

INFORMATION SHEET

Livelihood Vulnerability Index for Communities in South-West Suriname

CLIENT

Green Growth Suriname Foundation

PROJECT

Vulnerability Index for Communities in
South-West Suriname

RESEARCH PERIOD

March – November 2023

SAMPLE

83 households in South Suriname

Reference to this article as:

Smith, Gwendolyn (2023). Livelihood
Vulnerability Index for Communities in
South-West Suriname. Green Growth
Suriname: *Unpublished*.



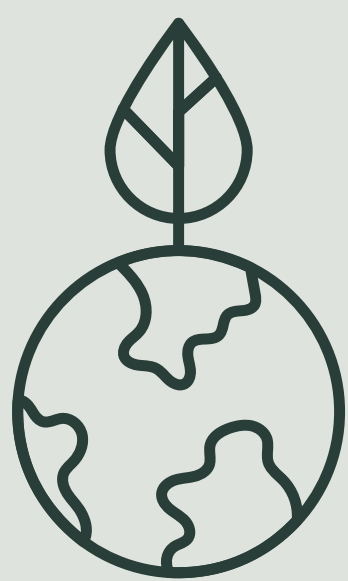
Introduction

The concept of livelihood vulnerability in this context refers to the hazards associated with a community due to environmental change. Vulnerability is the ability or inability of a social group to respond to, cope with, recover from, or adapt to any external stress placed on their livelihood and well-being. Coming from the natural hazards literature, the definition implies that local environmental factors mediate risks/outcomes for communities. Vulnerability is mainly linked to internal factors and defined at specific scales, such as the household/community, and the area where the community is located.

Vulnerability assessments are a set of methods used to systematically integrate and examine interactions between humans and their social and physical environments. For determining the livelihood vulnerability of small farming communities, the Sustainable Livelihoods Framework (SLF), developed by the United Kingdom Department for International Development (DFID), has been widely used since 1997.

The SLF defines livelihood as the livelihood that comprises the capabilities and activities required for a means of living and is sustainable when it can cope with and recover from stresses and shocks or enhance its capabilities and assets while not undermining the natural resource base.

LIVELIHOOD IS ORGANIZED INTO FIVE CATEGORIES OF CAPITAL:



1. Natural capital

Natural capital refers to natural resources, such as the forest with its flora and fauna, sources of fresh water, and mineral resources. It includes both public goods, such as clean air and biodiversity, and access to assets that people use for agricultural production, such as arable land and fruit trees.



2. Human capital

Human capital includes the “skills, knowledge, ability to work and good health that enable people to pursue different livelihood strategies and achieve their livelihood objectives.” It includes education, access to information, good health, and social security.



3. Financial capital

Financial capital represents (sources of) cash money and other valuables that are used as stock. It includes issues such as employment, savings, income, the investment climate, and access to credit.



4. Social capital

Social capital refers to “connections among individuals; social networks and the norms of reciprocity and trustworthiness that arise from them”. Data on social capital covers organizational and institutional structures, conflicts, migratory networks, and formal and informal social safety nets.



5. Physical capital

Physical capital comprises mainly physical infrastructure such as roads, markets, clinics, schools, and community assets.

Vulnerability is determined by identifying the community’s five types of household assets and analyzing how the livelihood system can withstand shocks such as prices, epidemics, conflict, and climate change. The Livelihood Vulnerability Index (LVI) is designed to provide development organizations, policymakers, and practitioners with a practical tool to understand demographic, social, and economic factors contributing to climate variability at the community level. It is designed to be flexible so that development planners can refine and focus the analysis to suit each geographic region’s needs and identify areas for intervention.

The assessment methodology for the LVI has been developed by Hahn and colleagues in 2009. The SLF and Intergovernmental Panel on Climate Change (IPCC) vulnerability framework served as a basis for developing the livelihood vulnerability index for the Trios, which is further explained in this document.

