Sri Lanka Social Safety Net Survey

Survey methodology note

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LIRNEasia is a pro-poor, pro-market think tank whose mission is catalyzing policy change through research to improve people's lives in the emerging Asia Pacific by facilitating their use of hard and soft infrastructures through the use of knowledge, information and technology.

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1. Introduction

In the wake of COVID-19 and the current economic crisis, there has been a surge in interest among think tanks and the government regarding the study of poverty and the social welfare programmes intended to mitigate it. Widespread poverty is currently being experienced in Sri Lanka. In June 2022, it was reported by the United Nations that urgent humanitarian assistance is needed by 5.7 million people, which is a quarter of the population. Unemployment and income loss have been contributed to by steep inflation driven by the rapid depreciation of the Sri Lankan rupee, coupled with fuel and gas shortages. Consequently, a food security crisis is currently being experienced by Sri Lanka, with over 70% of households reducing food consumption (e.g., by skipping meals), as reported by the United Nations.

This predicament has created an immediate need for social safety nets to be in place to safeguard the most vulnerable. Over 30 different social protection programs are available in Sri Lanka. However, there has been a longstanding call for reform in this area. Challenges faced in these schemes include inadequacy of benefits, lack of coordination among programs, high administrative burdens, and leakages in the delivery of benefits, which have contributed to errors in targeting (inclusion and exclusion).

Therefore, it is imperative to a) understand the best indicators of poverty – to identify the systematically poor and the newly poor (indicators pertaining to nutrition, years of schooling, school attendance, and access to cooking fuel, sanitation, and electricity are often used as proxies of wellbeing in many countries. This survey aims to identify which among these have the greatest association with longstanding (systemic) poverty and sudden shocks to income/expenditure); b) identify the various programs individuals have signed up for (e.g.: Samurdhi, disability benefits, kidney aid, etc.) to understand if/how schemes should be redesigned to cater to the holistic needs of households.

Objectives of the study

The objective of the study was to collect regionally comparable household level data on indicators of poverty in Sri Lanka that would enable estimates to be made within a 95% confidence interval with a +/-1.4% margin of error.

This data was collected through face-to-face surveys conducted using Computer Assisted Personal Interviewing (CAPI) and according to the methodology outlined in this document. The fieldwork was conducted in Sri Lanka by Survey Research Lanka (SRL), a market research company procured through a competitive process.

SRL was responsible for the fieldwork set-up, including questionnaire scripting, translation, and pilot testing, as well as enumerator training and dataset delivery. LIRNEasia, on the other hand, monitored the fieldwork remotely and provided field training in most cases. SRL's teams visited over 10,000 households and 400 Grama Niladhari divisions for data collection after undergoing a rigorous two-day training.



Due to the ongoing economic crisis in Sri Lanka, the data collection timeline was affected. Throughout the data collection process, SRL and LIRNEasia adopted several quality control mechanisms that helped to provide timely feedback to data collectors, allowing them to improve their work. The subsequent sections of this document provide more information on the research design, coverage, field problems, remedial actions, quality control mechanisms, and other related topics.



2. Sample size determination

The desired level of accuracy was set to a confidence level of 95% and an absolute precision (relative margin of error) of 5%. The population proportion (p) was set conservatively to 0.5, which yields the largest sample size. The minimum sample size (n) was determined by the following equation.

$$n = \left(\frac{Z_a \sqrt{p(1-p)}}{C_p}\right)^2 = \left(\frac{1.96 \sqrt{0.5(1-0.5)}}{0.05}\right)^2 = 384$$

Were,

n = Minimum sample size

Za= Z-value for 0.05 level of significance

Cp = Confidence level

p = Population proportion

Inserting the parameters for the survey yields the minimum sample size for simple random sampling; therefore, for our sample design (stratified with multiple levels in some cases) the minimum sample size was multiplied by the design effect variable.

In the absence of empirical data from previous surveys that would have suggested a different value, a value of 2 was used as the design effect to consider the additional levels of selection (district and sub-district) in the sample design. This yields then, a minimum sample size of 768 for households.

The actual sample size increased beyond the minimum requirement to compensate for clustering effects, and allow for urban, rural and estate disaggregation of data, as well as gender-based disaggregation and more importantly to have representative data at Province into urban, rural and estate levels and district levels.



