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WHY DOES ACCESS TO LAND AND LEADERSHIP MATTER?

Rural Vulnerability and Inequality in Eastern Sierra Leone: Findings from the Field

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Cover Photograph: A smallholder farmer from Baiwalla Village in Dea Chiefdom brushing his cocoa plantation with a cutlass; WHH, 11.05.2017

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Table of Contents

Abbreviations & Definitions

SPIRAL	Sustainable Partnerships for the Implementation of Responsible Investments in Agricultural Land
The Investor	Private sector partner providing the agricultural inputs, training, and active management of CPC's
The Project	The implementing partner brokering the relationship and agreements between the Investor and Beneficiaries
Beneficiaries	Individuals in either Target or CPC Associated Villages directly participating in the land investment, initially as farm laborers and later as independent producers under a contract-farming arrangement with the Investor
CPC	Cocoa Production Cluster
Vulnerability Assessment	The questionnaire administered to Project communities yielding the results discussed in the report
Beneficiary Mapping Exercise	Project Activity involving four questionnaires collecting village information, consent, vulnerability assessment responses, and lastly registering Beneficiaries
ITA	Investment Target Area
Target Village	Village that has pledged land for the investment and is directly participating in the CPC model
CPC Associated Village	Village providing additional, required labor for the CPC's, but has not pledged land together with the host communities
VC Data Model	Vulnerability and Capacity Data Model
UNDP	United Nations Development Programme
LOF	Land Owning Family

List of Tables

List of Figures

Executive Summary

The SPIRAL-Project (the "Project"), financed by the UK government under the LEGEND Challenge Fund and implemented by Deutsche Welthungerhilfe ("WHH") and a private-sector partner (the "Investor"), establishes and tests a fair, transparent, and inclusive business approach (the CPC model) for responsible land-based agricultural investments in the Sierra Leonean Cocoa Sector. With the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Forests, and Fisheries (the "VGGT") serving as the cornerstone of the Project, the CPC Model strengthens land tenure rights for the target communities, promotes leading farming and management practices, and establishes a mutually beneficial relationship between Beneficiaries and the Investor. In order to maximize programmatic impact, the Project conducted a Beneficiary Mapping Exercise for the selection of Beneficiaries in 13 Target and 3 CPC Associated Villages. The Project developed a unique data model to process assessment responses in order to identify the most vulnerable households in every Project village and provide a clear baseline to measure Project results throughout the land lease agreement.

Key Findings

The Vulnerability Assessment yielded numerous notable results, revealing that access to land and leadership are key to maintaining a livelihood in rural, Eastern Sierra Leone. Income, assets, and educational levels are invariably low and for almost all, related to agriculture. Cash crop cultivation and membership in a Land Owning Family are the most significant indicators to vulnerability, leaving those without access at a serious disadvantage. Of all demographic groups, female-headed households are most likely to be vulnerable because they lack equal access to land and have weaker tenure security.

Additionally, education has little influence on economic status. Of the 1,151 respondents of the vulnerability assessment, only three are commercial farmers, all of which are illiterate households indicating that education has less relevance in this environment. Very low percentages of households have at least one member that has completed primary school and upwards of 90% of all community members are illiterate. Despite low levels of literacy, parents are educating their children at increased rates and importantly, are more likely to spend money on education.

Access to leadership is also an important indication of vulnerability. The majority of respondents do not have access to leadership, meaning they do not have an immediate or extended family member holding a position at the community, chiefdom, district, or national level. Leadership is concentrated and hierarchical, with a disproportionate number of household heads serving as leaders themselves, demonstrating that power structures are inaccessible to 'outsiders' and amongst families. Most notably, leadership strongly impacts access to land and agricultural production and can serve as a stronger hindrance/advantage than economic status. Households with access to leadership are much more likely to have multiple cash crop fields and grow multiple crops than the average cocoa farmer. Leadership beyond the community is rare, confirming that there is strong decentralization of governance and insularity of the communities.

Vulnerability Assessment

The Vulnerability Assessment consists of 57 questions, covering four different dimensions: Material, institutional, nutritional, and attitudinal vulnerability. The different dimensions encapsulate a variety of factors that contribute to enduring poverty, inadequate access to food and healthcare, and social capital. The survey questions are based on other poverty and vulnerability assessments and adapted to the local context.

Material Vulnerability is represented by 26 different questions concerning income, assets, education levels, housing structure and ownership, cash crop yield, food crop yield, and household composition.
Institutional Vulnerability covers 23 questions including, organization/association membership, length of residence, diaspora connections, land ownership, number and size of cash crop fields, size of food crop fields, water source, electricity source, marital status, religion, and language.
Nutritional Vulnerability contains 6 questions considering food crop cultivation, type of food crops grown, variety of vegetables and fruits grown, whether a household has a member with an illness/disability, and type of medical treatment households seek when ill.
Attitudinal Vulnerability has 2 questions, which examine whether a household has access to leadership and at what level, as well as whether a household has management or NGO work experience.

Scope of Beneficiary Mapping Exercise

The Data Collection period commenced in April 2017 and concluded in October 2017. The Project sensitized and trained two primary field officers, who administered the assessment to all the Target and CPC Associated Villages (16 villages total) across Jawie, Luawa, and Dea Chiefdoms in Kailahun District. The Project surveyed every Head of Household across all villages, amounting to 1,151 total respondents. The survey was uploaded to handheld tablets and administered using Farmerline's data collection platform, Mergdata.

1) Aims of the Report

Sierra Leone consistently ranks among the lowest in development. Data from UNDP's 2016 Human Development Index puts Sierra Leone at 179th worldwide out of 188 countries surveyed. [1] Access to healthcare, completion and quality of education, work and employment, food security, among other factors remain a challenge to eradicating poverty and strengthening the fight against world hunger. What's more, Sierra Leone has one of the highest infant mortality rates and the highest youth mortality rate in the world, according to a WHO 2015 study.[2]

SPIRAL Project's model increases land tenure security and establishes a complementary relationship between rural agricultural communities and the Investor, which will provide training in best farming practices, access to capital and know how, ultimately meeting the Project's objectives in increasing income stability, agricultural productivity, and food security. Externally, the purpose of the report is to provide a clearer, more nuanced understanding of vulnerability as it pertains to poverty, health,

[1] UNDP, "Sierra Leone." *Human Development Reports* (2016).
[2] The Guardian, "Global Youth Mortality Rates", World Health Organization (2015).

nutrition, and social structures in the context of rural, Eastern Sierra Leone. The Assessment and VC Data Model serve as a baseline to measure impact and outcome of the Project across the four dimensions of vulnerability.

The Vulnerability Assessment also fulfills internal objectives in enabling the Project to empirically select Beneficiaries from among the Target and CPC Associated Villages. In many large-scale land investment schemes, individuals who use land but do not own it (Land Users) do not benefit from the investment. As the most vulnerable group of society, land users lose their use rights and thus often their livelihoods, while not receiving any compensation. The CPC Model, however, strives to include Land Users among the investment Beneficiaries. As such, the Vulnerability Assessment serves 1) as an instrument for the selection of Beneficiaries, and 2) as a tool for discussion of the selection results with and among the respective host communities.

2) Methodology

2.1 Assessment Approach

The Beneficiary Mapping Exercise is based on four key questionnaires:

1. The Village Registration Form
2. The Head of Household Consent Form
3. The Household Vulnerability Survey
4. The Beneficiary Registration Form

Questionnaire	Purpose	Product
Village Registration Form	Collect key information on Project Target Villages (e.g. number of households, village representatives, infrastructure and facilities, road accessibility) and inform the planning process, such as the required man-days, for the Household Vulnerability Assessment.	Village Summary Sheet Village Profiles (one for each community)
Head of Household Consent Form	Before undertaking the Vulnerability Assessment, the households are uniquely registered and asked to consent to their data being collected, stored, processed and analyzed.	
Household Vulnerability Assessment	The Household Vulnerability Assessment is administered to the heads of all households residing in Project Communities. The Assessment is the basis of all findings and vulnerability rankings.	Beneficiary Mapping Report (Project Baseline) Household Vulnerability Score Sheet (ranking of households by vulnerability) Vulnerability Score Summary (aggregated information on vulnerability levels within communities or ITA's)

		Vulnerability Profiles (detailed information on vulnerability indicators per village or ITA)
Beneficiary Registration Form	Based on the Household Vulnerability Score Sheet, the most vulnerable households are asked to appoint one Project Beneficiary each. This Beneficiary has to meet pre-defined criteria, which is verified in the "Beneficiary Eligibility Checklist". The Project registers all Beneficiaries with the Beneficiary Registration Form	Beneficiary Eligibility Checklist (list of characteristics required to be a Beneficiary) Final Selection of Beneficiaries participating in the Project

Table 1: Beneficiary Mapping Exercise Questionnaires

The SPIRAL Project developed the "Vulnerability and Capacity Data Model" to process the collected information from the Vulnerability Assessment. It is a tool to analyze vulnerability levels of Households and Communities on the basis of a set of complex metrics. The Household Vulnerability Score Sheet was used to select the households with the highest vulnerability rankings, where selections and key findings were validated in participatory community meetings.

2.2 Vulnerability Assessment Scoring

The Vulnerability Assessment questions each have a unique score and weighting, which add up to an overall, composite vulnerability score. The scoring system refers specifically to the answers that households give. Since most of the Assessment questions are multiple choice with specific answer options, the Project went through each survey question and gave a score that ranged from 1-6, with a higher number indicating higher vulnerability. For questions that require manual entry, for example, number of female and male dependents, the Project devised a scoring system based on number ranges. *Figure 1* provides an example of the assessment scoring system, with the assessment question about electricity.

