Timor-Leste

Food and Nutrition Survey 2020

Final Report

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Food and Nutrition Survey

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PREFACE

The 2020 Timor-Leste Food and Nutrition Survey (TLFNS) is the second comprehensive food and nutrition survey carried out in the country. The 2020 TLFNS was conducted under the leadership of the Ministry of Health – Nutrition Department with financial and technical assistance from the United Nations Children's Fund (UNICEF), European Union (EU), Korea International Cooperation Agency (KOICA), World Food Programme (WFP), Food and Agriculture Organization (FAO) and member of Timor-Leste nutrition working group.

The data collection for this survey was between June and September 2020 among children (0-59 months old) and their non-pregnant mothers (15-49 years old). The survey assessed the nutritional status and risk factors for undernutrition, including the factors affecting infant and young child-feeding practices of the same age group of children and non-pregnant mother.

Findings from the survey will be used in planning and implementing nutrition programmes in Timor-Leste. Furthermore, the results of the survey can also be used as baseline data to monitor the progress towards government initiatives to improve the nutrition situation in Timor-Leste.

On behalf of the Government of Timor-Leste, the Ministers of Health (MoH) would like to extend appreciation to the Consultant, who conducted the field studies, analysed the survey data, and wrote the report. Furthermore, the MoH realized that this survey would not be completed without the dedication from the 16 teams of four enumerators each and the participation of our partners who were directly or indirectly involved in the survey. Although we cannot mention it one by one, we would like to express our gratitude, especially to UNICEF and the European Union, for technical oversight and additional resources.

The MoH shared the preliminary findings during a press conference held by the MoH in November 2020, the presentation at a validation workshop with MoH's relevant partners in February 2021. This report was completed in 2020 and is launched in 2021 by the Eight Government Constitution of Timor-Leste.

Finally, no matter how small the contribution of the results from this survey can make, hopefully, it will be useful to, and I encourage departments in the MoH, other relevant ministries, and partners to use the data in this report for nutrition programme planning and implementation to improve the nutrition situation in Timor-Leste.

dr. Odete Maria Freitas Belo, MPH
Minister of Health, Democratic Republic of Timor-Leste

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Faraja Chiwile, UNICEF
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Paulino Pinto, WFP
Seoyoon Sofia Shin, WFP
Imaculada Lobo Belo Maia, WHO
Ligia Parada Maria Rangel, FAO
Evangelita Pereira, World Vision
Dirce Sarmento, Plan International
Marta Filomena Moniz Espirito Santo, INS
Angelita do Amaral Quim, CWS
Cristovão Ramos, CWS
Julio do Carmo, CRS
Gregorio, Mercy Corps
Acacio Sarmento, TOMAK
Sarah Mayenathan, TOMAK
Alicia, TOMAK
Niniva de Silva Barreito, Child Fund
Antoninho Pereira, PhD
Maria Assuncao Barreto Gama, Hamutuk
Lidia Correia dos Santos, Maluk Timor
Elisa Fra Herculano Valentim Soares, Maluk Timor
Octaviana Nunes Tavares, Maluk Timor
dra. Odete da Silva Viegas, MS
Pedro C. da C. Amaral, MS
Marcelo Amaral, MS
Isabel Maria Gomes, MS
dra. Olinda do Reis Albino, MS
Ivo Cornelio L. Guterres, MS
Carlitos Freitas Correia , MS
Dirce Maria Soares, INS
Jose Moniz , MS
Misliza Vital, MS
Luis Celestinho Correia, MS
Bernardo S. Dias, MS
Aderito C. Ribeiro, MS
Angela M. G. Maria, MS
Celestina A. M. Ximenes, MS
Mario Moreira dos Reis, MS
Lucia D. Marcal, MS
Afonso Sarmento, MS
Epifania D. Marques, MS
Dra. Natalia dos Reis, MS
Agustinha Segurado, SSM Dili
Silvano Pedro de Jesus Amaral, MS
Dra. Ramila F. P. Paiva, MS
Melita Monteiro, MS
Afonso H. Bareiro, MS
Abrio Freitas, MS
Ivo Ireneu, MS
Antonio Viegas, MS
Marcelina da Silva, MS
Ivo Cornelio L. Guterres, MS
Jose M. Goncalves, MS
Jose M. Mouzinho, MS
Elezito B. A, MS
Horacio Aleixo, MS
Carla Martinha Bakhita Almeida
Pascoela de Almeida Freitas
Franquelino dos Reis Moreira
Zenito Jose Maria Guterres
Teodoro Xavier Pereira
Deonizia Maria Fátima Gomes
Januario de Jesus Barreto
Madalena Dos Santos
Marito Da Silva
Narcisio Alves Perreira
Antonio Pereira Da Cruz
Hersilia Nunes
Filomeno Albino dos Reis.
Assisten Tonya Felisberta Freitas
Herminio Yohanes D j.Da Costa.
Diceana Vicente Kijong
Evaristo Nunes De Araujo
Lindalva Andresa Da Costa
Piter Janes da Costa Gusmao Ribeiro
Angelo correia de jesus inacio
Belchior Martins Soares.
Maria Estelita Ximenes.
Gaspar da Costa Pacheco.
Zulmira Varradas Lopes.
Miguel Soares Martins
Reinaldo Mascarenhas Sarmento
Isildo Joaquina da Silva
Rita Soares Maia
Aurora da Silva Fernandes
Jeovanio Jose Augostu Castro De Araujo
Joaninha Faria Marcal
Jaime Correia Da Conceicão
Francisco Adeo Pereira
Jovenia Sanches Soares
Domingas Maria Da Silva.
Luciano Mendonça De Assunção
Leão José Augusto
Antonio Amaral Guterres
Agapito Joao Dos Reis
Octaviano R.S. Boavida
Nivia Dos Santos Vicente
Julita Da Silva
Nelson Duarte B.A Almeida
Palmira De Jesus
Salvador Da Silva
Fernanda Almeida Da Silva
Luis Ximenes Soares
Fredy Correia de Lemos
Luis Elizaro Teofilo Amaral
Noelia de jesus Moniz
Tarsicio Baptista magalhaes
Afonso Raimundo soares Amaral
Dirce da Costa Mira Neto
Guido Beno Falo
Brandolina Barros Moniz
Marina Chenli Nunes Amaral
João Octavio Dos Reis Costa
Juvençio Ramiro Dos Santos Borges
Manuel L.B. França Da Silva
Joanico Maria Pires
Sergio E.N. Pereira
Lizia Dias Pereira
Fionia Frauna Freitas
Yoseph Siki
Sonia Maria Ximenes
José Morais
Filomena Lopes da Silva
Francisco de Jesus Moniz
Filipe Pereira
Agapito Estelando Oliveira Dos Reis Cunha
Milena Gomes
Anacleto dos Reis
Lidia Imaculada
Jovanio Alves Dos Anjos Mártires
Gaudencio do Nascimento Gusmao
Alexandre Soares
Joana de Jesus Carvalho Ferreira
Marcelina Amaral
Albro Da Costa Mendonca Ornai

Contents

PREFACE v

ACKNOWLEDGEMENTS vii

LIST OF ACRONYMS xii

EXECUTIVE SUMMARY 2

01 INTRODUCTION 9

1.1. General background 10
1.2. Nutrition context 11
1.3. Justification 11
1.4 Objectives 12

02 METHODOLOGY 14

2.1. Target Population 15
2.2. Study design 15
2.3. Sampling 16
2.3.1 Sampling method 16
2.3.2 Sampling procedure: definition and selection of clusters 16
2.3.3 Selection of households 16
2.3.4 Special Cases 16
2.4 Sample size 17
2.5 Case definitions and inclusion criteria 18
2.6 Questionnaire 25
2.7 Survey Personnel 25
2.8 Training 26
2.9 Data collection and supervision 26
2.10 Data entry, cleaning and analysis 26

03 RESULTS 27

3.1 Sample coverage and characteristics of respondents 28
3.2 Children (0-59 months) 30
3.2.1 Anthropometric indicators (WHO 2006 standards) 30
3.2.2 Morbidity 42
3.2.3 Vaccination and supplementation 43
3.2.4 Infant and young child feeding 45
3.3 Women of reproductive age (15-49 years) 54
3.3.1 Characteristics of sample 54
3.3.2 Body mass index (BMI) 56
3.3.3 Mid-upper arm circumference (MUAC) and short stature 57
3.3.4 Antenatal care and supplementation 59
3.3.5 Minimum dietary diversity for women (MDD-W) 62

3.4 Wealth index 65
3.5 Household Food Security 65
3.5.1 Food consumption score (FCS) 65
3.5.2 Iodised salt use 68
3.5.3 Food Insecurity Experience Scale (FIES) 69
3.6 Water, sanitation and hygiene 70
3.6.1 Access to drinking water 70
3.6.2 Access to sanitation facilities 72
3.6.3 Handwashing 74
3.6.4 Disposal of children's faeces 75
3.7 Determinants of stunting and wasting among children (0-59 months) 76

04 DISCUSSION 80

4.1 Nutritional status among children 0-59 months based on WHO 2006 standards 81
4.2 Morbidity, vaccination and supplementation for children 0-59 months 82
4.3 Infant and young child feeding for children 0-23 months 82
4.4 Health and nutrition status of women of reproductive age (15-49 years) 82
4.5 Wealth index 83
4.6 Food security 83
4.7 Water, sanitation and hygiene 83
4.8 Determinants of stunting and wasting 83

05 CONCLUSION AND RECOMMENDATIONS 84

06 REFERENCES 87

07 ANNEXES 89

Contents

List of Tables

Table 1. Summary of results, TLFNS 2020 6
Table 2. Timor-Leste 2018 projected population by municipality 15
Table 3. Sample size calculation in each municipality, TLFNS 2020 17
Table 4. Classification of malnutrition using WHO 2006 Growth Standards 19
Table 5. Classification of public health significance for children under 5 years of age 19
Table 6. Classification of malnutrition using Body Mass Index (BMI) 22
Table 7. Classification of malnutrition using Mid Upper Arm Circumference (MUAC) 22
Table 8. Classification of low stature 22
Table 9. Minimum dietary diversity for women (MDD-W) 22
Table 10. Food Consumption Score (FCS) 23
Table 11. FIES questions 23
Table 12. FIES classification 24
Table 13. Improved drinking water source definition 24
Table 14. Improved sanitation facility and excreta disposal facility definition 24
Table 15. Target and actual sample size by municipality, TLFNS 2020 28
Table 16. Description of households by sex and age of household head and residence, TLFNS 2020 29
Table 17. Plausibility report for anthropometry by municipality, TLFNS 2020 30
Table 18. Distribution of age and sex of sample, TLFNS 2020 31
Table 19. Prevalence of acute malnutrition and overweight among children (aged 0– 59 months) based on WHZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 33
Table 20. Prevalence of acute malnutrition based on MUAC cut-offs (and/or oedema) - 6-59m by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 35
Table 21. Prevalence of stunting based on HAZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 36
Table 22. Prevalence of underweight based on WAZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 38
Table 23. Mean z-scores, Design Effects and excluded subjects based on WHO flags by municipality, TLFNS 2020 40
Table 24. Prevalence of reported illness among children 0-59 months in the last 14 days by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 42
Table 25. Measles vaccination Vitamin A supplementation, Deworming and micronutrient powder coverage age by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 43
Table 26. Early initiation of breastfeeding and bottle feeding (0-23 months) by sex, municipality, residence, mother/caregiver's education and wealth quintile (TLFNS 2020) 45
Table 27. Exclusive and continued breastfeeding indicators by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 46
Table 28. Complementary feeding, meal frequency, dietary diversity and minimum acceptable diet by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 47
Table 29. Consumption of different food groups (6-23 months) by municipality, TLFNS 2020 51
Table 30. Additional complementary feeding indicators (6-23 months) by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020 52
Table 31. Physiological status by age group, municipality and residence, TLFNS 2020 54
Table 32. Nutritional status of non-pregnant women (15-49 years) based on Body mass index (BMI) by age group, municipality, residence and wealth quintile, TLFNS 2020 56
Table 33. Short stature and acute malnutrition among women (15-49 years) based on Mid Upper Arm Circumference (MUAC) by age group, municipality, residence and wealth quintile, TLFNS 2020 57
Table 34. Percent distribution of antenatal care provider during the pregnancy of the most recent live birth by age group, municipality, residence and wealth quintile, TLFNS 2020 59
Table 35. Number of antenatal care visits for women 15-49 years with a live birth in the last 5 years by age group, municipality, residence and wealth quintile, TLFNS 2020 60
Table 36. Percent distribution of timing of first antenatal care visit during the pregnancy of the most recent live birth by age group, municipality, residence and wealth quintile, TLFNS 2020 61
Table 37. Dietary diversity for women by age group, municipality, residence and wealth quintile, TLFNS 2020 62
Table 38. Women's consumption of different food groups by municipality, TLFNS 2020 63

Table 39. Additional food consumption indicators for women by municipality, residence and wealth quintile, TLFNS 2020 64
Table 40. Wealth quintiles by municipality and residence, TLFNS 2020 65
Table 41. Food consumption score (FCS) by municipality, residence and wealth quintile, TLFNS 2020 66
Table 42. Frequency of household food consumption in the previous 7 days (N=12,881), TLFNS 2020 67
Table 43. Use of iodised salt by municipality, residence and wealth quintile, TLFNS 2020 68
Table 44. Food Insecurity Experience Scale (FIES) by municipality, residence and wealth quintile, TLFNS 2020 69
Table 45. Main source of drinking water by municipality, residence and wealth quintile, TLFNS 2020 70
Table 46. Main toilet facility by municipality, residence and wealth quintile, TLFNS 2020 72
Table 47. Improved sanitation facility and excreta disposal facility by municipality, residence and wealth quintile, TLFNS 2020 73
Table 48. Handwashing method and important time for handwashing by municipality, TLFNS 2020 74
Table 49. Method of disposal of child's faeces/diapers by municipality, residence and wealth quintile, TLFNS 2020 75
Table 50. Bivariate analysis for the association between stunting in children 0-59 months and immediate causes, TLFNS 2020 76
Table 51. Bivariate analysis for the association between stunting in children 0-59 months and underlying and basic causes, TLFNS 2020 77
Table 52. Bivariate analysis for the association between wasting in children 0-59 months and immediate causes, TLFNS 2020 77
Table 53. Bivariate analysis for the association between wasting in children 0-59 months and underlying and basic causes, TLFNS 2020 78
Table 54. Multivariate analysis for the association between wasting in children 0-59 months and underlying and basic causes, TLFNS 2020 79

List of graphs

Figure 1. Trends in prevalence of malnutrition: 2010-2020 31
Figure 2. Prevalence of malnutrition by wealth quintile 32
Figure 3. Prevalence of malnutrition by age group 32
Figure 4. WHZ distribution 34
Figure 5. Proportion of wasting cases identified by different criteria 34
Figure 6. HAZ distribution 37
Figure 7. WAZ distribution 39
Figure 8. Trends in key IYCF indicators (2010-2020) 49
Figure 9. Proportion of children 6-23 months consuming different food groups 50
Figure 10. Trends in prevalence of malnutrition in women of reproductive age (2010-2020) 58

List of annexes

Annex 1. Assigned clusters 90
Annex 2. Team members 114
Annex 3. Training agenda 115
Annex 4. Standardisation test 117
Annex 5. Survey questionnaire 119
Annex 6. Local calendar of events 130
Annex 7. Interviewer manual 131
Annex 8. Field supervision checklist 146

List of Acronyms

ANC	Antenatal care
BMI	Body Mass Index
CI	Confidence Interval
ENA	Emergency Nutrition Assessment
EU	European Union
FAO	Food and Agriculture Organisation
FCS	Food Consumption Score
FIES	Food Insecurity Experience Scale
GAM	Global Acute Malnutrition
HAZ	Height-for-age z-score
IYCF	Infant and Young Child Feeding
KOICA	Korea International Cooperation Agency
MAM	Moderate Acute Malnutrition
MNP	Micronutrient Powder
MUAC	Mid-Upper Arm Circumference
ODK	Open Data Kit
PCA	Principal Component Analysis
PPS	Probability Proportional to Size
SAM	Severe Acute Malnutrition
SMART	Standardised Monitoring and Assessment for Relief and Transitions
TLFNS	Timor-Leste Food and Nutrition Survey
UNICEF	United Nations Children's Fund
WAZ	Weight-for-age z-score
WFP	World Food Programme
WHA	World Health Assembly
WHZ	Weight-for-height z-score
WHO	World Health Organisation

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Executive Summary

The report presents the results of the 2020 Timor-Leste Food and Nutrition Survey (TLFNS) which was conducted between 4 June and 18 September 2020 using 2-stage cluster sampling, in which the sample was stratified by municipality. The sample size, which was calculated using the SMART methodology, 992 households, in each municipality with 80 clusters and 12-13 households per cluster, which were selected using systematic random sampling. The total target sample was 12,896 households and 9,048 children. A total of 12,881 households and 11,246 children were surveyed.

Key findings

01 Nutritional status among children 0-59 months based on WHO 2006 standards

Anthropometry for children was assessed using WHO 2006 standards. The prevalence of stunting was 47.1% (46.2-48.0, 95% C.I), with a moderate and severe stunting prevalence of 30.2% (29.4-31.1, 95% C.I) and 16.9% (16.2-17.6, 95% C.I). The stunting prevalence was well above the WHO “very high” threshold of >30%. The prevalence of underweight was 32.4% (31.5-33.2, 95% C.I), with a moderate and severe underweight prevalence of 24.8% (24.0-25.5, 95% C.I) and 7.6% (7.1-8.1, 95% C.I), respectively. The prevalence of global acute malnutrition (GAM) was 8.6% (8.1-9.1, 95% C.I). The moderate acute malnutrition (MAM) was 7.1% (6.7-7.6, 95% C.I) and the prevalence of severe acute malnutrition (SAM) was 1.5% (1.2-1.7, 95% C.I). The prevalence of wasting was in the “medium” category of WHO classification. The general improvement in the nutrition situation continued, as stunting decreased to 47.1% compared to 50.2% in 2016 and 58.1% in 2010. Underweight decreased to 32.4% from 37.7% in 2016 and 44.7% in 2010. Wasting decreased to 8.6% compared to 11.0% in 2016 and 18.6% in 2010. The prevalence of acute malnutrition was much higher based on WHZ (8.6%) than MUAC (4.7%).

02 Morbidity, vaccination and supplementation for children 0-59 months

In terms of morbidity, 15.2% (14.5-15.8, 95% C.I) reported having experienced diarrhoea, with 9.9% (9.3-10.4, 95% C.I) for acute respiratory infection, and 23.5% (22.8-24.3, 95% C.I) for fever (without cough). The coverage of measles vaccination was 86.3% (83.5-89.2, 95% C.I), with 60.3% (59.2-61.4, 95% C.I) confirmed by the card. 77.8% (76.9-78.5, 95% C.I) of eligible children had received Vitamin A supplementation in the last 6 months, while the coverage of deworming was 71.4% (70.5-72.4, 95% C.I). The proportion of children who received micronutrient powder was 18.1% (16.9-19.3, 9% C.I).