3. Sampling

Survey target groups

The target groups of the study were all households in Sri Lanka.

Survey respondents

In a selected household, the household head (as identified by the households themselves) was interviewed. If the household head was not available, a suitable alternative was sought out (e.g., spouse or other) who would be able to provide sufficient detail on the household characteristics and other members.

Sample frame and PSU definition

The sample size in Sri Lanka was 10,000 households. The primary sampling unit (PSU) in Sri Lanka was the Grama Niladhari division (GND). The method was developed using population and housing data at GN level from the Department of Census and Statistics, Sri Lanka. Random sampling was performed in three steps resulting in the selection of 400 PSUs across Sri Lanka.

Overview of the sampling procedure

The study methodology ensured national representation through random selection of all sampling units (GND, household, etc.), enabled by household listing at the PSU level.

The methodology involves the following steps:

- 1. The GND level sample frame was separated into urban, rural, and estate PSUs.
- 2. The required number of GNDs were sampled from each stratum¹ using probability proportionate to size (PPS).
- 3. Listing maximum of 250 households in the selected PSU. The lists serve as the sample frame for simple random selections if households.
- 4. Systematic random sampling selection of the required number of households (20-25 with about 5 extra households as buffer sample) from each selected PSU.

PSU selection

The selection of PSUs was conducted by LIRNEasia and provided to SRL for fieldwork execution.

¹ There were 24 stratums used in this study. All nine provinces divided into urban, rural and estate PSUs depending on the availability of those relevant type of GNDs.



A pre-defined number of PSUs (GNDs) were selected using PPS sampling techniques. The proportional allocation at district into urban rural level was used to maintain the district wise coverage of the sample. Selected PSUs are depicted in Figure 1. Please refer Annex 1 for sample sizes and margin of errors.

Table 1: Number of PSUs by each stratum

Province	Number of PSUs					
	Total	Urban	Rural	Estate		
Central	53	15	24	14		
Eastern	36	16	20	-		
North Central	36	15	21	-		
North Western	43	15	27	1		
Northern	34	15	19	-		
Sabaragamuwa	51	15	24	12		
Southern	44	15	26	3		
Uva	49	15	20	14		
Western	57	21	33	3		
Sri Lanka	400	140	212	48		



Figure 1: The 400 PSU locations used in the survey.

Mapping and listing within sample PSUs.

The availability of GND-level household and population data in the form of a list was not readily accessible for selected GNDs. Hence, mapping and listing of all households



within a PSU was necessary to draw a random sample of households. The objective of mapping and listing was to ensure the coverage of the entire population residing in the PSU. This facilitated the equal probability random selection of households for the survey, enabling all eligible households in the PSU to have an equal chance of being selected.

This process was essential for creating a comprehensive list of occupied residential households in the selected GND and provided a complete range of households for the survey. By employing systematic and equal probability random selection of households, the listing process helped overcome the problem of biased household selection for the survey.

The listing operation involved visiting each PSU and documenting a description of every structure, along with the names of the household heads and their contact information. This information assisted the interviewers in locating the selected households for the main survey data collection.

Mapping and identifying the GND boundaries.

The Survey Department, Sri Lanka's GND level maps² were used to identify the administrative boundaries for selected 400 GNDs. The shape files were converted to A3 sized physical maps by overlaying the shape file on top of Google maps (satellite).

When arriving at a PSU, the listing team met with 2-3 key informants (KIs) to verify PSU details of the PSU (e.g., numbers of households, locations of households, PSU boundaries and access routes, etc.) and the boundaries. Any differences were marked on the map itself.

• KI was either one of the following: Grama Niladhari Officer/ Development Officer/ Senior resident/ schoolteachers etc.

The estimates of the number of households in a PSU provided by the KIs were also checked with census 2012 data. If the number varied (more or less than 10%) the figure was validated with another available KI in the PSU. Once validated, the final figure was reported on CAPI device.

Segmentation

The number of households available in each PSU (PSU size) were ranged from 39 to 6,143. Hence listing all the households in a selected PSU will be lengthy and unnecessary task from a sampling point of view. Therefore, a maximum of approximately 250 households were listed from each PSU, except when the PSU size was less than 250 households, in which case, the entire GND was listed.

