Social accountability and service delivery: Experimental evidence from Uganda[1]

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Abstract

Corruption is increasingly being targeted as one of the major reasons for service delivery failures and general efficiency loss for societies. We present results from a randomized evaluation of a community based anti-corruption training in Uganda implemented by the government of Uganda and in coordination with a large community driven development program. From a sample of 941 communities across the north of the country, we randomly selected 627 to receive a six-day training on identifying and reporting mismanagement of programs being implemented in these communities. The study is unique in size, geographic distribution and intensity of the program. We also employ a novel data collection to determine the impact of the program on service delivery, community participation and legitimacy of government. We find that the program had a modest impact on project quality by 0.12 standard deviations. The effect appears to come mostly from livestock projects, specifically a reduction in deaths of animals and increases in overall animal health. In total, the training appears to have increased the number of animals in communities by 0.27 heads of cattle, or 13%. We explore the mechanisms for these impacts and find no effects on the procedures communities used to procure animals, but large positive effects on whether community members report monitoring projects themselves and complaining of problems to government. We also find significant decreases in whether people trust their community leaders and district government. The results suggest that well-targeted community monitoring trainings can improve service delivery.

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1. Introduction

A fast growing body of literature shows how corruption can undermine development by generating costs for society. Those costs can take different forms and range from an increase in bureaucratic hurdles to extract greater payments (Bertrand et al., 2007), to the creation of an unappealing economic environment for foreign investments (Woo, 2010) or a reduction of human capital stemming from bad-quality delivery of health or education services (Reinikka and Svensson, 2004, Bjorkman and Svensson, 2009). Not only does corruption represent an efficiency loss for society, but it also has a negative equity impact, affecting more severely those with less voice but with greater need for public services (Olken, 2006, Hunt, 2007).

The problem of corruption is especially prevalent in Uganda. Combined with high poverty in the north of the country and underinvestment into anti-corruption strategies, corruption in Uganda continues to be seen as a serious problem, both locally and internationally. Anecdotal evidence suggests that outright corruption and general mismanagement of public funds is leading to a significant reduction in the quality of service delivery, putting development goals in serious risk. It is important to understand the causes behind such phenomenon and, most importantly, how it can be reduced and prevented.

What the most successful and cost-effective approaches to reduce corruption are remains an open question. Most traditional governance and anti-corruption interventions utilize the top-down approach through audits of programs and officials. However, these can often be costly to implement and can themselves become subject to elite interference. Auditing may also prove relatively ineffective in weak institutional environments (Serra, 2008; Barr and Serra, 2010).

Recent research has suggested that using local populations and promoting transparency on the performance of local leaders and service providers can improve public governance by increasing the demand for accountability and ultimately reducing corruption (Björkman and Svensson, 2009; Deininger and Mpuga, 2004; Banerjee et al., 2010; Banerjee et al., 2011; Djankov et al., 2010; Ferraz and Finan, 2008; Serra et al., 2011). However, social accountability can be less effective in the presence of elite capture, or in cases where the population is not able to fully affect service providers' incentives (Reinikka and Svensson, 2004; Björkman and Svensson, 2010, Barr and Zeitlin, 2011). Empirical evidence testing the relative effectiveness of social accountability design features in the context of large-scale national programs remains limited (Devarajan et al, 2011).

The second phase of the Northern Uganda Social Action Fund (NUSAF2) is a large-scale Community-Driven Development Program implemented by the Office of the Prime Minister in coordination with district and sub-county authorities. As part of the program, communities were invited to formulate projects and submit proposals to the government. Once projects were approved by the office of the prime minister, funds are managed directly by Community Project Management Committees and Community Procurement committees, which are in charge of delivering the selected projects. Community Social Accountability Committees are in charge of monitoring project progress and providing oversight within community. Sub-county

and district authorities undertake monitoring and provide oversight in coordination with project staff.

A highly decentralized project such a NUSAF2 can create many governance challenges. One of the innovations of the NUSAF2 project is that it includes a Transparency, Accountability and Anti-Corruption (TAAC) Component. The objective of the TAAC component is to strengthen transparency, accountability and anti-corruption in Northern Uganda, using the project as an entry point to develop improved systems to be used by communities, local authorities and others with a mandate to promote improved governance in development. The TAAC component was implemented by local NGOs under the oversight of the Inspectorate of Government (IG) and consists of mobilizing and training communities to identify, complain about and ultimately report mis-management or corruption in their local NUSAF2 program.

We worked with the government of Uganda to randomize which communities received the TAAC program. In total 627 communities received the training, with 314 acting as a control group. We then followed up each NUSAF2 project approximately one year after the communities received the funds in order to determine the quality of the project. This was done through an intensive audit of the project. As NUSAF2 included a wide range of projects, including teacher's houses, livestock, fencing, enterprise development and other programs, we develop a normalized index of project quality. As almost 2/3 of the projects were livestock, and so more easily comparable to each other, we also look specifically at these projects.

In addition to the audits, we also conduct individual surveys with community members, including those that directly benefited from the NUSAF2 program and those that did not, in order to better measure individual outcomes. These surveys came six-months after the audits and include over 7,300 individuals surveyed.

This paper presents the results from both of these surveys. We find that the program increased the overall quality of projects by 0.12 standard deviations. This effect is driven by increases in the quantity of living animals in the livestock programs and does not appear to be affected by other program types, though relatively low sample sizes do not allow us to definitively test this. In total, the training appears to have increased the number of animals in communities that received livestock projects by 0.27 heads of cattle, or 13% more than the control group. This is equivalent to approximately $64 per person, or $960 per community.

We explore the mechanisms for these impacts and find no effects on the procedures communities used to procure animals, but large positive effects on whether community members report monitoring projects themselves and complaining of problems to government. We also find significant decreases in whether people trust their community leaders and district government.