03 Infant and young child feeding for children 0-23 months

The proportion of children 0-23 months who were introduced to breast milk within the first hour after birth was 46.8% (45.2-48.4, 95% C.I). The prevalence of exclusive breastfeeding was 64.2% (61.4-67.0, 95% C.I). The prevalence of bottle feeding was 32.1% (30.7-33.4, 95% C.I). Continued breastfeeding at 1 year (12-15 months) was 68.4% (64.9-72.0, 95% C.I), and only 29.2% (24.9-33.6, 95% C.I) at 2 years (20-23 months). 75.8% (72.5-79.0, 95% C.I) had been introduced to solid foods at 6 months (6-8 months). The proportion of children 6-23 months who achieved a minimum meal frequency (MMF) was 52.3% (50.7-53.9, 95% C.I), and 35.3% (33.8-36.8, 95% C.I) met the minimum dietary diversity (MDD). Only 14.3% (13.2-15.4, 95% C.I) in the same age group met the minimum acceptable diet (MAD). In terms of the trend analysis, early initiation of breastfeeding has been on a general decline, while exclusive breastfeeding improved. There was an improvement in timely introduction of solid foods. Minimum dietary diversity remained unchanged, while minimum meals frequency and minimum acceptable diet decreased.

04 Health and nutrition status of women of reproductive age (15-49 years)

18.8% (18.1-19.5, 95% C.I) of non-pregnant women in the sample were underweight (BMI<18.5), while 19.3% (18.6-20.0, 95% C.I) were overweight/obese (BMI>=25). The prevalence of underweight decreased with age, while the prevalence of overweight/obesity increased with age. The prevalence of underweight decreased from 26.6% in 2016 to 18.8% in 2020, while the prevalence of overweight/obesity nearly doubled from 9.8% in 2016 to 19.3% in 2020. Based on MUAC for pregnant and lactating women, 8.9% (8.2-9.8, 95% C.I) had a low MUAC (below 21cm), with 23.2% (22.0-24.4, 95% C.I) at risk (21-22.9cm). For most women, the main provider of antenatal care were midwives (72.0%, 70.9-73.2, 95% C.I), followed by medical doctors (21.6%, 20.6-22.7, 95% C.I). Most women (64.1%, 62.9-65.4, 95% CI) had 4-7 visits in their last pregnancy, while 19.0% (18.0-20.0, 95% C.I) received 8 or more visits. The minimum dietary diversity for women (MDD-W) was met by 65.4% (64.6-66.2, 95% C.I) of sampled women.

05 Wealth index

The asset-based wealth index ranked households in terms of asset ownership using principal component analysis (PCA). Only 11.6% of rural households were in the highest quintile compared to 44.7% of urban households. Ermera and Ainaro were the poorest municipalities in terms of the index which was calculated.

06 Food security

Of the sampled households, 35.1% (34.2-35.9, 95% C.I) had poor food consumption, while 29.9% (29.2-30.7, 95% C.I) had borderline food consumption and 34.8% (34.0-35.6, 95% C.I) had acceptable food consumption. Based on the Food Insecurity Experience Scale (FIES), 49.6% (48.7-50.5, 95% C.I) of households were classified as food secure/mild food insecure, 34.8% (33.9-35.6, 95% C.I) as moderate food insecure and 15.6% (15.0-16.2, 95% C.I) as severe food insecure.

07 Water, sanitation and hygiene

At national level, access to an improved sanitation facility at national level, 68.2% (67.4-69.0, 95% C.I) had access to an improved sanitation facility, and 52.2% (51.4-53.1, 95% C.I) had access to an improved excreta disposal facility. For nearly all households (87.1%, 86.5-87.7, 95% C.I), the main hand washing method was soap and water and a high proportion of households reported washing their hands before eating (80.0%, 79.3-80.7, 95% C.I), although a lower proportion reported washing their hands before cooking food (45.1%, 44.3-46.0, 95% C.I), after defecation (28.5%, 27.8-29.3, 95% C.I), and a much lower proportion after disposing child's faeces (6.1%, 5.6-6.5, 95% C.I) and before breastfeeding/feeding children (6.2%, 5.8-6.6, 95% C.I).

08 Determinants of stunting

The association between stunting and immediate, underlying and basic causes of malnutrition was analysed using logistic regression analysis. The results revealed that stunting was strongly associated with diarrhoea ($p<0.001$) and fever ($p<0.001$) in terms of morbidity. Stunting also showed strong association with education status of mother/caregiver ($p<0.001$), wealth quintile ($p<0.001$) and lack of access to improved sanitation ($p<0.001$). Wasting was associated with diarrhoea ($p=0.001$), fever ($p<0.001$) and wealth quintile ($p<0.05$).

Recommendations

01 Improving the Nutritional status among children 0-59 months

Increase the coverage of high-impact intervention to address the immediate and underlying causes of malnutrition, focusing on pre-pregnancy and the first 1,000 days to reduce all forms of malnutrition. Prevent and control wasting in children aged 0-59 months by providing community- and inpatient-based treatment and providing food supplements in food insecure areas. Implement a robust social behavior change communication for collective action, community ownership with integrated interpersonal communication (one-on-one counselling), education, and national scale media and community mobilization. Strengthen the capacity of health care providers to deliver quality maternal, infant, young children, and adolescent health and nutrition services at health facility and community levels. Revitalize growth monitoring, promotion and education, including routine screening, early case detection, referral, treatment, and follow-up of cases at all levels. Increase coverage of management of acute malnutrition by establishing a MUAC cut-off point which includes most of the wasted children and early detection of malnourished children. Strengthen the capacity of the health workforce and community volunteers for effective programming and delivery of quality services to prevent and treat all forms of malnutrition. Enforce legal mechanisms to guide the delivery of nutrition services and support improvement in nutrition status.

02 Morbidity, Vaccination, and supplementation for children 0-59 months

Address the causes of diarrhoea and acute respiratory infections among children through robust education to families to inform of the importance of health-seeking immediately when the children get sick as well as promote access to maternal, newborn and child health services. Maintain immunization coverage to protect children from vaccine preventable diseases and invest more efforts to reach the unreached population. Intensify prevention and control of micronutrient deficiencies by strengthening and promoting access to quality services for micronutrient supplementation for children under five, especially the multiple micronutrient powders (MNP) for children 6-23 months.

03 Infant and young child feeding for children 0-23 months

Invest in support for early breastfeeding initiation (within 1 hour after delivery) by increasing health workers' capacity to provide quality services, including counselling during antenatal care (ANC). Continue to promote exclusive breastfeeding for infants 0-6 months at facility,

community and household levels with continued breastfeeding and appropriate complementary feeding of children aged 6 to 23 months and beyond, and optimal feeding during illness while focusing on improving dietary diversity, improving coverage of micronutrient supplementation and food fortification programs. Expand counselling and education for a healthy diet at antenatal care (ANC), postnatal, growth monitoring visits, and other outreach services by integrating SBCC as an essential component to support families to improve household food consumption and quality of child diet. The critical messages for caretakers of children should include the importance of a healthy diet and physical activity promotion in national nutrition strategy to tackle the emerging overweight and obesity. In addition, incorporate obesity prevention in the school nutrition program.

04 Health and nutrition status of women of reproductive age (15-49 years)

Promote women's nutrition before, during, and after pregnancy. Address malnutrition in women before they become pregnant by implementing universal micronutrient supplementation for all pregnant women and adolescent girls through schools and community platforms for out-of-school adolescents. Strengthen school nutrition to ensure that the school is a healthy environment free from advertisements and access to unhealthy foods while guaranteeing access to nutritious foods and clean water. Set up a targeted supplementary feeding program for pregnant and lactating women of reproductive age based on MUAC criteria.

05 Wealth index

Continue advocacy on intensifying the implementation of poverty reduction strategies to address the disparities and malnutrition—advocate for scaleup of cash-based transfer linking it to nutrition outcomes. Focus on poor wealth quintiles and poor households on nutrition education because children in those households are at higher risk of malnutrition.

06 Food Security

Promote and support domestic household food production to improve food availability. Advocate for expansion of nutrition sensitive interventions such as cash transfers for poor households with pregnant and lactating women and children under 2 years of age to increase household purchasing power and hence access to nutritious foods. Ensure the access to food is complemented with the right knowledge of caretakers on dietary diversity and appropriate feeding practices.

07 Water sanitation and hygiene

Continue to implement the flagship intervention of community-led total sanitation (CLTS) and support the communities to adopt "the open defecation free" (ODF) status. Scale up the promotion of hygiene and sanitation practices at the health facilities, schools, community and household levels including communication with integrated messages on handwashing with soap and water at critical times, keeping a clean environment for handling food, use safe water, promote a hygienic toilet, safely remove and treat fecal waste, stop open defecation, and access to sanitation.

08 Address the determinant of stunting

First, invest in understanding the drivers of poor nutrition in children and women and tailor a response that significantly reduces child stunting. Second, strengthen the inter-ministerial/ inter-sectoral collaboration and coordination to implement critical nutrition-sensitive activities in preventing stunting effectively. Third, define the roles and responsibilities of each sector in reducing child stunting and, importantly, co-locate the interventions of all sectors. In all instances, national strategies must prioritize the most vulnerable children: the youngest, the poorest, and the socially excluded. Finally, measure the performance of national systems in delivering essential interventions to prevent stunting and tracking investments and expenditures against costed plans to ensure public accountability and indicate good governance.

Results Summary

Table 1. Summary of results, TLFNS 2020

INDICATOR		% (95% C.I)
Nutritional status of children 0-59 months (WHO 2006 standards)		
Acute malnutrition based on WHZ	Severe	1.5 (1.2-1.7)
	Moderate	7.1 (6.7-7.6)
	Global	8.6 (8.1-9.1)
	Overweight	1.2 (1.0-1.5)
Acute malnutrition based on MUAC	Severe	1.2 (1.0-1.4)
	Moderate	3.5 (3.2-3.9)
	Total	4.7 (4.3-5.1)
Stunting based on HAZ	Severe	16.9 (16.2-17.6)
	Moderate	30.2 (29.4-31.1)
	Total	47.1 (46.2-48.0)
Underweight based on WAZ	Severe	7.6 (7.1-8.1)
	Moderate	24.8 (24.0-25.5)
	Total	32.4 (31.5-33.2)
Morbidity (0-59 months)		
Illness in the last 2 weeks		
Diarrhoea		15.2 (14.5-15.8)
Acute respiratory infection		9.9 (9.3-10.4)
Fever (without cough)		23.5 (22.8-24.3)
Treatment for illness		
Private clinic		3.3 (2.6-3.8)
Public health facilities/hospital		94.9 (94.1-95.6)
Religious leader		0
Traditional healer		0
Pharmacy		0.3 (0.0-0.5)
Home treatment		1.4 (1.1-1.7)
Other		0.2 (0.0-0.3)
Immunisation, vaccination and supplementation (6-59 months)		
Measles vaccination-2 doses (18-59 months), confirmed by card or recall		60.3 (59.2-61.4)
Measles vaccination-2 doses (18-59 months), confirmed by card		86.3 (83.5-89.2)
Vitamin A supplementation (6-59 months), confirmed by card or recall		77.8 (76.9-78.5)
Deworming (12-59 months), confirmed by card or recall		71.4 (70.5-72.4)
Micronutrient powder (6-23 months), confirmed by card or recall		18.1 (16.9-19.3)
Infant and young child feeding (0-23 months)		
Early initiation of breastfeeding (0-23 months)		46.8 (45.2-48.4)
Exclusive breastfeeding (0-5 months)		64.2 (61.4-67.0)
Bottle feeding (0-23 months)		32.1 (30.7-33.4)
Continued breastfeeding at 1 year (12-15 months)		68.4 (64.9-72.0)
Continued breastfeeding at 2 years (20-23 months)		29.2 (24.9-33.6)
Introduced to solid foods at 6 months (6-8 months)		75.8 (72.5-79.0)

Minimum meal frequency (6-23 months)		52.3 (50.7-53.9)
Minimum dietary diversity (6-23 months)		35.3 (33.8-36.8)
Minimum acceptable diet (6-23 months)		14.3 (13.2-15.4)
Milk feeding frequency for non-breastfed children (6-23 months)		29.3 (24.2-34.5)
Women of reproductive age (15-49 years)		
BMI for non-pregnant women (kg/m^2)		
Underweight (<18.5)		18.8 (18.1-19.5)
Normal (18.5-24.9)		61.9 (61.0-62.7)
Overweight (>=25.0)		19.3 (18.6-20.0)
Short stature (<145cm)		12.6 (12.1-13.2)
Acute malnutrition based on MUAC (mm)		
<210mm (low)	All	9.4 (8.9-9.9)
	Pregnant/Lactating	8.9 (8.2-9.8)
210-299mm (at risk)	All	21.9 (21.2-22.6)
	Pregnant/Lactating	23.2 (22.0-24.4)
Antenatal care provider		
Midwife		72.0 (70.9-73.2)
Medical doctor		21.6 (20.6-22.7)
Nurse		5.4 (4.8-5.9)
Nurse assistant		0.2 (0.1-0.3)
Traditional birth attendant		0.2 (0.1-0.3)
Other		0.3 (0.1-0.4)
Number of antenatal care visits		
3 or less		16.8 (15.9-17.8)
4 to 7		64.1 (62.9-65.4)
8 or more		19.0 (18.0-20.0)
Minimum dietary diversity for women (MDD-W)		
Good (>=5 groups)		65.4 (64.6-66.2)
Poor (0-4 groups)		34.6 (33.8-35.4)
Household food security		
Food consumption score (FCS)		
Poor (0-28)		35.2 (34.2-35.9)
Borderline (>28-42)		29.9 (29.2-30.7)
Acceptable (>42)		34.8 (34.0-35.6)
Food Insecurity Experience Scale (FIES)		
Food secure/mild food insecure (<4)		49.6 (48.7-50.5)
Moderate food insecure (4-6)		34.8 (33.9-35.6)
Severe food insecure (7-8)		15.6 (15.0-16.2)

Water, sanitation and hygiene (WASH)	
Access to water and sanitation	
Access to improved drinking water source	87.8 (87.2-88.3)
Access to improved sanitation facility	68.2 (67.4-69.0)
Access to improved excreta disposal facility	52.2 (51.4-53.1)
Hand washing method	
Water only	11.6 (11.0-12.1)
Water and ash	0.0
Water and sand	0.0
Water and soap	87.1 (86.5-87.7)
Other	1.3 (1.1-1.5)
Hand washing times	
Before cooking food	45.1 (44.3-46.0)
After defecation	28.5 (27.8-29.3)
Before eating food	80.0 (79.3-80.7)
After disposing child's faeces	6.1 (5.6-6.5)
Before feeding/breastfeeding children	6.2 (5.8-6.6)

01

Introduction

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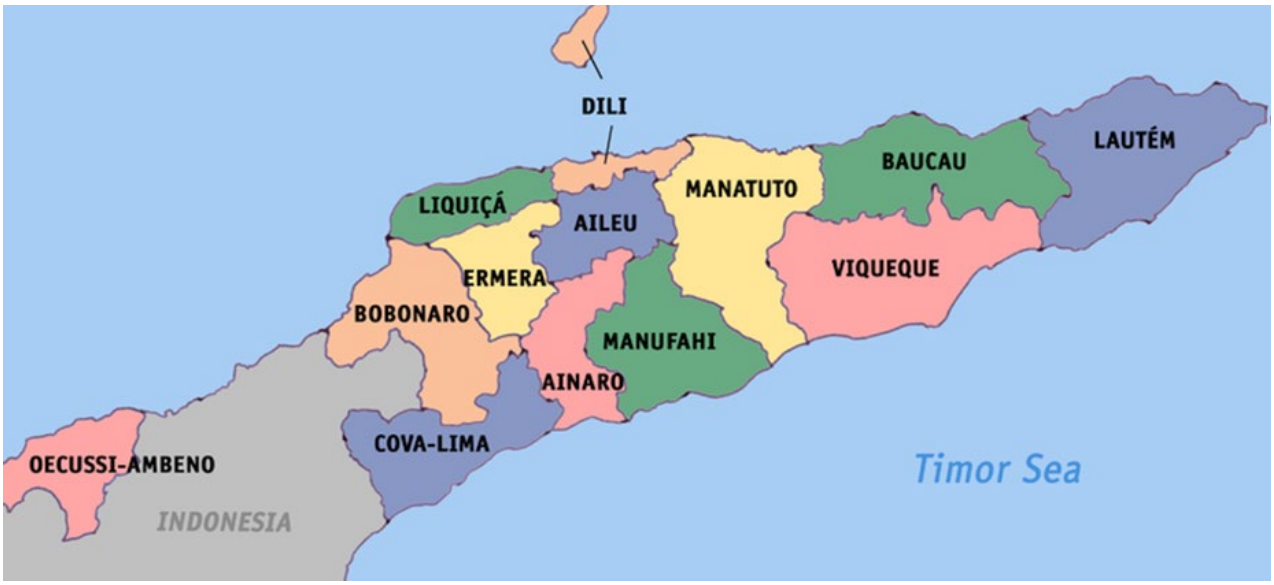
01 Introduction

1.1 General background

Timor-Leste is a country in South-East Asia which comprises the eastern half of the island of Timor, the nearby islands of Atauro and Jaco, and Oe-cusse, an enclave on the north western side of the island surrounded by Indonesian West Timor. Australia is the country's southern neighbour, separated by the Timor Sea. The country's size is about 5,794 square miles. The country is divided into thirteen municipalities, which in turn are sub-divided into 65 administrative posts, 442 sucos and 2,225 aldeias[1].

With over 70% of the population living in rural areas, Timor-Leste is an agrarian society which has adapted to the tropical climate of wet (i.e., November to May depending on elevation and geography) and dry seasons. Agriculture on the island has not reached its full productive potential. Only 30% of arable land is in use for crops or grazing. Due to chronic underproduction the food supply must be supplemented with imported cereals. Higher elevations (over nine months in the high cold zone) and the moist zone of the south coast tend to receive greater rainfall (as much 2000 mm per year and ~1500 mm over 7-8 months, respectively), while the northern coast is hotter and drier. The mountainous and steep terrain is predisposed to extensive soil erosion on the slopes. Climate change is expected to intensify wind and rainfall, increasing erosion from steep, deforested hillsides and affect agricultural productivity. Along with climate change, population growth will exert further pressure on the agricultural system, potentially exacerbating food insecurity if cropping systems and varieties do not improve[2].



Source: https://en.wikipedia.org/wiki/File:Map_of_Timor-Leste_divided_into_districts.png

1 https://en.wikipedia.org/wiki/East_Timor
2 World Bank Group. Malnutrition in Timor-Leste.