Listing

To facilitate the listing process, a listing format was jointly developed by LIRNEasia and SRL. The listing was performed using CAPI. The details were obtained from each

² https://it.survey.gov.lk/gn_updating/



household during the listing process using a listing questionnaire. The data collected through the listing questionnaire included:

- 1. Address of the household
- 2. GPS coordinates of the household
- 3. Contact information (mobile or landline number of the household)

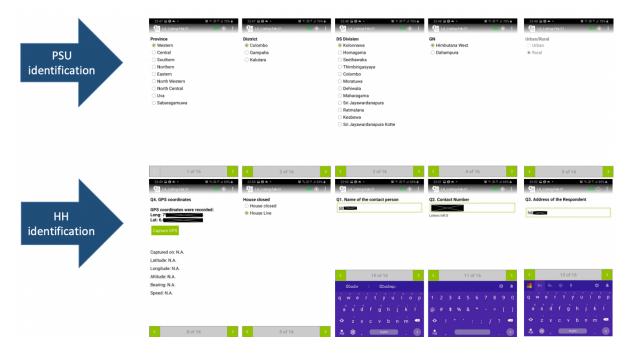


Figure 2. Listing Format

The listing exercise was conducted using CAPI devices. The SRL team listed all the structures (or a maximum of 250 households) within the PSU to ensure no households were missed out. The complete list of households in the PSU served as a sample frame for random selections of households, with all structures in the PSU listed and marked with a structure ID. All households within a structure were listed using the household number, name, or the name of the household head.

The SRL field team received 400 randomly selected GPS coordinates for each GND as the starting point to begin the listing fieldwork. The listing process involved the following steps:

- 1. Arrival at the PSU and determination of the boundary.
- 2. Finding the randomly selected GPS coordinate.
- 3. Listing the closest household to the randomly selected GPS point as the first household.
- 4. Listing each household using the **right-hand rule** without missing any households until 250 households were enumerated.

Each enumerator completed their own listing form and assigned a unique structure ID for all the listed households. However, there were occasions where the field team encountered issues that had to be rectified. These issues were resolved in the following ways:



- For GNs with less than 250 households, the field team was allowed to ignore the randomly selected GPS starting point and start the listing from a convenient starting point. However, the enumerators were required to list all the households in those GNs.
- When GPS points were located in large uninhabited areas such as lakes, forests, and lagoons, another random starting point was given to the field team to begin the listing.

The PSU area listing data, along with GPS coordinates and a list of all structures, including both residential and non-residential structures, was shared with LIRNEasia upon completion of the listing.

Household selection

After the completion of the listing process, the data was checked by the SRL quality control team and uploaded to a secure server. The LIRNEasia research team then conducted quality checks remotely before proceeding to select households. The quality checks performed by LIRNEasia aimed to verify that:

- All GPS points were located inside the respective GND boundary.
- The fieldwork started from the assigned random starting point.
- The enumerators followed the right-hand rule while listing households.
- No households were missed by the field team in between houses.
- The field team listed the required number of households.





Figure 3. GPS locations of a completed household listing³

After the listing data was uploaded to the server, 30 households were randomly selected in each GN. This was done to meet the actual requirement of 25 households, but more households were selected to account for replacements, if needed. The selection of households for the main survey was carried out by LIRNEasia's research team.

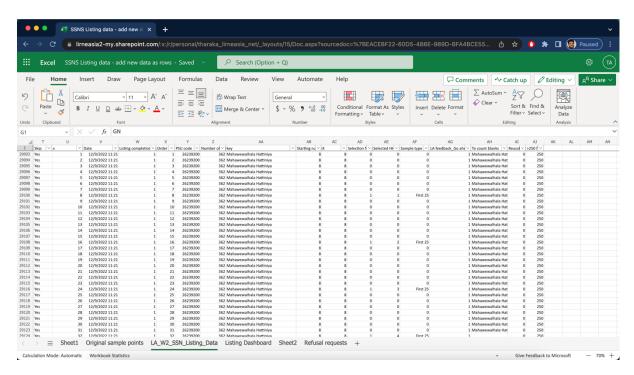


Figure 4. Random selection of households for main survey

Identification of households during main survey

To ensure accurate identification of the selected households during the main survey stage, the main survey team was provided with crucial information ahead of time, including the address, GPS coordinates, name of head of household, contact information and structure number of each selected household. This information allowed the survey team to easily locate and interview the selected households during the main survey.