Qualitative outcomes are translated into numerical scores. Citing the example in *Figure 1*, a solar system or generator creates regular access to electricity, giving it a low score of 1, whereas no electricity would be a score of 6.

Question	Options	Vulnerability Rating	Justification for Rating	Weighting	Justification for Weighting
Do you have (regular) access to electricity?	1. Yes, we have a generator; 2. we have a home solar system, 3. Yes, we are connected to a public/mini-grid; 4. Yes, we have a power-sharing arrangement with a neighbor; 5. Yes, we use a commercial charging station; 6. No, we do not have access to electricity	**1**= we have a generator, home solar system **2**= connected to a mini grid, power sharing arrangement with neighbor **4**= use commercial charging station **6**= no electricity	Ranking indicates the accessibility and reliability of electricity	0.8	Electricity, while not a vital resource like water, is an important resource. Variability, productivity, and reliability of access to electricity demonstrate capacity or vulnerability

Figure 1: Vulnerability Assessment Scoring

Due to the subsistence/agrarian setting of the communities, the Vulnerability Assessment is specifically designed to capture vulnerability in rural contexts, concentrating a significant amount of questions on land ownership and agricultural activities. In order to avoid over-inflation of vulnerability scores of households that are landless and/or do not participate in agricultural activities, scoring includes a 'skip' option, which gives respondents a score of 0.0.

The Project utilized a similar approach for the weighting system. Based on how important or significant a question is considered to vulnerability, the scores for a question receive a high or low weighting, ranging from 0.1-1.0. Again, using the example in *Figure 1,* access to electricity is deemed an important resource and therefore receives a weighting of 0.8. In contrast, the number of people in a household that has completed tertiary education, another question from the assessment, receives a low weighting of 0.2, since higher education has less effect on vulnerability in rural settings. Regardless of how the head of household responds, their score is multiplied by the weighting, creating the differences in levels of vulnerability across households.

51 out of 57 questions were scored, weighted, and used for analysis in the VC Data Model. For reasons outlined below and to ensure the validity of the vulnerability scores, the questions regarding monthly income, monthly expenditures, the months of highest and lowest reported income, and number of male dependents were excluded from analysis. When referencing the number of questions used in the survey, 51 is the only number to be considered moving forward.

2.3 A Note on Survey Administration

Data Collection, although overall successful, was prolonged due to unanticipated events in the communities. While the field staff was trained to administer the Vulnerability Assessment and completed debriefings with the Head of Project and Regional Liaison Officer after data collections, three key survey administration issues arose.

First, nearly half of the respondents registered were female-headed households, which indicated an error since most head of households are male. Upon further inquiry, it was discovered that many of the women registered as the head of households were 'stepping in' to answer the assessment questions in place of their husband or adult son who were not home at the time of administration. Accuracy regarding the sex of the head of household is significant to the Project's understanding of how gender interacts with vulnerability, given the marginalized status of women in Eastern Sierra Leone. The total number of female respondents is 435. For those reasons, the Report defines female-headed households as those headed by widowed, single, or divorced women, of which there are 172. It is possible, though quite rare, for a married woman to be a head of household; for reasons stated above, households which may truly have had a married woman as their head are counted as male. Creating an additional validity check in the assessment for the head of household would further prevent these errors in the future.

Secondly, a portion of households intentionally split their household into two, creating duplicate registrations. These multiple registrations were uncovered later into the data collection period. Project-led community meetings revealed that the community members believed they would be receiving rice for registering and completing a Vulnerability Assessment. After this discovery, the Project held additional meetings in the villages clarifying the purpose of registration and the Vulnerability Assessment while identifying the split households and deleting the duplicated household's information. Thirdly, the Project also discovered that some individuals not living in the Project villages and temporary workers had registered. The Project was able to identify which individuals they were and exclude their information. The SPIRAL Project operates with a high level of transparency and utilizes a participatory approach, however, more awareness meetings in Project villages and the larger community would have created a more reliable and valid dataset.

Even with these minor shortcomings, the Beneficiary Mapping Exercise employed best practices in a challenging environment and has a sound methodological approach, making the following results both valid and reliable. The dataset taken as a whole is comprehensive and sentient to small differences among a largely homogenous sample.

2.4 A Note on Survey Questions: Knowledge of Land, Farming, and Income/Assets

After the initial data collection, a few key questions yielded either unreliable or invalid responses that ultimately led the Project to lower the weighting for the questions making them less significant (reference Methodology), or exclude them entirely from the VC Data Model. The questions that are completely disregarded are average monthly expenditures, the average monthly income, and the months that generated the highest and lowest amount of income for households. After preliminary analysis, it was clear that respondents either underreported monthly income for reasons discussed below and/or do not know what their monthly income is. The poverty line in 2016, defined by the World Bank and IMF, was $1.90/day per person. [3] In Sierra Leone, that would equate to roughly 400,000-500,000 SLL monthly per person. Despite these figures, a significant portion of people stated that they spent less than 50,000 SLL per month, 10 times less than the international poverty line. In

[3] *Development Goals in an Era of Demographic Change*. (Washington DC: The World Bank, 2016).

some cases, international standards are not best suited to capture reality on the ground; Hans-Peter Mueller, an expert on Eastern Sierra Leone, reports that 80,000-90,000 SLL per month is a more appropriate estimate for the average farming household.[4] Still, community members also reported much higher spending than earnings, leading the Project to conjecture that most community members did not want to disclose their finances to outsiders or perhaps exaggerated in order to improve their chances of being selected to participate in the Project. Finally, collecting financial information is challenging in a subsistence, agrarian setting. Income and livelihood activities do not exclusively operate in hard currency and payment in kind is common practice, complicating the notion of 'income'.

While unreliable financial information necessitated exclusion from the VC Data Model, other significant factors relating to land ownership and cash crop cultivation yielded slightly invalid, yet important information. For that reason, these factors remain in the VC Data Model albeit at lower significance. Of foremost importance, communities reported on average 6-10 acres of family land, a figure much smaller than anticipated and reported by the communities. Our Site Identification Exercise confirmed that few Land Owners understand how much land they own. As a result, the question of land size is left out of the results and analysis below. For similar reasons, the Project treated cash crop field size critically as discussed further under Cash Crop Cultivation.

2.5 VC Data Model

The VC Data Model calculates vulnerability scores for each dimension and a composite score for every household. The VC Data Model contains the household Vulnerability Assessment responses and tables that contain the unique scoring and weighting for each question, all of which references one another to produce a score. For every question, there is a series of seven calculations. *Figure 2* demonstrates the steps to calculate a score for the assessment question "How many members have completed Primary/Adult-Literacy Education?" for six different households. Each question in the assessment has a possible score range between 1-6, yet a different maximum and minimum score. For example, the question asking whether a household grows food crops has a minimum score of 1 and a maximum score of 6. However, the next question, which types of food crops are grown, has a minimum score of 1 and a maximum score of 3. There are different minimum and maximum scores to more accurately reflect the specific answer options for each question. For example, primary education levels contain the full range of scores (1-6) because it has more answer options (ratios) and has a higher significance, whereas the question 'type of food crops' has only four possible answer options. Because of the varying minimum and maximum scores for each question, there are two steps that calculate the actual score of the respondent and the maximum possible score for the question. In the example in *Figure 2*, the maximum possible score is 6. Having a basic educational level is significant to vulnerability, thus it receives a weighting of 1.0. The next column calculates what the actual maximum weighted score would be for the question; in other words, the maximum score multiplied by the weighted value. The *Answered* column references whether a respondent answered a question or not. As mentioned previously, households could receive a score of 0 if a question was not applicable to them. A respondent who does not grow cash crops, for example, would receive a score of 0 for questions about size of cash crop fields and yield.

[4] Hans-Peter Mueller. Personal Communication. (2017).

15. Ratio Primary Education to Adults in HH	Q15_Dimension	Q15_Actual Score	Q15_Max Score	Q15_Weighting	Q15_Max Weighted Score	Q15_Answered	Q15_Actual Max Weighted Score	Q15_Actual Weighted Score
0.142857143	material vulnerabi	5	6	1	6	1	6	5
0	material vulnerabi	6	6	1	6	1	6	6
0	material vulnerabi	6	6	1	6	1	6	6
0.25	material vulnerabi	4	6	1	6	1	6	4
0.2	material vulnerabi	5	6	1	6	1	6	5
0	material vulnerabi	6	6	1	6	1	6	6

Figure 2: VC Data Model

The last two columns in the 7-step calculation are the most important. The *Actual Maximum Weighted Score* takes into account the previous column—whether a respondent has actually answered the question or received a score of 0. The *Actual Weighted Score* is the true score for the question. The composite vulnerability score is the sum of the *Actual Weighted Scores* for every question, divided by the sum of the *Actual Maximum Weighted Scores.* This approach minimizes score inflation by avoiding repeated penalization for households that do not possess certain things or participate in specific activities, and therefore cannot provide responses for subsequent questions.

3) Project Communities

The Target Villages and CPC Associated Villages are located in the Eastern Province in Kailahun District.

