



S.H.E.E.P. Summary Report

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Introduction

The role of this report

S.H.E.E.P. (Sheep Health and Economic Empowerment Programme) is a livestock lending project administered and funded by Ghana Medical Help.. This summary report provides preliminary findings from a research project carried out in Goldema and Kadema in May and June 2023. The research aimed to identify lessons from the Kadema project, to characterise the socio-economic status of the Goldema community, and to develop, pilot, and use survey instruments for ongoing monitoring and assessment of new participants to the project.

To support the S.H.E.E.P. project, research was carried out in the village of Goldema in May and June, 2023. This research had multiple aims. We sought to develop, pilot and use new survey instruments to undertake a demographic and socio-economic study of the village population. Finally, we sought to use these data to set clear inclusion criteria for the second round of the project. This summary report presents basic results from the survey of the village population, identifying areas and levels of need in Goldema. The data presented below is intended to help donors understand the needs of the community, the structure of the project, and how the project has been updated since its first trial in Kadema to better serve the needs of the local population. It also provides an overview of the data available to help project organisers establish which outcome indicators are most important for evaluating the project. It also provides an overview of the indicators available for determining appropriate inclusion criteria.

The S.H.E.E.P. Project: History and Structure

Livestock lending projects involve donating livestock to households in a community. After the livestock produce a previously agreed number of offspring or have been bred for a previously agreed number of generations, families who received livestock return one of the offspring – usually a healthy, young female – to the organisation. The returned livestock are then distributed to a new cohort of families in the village who didn't benefit in the first round of donations. The key benefit of this project structure is its sustainability – if the livestock reproduce at a sufficient rate, the project is self-sustaining, and can grow far beyond the initial group of beneficiaries.

GMH began its first livestock lending project, S.H.E.E.P., in the rural village of Kadema in 2019, using a breed of sheep from Burkina Faso. These sheep are larger, more resistant to disease, and more economically productive than more common breeds of sheep in northern Ghana. In general, small ruminants such as sheep are very economically useful for rural households in northern Ghana. While almost all households farm some crops, and many rear fowl, fewer own larger animals. Rearing small ruminants like sheep and goats is not only economically beneficial through the sale of their meat – they also function as a way to save for large or unexpected expenditures (Adams et al., 2021). This is particularly important in an environment where access to traditional financial markets is non-existent. Livestock also offer a variety of non-pecuniary benefits, through the use of their manure as fertiliser and through their effect on soil erosion. The project also aims to empower women in the village, as primary responsibility for the sheep and for project participation rests on the female head of the household. Once a sheep is returned to GMH, the remaining sheep become the property of the female head of the household. This provides women with some independence in the management of resources in their household. Finally, the project was combined with public health information workshops open to the whole village, meaning it provided an educational benefit both to participants and the wider community. Due to difficulties associated with disease among the sheep and the covid-

19 pandemic, this project never reached the first round of re-distribution. The S.H.E.E.P. project is now being trialled again in the neighbouring village of Goldema.

The current project

Sheep were delivered to families in Goldema in September 2023. After the pregnant female sheep has given birth to two lambs, one of the lambs will be released back to GMH for distribution to another beneficiary. The livestock lending part of the project will be combined with workshops on public health and veterinary care – one such workshop has already taken place. There is also improved access to veterinary care, as the project team includes a veterinary doctor and beneficiaries will work along with the project team to ensure that sheep are vaccinated on the necessary schedule. For further care of the sheep, a dipping pond and shelter will be constructed at the home of the project local leader and village sub-chief, Nab Emmanuel Akaateba. Finally, a savings group has been established among the project beneficiaries to prepare for emergency expenditure in the future.

Methods

The main component of the research project was the development and use of two survey instruments. The first was used to interview the group of confirmed beneficiaries who received sheep in the first lending round. The second survey was an abridged version of the first survey, intended to gather data from a larger sample of households who were not included in the first round of lending. The surveys were developed in English, and translated to Buli, the language of the area. This data is used to supplement the in-depth surveys in describing the community and characterising the level of need in the village. A combined dataset of both surveys will be used to develop well-defined assessment criteria for inclusion in future rounds of the project.