Selection of household respondent during main survey

In a selected household, the household head was interviewed on household characteristics. If the household head was not available, a suitable alternative was sought out (e.g., spouse or other) who could provide sufficient detail on the household characteristics and other members.

³ The red dot on the map represents the randomly selected GPS starting point for the listing process. The white dots represent the households that were listed within the respective GN, and the line connecting the dots represents the path taken by the enumerator during the listing process.



In the case that a respondent from the household was not available at the first visit, a minimum of three (3) attempts (first visit + two follow-ups) were made (at different times of day or based on an appointment) to reach the household.

If the household could still not be reached, the entire household was replaced by drawing additional samples from the frame.

Replacement procedures

Strict replacement procedures were set in place, to ensure the randomness of the sample at all levels was preserved. The circumstances under which replacements were allowed are detailed below.

Household replacement

A household was replaced in the following situations:

- A household head or suitable alternative refused to participate in the survey
- A household head or suitable alternative was unavailable after three (3) attempts to contact them
- A house had been found to be locked/vacant after three (3) attempts to contact the house were made
- Household head and suitable alternative are both unable to be surveyed due to severe disability

If any of these situations arose, the house had to be replaced with a random selection from the list of houses in the PSU/segment (applying the pre-determined sampling interval). Individual replacement in a household was not permitted.



4. Research Instrument

Development, translation, and scripting

A structured questionnaire was used to capture the household and individual level data. The English language questionnaire was developed by LIRNEasia.

The questionnaire was translated into two languages by SRL, namely: Sinhala and Tamil. Translations were extensively checked by the LIRNEasia research team.

The scripting of the questionnaire was done by SRL. The SRL project teams tested the script for all logical and consistency checks before planning for pilot-test. The bilingual tools and script with login details were also shared with LIRNEasia for comments and feedback before pilot-test.

Pilot Testing

The pilot-test exercise was conducted in actual field setting. The pilot-tests were conducted in non-sample locations, and among a range of respondents to ensure those with different literacy levels and both genders were included.

Pilot Goals

The goal of the pilot survey included:

- Estimate realistic median Length of Interview (LOI).
- Test Skipping and Routing.
- Test Language (phrasing).
- Test Translation.
- Test Understanding of the Questions, Cognitive Difficulties and Questions Sensitivities.
- Test Tablet Functionality.

Pilot Approach and Conduct

One urban PSU and one rural PSU were selected for the pilot test. The selection of the locations was done to represent the urban and rural mix and socio-economic groups.

The exercise was led by the senior SRL professionals and LIRNEasia researchers on the ground.

Based on the observations made during the pilot tests, various improvements to the field process as well as the research tools were made.



5. Consent

Prior to the commencement of an interview, the respondent was informed of the following:

- 1. The objectives of the research
- 2. That his/her participation was voluntary
- 3. That he/she could choose to end the interview at any point

Once informed of these, the respondent's written or verbal consent was obtained from the respondent to (1) proceed with the interview; (2) be photographed [if applicable]; and (3) be contacted again for further research. Respondents who refused to be photographed could still be interviewed if they agreed to participate.

Photography

In every PSU, while working high resolution digital photographs were captured. Proper consent of the relevant community members was taken before taking photograph.

Two-three teams captured photographs during the listing / mapping exercise (structure number on walls, listing household, KI interview or permission) using CAPI devices



6. Quality Control (QC) Mechanisms

Following are some of the QC procedures that were adopted by for the survey by SRL and LIRNEasia:

- 1. AC- Accompaniments Supervisor accompanied first few interviews of each enumerator
- 2. BC- Back Checks 30% of each enumerator's interviews were back checked by supervisors
- 3. SC- Spot Checks 10% of the sample was spot checked by the Operation Manager
- 4. TBC- Telephonic Back Checks Once the data was synced to the server, telephonic back checks were done for all main interviews which have a contact number.
- 5. VC Voice Checks Parts of interviews randomly got recorded for quality check purpose
- 6. 100% MC Map Checks for GPS GPS location of the interview is captured to check sampling and authenticity of the selected respondent
- 7. For each enumerator's interviews length of interview was checked.
- 8. CAPI script ensured the right filters for the questionnaire
- 9. Enumerators were trained on general Dos and Don'ts in the field and also on the questionnaire content and to administer different questions and scales. Further, mock interviews were conducted by enumerators before they are sent to the field for data collection
- 10. Debriefing sessions were done for the enumerators who made mistakes during the interview process All research process and practices followed at SRL are based on ESOMAR research guidelines.