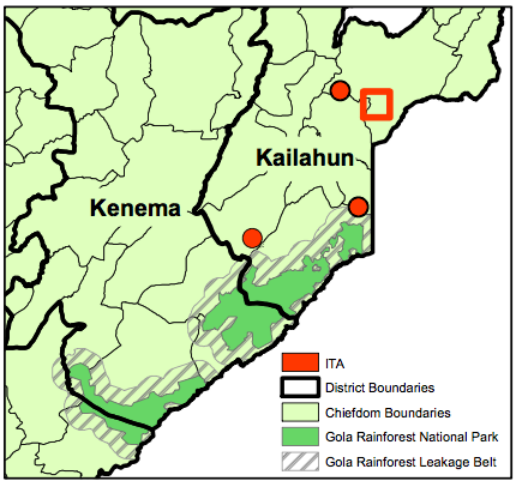


Figure 3: Kailahun District

There are four ITA's in three different chiefdoms: Jawie, Luawa, and Dea. The villages lie within one of the most rural districts in Sierra Leone, sharing borders with Guinea to its North and Liberia directly east. Project communities are in the heart of the cocoa and coffee growing region in Sierra Leone, with many households engaged in cash crop farming and other agrarian activities. Agribusiness also continues to be influenced by the mineral and resource-rich environment of the Eastern province. Mining and forestry are prevalent and usually coupled with farming activities. *Figure 3* shows the locations of the four ITAS's, highlighting ITA Wegornyama in Luawa chiefdom.

4) Socio-demographic Background of Heads of Households

A total of 1,151 individuals participated in the Assessment. The average age of the Head of Household is 38 years and 75% of the heads are male. The average household size has 5.11 members with slightly more men than women. 66% are monogamously married, 16% polygamously married, 5% are single or divorced, and 13% are widowed. Most people practice Islam (94%) and speak Mende as their primary language (93%).

5) Score Profile of all Communities

Among all respondents, the average vulnerability score is 0.59 and the median is 0.58. The proximity of the average and median indicate that the average is a valid figure, not skewed by outlying scores. *Figure 4* further elucidates some of the key statistical findings for the entire dataset. Despite a range of 0.41, there is a low standard deviation (0.05), indicating that all communities, despite differences in size and location, are very similar. Notably, the scores have a normal distribution albeit, a taller, narrower curve. The shape of the bell curve shows a higher concentration of scores around the average, meaning data is quite homogenous. Typically, a normal distribution has 68% of scores within one standard deviation, however, a larger concentration of the scores (78%) fall within one standard deviation, clustering around the average. Overall, the communities experience high vulnerability and in a very similar manner.

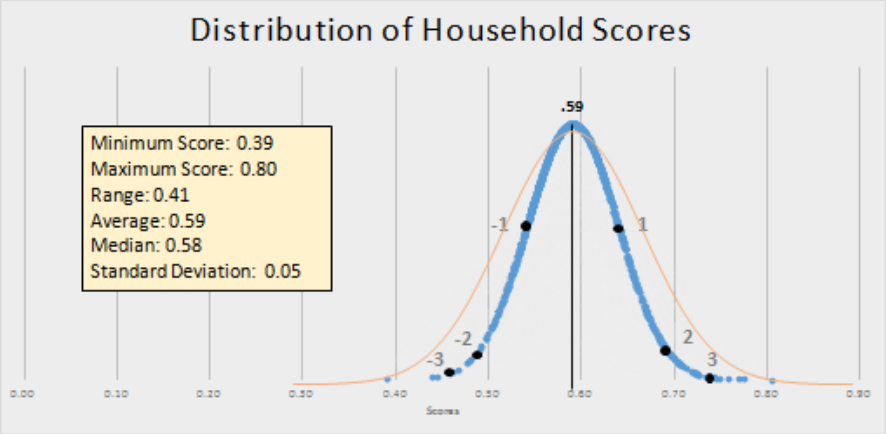


Figure 4: Score Distribution

Given the high concentration of scores around the average, the Project defines scores falling below one standard deviation of the average as the *Least Vulnerable Group* (0.39-0.53). Scores above one standard deviation are among the *Most Vulnerable Group* (0.65-0.80). *Figure 5* illustrates the breakdown of the three vulnerability groups. As well as a high cluster of scores around the average, there is a higher percent of respondents that fall above rather than below one standard deviation. In other words, there are more people among the most vulnerable than the least vulnerable.

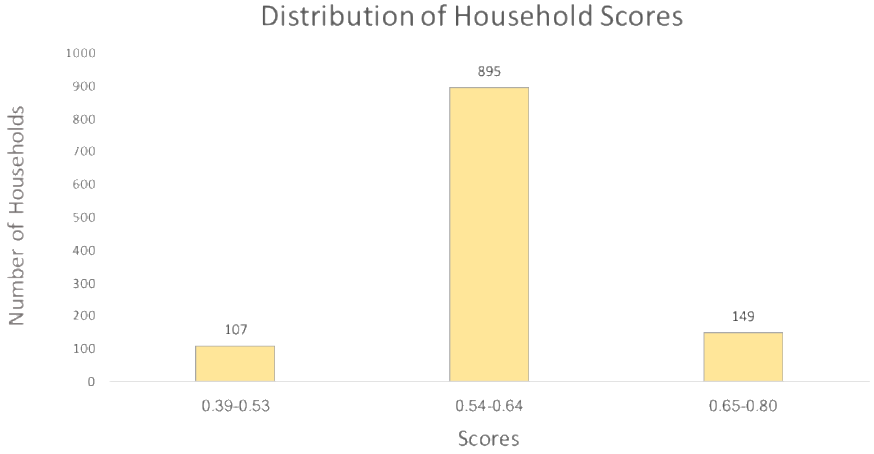


Figure 5: Breakdown of Scores by Vulnerability Group

Figure 6 shows the geographic breakdown of scores by vulnerability group for each Target and CPC Associated Village. Most villages have households falling into the middle range of scores, however, a few villages demonstrate unique patterns. ITA Gassimani, with villages Pewama, Kamatahun, Bandajuma, and Gunsua, has the highest share of respondents among the most vulnerable. ITA Gassimani is the most remote of all Project areas and notably, is the only one to have never seen an NGO intervention. ITA Gassimani's concentration of highly vulnerable households can in part be attributed to its isolation and insularity.

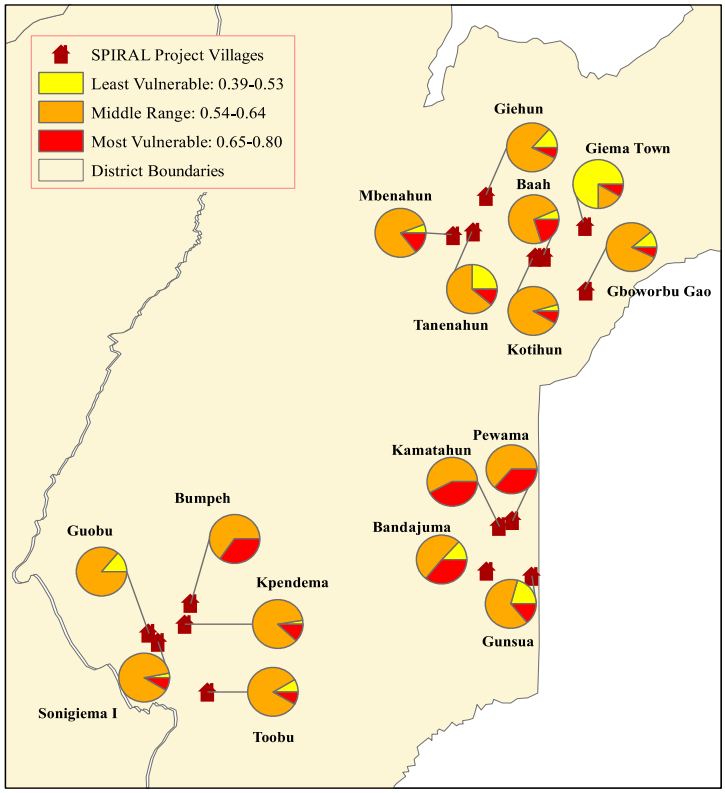


Figure 6: Project Communities by Vulnerability Group

Giema Town, in ITA Wegornyama, has the largest share of households in the least vulnerable group. The village is quite small, with only 12 households, making any conclusions about vulnerability less reliable.

6) Vulnerability by Dimension

Although vulnerability is consistently high across all communities, the four different dimensions exhibit unique patterns. Material and attitudinal dimensions are the most vulnerable and institutional and nutritional are the least (seen in *Figure 7*). With uniformly high composite vulnerability scores, it's unexpected that there would be such large differences between dimensions, especially since the factors that constitute each dimension are invariably linked to each other. Extricating each dimension reveals some of the shortcomings regarding the Vulnerability Assessment and in part contributes to the large inter-dimensional differences (outlined below). At the same time, the discrepancies themselves capture a more complex, authentic narrative about the lived experiences of community members; the assessment captures how communities are vulnerable, but also the ways in which they have capacity and capacity-building factors.

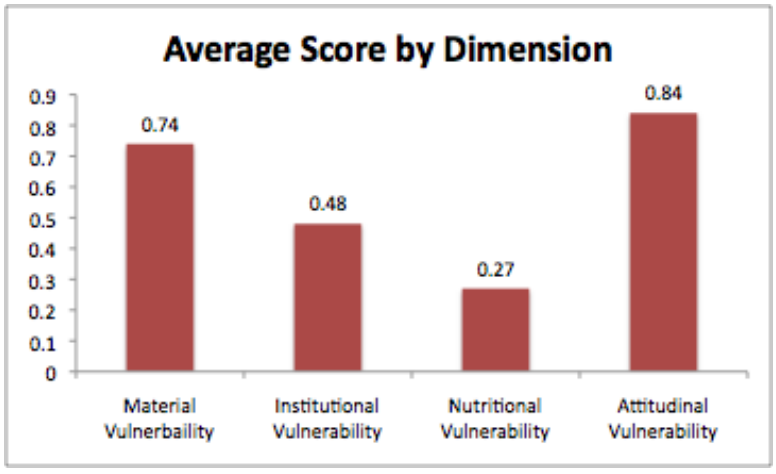


Figure 7: Average Vulnerability Score by Dimension

Material Vulnerability is the most *consistently* high dimension across all communities. While Attitudinal Vulnerability has the highest average score, there is a much larger standard deviation (0.22) and median (1.00), meaning there are frequent outliers. Material Vulnerability, on the other hand, has a median of 0.73 and a low standard deviation (0.05), signifying a valid average and little variation in scores between households. Income, assets, and educational levels are invariably low and for almost all, related to agriculture.