The in-depth beneficiary surveys consisted of twenty-five structured interviews. The sample was provided by the Goldema village sub-chief, and participants were visited at their home. The abridged survey consisted of fifty-five structured interviews. Again, a sample of interested households in the village was provided by the village sub-chief, and participants were interviewed at their home. For all questions, the respondent was the female head of the household.

Overview of the Data Available

Table 1 presents each category of variables which are available for the entire sample, with a brief description of the variables it contains. Two of these categories have not been presented in this report but will be presented in a longer forthcoming report. Appendix 2 presents an overview of categories of variables available for only the beneficiary sample. None of these have been presented in this report, as this report focuses only on variables available for the whole sample. These will also be presented in the forthcoming report, along with more complex analyses of the data.



Figure 1 – Goldema, Builsa North, Upper East Region, Ghana

Table 1 – Overview of variables available for both samples

Category	Presented in this report	Description
Demographic data	Presented	Demographic data includes a wide range of variables, including identifiers, the age, and education of the household head, the number of dependents and workers in each family, the number of students at each level of education in a family, and the number of family members with a given level of education.
Farming	Presented	Farming data includes dummy variables indicating whether a household farms each crop and farms each animal. It also includes dummy variables indicating whether a household farm multiple crops and whether it rears multiple types of animals, whether it rears ruminants, and whether it rears fowl. Finally, it includes variables indicating how many adults of each kind of animal a household owns, and a variable indicating how many kinds of animals a household rears.
Economic Activity	Presented	Economic activity data includes variables on whether a household head or other member of a household engages in trading, what kind of trading they engage in, whether any members of the household are training for an apprenticeship, and whether the household head is a member of a susu (borrowing) group.
HFIAS	Not presented	The Household Food Insecurity Access Scale (Coates et al., 2007) is a standardised scale used for assessing food insecurity on the household level.
Access to Healthcare	Not presented	Access to Healthcare data includes a short segment from the Perceived Access to Healthcare scale (Hoseini-Esfidarjani et al., 2021), data on NHIS coverage, and data regarding the month

Demographics

The project took place in the rural village of Goldema, Wiaga, in the municipality of Builsa North, which is in the Upper East region of Ghana. There are 51 houses in the village, containing 113 households. In this context, a household is roughly equivalent to a nuclear family. This means that some of the households recorded in the data are living in the same house. In total, there are 596 individuals living in Goldema. Our sample, which was selected by the sub-chief from a sampling frame of individuals who had expressed interest in the project, contained 83 households and 435 individuals, representing 73% of households and 73% of individuals. Figure 3 shows the distribution of household sizes. Household members were all members of a nuclear family who were either dependent on or economically supporting the household, regardless of their current address. For instance, where members of the household were boarding at a Senior High School (SHS) college and were dependent on other household members, or where members of the household had migrated to other places but were still supporting the household, these were counted as full members of the household. As Figure 3 shows, household sizes are clustered around 3-7, with many households of a large size.

Figure 4 presents the distribution of ages of the female household head. The age range is 19 to 88 (see Table 1, Appendix A). The distribution is skewed towards younger ages, although there are some very elderly household heads. However, older ages were more likely to suffer from measurement error, as elderly respondents often did not know their date of birth and did not have ID or had improbable ages on their ID. In some cases voter IDs and NHIS cards differed in the date of birth given. In these cases, the NHIS card date was taken. In cases where the date of birth seemed improbable, either as identified by the respondent, or in comparison to the ages of their children (who had reliable IDs), a probable age range was established through discussion between the researchers, the respondent, and the respondent's family. A point estimate in the middle of this range was then imputed instead of a missing value. Table 1 shows the proportion of households where the female husband or partner of the respondent was present. Houses where the husband is not present are of interest to the study as these households may be particularly vulnerable.

