517	6,887
Non-beneficiary	4,030	1,768	3,513

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: [†] The endline (2012) sample for the Phase 1 evaluation does not include non-beneficiaries.

Table 1 shows that the beneficiary status of some households changed between Phase 1 and 2. Some households that were benefiting from HSNP in Phase 1 are no longer benefiting, while others who were non-beneficiaries in Phase 1 are now beneficiaries.[13] All of the analysis below is based on beneficiary status at Phase 2.

As mentioned above (section 2.4), the sample used for this study is not a random sample of the MIS household population. This means that the study sample may differ from the MIS population in a systematic way. If this is the case, we cannot say that the estimates of targeting performance made below would precisely mirror those for the general population. In order to see whether or how far the sample differs from the MIS population, we compare characteristics across the two populations.

Table 2 below shows the results of this comparison. The first column shows the value for the whole population registered in the HSNP2 MIS. The second column provides the average for the subsample of households (3,101) that we were able to match with the HSNP1 IE baseline and midline (2010 and 2011). The third column provides the same statistic for the smaller subsample of households (1,790) that we were able to match with the HSNP1 IE endline survey (2012).

The results show that beneficiaries are slightly over-represented in the samples from HSNP1 IE, as compared to the whole population surveyed in the MIS. This is likely due to the fact that the HSNP1 IE surveys were designed primarily to capture information on HSNP1 beneficiaries, who represented 67% of the total sample in the HSNP1 baseline and 100% of respondents in the endline. The indications are that these households tend to be slightly poorer than the average, as the various targeting mechanisms used were marginally directed towards poorer households. Consequently, they would have had a higher probability of being selected into HSNP2 than other households (see Table 2 below).

---

[13] Of the HSNP2 beneficiaries, 65% had already benefited from HSNP1, whereas 35% are new beneficiaries. Conversely, 37% of those who had received benefits under HSNP1 did not receive benefits under HSNP2, whereas 11% of those registered under Phase 2 received no benefits under HSNP1 or HSNP2.

This bias is largely reflected in the comparative statistics. Study sample households tend to be larger and have a lower DDS than the population average, and have a higher number of total deprivations. These differences are statistically significant at 1%. They are also more likely to have disabled household members.

The only indicators which do not vary significantly across surveys are the PMT score and adult education (primary completion). Both the average PMT score and primary education completion indicators were almost identical for the 2012 subsample as for the total population, and slightly better for the 2010 subsample (significant at 5%).

Table 2:   Group 1 and Group 2 characteristics by dataset

	Whole population	Subsample matched with 2010/11 survey		Subsample matched with 2012 survey	
Number of households	380,355	3,101		1,790	
% beneficiaries	30.8	34.0	***	35.6	***
Household size	6.2	6.7	***	6.7	***
% female-headed households	8.8	7.3	***	7.7	***
Age of head of household (years)	40.8	45.6	***	47.9	***
DDS	3.9	3.7	***	3.7	**
PMT score	838.3	860.8	**	839.2	
Total deprivations (weighted)	3.04	3.16	***	3.18	***
% adults with no primary education	83.8	82.6	**	83.1	
% households with disabled members	5.0	6.4	***	6.8	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig.

The fact that the study sample appear to be slightly poorer and/or slightly more vulnerable according to other dimensions of welfare, such as food security or prevalence of disability in the household, means that the figures produced by our analysis cannot be assumed to precisely reflect those we would find in the general population. However, this caveat does not imply that the conclusions drawn from this analysis do not hold. The general direction and magnitude of the estimates below should be considered valid.

3.2   CHARACTERISTICS OF HSNP GROUP 1 BENEFICIARIES

Table 3 below presents some key characteristics of HSNP Group 1 beneficiaries. According to the MIS, the HSNP actually covers (or intends to cover – not all Group 1 beneficiaries have an active account yet) a total of 101,554 households out of a total of 380,355 listed in programme areas. This represents an actual coverage rate of 26.7% of households. Beneficiary households tend to be larger than non-beneficiary households (6.9 members vs. 6.2 for the whole population), meaning that the coverage rate in terms of individuals is slightly higher at 30.8%.

More than half of the beneficiary account holders (57.9%) are women. The average age of female account holders is 39.8, compared to 41.0 for male beneficiaries. Almost one in 10 (9.3%) of beneficiary account holders are over 65 years of age.

Table 3: Characteristics of HSNP Group 1 beneficiaries[†]

Indicator	Estimate	N
Coverage rate – population	30.8%	2,013,707
Coverage rate – households	26.7%	380,355
Average household size for whole population	6.23	2,013,707
Average household size for Group 1 beneficiaries*	6.91	620,074
Proportion of female account holders among Group 1 bens	57.9%	620,074
Proportion of elderly (>=65 yrs) account holders among Group 1 bens	9.3%	620,074
Average age of female account holders among Group 1 bens	39.81	202,194
Average age of male account holders among Group 1 bens	41.01	147,278

Source: HSNP MIS data (2014). Notes: [†] Group 1 here refers to the intended target of 100,000 beneficiaries, not restricted to only those with 'active' accounts.

3.3   OWNERSHIP OF NATIONAL IDENTITY AND ACTIVE BANK ACCOUNTS

In order to receive payments from HSNP, either as a regular Group 1 beneficiary or as a recipient of periodic emergency payments in Group 2, households require an active bank account. For this, households require at least one member to have a valid national identity card.

The HSNP has undertaken a large-scale exercise to provide bank accounts to the entire population. This has also meant supporting those households that do not have any members with a valid national identity card to obtain one. According to the dashboard on the HSNP website,[14] at the time of writing 86% of Group 1 beneficiaries, or 87,963 households, had valid national identity cards; 82%, or 84,340 households, had active accounts, of which 84,181 had received at least one transfer.[15] Of the sub-section of households that are potentially in line to receive any emergency payments – a subset of Group 2, due to HSNP's capacity to scale up to cover up to 75% of the population in the event of extreme drought – 82% or 225,379 households have national identity cards, while 76% or 208,377 have active accounts. Of these, 207,859 have ever received an emergency payment.[16]

---

[14] www.hsnp.or.ke/index.php/dashboards/at-a-glance [accessed 12 February 2016].

[15] As mentioned above in section 1.1, households coming late to the programme receive their full entitlement dating back to July 2013. This implies that these households each could have received relatively large single payments for their first transfer.

[16] To date there have been three emergency payments to mitigate the effects of severe or extreme drought in select locations across the four counties: January–March 2015, May 2015, and October 2015 (the last was a single payment to every household in the entire population with an active bank account in anticipation of El Niño).

Those households without national identity cards are thus unable to access HSNP. It is therefore useful to look at the characteristics of these households to: a) understand the kind of household that is being excluded on account of not having a national identity card (are they more vulnerable?); and b) see if there are any policy implications or additional strategies that may be developed to bring these households into the programme.

Table 4 below shows the monetary and multidimensional poverty rates by national identity card and bank account status. The table shows that monetary poverty rates tend to be lower among people who do not have national identity cards or bank account than among people who do, although the differences are not statistically significant. Consequently, there is no evidence that the national identity card and bank account requirement discriminates against poorer households. However, when looking at multidimensional poverty, we find that households without national identity cards or bank accounts tend to have more deprivations than those that meet the eligibility criteria. This points to the possible exclusion of marginalised groups and would require further investigation to ensure that these marginalised households are not left behind.

Table 4:   Poverty rates by national identity card and bank account status

Indicator	Valid Kenyan identity card		Active bank account	
	No	Yes	No	Yes
National poverty line	91.9%	94.7%	91.9%	94.6%
Food poverty line	56.9%	62.5%	56.9%	62.2%
Deprived in two or more dimensions	95.4%	90.3%	92.3%	90.9%
Deprived in three or more dimensions	70.9%	59.7%	65.3%	61.1%
Deprived in four or more dimensions	7.0%	4.6%	6.1%	4.8%

Source: HSNP MIS data (2014).

4   Monetary poverty

The targeting of poor households is very challenging in the areas covered by HSNP. This is due to the extremely high rates of poverty (see section 1.3 above for national poverty estimates). In the sample used for the evaluation of HSNP, 75.3% of individuals were assessed to live in households that had a total household consumption level that fell below the national poverty line in 2010. In 2011 and 2012, this rose to 90.8% and 94.3%, respectively, due to the impact of a severe drought that affected the area at that time. The proportion of individuals living in food-poor households (unable to meet the expenditures required to satisfy the minimum caloric intake per capita) increased from 37.7% in 2010 to 61.6 in 2012.[17]

As described in section 2.2 above, the assessment of the targeting performance is particularly challenging due to the fact that we do not have consumption data in the programme MIS, which covers current beneficiaries of HSNP2. Therefore, our estimations are based on a small subsample of beneficiaries from HSNP1 that we were able to identify among the 2014 list of targeted households, based on matching names of household members and other household characteristics (see section 2.3.1). The limitations or constraints of this approach are described in section 2.4.

Given the limitations, it is in principle preferable to use the 2012 consumption data in order to minimise the time lag between the consumption data and the HSNP2 registration. However, the 2012 sample is quite small, due to the fact that the 2012 survey covered only beneficiaries of HSNP1. For this reason, in Table 5 below, we also report results using the larger samples from 2011 and 2010. For the remainder of the analysis we use the 2012 data exclusively.

The results presented in Table 5 below suggest that the programme targets poor and non-poor individuals in roughly equal proportions, as measured by the national poverty line. In the years 2011 and 2012, the proportion of poor individuals is similar among beneficiaries and non-beneficiaries (the ratio of poverty rates between beneficiaries and non-beneficiaries is statistically equivalent to one). The HSNP is more likely to select food-poor individuals (those falling below the national food poverty line), individuals in the bottom half of the distribution and individuals in the bottom national consumption decile. For example, the ratio of poverty rates between beneficiaries and non-beneficiaries improves continuously as one moves the poverty line downward from food poor, to the bottom half of the consumption distribution, to the bottom national decile.[18] According to our 2012 data, HSNP2 beneficiaries are almost 20% more likely to fall into the bottom national decile than non-beneficiaries.

---

[17] It should be noted that these data slightly over-estimate poverty rates at all points in time due to the reduced-form consumption module implemented for the HSNP Phase 1 evaluation survey (see section 2.3.2 above).

[18] This is not an unexpected result given that the ratio of poverty rates between the two groups will naturally increase as your target group becomes smaller, because the excluded poor become more diluted among the larger non-beneficiary group.

Table 5: Targeting performance based on consumption criteria using the combined CBT/PMT targeting method, based on 2010–2014 data

Indicator	Phase 1 evaluation baseline (2010)		Phase 1 evaluation midline (2011)		Phase 1 evaluation endline (2012)	
Poverty rate (whole sample)	75.3		90.8		94.3	
Ratio ben./non-ben. poverty rates	1.08	***	1.01		1	
Ratio ben./non-ben. food poverty rates	1.16	***	1.10	***	1.13	***
Ratio ben./non-ben. bottom 51% households	1.14	***	1.12	***	1.15	***
Ratio ben./non-ben. national bottom decile	1.18	**	1.19	***	1.19	***
% of eligible pop. (poorest 26.7%) who are excluded	64.5		63.5		62.3	
% of bens who are non-eligible (not poorest 26.7%)	68.6		68.3		68.5	
Number of beneficiaries	5410		5285		3513	
Number of non-beneficiaries	11150		10805		6879	

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (base=1).