Our experiment is unique for a number of reasons. First, the sample size is large – at least five times bigger than similar studies. It is also implemented by local NGOs, through the office of the Inspectorate of Government, and so is of the type and size that can be routinely run in such countries. Recent evidence on the difference in approach and impact between governments,

NGOs and small tightly designed experiments has led to concerns about external validity of such experiments. There are a number of issues that arose during the program that make this significantly messier than other experiments. We believe this messiness makes the external validity of the program much stronger.

The project is also based across a large geographic distribution. Our sample basically covers the top half of the country of Uganda. This allows us to take advantage of geographic, political and demographic differences to explore where impacts may be the strongest.

Finally, the intensity of the program is very large relative to similar studies. Communities were visited six times by the community trainers. In the first visit, community members were mobilized to expand existing but poorly functioning monitoring groups. The next three visits were for day long trainings on how to identify issues with program implantation and how and where to make complaints. The final two visits were follow-ups designed to assist communities in organizing for making complaints, as needed.

The remainder of this paper is as follows. In the next section we describe the NUSAF2 and TAAC programs. In Section 3 we present the experimental design and hypotheses to be tested. Section 4 presents the data and Section 5 the results. Section 6 then concludes.

2. The NUSAF2 and TAAC programs

NUSAF2 is a large-scale Community-Driven Development Program implemented by the Office of the Prime Minister in coordination with district and sub-county authorities. As part of the program, communities were invited to formulate projects and submit proposals to project offices. The submitted projects can fall under three categories: (i) public works, (ii) livelihood investment and (iii) infrastructure rehabilitation.

We worked with the government to evaluate the TAAC program in all of the NUSAF2 projects implemented within the 7^{th} and 8^{th} rounds of funding. As such, the evaluation includes a number of very different project types. Table 1 provides the number of each project type assigned to the control group, the standard modality and the added incentive modality. Due to the range of project types and the difficulty of comparing outcomes for these different projects, we drop all projects in less than 20 communities from the final analysis.

We next describe each individual component of the TAAC training in detail.

2.1 Social Accountability and Community Monitoring - Standard model

In order to determine the effectiveness of community participation in the monitoring of projects, a random sample of projects received assistance in community monitoring through a Social Accountability and Community Monitoring intervention (SACM) delivered as part of the

NUSAF2 TAAC component. The SACM intervention was implemented by NGOs contracted out by the IG and included thorough training on social accountability and community monitoring of NUSAF2 projects, as well as follow-up visits by a 'Community Trainer' to provide on-going training and support for the communities to monitor implementation of NUSAF2 projects.

Community assemblies were organized to discuss the principles of social accountability and community monitoring. As part of this mobilization phase, new representatives were elected by the whole community to joint strengthened social accountability committees. Members of the committees made a public pledge to participate in a training program, undertake monitoring of the project on behalf of the community, and report back to the community. The training provided background on social accountability and NUSAF2, taught participants community monitoring skills and provided tools to monitor NUSAF2 projects. The training also provided hands-on skills in writing reports, providing feedback to the community, generating a community action plan and applying monitoring skills to projects other than NUSAF2 in the community. A full description of the program components is presented in Appendix A.

2.2 Social Accountability and Community Monitoring - Increased incentives

In addition to receiving the standard model, a sub-set of communities were offered additional incentives for regular participation in training and reporting of their project status to the IG. The NUSAF2 Operational Manual outlines that the SACs are expected to complete "participatory monitoring tools" to ensure active involvement of all stakeholders in monitoring of project activities and outputs secure commitment, and build the capacity of communities to be able to analyze, reflect, and take corrective action. It is expected that regular reporting will improve accountability and result in improved project outcomes. However, communities may lack so incentives to complete these reports. Through the 2010 Whistleblowers Protection Act, the IG system can provide a bonus of 5% of recovered costs to whistleblowers. However, this incentive for reporting faces long delays, is rarely given out, and few people know about it.

Communities in a selection of sub-counties that received the standard community monitoring model were provided additional incentives to carry out monthly reporting. The incentives were designed to include individual rewards as well as group rewards. For individual rewards, individuals who complete the preliminary training and participate in follow-up visits and monitoring received an official "Community Monitor" pin from the IG. This badge helped identify and legitimize them as someone who had been trained and had completed the community monitoring work. They also received a contact card with the IG contacts in case of any problems. As part of the group reward, communities that completed the entire training, support visits, and undertook the community monitoring resulting in the final report are recognized by the IG for their hard work on local radio stations. Some communities or individuals may be invited to share experiences of community monitoring on the radio. The individual reward was designed to be based on attendance and participation in the training and follow-up visits. The group reward was designed based on timely production of monthly reports on their community monitoring findings.

During qualitative interviews we learned that communities did not value the additional incentives very much. This is likely due to the low intensity of the incentive. We compare the treatment effects between the different treatments and do not observe a meaningful difference in coefficients and significance. For the analysis presented here we thus do not differentiate between the different treatments and instead group the treatment groups into one treatment group.

3. Experimental design and hypotheses

The NUSAF2 program was a $120 million loan from the World Bank and DFID to the Government of Uganda. Due to the large size of the program, it was implemented in rounds over the span of five years. We were given a list of all projects to be funded in the 7th and 8th rounds and randomized which communities were given the TAAC training. The randomization was done in Stata. Due to limited administrative data from the government, were we only able to observe the location, size of budget and rough classification of project (whether a public works, livelihood investment or infrastructure rehabilitation).

All of the outcomes of interest were pre-registered with the American Economic Association registration system, number AEARCTR-0001115. The main outcome of interest is the quality of the NUSAF2 project[4]. Secondary outcomes include whether TAAC affected the number of animals and assets in households, the procurement and contracting process for communities, the level of monitoring by community members and the interaction with local officials and technical staff. To understand the mechanisms of the effects, we also look at process indicators, including the composition of the groups trained and whether the training was conducted at the expected time. Extending these impacts, we also look at whether the program changed individual's perceptions of the legitimacy of local and national government, and other potential spillovers to programming in communities.