In comparison, Institutional Vulnerability has a remarkably lower average of 0.48 and a median of 0.47. Like Material Vulnerability, the average and median are nearly identical with only a slightly higher standard deviation (0.08). Since the cumulative score distribution and Material Vulnerability are generally high and most households are vulnerable, the Project expected to also see high Institutional Vulnerability. While households have low incomes, educational levels, and similar assets, there are also capacity building factors, such as membership in a Land Owning Family, membership in an organization/association, connections to diaspora abroad or in a city, food and cash crop cultivation, etc.. These institutional factors build capacity; however, their potential is not fully being utilized. In other words, just because 84% of households are in a farming association doesn't mean they actually coordinate and cooperate with one another. Similarly, membership in a Land Owning Family doesn't ensure that households will have larger or more fields, in fact, it does not (discussed at greater length under *Land Owning Families*). Overall, it may be said that while many households have factors that build resilience, they are not being capitalized upon, which explains the discrepancy between Material and Institutional Vulnerability.

Nutritional Vulnerability has the lowest average at 0.27 and a median of 0.21. The standard deviation is higher (0.12), indicating greater diversity in responses. Nutritional Vulnerability is the least vulnerable dimension for a few reasons. First, there are only six questions in this dimension, most of which pertain to fruit and vegetable production. Households that grow vegetables and fruits tend to grow a large variety, giving households a lower score (to be discussed under *Food Crop Cultivation*). Additionally, few households in the dataset actually grow vegetables and fruits, making the dimension appear lower. Because of the skip condition, Nutritional Vulnerability only considers those households which tend to have higher productivity. As a result, the overall average is lower, despite higher Material and Institutional Vulnerability. Lastly, two questions ask about healthcare. Almost all households reported going to a hospital or PHU for medical treatment and reported not having family members with illnesses, further lowering scores. The assessment falls short of its potential regarding this dimension and could be considerably improved by factoring in other indicators (e.g. dietary recall). However, the brevity of questions is a trade-off for the magnitude of the survey and scope.

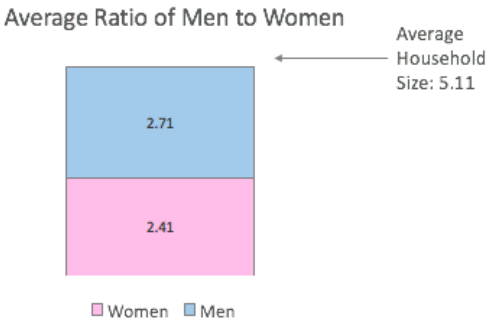
Attitudinal Vulnerability has the highest average at 0.84, with an even higher median 1.0. The standard deviation (0.22) is also the highest among the dimensions. Attitudinal Vulnerability only contains two questions: access to leadership and whether a household has management/NGO work experience. Almost all households do not have a member who has worked for an NGO and a majority of households do not have access to leadership. Because there are only two questions, Attitudinal Vulnerability is the least reliable dimension and is not considered further.

7) Results & Analysis

The Project examined all of the factors included in the VC Data Model for interactions and relationships with one another. The section below presents only the findings that are significant and relevant.

7.1 Household Composition and Characteristics

The average household has 5.11 members. On average within the household, there are slightly more female dependents (2.16) than male dependents (1.95), although the gender ratio is imbalanced. There is a male bias within communities (refer to *Figure 8*), since populations that express no gender preference should have naturally more women than men. The households tend to be young and the average age distribution in a household has more children than adults (18+), with 55% of all household members below 19 years of age.



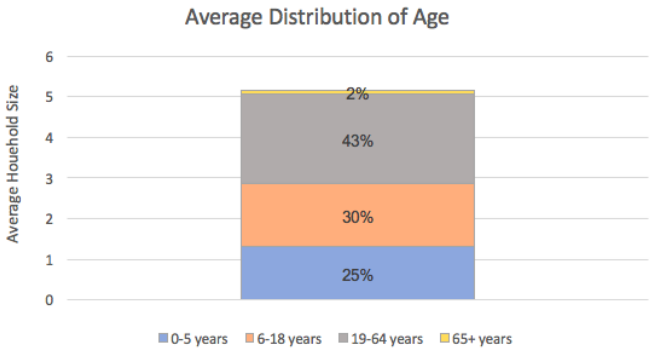


Figure 8: Average Number of Men to Women in a Household

Figure 9: Average Distribution of Age in a Household

One interesting finding from Household Composition concerns household size. The Project predicted there would be a relationship between household size and vulnerability. Arguments can be made of the benefits and drawbacks of a small or large family in this setting. For example, having more children provides added labor to help with household chores and farming. At the same time, having more children creates more food, health, and educational expenses. Despite the Project's speculation, there is no relationship between size of household and vulnerability score. In fact, 11% of the least vulnerable households have 10+ members. Additionally, single, widowed, and divorced household heads, irrespective of gender, have an average household size of 4.5, only slightly smaller than the overall average of 5.11 members. Despite similar sizes among single households and the baseline, female-headed and single, male-headed households are much more vulnerable (0.63 and 0.61 average scores, respectively).

The personal characteristics of households (religion, marital status, and language) are described in Chapter 4, *Socio-demographic Background of Head of Households*. As mentioned, almost all (94%) households are Muslim, 65 (6%) are Christian, and 2 (>1%) follow Traditional Beliefs. The results from the Project align with other research findings. Even though there is a strong religious majority, there is no relationship between vulnerability and religion. Sierra Leone is internationally recognized for its religious tolerance and interreligious marriage, as well as blending of religious practices.[5] However,

[5] "Freedom House."Freedom in the World: Sierra Leone.", (2016).

language, specifically speaking a minority language, is associated with higher vulnerability (average score 0.65). Minority languages are defined as languages other than Mende, since Kailahun District is predominantly composed of the Mende tribe. Minority languages cited by households in the Vulnerability Assessment include, Gola, Gola-Mende, Kissi, Sherbro, Limba, Fullah, Gbandi, Gbandi-Mende, Kormende, Madingo, Temne, and Arabic.

The majority (76%) of linguistic minorities was born in their village or is well established meaning most are *not* strangers deprived of access to land and an economic livelihood. In fact, 81% (in comparison to the baseline of 91%) belong to a Land Owning Family, though it's possible that the land they are entitled to is not within the community itself. During Site Identification, some community members/households reported owning land miles away from their village. Instead, being a linguistic minority suggests segregation within the village. It's possible that families living in an area dominated by another tribe learn the majority language. The Project found anecdotal evidence supporting linguistic adaptation among minority tribal groups. The fact that there are linguistic minorities then, reveal a degree of segregation along tribal lines. That linguistic minorities are much more likely to be vulnerable, indicates weak intra-community integration, leading to social and political exclusion. The most significant indicators of exclusion include agricultural production, diaspora connections, and access to leadership.

To start, minorities have overall lower food and cash crop production than the baseline (the Mende-majority and baseline have indiscernible differences). 78% of minorities grow food crops compared to 86%, with the largest differences in upland rice and vegetable fields; 72% grow upland rice (baseline 80%) and only 13% have vegetable fields (baseline 21%). Furthermore, there is a 10-point difference in cash crop cultivation. While 79% of all households grow cash crops, 69% of minorities do, with lower numbers of cocoa production. Lower rates of agricultural production demonstrate less-equitable access to land than the average Mende-speaker, challenging their livelihood and increasing vulnerability. Secondly, only 18% of linguistic minority households have immediate family members in a city or abroad, as compared to 39% for Mende-speakers and a baseline average of 38%. Extra-local connections signify larger networks leading to greater access to information, people, and remittances. In addition to smaller networks, minorities have less access to governing structures. Only 17 (20%) households have access to leadership, all of those households being leaders themselves. This indicates linguistic minorities are more excluded from leadership and power structures overall, however, leadership within linguistic minorities is highly concentrated and hierarchical, making it largely inaccessible to outsiders. An example in action is discussed below under *Profile of Bandajuma*.

7.2 Female-Headed Households

172 (15%) respondents are female-headed households—households that are headed by single, divorced, or widowed women. Overall, female-headed households are more likely to be vulnerable, with an average vulnerability score of 0.63. Not only do they have a higher average score, but they also have a high concentration among the most vulnerable group. *Figure 10* draws a comparison in the distribution of scores for female-headed households and the complete dataset.

Figure 10: Distribution of Scores for Female-Headed Households vs. Distribution of Scores for All

Female-headed households are more likely to be vulnerable because they lack greater access to land and have weaker tenure security. While 146 (86%) are in Land Owning Families, only 69% have food crop fields (baseline 86%). Of those, 100 (58%) grow upland rice, in comparison to 84% of male-headed households and 80% of all households. 33 (19%) grow vegetables and only two grow fruit. Given that food crops are considered to be the "women's domain" and a majority are in a LOF, it's surprising that they have lower rates of food production. This finding reveals how female households have less access to land and encounter additional barriers specific to being a woman; comparatively, single male households have higher rates of food production, yet similar family size (average household size for both is 4.5).