The HSNP logframe measures targeting performance by the proportion of the beneficiary population that fall into the bottom national consumption decile. The target given by the logframe is for 87% of HSNP2 beneficiaries to fall into this wealth group by 2016/17. While the study population used for this analysis is not representative of the actual phase 2 beneficiary population, and is in fact shown to be poorer than the phase 2 beneficiary population on average (see sections 2.4 and 3.1 above), we find that just 36.5% of the phase 2 beneficiaries in this study population fall within the national bottom decile. Using data collected in 2016 for the current impact evaluation, we estimate that just 23.9% of phase 2 beneficiaries fall into this category. While there are a number of caveats to this analysis, the low proportions observed strongly indicate that the targeting performance actually achieved by the programme in phase 2 is highly unlikely to have met the target given in the programme logframe.

Table 6: Comparing targeting performance of various targeting mechanisms to identify consumption-poor households, based on 2012 consumption data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)	Sub-location-level PMT (ratio ben./non-ben.)	Combined CBT/PMT (ratio ben./non-ben.)	Actual bens (ratio ben./non-ben.)	Pooled PMT (ratio ben./non-ben.)	Random targeting (ratio ben./non-ben.)
Indiv. in poor households	94.3	0.97 ***	1.01	0.98 **	1.00	1.04 ***	1.02 **
Indiv. in food-poor households	61.6	0.93 **	1.08 **	0.98	1.13 ***	1.41 ***	1.02
Indiv. in sample bottom 51% households	54.1	0.91 **	1.1 **	0.99	1.15 ***	1.54 ***	1.03
Indiv. in nat. bottom decile	38.8	0.90 **	1.16 **	1.03	1.19 ***	1.75 ***	1.13 **
% of poor pop. who are excluded	-	64.0	38.9	36.5	62.3	51.1	66.3
% of bens who are not poor	-	75.9	68.8	71.8	68.5	55.6	68.7
Number of beneficiaries		4398	5751	6609	3513	2789	3223
Number of non-bens		5994	4620	3710	6879	7594	7169

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.)

The challenge of the programme to reach the very poorest households in this context is reflected in the high inclusion and exclusion errors reported in

Table 6.[19] The analysis shows that 62.3% of eligible beneficiaries (i.e. those living in the poorest 26.7% of households) are wrongly excluded from the programme, while 68.5% of beneficiaries were not from the poorest 26.7% of households (inclusion error).

Table 6 compares the targeting performance of various targeting mechanisms. These include the discrete elements that are combined to target the programme, the actual HSNP targeting mechanism, and two hypothetical targeting scenarios. It is important to note that the inclusion and exclusion errors are not comparable across targeting mechanisms, due to the fact that the size of the groups of selected beneficiaries differs depending on the targeting mechanism used. Only the last three targeting groups are comparable in size (representing 26.7% of households). These are: (a) the group of actual beneficiaries; (b) the hypothetical group of beneficiaries that would have been selected using a pure pooled PMT (representing a hypothetical best case scenario); and (c) the hypothetical random targeting mechanism (representing a hypothetical worst-case scenario).

The table shows that the CBT targeting is the worst at targeting the poorest households, since it actually tends to select households that are less poor than the average (significantly so in the case of all the poverty lines used). The sub-location-level PMT is slightly better, performing progressively, albeit marginally, better as we move from the national poverty line to the bottom national decile (38.8% of the population fall into the bottom national consumption decile). The combination of these two mechanisms, unsurprisingly, generates a targeting mechanism that performs slightly better than CBT and slightly worse than PMT, and which is effectively neutral in terms of selecting individuals beneath the food poverty line, in the bottom half of the distribution, or in the bottom consumption decile nationally. In other words, the CBT element appears to cancel out the effect of the sub-location PMT element in terms of reaching poorer households, as measured by monetary poverty.

We cannot conclude from this that CBT is unequivocally worse than PMT at targeting poorer households: PMTs are designed to mimic household consumption and will, therefore, by design, perform better than all alternative methods when assessed against this benchmark. The difference between CBT and PMT may thus reflect the fact that community members have a concept of poverty that takes into account criteria of vulnerability other than just consumption. This is shown below (section 5) in the analysis of targeting performance in relation to a multidimensional conception of poverty, where we find the CBT performs rather better in terms of other vulnerability criteria such as food security.

As mentioned above, when looking at actual beneficiaries, we find that the programme is essentially neutral in terms of the national poverty rate (a ratio of 1), but gets slightly more progressive as we move down through food poverty (1.13), the bottom half of the distribution (1.15) and the bottom national decile (1.19). This is

---

[19] It should be noted that the exclusion errors are likely to be underestimated here, and inclusion errors over-estimated, due to the fact that the group selected through the combined CBT/PMT targeting method is much larger than the target group used to assess the targeting accuracy of the programme. The target group represents 26.7% of households, whereas the group identified through the combined CBT/PMT ranking represents over 50% of households.

likely the result of the way in which the PMT is utilised in the complex process by which beneficiaries are actually targeted. It is difficult to explain finding this with certainty, without access to more qualitative information, but because the PMT is first used to set quotas at the sub-location level, then split into discrete score groups to match the CBT wealth groups, which are then combined, and then used again to rank households within those discrete combined CBT/PMT score groups, the beneficiaries that are actually selected are in theory a poorer subset of the combined CBT/PMT score groups.

These results are framed by our hypothetical best- and worst-case scenarios. The pure pooled PMT performs significantly better in terms of targeting the monetary poor, with a ratio of poverty rates between beneficiaries and non-beneficiaries significantly greater than 1 (1.04) for the national poverty line, and as high as 1.75 for the poverty line delimiting those in the bottom national decile (all these estimates are significant at 1%). This indicates that the establishment of county allocations for HSNP beneficiaries via the modified CRA negatively and significantly impacted the targeting performance of the programme in terms of reaching the poorest. If allocations had been established on the basis of poverty rates alone, HSNP beneficiaries would have been 41% more likely to be food poor than non-beneficiaries, and 75% more likely to be in the bottom national decile. This negative effect on poverty targeting is largely accounted for by the loss of HSNP beneficiaries from Turkana to the other three counties, particularly Wajir and Mandera (see Figure 1 above).[20]

This result is clearly illustrated by

Figure 3 below. This shows how the distribution of beneficiaries shifts markedly towards those with higher PMT scores (to the right of the figure) after the application of the modified CRA, even if the PMT is still the sole determinant of selection into the programme; this is the scenario that the figure models (the results depicted do not include the added effect of the CBT).

Figure 3: The impact of the application of the modified CRA on targeting performance

The modified CRA negatively impacts targeting performance

PMT Score

Source: HSNP MIS (October 2015)

---
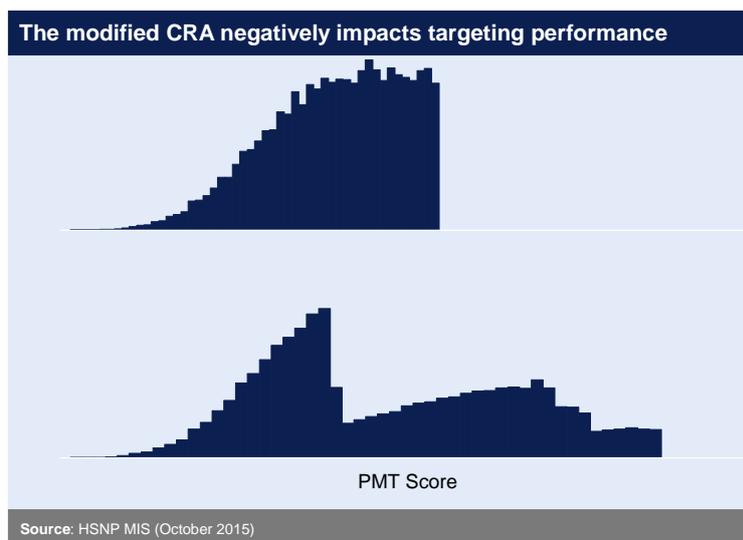
[20] This can also be seen in the county-specific PMT thresholds that derive from the application of the modified CRA (see section 1.3.1 above). The PMT threshold for Mandera is almost double that for Turkana and more than double that for Wajir.

Figure 4: The impact of the application of the modified CRA on targeting performance by county

The modified CRA affects targeting performance across counties

Mandera   Marsabit   Turkana   Wajir

PMT Score   PMT Score   PMT Score   PMT Score

Source: HSNP MIS (October 2015)
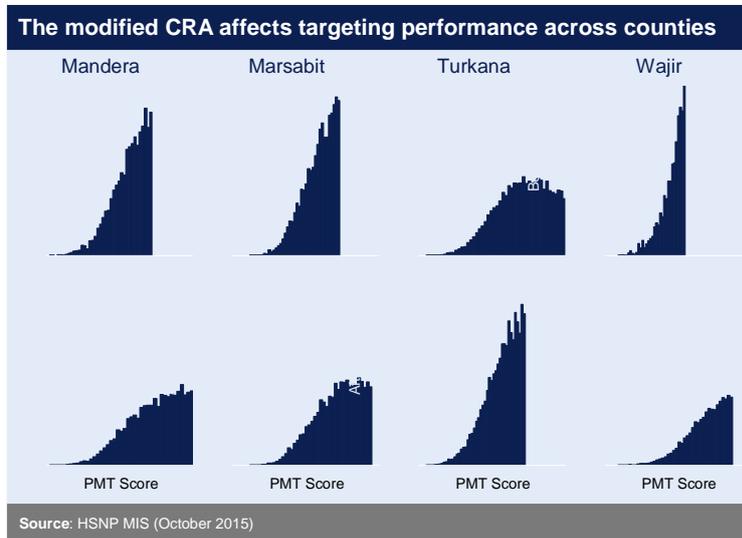
Figure 4 demonstrates this effect within each county. It shows how, in all the counties bar Turkana, the distribution of beneficiaries shifts markedly up the welfare ranking (to the right) as a result of the modified CRA. In Turkana, by contrast, the distribution is shifted downwards (i.e. beneficiaries are shown to be poorer), due to the fact that, with fewer beneficiaries in total across the county, those selected would have been poorer (as measured by the PMT score) if the PMT were the sole mechanism used to select beneficiaries for the programme within counties.

Figure 5 and Figure 6 then show the additional effect of the CBT on the targeting performance (i.e. they show the actual targeting performance that was achieved by the programme via the targeting mechanism's combination of modified CRA, CBT and PMT), which further shifts the distribution of beneficiaries up the wealth ranking.