For the primary and secondary outcomes, we also look at heterogeneous impacts for which region the community comes from, the project type, especially for livestock projects, which represent the largest number of projects in our sample, and baseline perception of local levels of corruption measured through interviews before the program with local leaders.

[4] We describe in the next section and in Table A1 and A2 the construction of this indicator.

4. Data and results

4.1 Data

The data for the analysis we present comes from a number of sources. Before the program began, we were given limited administrative data on what projects were to be funded by NUSAF2. From this list we have information on location, budget and the general type of project.

A survey of local officials was conducted between January 2012 and March 2013 and included all 45 districts and 485 sub-counties in areas where NUSAF2 operated at that time. Sub-county officials included in the surveys include sub-county and district elected and appointed officials, as well as local NUSAF2 officers. The survey sought to capture local leaders' attitudes towards corruption and governance. The survey also allowed collected information on socio-economic data on local leaders (including education, work experience, earnings and assets), their knowledge of NUSAF2 operating rules, as well as leaders' cognitive and behavioral skills. The baseline survey among local officials was meant to complement available administrative data on community project characteristics.

The main source of follow-up data collected for the impact evaluation consists of a project assessment conducted after the completion of implementation of the SACM implementation intervention was completed between December 2015 and February 2016. The project assessment included an observation of community projects by a team of enumerators. For projects with a single output (e.g. a staff house or a borehole), enumerators directly observed characteristics of the output. For livelihood support projects where outputs were distributed to beneficiaries, a sample of beneficiaries was drawn and beneficiary-level outputs were observed. For example, for livestock projects, a sample of beneficiaries was selected and enumerators visited the sampled beneficiaries to observe the animals provided by the project. The project assessment data allows for the measurement of a set of core outcomes for the impact evaluation, but also of intermediary outcomes (or main underlying mechanisms) that can lead to changes in final outcomes. For each domain, the project assessment allows capturing a range of variables, which can later be aggregated indices. The next sub-sections provide additional information on the main outcomes and intermediary outcomes to be tested and the indicators that were collected to measure them. The appendix provides tables with the full list of variables composing the various indices.

The primary outcome is a measure of a project overall score, which is composed of indices that measure the quality of the project and the quantity of outputs delivered. The project overall score is the main outcome for the analysis. It is built as an interaction of a quality measure and quantity measure. This allows accounting for the situation where a community received more of output from a project, but at lesser quality, and vice versa. The quality and quantity indices are also analyzed separately. As the quality and quantity indicators are created across different product types, the indices constructed are normalized within each project type to ensure comparability.

Project quality is measured within each project type through direct observation of a range of attributes of the project output. For livestock, the project quality score is an additive index of whether the animal received was of the appropriate age, whether it was a local or improved breed of animal, whether the animal was productive when visited by the survey team, and whether the animal displayed any signs of illness. For staff houses, quality is whether the walls, roof, windows, doors, ceilings and floors meet quality standards. For enterprise projects, this is whether individuals have access to materials, transportation, credit, labor and markets. Roads are determined by the material used in the construction. Tree planting is whether the seeds or seedlings were certified. The annex provides the full set of indicators that compose the quality index.

The quantity measure captures the outputs delivered as part of the community project. It is determined by the number of animals received, length and height of the building constructed, number of people engaged in the enterprise, length of the road constructed and the number of trees planted. These measures are obtained from direct observations of the outputs by enumerators at the time of the project assessment. In cases where the output could not be observed, the quantity measure takes a value of 0. This happens for livestock project when the livestock has died or is otherwise missing at the time of the follow-up project assessment. The annex provides the full list of quantity indicators.

To complement the observed measures of project quality and quantity of outputs, an index of project implementation is also constructed. This score is composed of subjective questions asked to the community about whether they felt the project was useful, whether they felt the project was completed as expected, and whether the materials met expectations and were not deemed to be very expensive.

The final indicator considered is whether the project appeared to be a "problem project". 23 of the projects could not be found and could not be included in the sample. These projects are categorized as 'potential problem projects', pending verification from the implementing agency as to whether funds were disbursed to the communities or whether these projects were otherwise dropped. The impact evaluation cannot fully capture the reasons why the projects were not implemented, and in particular whether or not the communities actually received funding for the project to be implemented. As part of the analysis, we test whether the share of potential problem projects varies different between treatment and control.

In addition to the primary outcomes, the project assessment also measures three main types of intermediary outcomes that capture the main underlying mechanisms that can explain changes in final outcomes. As mentioned above, the three main domains of intermediary outcomes are (i) the procurement and contracting process, (ii) community monitoring, and (iii) community interactions with local leaders. These three domains relate to some of the key areas covered by the social accountability and community monitoring curriculum. Indicators on the procurement and contracting process include an index of challenges faced by communities in the procurement process, an index of satisfaction with suppliers of goods and materials, whether the community hired a contractor. For communities that did hire a contractor, indicators also

include an index of challenges faced by communities in the contracting process, and an index of satisfaction with the contractor. The second main domain for intermediary outcomes include indicators on community monitoring, in particular an index for the intensity of project community monitoring, and an index for intensity of Social Accountability committee (SAC) Project Monitoring. Finally, the third last main domain for intermediary outcomes captures interactions between communities and local officials. This domain includes indicators for whether a payment was made to district official or staff, and an index of satisfaction with the sub-county NDO and district veterinarian officer.

The third source is an endline survey conducted with individuals in NUSAF2 communities in July to August 2016.