1.2 Nutrition context

Childhood stunting is one of the most significant impediments to human development, globally affecting approximately 162 million children under the age of 5 years. Stunting, or being too short for one's age, is defined as a height that is more than two standard deviations below the World Health Organization (WHO) Child Growth Standards median. It is a largely irreversible outcome of inadequate nutrition and repeated bouts of infection during the first 1,000 days of a child's life. Stunting has long-term effects on individuals and societies, including diminished cognitive and physical development, reduced productive capacity and poor health, and an increased risk of degenerative diseases such as diabetes. If current trends continue, projections indicate that 127 million children under 5 years will be stunted in 2025. Therefore, further investment and action are necessary to the 2025 WHA target of reducing that number to 100 million. Stunting is a well-established risk marker of poor child development. Stunting before the age of 2 years predicts poorer cognitive and educational outcomes in later childhood and adolescence and has significant educational and economic consequences at the individual, household and community levels[3].

Despite having decreased from 58% in 2010 to 50% in 2013, according to the Global Health Index (2017), Timor-Leste has the third highest prevalence of stunting and is among the only 3 countries in which at least half of children below 5 years are stunted[4]. According to the Fill the Nutrient Gap (FNG) report[5], all Timorese households were able to afford to meet their energy needs but a nutritious diet that met the requirements of energy, protein and 13 micronutrients, would be unaffordable for most households. Diets modelled to meet the needs of energy, protein and 13 micronutrients cost $158 to $211 per month for five people, which was significantly higher than the minimum wage of $115 per month.

1.3. Justification

The last national Timor-Leste Food and Nutrition Survey (TLFNS) was conducted in 2013. The findings revealed that there was an improvement in the nutritional status of children compared to the Timor-Leste Demographic and Health Survey conducted in 2010 (TLDHS 2010). There was a decrease of 8 percentage points in terms of stunting, 7 points in terms of underweight, and 8 points in terms of wasting. Given that there is a National Nutrition Strategy which covers the period 2014-2019, the TLFNS 2020 was expected to contribute to the evaluation of the impact of nutrition sensitive and nutrition specific programmes addressing nutrition throughout the life cycle.

3 WHO. WHA Global Nutrition Targets 2025: Stunting Policy Brief
4 IFPRI. Global Health Index
5 WFP. Fill the Nutrient Gap Timor-Leste Report

1.4 Objectives

The overall objective of the survey was to determine the prevalence of malnutrition among children and women of reproductive age in Timor-Leste and to assess contributing factors at the household level, which include health-seeking behaviour, vaccination coverage, maternal, infant and young child feeding, household food security and water, sanitation and hygiene.

Specific objectives

Anthropometry

- To estimate the prevalence of Global and Severe Acute Malnutrition (GAM and SAM) among children aged 0 to 59 months (WHZ and MUAC)
- To estimate the prevalence of stunting among children aged 0-59 months
- To estimate the prevalence of underweight among children aged 0-59 months

Immunization, Morbidity and Health Practices

- To determine the two-week period prevalence of diarrhoea, acute respiratory infection and fever among children aged 0-59 months
- To determine health care seeking behaviour amongst children who have been ill in the previous 2 weeks
- To estimate the coverage of measles immunisation for children 18-59 months
- To estimate coverage of Vitamin A supplementation in the last six months among children aged 6-59 months
- To estimate the coverage of deworming for children aged 12-59 months

Infant and Young Child Feeding Practices

- Early initiation of breastfeeding (0-23 months)
- Exclusive breastfeeding under 6 months (0-5months)
- Prevalence of bottle feeding (0-23 months)
- Introduction to solid, semi-solid and soft foods (6-8 months)
- Continued breastfeeding at 1 year (12-15 months)
- Continued breastfeeding at 2 years (20-23 months)
- Age-appropriate breastfeeding for children 6-23 months
- Minimum dietary diversity in children 6-23 months
- Minimum meal frequency in children 6-23 months
- Minimum acceptable diet for children 6-23 months of age
- Consumption of sugar sweetened beverages for children 6-23 months of age
- Consumption of tracer junk foods for children 6-23 months of age
- Consumption of no fruits or vegetables for children 6-23 months of age
- Receipt of IYCF counselling in the previous 6 months (0-23 months of age)

Women of reproductive age (15-49 years)

- To estimate the proportion of women accessing 4 or more and 8 or more ANC visits
- To estimate the proportion of women consuming iron/folic acid supplementation tablets during pregnancy
- To determine the prevalence of underweight, overweight and obesity
- To estimate the prevalence of short stature based on height measurement
- To determine the prevalence of acute malnutrition based on MUAC cut-offs
- To measure minimum dietary diversity for women (MDD-W)
- To estimate women's consumption of sugar sweetened beverages
- To estimate women's consumption of tracer junk foods
- To estimate women's' consumption of no fruits and vegetables

Household characteristics, food security and coping mechanisms

- To determine socio-economic status of households using wealth quintiles
- To estimate the Food Consumption Score (FCS) to determine the proportion of households with poor, borderline and acceptable food consumption
- To determine the prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
- To assess the usage of iodized salt

Water Hygiene and Sanitation

- To determine the proportion of households using an improved drinking water source
- To determine the proportion of households using an improved sanitation facility
- To assess hand washing at household level
- To determine methods of disposal of children's faeces at household level

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02

Methodology

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02 Methodology

The survey was based on the SMART (Standardised Monitoring and Assessment for Relief and Transitions) methodology, which is standardised, simplified, cross-sectional field survey method which is widely used internationally got nutrition survey design and for the collection of quality nutrition data to produce timely results for decision-making.

2.1. Target population

The target population for the anthropometric part of the survey was all children between 0 and 59 months of age and women of the reproductive age (15-49 years of age), who are considered to the most nutritionally vulnerable and important groups in terms of nutrition in the life cycle.

2.2. Study design

The survey was designed as a cross-sectional household survey using a two-stage cluster sampling with representativeness for each of the 13 municipalities, which were the survey domains. In addition, the survey sought to compare results in the urban and rural areas and between wealth quintiles, which was consistent with TLFNS 2013 and therefore ensured that the results could be compared. The survey domains with their population figures are presented in Table 2 below.

Table 2. Timor-Leste 2018 projected population by municipality

Municipality	Population
Aileu	53,009
Ainaro	64,922
Baucau	126,236
Bobonaro	99,823
Covalima	68,185
Dili	316,728
Ermera	134,069
Lautem	66,845
Liquica	77,328
Manatuto	48,559
Manufahi	56,306
Oe-cusse	71,132
Viqueque	78,265
Timor-Leste	**1,261,407**

2.3. Sampling

2.3.1 Sampling method

The 2-stage cluster sampling method was used given that the survey was conducted over a large geographical area in which it was expected that there will not be a linear arrangement of households.

2.3.2 Sampling procedure: definition and selection of clusters

The primary sampling unit was the cluster. Clusters were selected from a list of aldeias using sampling with probability proportional to size (PPS). The list of aldeias in each municipality was listed. The required number of clusters were then selected using sampling with probability proportional to size (PPS). The list of clusters is shown in Annex 1.

2.3.3 Selection of households

The required number of households in each cluster were selected using systematic random sampling from a random starting point, which will follow the following steps:

- Identify the boundaries of the cluster and locate the centre
- Divide the number of households in the cluster by the required number of households to calculate a sampling interval
- Spin a pen to select a random direction
- Move in the direction of the pen, counting households, from 1 up to the number of the interval
- Interview the first household immediately at the end of the interval
- Select a new random direction and repeat the steps above

2.3.4 Special Cases

Absent household/respondents
In the event that either the whole household, or a respondent (for example, a child) was not present at the time of the survey, the team sought information from neighbours so as to confirm if the respondent/household would return the same day. If the household/respondent was expected back the same day, the team returned to the household to administer the questionnaire. If the household was not expected back the same day, the household was classified as an abandoned household and replaced randomly using the sampling method outlined above. Respondents who could not return the same day were recorded as absent.

Abandoned house
These were defined as either empty household, in which the residents had left permanently, or absent households which were not expected back the same day. These were replaced as described above.

Households without children and/or without women of reproductive age
These households were interviewed for the household module only.

Disabled children/women
They were included in the survey. In the event that a physical deformity prevented the measurement of child's or woman's anthropometric measurements (weight, height or MUAC), the data was recorded as missing in the questionnaire and on the relevant forms.

2.4 Sample size

The survey sample size was calculated automatically in ENA for SMART software, January 11, 2020 version using the assumptions shown in Table 3. The estimated prevalence was obtained from the Timor-Leste Food and Nutrition Survey 2013 (TLFNS 2013). The desired precision and design effect were based on the guidance in the SMART Methodology Manual 2.0 (2017). The proportion of children below 5 years and average household size were obtained from population projections. Based on previous surveys, the expected proportion of non-response was set at 10%.

Table 3. Sample size calculation in each municipality, TLFNS 2020

Parameters for Anthropometry	Value
Estimated Prevalence of Stunting	50%
± Desired precision	5%
Design Effect	1.5
Children to be included- 6 to 59 months	627
Children to be included- 0 to 59 months	696
Average HH Size	5
Percentage Children under-5	15.8%
Percentage Non-response Households	10%
Households to be included	980

The fixed household method was used, implying that the target was the number of households rather than the number of children, based on the assumption that 980 households would result in at least **627 children 6-59 months** (this translates to **696 children 0-59 months** as ENA-for-SMART determines the number between 6 and 59 months, which is assumed to be 90% of the total 0-59 months) being interviewed. In each municipality, there were a total of **80 clusters, 48 of which had 12 households, while 32 had 13 households each, bringing the total target to 992 households per municipality and 12,896 overall.**

2.5 Case definitions and inclusion criteria

Household	A household was defined as a group of people who normally live together and eat from the same pot and resources.
Sex of children	Sex was recorded as male or female.
Birth date or age in months for children 0-59 months	The exact date of birth (day, month, and year) was recorded from birth certificates or LISIO (maternal and child booklet). In the absence of the official document, the date of birth was obtained from recall. A local calendar of events was used to support recall. In the event that the day of birth was not known, 15 was entered[6].
Age of women 15-49 years	The reported age was recorded in years.
Weight of children 0-59 months	Measurements were taken to the nearest 0.1kg using an electronic scale.
Height/Length of children 0-59 months	Children's height or length was taken to the nearest 0.1cm using a height/length board. Children 2 years and above, who were measured standing up, while those below 2 years, who were measured lying down. For children below 2 years could not be measured lying down, an adjustment was automatically made by adding 0.7cm. For children 2 years and above could not be measured standing up, an automatic adjustment was made by subtracting 0.7cm.
Oedema in children 0-59 months	Bilateral oedema was assessed by applying gentle thumb pressure on to the tops of both feet of the child for a period of three seconds and thereafter observing for the presence or absence of an indent.
MUAC of children 0-59 months and women 15-49 years	MUAC was measured at the mid-point of the left upper arm between the elbow and the shoulder and taken to the nearest 0.1cm using a standard tape.
Measles vaccination in children 18-59 months	Measles vaccination was assessed by checking for the measles vaccine on the child health card if available or by asking the caregiver to recall if no LISIO booklet was available or if it was not recorded.
Vitamin A supplementation in last 6 months in children 6-59 months	Whether the child received a vitamin A capsule over the past six months was recorded using recall from the mother/ caregiver.
Deworming-children 12-59 months	Whether the child received deworming was recorded using recall from the mother/caregiver.
Morbidity	Retrospective morbidity was assessed using recall for the past 2 weeks.
Diarrhoea	Diarrhoea was defined as three loose stools or more in 24 hours. Caregivers were asked if their child had suffered episodes of diarrhoea in the past two weeks.
Fever (without cough)	Fever was assessed through a two-week recall, defined as fever in the absence of respiratory symptoms (cough) in children 6-59 months. This indicator is a proxy for suspected malaria.

Acute Respiratory Infection (ARI)	Cough, breathing difficulties, chest in-drawing, rapid breathing.
ANC enrolment and iron and folic acid pills coverage	If the surveyed woman was pregnant, she was assessed on whether she was enrolled in the ANC programme and was receiving iron-folic acid pills.
Classification of malnutrition	Table 4 shows the definition and classification of the nutritional indicators used. Main results are reported according the World Health Organisation (WHO) Growth Standards 2006.

Table 4. Classification of malnutrition using WHO 2006 Growth Standards

Indicator		Definitive criteria
Acute Malnutrition	Global Acute Malnutrition	WHZ <-2SD and/or
		Presence of Bilateral pitting oedema-
		MUAC <125mm
	Moderate Acute Malnutrition	WHZ <-2 and ≥-3
		MUAC ≥115mm and <125mm
	Severe Acute Malnutrition	WHZ <-3 and/or oedema
		MUAC <115mm
Stunting	Overall stunting	HAZ <-2
	Moderate Stunting	HAZ <-2 and ≥-3
	Severe stunting	HAZ <-3
Underweight	Overall Underweight	WAZ <-2
	Moderate Underweight	WAZ <-2 and ≥-3
	Severe Underweight	WAZ <-3

Table 5. Classification of public health significance for children under 5 years of age[7]

Prevalence %	Very High	High	Medium	Low	Very low
Wasting	≥15	10-<15	5-<10	2.5-<5	<2.5
Stunting	≥30	20-<30	10-<20	2.5-<10	<2.5

6 WHO/UNICEF. Recommendations for data collection, analysis and reporting on anthropometric indicators in children under 5 years old.
7 UNICEF/WHO/World Bank. Levels and trends in child malnutrition-Joint Malnutrition Estimates.

Infant and young child feeding indicators[8]

Early initiation of breastfeeding	Definition	Percentage of newborns put to the breast within one hour of birth.
	Formula	Children born in the last 2 years who were put to the breast within one hour of birth / Children born in the last 2 years
Exclusive breastfeeding	Definition	Proportion of infants 0–5 months of age who are fed exclusively with breast milk.
	Formula	Infants 0–5 months of age who received only breast milk during the previous day / Infants 0–5 months of age
Continued breastfeeding at 1 year	Definition	Proportion of children 12–15 months of age who are fed breast milk.
	Formula	Children 12–15 months of age who received breast milk during the previous day / Children 12–15 months of age
Continued breastfeeding at 2 years	Definition	Proportion of children 20-23 months of age who are fed breast milk.
	Formula	Children 20-23 months of age who received breast milk during the previous day / Children 20-23 months of age
Introduction of solid, semi-solid or soft foods	Definition	Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods.
	Formula	Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day / Infants 6–8 months of age
Minimum dietary diversity (MDD)	Definition	Percentage of children 6-23 months of age who received a minimum diet diversity.
	Formula	Number of children 6-23 months of age who received foods from ≥ 5 (out of 8) food groups1 during the previous day. / Children 6-23 months of age
	(The eight food groups are: (i) breastmilk; (ii) grains, roots and tubers; (iii) legumes and nuts; (iv) dairy products (infant formula, milk, yogurt, cheese); (v) flesh foods (meat, fish, poultry and liver/organ meats); (vi) eggs; (vii) vitamin-A rich fruits and vegetables; (viii) other fruits and vegetables.)	

8 WHO. Indicators for assessing infant and young child feeding practices. Part II. Measurement.

Minimum meal frequency (MMF)	Definition	Percentage of children 6-23 months of age who received a minimum meal frequency.
	Formula	Number of breastfed children 6–23 months of age who received solid, semi-solid or soft foods the minimum number of times or more during the previous day AND the number of non-breastfed children 6–23 months of age who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the previous day ——— Breastfed children aged 6-23 months AND Non-breastfed children aged 6-23 months
		** Minimum is defined as: 2 times solid, semi-solid or soft foods for breastfed infants 6–8 months of age; 3 times solid, semi-solid or soft foods for breastfed children 9–23 months of age; and 4 times solid, semi-solid or soft foods and/or milk feeds for non-breastfed children 6–23 months of age* ** Milk feeds refer to infant formula, animal milk (tinned/powdered/fresh) and yogurt*
Minimum acceptable diet (MAD)	Definition	Percentage of children 6-23 months of age who received a minimum acceptable diet
	Formula	Breastfed children 6-23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day AND Non-breastfed children 6-23 months of age who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day ——— Breastfed children aged 6-23 months AND Non-breastfed children aged 6-23 months
Bottle feeding	Definition	Proportion of children 0–23 months of age who are fed with a bottle.
	Formula	Children 0–23 months of age who were fed with a bottle during the previous day ——— Children 0–23 months of age
Age-appropriate breast-feeding	Definition	Proportion of children 0–23 months of age who are appropriately breastfed.
	Formula	Infants 0–5 months of age who received only breast milk during the previous day Infants 0–5 months of age ——— AND Children 6–23 months of age who received breast milk, as well as solid, semi-solid or soft foods, during the previous day ——— Children 6–23 months of age
Milk feeding frequency for non-breastfed children	Definition	Proportion of non-breastfed children 6–23 months of age who receive at least 2 milk feedings.
	Formula	Non-breastfed children 6–23 months of age who received at least 2 milk feedings during the previous day ——— Non-breastfed children 6–23 months of age

Anthropometry for women of reproductive age

Table 6. Classification of malnutrition using Body Mass Index (BMI)[9]

Classification	BMI (kg/m^2)
Underweight	<18.5
Normal	18.5-24.99
Overweight	> 25-29.99
Obese	> 30

Table 7. Classification of malnutrition using Mid Upper Arm Circumference (MUAC)

Classification	MUAC (cm)
Low	<21
At-risk	21-22.9
Normal	>= 23

Table 8. Classification of low stature

Classification	Height (cm)
Short Stature	<145cm
Normal stature	>=145cm

Minimum dietary diversity for women (MDD-W)

MDD-W is a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups the previous day or night. The 10 groups are:

1. Grains, white roots and tubers, and plantains;
2. Pulses (beans, peas and lentils);
3. Nuts and seeds;
4. Dairy products;
5. Meat, poultry and fish;
6. Eggs;
7. Dark green leafy vegetables;
8. Other vitamin A-rich fruits and vegetables;
9. Other vegetables;
10. Other fruits.

Table 9. Minimum dietary diversity for women (MDD-W)[10]

MDD-W	Threshold
Good	>=5 food groups
Poor	0-4 food groups

9 WHO. Obesity-Preventing and Managing the global epidemic. WHO Technical Report Series 894.
10 FAO/FANTA/USAID. Minimum Dietary Diversity for Women-A Guide to Measurement.

Food Consumption Score (FCS)[11]

The frequency weighted diet diversity score or "Food consumption score" is a score calculated using the frequency of consumption of different food groups consumed by a household/individual during the 7 days before the survey (Table 10).