Figure 5: The impact of the application of the modified CRA on targeting performance

The CBT has a further negative affect on targeting performance

PMT Score

Source: HSNP MIS (October 2015)
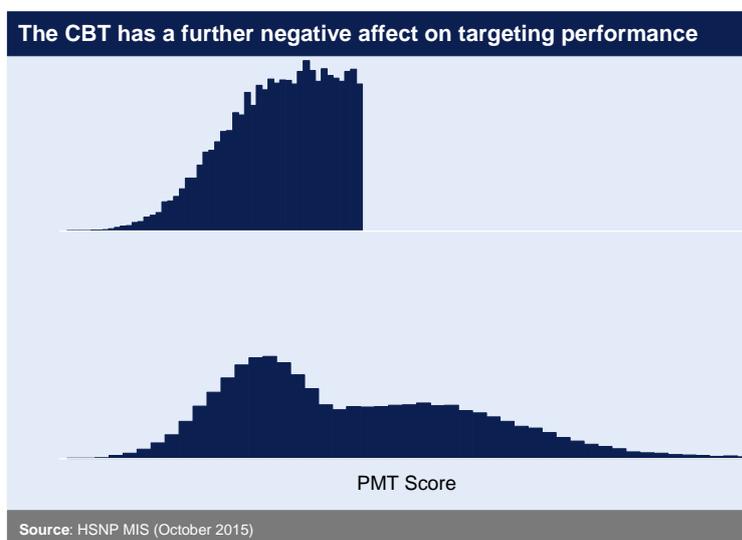
Figure 6: The impact of the application of the modified CRA on targeting performance by county

Impact of modified CRA and CBT across counties

Mandera | Marsabit | Turkana | Wajir

PMT Score | PMT Score | PMT Score | PMT Score

Source: HSNP MIS (October 2015)
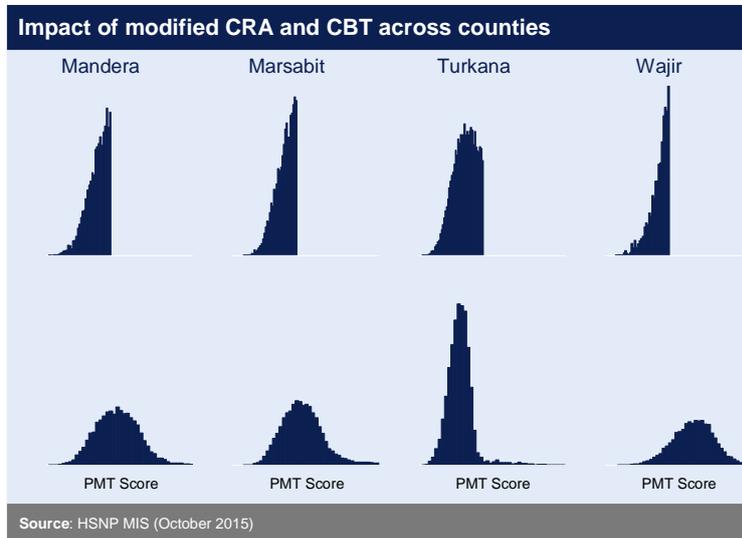
All this being acknowledged, targeting errors would have been significant even in the best-case scenario of a pure pooled PMT targeting mechanism (which also assumes no implementation errors), as

Table 6 shows. In this case, we would have had minimal exclusion and inclusion errors of 51.1% and 55.6%, respectively, which is high by international standards (Ellis *et al.* 2009).

This reflects significant limitations of the PMT method in contexts like those of the HSNP counties, which are characterised by uniform extreme poverty and where it is very difficult to distinguish between very poor households based on asset ownership. This calls for the use of more sophisticated targeting mechanisms, allowing for a finer identification of household vulnerabilities, or even for the use of radically different targeting approaches (e.g. geographic or categorical), which would have to be determined based on political agreement as well programme objectives. Geographic targeting of drought-affected areas may, for instance, be most suited to combating food insecurity, whereas the categorical targeting of specific vulnerable groups may be more politically acceptable.

Finally, it is interesting to note that our worst-case scenario of purely random targeting is surprisingly similar to the actual targeting performance of HSNP2, with poverty ratios at the bottom national decile of similar magnitude (1.13 for random targeting vs. 1.19 for actual targeting) and exclusion rates of 66.3% vs. 62.3% respectively, and inclusion rates of 68.7% vs. 68.5%. Such a finding raises important questions as to the cost-effectiveness of these targeting mechanisms.

5 Multidimensional poverty

5.1 NUTRITION

Table 7 below provides an overview of beneficiary/non-beneficiary ratios for a number of relevant nutritional outcome indicators. Given that one of the key objectives of the HSNP programme is to improve food security in food-insecure areas, nutritional outcomes provide an important indication of the targeting performance of the programme.

Unfortunately, only one nutritional indicator is available in the MIS, namely dietary diversity. Furthermore, this indicator was collected only for a subsample of non-random households in the MIS (160,751 households). This was because the dietary diversity module of the registration instrument was added only after the registration data collection had already been partially completed. Consequently, we have decided to corroborate our findings from the MIS using nutritional data from the HSNP1 evaluation. As before, this implies that there is a lag between the observed nutritional status of the beneficiary and the targeting by the HSNP2 programme. This problem may be severe for some nutritional indicators, such as coping mechanisms or wasting, which are likely to fluctuate significantly over time in response to shocks. The problem may be less severe for indicators of structural food security, such as stunting, which are likely to be more stable over time.

Table 7 shows that the average DDS in 2014 was 3.9, meaning that households consumed on average fewer than four different food types out of a maximum of 10.[21] As a proportion of all those households with dietary diversity data, 63.7% of respondents consumed fewer than four different food types.

Table 7: Nutrition profiles of beneficiaries vs. non-beneficiaries, based on 2010–2014 data

	2010 data		2011 data		2012 data		2014 data	
DDS (whole sample)	4.3		4.4		4.5		3.9	
Ratio (ben./non-ben.) DDS =< 4	1.02		1.06	**	1.08	**	1.25	***
Ratio (ben./non-ben.) reduced number meals 2–3x per week	1.06		1.04		0.8	**	.	
Ratio (ben./non-ben.) reduced size meals 2–3x per week	1.02		1.26	*	1.08		.	
Ratio (ben./non-ben.) no solid food 2–3x per week	1.15	*	1.1		0.93		.	
Ratio (ben./non-ben.) stunted	1		.		1.02		.	
Ratio (ben./non-ben.) underweight	1.05		.		1.02		.	
Ratio (ben./non-ben.) wasted	1.12	*	.		1.02		.	

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.)

---

[21] The decrease in dietary diversity score from 2012 to 2014 is not necessarily indicative of a deterioration in food security, since these are two different and not necessarily comparable datasets. In particular, our previous analysis has shown that some indicators in the MIS may be skewed (see 0) due to the respondent's incentive to portray themselves as poorer than they are to increase their chances of accessing the programme.

The proportion of individuals with low dietary diversity was higher among beneficiaries than non-beneficiaries. Statistical significance is not a meaningful indicator of reliability for the MIS because, due to the large number of observations, even very tiny variations from one will be statistically significant. However, the analysis shows that the ratio is equal to or larger than one in all years and by a margin that is similar to that for food poverty rates in most years (respectively: 1.06 vs. 1.10 in 2011, 1.08 vs. 1.13 in 2012, and 1.25 vs. 1.13 in 2014; see Table 5 and

Table 6 above).

The various self-reported indicators of food security, reduction in meal size, frequency, etc., are more erratic and show no clear patterns. However, these are subjective and relative measures and prone to difficulties of reporting and interpretation (how big a meal is, what it consists of, etc.).

When looking at nutritional outcome indicators, we do not find very compelling results, meaning that the programme may not be especially effective at identifying households with children with either chronic or acute malnutrition problems (the only statistically significant ratio is from the 2010 data, and is significant only at 10%).

These results point to a targeting performance in terms of nutritional indicators that seems to be similar to the performance in terms of poverty targeting, but that remains relatively weak and statistically indistinguishable from a neutral targeting for many indicators.

Table 8 below shows the comparative targeting performance obtained using the various targeting mechanisms used and considered in HSNP2. The same caveats stated in relation to the analysis of poverty targeting above apply.

Table 8: Comparing the targeting performance of various targeting mechanisms, based on 2014 dietary diversity data and 2012 nutrition data† (other indicators)

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
DDS =< 4	63.7	1.12	***	1.15	***	1.16	***	1.25	***	1.18	***
Reduced no. meals 2–3x/wk†	15.0	1.09		0.99		1.13		0.80	**	1.63	***
Reduced size meals 2–3x/wk†	14.3	1.12		1.25	**	1.10		1.08		2.08	***
No solid food 2–3x/wk†	8.10	1.25	*	0.92		1.11		0.93		1.67	***
Stunted†	36.7	1.31	***	1.11		1.26	***	1.02		.74	***
Underweight†	31.7	1.00		1.11		1.02		0.94		1.21	**
Wasted†	26.0	.84		1.15		1.02		1.02		2.07	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.) † 2012 data (HSNP1 evaluation, matched with 2014 MIS registry of beneficiaries using reclink).

The analysis shows that the actual beneficiaries tend to be food insecure to a greater extent than those that would have been selected using the pooled PMT (1.25 vs. 1.18). This implies that the losses in terms of poverty-targeting performance that occurred as a result of the application of the modified CRA formula to establish county beneficiary quotas were at least partially offset by gains in performance in relation to targeting food insecurity. This said, the losses in poverty-targeting performance sustained due to the use of the modified CRA were much larger than the gains in terms of food insecurity targeting.

Another finding appears to be that the CBT targeting performs almost as well, and in some cases better than the PMT when it comes to food insecurity indicators. This suggests that CBT might not suffer so much from elite capture (although we cannot exclude that) as from having a concept of vulnerability that is different from that underlying the PMT model. In particular, our data suggests that the CBT is reasonably good at identifying structurally food-insecure households, based on indicators such as low dietary diversity and, particularly, child stunting.

The village-level PMT is a little better at identifying households with low dietary diversity, but not as good at CBT on the more structural food-security indicator (stunting). As before, and unsurprisingly, the targeting performance of the actual targeting performance (which uses a combination of CBT and PMT scores, ranked by PMT) falls somewhere between CBT and PMT targeting performance, and thus the propensity for the programme to reach the structurally food insecure disappears.

This analysis suggests that the targeting performance of the programme in terms of acute food insecurity, as opposed to structural food insecurity, could have been improved by using the pooled PMT, which identifies the poorest households across the whole programme area rather than within each village. If this targeting mechanism had been used (assuming no implementation errors), the programme would have been strongly progressive and statistically significant in terms of all of the acute food-security indicators presented here, with the exception of the more structural indicator of child stunting.

5.2   HEALTH

Table 9 below presents the results from the comparative targeting analysis using health outcome indicators. The programme was not explicitly designed to address health vulnerabilities and therefore should not necessarily be expected to target beneficiaries with poor health outcomes. However, poor health outcomes tend to be highly correlated with poverty, as adverse health shocks can be a cause of impoverishment, as well as often being the result of chronic malnutrition and neglect. Furthermore, health is an important dimension of wellbeing in its own right, which should be taken into account when considering beneficiaries' vulnerability.

Table 9:   Health profiles of beneficiaries vs. non-beneficiaries, based on 2014 data (consultation, chronic illness, disability) and 2012 data[†] (immunisation, distance to health facility)

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Not consult doctor if sick	22.1	1.02		1.2	***	1.1	***	1.33	***	1.45	***
Child immunised[†]	95.5	1.00		1.01		1.01		1.01		1.01	
> 4hrs to health facility[†]	12.1	1.21	*	1.16		1.02		1.12		2.60	***
Chronic illness in households	3.8	1.10	***	1.27	***	1.28	***	1.11	***	.89	***
Disability in households	5.0	1.38	***	1.32	***	1.40	***	1.30	***	1.25	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.) † 2012 data (HSNP1 evaluation, matched with 2014 MIS registry of beneficiaries using reclink).