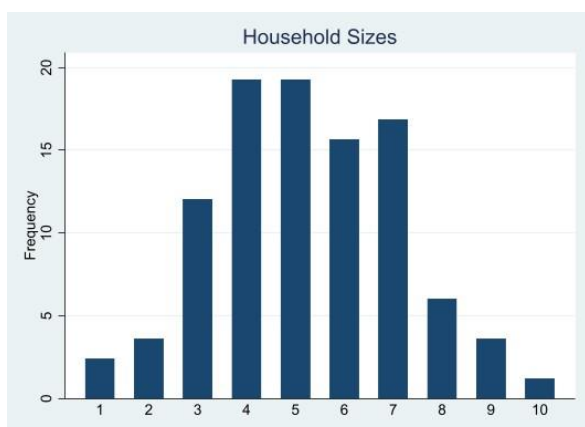


Figure 2 – Household size for all households in the sample (n=83)

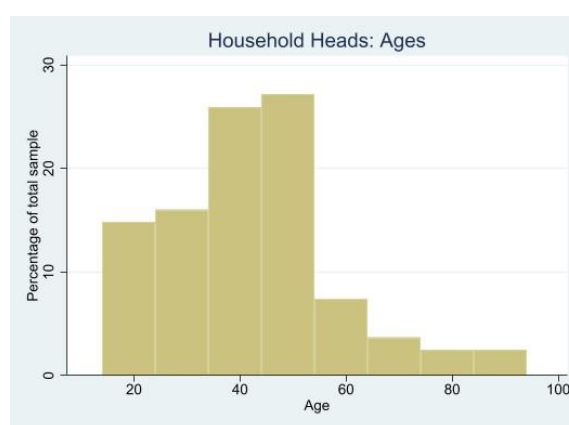


Figure 3 – Age of household heads (n=83)

Table 2 – Proportion of households where husband of the head is present

Sample	N	Mean	SD
Assessment Sample	58	79.3%	0.409
Beneficiary Sample	25	68.0%	0.476
Combined Sample	83	75.9%	0.430

Education

Figure 5 shows the education level of the household heads in the combined sample. Almost 50% of the respondents had no education whatsoever, and less than 20% have completed secondary education. Figure 6 shows a similar skew towards the left in the total adult population, with the largest group of adults having no education whatsoever. Finally, most students are currently in primary education, which likely reflects a population distribution which is also skewed to the left, given that very few household members under 18 were not enrolled in full-time education.

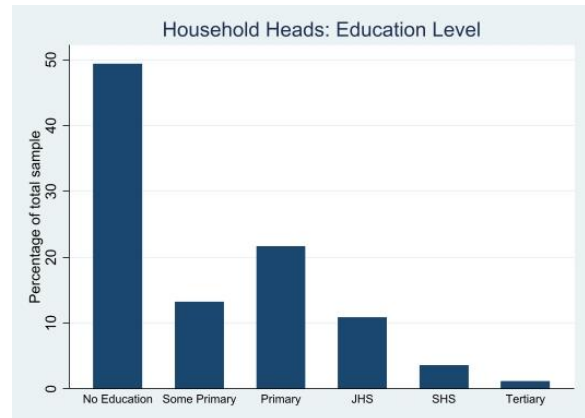


Figure 4 – Level of education of household heads (n=83)

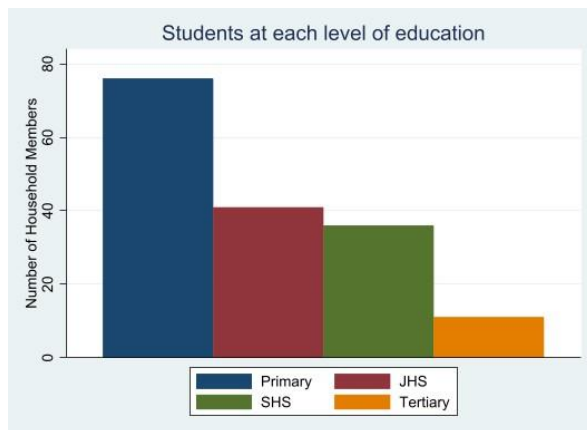


Figure 6 – Number of students currently at each level of education (n=177)

