

Supplementary material S1

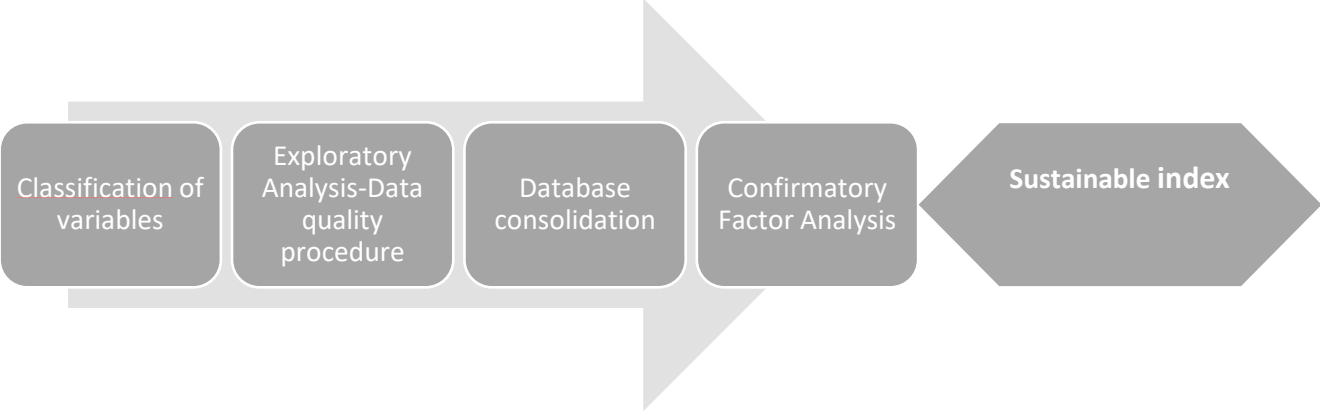
The household-level survey's primary purpose was to document the current socioeconomic conditions and farming practices engaged by farmers. Later, this information was further synthesized to estimate the livelihood sustainability index

Eight local survey takers were trained to apply the questionnaire and follow the data collection procedure. We interviewed the heads of households or their spouses, decision-makers, and the people most familiar with household duties and productive activities. The interviewed households had to fill out a consent protocol. The survey data were collected using Android tablet devices CSPro 6.2 and 6.3 (U.S. Census Bureau 2020).

Table S1. Household-level survey structure

Module	Contents
General data	ID, municipality, date
Sociodemographic	Age, sex, relationship, education level, occupations, migration
Household information	Health system, ethnic group Roof, floor, and wall material; electric power; source of drinkable water; type of home ownership; access roads; means of transportation
House characteristics	
Assets	Household and productive assets
Subjective well-being	Perception of well-being Household Dietary Diversity Score (HDDS); Latin American and Caribbean Household Food Security Measurement Scale (ELCSA); Months of Adequate Household
Food security	Food Provisioning (MAHFP) Agricultural and livestock activities, natural resource
Productive activities and natural resources	extraction, conflicts
Associativity	Affiliation with organizations, training, information
Off-farm income	Off-farm activities, income, subsidy
Farm characteristics	Type of farm ownership, land use, crops
Pastures	Type of pastures, area
Cattle ranching	Cattle and poultry information
Climate change perceptions	Shocks and climate change perceptions, coping strategies

Figure S1- Methodological process for the Sustainability index-estimation.



Supplementary material S2- Goodness of fit for the structural equation model.

The model was adjusted to the target criteria and therefore we obtained well-founded indices that come from the theoretic framework (Table S2). We can therefore make inferences based on the estimation. Overall, statistical results show that our SI has high internal validity.

Table S2. Summary of the model fit information used to calculate the SLF indices.

Fit indices	Production system			
	Cattle ranching system		Small-scale family agriculture	
	Acceptance value	Value	Acceptance value	Value
Overall model fit (χ^2)				
Chi-square	P-value >0.05	0.022	P-value >0.05	0.022
Incremental fit indices				
Comparative fit index (CFI)	≥ 0.95	0.962	≥ 0.95	0.962
Tucker-Lewis index (TLI)	≥ 0.95	0.954	≥ 0.95	0.954
Residual-based indices				
Root mean square error of approximation (RMSEA)	<0.08	0.038	<0.08	0.038

Note: We included only the statistically significant paths.