Of the various indicators selected for our analysis, only child immunisations appears to be totally invariant in terms of the various targeting criteria considered here. This is probably due to the fact that immunisation is near universal in Kenya (95.5% of children under the age of five in our sample), and is therefore not a reliable indicator of vulnerability.

The CBT appears to be most sensitive to disability and chronic illness, as well as showing a progressive (>1, albeit statistically significant only at 10%) ratio for households living more than four hours from a health facility. By contrast, the CBT does not appear to pick up beneficiaries who have been unable to consult a doctor when sick, with a non-significant ratio of 1.02.

The village-level PMT is progressive (>1) for all indicators except child immunisation and distance to health facility (which makes sense given that households in a single sub-location are effectively equidistant from health facilities in relation to the >4 hours travel time measure).

When looking at doctor consultation, we find that actual beneficiaries tend to have worse wellbeing outcomes than theoretically eligible beneficiaries identified by the combined CBT/PMT formula. This positive result is an effect of the influence of the pooled PMT, which helped shape the quotas given to each county in the application of the modified CRA. However, this result is not replicated for other vulnerability indicators, such as disability or chronic illness, for which the pooled PMT is less progressive than the CBT or sub-location-level PMT.

As before, we find that the pooled PMT targeting (assuming no implementation errors) tends to be the most efficient at targeting health-deprived households. This is certainly the case when looking at consultations and distance to health facilities, but less so for disability; the pooled PMT is regressive with regard to chronic illness.

5.3   EDUCATION

Table 10 below shows the comparative targeting performance of the various targeting mechanisms, as assessed by their ability to identify households with educational deprivations.

Table 10: Education profiles of beneficiaries vs. non-beneficiaries, based on 2014 data (completion, attendance) and 2012 data[†] (literacy)

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Adult not completed primary	83.8	1.01	***	1.02	***	1.01	***	1.06	***	1.08	***
Illiterate adult[†]	62.5	1.09	***	1.05	**	1.05	**	1.12	***	1.18	***
Child 6–17 not attending	50.8	.98	***	.90	***	.88	***	1.02	***	1.11	***
Child never attended	49.7	.97	***	.90	***	.87	***	1.01	***	1.11	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.) † 2012 data (HSNP1 evaluation, matched with 2014 MIS registry of beneficiaries using reclink).

The results shows that adults who have not completed primary school would have been best prioritised if a pooled PMT had been used (assuming no implementation errors), with a ratio of 1.08. However, this result is not substantially greater than that achieved by the actual targeting of the programme (a ratio of 1.06). Primary completion does not appear to be strongly prioritised by the CBT targeting (1.01), nor at the sub-location-level PMT (1.02).

These results are replicated for targeting of illiterate adults, although adult literacy appears to be a much more significant factor in the determination of the CBT, with a ratio of 1.09, compared to 1.05 for the sub-location-level PMT. As before, we find that the targeting performance could have been improved by using the pooled PMT (a ratio of 1.18), and that beneficiaries tend to be more disadvantaged than non-beneficiaries in the actual targeting performance achieved by the programme (1.12).

Children's school attendance does not appear to be a highly significant factor in the selection of beneficiary households, since the ratio of out-of-school children among beneficiary and non-beneficiary households is below 1 for all of the sub-county elements of the targeting mechanism (CBT = .98; sub-location PMT = .90; combined CBT/PMT = 0.88), resulting in an achieved targeting performance ratio of barely above 1 (1.02). Once again, therefore, it was the influence of pooled PMT in setting county beneficiary quotas that allowed HSNP targeting to finish on the right side of regressive in this regard.

5.4   HOUSING

Table 11 below presents the results of the targeting analysis for various indicators of housing quality. The results show that almost all housing indicators are positively associated with beneficiary selection into the programme. This is partly a reflection of the fact that several of these indicators enter into the PMT formula.

Table 11: Housing profiles of beneficiaries vs. non-beneficiaries, based on 2014 data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Inadequate walls	81.9	1.03	***	1.06	***	1.06	***	1.08	***	1.02	***
Inadequate roof	92.3	1.05	***	1.06	***	1.06	***	1.08	***	1.09	***
Inadequate floor	93.1	1.05	***	1.06	***	1.07	***	1.07	***	1.09	***
Inadequate water	8.7	1.18	***	0.81	***	.88	***	.75	***	1.44	***
Inadequate sanitation	86.1	1.05	***	1.05	***	1.05	***	1.09	***	1.11	***
No electricity	81.9	1.02	***	1.03	***	1.03	***	1.03	***	1.03	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base =1 for ratios, base = bens for DDS.)

Interestingly, we find that the CBT also appears to pick out housing issues, since all of the housing indicators have a ratio of beneficiary/non-beneficiary deprivation rates that is superior to one. In the case of access to clean water, the ratio is 1.18, suggesting that this is an important factor for vulnerability in the eyes of the community.

However, the water indicator shows anomalous values that require further investigation through research (qualitative or otherwise). Indeed, our results show that individuals without access to clean water are under-represented among beneficiaries selected by the village-level PMT (a ratio of .81), although they would have been strongly over-represented if a pooled PMT had been used (access to water enters into the PMT formula). This can be due to measurement errors, implementation errors, or to the formula used to allocate beneficiary quotas across communities. Conversely, the sub-location-level PMT does much less well (it is actually regressive) in this regard.

As before, we find that the pooled PMT appears to give the most progressive targeting, except for wall quality, suggesting that these deprivations are heavily correlated with poverty rates across all HSNP areas.

5.5   CHILD PROTECTION

Table 12 below shows the targeting performance of the various targeting mechanisms in terms of available child protection indicators. In the datasets used here, we could find only two child protection indicators, namely child labour (children aged 5–17 who are working) and children lacking a birth certificate.

The analysis shows that children with no birth certificates tend to be somewhat over-represented among beneficiaries as compared to non-beneficiaries in all targeting mechanisms.

For child labour, the results are more ambiguous. The results show that in the hypothetical case of a pure application of a pooled PMT without implementation errors, households engaged in child labour would have been strongly over-represented among beneficiaries, with a ratio of 1.35. However, in practice, this does not appear to be the case with any of the targeting mechanisms that have actually been used, including the sub-location-level PMT, which shows a ratio of just 0.53.

Table 12: Child protection profiles of beneficiaries vs. non-beneficiaries, based on 2014 data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Children 5–17 working	18.5	.71	***	.53	***	.51	***	.74	***	1.35	***
No birth certificate	87.7	1.03	***	1.03	***	1.02	***	1.03	***	1.07	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.) † 2012 data (HSNP1 evaluation, matched with 2014 MIS registry of beneficiaries using reclink).

It is difficult to understand what might explain these surprising results without further analysis or qualitative research. One might note that, while constituting a violation of children's rights, the effect of child labour on household welfare tends to be ambiguous, since working children contribute with income and therefore may help reduce the household's consumption poverty. This may explain why the CBT targeting disfavours households with working children, but would not explain why the village-level PMT fails to pick out those same households, despite the fact that they would have been targeted by the pooled PMT.

5.6   MULTIDIMENSIONAL POVERTY INDEX

This section presents a targeting analysis carried out in terms of multidimensional poverty instead of monetary poverty. The indicators used in the computation of our multidimensional poverty index are selected from the various indicators of vulnerability presented above, based on criteria of comparability across datasets and coverage (i.e. few missing observations). As such, the analysis below should provide results that are broadly consistent with the results presented thus far. The advantage of looking at multidimensional poverty as a separate item is that it allows us to consider the overlap between the various deprivations considered in our analysis. The rationale is that a deprivation in, say, education is more serious if it is compounded by other deprivations, for instance in health and nutrition.

The targeting analysis shows that selected beneficiaries tend to have, on average, slightly more deprivations than non-beneficiaries. The ratios are not very high (ranging between 1.02 and 1.04), but are statistically different from one in all years.

Importantly, the progressiveness of the programme appears to improve for more vulnerable individuals, at least up to a point. In 2012, the ratio increases to 1.11 for individuals with deprivations in three or more dimensions, and to 1.62 for individuals with deprivations in four or more dimensions. In 2014, the ratio increases to 1.15 for individuals with deprivations in three or more dimensions, but then falls to .81 for individuals with four or more deprivations.[22] Further analysis would be required to understand whether these

---

[22] The threshold of four or more dimensions corresponds to the bottom 16% of the population in 2012, but 5.1% in 2014. This could be due to slight differences in variable definitions across surveys, or simply to improvements over time in the underlying living conditions.

results are due to data quality issues (highlighted in the MIS quality review), or whether they reflect actual discrimination by the programme against households with multiple and overlapping deprivations.

Table 13: Multidimensional poverty profiles of beneficiaries vs. non-beneficiaries, based on 2010–2014 data (combined CBT/PMT targeting)

	2010 data		2012 data		2014 data	
All: Average number of deprivations	3.09		3.11		3.04	
Ratio (ben./non-ben.) Number of deprivations	1.05	***	1.06	***	1.08	***
Ratio (ben./non-ben.) two dimensions equiv. deprivations	1.05	***	1.03	***	1.11	***
Ratio (ben./non-ben.) three dimensions equiv. deprivations	1.10	***	1.15	***	1.29	***
Ratio (ben./non-ben.) four dimensions equiv. deprivations	1.49	***	1.50	***	0.92	***
% of multidimensional poor who are excluded	61.3	***	59.0	***	68.1	***
% of bens who are not multidimensionally poor	72.5	***	69.4	***	68.3	***

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1).

The targeting performance remains relatively weak when assessed in terms of multidimensional poverty exclusion and inclusion errors, which are of similar magnitudes to those achieved for monetary poverty. In the 2012 data, the programme missed 59% of multidimensionally poor individuals, compared to 62.3% of monetary poor (individuals in the poorest 26.7% of households; see Table 5 above). Inclusion errors were also similar, at 69.4% for multidimensional poverty, compared to 68.5% for monetary poverty.

Table 14 below provides a comparative analysis of the targeting performance of the various elements of the HSNP targeting mechanism. It suggests that one reason for the poor targeting performance in 2014 is the sub-location-level PMT, which has a ratio of 0.73 for individuals with deprivations in four or more dimensions. By contrast, the pooled PMT would be quite progressive with a ratio of 1.39 for this group. All targeting mechanisms are strongly progressive for individuals with deprivations in two and three dimensions.

Table 14: Targeting efficiency profiles of beneficiaries vs. non-beneficiaries, based on 2014 data on multidimensional poverty

	Point est. (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)		Random targeting (ben./non-ben.)	
Number of deprivations	3.04	1.02	***	1.04	***	1.03	***	1.08	***	1.1	***	1.00	
>= 2 dimensions equivalent deprivations	91.2%	1.04	***	1.10	***	1.08	***	1.11	***	1.12	***	1.00	
>= 3 dimensions equivalent deprivations	61.8%	1.11	***	1.17	***	1.15	***	1.29	***	1.25	***	1.00	
>= 4 dimensions equivalent deprivations	5.1%	1.03	***	0.73	***	0.81	***	0.92	***	1.39	***	0.95	***
% of MD poor who are excluded	-	52.7		47.8		38.5		68.1		53.5		69.6	
% of bens who are not MD poor	-	70.5		72.4		71.5		68.3		64.6		69.7	

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1 for ratios).