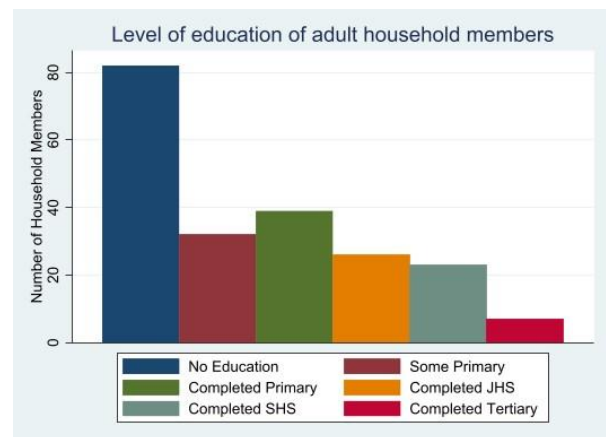


Figure 5 – Level of Education among all adult household members (n=207)

Crops and Livestock

Figure 8 shows the proportion of respondents who farm various crops. Table 1 shows that almost all households across the community engage in crop farming, with 97% of households farming crops. 81% of families farm multiple crops, while the average number of types of crops farmed per household is nearly three. Crop farming is the economic bedrock of the community, and almost all households are dependent mostly on farming for their food supply. Animal rearing is also common in the village, although only around 40% of the sample rear animals. 46% of households rear fowl of some kind, and just 11% rear sheep.

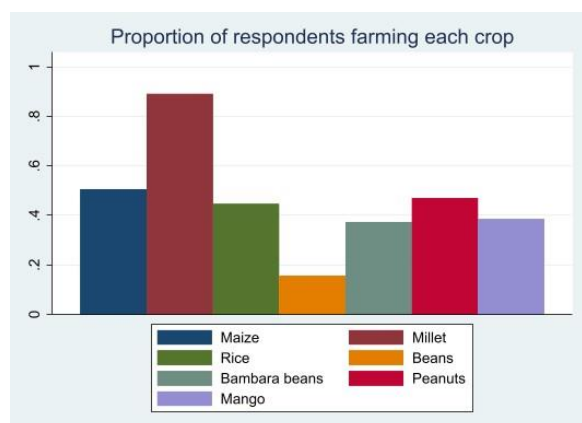


Figure 8 - Proportion of respondents farming each crop

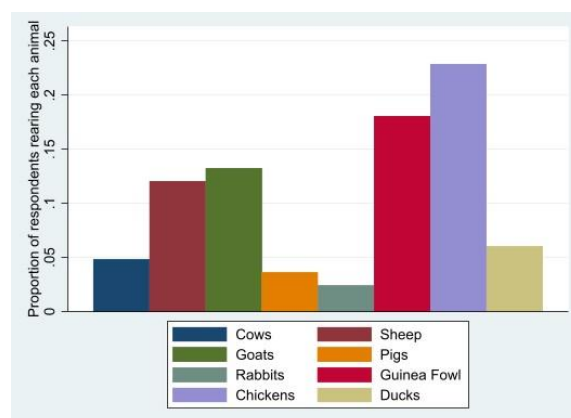


Figure 7 – Proportion of respondents rearing each animal

Table 3 – Statistics relating to farming

Variable	Obs	Mean	Std. Dev.	Min	Max
Proportion farming crops	83	.964	.188	0	1
Proportion farming multiple crops	83	.807	.397	0	1
Number of crops farmed	83	2.964	1.678	0	7
Proportion rearing livestock	82	.39	.491	0	1
Proportion rearing more multiple types of livestock	82	.183	.389	0	1
Number of livestock reared	82	.732	1.207	0	6