7. Mandatory COVID-19 Related Protocols

Since the survey took place while COVID-19 health risks still existed in Sri Lanka, mandatory steps were taken to ensure the safety of all parties related to the survey. The following protocols were issued by SRL with guidance from LIRNEasia's research team.

- 1. A mask was worn by enumerators every time they were in the field and it was replaced every day.
- 2. Hand sanitizer was used every time before and after visiting a household or when they used any public services such as transportation, bank, communication centres, etc.
- 3. A distance of one meter was kept from the respondent at all times.
- 4. Unless the household representatives allowed or invited the enumerator to step into the house they did not enter the home. To ensure safety of both parties, entering the house was discouraged even if the household representative allowed access.
- 5. If the household representative did not agree to participate in the survey and showed any discomfort of accepting it considering the current pandemic situation, enumerators moved on without attempting to force participation.
- 6. If there were props, cue/show cards or any the material to be shown or given to the respondent during the interview, hand sanitizer was given to the respondent to clean his or her hand and once the use of props and showcards was complete, the hand sanitizer was offered again.
- 7. It was STRICTLY prohibited to have any physical contact with the respondent or the household representative i.e. a handshake, hand holding, or any sort of physical greeting was avoided during this process.
- 8. To ensure the comfort of the respondent during the interview, actions such as coughing, sneezing, scratching, removing the mask or glove, and/or any other action that might look like a threat to the respondent was avoided.



Annex 1 - Sample sizes and margin of errors

Table 2: Sample size, number of PSUs and margin of error at province level

	Sample size			Number of PSUs			Margin of error					
Province	Total	Urban	Rural	Estate	Total	Urban	Rural	Estate	Total	Urban	Rural	Estate
Central	1,331	379	592	360	53	15	24	14	3.8%	7.1%	5.7%	7.3%
Eastern	897	388	509	-	36	16	20	-	4.6%	7.0%	6.1%	-
North Central	887	363	524	1	36	15	21	-	4.7%	7.3%	6.1%	-
North Western	1,056	367	669	20	43	15	27	1	4.3%	7.2%	5.4%	31.0%
Northern	839	371	468	-	34	15	19	-	4.8%	7.2%	6.4%	-
Sabaragamuwa	1,256	368	588	300	51	15	24	12	3.9%	7.2%	5.7%	8.0%
Southern	1,100	378	642	80	44	15	26	3	4.2%	7.1%	5.5%	15.5%
Uva	1,222	365	497	360	49	15	20	14	4.0%	7.3%	6.2%	7.3%
Western	1,413	520	813	80	57	21	33	3	3.7%	6.1%	4.9%	15.5%
Sri Lanka	10,001	3,499	5,302	1,200	400	140	212	48	1.4%	2.3%	1.9%	4.0%

Table 2: Sample size, number of PSUs and margin of error at district level

Distirct	Sample size	No of PSUs	Margin of error
Gampaha	494	20	6.2%
Colombo	485	20	6.3%
Kurunegala	456	19	6.5%
Kandy	432	18	6.7%
Kalutara	423	17	6.7%
Ratnapura	418	17	6.8%
Galle	415	17	6.8%
Anuradhapura	405	17	6.9%
Kegalle	403	17	6.9%
Badulla	401	17	6.9%
Matara	399	16	6.9%
Puttalam	398	16	6.9%
Nuwara Eliya	393	16	7.0%
Ampara	389	16	7.0%
Hambantota	387	16	7.0%
Jaffna	383	16	7.1%
Batticaloa	382	16	7.1%
Matale	381	16	7.1%
Moneragala	379	16	7.1%
Polonnaruwa	376	16	7.1%
Trincomalee	373	15	7.2%
Vavuniya	360	15	7.3%
Kilinochchi	357	15	7.3%
Mullaitivu	356	15	7.3%
Mannar	356	15	7.3%
Sri Lanka	10,001	400	1.4%