Interestingly, the analysis shows that the CBT would perform quite adequately at identifying the most vulnerable households in terms of multiple deprivations, with ratios of 1.11 and 1.03 for households with deprivations in more than three and four dimensions, respectively. The CBT also misses fewer of the multidimensional poor (52.7%) than it does the monetary poor (64.0%), and includes fewer non-poor (70.5% for multidimensional poverty, compared to 75.9% for monetary poverty). This suggests that the concept of poverty held by community members may be closer to a concept of multidimensional poverty, based on observed deprivations, than to a formal concept of monetary poverty, based on aggregate consumption.

Importantly, in terms of inclusion and exclusion errors, we find that for the beneficiaries actually active in the programme, the targeting in relation to multidimensional poverty is almost indistinguishable from the random targeting mechanism, in which no eligibility criteria are applied at all. Concretely, the current programme misses 68.1% of the most deprived individuals (exclusion error), whereas 68.3% of those included are not among the most deprived quartile (inclusion error). By comparison, a random targeting would have generated exclusion and inclusion errors of 69.6% and 69.7%, respectively. This was a very similar situation to that relating to the performance of the programme in terms of including and excluding the monetary poor, and thus raises serious questions about the value of the applied targeting criteria in this context.

6   NSNP registration pilot

The NSNP is currently negotiating a harmonisation and consolidation agenda. Harmonisation refers to the development of common systems and processes for the various functions necessary for the delivery of a national social protection system. These include targeting and enrolment protocols, rights and grievances systems, case management, monitoring and evaluation, and MIS. Consolidation refers to the development of an appropriate institutional structure for the housing of the NSNP.

Much progress has been made under the harmonisation agenda. A single registry that links the MIS of the four CT programmes has been established and is now operational. A NSNP-wide monitoring instrument has been developed, in the form of a Programme Implementation and Beneficiary Satisfaction Survey, for which a baseline has been completed. The survey monitors conformity to the NSNP targeting criteria, the functioning of the individual programmes' payments systems and complaints and grievances processes, and compiles a composite beneficiary satisfaction index. In addition, a common targeting protocol and set of tools has recently been agreed which are now set to undergo a number of pilots.

HSNP is leading the first of these pilot exercises. The pilot is being conducted in three sub-locations in Turkana.[23] Data collection took place between February and May 2016, with community sensitisation and preliminary beneficiary lists for the four CTs posted in communities in early May. Community validation and finalisation of the lists is set to be completed in early June.

The main purpose of the harmonisation agenda with regard to targeting is to improve the efficiency and effectiveness of the identification of eligible households and individuals, including those that are classified as poor, applied consistently across the NSNP. The harmonised NSNP targeting protocol therefore comprises a framework of rights and entitlements to the four NSNP CTs, a draft system for establishing quotas of NSNP beneficiaries (developed for the pilot exercise) (Fitzgibbon, 2016), a new poverty-targeting instrument, and a new procedure for the community verification of beneficiary lists.

6.1.1   NSNP rights and entitlements framework

The rights and entitlements framework establishes the logic and lays out the hierarchy by which households qualify for the various programmes, given the condition that a household is able to benefit only from a single programme at any one time.[24] The rights and entitlements framework enshrines three basic principles:

1.   Households with multiple vulnerabilities are given priority (i.e. targeted first);
2.   Households are allocated to programmes with a categorical element to their eligibility first;
3.   The order in which households are allocated to a programme with a categorical element is based on the size of the expansion target for each programme in the specific location.

---

[23] Lodwar, Kapus and Kataboi.
[24] See Annex 3 to Aide Memoire (2016).

This framework thus implies that the HSNP will pick up beneficiaries who are both poor and qualify for any of the other CTs only after quotas for those other programmes are fulfilled. This framework will thus influence the performance of the HSNP in terms of reaching the poorest households.

6.1.2 NSNP beneficiary quotas

The draft system (developed for the pilot) for establishing quotas of beneficiaries for each of the four programmes down to the sub-location level builds on programme-level allocations and expansion plans. The CT-OVC, OPCT and PWSD-CT programmes have each established sub-location quotas as part of their nationally agreed expansion plans.[25] In the case of HSNP, the process runs as follows:

1. The modified CRA distributes the total HSNP beneficiary allocation between counties (see section 1.3.1 above for further detail);
2. Constituency-level quotas are calculated by multiplying the number of households contained in the HSNP MIS for each constituency by the proportion of households that are classified as poor in that constituency, as defined by the KIHBS 2005/6. The HSNP allocation for the county is then shared out between constituencies such that each constituency covers the same proportion of its poor households;
3. Sub-location quotas are then produced in a similar fashion by distributing the constituency quotas from step 2 above, using location-level poverty rates (derived using small-area estimation techniques on KIHBS 2005/6 and Kenya National Census 2009 data), such that every sub-location covers the same proportion of its poor households.

This system of allocation implies that, within counties, places with higher numbers of poor people (according to national poverty estimates) will get higher numbers of beneficiaries, while all areas will get the same coverage rate in terms of the proportion of the poor population that is covered by the HSNP.

It should be noted that the poverty data used to establish these allocations are now over a decade old (and that the constituency and location-level poverty rates are derived by applying econometric small-area estimation techniques to 2009 national census data, which necessarily contain a set of technical assumptions and choices that are not apparent to the lay observer). County populations and governors may thus not see the connection between the allocations given to different sub-locations and their own observations and feelings about conditions on the ground. Basing the allocations on updated national poverty data (the new KIHBS is currently underway) would likely help in this regard, insofar as the national poverty estimates tend not to be strongly disputed and the allocation mechanism is transparent (as long as it can be clearly explained to all stakeholders). However, by itself this will not resolve any misgivings about the targeting of individual households within sub-locations.

6.1.3 NSNP poverty-targeting instrument

The new targeting instrument provides a means to identify poor households within sub-locations. It was developed by the NSNP via a review of the targeting processes for all the individual NSNP CTs (Ministry of Labour, Social Security and Services, 2015). The review found that definitions of poverty were not applied consistently across the four programmes. One reason for this was that each programme used PMT tools and

---

[25] See Expansion Plan for National Safety Net Programme (2014–17), Annex 2.

CBT methodologies that were somewhat different (except OPCT and PWSD-CT, which applied the same protocols). Another was that the conceptions of poverty implied by the CBT and PMT were also markedly different: the PMT applies a notion of poverty based on (predicted) consumption expenditure, whereas the various forms of CBT rely on a more or less defined group of household characteristics that are in some way understood to relate to household vulnerability.

In addition, it was recognised that the registration exercise carried out for HSNP Phase 2 was not optimally delivered, with little or no quality assurance conducted during the data collection (Fitzgibbon, 2014) (see also section 1.4.2 above). For the NSNP registration pilot, the HSNP thus developed a different fieldwork model that would enable much closer quality control during data collection.

The main difference between the new poverty-targeting instrument and the previous PMTs is that the new instrument is based on Principle Component Analysis (PCA) rather than regressing household consumption against household characteristics. PCA works not by a linear regression that correlates household characteristics with household consumption, but by modelling the relation between household characteristics. As argued by the review (Ministry of Labour, Social Security and Services, 2015), the PCA has a number of advantages over the regression-based PMT:

- It is more consistent with CBT because communities do not rank households based on observed consumption;
- The lack of understanding by a community of how a PMT works can result in grievances against, or rejection of, the selection processes and results; and
- The estimations of household consumption based on linear regressions are endowed with a constant term that assigns a floor of consumption that prevents the programmes from reaching the very poor households that are identified by the communities.

An additional advantage is that the PCA was constructed utilising 2009 national census data rather than the KIHBS 2005/6. These data are more recent and enable inclusion of sub-location data that can help discriminate between households across communities within the same region or county.

However, even if one accepts these advantages, there remain a number of issues with the new PCA tool that are also inherent to the previous PMT. The costs of collecting, updating and checking such data are very large. Moreover, the quality of the data is very difficult to ensure (for example, the new PCA model includes data on livestock holdings of households, which are notoriously hard to gather accurately (World Bank, 2011)[26]).

Furthermore, it is open to debate whether consistency between the CBT and PCA is more or less important than the aim of reaching the poorest households, as defined by the national poverty data, which use a money metric measure of deprivation. An alternative wealth index, such as the PCA in question, is likely to be less good at identifying the poor than the regression-based PMT method, precisely because it is not based on a consumption aggregate. Whatever inefficiencies were present with the initial PMT (in terms of inclusion and exclusion errors etc.) are likely to be accentuated by such an index. In many cases, PCA is found to be a decent

---

[26] Spot checks conducted on household data gathered during the NSNP registration pilot in Kapus revealed that six out of eight households checked under-reported livestock holdings.

predictor of household welfare, but this is not guaranteed. If, for example, households have very strong regionally determined profiles, then the PCA may end up essentially being a predictor of geographic location.[27]

One key limitation of these types of indices, whether derived from PCA or regression-based PMT, is that they struggle to discriminate between poor and less poor households in contexts such as those prevalent across sub-Saharan Africa, in which high rates of extreme poverty are characterised by a general lack of assets. In this particular case, the design document for the new poverty-targeting instrument itself appears to acknowledge that the power of the PCA model in terms of predicting wealth is fairly weak. Figure 6 in the draft Harmonised Targeting Methodology document (reproduced below) shows huge variation in the level of correlation between the PCA score (the 'Living Conditions Score') and predicted wealth.

Figure 7:   Actual consumption vs. an adapted version of the Living Conditions Score in the KIHBS
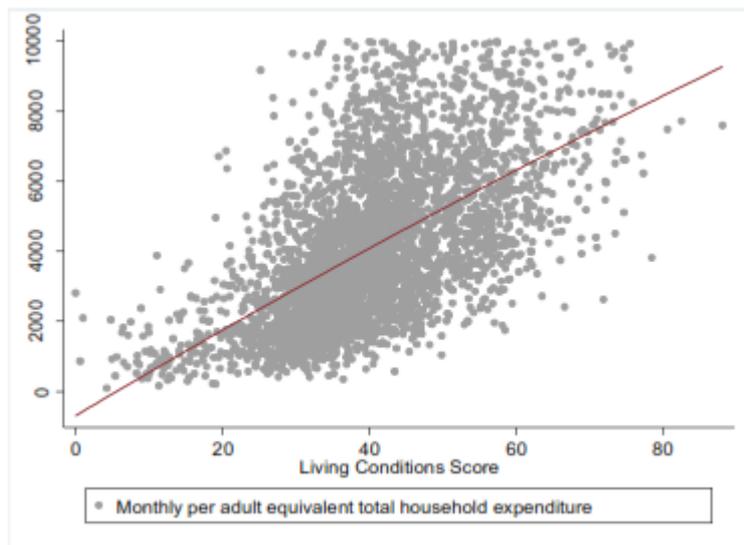
Source: Ministry of Labour, Social Security and Services (2015), p. 24.

Where both PMTs and PCAs remain obscure and difficult to understand for beneficiaries they are liable to undermine public accountability. Even if they are not actually manipulated, it is easy for people to think that they are because the way the scores they produce are calculated is so opaque. Indeed, there is evidence of discontent over the current targeting approach of HSNP from studies conducted to assess the implementation of the Phase 2 registration (see, for example, Fitzgibbon, 2014) (as well as much anecdotal evidence to this effect gathered during the completion of several studies conducted as part of the current evaluation).