Female-headed households also grow permanent crops at lower rates, weakening tenure security and rights. Tenure security is determined under customary law, which makes the provision that permanent crop fields essentially pass into private ownership. For example, a smallholder farmer with permanent crops has a lifelong user right which can even devolve to his direct descendants. When households have permanent crop fields it considerably increases their tenure security. IVS Rice and Cash Crop production are important to tenure security since they are permanent crops with long life spans and, while more labor-intensive, survives for years. Among female-headed households, only 19% grow inland valley swamp (IVS) rice, whereas 30% of male-headed households and 29% of all households have IVS rice fields. Moreover, 63% have cash crop fields compared to 79% of all respondents. While it is clear that female-headed households have less access to land and weaker land security, there is no information or evidence to suggest how they secure their livelihood and any conclusions to be considered necessitate further research.

To reiterate, female-headed households have lower rates of food and cash crop production than their male counterparts and the overall dataset, despite having membership in a Land Owning family. The results indicate a community bias against female-headed households, challenging their access to land and agricultural activities. Since agriculture is the main economic domain, the propensity of female-headed households to be more vulnerable is strongly related to the barriers they face in gaining access to land.

7.3 Economic Status

Across all villages, households experience consistently high economic vulnerability. Significantly, 1,092 (95%) respondents feel their income is unstable or very unstable and there is a large share of households with a low economic status; 792 (69%) have debts, 317 (28%) have neither savings nor debts, and 42 (3%) have savings. The Project considered whether having debts would negatively impact economic status. In an agrarian setting where these communities reside, it may be less desirable to have savings and more worthwhile to immediately reinvest or borrow assets for agricultural activities. The results reveal that households in debt do in fact have on average 3.7 productive assets, while those with savings have 2.8. However, the greatest difference in assets listed by households in debt versus households with savings is physical labor. 83% of households in debt considered manual labor to be a productive asset, while only 21% of households with savings did. The difference then indicates that households with savings do not need to engage in manual labor themselves as a way of generating income. Furthermore, if households in debt were reinvesting, one would expect to see higher levels of agricultural production. As it is, those in debt have rates of food and cash crop cultivation slightly lower than the baseline for all crops and households with savings have slightly higher or the same. It is clear, having debts in these communities is a negative influence on economic status.

Many households have the same sources of income, which are predominantly agricultural activities, namely sale of cash crops and food crops. *Figure 11* illustrates the economic activities that households cited as sources of income, with 3.12 being the average number of sources per household.

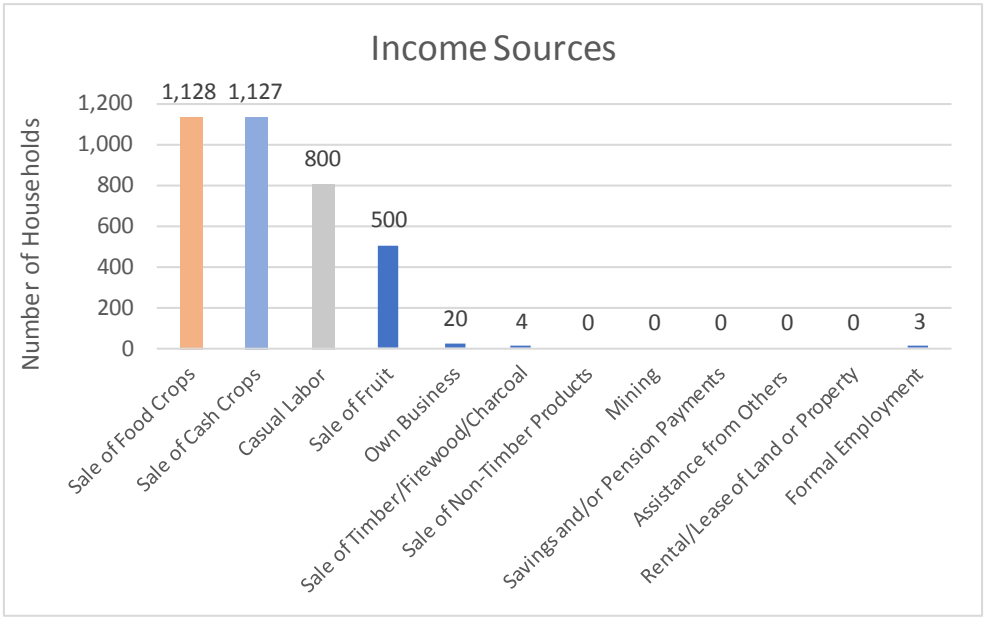


Figure 11: Economic Activities Cited by Households

Questions concerning actual reported income and expenditures are not explored further for reasons discussed under Chapter 2. To reiterate, households likely did not want to disclose their income to Project staff, underreported their income, and/or do not know what their monthly income and expenses are.

As indicated under the material dimension, economic vulnerability is very low and homogenous, where most people have unstable finances, status, and similar income sources. Since most people are highly economically vulnerable, the Project examined the households with savings and those who reported having a stable income. Interestingly, these two factors do not generally overlap. Households that reported a stable income are much more likely to have neither savings nor debts, or savings. At the same time, very few households with savings feel their income is stable. The relationship between stability and households with savings vs. households with neither savings nor debts suggest a divergence in how finances are viewed and money is spent. Households with neither savings nor debts, have on average nearly the same amount of productive assets as those with savings. However, 45% of the 317 households with neither savings nor debts have small livestock (chickens, goats, sheep, pigs), compared to 3% of those with savings and 21% of households with debts. One can conclude then, that savings serve as a security mechanism against a sudden loss of income, while having neither savings nor debts indicates households are more likely to immediately reinvest their resources. Since there is unreliable information on income and expenditures, it cannot be concluded whether households that reinvest fare better and are more resilient than those who save their money, and whether a crisis would impact households with neither savings nor debts more negatively.

Income stability and economic status (debts/savings) also have distinct factors that each contribute to a household's capacity. Significantly, households with savings grow a greater diversity of crops. While only 24% of all households grow more than just rice, 69% of households with savings grow rice *and* either vegetables or fruit. These households have greater diversity of income than the rest of their community members and the means to meet high agricultural input and labor costs associated with vegetable cultivation. Whether households obtain greater financial resources elsewhere to invest in farming activities or the diverse agricultural activity base generates more income which could later be invested, is unclear; greater research into this finding is required to better understand the relationship between savings and higher agricultural activity.

Of the 59 households that have stable incomes, marriage, particularly monogamous marriage, is a significant factor. 56 (95%) of the households are married of which 70% are in a monogamous marriage. Married households, in contrast to single-headed households, have more adults, which can complete household chores and income-generating activities. There are multiple adults in a polygamous marriage; however, the economic responsibility of caring for multiple households may strain resources, where they would be concentrated in a monogamous marriage.

It might be expected that education is the most important determinant of economic vulnerability; a more educated populace leads to greater overall development and is a deterrent of poverty. However, education has a minor influence on economic status in a rural environment -- only 29% of households with savings have at least one member that has completed primary school or adult literacy education, which is slightly above the overall average of 21%. Interestingly for households with stable incomes, the figure is higher (39%). Even though both these figures are above average, it's important to recognize that overall, educational levels are very low, even for the more economically resilient.

7.4 Education

There is a low level of education across every village. *Figure 12* illustrates the number of households that have at least one member that has completed primary/adult literacy, secondary, and tertiary school and households that have at least one child in school. As previously mentioned, only 237 (21%) households have at least one family member that has completed primary school. In other words, 79% of households are completely illiterate. The figures below are based off the answers provided by the 1,151 heads of households. However, using absolute figures reveals a more extreme situation. There are 5,882 individuals total (the heads of households plus members of their household), of which only 363 have completed primary school. In other words, 94% of all Project-associated individuals have no education. These figures are only fractionally lower for the number of people 6+ years with a primary education at 90%.

The number of people who have completed secondary or tertiary education is even smaller. Only 55 people have a secondary education with 39 households (3%) having at least one member who has completed secondary school. Six people have completed tertiary school, across 5 households (0.4%).

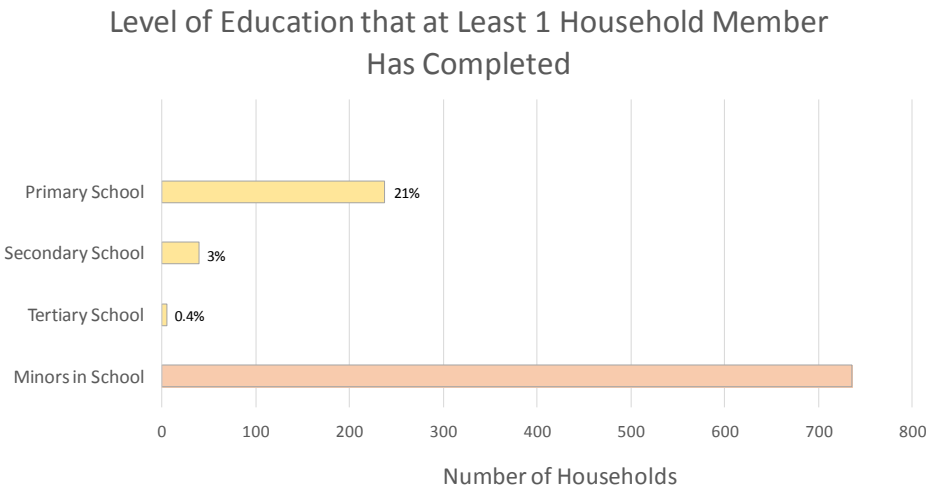


Figure 12: Level of Education at Least One Household Member Has Completed

The number of households with at least one child in school is much higher than the share of adults with education. 1,100 households have school-aged children and of those, 64% have a child in school. There is no difference in vulnerability between households with children and those without. Although there is a greater number of households educating their children, only 1,268 (38%) of all school-aged children are attending school. These figures remain low, but demonstrate a positive trajectory when compared to adult literacy levels - parents are educating their children at increased rates and importantly, are more likely to spend money on education. The results show that 83% of all households with savings have at least one child in school, with half of all their children enrolled, indicating that households with a better economic status typically spend their money towards educating their children.