The sample to be surveyed is a selection of individuals within the NUSAF2 group and the broader community. 6-8 people per community will be surveyed. This will include the chairpersons of each of the executive committee in the project, called CPC and CPMC, two members of the original community social accountability committee, called the SACM, two members from the expanded community accountability committee in the treatment group, called the CMG, and two regular members. In control communities, the CMG does not exist and so this group will be replaced with two regular members.

The sample is constructed this way so as to be able to test the impact of the program on beneficiaries (8 in control communities, 6 in treatment), as well as test for the effect of accountability group composition (the addition of CMG members from the broader community), and the quality of group leadership (CPC and CPMC chairpersons).

The descriptive statistics for the first and second endline data collection are presented in Table 2.

4.2 Balance tests

Table 3 presents the balance tests for the baseline and administrative data that was available on the projects. Due to the timeline and funding, a full baseline with communities is not available. We do have three indicators that were available before the beginning of the NUSAF2 projects: the amount of money approved per community, the type of project, and when the program grants were received. These are presented in columns 1 to 3, respectively.

We do not find a statistically or economically significant difference between the treatment groups and the control group for any of these indicators. The amount of funding received by project averaged over 20 million USH. The test for balance shows a difference of less than 1% from the control group and is not statistically significant. Likewise, there is no difference in whether the project was livestock, and the date for when the funding was received in the communities.

5. Results

5.1 Main impacts in the short-run

The outcomes for the main indicators of interest are presented in Table 4. These include the overall score for each of the NUSAF2 projects in the sample (column 1), which is created by multiplying the project quality score (column 2) and quantity score (column 3) together. We also looked at whether the project was actually implemented or missing completely (column 4) and an indicator of how well communities implemented the programs (column 5). Each of these indicators is from the first audit endline and are estimated at the community level.

We find a small, positive but not significant impact on the overall score of the project. Looking at the individual components, we also find a small and positive, but not significant, impact on quality of project. However, we do find a positive and significant impact on the quantity of projects, significant at the 5% level. This suggests the program led to an increase in quantity of projects by approximately 0.17 standard deviations. We do not find any impacts on whether a project is completely missing, nor on the quality of implementation of the program.

The impact on the quantity of projects suggests there is a significant impact of the program. However, as there is no impact on whether a project is missing, the result is suggestive that the impacts are coming from the only type of project where quantity could vary within the project itself: livestock projects. We next look at the impact of the TAAC program on livestock only indicators.

In Table 5 we look closer at the impacts for livestock. In this table we use individual level data as the survey team interviewed five randomly selected individuals from the livestock projects and viewed each of their animals. We include measures of animal quality, age the animal was purchased, whether it is an improved breed, whether the enumerator observed the animal to be productive, a measure of health, and whether the animal was dead, stolen or sold. We find some improvement in the quality and health of animals, as well as whether the animal was missing.

We further explore these results in Tables 6A and 6B, where we look at whether it is a cattle or goat that is missing, respectively. We find a negative and statistically significant on whether the animal is missing for both cattle and goats. However, the individual components of this indicator are not significant for cattle. We find that all of the components are statistically significant for goats. Treatment reduces the number of dead and sold animals, and increases the likelihood of an animal being stolen. As an animal is more likely to be stolen if it is in good health, and individuals only sell the animals for meat when the animal is very sick and about to die, all of these are suggestive of big impacts from the program on the quality of goats.

4.4 Medium-term impacts

The results presented in Tables 3 to 6 are from the audit survey, which was conducted approximately one year after the TAAC training ended. We then followed-up with the communities six months after that in order to measure individual level outcomes and test for the sustainability of the outcomes. The survey methods we conducted differently to also provide a robustness check to the methods employed in the audit survey.

In Tables 7A, 7B and 7C, we look at the number of animals that individuals report to the survey team at the time of the final individual endline survey for cattle, goats and a weighted combination, respectively. Columns 1 to 5 report the number of animals for all of the project types included in our sample, while columns 6 to 10 are for livestock projects only. We also divide the results by region.

We find similar results to what was obtained in the audit survey. The weighted number of animals has increased per person on average 0.151 (Table 7C, column 6) by 0.151, approximately 9% over the control group mean. These effects are only significant in the north region, though the eastern region shows a positive and nearly significant effect. This effect is driven by the number of cattle (Table 7A, column 6) and not by the number of goats (Table 7B, column 6). Overall, we estimate an increase in the number of cattle by 13%.

4.5 Process outcomes

To test for the mechanisms of these impacts, we first look at four indicators. The first three, issues with the procurement process (Table 8), intensity of monitoring projects (Table 9) and interactions with local leaders (Table 10) come from the first audit survey. In Table 11 we also look at whether individuals report making complaints to local and national government from the second individual endline survey.

Overall, we do not find significant impacts from the program on whether people had challenges with the procurement process or their satisfaction with suppliers, or whether they were asked to make payments to officials or their satisfaction with local bureaucrats. We do find an increase in the intensity of monitoring of the project.

This effect on monitoring is also reflected in whether individuals made reports to local officials about their project. In Table 11 we present results for whether people report making complaints to local and national officials about their NUSAF2 project. Column 1 is the total number of reports, which column 2 is the village elected leader, column 3 is sub-county officials, column 4 is district officials and column 5 is the Inspectorate of Government, who represents the national government. We also divide the results by region.

For the full sample, we find large and very significant increases in the number of reports across all levels of government. This is an especially surprising finding as most people do not interact

with higher levels of government. We find the number of reports varies by region, with people in Karamoja reporting making complaints to all levels of government. For all regions, the number of complaints to the IG increased dramatically relative to the control group.

4.6 Trust

We also look at whether the program changed the way people view their local and national leaders. In Table 12 we present the results from asking respondents whether they thought their leaders acted in the interests of local communities. In column 1 to 6 we look at the village leaders for NUSAF2 program, the elected sub-county official, sub-county bureaucrats, the elected district official, the district bureaucrats

6. Discussion

We report the results from an experimental evaluation of a bottom-up accountability program conducted in cooperation with a large, community driven development program. We find significant impacts from the training on quality of projects, but especially for livestock projects. These impacts resulted in individuals owning a significant number of additional animals.