Trading

The average ratio of dependents to workers in the sample is 1.634, meaning for every two workers in a household there are approximately three dependents. The types of work carried out by these workers is predominantly farming, and almost no household does not engage in farming activities. However, some households engage in trading either as their main economic activity or to supplement their agricultural activity. Figure 10 shows the breakdown of trading activity across all households. Where there was more than one type of trade in a household, the trade which was reported to bring in the most income was used for this graphic. Most households do not engage in any form of trading. The most common good to trade was shea butter – this trade involves harvesting and processing the shea nut, which is used to produce shea butter. ‘Buying and selling’ is a catch-all term for trades which involve buying processed goods in bulk and reprocessing them to sell in smaller quantities. ‘Foodstuff’ involves the preparation of food for sale. Finally, skilled trades are those which require special training, usually an apprenticeship. Examples include carpentry, masonry, and sewing.



Figure 9 – Types of trades in households

Borrowing and Investment

There is almost no access to formal financial markets in Goldema. This means that physical assets, such as livestock, are important for investment and savings (Adams et al., 2021). However, 59% of household heads are members of susu groups, savings clubs where women pay a weekly fee towards a common fund and periodically borrow from this fund. There are 12 different susu groups represented in the sample, with one group having 33 members in the sample, one having four members, one having two members, and the rest having one each. Table four and five present statistics relating to the membership of susu groups in the sample.

Table 4 – Membership of Susu Groups by Sample

Sample	N	Mean	SD
Assessment Sample	58	.552	0.502
Beneficiary Sample	24	.667	0.482
Combined Sample	82	.585	0.496

Table 5 - Membership of Susu Groups by Presence of Trading in Household

Presence of trading	N	Mean	SD
No traders	47	.553	0.503
Traders	34	.647	0.485

NHIS Coverage

NHIS is Ghana’s national healthcare insurance programme. While subscription does not cover all healthcare costs, it is a strong indicator of greater access to healthcare. Combining this statistic across both samples is problematic however, as during the interviews for the assessment sample, respondents were encouraged to include individuals who contribute to the household or who are dependent on the household, but who are not currently residing in the household. This was an improvement on the interview methodology for the beneficiary survey, which did not prompt respondents to consider non-resident contributors to the household. However, this led to an increase in missing values for the Many of these were reported as missing, as the respondent was not aware of their NHIS status. This means that a comparison or combination of data between samples would not be appropriate. In order to generate an estimate of the proportion of household members with NHIS coverage, despite the frequent missing data, the number of covered household members was divided by the difference between the number of household members for whom there was NHIS coverage data. Thus, the statistic represents the number of people who have NHIS coverage as a proportion of the number of people in the household whose NHIS status the household head was aware of. The proportion is 26%, which highlights the difficulties in accessing healthcare within the sample.

Next Steps

The continued success of the project is dependent primarily on the health of the flock of sheep. This has been the focus of most of the updates to the project structure and should improve the sustainability and long-term impact of the project. However, other challenges include monitoring and impact assessment. The flock’s size and reproductive health will be monitored quarterly, socio-economic indicators will be measured on a regular basis to assess areas of progress for the participants, and participants will be interviewed to ascertain their thoughts and feedback on the programme. The data collected and presented in this preliminary report will be used to inform a more complete analysis and to inform clear inclusion criteria for the future expansion of the project.

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Appendix: Variables Available for the Beneficiary Sample Only

HWIAS	Beneficiary	Not presented	The Household Water Insecurity Access Scale (Tsai et al., 2016) is a standardised scale used for assessing water insecurity on the household level.
PAHC	Beneficiary	Not presented	The Perceived Access to Healthcare (Hoseini-Esfidarjani et al., 2021) questionnaire is used to identify issues perceived by the public as impeding their access to healthcare
SWPER Africa	Beneficiary	Not presented	The Survey-based Women's Empowerment index (SWEPR) standardised scale used to measure women's empowerment based on questions from the Demographic and Health Surveys
Borrowing	Beneficiary		Data on the currently outstanding or most recent loans (within 12 months) respondents took out from their susu group, and their amount left to repay