Despite the importance of education, it has a minor impact on vulnerability scores. Generally, rural agrarian communities working within a subsistence economy have low levels of higher education, which is consistent with the current results. Primary Education and Adult Literacy, however, is thought to have greater importance economically, politically, and socially. In spite of this, there is not a

significant difference in vulnerability scores for households with literate members and households that are completely illiterate. Illiterate households have an identical score (0.59) to the baseline, while households that have a primary education have an average of 0.55, still within one standard deviation of the average. What's more, all three of the commercial farmers identified across the ITA's are illiterate households, further demonstrating that education has less relevance in this setting. The Project postulates that households with greater education may not find farming to be a desirable income-generating activity, earning money in other economic domains. For the same reasons, there is a shortage of educated people because they migrate to cities to pursue other, more coveted sectors in cities.

7.5 Land Owning Families

In Eastern Sierra Leone, land ownership and use fall under a customary land tenure system, encompassing various levels of traditional authority over family land. In this context, a Land Owning Family (LOF) is a group of households deriving from the same paternal lineage that have some type of access and ownership to a prescribed area of land. These families range in size, sometimes comprising an entire village with various representatives and a custodian. In some cases, households that are not technically a part of a LOF curry favor with Master Families and Village Elders, gaining access to land, protection, and de facto membership in a LOF.

Membership in a LOF is critical for access to land and social networks; without it, households struggle to participate in an agriculture-based economy and access power structures. Not surprisingly then, membership in a LOF is one of the most important indicators of vulnerability. 1,050 (91%) households are in LOF. The differences in vulnerability between households in a LOF and those that are not, are tremendous. Households not in a LOF have an average vulnerability score of 0.67, compared to households in a LOF with an average score of 0.58. Economic status, tenure security, and access to leadership contribute to the nine-point difference in vulnerability scores. *Table 2* displays a few of the key differences.

Indicators	Households in a Land Owning Family	Households Not in a Land Owning Family
Cash Crop Cultivation	85%	20%
Food Crop Production	88%	64%
IVS Rice Cultivation	30%	14%
Percent in Debt	68%	80%
Access to Leadership	47%	14%

Table 2: Key Differences Between Households in a LOF and not in a LOF

It is clear that membership in a LOF is a capacity-building factor and those lacking access are at a severe disadvantage; households not in a LOF have much lower rates of cash crop cultivation and IVS rice fields, verifying that they experience weaker tenure security. Differences in access to leadership and economic status are self-evident. Nevertheless, being a member of a LOF does *not* mean households have more or larger cash crop fields. The average size and number of cash crop fields among households in LOF and the baseline is low in comparison to the benchmark prescribed by the Project. Cash crop cultivation and field number and size are discussed in greater detail below.

7.6 Cash Crop Cultivation

Like the indicator Land Owning Families, cash crop cultivation is one of the most significant indicators of vulnerability. 910 (79%) households grow cash crops, of which 781 (86%) cultivate only one type of crop. The Assessment asks specifically about cocoa and coffee, which are primary cash crops in Eastern Sierra Leone. Households that grow cash crops predominantly (99%) grow cocoa. Only 134 (15%) grow coffee. A majority of households grow cash crops, and like membership in a LOF, cultivation is a capacity-building factor; households with cash crops have an average vulnerability score of 0.58. Comparatively, households that do not have cash crop fields have an average score of 0.65.

Even though cash crop cultivation is critical to higher or lower vulnerability, households that do grow cash crops consistently have small coffee and cocoa fields. Using the Sierra Leone Ministry of Agriculture, Forestry, and Food Security's Agriculture for Development (A4D) Project as the Project benchmark for average cocoa and coffee field sizes, the data model yields consistently high scores (smaller holdings) for cash crop field size. The A4D Project found that the average cocoa and coffee holding in Sierra Leone is 6 acres.[6] Like land owners, farmers presumably also struggle to correctly estimate the size of their holdings and one must be reticent when considering both the A4D benchmark and Project results. Results from the Project indicate a household's average cocoa field is 2.47 acres and coffee field is 1.44 acres. In comparison to the A4D and Project standard, the average field is much lower and small cash crop holdings are pervasive; 95% of households have 4.5 acres or less of cocoa and 99% have 4.5 acres or less of coffee.

Figure 13 shows the number of cash crop fields that households cultivate. A majority (53%) of households has 1 cocoa field and almost all coffee farmers have 1 coffee field. The number of fields, size of fields, and cultivation of only one cash crop suggest that communities have extensively low levels of productivity and access to land is socially constrained, evidenced by findings among households with more than two fields or cash crops.

[6] *Agriculture for Development (A4D) Project*. (Sierra Leone: Ministry of Agriculture, Forestry, and Food Security, 2014).

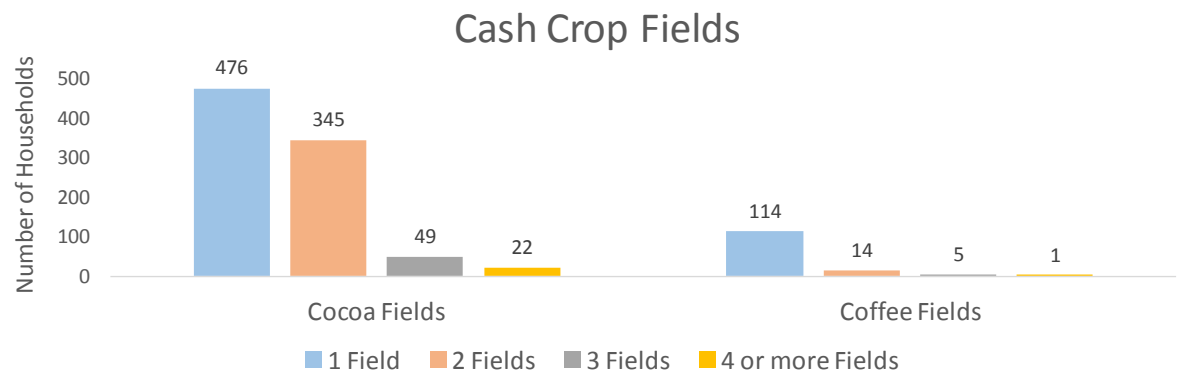


Figure 13: Average Number of Cash Crop Fields

Households with More than Two Fields

Among cocoa farming households, only 8% have more than two cocoa fields. Even though they have lower vulnerability (0.54 average score), there is not a substantial difference in economic status or income stability from the baseline—a majority of people still report having debts and even more, an unstable income. Nevertheless, 69% of those households have access to leadership, of which 40 (82%) are leaders themselves. Clearly, households with multiple fields are more likely than the average cocoa farmer to have access to leadership and even more, be leaders themselves. The high prevalence of leadership and concentration of leaders reveals the importance of leadership over economic status in gaining greater access to land.

Households with Two Cash Crops

Households with more than one cash crop exhibit similar, yet more substantial findings than households with multiple fields. Again, 11% of households in all communities (128) grow both cocoa and coffee, with insignificant differences economically from the baseline. However, there is overall greater accessibility to land and tenure security. Since cocoa is the primary cash crop, almost all households that grow coffee, grow cocoa as well and are more likely to have 2+ cocoa fields. Furthermore, all households (18) that grow coffee and cocoa and have more than one coffee field, also have more than one cocoa field. Multi-crop households typically have beyond the requisite two fields (one for each cash crop), which is to say, higher cash crop cultivation begets incommensurate access to land. Additionally, 53% of the households with two cash crops have IVS rice fields, whereas 26% of households with one crop and 24% of those with no cash crops grow IVS rice. These households have even greater tenure security, with the majority cultivating these three permanent crops (cocoa, coffee, IVS rice).

Like households with multiple fields, households with two cash crops have significant access to leadership. Notably, 93/128 (73%) have some type of access, with a majority (76%) of those serving as leaders themselves. Since most households rely on cash and food crop production as income sources, irrespective of access to leadership, it can be concluded that leadership is not used as a prohibitive force but rather attributive; in other words, those with access to leadership use it as a means to gain even greater access to land instead of deterring others, both through the number of cash crop fields, but even more so with the number of permanent crops grown. What remains clear is that leadership provides an added advantage, increasing access to land through the number of fields and cash crops cultivated.

7.7 Food Crop Cultivation

991 (86%) households grow food crops (Inland Valley Swamp Rice, Upland Rice, Vegetables, and Fruit). Rice, which is considered a critical food crop, serves as the standard-bearer for vulnerability. In other words, if a household does not grow rice, they receive a high score. As outlined in *Figure 14*, most households (85%) grow rice, with upland rice being the dominant crop. Rice field sizes are similar to cash crop fields; the average upland rice field is 2.18 acres and the average IVS rice field is 1.45 acres. While many households grow rice, only a fraction grows vegetables and even fewer (45 households) grow fruit, which is remarkable considering 511 households (44%) listed sale of fruits as an income source. The Project presumes the difference lies in the division of labor. It's likely that some households focus on actual production, growing and tending to the fruit crops. Others concentrate on sales, serving as mere retailers. Lastly, the average vegetable field is 0.08 acres, yet vegetable variety is high, with eggplant, okra, and cassava leaves being the most ubiquitous. Given that 69% of households with savings grow vegetables, it can be concluded that the small yet productive fields have greater variety as a means to diversify households' income. Overall, households that grow vegetables and fruit tend to grow more variety and are more likely to have a stronger economic status.