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Table 1: Project design

Project Type from survey, fully currupted data from the sample.	Treatment Given			
	Control	SAC	SAC Plus	Total
Livestock	212	206	217	635
Enterprise	23	29	29	81
Borehole	5	3	6	14
Fencing	9	11	7	27
Roads	9	12	10	31
Tree Planting	27	29	18	74
Staff House	11	22	14	47
Dormitory	2	2	5	9
Classroom	2	2	3	7
OPD	3	4	4	11
Valley Tank	2	1	0	3
Valley Dam	1	0	0	1
Total	306	321	313	940

Table 2. Descriptive Statistics

Variable	(1) Mean	(2) SD	(3) Min	(4) Max	(5) Obs
Subproject level:					
Project Funds (in 1,000 ugx)	22750.603	32741.917	7612	162670.23	895
Livestock project (0/1)	0.709	0.454	0	1	895
Project start date (Period when grants were received)	38.188	3.935	1	48	812
Project overall score (std)	0	0.996	-2.9	3.64	872
Project quality score (std)	0	0.996	-2.86	2.69	871
Project quantity score (std)	0	0.996	-5.71	11.86	863
Project is missing (0/1)	0.027	0.162	0	1	895
Project Implementation Quality Index	2.385	0.909	0	4	710
Satisfaction with supplier Index	5.585	1.39	0	8	686
Hired a Contractor to Implement Project	0.383	0.486	0	1	833
Index of challenges in Contracting Process	3.355	1.865	0	9	307
Satisfaction with contractor Index	5.275	1.798	0	8	501
Index for Intensity of Project Community Monitoring	2.903	1.158	0	4	855
Index for Intensity of Social Accountability Committee Project Monitoring	0.817	0.946	0	4	907
Payment was made to district official	0.142	0.35	0	1	871
Payment was made to district officer	0.149	0.357	0	1	871
Satisfaction with NDO Index	5.857	1.448	0	8	881
Satisfaction with Disctrict Vet Index	10.638	1.463	6	15	572
Animal level:					
Animal dead (0/1)	0.133	0.339	0	1	6727
Animal sold (0/1)	0.052	0.223	0	1	6727
Animal stolen (0/1)	0.018	0.132	0	1	6727
Animal dead/sold/stolen (0/1)	0.203	0.402	0	1	6727
Beneficiary level:					
Number of Cattle (Total)	2.526	10.526	0	800	7302
Number of Goats (Total)	4.417	8.248	0	250	7307
Number of Livestock in FAO Livestock Unit	1.87	5.622	0	406.5	7293
Reporting NUSAF-related issues (total)	2.114	2.513	0	8	6002
Reporting NUSAF-related issues to LC1	0.792	0.863	0	2	6581
Reporting NUSAF-related issues to Subcounty	0.643	0.815	0	2	6445
Reporting NUSAF-related issues to District	0.449	0.727	0	2	6328
Reporting NUSAF-related issues to IG	0.318	0.655	0	2	6286
Trust Project Leaders (1-4)	3.582	0.711	1	4	7292
Trust LC3 Chairperson (1-4)	3.182	0.927	1	4	7278
Trust Subcounty Bureaucrats (1-4)	3.287	0.812	1	4	7260
Trust LC5 Chairperson (1-4)	2.991	1.015	1	4	7233
Trust District Bureaucrats (1-4)	3.295	0.856	1	4	7271
Trust Government (1-4)	3.636	0.659	1	4	7273

Table 3. Baseline Balance

	(1)	(2)	(3)
	Project Funds (in 1,000 ugx)	Livestock project (0/1)	Project start date (When grants were received)
Treated	147.443	0.002	0.021
	[457.730]	[0.026]	[0.312]
Control Mean	20671.62	0.729	38.38
Observations	895	895	812
R-squared	0.977	0.624	0.357

Table 4. Overall Score (All project types)

	(1)	(2)	(3)	(4)	(5)
	Project Overall Score	Project quality score (std)	Project quantity score (std)	Project is missing	Project Implementation Quality Index
Treated	0.12	0.094	0.168**	-0.003	0.029
	[0.077]	[0.075]	[0.078]	[0.012]	[0.075]
Control Mean	-0.059	-0.04	-0.073	0.027	2.373
Observations	872	871	863	895	710
R-squared	0.353	0.362	0.376	0.28	0.409

Table 5. Components of Livestock Overall Score at the Beneficiary Level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Livestock Quality Score (std) - Health Mean	Animal Bought At The Correct Age (0/1)	Animal Is An Improved/Crossed/Hybrid Breed (0/1)	Animal Is Productive (0/1)	Animal Health By Mean Number Of Illnesses	Fraction Of Animals Not Observed (Dead/Stolen/Sold)	Fraction Of Animals Dead
Treated	0.108*	0.023	0.018	-0.013	0.027*	-0.047**	-0.018
	[0.058]	[0.029]	[0.011]	[0.027]	[0.015]	[0.019]	[0.014]
Control Mean	-0.028	0.345	0.167	0.397	0.859	0.187	0.1
Observations	2,825	2,814	2,812	2,645	2,645	2,814	2,814
R-squared	0.228	0.271	0.761	0.234	0.187	0.173	0.175

Table 6a. Cattle Missing, All Regions

	(1) Animal dead/sold/stolen (0/1)	(2) Animal dead (0/1)	(3) Animal sold or traded (0/1)	(4) Animal stolen (0/1)
Treated	-0.030*	-0.014	-0.008	-0.007
	[0.017]	[0.013]	[0.010]	[0.005]
Control Mean	0.110	0.063	0.036	0.011
Observations	2,338	2,338	2,338	2,338
R-squared	0.116	0.151	0.080	0.050