---

[27] Based on data from the registration pilot this may even have turned out to be the case. A crude analysis conducted on the raw pilot data showed that some two thirds of the PCA ('Living Conditions') score is determined by elevation and precipitation variables. These are fixed coefficients based on geographical variables. If the other location-specific variables the PCA deploys are added, they account for about 80% of the final PCA score.

On the other hand, even if the PCA score does not correlate well with consumption, one would hope it would correlate to other dimensions of vulnerability as understood by the community (as per its supposed advantages listed above).[28] However, the extent to which this is the case remains to be ascertained.

6.1.4   NSNP community verification of beneficiary lists

Community-based verification (CBV) refers to the process of getting communities to review and approve the beneficiary lists derived from the harmonised NSNP targeting protocols. It represents a chance for communities to mitigate any perceived errors of the targeting based on data gathered during the registration exercise. It also represents an opportunity for the programme and communities to reach an explicit agreement on the selection of beneficiaries for all the NSNP CTs, and thereby confirm social and political acceptance of the programme. The new targeting approach puts significant emphasis on the CBV component of the protocol, in recognition both of the need for community acceptance and the challenges inherent in trying to target the poorest households in contexts of high poverty.

For the NSNP registration pilot, CBV will work by communities taking a short period (around two to four weeks) to review and validate the lists generated by the initial application of the targeting protocol on the household data gathered during the registration exercise. Communities will be able to suggest amendments to the lists, including the transferring of beneficiaries between CTs, and the inclusion and exclusion of specific households. Once the community has submitted its recommendations to the NSNP, changes are reviewed against quotas and then (assuming quotas can be met) the final lists are posted.

CBV thus secures community acceptance of the programme targeting. However, it is not without cost. It requires significant involvement from county-level programme implementing staff, as well as oversight by a functioning independent rights component, and the involvement of community groups representing the local populations. Nor is it clear to what extent CBV will either increase or decrease the efficiency with which the NSNP, and HSNP in particular, is able to reach the poorest households. As the above analysis makes clear, communities often have a different conception of welfare to that expressed in money metric measures, one that does not necessarily correlate with consumption poverty.

---

[28] Preliminary analysis of the pilot data may raise questions over the extent to which this is the case. The correlation appears to be low between the PCA score and the categorical vulnerabilities that prescribe eligibility for the three other NSNP programmes, apart from the HSNP.

7   Conclusions

7.1   SUMMARY CONCLUSIONS

Based on the analysis presented in this report, we draw the following conclusions:

7.1.1   Main findings

- Identifying the poorest households in the context of northern Kenya is very challenging. There are no easy solutions to this challenge. This fact raises serious questions about the cost effectiveness of trying to target the poorest.

- Geographic targeting is the most efficient way to target the poor en mass, but pure geographic targeting (i.e. deriving beneficiary quotas based on geographic poverty rates alone) has proved not to be politically feasible. The modified County Resource Allocation formula, by which HSNP2 beneficiary quotas were established for each of the four counties, thus strongly influenced the targeting performance of the HSNP by significantly reducing the degree to which it reached the poorest households.

- CBT has both strengths and weaknesses: it is not especially good at identifying the monetary poor, but is much better at identifying the multidimensional poor.

7.1.2   Detailed findings

- Given the extent and uniformity of poverty in areas targeted by HSNP2 it is difficult to accurately identify the poorest households using either the PMT or CBT targeting mechanisms. Exclusion and inclusion errors are very high, and targeted beneficiaries are not considerably worse off than non-beneficiaries in terms of monetary poverty. Importantly, the targeting performance appears to be very close to what would have been achieved if a random targeting rule had been used. This raises serious questions about the cost-effectiveness of the current targeting mechanism.

- It was found that the establishment of county allocations using a modified Commission of Revenue Allocation (CRA) formula (which allocates funds from central government to the counties) negatively affected HSNP2's performance in reaching the poorest because many poor households were excluded due Turkana's allocation being significantly reduced. This indicates that the geographic element of the targeting (at least down to the county level) has a large impact on targeting performance, and suggests that targeting the most extreme areas of poverty could be the best way to achieve progressive targeting results.

- The sub-location-level PMT was found to perform much worse than if a pure pooled PMT had been applied across the whole population, without geographic quotas. However, it is not clear the degree to which this lack of targeting accuracy is due to a weakness in design or due to implementation errors in the application of the village-level PMT.

- The technical and political challenges of targeting the poorest households in this context mean that HSNP2 has not achieved its logframe target of ensuring 87% of phase 2 beneficiaries fall into the bottom national consumption decile.

- HSNP2's targeting performance in terms of some other indicators of vulnerability – including food security, access to healthcare, disability, and reaching households suffering at least three forms of deprivation – is similar to its performance in terms of monetary poverty.
- In terms of exclusion and inclusion errors the programme's targeting performance is somewhat better for multidimensional poverty (which takes into account non-monetary aspects of wellbeing, including nutrition, education, health, housing and child protection) than for monetary poverty. In particular, the CBT performs better for multidimensional poverty. However, it is unclear whether HSNP2's targeting has missed individuals suffering from the most extreme vulnerability (the 5% of households experiencing deprivation across four or more dimensions).
- The fact that the different targeting mechanisms perform with different levels of success depending on the indicator concerned suggests that there is no single mechanism that is 'best' across all dimensions of vulnerability. More important is to match the targeting mechanism with the objectives of HSNP2.

7.2   IMPLICATIONS FOR POLICY

7.2.1   The harmonisation and consolidation agenda within the NSNP

The NSNP is engaged in an ongoing effort to harmonise and consolidate the four CT programmes it encompasses and the various implementation processes they deploy, including targeting, complaints and grievances, and programme monitoring. As part of this agenda, the NSNP is conducting a pilot of a harmonised registration and targeting approach for the four CTs. The pilot is testing a new registration instrument, incorporating a revised poverty-targeting instrument (an alternative model PMT), as well as a revised targeting and enrolment process that includes a community validation of proposed beneficiary lists. The value for money of applying a PMT (however it is modelled) as part of a harmonised targeting approach across all NSNP CTs is a crucial point of consideration. The analysis presented above provides some evidence to help in this regard.

This assessment indicates that, given the high correlation of poverty with different types of vulnerability, and if the main aim of the programme is to reach households that are 'vulnerable' in general, some kind of 'poverty targeting' may be warranted. However, it has also shown that the major part of any improvements to be made in this regard would be achieved simply by ensuring geographical targeting of the poorest areas, for which a PMT is not required. For example, one possible approach would be to apply national estimates of poverty or extreme poverty rates to establish beneficiary allocations for given geographic areas,[29] and then use CBT to generate lists of beneficiaries. If absolutely necessary, a PMT could then be applied to those lists as a way of reducing inclusion errors.

However, the experience of the HSNP2 design phase already highlights the political unacceptability of this solution, as indicated by the fact that the debate over the establishment of county quotas for HSNP beneficiaries culminated in the application of the modified CRA. The tension is thus between social and political acceptability on the one hand, and the ability to prioritise programme resources to the poorest areas on the other. For this reason, the potential demerits of poverty targeting may extend beyond cost,

---

[29] Small-area estimation techniques can be applied to generate sub-county quotas; this was the method that was in fact applied for the NSNP expansion plan and registration pilot.

implementation and socio-political challenges, into financial sustainability challenges. The risk is that political support could diminish for nationally- (or even county-) funded programmes that redistribute public finances only to the poor (however defined), resulting in shrinking budget allocations to those programmes, because the populations and politicians within the counties do not support the targeting.[30]

Within counties, there are indications that geographic poverty targeting could be implemented in a more palatable way for local populations and politicians. This could be achieved either by sub-county allocations that are derived using national poverty data and then implemented via CBT and verified by PMT; or conversely, by beneficiary lists proposed on the basis of PMT rankings which are then modified via a functioning community validation process (Njagi, 2014; Fitzgibbon and Thirikwa, 2015). This latter is the model adopted by the NSNP registration pilot.

The important questions for HSNP and NSNP are thus: has the new NSNP targeting protocol and instrument improved poverty targeting in comparison to what was achieved by HSNP Phase 2? If so, is that improvement worth the cost?

With its new fieldwork implementation model, the new targeting protocol currently being piloted should at least reduce the implementation errors that likely affected the HSNP Phase 2 targeting performance. However, sizeable inclusion and exclusion errors of design may well remain. A rapid evaluation of the NSNP registration pilot could assess the performance of the new targeting protocol empirically, answering the above crucial questions and others, such as:

1. What are the inclusion and exclusion errors (design and implementation) of the new poverty-targeting instrument?
    a. What would be the impact on these errors of using a simpler, cheaper instrument (i.e. one that uses fewer variables)?
    b. What is the optimal length of a registration instrument that can still provide a comprehensive ranking of households according to some adequate estimate of welfare?
    c. Can these errors be given a monetary value (e.g. in terms of the poverty gap)?
2. What is the impact of CBV on targeting performance?
3. How does the pilot NSNP targeting protocol compare to the HSNP Phase 2 approach in terms of performance?
4. What are the implications of these findings at scale?

An assessment of the NSNP registration pilot could answer these and other questions, both for the NSNP as a whole and/or for the HSNP or other NSNP CTs individually. It could also help assess whether a much simpler 'PMT' tool could be administered, perhaps one that utilises variables that better correlate to populations' natural conceptions of poverty. If such an instrument were possible, it would still have the potential to provide a ranking of households within communities, such that an initial comprehensive list of beneficiaries could be drawn up for community verification, while simultaneously being significantly cheaper and not sacrificing too much in terms of efficiency of identifying the poor.

---

[30] See, for instance, Pritchett (2005). There is ample evidence of discontent over the current targeting approach of HSNP from studies conducted by the HSNP (as well as much anecdotal evidence gathered during the completion of several studies conducted as part of the current evaluation). See, for instance, Fitzgibbon (2014).

7.2.2   Social protection strategy in Kenya

Given the challenges associated with reaching the poorest and most vulnerable households in the context of HSNP counties, questions are raised about the objectives of the programme, and how these fit within the broader social protection strategy in Kenya.

Currently, the social protection strategy incorporates three CTs that use categorical targeting criteria aiming to reach households with particular vulnerabilities associated with stages or characteristics of the life cycle (orphans, elderly, those living with disability). These categorical targeting mechanisms are combined with a poverty-targeting element that aims to reduce inclusion errors. The HSNP, on the other hand, directly attempts to reach the poorest and most food-insecure households. The question of how well these objectives complement and/or supplement the broader aims and objectives of the social protection strategy overall are important to answer, especially when making choices about the approach to targeting that should be adopted in future phases of the HSNP, and the NSNP as a whole. Is the primary aim of the HSNP to redistribute resources to the poor? Is it a particular effort to combat food insecurity? Is it an attempt to provide income support to labour constrained households? What should be the rights and entitlements of different households suffering multiple forms of deprivation that potentially qualify them for more than one of the four NSNP CTs? It is crucial to answer these questions, among others, before making further design decisions on HSNP or the other programmes in the NSNP.