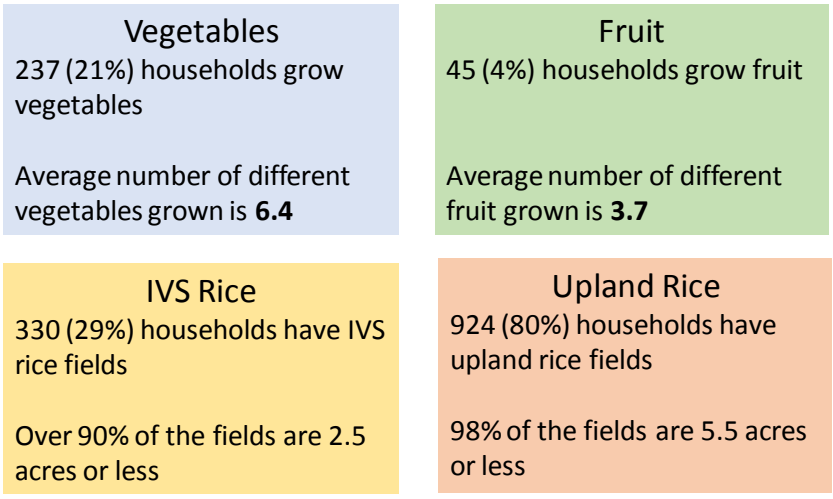


Figure 14: Food Crop Production

7.8 Length of Residence

84% of respondents were either born in their village or are well-established, having lived there for many years. The other 16% of households have moved to their current village in the last five years. Length of residence is strongly associated with high vulnerability, with households averaging a score of 0.64. If a household is a 'stranger' to the village they live in, they potentially face social and political exclusion, as well as barriers to accessing land and agricultural activities, which is the main source of income for communities.

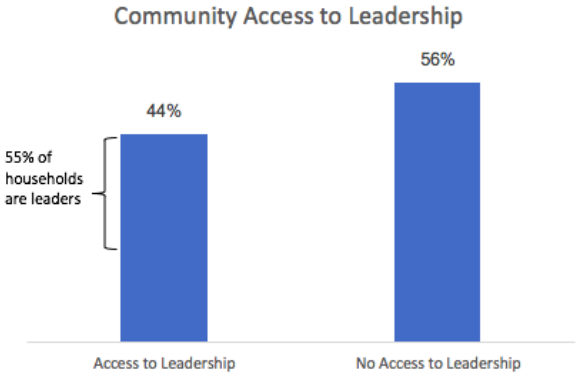
Not surprisingly, there is a direct relationship between length of residence and access to land through leadership and Land Owning Families. This is an important factor for mobility and domestic migration, which might have negative impacts on agri-business since there are hurdles to meet labor demand. Households that have moved to their village in the last 5 years are less likely to be in a LOF—64% are members compared to 91% of all households. Subsequently, only 48% grow cash crops. However,

membership in a LOF influences new households' access to land; while less than half of new households cultivate cash crops, 87% of those households that do have cash crops are members of a LOF. Again, it's important to bear in mind the definition of a Land Owning Family, especially under this pretext. It could be possible that some of these households are not technically in a LOF, however, through Master Families they have gained access to land and effective ownership. It's also possible that these households have moved in the last five years to be close to their LOF and gain better access to land.

Overall education and access to leadership is quite low for all households that have recently moved. Only 13% of new households have at least one member who has completed primary school and only 23% of new households having any access to leadership. Again, of the households that have access to leadership, 83% are also in a LOF. Here, the influence of LOF and leadership is critical to agricultural activities.

7.9 Access to Leadership

Access to Leadership concerns the type and level of leadership that households have access to. Households were asked about the closest relation they have in community, district, chiefdom, or national positions. The closest relation includes the respondents themselves, an immediate family member, or extended family member. The closer the relation and higher level of the position, the lower score a household receives. Examples of leadership positions cited by households include Women's Leader, Village Elder, Village Chief, Section Chief, Quarter Head, Youth Leader, and Pastor/Imam. *Figure 15* and *Figure 16* break down the categories of leadership and level across all communities.



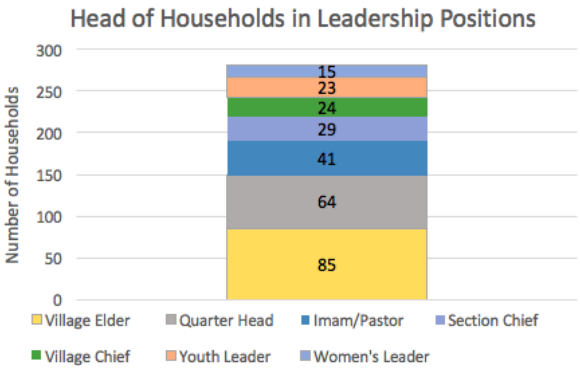


Figure 15: Household Access to Leadership

Figure 16: Types of Leadership Positions Held by Head of Households

As demonstrated in *Figure 15*, 55% (281) of households who have access to leadership are leaders themselves. The other 45% are households who have access through immediate and extended family members. 69 (13%) households that have access, have *immediate family members* in a leadership position, almost all (67) within the community. Likewise, 162 (32%) households that have access have an *extended family member* in leadership, of which nearly all (158) are at the community level. Evidently, access to leadership beyond the community is rare and a majority of heads of households are leaders themselves.

Generally, access to leadership is low considering the dominance of Land Owning Families and the traditional, agrarian setting that focalizes community and family ties. The sheer number of leaders

relative to all households that have access indicates that 1) the power/governing structures are inaccessible to households outside the confluence of ruling families and 2) even leadership is highly concentrated among families within the leadership structure. The infrequency of access to leadership beyond the community further emphasizes the decentralization of governance and insularity of the communities.

Access to leadership has far-reaching consequences for communities, beyond social and political status. Perhaps not surprisingly, leadership is a strong capacity-building factor; 82 (77%) of the least vulnerable households have access to leadership, with 65 of them being leaders themselves. Of greater consequence though, is the indisputable relationship of access to land and agriculture with leadership. 498 of the 512 households (97%) that have access to leadership are in a Land Owning Family. Even more importantly, only three leaders of 281 are *not* in a LOF. To reiterate earlier points, access to leadership does not determine membership in a Land Owning Family, and there are many households in a LOF that do not have access. Instead, access to leadership creates added advantages for households in a LOF, providing better access to land and tenure security; households that have multiple cash crop fields, and multiple permanent crops are much more likely to have access to leadership and/or be a leader themselves and vice versa, as illustrated earlier under *Cash Crop Cultivation.* Because of how power is held, accessed, and inextricably linked to improved access to land and stronger tenure security, it also fosters inequality. An example of these factors and the importance of land and access to leadership is encapsulated by one of the Target Villages, Bandajuma, in the ITA Gassimani.

8) Profile: Bandajuma and ITA Gassimani

The village Bandajuma in the ITA Gassimani provides a concrete illustration of the importance of leadership and access to land in Eastern Sierra Leone. Bandajuma, located close to the Liberian border, has one of the highest average vulnerability scores of 0.62, yet a wide range of scores (the lowest 0.49, and the highest 0.78). Since Bandajuma has only 53 households in a remote location, it is unusual that there would be a vast array of scores and differences within the village. The results from Bandajuma elicit the following questions: 1) Why is there high vulnerability? 2) Why is there a high range of scores, indicating large inequality?

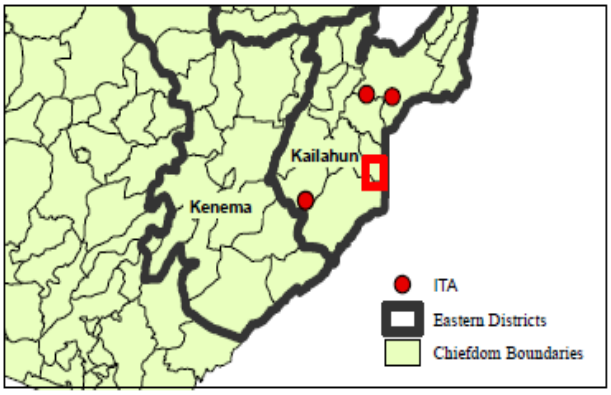


Figure 17: ITA Gassimani

High vulnerability traces back to a few factors. Unlike the villages outside of the ITA Gassimani, there is a large community of linguistic minorities (33%). Most of the linguistic minorities speak Gola, which means proximity to Liberia, where there is a predominance of Gola Tribe members, is partly responsible for high vulnerability. In fact, the border is very fluid and often times community members will affiliate more with Liberia than Sierra Leone. Secondly, there are a large number (27%) of widows and single people in Bandajuma, averaging 41 years of age. Since Gassimani is the most remote of the ITA's, the Project suspects that access to healthcare and better nutrition is limited, thus lowering

overall life expectancy, more so than in other ITA's. Lastly, a significant concentration of households has moved in the past 5 years (23%), without having membership in a LOF. Again, location proves vital here; Gassimani, because of its remoteness, has much lower land pressure, which is highly desirable for farming and would be a significant pull factor for households looking to establish new holdings.

The second question addresses the relationship between access to leadership, land, and inequality and solidifies the findings previously described. Unlike every other village, Bandajuma has 21 (40%) households with access to leadership, but every household is a leader himself/herself. With a high concentration of power, *Figure 18* specifically demonstrates the differences in vulnerability between Bandajuma and another, larger village of 434 households, Gboworbu Gao. Unlike Bandajuma, leadership is less concentrated in Gboworbu Gao, with about half of those with access *not* serving in leadership positions. Gboworbu Gao has few differences across vulnerability dimensions for those with and without access to leadership. In Bandajuma however, the differences in vulnerability between leaders and households with no leadership access are remarkable. While all dimensions are affected by leadership, the biggest difference across dimensions is in Institutional Vulnerability, which largely concerns land ownership, cash crop cultivation, field sizes, number of fields, and overall tenure rights. Given the previous findings, it can be concluded that Bandajuma experiences high inequality from the leadership structures, which serve to provide greater access to land to those in power, consequently creating large inequality.