Table 10. Food Consumption Score (FCS)

#	Food items (examples)	Food group	Weight
1	Maize, maize porridge, rice, sorghum, millet pasta, bread and other cereals	Cereals and tubers	2
2	Cassava, potatoes and sweet potatoes		
3	Beans, peas, groundnuts and cashew nuts	Pulses	3
4	Vegetables and leaves	Vegetables	1
5	Fruits	Fruit	1
6	Beef, goat, poultry, pork, eggs and fish	Meat and fish	4
7	Milk, yogurt and other diary	Milk	4
8	Sugar and sugar products	Sugar	0.5
9	Oils, fats and butte	Oil	0.5
10	Condiments	Condiments	0
FCS	Classification		
<=28	Poor consumption		
>28 and <=42	Borderline consumption		
>42	Acceptable consumption		

Food Insecurity Experience Scale (FIES)[12]

The FIES consists of a set of eight short yes/no questions which focus on self-reported, food-related behaviours and experiences associated with increasing difficulties in accessing food due to resource constraints. The measure of food insecurity associated with a respondent can be located on the scale based on the number of positive responses to the questions. Such measures are then used to classify respondents into categories of food insecurity severity. The questions are shown below.

Table 11. FIES questions

During the last 12 months…
Were worried you would run out of food because of a lack of money or other resources?
Were unable to eat healthy and nutritious food because of a lack of money or other resources? 3 (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)
Ate only a few kinds of foods because of a lack of money or other resources?
Had to skip a meal because there was not enough money or other resources to get food?
Ate less than you thought you should because of a lack of money or other resources?
Ran out of food because of a lack of money or other resources?
Were hungry but did not eat because there was not enough money or other resources for food?
Went without eating for a whole day because of a lack of money or other resources?

11 WFP/FAO. Interagency Workshop Report Measures of Food Consumption - Harmonizing Methodologies Rome, 9 - 10 April 2008
12 http://www.fao.org/3/a-bl404e.pdf

Each positive response carries a score of 1. The categories for analysis based on the responses are shown below[13]:

Table 12. FIES classification

Raw score	Classification
<4	Food secure/Mild food insecure
4-6	Moderate food insecure
7-8	Severe food insecure

Wealth index[14]

Wealth is the value of all natural, physical and financial assets owned by a household, reduced by its liabilities. Household wealth is a measure commonly used in food security assessments. It gives an idea of households' ability to access food, the severity of food insecurity and gives information about the economic situation of the food insecure. It is used to differentiate between the poorer and the wealthier households in food security related indicators, such as food consumption, and thereby provides information on how to target the food insecure. The wealth index is commonly used in reports and analysis based on datasets from Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), and WFP surveys, and is used to rank households into quintiles. The value of using the wealth index is especially recognised in contexts where reliable income and expenditure data is absent. Principal Component Analysis (PCA) is used to create the wealth index.

Water, sanitation and hygiene indicators

Table 13. Improved drinking water source definition

Improved sources	Unimproved sources
Public tap/standpipe	Unprotected well
Piped water into dwelling	Surface water
Tubewell/borehole	
Protected well/spring	
Bottled water	

Table 14. Improved sanitation facility and excreta disposal facility definition

	Improved facilities	Unimproved facilities
Sanitation facility	Flush latrine with septic tank	Pit latrine without slab
	Pit latrine with slab	Flush latrine without septic tank
		No latrine/bush
Improved excreta disposal facility	Improved facility + not sharewd	
Shared	Improved + shared by 2 families	
Unimproved	Unimproved facility OR shared by more than 2 families	

13 FAO. Measuring Food Insecurity Experience Scale (FIES) in Indonesia.
14 WFP, VAM Guidance Paper-Creation of a wealth index

2.6 Questionnaire

The survey questionnaire included 3 modules, which were as follows:

- Child module (0-59 months): for child anthropometry, health and infant and young child feeding.
- Maternal module (15-49 years): for maternal nutritional status, dietary diversity and antenatal care.
- Household module: for the wealth index, household food security, dietary diversity, water, sanitation and hygiene.

2.7 Survey Personnel

The data collection team was made up of 64 members, who were in 16 teams, each with 4 members.

The team member roles were as follows:

- Measurer: responsible for reading all anthropometric measurements
- Assistant measurer: responsible for ensuring that the children/women are in the correct position and recording the measurement in the data form.
- Interviewer: responsible for completing the household listing form and administering the questionnaires and data entry into the tablet.
- Supervisor: responsible for ensuring that all procedures are followed for sampling, interviewing and data entry, and also responsible for sending completed and verified questionnaires to the server at the end of each day of data collection.

A list of the team members is shown in Annex 2.

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2.8 Training

The trainings for the data collection teams were conducted over a period of 5 days each in Dili. Due to the large number, there were two separate trainings, each attended by 32 participants. The training included the following aspects:

- Introduction to nutrition surveys
- Sampling and household selection
- Anthropometry
- Questionnaire familiarisation
- Mobile data collection
- Field procedures
- Standardisation test

A complete agenda for the training is shown in Annex 3. Results of the standardisation test are contained in Annex 4.

2.9 Data collection and supervision

The 16 teams collected data over a period of 5 days in each of the 13 municipalities using android tablets which contained the 3 modules of the questionnaire. The 16 teams were supervised by a multi-agency team led by the Ministry of Health which ensured that data was collected with a high degree of quality.

2.10 Data entry, cleaning and analysis

At the end of each day of data collection, the supervisor in each team checked the accuracy and completeness of questionnaires before sending the completed questionnaires to a central ONA server using an internet connection. A plausibility report was generated on a daily basis for anthropometry so as to test the quality of the data. Feedback was given to the monitoring team as well as the data collection team. In some instances, measurements were re-taken. There were also situations whereby data entry errors were identified and corrected given that each measurement was recorded on forms before being entered into the tablets. Data analysis for anthropometry was performed using ENA-for-SMART. Analysis for the remaining modules was conducted using both SPSS (which was particularly used to generate the wealth quintiles as well as the regression analysis) and EPI-INFO.

03

Results

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03

Results

3.1 Sample coverage and characteristics of respondents

From the target of 12,896 households, the total number completed was 12,881, which represents 99.9%. In terms of children below 5 years, a total of 11,246 were measured, against a target of 9,048, which was 124% (Table 15).

Table 15. Target and actual sample size by municipality, TLFNS 2020

Municipality	Households			Surveyed population	Average household size	Children below 5 years		
	Target	Actual	Percentage			Target	Actual	Percentage
Aileu	992	991	99.9%	5,837	5.9	696	875	126%
Ainaro	992	992	100.0%	5,935	6.0	696	916	132%
Baucau	992	991	99.9%	5,381	5.4	696	843	121%
Bobonaro	992	992	100.0%	5,978	6.0	696	787	113%
Covalima	992	992	100.0%	5,578	5.6	696	785	113%
Dili	992	983	99.1%	6,376	6.5	696	927	133%
Ermera	992	992	100.0%	5,884	5.9	696	931	134%
Lautem	992	992	100.0%	5,829	5.9	696	1,010	145%
Liquica	992	990	99.8%	5,628	5.7	696	842	121%
Manatuto	992	992	100.0%	5,459	5.5	696	842	121%
Manufahi	992	992	100.0%	5,576	5.6	696	822	118%
Oe-cusse	992	991	99.9%	5,159	5.2	696	683	98%
Viqueque	992	991	99.9%	5,417	5.5	696	983	141%
Total	12,896	12,881	99.9%	74,037	5.7	9,048	11,246	124%

The average household size was 5.7 for the sample. Most of the households (59.9%) had between 5 to 9 people, while a third (33.3%) had 1 to 4 people. Over 90% of households were male headed. Over three quarters (76.1%) was rural, which reflects the population statistics (Table 16).
w

Table 16. Description of households by sex and age of household head and residence, TLFNS 2020

Description	n/N	% (95% C.I)
Household size		
1-4	4295/12881	33.3 (32.2-34.5)
5-9	7711/12881	59.9 (58.8-61.0)
10-14	815/12881	6.3 (5.8-6.9)
15-19	51/12881	0.4 (0.3-0.5)
20+	9/12881	0.1 (0.0-0.1)
Mean	5.7	(5.7-5.8)
Sex of household head		
Male	11808/12881	91.7 (91.2-92.2)
Female	1073/12881	8.3 (7.8-8.8)
Age of household head		
<18 years	2/12881	0.02 (0.00-0.04)
18 to 29 years	1589/12881	12.3 (11.7-13.0)
30 to 39 years	3959/12881	30.7 (29.8-31.6)
40 to 49 years	2911/12881	22.6 (21.9-23.3)
50 to 59 years	2270/12881	17.6 (17.0-18.3)
60+ years	2150/12881	16.7 (15.9-17.4)
Residence		
Rural	9800/12881	76.1 (73.6-78.5)
Urban	3081/12881	23.9 (21.5-26.4)

3.2 Children (0-59 months)

3.2.1 Anthropometric indicators (WHO 2006 standards)

Stunting refers to a child who is too short for his or her age. These children can suffer severe irreversible physical and cognitive damage that accompanies stunted growth. The devastating effects of stunting can last a lifetime and even affect the next generation. Wasting refers to a child who is too thin for his or her height. Wasting is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible. Overweight refers to a child who is too heavy for his or her height. This form of malnutrition results from energy intakes from food and beverages that exceed children's energy requirements. Overweight increases the risk of diet-related non-communicable diseases later in life[15].

The quality of anthropometric data met the required standard in terms of all the key quality parameters, which include the proportion of flagged values, sex ratio, age ratio, digit preference, standard deviation, skewness, kurtosis and poisson distribution (Table 17). In all municipalities, the standard deviation (SD) of weight-for-height z-score (WHZ) was below 1.1, which is a measure of good quality. Sex ratio was particularly high in Aileu, while the proportion of flagged values was highest in Dili, which was the first municipality for data collection.

Table 17. Plausibility report for anthropometry by municipality, TLFNS 2020

Municipality	Bias			Digit preference			Sample distribution				Overall quality	
	Flagged values	Sex ratio	Age ratio	Weight	Height	MUAC	SD of WHZ	Skewness WHZ	Kurtosis WHZ	Poisson dist. WHZ-2	Total	Quality level
Aileu	0	10	2	0	2	2	0	0	0	0	16	Acceptable
Ainaro	0	4	4	0	2	2	5	0	3	3	23	Acceptable
Baucau	0	0	4	0	2	0	0	0	1	3	10	Good
Bobonaro	0	0	0	0	2	2	0	0	0	1	5	Excellent
Covalima	0	4	0	0	0	2	5	0	0	1	12	Good
Dili	5	0	0	0	2	2	0	0	1	0	10	Good
Ermera	0	0	4	0	2	2	0	0	1	1	8	Excellent
Lautem	0	0	4	0	2	2	5	0	1	0	14	Good
Liquica	0	0	4	0	0	2	0	0	1	1	8	Excellent
Manatuto	0	4	2	0	2	2	0	0	1	5	16	Acceptable
Manufahi	0	2	4	0	2	2	0	0	0	0	10	Good
Oe-cusse	0	4	4	0	0	2	0	1	0	0	11	Good
Viqueque	0	0	4	0	2	2	0	0	1	0	9	Excellent
National	0	10	10	0	0	2	0	0	0	0	22	Acceptable

15 UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates Key findings of the 2018 edition

The age and sex distribution of the sample was within the expected range (Table 18).

Table 18. Distribution of age and sex of sample, TLFNS 2020

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
0-5	577	11%	538	9%	1115	10%	1.1
6-11	595	11%	668	11%	1263	11%	0.9
12-23	1201	22%	1294	22%	2495	22%	0.9
24-35	1099	20%	1238	21%	2337	21%	0.9
36-47	1008	19%	1090	19%	2098	19%	0.9
48-59	909	17%	1029	18%	1938	17%	0.9
Total	5389	100%	5857	100%	11246	100%	0.9

Figure 1. Trends in prevalence of malnutrition : 2010-2020

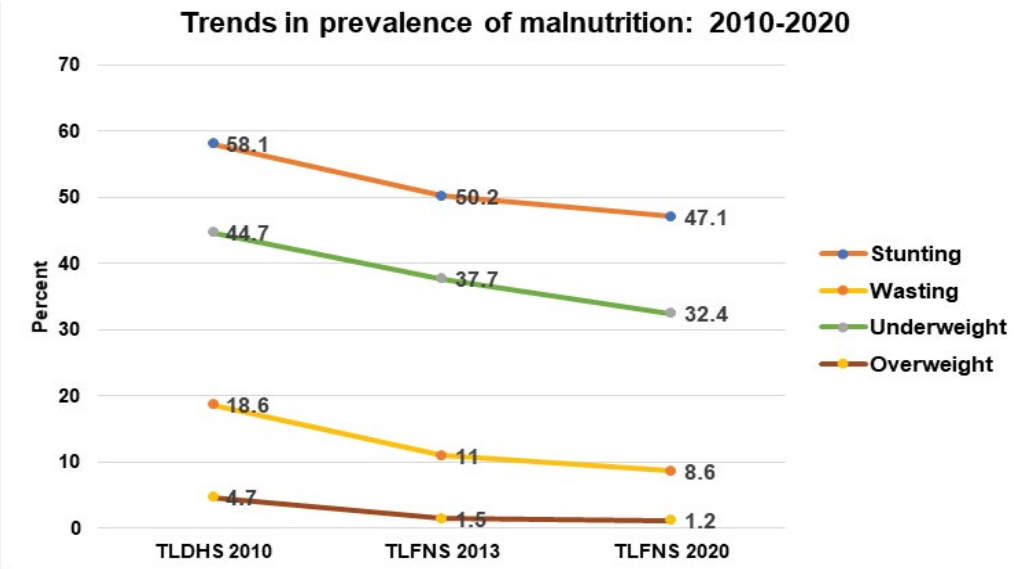
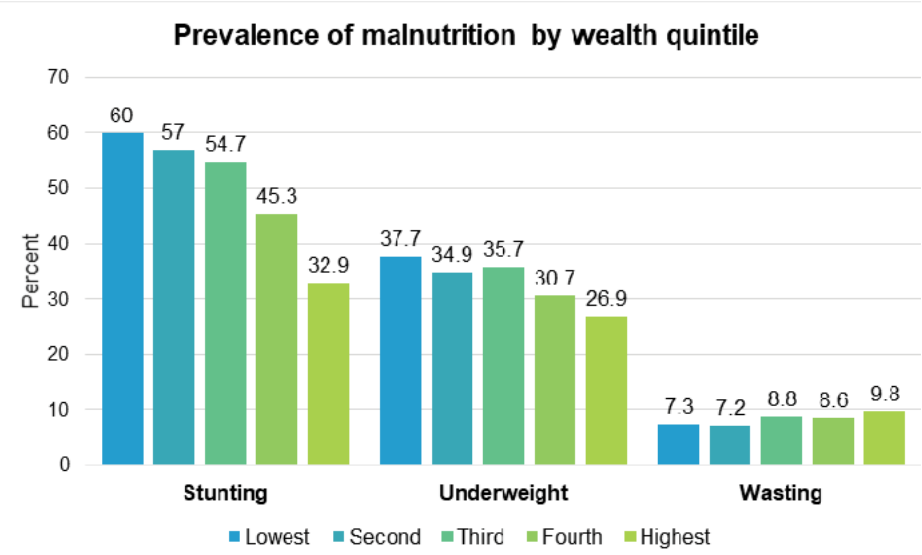


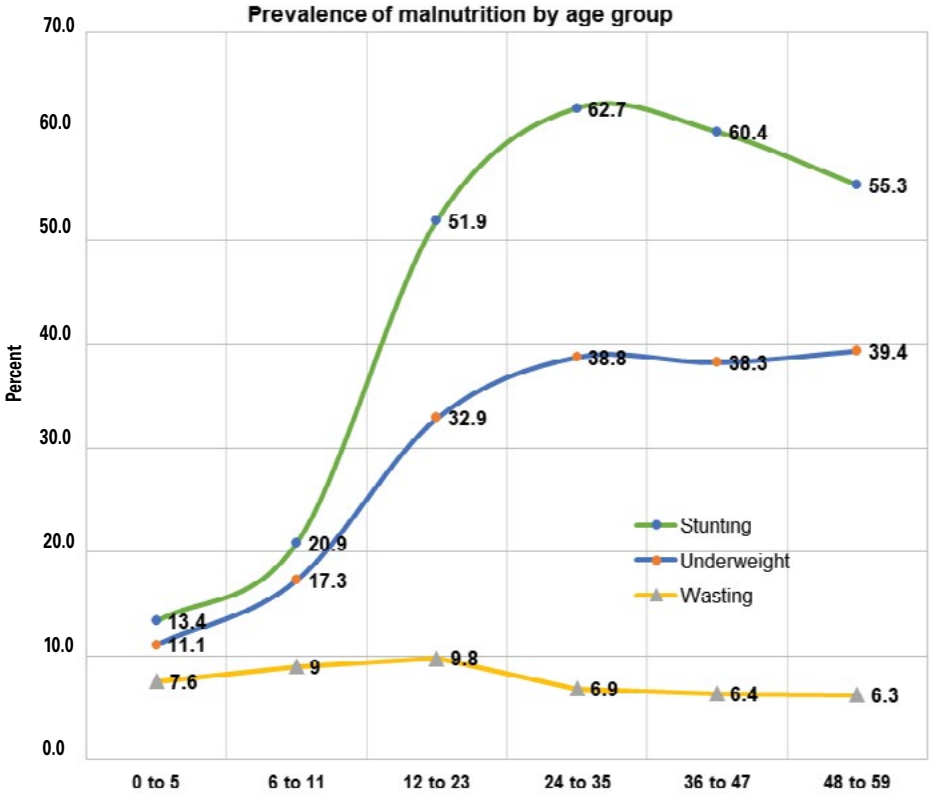
Figure 1 reveals that the trend of improvement in terms of nutritional status of children below 5 years continued, with a reduction in stunting, wasting, underweight as well as overweight (Figure 1). The decrease in the prevalence of stunting, wasting and underweight were all statistically significant ($p<0.05$) when comparing 2020 with 2013. The decrease in overweight was not statistically significant.

Figure 2. Prevalence of malnutrition by wealth quintile



The prevalence of malnutrition increased with decreasing wealth quintile for stunting and underweight, but the reverse was true for wasting, mainly since wasting was high in Dili, the largest urban centre (Figure 2).

Figure 3. Prevalence of malnutrition by age group



The prevalence of acute malnutrition was highest in the 12-23 months age group. Stunting increased with age and peaked at the 24-35 months age group then began to decrease. Underweight peaked at the 24-35 months age group then was almost unchanged up to the 48-59 months age group (Figure 3).

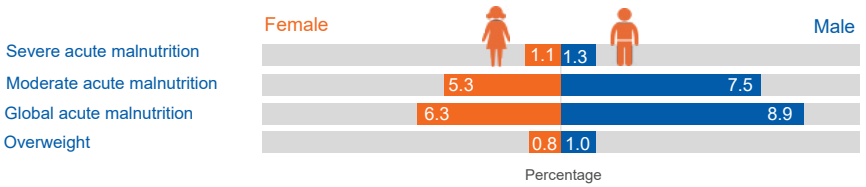
The prevalence of global acute malnutrition (GAM) was 8.6% (8.1-9.1, 95% C.I), which falls within the medium category in terms of WHO classification. The GAM prevalence was higher in males (8.9%) than females (6.3%). GAM was highest in Oe-cusse (13.0%), Bobonaro (11.8%), and Dili (10.1%) and was higher in urban (8.9%) than rural areas (7.3%). The prevalence of GAM increased with decreasing maternal education status as well as decreasing wealth quintile (Table 19).