Table 6b. Goats Missing, All Regions

	(1) Animal dead/sold/stolen (0/1)	(2) Animal dead (0/1)	(3) Animal sold or traded (0/1)	(4) Animal stolen (0/1)
Treated	-0.069***	-0.041*	-0.047***	0.018**
	[0.026]	[0.021]	[0.016]	[0.009]
Control Mean	0.294	0.199	0.079	0.016
Observations	3976	3976	3976	3976
R-squared	0.163	0.093	0.397	0.072

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10

Table 7A. Number of Cattle

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			All projects				Livestock Projects Only			
	All	North	WN	East	KRMJ	All	North	WN	East	KRMJ
Treated	0.576	0.305**	-0.163	1.736	-0.077	0.271*	0.312**	-0.019	0.3	0.101
	[0.404]	[0.133]	[0.281]	[1.331]	[0.234]	[0.154]	[0.144]	[0.447]	[0.279]	[0.344]
Control Mean	2.352	1.952	3.016	2.17	2.412	2.135	1.981	2.487	2.063	2.405
Observations	7,302	2,009	1,719	2,130	1,444	4,973	1,700	587	1,912	774
R-squared	0.048	0.175	0.14	0.037	0.086	0.089	0.181	0.195	0.063	0.142

Table 7B. Number of Goats

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			All projects				Livestock Projects Only			
	All	North	WN	East	KRMJ	All	North	WN	East	KRMJ
Treated	-0.029	0.099	-0.443	0.292	-0.279	-0.021	0.071	-0.552	0.124	-0.376
	[0.191]	[0.183]	[0.566]	[0.294]	[0.383]	[0.180]	[0.199]	[0.631]	[0.252]	[0.488]
Control Mean	4.372	2.464	6.644	3.254	6.225	3.968	2.561	6.641	3.163	7.198
Observations	7307	2009	1721	2130	1447	4975	1700	588	1912	775
R-squared	0.146	0.221	0.111	0.17	0.103	0.243	0.253	0.228	0.183	0.15

Table 7C. Weighted number of Livestock

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			All projects				Livestock Projects Only			
	All	North	WN	East	KRMJ	All	North	WN	East	KRMJ
Treated	0.306	0.172**	-0.141	0.944	-0.031	0.151*	0.162*	-0.103	0.206	0.043
	[0.210]	[0.079]	[0.174]	[0.688]	[0.143]	[0.082]	[0.085]	[0.260]	[0.144]	[0.195]
Control Mean	1.769	1.422	2.269	1.569	1.985	1.634	1.445	2.046	1.504	2.086
Observations	7293	2005	1719	2125	1444	4966	1696	587	1909	774
R-squared	0.056	0.169	0.137	0.039	0.086	0.106	0.179	0.202	0.076	0.148

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10

The number of livestock was adjusted using FAO Livestock Unit. Cattle=0.5, Goats=0.1, Pigs=0.2, Chickens=0.01.

Regressions includes sub-county fixed effects. Standard errors are clustered at the project level.

Table 8. Procurement & Contracting

	(1)	(2)	(3)	(4)	(5)
	Challenges in Procurement Process Index	Satisfaction with supplier Index	Hired a Contractor to Implement Project	Index of challenges in Contracting Process	Satisfaction with contractor Index
Treated	-0.052	0.135	0.001	-0.153	-0.021
	[0.083]	[0.134]	[0.030]	[0.287]	[0.228]
Control Mean	2.046	5.544	0.41	3.623	5.273
Observations	742	686	833	307	501
R-squared	0.273	0.366	0.619	0.552	0.431

Table 9. Community Monitoring

	(1)	(2)
	Index for Intensity of Project Community Monitoring	Index for Intensity of Social Accountability Committee Project Monitoring
Treated	0.153*	0.247***
	[0.086]	[0.067]
Control Mean	2.767	0.628
Observations	855	907
R-squared	0.486	0.438

Table 10. Interactions with Leaders

	(1) Payment was made to district official	(2) Payment was made to district officer	(3) Satisfaction with NDO Index	(4) Satisfaction with Disctrict Vet Index
Treated	-0.003	-0.013	-0.058	0.092
	[0.029]	[0.031]	[0.122]	[0.141]
Control Mean	0.141	0.166	5.822	10.566
Observations	871	871	881	572
R-squared	0.346	0.342	0.337	0.428

Table 12. Reporting NUSAF-Related Issues

	(1)	(2)	(3)	(4)	(5)
	Total Reports	LC1 Chairperson	Sub-county Officials	District Officials	IG
Full Sample	0.299***	0.075**	0.054*	0.058**	0.117***
	[0.102]	[0.031]	[0.030]	[0.027]	[0.027]
Control Mean	1.929	0.74	0.611	0.422	0.237
North	0.168	0.068	-0.021	0.007	0.068*
	[0.147]	[0.050]	[0.045]	[0.041]	[0.038]
Control Mean	1.732	0.676	0.574	0.386	0.2
West Nile	0.066	0.014	0.035	0.076	0.059
	[0.191]	[0.067]	[0.065]	[0.052]	[0.037]
Control Mean	1.806	0.75	0.588	0.381	0.145
East	0.349**	0.062	0.063	0.064	0.116***
	[0.156]	[0.050]	[0.046]	[0.039]	[0.042]
Control Mean	1.626	0.676	0.505	0.325	0.24
Karamoja	0.564**	0.135*	0.149**	0.089	0.212***
	[0.261]	[0.072]	[0.070]	[0.071]	[0.076]
Control Mean	2.887	0.931	0.872	0.693	0.421