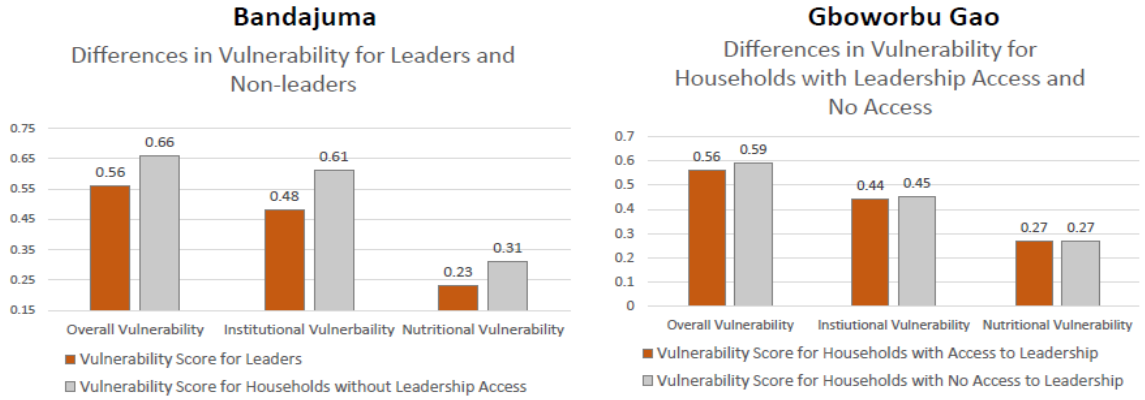


Figure 18: Effect of Leadership on Vulnerability Dimensions

The findings from Bandajuma emulate a larger pattern found in ITA Gassimani. Like Bandajuma, Gassimani as a whole experiences the highest vulnerability across all ITA's and the factors affecting scores in Bandajuma similarly impact the region. Not coincidentally, Gassimani is the only area within the Project's operational scope which has never seen an NGO intervention, as mentioned. Again, *Figure 19* shows that Gassimani has a much higher concentration of leaders among the households who have access, especially in comparison to ITA Wegornyama (Gboworbu Gao lies in Wegornyama). Like Bandajuma, ITA Gassimani has a significant difference in overall and Institutional Vulnerability scores for those with access to leadership from households who do not, albeit slightly less pronounced. ITA Wegornyama on the other hand, has near equivalent overall and institutional vulnerability scores for households with access to leadership and without. Just like Bandajuma, ITA Gassimani experiences the same concentration of power and inequality.

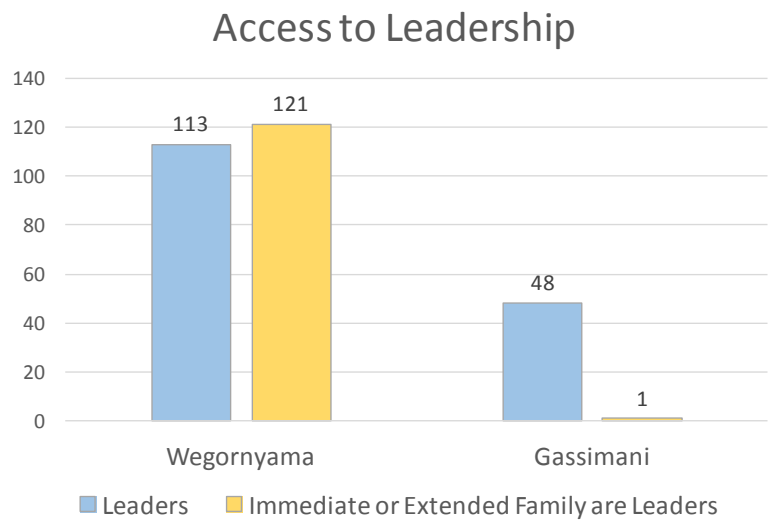


Figure 19: Access to Leadership in ITA Wegornyama and ITA Gassimani

9) Conclusions and Policy Recommendation

Overall, the communities are homogenous and have consistently low economic status and unreliable sources of income and assets. The economy centers around agriculture and social networks are entrenched in Land Owning Families and leadership structures. Consequently, vulnerability is strongly tied to agricultural activities and land. Specifically, the main determinants of vulnerability are lacking membership in a LOF, having no access to leadership, having no cash crop fields, and being a female-headed household. Vulnerability is symptomatic of the concurrent social structures that pervade community life. For one, households that are not in a LOF face immense challenges because LOF's are reluctant to give land to them. As a consequence, households not in a LOF have lower rates of food and IVS rice production, are more likely to be excluded from leadership, have higher rates of debt, and are less likely to grow cash crops. At the same time, leadership is concentrated and hierarchical, enabling those households that govern to siphon off resources and obstruct access to land for those outside of power, especially female-headed households and those not in a LOF. Single female households face further stigmatization, despite the possibility of being in a LOF or leadership position, also resulting in lower cash crop and food production.

In order to address these root causes of vulnerability, 1) communities need to ease other members' access to land, 2) provide incentives to LOF to share resources, 3) create more inclusive leadership structures, and 4) improve equality for female-headed households.

To start, access to land can be improved by undertaking Tenure Assessments and PLUP-Exercises to strengthen communities understanding of land rights, customary land titles, and resource-distribution. Currently, Eastern Sierra Leone follows a customary land tenure system, which has complex practices regarding land use and ownership. Furthermore, it is not always clear who makes decisions about land and who is entitled to it, as there is no documentation or recordings of land owners, users, or demarcation. Tenure assessments would clarify these major questions and make it easier for community members to lease land for farming, expand holdings, avoid land disputes, facilitate better planning, and increase general awareness on land rights. Agriculture is central to

community life and affects vulnerability across all the dimensions, underscoring the importance of tenure assessments and the dissemination of knowledge regarding land.

Secondly, promoting a shift in smallholder focus from food crop to cash crop cultivation would lower vulnerability and increase food security. Cash crop cultivation is one of the most significant indicators of vulnerability and a major source of income for community members. The long life cycles of cash crops make them a more reliable source of income over food crops and strengthens land tenure rights. Additionally, the profit margins of cash crops are higher. Since more households engage in food crop production than cash crop, a mixed approach in which cash crop production is the focus, but is complemented by the production of food crops would be best suited for these communities. How much land is being cultivated under cash crops versus food crops could be determined on the basis of labor considerations. For example, farming households could spend 70% of its annual labor on cash crop cultivation, while dedicating the remaining 30% on the cultivation of food crops. A mixed approach with a focus on cash crops is a simpler way to help stabilize household incomes since it's a slight, added alteration of current practice.

In order to make access to land more equitable and better aid the first two recommendations, communities need to be encouraged to use transparent and inclusive systems of leadership. Leadership structures are hierarchical, concentrated, and closed off to those who are outside of families in power. Those in a position of power or have family as leaders use their status to provide added benefits in access to land and agricultural production. Encouraging leadership to use more democratic practices would make power more accessible to other community members and motivate people to treat land and resources more equitably. Establishing checks and balances, such as a Complaints Response Mechanism, would allow community members to safely voice problems and complaints and promote fair treatment through a streamlined process. To complement the CRM, an independent body could monitor and document land allocation, creating pressure and accountability among leadership that might otherwise foster unequitable access to land.

Lastly, gender awareness trainings for men and female empowerment trainings for women could help address gender inequality. Female-headed households are much more vulnerable than single, male households and male-headed households. Women face more barriers with access to land and are more likely to have weaker tenure security. Anecdotally, the Project has found strong attitudes about work "best-suited" for men and women, particularly in the agricultural sector where women's physical capabilities are consistently called into question. Changing long-entrenched attitudes requires challenging and shaping practices that has led to the marginalization of women. Cultural beliefs about women's work ethic and type of work can be directly challenged with gender awareness trainings for men, partnered with female empowerment trainings focused on agricultural work. Providing equal opportunities for women to participate in agricultural work will enhance productivity, since many farming tasks currently rely on only half of the potential community labor force.

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Appendix

District	Chiefdom	Section	Village	Status of Village	No. of Registered HHs
Kailahun	Jawie	Upper Giebu	Bumpeh	Target	46
Kailahun	Jawie	Upper Giebu	Sonigiema I	Target	103
Kailahun	Jawie	Upper Giebu	Kpendema	Target	150
Kailahun	Jawie	Lower Giebu	Toobu	Target	24
Kailahun	Jawie	Upper Giebu	Guobu	Associated	29
Kailahun	Dea	Sienga	Bandajuma	Target	53
Kailahun	Dea	Dodo	Pewama	Target	52
Kailahun	Dea	Baiwalla	Gunsua	Associated	29
Kailahun	Dea	Baiwalla	Kamatahun	Target	26
Kailahun	Luawa	Giehun	Mbenahun	Target	35
Kailahun	Luawa	Giehun	Tanenahun	Target	36
Kailahun	Luawa	Giehun	Giehun	Associated	83
Kailahun	Luawa	Lower Kpombali	Baah	Target	24
Kailahun	Luawa	Gao	Gboworbu Gao	Target	434
Kailahun	Luawa	Lower Kpombali	Giema	Associated	12
Kailahun	Luawa	Lower Kpombali	Kotihun	Target	15