Table 19. Prevalence of acute malnutrition and overweight among children (aged 0–59 months) based on WHZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

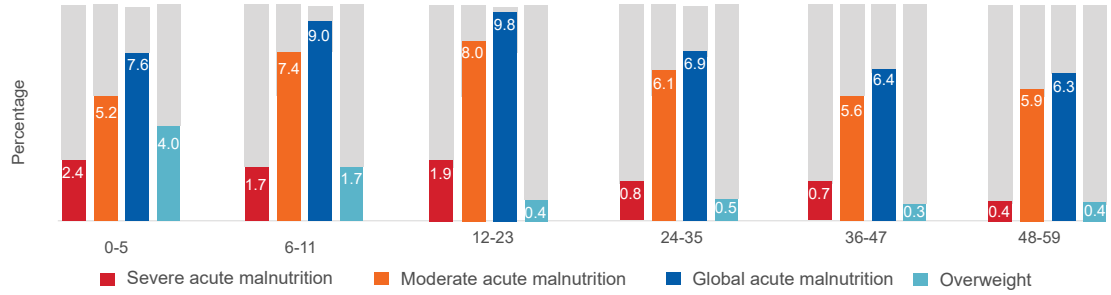
Total (weighted)

1.5%	7.1%	8.6%	1.2%
Severe acute malnutrition (WHZ <-3 z-score and/or oedema)	**Moderate acute malnutrition** (WHZ <-2 z-score and >=-3 z-score, no oedema)	**Global acute malnutrition** (WHZ<-2 z-scores and/or oedema)	**Overweight** (WHZ>2 z-scores)

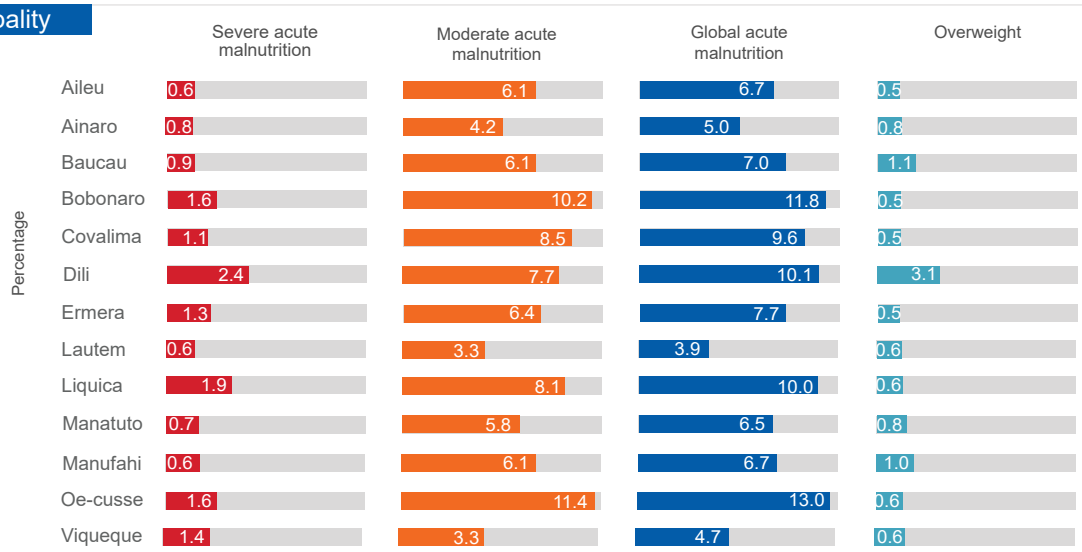
Sex



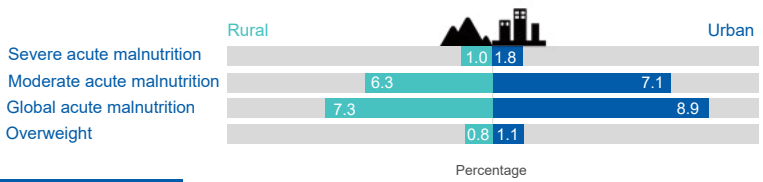
Age group



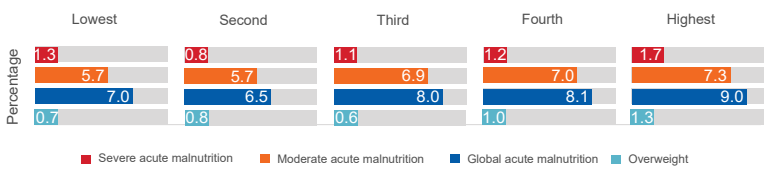
Municipality



Residence



Wealth quintile



Mother/caregiver's education status

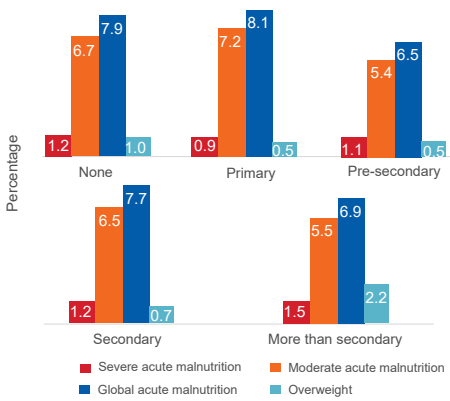


Figure 4. WHZ distribution

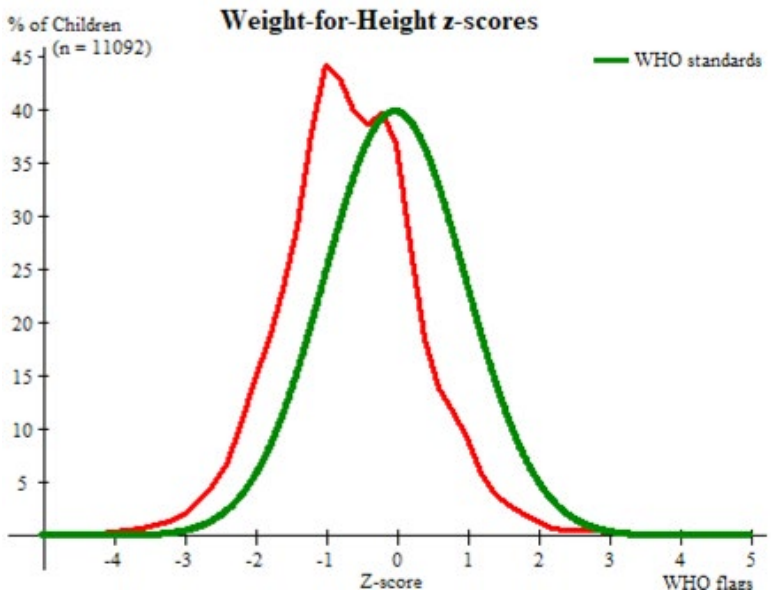
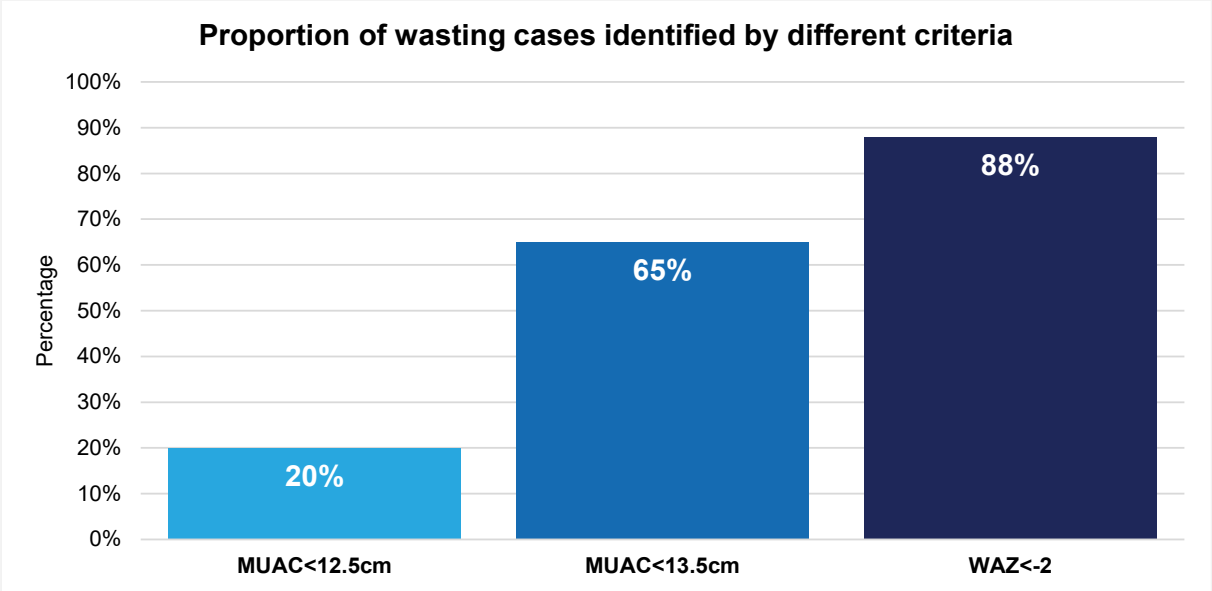


Figure 4 is a comparison of the survey and WHO distribution of weight-for-height z-scores. The survey curve was shifted to the left of the WHO curve, showing a higher prevalence of acute malnutrition than the reference population. The mean of WHZ was -0.64±1.00.

Figure 5. Proportion of wasting cases identified by different criteria



As Table 20 shows, based on MUAC, the prevalence of acute malnutrition for children 6-59 months was 2.7% (2.4-3.0, 95% C.I), which was much lower than the prevalence based on WHZ. As revealed by Figure 5, WAZ<-2% identified 88% of the wasting cases (WHZ<-2). However, MUAC<13.5cm identified 65%, while MUAC<12.5cm identified only 20%. This shows a very low overlap between MUAC and WHZ, which is an important finding given that case finding at community level uses MUAC, as it shows that the standard cut-off is inadequate in terms of capturing children with wasting.

Table 20. Prevalence of acute malnutrition based on MUAC cut-offs (and/or oedema) - 6-59m by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

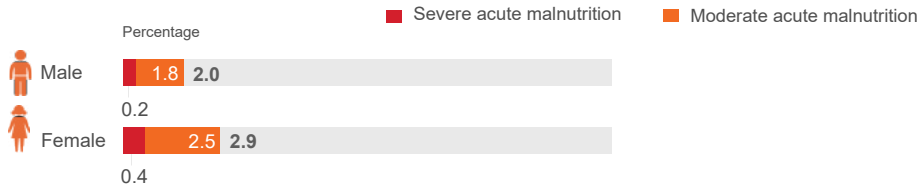
Total (weighted)

0.4% **Severe acute malnutrition** (MUAC <-115mm and/or oedema)

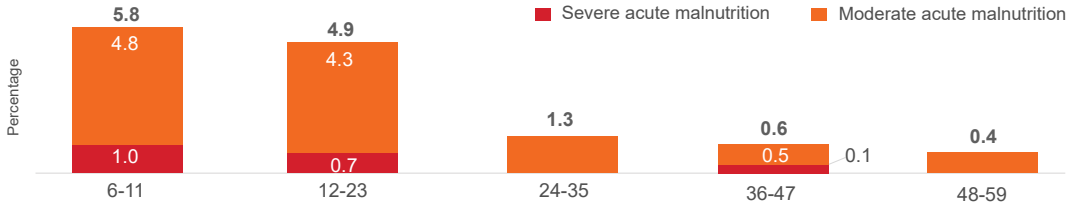
2.3% **Moderate acute malnutrition** (MUAC < 125mm and >= 115mm, no oedema)

2.7% **Total acute malnutrition** (MUAC<125mm and/or oedema)

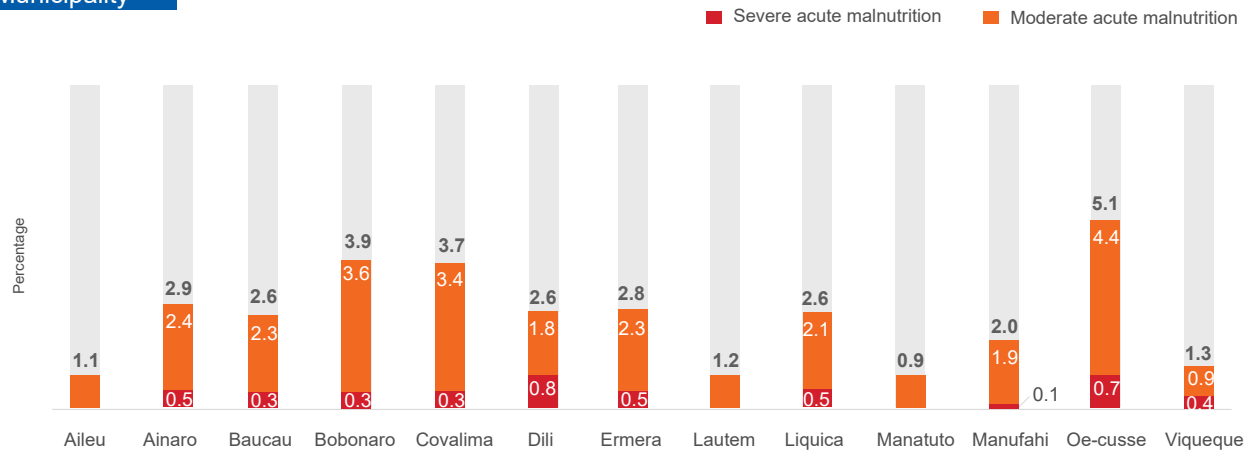
Sex



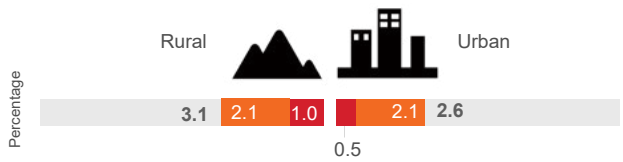
Age group



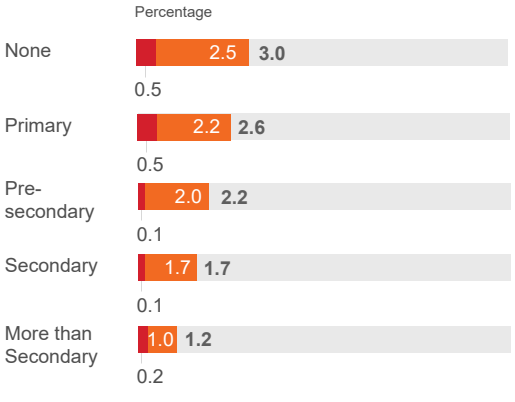
Municipality



Residence



Mother/caregiver's education status



Wealth quintile

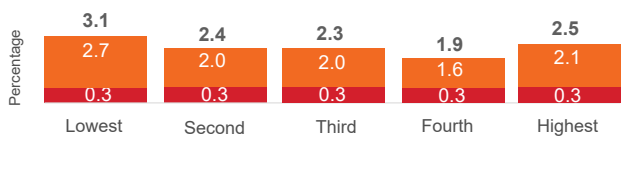
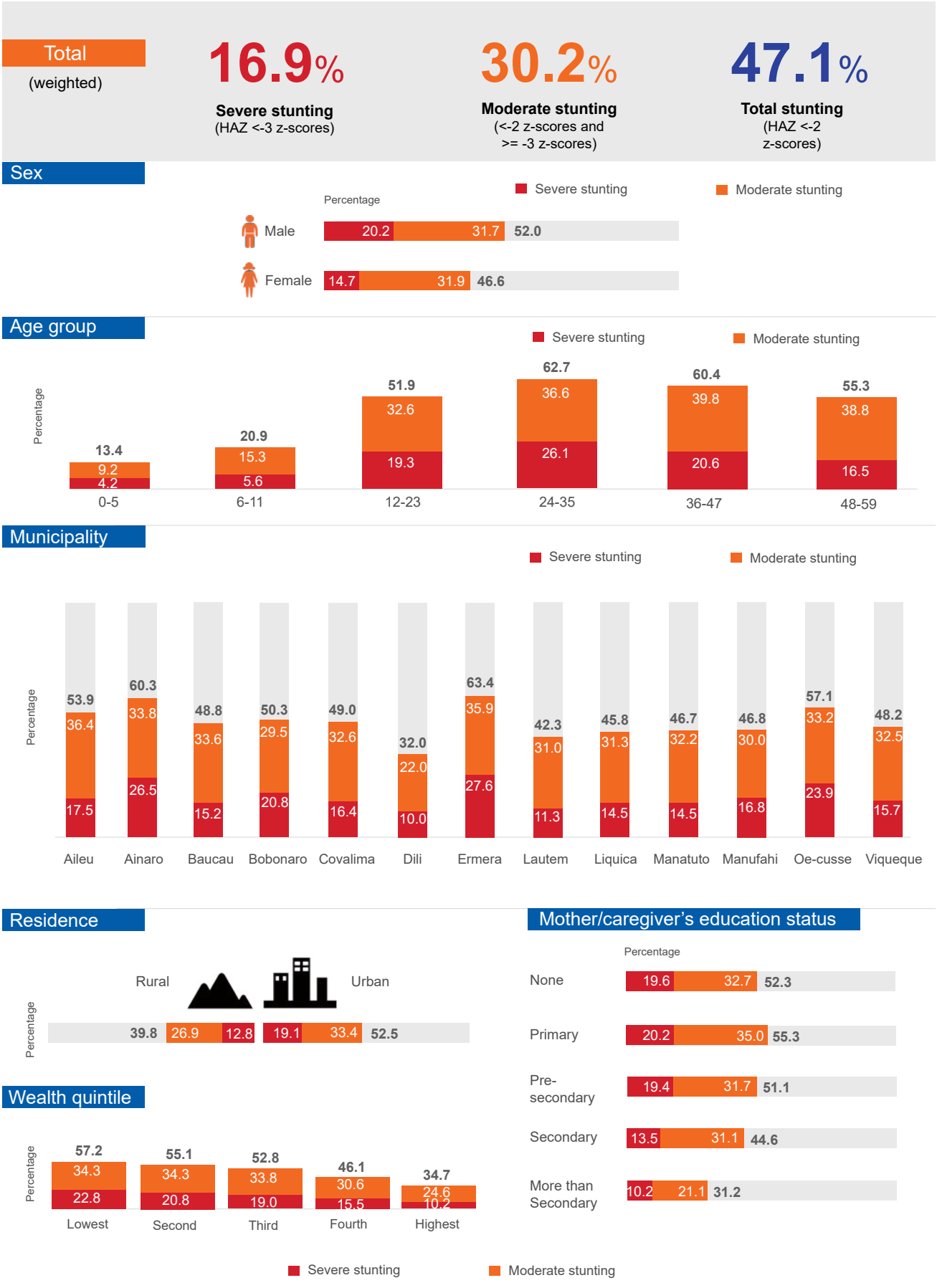
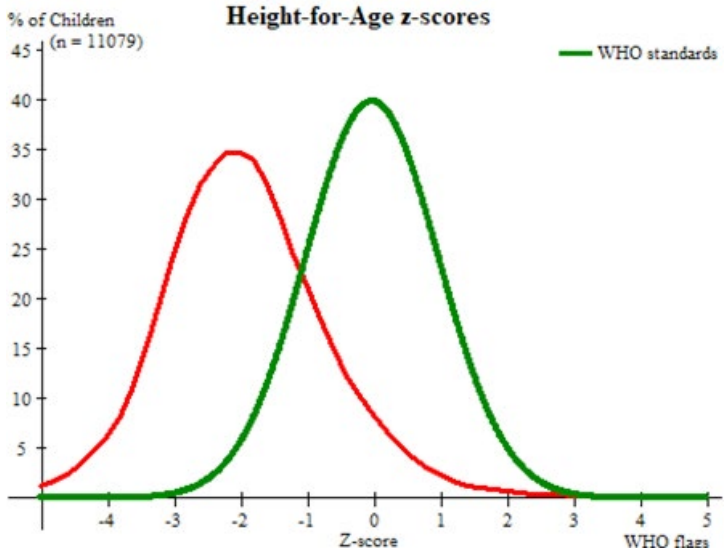


Table 21. Prevalence of stunting based on HAZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020



The prevalence of stunting for Timor-Leste was 47.1% (46.2-48.0, 95% C.I), which is well above the WHO “very high” threshold of >=30%. Stunting therefore continues to be a major problem in the country. Stunting was higher for boys (52.0%) than girls (46.6%), and much higher in rural areas (52.5%) than urban areas (39.8%). As observed in previous surveys, stunting was highest in Ermera (63.4%), Ainaro (60.3%) and Oe-cusse (57.1%). Children with mothers/caregivers with lower education status had a higher prevalence of stunting (Table 21).