At the operational level, the long-term strategy must equally consider how to move away from the kind of costly, single event-style mass registration models that are currently required. Once a framework of social protection rights and entitlements is embedded in the polity, there will be a need for ongoing, on-demand registration. The vision must be that households are aware of the kinds of social protection support available to them, understand their rights and entitlements in relation to these, and can access the application system as and when those rights and entitlements come into effect. Such a system will necessarily be underpinned by a functioning national registration system (births, deaths, national identity cards etc.) and an administrative infrastructure with the capacity to deliver it. Developing cost-effective tools attuned to the objectives of the specific social protection instruments, the capacity of the administrative infrastructure to deliver those instruments, as well as the political trade-offs specific to the Kenya context, is an important element in this strategy.

7.3   NEXT STEPS

7.3.1   Ongoing NSNP review

The mid-term review of the World Bank P4R for the NSNP took place in February 2016. It comprised two weeks of workshops and engagement with all NSNP stakeholders to discuss and review every aspect of the NSNP programmes in terms of design, implementation and monitoring. The targeting performance of the NSNP CTs, both individually and collectively, came under scrutiny, with significant funding disbursements from the P4R linked to indicators of NSNP targeting performance.

Alongside other studies (Ministry of Labour, Social Security and Services, 2015), this report provides evidence that fed into that forum. Moreover, it will continue to feed into ongoing discussions following on from the mid-

term review around the fitness for purpose of HSNP targeting in particular, the challenges of targeting for all programmes in the context of the four northern counties (some of which are very likely to extend into other poor counties), and the value for money implications for choices concerning targeting, both for the four CTs individually and for the NSNP as a whole.

7.3.2   Questions for further research

Two key issues highlighted in the above analysis require further research. These are:

- Understanding the performance of the new pilot NSNP targeting protocol and investigating the viability of an alternative reduced-form poverty-targeting instrument; and
- Assessing the strategic position of the HSNP within the NSNP and the social protection strategy in Kenya more broadly, in order to understand how to best formulate the programme and its objectives and operational processes to complement and develop the achievement of social protection goals in Kenya.

References

Alkire, S. and Foster, J.E. (2011) "Counting and multidimensional poverty measurement." Journal of public economics 95.7: 476-487.

Aide Memoire Joint Mid-Term Review Mission for Kenya National Safety Net Program for Results (Credit 5287) and Joint Review and Implementation Support Mission for Cash Transfer for Orphans and Vulnerable Children Program (Credit 4553), Additional Financing Credit (Credit 5312) and TF 0927272 February 12–26, 2016.

Ellis, F., Devereux, S. and White, P. (2009) *Social Protection in Africa*, Edward Elgar Publishing.

Fitzgibbon, C. (2014) *HSNP Phase II Registration and Targeting Lessons Learned and Recommendations Final Report*, July 2014.

Fitzgibbon, C. (2016) *Summary Steps in Combined Registration and Selection Process for NSNP in HSNP Counties*.

Fitzgibbon, C. and Thirikwa, P. (2015) *Field Report on Moyale HSNP Beneficiary List Finalisation Review*, January 2015.

Njagi, R. (2014) *Bori Sublocation HSNP Registration Completion Report*, November 2014.

Ministry of Labour, Social Security and Services (2016) *Programme Implementation and Beneficiary Satisfaction Survey for the Kenya National Safety Net Programme – Cycle-1 Report*.

Ministry of Labour, Social Security and Services (2015) *Draft Harmonized Targeting Methodology for the National Safety Net Programme*.

OPM and IDS (2011) *Kenya Hunger Safety Net Programme Monitoring and Evaluation Component HSNP Targeting Effectiveness Evaluation Report*, December 2011.

OPM (2015) *Hunger Safety Net Programme Evaluation of HSNP Phase 2: Inception Report*, July 2015.

Pinney, A. (2013) *Household Registration and Targeting in the Hunger Safety Net Programme 2*, December 2013

Pritchett, L. (2005) 'A Lecture on the Political Economy of Targeted Safety Nets', Social Protection Discussion Paper Series No. 0501.

World Bank. 2011. Challenges in collecting household level livestock data in Africa : workshop summary report - Rome, IFAD Headquarters, 30 June - 1 July 2011. Washington, DC ; World Bank Group.

Annex A   Quality checks for MIS data

A.1   OBJECTIVE

This note lays out the quality controls that were carried out on the MIS data. The conclusions of this note will help inform the subsequent redesign of the PMT. The idea is that the next PMT should, to the greatest extent possible, seek to avoid indicators that are deemed unreliable or are otherwise thought to have quality issues.

Due to time and budget constraints, the quality review focused on a limited number of variable that we think are most likely to enter into the next PMT, based on a previous review of the PMT design carried out in 2013. Further checks could be carried out on request to assess the quality of other indicators, if this is deemed necessary.

A.2   METHODOLOGY

The following tests were carried out on the data:

- **Missing observations**: The proportion of missing observations for each indicator was checked. The idea is that an indicator which is difficult to collect or has many missing observations should be avoided in the PMT.

- **Outliers**: As part of the basic quality checks, we check for patterns of outlier observations and other unusual patterns in the data that may indicate a problem with the indicator.

- **Plausibility**: The final check consists of assessing the plausibility of the point estimate of the indicator, when compared to identical indicators available in existing reliable surveys. The problem we faced in this assessment is that no other survey was collected at the same time as the MIS data, which means that the difference between the two datasets could be due either to: (a) change in the value of the indicator between the two surveys; or (b) a measurement error in one of the surveys. For this reason, the plausibility check consists of two separate parts:

  - Checking if the MIS point estimates lies within the confidence interval of previous survey estimates of the same indicator; and
  - Checking whether the point estimates lies within the predicted value of the indicator for 2014, based on historical trends. A simple linear trend is estimated.

An indicator will be deemed 'implausible' if it is significantly different from all previous point estimates *and* is significantly different from the predicted 2014 value of the indicator based on historical trends.

The following datasets were used for this assessment:

- KIHBS 2005 (only districts covered by the MIS – changes made to district boundaries after 2005 have been taken into account here to ensure comparability);
- Census 2009;
- HSNP 1 data for 2010, 2011, 2012; and
- MIS data for HSNP 2 (2014).

A.3   RESULTS

This section presents the key findings of our analysis. The detailed results for each indicator, by district, can be found in this annex.

The following variables were reported to have serious problems:

- Households with children under 14: implausibly high values in all four counties.

- Households with members aged 15–64: implausibly low values in three out of four counties.

- Households with member aged 65+: implausibly low values in three out of four counties.

- Dependency ratio: implausibly high values in all four counties (see Figure 8 below).

- Female-headed households: implausibly high values in three out of four counties. In Mandera, more than 50% of all households declare they are headed by a female, whereas the proportion never exceeded 30% in any of the previous surveys.

- Households with orphans: implausible values in three out of four counties. However, in this case, it is important to note that the values are below expectations. It is therefore more likely to be a measurement error problem rather than a deliberate misreporting.

- Number of rooms in the main dwelling: implausible values in all four counties. We should note than 78% of respondents answered that their house had 0 rooms, which suggests that this might be a problem with the coding of the variable, or the question posed.

- Number of wives: implausibly low values in all four districts. However, it should be noted that over 90% of households reported having no wives, which suggests that this may be a problem with the coding of the variable, rather than a deliberate misreporting.

- Population estimates are significantly below the results of the latest census in Mandera, Turkana and Wajir.

Figure 8: Comparing MIS point estimates for dependency ratio against

Source: KIHBS (2005), Census (2009), HSNP1 (2010-2012), HSNP2 (2014)
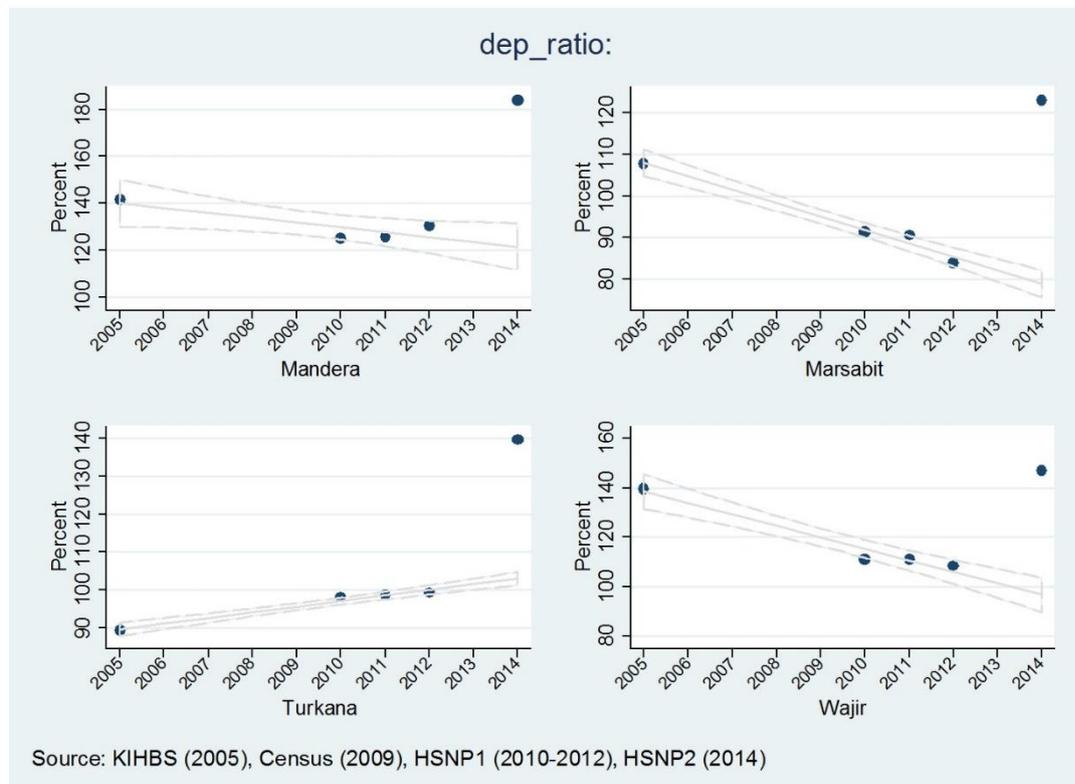
The following indicators had moderate problems:

- Stone/ brick walls: implausible values in two out of four counties. However, in one case, the result is significant only at the 10% level.
- Disabled children: implausibly high values in three out of four counties. However, in one case, the difference is significant only at the 10% level.

A.4   CONCLUSION

There appears to be serious quality issues with some of the indicators in the MIS data. In particular, the above results raise concerns that households may have over-reported the number of children and the elderly in the household in order to qualify for the transfer.

Some other variables (walls, floor, and motorcycle ownership) exhibited some less severe anomalies that may point to problems in the indicator definition, coding or data collection.

More worryingly, the aggregated population figures provided by the MIS dataset do not match the estimates from the latest census. Mandera has half the population reported in the census. This points to possible problems in coverage.