*Kelly, P. and Adger, W. 2000. Theory and practice in assessing vulnerability to climate exchange and facilitating adaptation. Climatic Change 47: 325-352

*Scoones, I. n.d. Sustainable Rural Livelihoods A Framework For Analysis Ids Working Paper 72.

LVI for Communities in South-West Suriname

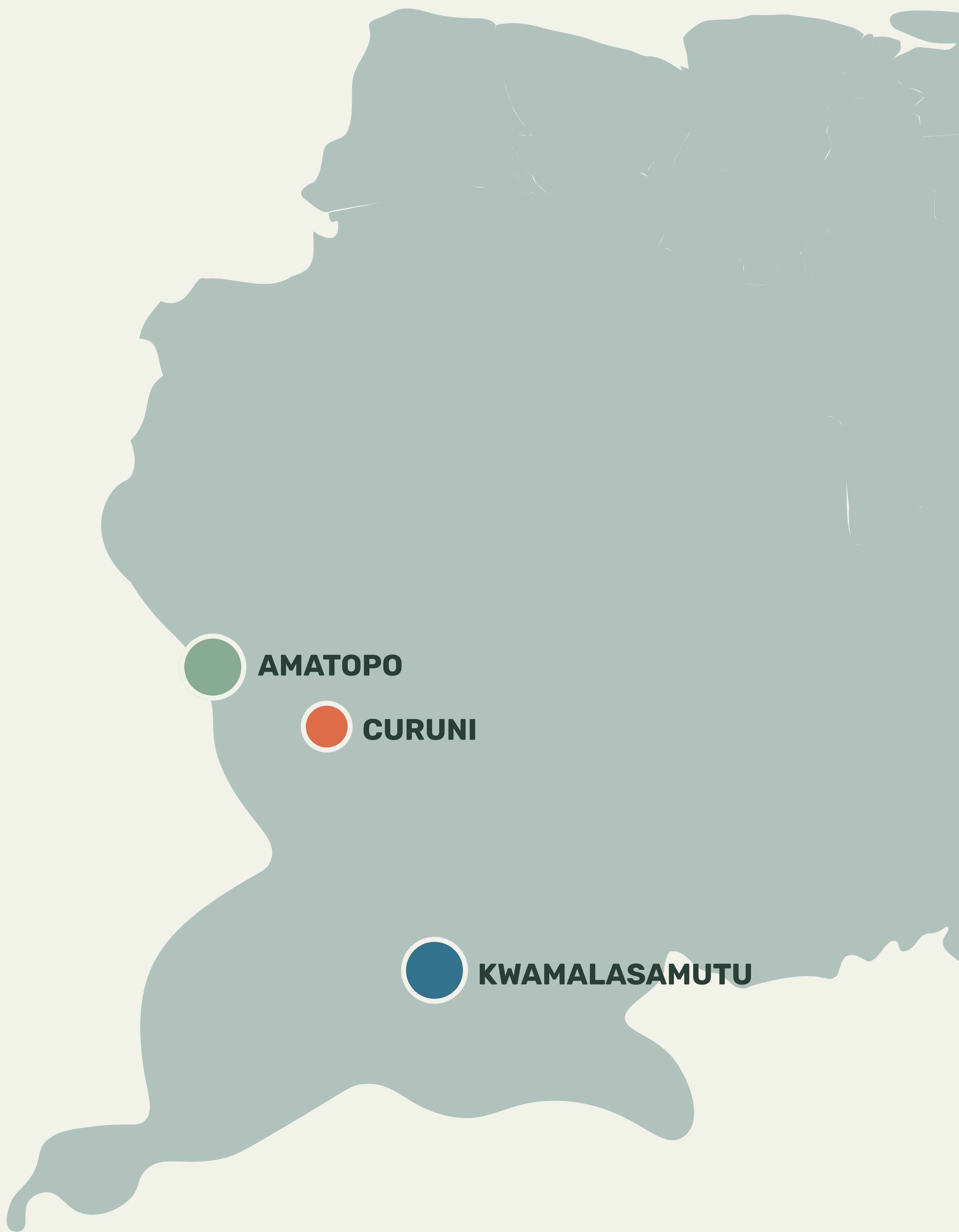
The Livelihood Vulnerability Index (LVI) was calculated to assess the vulnerability of the Trio community in three communities in Southwest Suriname. A representative sample of each the community’s households was surveyed with 90% confidence interval and 10% margin of error, as follows:

KWAMALASAMUTU

The calculation was based on a structured survey of 62 from a population of 228 households in a 70-hectare area, which was conducted in July and November 2023 and complemented with secondary data and climate data.

AMATOPO

The calculation was based on a structured survey of 6 from a population of 8 households in a 20-hectare area, which was conducted in August 2023 and complemented with secondary data and climate data.



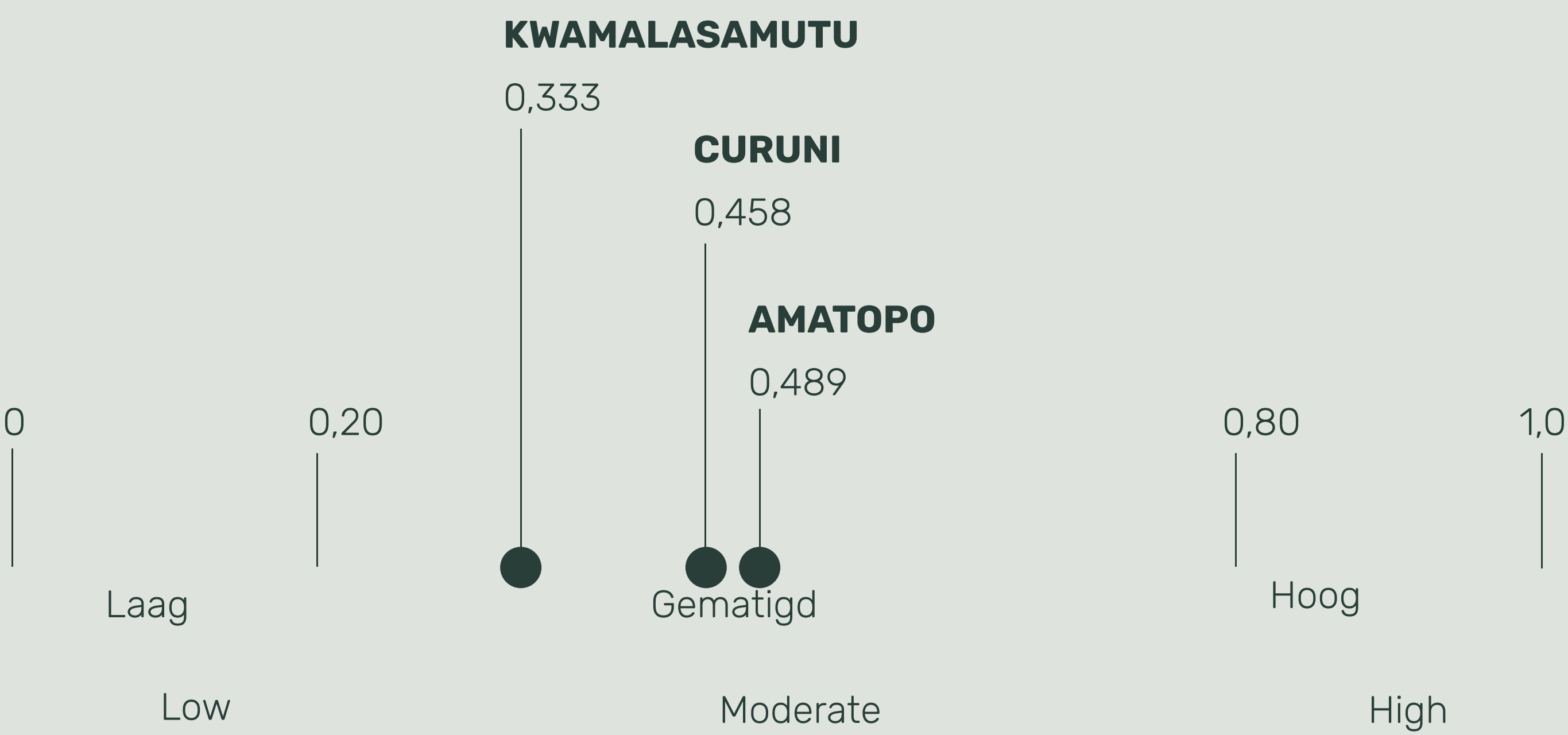
CURUNI

The calculation was based on a structured survey of 15 from a population of 15 households in a 20-hectare area, which was conducted in August 2023 and complemented with secondary data and climate data.

LVI-VALUES

LVI- values are scaled between 0 (least vulnerable) and 1 (most vulnerable). The goal is to have communities that score an LVI value of close to 0. LVI $\leq$ 0.20 indicates low vulnerability, LVI between 0.21-0.80 indicates moderate vulnerability, and LVI $>$ 0.81 indicates high vulnerability.

THE OVERALL LVI SHOWS THAT EACH OF THE COMMUNITIES HAS A MODERATE VULNERABILITY.



³Hahn, M, Riederer, A, Foster, S, 2009. The Livelihood Vulnerability Index: A pragmatic approach to assessing risk from climate vulnerability and change – A case study from Mozambique. Global Environmental Change 19: p74–88.

Comparative Analysis 1/4

The LVI was determined across 6 components - socio-demographics, livelihood strategies, basic household needs, natural disasters and climate variability, financial stability, and social networks - which together give an overall value to the LVI. Below is an detailed overview of the indicators assessed for calculating the LVI across all 6 components.

SOCIO-DEMOGRAPHICS

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Female-headed households	0.113	0.067	0.167