Figure 6. HAZ distribution



The HAZ distribution of the survey is shown in Figure 6. The curve followed a normal distribution with a mean HAZ of -1.90±1.28. The graph showed some kurtosis.

Table 22. Prevalence of underweight based on WAZ by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

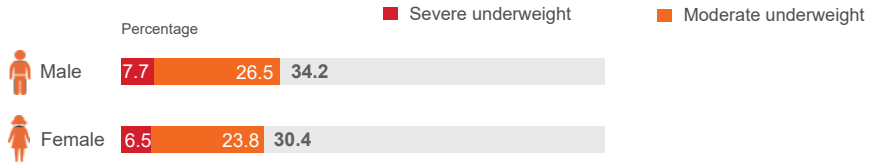
Total (weighted)

7.6% **Severe underweight** (WAZ<-3)

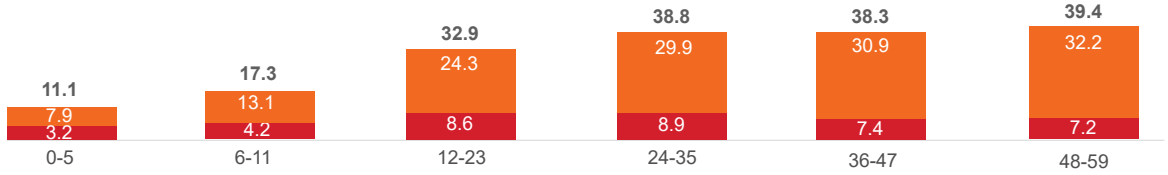
24.8% **Moderate underweight** (WAZ<-2 and WAZ >=-3)

32.4% **Total underweight** (WAZ<-2)

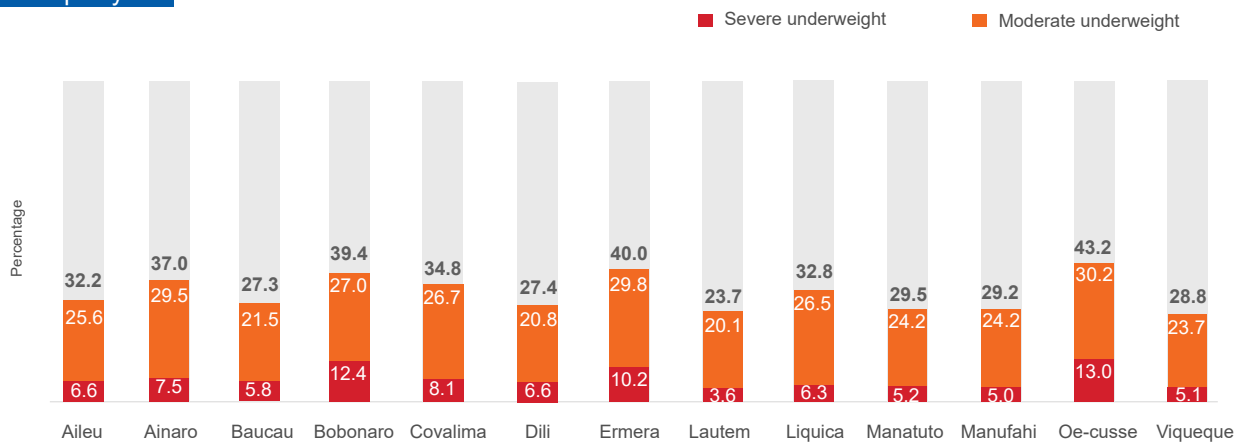
Sex



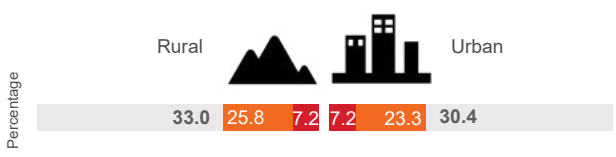
Age group



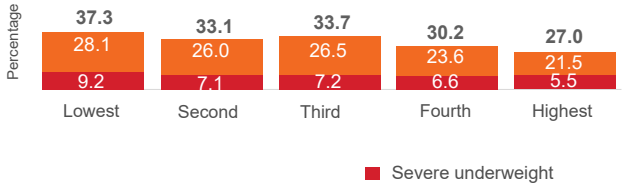
Municipality



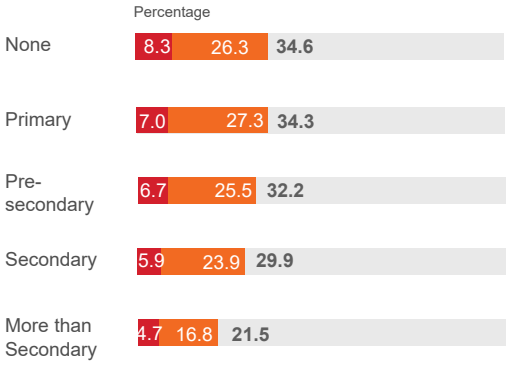
Residence



Wealth quintile



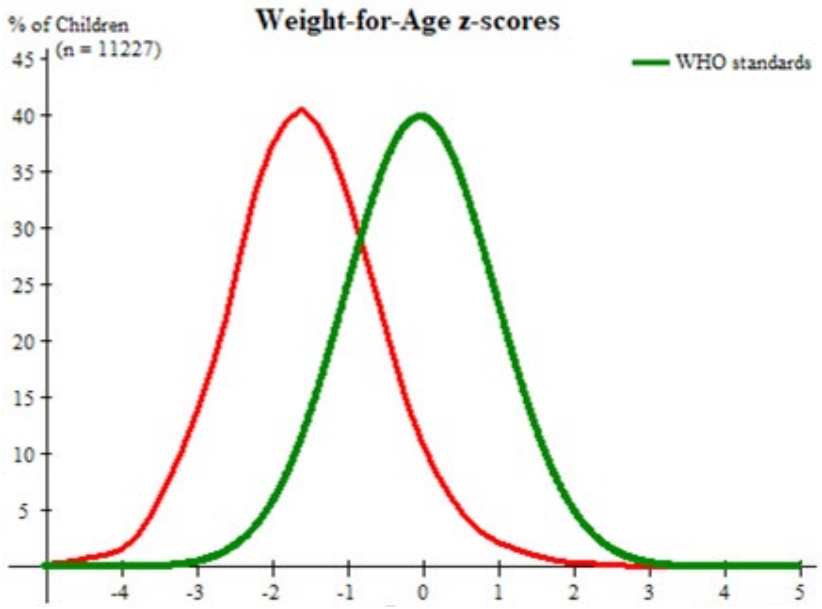
Mother/caregiver's education status



Severe underweight Moderate underweight

The prevalence of underweight in Timor-Leste was 32.4 (31.5-33.2, 95% C.I), with a higher prevalence among boys (34.2%) than girls (30.4%). Underweight was highest in Oe-cusse (43.2%) and Ermera (40.0%), and higher in rural areas (33.0%) than urban areas (30.4%). Children whose mothers/caregivers had a lower education status had a higher prevalence of underweight (Table 22).

Figure 7. WAZ distribution



The survey WAZ distribution followed a very similar shape to the standard WHO distribution, with a mean WAZ of -1.53±1.05 (Figure 7).

Mean z-scores, design effects and excluded subjects are summarized by municipality in Table 23.

Table 23. Mean z-scores, Design Effects and excluded subjects based on WHO flags by municipality, TLFNS 2020

Municipality	Indicator	N	Mean z-scores ± SD	Design Effect (z-score < -2)	Z-scores not available	Z-scores Out of range
Aileu	Weight-for-height	875	-0.58±0.97	1.16	0	0
	Weight-for-age	875	-1.56±0.97	1.66	0	0
	Height-for-age	874	-2.03±1.08	1.71	0	1
Ainaro	Weight-for-height	906	-0.53±0.92	1.44	9	1
	Weight-for-age	913	-1.65±1.05	1.48	2	1
	Height-for-age	902	-2.21±1.32	1.80	8	6
Baucau	Weight-for-height	843	-0.52±0.99	1.55	0	0
	Weight-for-age	843	-1.44±0.98	1.80	0	0
	Height-for-age	843	-1.90±1.16	1.53	0	0
Bobonaro	Weight-for-height	763	-0.87±1.00	1.31	15	9
	Weight-for-age	785	-1.69±1.18	1.00	0	2
	Height-for-age	766	-1.89±1.52	1.69	13	8
Covalima	Weight-for-height	740	-0.88±0.94	1.30	38	1
	Weight-for-age	779	-1.58±1.08	1.16	0	0
	Height-for-age	737	-1.80±1.35	1.48	38	4
Dili	Weight-for-height	901	-0.70±1.22	1.14	17	10
	Weight-for-age	927	-1.31±1.22	1.22	1	0
	Height-for-age	904	-1.41±1.40	1.39	10	14
Ermera	Weight-for-height	914	-0.59±1.03	1.41	15	2
	Weight-for-age	928	-1.74±1.05	1.29	3	0
	Height-for-age	911	-2.28±1.32	1.00	14	6
Lautem	Weight-for-height	1,010	-0.52±0.90	1.23	0	0
	Weight-for-age	1,010	-1.33±0.97	1.32	0	0
	Height-for-age	1,008	-1.71±1.15	1.76	0	2
Liquica	Weight-for-height	828	-0.75±1.03	1.48	12	2
	Weight-for-age	839	-1.54±1.00	1.00	2	1
	Height-for-age	827	-1.80±1.23	1.74	11	4
Manatuto	Weight-for-height	842	-0.60±0.94	1.77	0	0
	Weight-for-age	842	-1.47±0.98	1.74	0	0
	Height-for-age	841	-1.85±1.20	1.87	0	1

Municipality	Indicator	N	Mean z-scores ± SD	Design Effect (z-score < -2)	Z-scores not available	Z-scores Out of range
Manufahi	Weight-for-height	820	-0.73±0.91	1.25	1	1
	Weight-for-age	822	-1.62±0.98	1.34	0	0
	Height-for-age	820	-1.71±1.08	1.54	1	1
Oe-cusse	Weight-for-height	667	-0.92±1.01	1.00	16	0
	Weight-for-age	683	-1.78±1.08	1.00	0	0
	Height-for-age	666	-2.04±1.44	1.51	16	1
Viqueque	Weight-for-height	978	-0.68±0.90	1.11	5	0
	Weight-for-age	983	-1.57±1.00	1.55	0	0
	Height-for-age	982	-1.69±1.09	1.51	0	1
Total	Weight-for-height	11092	-0.64±1.00	1.05	129	25
	Weight-for-age	11227	-1.53±1.05	1.35	15	4
	Height-for-age	11079	-1.90±1.28	1.45	118	49

3.2.2 Morbidity

The proportion of children who reported having experienced diarrhoea was 15.2% (14.5-15.8, 95% C.I), with 9.9% (9.3-10.4. 95% C.I) for acute respiratory infection and 23.5% (22.8-24.3, 95% C.I) based on a 14-day recall period (Table 24). The TLFNS 2013 had similar findings for diarrhoea (16.7%).

Table 24. Prevalence of reported illness among children 0-59 months in the last 14 days by sex, age group, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

Description	N	Diarrhoea		Acute respiratory infection		Fever (without cough)	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Sex							
Male	5857	962	16.4 (15.2-17.7)	652	11.1 (9.7-12.6)	1354	23.1 (21.8-24.4)
Female	5389	836	15.5 (14.2-16.9)	560	10.4 (8.9-11.9)	1277	23.7 (22.2-25.2)
Age group							
0-5	1115	101	9.1 (7.1-11.0)	100	9.0 (6.9-11.0)	168	15.1 (12.7-17.5)
6-11	1018	245	19.4 (17.0-21.8)	163	12.9 (10.6-15.3)	360	28.5 (25.8-31.2)
12-23	2495	588	23.6 (21.6-25.6)	325	13.0 (11.1-14.9)	750	30.1 (28.0-32.1)
24-35	2337	396	16.9 (15.3-18.5)	247	10.6 (8.9-12.3)	530	22.7 (20.8-24.6)
36-47	2098	252	12.0 (10.4-13.6)	186	8.9 (7.3-10.5)	445	21.2 (19.1-23.3)
48-59	1938	216	11.1 (9.4-12.8)	191	9.9 (8.3-11.5)	378	19.5 (17.9-21.1)
Municipality							
Aileu	875	136	15.5 (12.5-18.6)	113	12.9 (8.1-17.7)	197	22.5 (18.6-26.4)
Ainaro	916	153	16.7 (13.0-20.5)	86	9.4 (5.6-13.2)	216	23.6 (19.9-27.2)
Baucau	843	102	12.1 (8.7-15.5)	63	7.5 (4.4-10.6)	123	14.6 (11.4-17.8)
Bobonaro	787	132	16.8 (12.9-20.7)	88	11.2 (7.2-15.2)	223	28.3 (23.9-32.8)
Covalima	785	133	16.9 (13.8-20.1)	87	11.1 (7.3-14.9)	184	23.4 (20.1-26.8)
Dili	928	94	10.1 (7.7-12.6)	57	6.1 (3.9-8.4)	191	20.6 (17.0-24.1)
Ermera	931	207	22.2 (18.2-26.2)	122	13.1 (8.2-18.0)	293	31.5 (26.6-36.3)
Lautem	1,010	89	8.8 (6.7-10.9)	84	8.3 (5.0-11.6)	173	17.1 (13.8-20.5)
Liquica	842	177	21.0 (17.7-24.3)	96	11.4 (6.7-16.1)	257	30.5 (26.3-34.7)
Manatuto	842	182	21.6 (17.8-25.4)	106	12.6 (8.4-16.8)	174	20.7 (16.7-24.6)
Manufahi	822	162	19.7 (15.5-23.9)	104	12.7 (7.3-18.0)	175	21.3 (17.0-25.6)
Oe-cusse	683	112	16.4 (12.9-19.9)	77	11.3 (7.6-15.0)	233	34.1 (29.3-38.9)
Viqueque	983	119	12.1 (9.6-14.7)	129	13.1 (8.1-18.1)	192	19.5 (16.0-23.1)
Residence							
Urban	2742	410	15.0 (13.1-16.8)	282	10.3 (7.9-12.7)	585	21.3 (19.2-23.5)
Rural	8504	1388	16.3 (15.1-17.5)	930	10.9 (9.4-12.5)	2046	24.1 (22.7-25.4)
Mother/caregiver's education status							
None	4998	799	16.0 (14.5-17.5)	412	8.2 (7.0-9.5)	1118	22.4 (20.8-24.0)
Primary	1242	237	19.1 (16.6-21.6)	156	12.6 (9.8-15.3)	319	25.7 (23.0-28.4)
Pre-secondary	1532	253	16.5 (14.3-18.7)	210	13.7 (11.2-16.2)	393	25.7 (22.8-28.5)
Secondary	2916	443	15.2 (13.6-16.8)	359	12.3 (10.2-14.4)	667	22.9 (20.9-24.8)
More than secondary	558	66	11.8 (8.7-15.0)	75	13.4 (9.2-17.7)	134	24.0 (19.7-28.3)
Wealth quintile							
Lowest	2330	376	16.1 (14.3-17.9)	199	8.5 (7.0-10.0)	571	24.5 (22.0-27.0)
Second	2255	366	16.2 (14.2-18.3)	240	10.6 (8.5-12.8)	511	22.7 (20.7-24.6)
Third	2237	387	17.3 (17.3-21.6)	257	11.5 (9.5-13.5)	526	23.5 (21.5-25.6)
Fourth	2291	360	15.7 (13.8-17.7)	272	11.9 (9.7-14.0)	509	22.2 (20.3-24.1)
Highest	2072	299	14.4 (12.9-15.9)	242	11.7 (9.5-13.9)	501	24.2 (21.8-26.5)
Total (weighted)	**11247**	**15.2 (14.5-15.8)**		**9.9 (9.3-10.4)**		**23.5 (22.8-24.3)**	

3.2.3 Vaccination and supplementation

The coverage of measles vaccination was 86.3% (83.5-89.2, 95% C.I), with 60.3% (59.2-61.4, 95% C.I) confirmed with the card (Table 25). The coverage of Vitamin A supplementation was 77.8% (76.9-78.5, 95% C.I) for the last 6 months. The proportion of children who received deworming was 71.4% (70.5-72.4, 95% C.I). The coverage of micronutrient powder supplementation was only 18.1% (16.9-19.3, 95% C.I).