Table 15: MIS quality checks (Marsabit), by household type

Indicator	Description	Point estimate		Trend prediction		Missing obs. (%)	Outliers
Walls	Stone/brick	42.25	**	18.39	***	0.278	0
Roof	Corr. iron	24.56		18.08		0.278	0
Floor	Cement	20.74		21.23		0.278	0
Water source	River, lake, etc.	2.59		10.5	**	0.278	0
Light source	Electricity	6.87		9.81		0.278	0
Cooking fuel	Firewood	92.13				0.278	0
Assets	Radio	6.95		-8.58		0	0
	TV	4.54	*	-6.32		0.012	0
	Mobile	26.09		24.38		0	0
	Bicycle	0.91		-4.66	***	0.001	0
	Motorcycle	0.93	***	-3.31	**	0.003	0
Household size		6.2		6.14		0	0
Pop. age	Under 14	51.46	*	42.44	***	0	0
	15-64	44.79	*	51.99	***	0	0
	65+	3.75		5.57		0	0
Gender ratio	Males	51.05		51.53	*	0	0
Dependency ratio	0–13, 65+	123.24	***	78.95	***	0	0
Population		297889		479927.3		0	0
Household head	Female	33.28	*	23.49	**	0	0
Rooms	Number	0.85	***	1.6	***	0.278	0
Wives	Number	0.02	***	1.48	***	0.184	0
Religion				46.58			
	Elderly	28.38		45.58	*	0	0
Children	Orphans	5.46		32.47	***	0	0
	Chronically ill	2.07	*	0.23		0	0
	Disabled	1.94	*	-1.82	***	0	0

Source: authors' calculations based on KIHBS (2005), Census (2009), HSNP1 (2009/10/11), HSNP 2 MIS (2014). Note: statistical significance: *=10%; **=5%; ***=1% (MIS point estimate compared to trend prediction/previous survey point estimates).

Table 16: MIS quality checks (Wajir), by household type

Indicator	Description	Point estimate		Trend prediction		Missing obs. (%)	Outliers
Walls	Stone/brick	7.24		24.35	***	0.158	0
Roof	Corr. iron	3.84	**	10.7		0.158	0
Floor	Cement	4.75		20.96	***	0.158	0
Water source	River, lake, etc.	2		0.14		0.158	0
Light source	Electricity	1.43	**	-16.3		0.158	0
Cooking fuel	Firewood	84.73				0.158	0
Assets	Radio	4.5	***	-12.39		0	0
	TV	0.48		-1.51		0.007	0
	Mobile	18.69		57.76		0	0
	Bicycle	0.23		-0.36	**	0.002	0
	Motorcycle	0.35		-0.33	***	0.006	0
Household size		6.5	*	7.71	***	0	0
Pop. age	Under 14	57.44	*	45.5	***	0	0
	15–64	40.49		49.91	***	0	0
	65+	2.07	***	4.59	***	0	0
Gender ratio	Males	53.78		52.12	***	0	0
Dependency ratio	0–13, 65+	146.99	***	96.63	***	0	0
Population		553534	***	1003314		0	0
Household head	Female	25.1		11.18	**	0	0
Rooms	Number	0.14	***	1.52	***	0.158	0
Wives	Number	0.01	***	1.69	***	0	0
Religion				-0.02			
	Elderly	19.19		45.99	***	0	0
Children	Orphans	2	***	29.85	***	0	0
	Chronically ill	0.91		1.86		0	0
	Disabled	1.52	***	-4.48	***	0	0

Source: authors' calculations based on KIHBS (2005), Census (2009), HSNP1 (2009/10/11), HSNP 2 MIS (2014). Note: statistical significance: *=10%; **=5%; ***=1% (MIS point estimate compared to trend prediction/previous survey point estimates).

Table 17: MIS quality checks (Turkana), by household type

Indicator	Description	Point estimate		Trend prediction		Missing obs. (%)	Outliers
Walls	Stone/brick	24.83	***	0.86	***	0.553	0
Roof	Corr. iron	6.33	*	9.08		0.553	0
Floor	Cement	3.8		2.73		0.553	0
Water source	River, lake, etc.	16.05		1.39	***	0.553	0
Light source	Electricity	0.71		0.48		0.553	0
Cooking fuel	Firewood	93.69				0.553	0
Assets	Radio	4.16		-6.37		0.001	0
	TV	0.96	**	-5.13	**	0.008	0
	Mobile	13.15		3.14		0	0
	Bicycle	1.98		-3.48		0	0
	Motorcycle	0.61		-1.27	**	0	0
Household size		5.48	***	5.26		0	0
Pop. age	Under 14	55.33	***	44.94	***	0	0
	15–64	41.7	***	48.24	***	0	0
	65+	2.97	**	6.82	***	0	0
Gender ratio	Males	48.98		47.4	***	0	0
Dependency ratio	0–13, 65+	139.81	***	103.03	***	0	0
Population		647189	***	1250962		0	0
Household head	Female	60.51	***	22.2	***	0	0
Rooms	Number	0.35	***	2.69	***	0.553	0
Wives	Number	0.03	***	1.91	***	6.008	0
Religion				47.81			
	Elderly	22.89		54.8	***	0	0
Children	Orphans	9.42	***	38.36	***	0	0
	Chronically ill	1.01		-2.24		0	0
	Disabled	1.89		0.31	***	0	0

Source: authors' calculations based on KIHBS (2005), Census (2009), HSNP1 (2009/10/11), HSNP 2 MIS (2014). Note: statistical significance: *=10%; **=5%; ***=1% (MIS point estimate compared to trend prediction/previous survey point estimates).

Table 18: MIS quality checks (Mandera), by household type

Indicator	Description	Point estimate		Trend prediction		Missing obs. (%)	Outliers
Walls	Stone/brick	7.32		15.88	*	0.038	0
Roof	Corr. iron	3.89		18.06		0.038	0
Floor	Cement	4.92		13.39	*	0.038	0
Water source	River, lake, etc.	10.43		9.92		0.038	0
Light source	Electricity	1.29		0.87		0.038	0
Cooking fuel	Firewood	86.44				0.038	0
Assets	Radio	5.55		-21.51		0.001	0
	TV	0.55		-2.23	**	0.005	0
	Mobile	20.7		30.3		0	0
	Bicycle	0.29		-0.56	**	0.005	0
	Motorcycle	0.5	***	-0.36	*	0.005	0
Household size		6.93		6.77	*	0	0
Pop. age	Under 14	62.76	***	47.78	***	0	0
	15–64	35.2	***	45.43	***	0	0
	65+	2.04	**	6.79	***	0	0
Gender ratio	Males	52.36		54.36	***	0	0
Dependency ratio	0–13, 65+	184.12	***	121.56	***	0	0
Population		513805	***	1909462		0	0
Household head	Female	51.18	***	17.99	***	0	0
Rooms	Number	0.08	***	1.49	***	0.038	0
Wives	Number	0.02	***	1.51	***	8.49	0
Religion				0.03			
	Elderly	18.53		46.72	***	0	0
Children	Orphans	3.08	***	24.58	***	0	0
	Chronically ill	1.41		-5.37	***	0	0
	Disabled	1.99	*	-2.41	***	0	0

Source: authors' calculations based on KIHBS (2005), Census (2009), HSNP1 (2009/10/11), HSNP 2 MIS (2014). Note: statistical significance: *=10%; **=5%; ***=1% (MIS point estimate compared to trend prediction/ previous survey point estimates).

Annex B   Subsample bias checks: linked households only

The tables below report the beneficiary/non-beneficiary ratios for a selection of indicators for the matched sample only, which is thereby compared to the analysis conducted across the whole sample presented in the main report above. The results show that only in a few cases do the ratios change direction or significance when calculated across the linked households alone in comparison to the whole sample.

For DDS the ratios are unchanged.

Table 19: Comparing the targeting performance of various targeting mechanisms, based on 2014 dietary diversity data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)	Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)	Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
DDS =< 4	64.5	1.05	1.19	***	1.05	1.17	**	1.08	*

Source: HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0).

For chronic illness the ratio is reversed for CBT and village-level PMT. Disability is reversed for CBT.

Table 20: Health profiles of beneficiaries vs. non-beneficiaries, based on 2014 data (consultation, chronic illness, disability)

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)
Not consult doctor if sick	28.3	2.79	***	1.7	*	2.99	***	2.6	***	1.48
Child immunised†										
> 4hrs to health facility†										
Chronic illness in household	4.5	.64	**	0.69	**	1.07		1.07		0.93
Disability in household	6.4	0.83		1.00		1.04		1.07		1.03

Source: HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0).

For primary school completion rates there is no significant change. For attendance rate the ratio is reversed for CBT and village PMT.

ASSESMENT OF PROGRAMME TARGETING

Table 21: Education profiles of beneficiaries vs. non-beneficiaries, based on 2014 data (completion, attendance)

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Adult not completed primary	82.6	1.1	***	1.07	***	.98	*	1.01		1.05	***
Illiterate adult†											
Child 6–17 not attending	45.7	1.17	***	1.19	***	.91	***	.96		1.1	***
Child never attended	44	1.17	***	1.2	***	.89	***	0.94	*	1.09	**

Source: HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0.)

There are no changes for quality of housing indicators except for water, which is reversed for village-level PMT and actual beneficiaries (which become insignificant).

Table 22: Housing profiles of beneficiaries vs. non-beneficiaries, based on 2014 data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Inadequate walls	89.8	1.11	***	1.05	***	1.02	*	1.01		1.07	***
Inadequate roof	92.1	1.11	***	1.09	***	1.06	***	1.08	***	1.08	***
Inadequate floor	89.2	1.14	***	1.08	***	1.04	***	1.05	***	1.08	***
Inadequate water	7.6	.55	***	1.5	***	.85		1.07		.77	**
Inadequate sanitation	83.2	1.17	***	1.09	***	1.04	***	1.07	***	1.07	***
No electricity	95.6	1.07	***	1.06	***	1.04	***	1.06	***	1.05	***

Source: HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base =1 for ratios, base = bens for DDS.)

For child protection indicators there are no significant changes (child labour is reversed in CBT but only at 10% significance).

Table 23: Child protection profiles of beneficiaries vs. non-beneficiaries, based on 2014 data

	Point est. % (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/ PMT (ratio ben./non-ben.)		Actual bens (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)	
Children 5–17 working	20.8	1.09	*	.84	***	.63	***	.63	***	.84	***
No birth certificate	79.6	1.05	***	1.09	***	1.07	***	1.09	***	1.03	***

Source: HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1, except for inclusion/ exclusion = 0).

There are no significant changes for the multidimensional poverty index.

Table 24: Targeting efficiency profiles of beneficiaries vs. non-beneficiaries, based on 2014 data on multidimensional poverty

	Point est. (whole sample)	CBT (ratio ben./non-ben.)		Village-level PMT (ratio ben./non-ben.)		Combined CBT/PMT (ratio ben./non-ben.)		Actual beneficiaries (ratio ben./non-ben.)		Pooled PMT (ratio ben./non-ben.)		Random targeting (ben./non-ben.)	
Number of deprivations	3.16	1.04	**	1.04	**	1.01		1.02		1.03	*	1.1	***
>= 2 dimension equivalent deprivations	97.3%	1.04	***	1.03	**	1.07	***	1.03	**	1.05	***	1.06	***
>= 3 dimensions equivalent deprivations	65.9%	1.08	*	1.15	**	1.05		1.12	**	1.09	*	1.25	***
>= 4 dimension equivalent deprivations	3.0%	1.29		0.94		.52	*	1.01		1.03		.8	
% of multidimensionally poor who are excluded	-	63.9		50.3		39		29.9		65.4		39	
% of bens who are not multidimensionally poor	-	63		66.5		68.6		67.4		66.9		59.6	

Source: HSNP1 evaluation data (2010–2012), HSNP MIS data (2014). Notes: significance: * = 10% sig., ** = 5% sig.; *** = 1% sig. (Base=1 for ratios.)