Table 12. Trust In Leaders, Local Officials, and Politicians

	(1) Project Leaders	(2) LC3 Chairperson	(3) Subcounty Bureaucrats	(4) LC5 Chairperson	(5) District Bureaucrats	(6) Government
Full Sample	-0.100***	-0.043	-0.026	-0.036	-0.038	0.026
	[0.028]	[0.034]	[0.029]	[0.038]	[0.033]	[0.021]
Control Mean	3.651	3.199	3.309	3.027	3.322	3.62
North	-0.093*	-0.087	-0.019	-0.003	-0.003	0.028
	[0.050]	[0.053]	[0.054]	[0.057]	[0.057]	[0.039]
Control Mean	3.603	3.226	3.273	3.046	3.276	3.533
West Nile	-0.124***	-0.081	-0.059	-0.194**	-0.007	0.012
	[0.046]	[0.068]	[0.056]	[0.075]	[0.070]	[0.038]
Control Mean	3.672	3.224	3.275	3.042	3.286	3.681
East	-0.154***	-0.027	-0.053	-0.074	-0.128**	0.005
	[0.044]	[0.060]	[0.055]	[0.063]	[0.058]	[0.038]
Control Mean	3.723	3.146	3.297	3.024	3.287	3.61
Karamoja	0.022	0.026	0.035	0.085	0.014	0.055
	[0.063]	[0.062]	[0.061]	[0.088]	[0.054]	[0.048]
Control Mean	3.578	3.212	3.431	2.981	3.494	3.69

Appendix A: Curriculum components

The SACM curriculum was developed to be delivered to low-skilled populations, with intensive piloting and heavy focus on visual-based learning. The 7 main modules of the curriculum were as follows:

Module 1: Community Mobilization and Introduction to Social Accountability

This module includes 2 to 3 hours of interaction with mobilized members of the community within which a selected NUSAF2 sub project is implemented. In the meeting, the community trainer leads the discussion on key concepts of accountability and community engagement, the roles and responsibilities of the Social Accountability Committee (SAC) and conducts the election of 4 willing members of the community to strengthen the existing SAC and form the Community Monitoring Group (CMG).

Part of the discussion include an overview of NUSAF2 and identifying existing government programs, targeted beneficiaries and why it is important for the wider community members to monitor these projects even if they are not direct beneficiaries.

Discussions on key concepts of accountability includes: a) common types of corruption at the central, local government and community levels such as bribery, embezzlement, nepotism, absenteeism and solicitation of favors; b) social accountability and the constitutional right of every Ugandan to participate in conducting accountability and combating corruption. This session is concluded with brain storming on key actions the community can take as individuals or group to conduct social accountability, combat corruption and thus improve project outcomes.

The module ends with the election and introduction of the CMG. Preceding the election, community members are taken through the roles of the monitoring group and characteristics of people who would be suitable for this role. Both the SAC chairman and coordinator of the newly formed CMG are given an opportunity to give short speeches on how they will execute their duties to meet the expectations of the community. The CMG members are then invited for a 3 days training at a selected venue and date.

Module 2: Social Accountability and NUSAF2

The second module is delivered on the first day of the 3 days' comprehensive training. It reviews into detail all the basic concepts discussed at the enrollment meeting as well as provides a deeper understanding of the different stages of implementation of the NUSAF2 sub project and the guidelines, for instance, at the procurement stage, what are the procurement rules and procedures. In this module the CT leads the community in identifying key implementation areas that are more prone to mismanagement and explores ways in which the community can engage in monitoring to ensure achievement of the project outcomes.

The module ends with the announcement of the individual and group incentives for completing the comprehensive training and all the stages of community monitoring respectively.

Module 3: Community Monitoring Skills

This module aims at providing basic skills in community monitoring of NUSAF2 projects. The CMGs are taken through steps in monitoring, identifying sources of information and gathering monitoring data and management of monitoring data. The module includes practical sessions that help CMGs to generate critical questions for monitoring the procurement, timelineness, technical support, financial management and quality of inputs for the NUSAF2 project of their own community.

Module 4: Post-monitoring Activities

This module provides basic understanding on how to review, store and manage monitoring data and outcome. It includes using monitoring data to generate simple monthly reports for submission to relevant authorities. Practical sessions include conducting a mock monitoring session and writing a simple report.

The module ends with a session on how to provide feedback on findings from monitoring to the community members as well as explore possible actions to respond to the findings .

Module 5: How to Generate a Community Action Plan

This is a practical step by step session on how to developean action plan relevant to the sub project of any given community. CMGs are taken through a participatory discussion that results into key action plans that will be implemented and reviewed with the community trainer during the first follow up support visit.

The session includes actual planning and setting timelines for all monitoring activities and allocation of tasks among the CMGs.

Module 6: Follow-up Support Visit

This module provides step by step guidance on how the CMGs can review the action plan generated in module 5 and provide technical support and/or a full refresher training to the CMGs depending on identified technical gaps.

The module ends with guidance on how to revise and create new action plans at the end of every follow up support visit.

Module 7: Applying Lessons Learnt to Other Government Services

The aim of this module is to help CMGs apply the monitoring skills they gained from monitoring NUSAF2 to other government programs in their communities. The module uses an example of

teacher absenteeism from the education sector to help CMGs learn and apply their skill to other sectors.

The module ends with a practical session on creating a monitoring check list using teacher absenteeism as an example, from the original NUSAF2 checklist.