Table 25. Measles vaccination Vitamin A supplementation, Deworming and micronutrient powder coverage age by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

Description	Measles vaccination (18-59 months)				Vitamin A supplementation (6-59 months)		Deworming (12-59 months)		Micronutrient powder (6-23 months)	
	Confirmed with card		Card or recall							
	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)
Sex										
Male	2382/ 3996	59.6 (56.3-63.0)	3440/ 3996	86.1 (84.4-87.8)	4150/ 5319	78.0 (76.1-80.0)	3349/ 4651	72.0 (70.3-73.7)	314/ 1962	16.0 (14.1-17.9)
Female	2166/ 3585	60.4 (57.0-63.9)	3123/ 3585	87.1 (85.6-88.6)	3784/ 4812	78.6 (76.8-80.4)	3023/ 4217	71.7 (70.0-73.4)	285/ 1796	15.9 (14.1-17.7)
Municipality										
Aileu	418/ 605	69.1 (60.2-78.0)	558/ 605	92.2 (88.6-95.8)	663/ 796	83.3 (78.7-87.9)	519/ 682	76.1 (71.1-81.1)	84/ 277	30.3 (20.7-40.0)
Ainaro	335/ 610	54.9 (45.3-64.5)	529/ 610	86.7 (82.1-91.3)	528/ 821	64.3 (57.6-71.0	407/ 708	57.5 (51.5-63.5)	41/ 321	12.8 (8.3-17.2)
Baucau	388/ 556	69.8 (61.4-78.2)	495/ 556	89.0 (84.8-93.3)	596/ 752	79.3 (74.0-84.5)	462/ 668	69.2 (63.4-74.9)	26/ 289	9.0 (4.5-13.5)
Bobonaro	285/ 531	53.7 (44.5-62.9)	436/ 531	82.1 (77.0-87.2)	506/ 716	70.7 (65.1-76.3)	434/ 618	70.2 (65.1-75.3)	60/ 253	23.7 (16.7-30.8)
Covalima	274/ 522	52.5 (43.0-62.0)	447/ 522	85.6 (81.5-89.8)	523/ 684	76.5 (71.2-81.7)	449/ 612	73.4 (67.5-79.3)	48/ 241	19.9 (14.1-25.7)
Dili	446/ 652	68.4 (60.7-76.1)	573/ 652	87.9 (84.2-91.6	678/ 851	79.7 (75.8-83.6)	552/ 753	73.3 (68.8-77.8)	71/ 281	25.3 (18.3-32.2)
Ermera	302/ 636	47.5 (37.5-57.4)	518/ 636	81.4 (76.3-86.6)	630/ 855	73.7 (67.9-79.5)	498/ 745	66.8 (61.4-72.3)	47/ 333	14.1 (9.5-18.8)
Lautem	471/ 687	68.6 (59.3-77.8)	612/ 687	89.1 (84.6-93.5)	714/ 925	77.2 (70.3-84.1)	556/ 800	69.5 (63.3-75.7)	36/ 357	10.1 (5.0-15.1)
Liquica	246/ 569	43.2 (33.0-53.5)	478/ 569	84.0 (79.3-88.7)	587/ 757	77.5 (72.6-82.5)	482/ 672	71.7 (67.0-76.5)	36/ 281	12.8 (7.9-17.7)
Manatuto	414/ 575	72.0 (63.5-80.5)	520/ 575	90.4 (86.4-94.5)	723/ 752	96.1 (94.4-97.9)	597/ 663	90.0 (87.4-92.7)	48/ 280	17.1 (10.3-24.0)
Manufahi	332/ 560	59.3 (49.7-68.9)	458/ 560	81.8 (74.9-88.6)	561/ 756	74.2 (67.9-80.5)	444/ 657	67.6 (61.2-73.9)	29/291	10.0 (5.5-14.5)
Oe-cusse	231/ 449	51.4 (41.7-61.2)	389/ 449	86.6 (81.6-91.7)	529/ 609	86.9 (83.2-90.5)	430/ 548	78.5 (74.3-82.6)	49/ 225	21.8 (14.4-29.1)
Viqueque	407/ 630	64.6 (56.3-72.9)	551/ 630	87.5 (83.2-91.7)	697/ 858	81.2 (75.9-86.5)	543/ 743	73.1 (68.1-78.0)	24/ 329	7.3 (4.0-10.6)
Residence										
Urban	1104/ 1893	58.3 (53.4-63.2)	1646/ 1893	87.0 (84.8-89.1)	1886/ 2510	5.1 (71.8-78.5)	1540/ 2214	69.6 (67.0-72.1)	144/ 909	15.8 (13.2-18.5)
Rural	3444/ 5688	60.5 (57.2-63.9)	4917/ 5688	86.4 (84.8-88.1)	6048/ 7621	79.4 (77.3-81.4)	4832/ 6654	72.6 (70.9-74.4)	455/ 2849	16.0 (14.3-17.7)

Description	Measles vaccination (18-59 months)				Vitamin A supplementation (6-59 months)		Deworming (12-59 months)		Micronutrient powder (6-23 months)	
	Confirmed with card		Card or recall							
	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)
Mother/caregiver's education status										
None	1695/ 3454	49.1 (45.8-52.3)	2755/ 3454	79.8 (77.8-81.7)	3354/ 4556	73.6 (71.2-76.0)	2696/ 4005	67.3 (65.0-69.7)	262/ 1647	15.9 (13.9-17.9)
Primary	507/ 839	60.4 (54.9-66.0)	752/ 839	89.6 (86.6-92.7)	884/ 1104	80.1 (76.4-83.7)	740/ 971	76.2 (72.7-79.7)	71/ 395	18.0 (13.7-22.3)
Pre-second-ary	689/ 1026	67.2 (61.9-72.4)	941/ 1026	91.7 (89.7-93.8)	1123/ 1378	81.5 (78.5-84.5)	909/ 1202	75.6 (72.2-79.0)	74/ 518	14.3 (11.2-17.4)
Secondary	1381/ 1906	72.5 (68.2-76.7)	1776/ 1906	93.2 (91.6-94.8)	2157/ 2592	83.2 (81.4-85.0)	1701/ 2254	75.5 (73.7-77.2)	155/ 997	15.5 (13.1-18.0)
More than secondary	276/ 356	77.5 (71.7-83.3)	339/ 356	95.2 (92.6-97.9)	416/ 501	83.0 (78.9-87.1)	326/ 436	74.8 (70.1-79.4)	37/ 201	18.4 (13.6-23.2)
Wealth quintile										
Lowest	839/ 1563	53.7 (49.3-58.1)	1298/ 1563	83.0 (80.2-85.9)	1574/ 2097	75.1 (72.2-77.9)	1271/ 1838	69.2 (66.3-72.0)	120/ 766	15.7 (12.5-18.8)
Second	851/ 1538	55.3 (51.3-59.4)	1288/ 1538	83.7 (81.4-86.1)	1548/ 2032	76.2 (73.3-79.1)	1236/ 1774	69.7 (66.9-72.5)	109/ 761	14.3 (11.5-17.1)
Third	854/ 1478	57.8 (53.8-61.7)	1273/ 1478	86.1 (83.8-88.5)	1593/ 2008	79.3 (76.8-81.9)	1276/ 1745	73.1 (70.3-75.9)	132/ 760	17.4 (14.4-20.3)
Fourth	948/ 1536	61.7 (57.2-66.2)	1355/ 1536	88.2 (86.2-90.2)	1609/ 2068	77.8 (75.2-80.4)	1301/ 1823	71.4 (68.5-74.2)	111/ 804	13.8 (11.2-16.3)
Highest	1025/ 1420	72.2 (68.1-76.3)	1308/ 1420	92.1 (90.4-93.8)	1567/ 1873	83.7 (81.4-85.9)	1250/ 1639	76.3 (74.1-78.4)	124/ 655	18.9 (15.5-22.3)
Total (weighted)	**7582**	**60.3 (59.2-61.4)**	**7582**	**86.3 (83.5-89.2)**	**10374**	**77.8 (76.9-78.5)**	**8934**	**71.4 (70.5-72.4)**	**3814**	**18.1 (16.9-19.3)**

3.2.4 Infant and young child feeding

The proportion of children who were introduced to breast milk within an hour after birth was 46.8% (45.2-48.4, 95% C.I). About a quarter 32.1% (30.7-33.4, 95% C.I) of children had been bottle fed. Bottle feeding was highest in Dili, and generally higher in urban than in rural municipalities (Table 26).

Table 26. Early initiation of breastfeeding and bottle feeding (0-23 months) by sex, municipality, residence, mother/caregiver's education and wealth quintile (TLFNS 2020)

Description	Early initiation of breastfeeding (breastfed within an hour of birth) (0-23 months)			Bottle feeding (0-23 months)	
	N	n	% (95% C.I)	n/N	% (95% C.I)
Sex					
Male	2500	1158	46.3 (44.4-48.3)	656/2500	26.2 (24.4-28.1)
Female	2373	1098	46.3 (44.3-48.3)	673/2373	28.4 (26.6-30.1)
Municipality					
Aileu	356	171	48.0 (42.8-53.2)	89/356	25.0 (19.3-30.7)
Ainaro	416	168	40.4 (35.7-45.1)	107/416	25.7 (21.3- 30.1)
Baucau	380	176	46.3 (41.3-51.3)	108/380	28.4 (22.5-34.3)
Bobonaro	324	142	43.8 (38.4-49.2)	119/324	36.7 (30.5-42.9)
Covalima	342	138	40.4 (35.2-45.6)	103/342	30.1 (24.8-35.5)
Dili	358	189	52.8 (47.6-58.0)	188/358	52.5 (46.2-58.8)
Ermera	409	183	44.7 (40.0-49.6)	92/409	22.5 (17.6- 27.4)
Lautem	442	196	44.3 (39.7-49.0)	90/442	20.4 (15.6-25.1)
Liquica	366	162	44.3 (39.2-49.4)	83/366	22.7 (17.6-27.8)
Manatuto	370	217	58.6 (53.6-63.7)	104/370	28.1 (22.5-33.7)
Manufahi	357	177	49.6 (44.4-54.8)	100/357	28.0 (22.9-33.1)
Oe-cusse	299	111	37.1 (31.6-42.6)	51/299	17.1 (12.4-21.7)
Viqueque	454	226	49.8 (45.2-54.4)	95/454	20.9 (16.4-25.5)
Residence					
Urban	1141	499	43.7 (40.9-46.6)	430/1141	37.7 (34.7-40.7)
Rural	3732	1757	47.1 (45.5-48.7)	899/3732	24.1 (22.7-25.5)
Mother/caregiver's education status					
None	2089	957	45.8 (43.7-47.9)	501/2089	24.0 (22.0-26.0)
Primary	533	244	45.8 (41.5-50.0)	130/533	24.4 (21.1-27.6)
Pre-secondary	672	338	50.3 (46.5-54.1)	167/672	24.9 (21.4-28.3)
Secondary	1321	603	45.6 (43.0-48.3)	415/1321	31.4 (28.9-34.0)
More than secondary	258	114	44.2 (38.1-50.2)	116/258	45.0 (38.4-51.5)
Wealth quintile					
Lowest	999	484	48.4 (45.3-51.5)	188/999	18.8 (16.2-21.4)
Second	984	468	47.6 (44.4-50.7)	210/984	21.3 (18.6-24.1)
Third	989	482	48.7 (45.6-51.9)	234/989	23.7 (21.0-26.3)
Fourth	1027	448	43.6 (40.6-46.7)	293/1027	28.5 (25.4-31.6)
Highest	854	363	42.5 (39.2-45.8)	401/854	47.0 (43.2-50.8)
Total (weighted)	**4873**		**46.8 (45.2-48.4)**	**32.1 (30.7-33.4)**	

64-.2% (61.4-67.0, 95% C.I) of children below 6 months had been exclusively breastfed (Table 27). The proportion of children who were still breastfeeding at 1 year (12-15 months) was 68.4% (64.9-72.0, 95% C.I). However, only 29.2% (24.9-33.6, 95% C.I) were still breastfeeding at 2 years (20-23 months). Exclusive breastfeeding was higher among females (70.7%) than males (66.5%), and urban areas (70.8%) than rural areas (60.8%) and was also lowest (56.8%) in the highest wealth quintile.

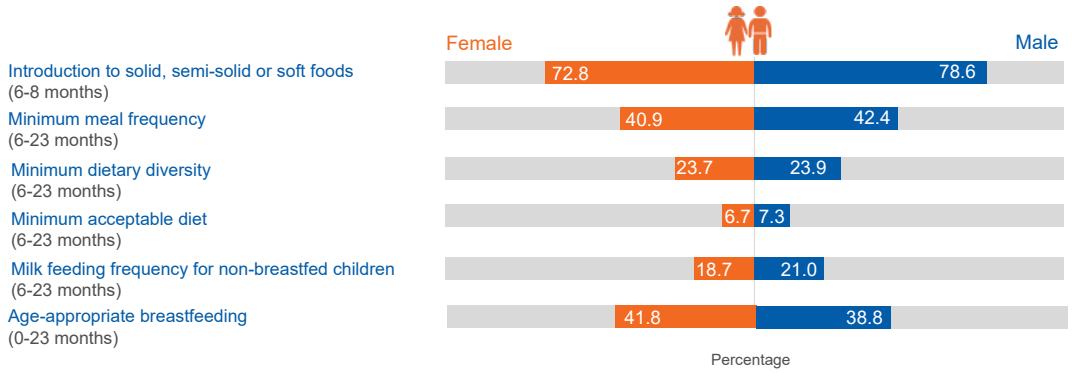
Table 27. Exclusive and continued breastfeeding indicators by sex, municipality, residence, mother/ caregiver's education status and wealth quintile, TLFNS 2020

Description	Exclusive breastfeeding (0-5 months)		Continued breastfeeding at 1 year (12-15 months)		Continued breastfeeding at 2 years (20-23 months)	
	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)
Sex						
Male	358/538	66.5 (63.2-69.9)	303/427	71.0 (66.7-75.3)	123/435	28.3 (24.0-32.5)
Female	408/577	70.7 (66.7-74.7)	275/419	65.6 (61.1-70.2)	114/386	29.5 (25.0-34.1)
Municipality						
Aileu	58/79	73.4 (62.4-84.4)	37/47	78.7 (67.0-90.4))	30/61	49.2 (36.6-61.7)
Ainaro	65/95	68.4 (59.1-77.7)	41/61	60.1 (55.4-79.0)	28/75	37.3 (26.4-48.3)
Baucau	64/91	70.3 (59.3-81.3)	43/71	60.6 (49.2-71.9)	7/61	11.5 (3.5-19.5)
Bobonaro	43/71	60.6 (47.8-73.3)	42/67	62.7 (51.1-74.3)	14/44	31.8 (18.1-45.6)
Covalima	62/101	61.4 (50.6-72.2)	42/59	71.2 (59.6-82.7)	16/58	27.6 (16.1-39.1)
Dili	33/77	42.9 (30.3-55.4)	45/68	66.2 (54.9-77.4)	22/61	36.1 (24.1-48.1)
Ermera	59/76	77.6 (66.7-88.6)	60/70	85.7 (77.5-93.9)	30/79	38.0 (27.3-48.7)
Lautem	58/85	68.2 (57.9-78.6)	39/71	54.9 (43.4-66.5)	9/79	11.4 (4.4-18.4)
Liquica	65/85	76.5 (66.8-86.2)	53/67	79.1 (69.4-88.9)	19/62	30.6 (19.2-42.1)
Manatuto	66/90	73.3 (63.4-83.3)	41/59	69.5 (57.8-81.2)	21/61	34.4 (22.5-46.3)
Manufahi	44/66	66.7 (55.8-77.6)	46/67	68.7 (57.5-79.8)	23/60	38.3 (26.0-50.6)
Oe-cusse	59/74	79.7 (69.6-89.8)	44/67	65.7 (54.3-77.0)	6/50	12.0 (3.0-21.0)
Viqueque	90/125	72.0 (64.5-79.5)	45/72	62.5 (51.3-73.7)	12/70	17.1 (8.3-26.0)
Residence						
Urban	141/232	60.8 (53.4-68.2)	136/206	66.0 (59.6-72.5)	61/204	29.9 (23.6-36.2)
Rural	625/883	70.8 (68.3-73.3)	442/640	69.1 (65.5-72.6)	176/617	28.6 (25.0-32.1)
Mother/caregiver's education status						
None	305/442	69.0 (64.4-73.6)	238/360	66.1 (61.2-71.0)	109/360	30.3 (25.5-35.0)
Primary	99/138	71.7 (63.9-79.6)	69/93	74.2 (65.3-83.1)	24/86	27.9 (18.4-37.4)
Pre-secondary	103/154	66.9 (59.6-74.2)	83/112	74.1 (66.0-82.2)	37/117	31.6 (23.2-40.1)
Secondary	226/324	69.8 (65.4-74.2)	150/228	65.8 (59.6-71.9)	56/217	17.1 (12.0-22.1)
More than secondary	33/57	57.9 (44.7-71.0)	38/53	71.7 (59.6-83.8)	11/41	26.8 (13.3-40.4)
Wealth quintile						
Lowest	173/233	74.2 (68.8-79.7)	117/169	69.2 (62.3-76.2))	47/149	31.5 (24.1-39.0)
Second	151/223	67.7 (61.6-73.8)	115/156	73.7 (66.8-80.6)	56/183	30.6 (23.9-37.3)
Third	168/29	73.4 (67.9-78.8)	124/176	70.5 (63.7-77.2)	41/150	27.3 (20.2-34.5)
Fourth	156/223	70.0 (64.2-75.7)	124/194	63.9 (57.2-70.7)	45/189	23.8 (17.7-29.9)
Highest	113/199	56.8 (49.1-64.5)	98/149	65.8 (58.2-73.3)	46/146	31.5 (24.0-39.0)
Total (weighted)	**1115**	**64.2 (61.4-67.0)**	**846**	**68.4 (64.9-72.0)**	**414**	**29.2 (24.9-33.6)**

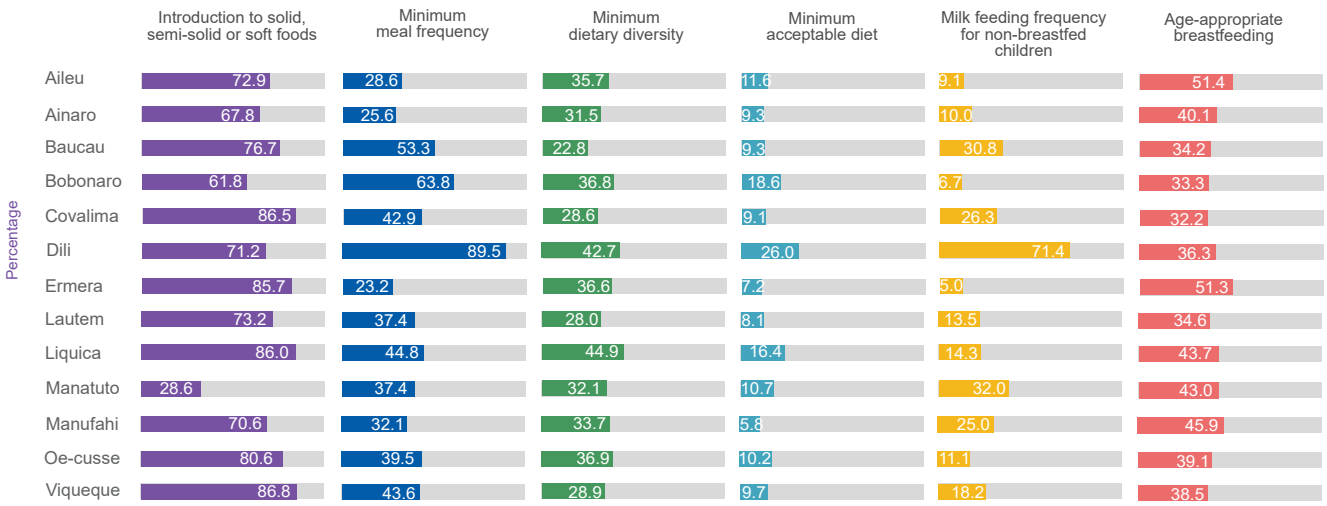
Table 28. Complementary feeding, meal frequency, dietary diversity and minimum acceptable diet by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