Dependency ratio	0.009	0.059	0.417
Migration	0.000	0.200	0.333
School attendance-head of household	0.823	0.200	0.000
School attendance-children of household	0.008	0.010	0.000
Language proficiency	0.014	0.063	0.446
Distance to healthcare	0.242	1.000	1.000
Absence due to sickness	0.419	0.933	0.667
Safety violations	0.065	0.067	0.167

LIVELIHOOD STRATEGIES

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Livelihood diversity index	0.005	0.096	0.304
Distance to the nearest market	0.210	1.000	1.000
Presence of intermediaries	0.000	0.533	0.667

Comparative Analysis 2/4

BASIC HOUSEHOLD NEEDS

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Subsistence yield loss	0.000	0.000	0.000
Self-sufficiency	0.003	0.000	0.250
Durability of housing structure	0.839	1.000	1.000
Access to drinking water source	0.113	1.000	1.000
Access to potable water supply	0.290	1.000	1.000
Access to energy	0.000	0.000	0.333

NATURAL DISASTERS AND CLIMATE VARIABILITY

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Exposure to extreme weather events	0.032	0.133	0.167
Property damage	0.097	0.067	0.000
Mean standard variation of the daily average maximum temperature	0.314	0.314	0.314
Mean standard variation of the daily average minimum temperature	0.315	0.315	0.315
Mean standard deviation of average precipitation	0.606	0.606	0.606

Comparative Analysis 3/4

FINANCIAL STABILITY

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Loans	0.016	0.067	0.333
Trips to capital city	0.023	0.113	0.556
Poverty line	1.000	1.000	1.000
Employment	0.017	0.378	0.583

SOCIAL NETWORKS

INDICATOR	KWAMALASAMUTU	CURUNI	AMATOPO
Access to social networks	0.979	0.933	0.333
Access to training	0.935	0.867	0.500

Comparative
Analysis 4/4

LVI RADAR CHART OF THE COMMUNITIES