Table A1: Project score construction

Subproject Type	Quantity Score		Quality Score		
	Unit	Score	Quality Indicators	Construction	Score
Livestock	Animals	Total number of animals received	1. Correct age of the animal when it was received	Binary indicator for correct age of animal, i.e. 2 year to 4 years for male cows and 2.5 - 4.5 years for female cows	Average of Quality Indicators
			2. Improved breed of the animal	Binary indicator which takes 1 if the animal received is improved breed	
			3. Productivity of the animal	Binary indicator which takes 1 if the animal did at least one of the followings: oxen ploughing, given birth (female), bull breeding, pregnant (female cows and goats/sheep), giving milk and female cow ploughing	
			4. Animal health	Binary illness indicator which takes 1 if the animal has at least one illness. Note: 50% of the animals observed did not have any illness	
Staff House	M^2	Size of the staff house built	1. Walls	Binary indicator which takes 1 if the part is completed to a satisifactory standard	Average of Quality Indicators
			2. Roof		
			3. Ceiling		
			4. Floor		
			5. Painting		
			6. Doors	Binary indicator which takes 1 if there is at least one is built and functioning	
			7. Windows		
			8. Electricity	Binary indicator for having power supply that is complete	
			9. Water Tank	Binary indicator for having water tank built	
Enterprise	People	The number of people currently invloved in the enterprise	1. Equipment	Binary indicator for having secure access to each category for business	Average of Quality Indicators
			2. Materials		
			3. Transportation		
			4. Credit		
			5. Skilled labour		
			6. Markets		
			6. Markets		
			7. Success	Binary indicator which takes 1 if the enterprise owner feels the business is successful	
Fencing	M	Length of the fence	1. Fence	Binary indicator for completion of each category	Average of Quality Indicators
			2. Main gate		
			3. Small gate		
			4. Guard house		
Roads	M^2	Road surface area	1. Material of the road	Binary indicator for gravel road (entirely or mixed as opposed to earth/dirt)	Average of Quality Indicators
			2. Road surface	Binary indicator for satsifactory road surface	
			3. Wingwalls	Binary indicator for at least one satisfactory wingwall but none defective	
			4. Drainage lines	Binary indicator for satsifactory status of each category	
			5. Scour checks		
			6. Mitre drains		
			7. Culverts		
Tree Planting	Acres	Total amount of land in acres	1. Seed certification	Binary indicator which takes 1 if the batch of seeds/seedlings came with a certification number	Average of Quality Indicators
			2. Herbicide	Binary indicator for having sprayed with herbicides during pre-planting	
			3. Training	Average of 7 binary indicators for having received advice on (1) species selection, (2) weeding, (3) planting preparation, (4) disease detection and treatment, (5) fire prevention, (6) pruning/thinningm and (7) record keeping	

Table A2: Other index construction

Category	Index	Range	Description	Variables
Implementation	**Project Implementation Quality Index**	0 - 4	Additive index with sum of 4 discrete variables, each of which describes how the project implementation was perceived by beneficiaries	1. Project usefulness (0-1)
				2. Project completed (0/1)
				3. Satisfaction with material (0/1)
				4. Satisfaction with cost of material (0/1)
Procurement	**Challenges in Procurement Process Index**	0 - 4	Additive index with sum of 4 binary variables, each of which indicates challenges/violations in procurement process	1. Funds withdrawn by members outside of CPMC (0/1)
				2. Project material acquired by members outside of CPC (0/1)
				3. Less than three steps taken to purchase materials (0/1)
				4. Procurement process was difficult (0/1)
	Satisfaction with supplier Index	0 - 8	Additive index with sum of 2 discrete variables	1. Relationship with the local suppliers (0-4)
				2. Level of satisfaction with the services provided by the supplier (0-4)
	Hired a Contractor to Implement Project	0 / 1	Binary indicator for hiring a contractor	1. Hired a Contractor to Implement Project (0/1)
	Index of challenges in Contracting Process	0 - 9	Additive index with sum of 9 binary variables, each of which indicates challenges/violations in procurement process conditional on hiring a contractor	1. No advertisement to select contractor (0/1)
				2. There were less than 3 bidders (0/1)
				3. Bids not registered (0/1)
				4. Less than 2 (out of 5 advised) contacting steps involved (0/1)
				5. No information gathered on contractor during vetting process (0/1)
				6. Oustide influence in the contractor selection process (0/1)
				7. Contractor not signed a formal contract (0/1)
				8. Beneficiary not consulted during implementation (0/1)
				9. Beneficiary contribution not taken into consideration (0/1)
	Satisfaction with contractor Index	0 - 8	Additive index with sum of 2 discrete variables	1. Relationship with the contractor/local lead artisan (0-4)
				2. Level of satisfaction with the services provided by the contractor (0-4)
Monitoring	**Index for Intensity of Project Community Monitoring**	0 - 4	Additive index with sum of 4 binary variables	1. Compiled an Accountability Report (0/1)
				2. Monitored project implementation (0/1)
				3. Monitored selection of materials/livestock (0/1)
				4. Monitoring report was written (0/1)
	Index for Intensity of Social Accountability Committee Project Monitoring	0 - 4	Additive index with sum of 4 binary variables, each of which indicates SAC involvement and quality	1. SAC witnessed delivery of procured goods (0/1)
				2. SAC wrote monitoring report (0/1)
				3. SAC monitored project implementation (0/1)
				4. SAC monitored selection of materials/livestock (0/1)
Interactions with Leaders	**Satisfaction with NUSAF Desk Officer (NDO) Index**	0 - 8	Additive index with sum of 2 discrete variables	1. Relationship with the NDO (0-4)
				2. Level of satisfaction with the services provided by the NDO (0-4)
	Satisfaction with Disctrict Vet Officer (DVO) Index	0 - 8	Additive index with sum of 2 discrete variables	1. Relationship with the DVO (0-4)
				2. Level of satisfaction with the services provided by the DVO (0-4)
Reporting	**Reporting NUSAF-Related Issues**	0 - 2	Additive index with sum of 2 binary variables	1. Beneficiary reported NUSAF-related issues (0/1)
				2. Someone else in the group reported NUSAF-related issues (0/1)
Trust	**Trust**	1 - 4	Single categorical variable	1. Level of trust in leaders (1-4)