	Introduction to solid, semi-solid or soft foods (6-8 months)	Minimum meal frequency (6-23 months)	Minimum dietary diversity (6-23 months)	Minimum acceptable diet (6-23 months)	Milk feeding frequency for non-breastfed children (6-23 months)	Age-appropriate breastfeeding (0-23 months)
Total (weighted)	75.8%	52.3%	35.3%	14.3%	29.3%	39.3%

Sex



Municipality



Residence

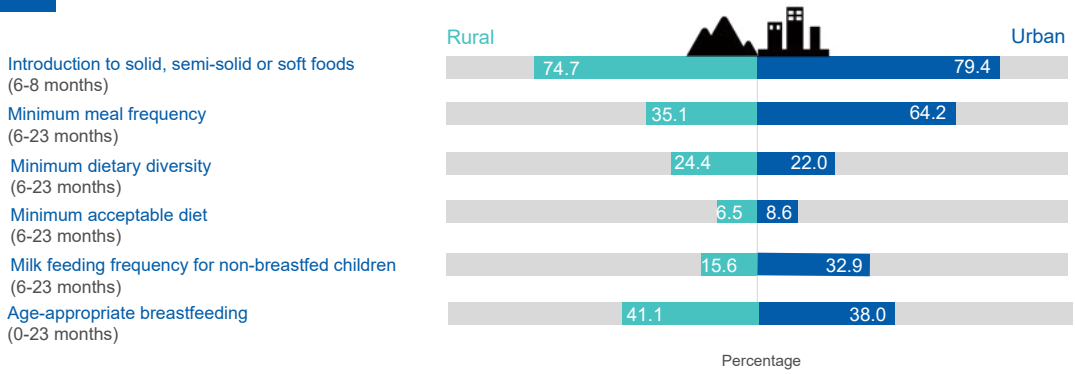
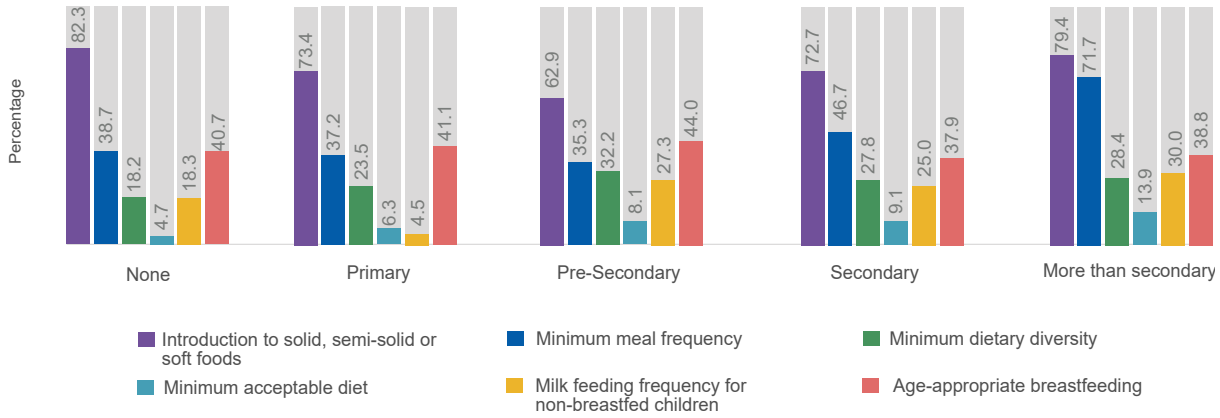


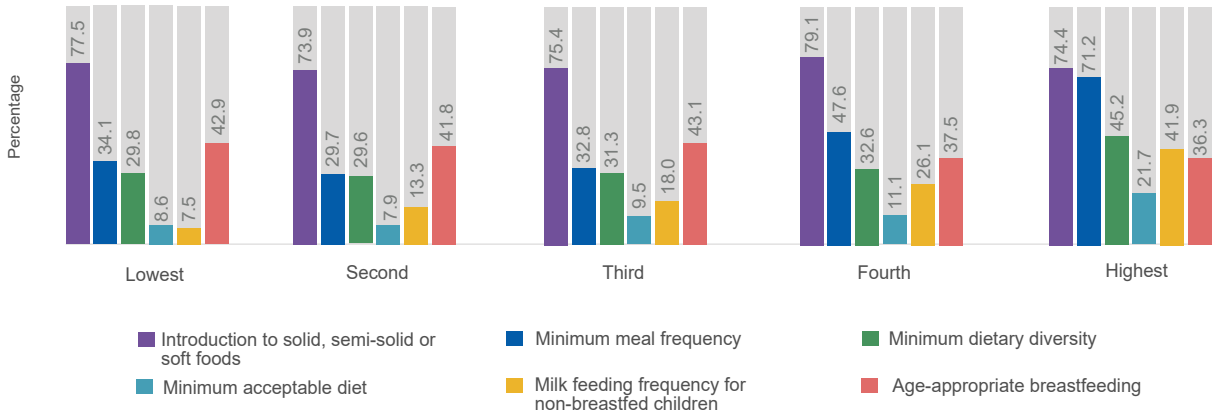
Table 28. Complementary feeding, meal frequency, dietary diversity and minimum acceptable diet by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

(continued)

Mother/caregiver's education status

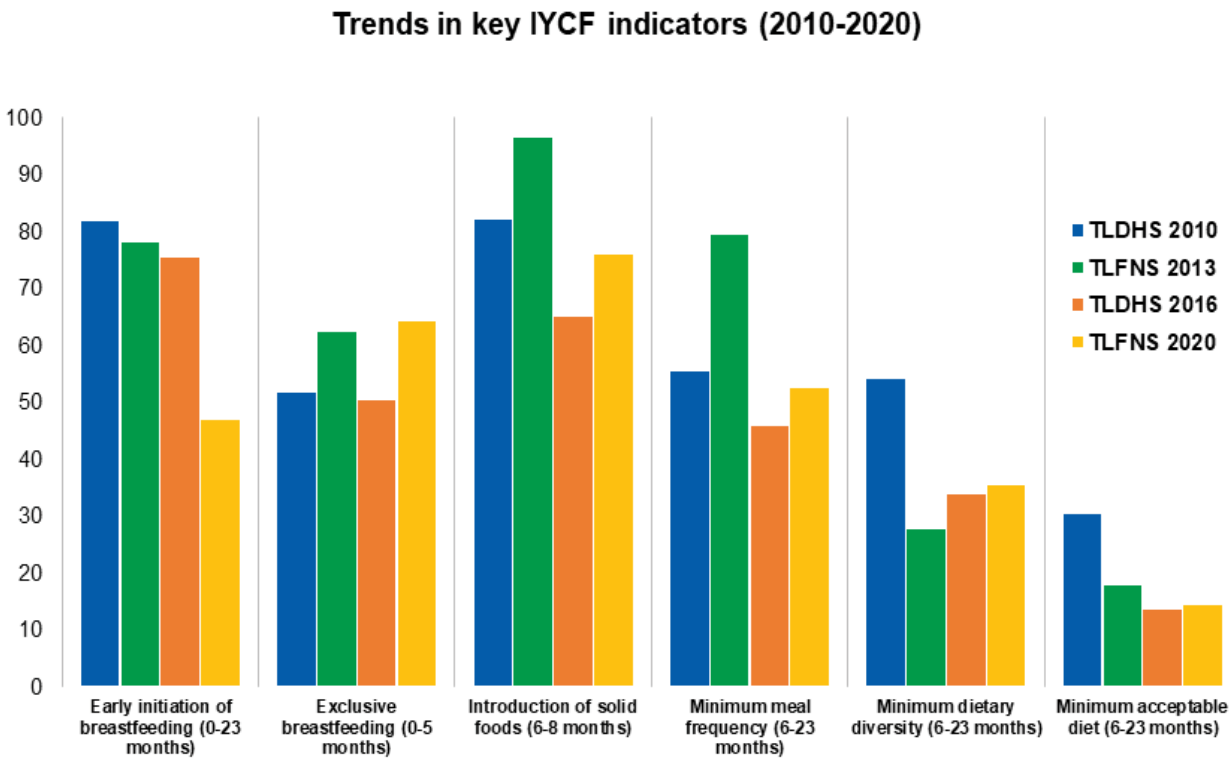


Wealth quintile



The proportion of children 6-8 months who had been introduced to solid foods was 75.8% (72.5-79.0, 95% C.I). Slightly over half of children 6-23 months achieved the minimum meal frequency (52.3%, 50.7-53.9, 95% C.I) and minimum dietary diversity (35.3%, 33.8-36.8, 95% C.I), and only 14.3% (13.2-15.4, 95% C.I) met the minimum acceptable diet. Milk feeding frequency for non-breastfed children 6-23 months was met by 29.3% (24.2-34.5, 95% C.I) while the coverage of age-appropriate breastfeeding was 39.3% (37.9-40.7, 95% C.I) for children 0-23 months (Table 28.).

Figure 8. Trends in key IYCF indicators (2010-2020)



The analysis of trends in key IYCF indicators reveals that early initiation of breastfeeding has been on a decreasing trend, while exclusive breastfeeding and introduction to solid foods at 6 months increased in 2020 compared to 2016. The results for minimum meal frequency, minimum dietary diversity and minimum acceptable diet were similar to what was observed in 2016 (Figure 8).

Figure 9 below shows the proportion of children who consumed different food groups. A very high proportion had consumed grains, roots and tubers (97.5%) and breast milk (90.6%), as well as Vitamin A-rich fruits and vegetables (71.5%). Consumption of dairy products (0.8%) was very low, while consumption of flesh foods (23.1%) and legumes or nuts (31.0%) was also quite low.

Figure 9. Proportion of children 6-23 months consuming different food groups

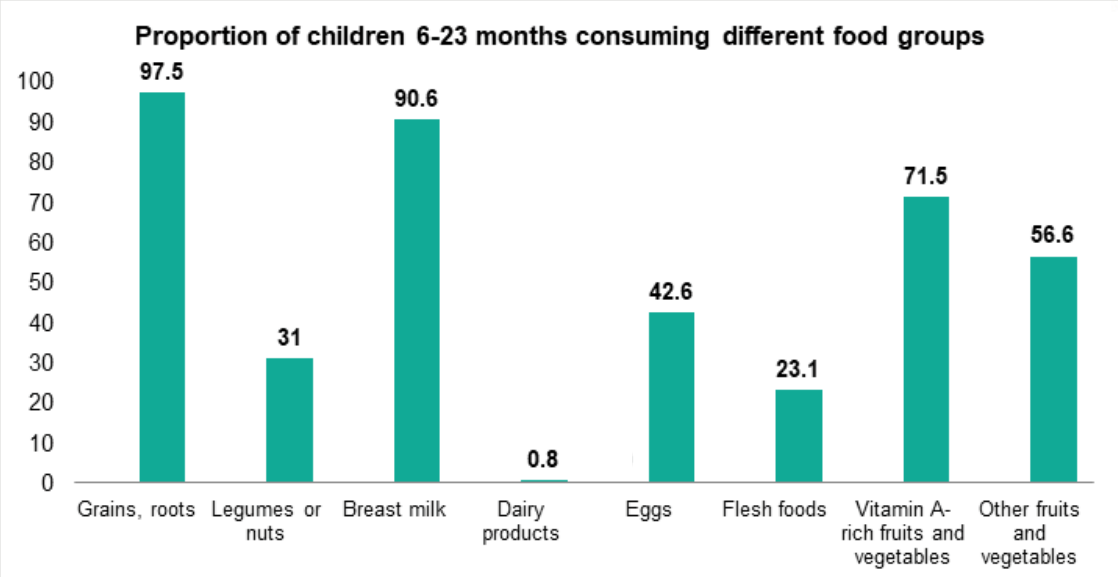


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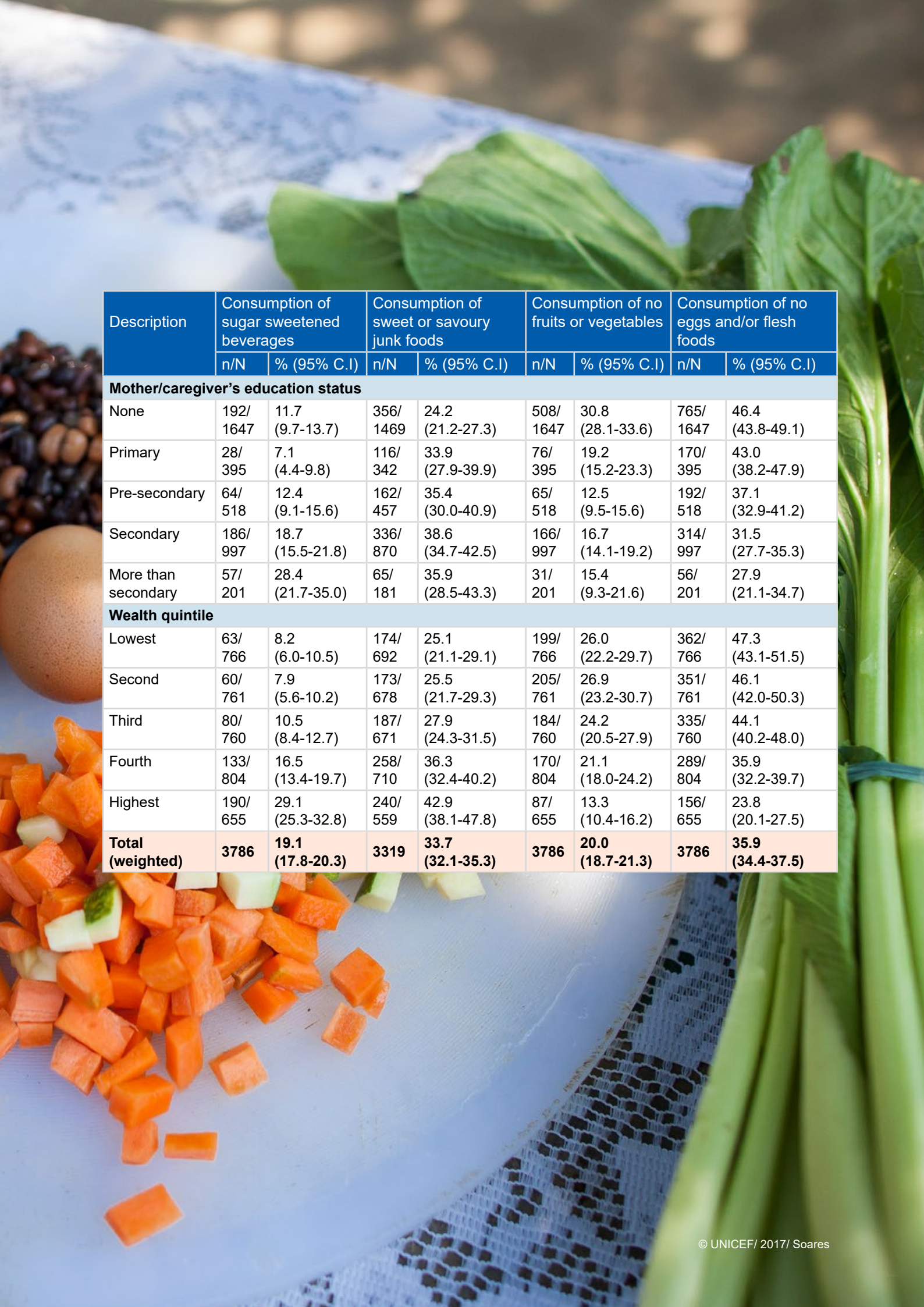
Table 29. Consumption of different food groups (6-23 months) by municipality, TLFNS 2020

Description	Grains, roots and tubers	Legumes or nuts	Breast milk	Dairy products	Eggs	Flesh foods	Vitamin A-rich fruits and vegetables	Other fruits and vegetables
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Municipality								
Aileu	97.5 (95.6-99.4)	31.0 (22.9-39.1)	90.6 (84.4-96.8)	0.8 (0.0-2.0)	42.6 (33.4-51.7)	23.1 (16.2-30.1)	71.5 (62.4-80.5)	56.6 (46.6-66.6)
Ainaro	99.6 (98.9-100.0)	44.4 (36.5-52.2)	86.7 (80.9-92.6)	0	27.5 (19.9-35.0)	22.5 (15.0-30.0)	67.6 (59.7-75.5)	56.7 (46.5-66.8)
Baucau	98.1 (95.5-100)	20.2 (13.2-27.2)	84.9 (77.8-92.0)	1.9 (0.0-4.0)	32.2 (23.6-40.8)	27.9 (20.4-35.4)	65.5 (57.0-74.0)	46.1 (35.3-56.9)
Bobonaro	97.0 (94.3-99.7)	35.5 (27.1-43.8)	90.6 (85.5-95.8)	3.9 (1.0-6.8)	59.1 (51.0-67.2)	45.3 (36.2-54.5)	67.0 (58.3-75.7)	64.0 (56.1-72.0)
Covalima	88.0 (82.9-93.0)	34.6 (25.4-43.8)	92.4 (88.5-96.3)	1.0 (0.0-2.3)	47.1 (38.2-56.0)	32.7 (24.6-40.8)	57.2 (47.1-67.4)	53.8 (43.2-64.4)
Dili	96.4 (94.0-98.8)	39.2 (31.5-46.9)	90.8 (85.7-95.8)	7.7 (3.7-11.6)	58.6 (49.5-67.6)	41.9 (31.9-51.9)	73.4 (65.1-81.7)	58.6 (49.6-67.5)
Ermera	95.8 (92.6-99.0)	36.0 (27.5-44.5)	91.9 (86.3-97.4)	1.6 (0.3-3.0)	37.9 (29.4-46.5)	36.0 (27.1-44.9)	68.5 (59.7-77.3)	57.9 (48.4-67.3)
Lautem	99.1 (98.0-100)	17.6 (10.3-24.9)	83.1 (76.7-89.5)	2.5 (0.3-4.8)	39.9 (31.9-48.0)	36.5 (27.8-45.2)	66.4 (58.5-74.2)	45.3 (35.8-54.8)
Liquica	98.5 (97.0-100.0)	41.7 (31.8-51.6)	92.8 (88.4-97.2)	0.4 (0.0-1.2)	45.6 (37.3-53.8)	40.2 (31.8-48.5)	69.5 (60.7-78.3)	64.1 (54.8-73.4)
Manatuto	98.8 (97.4-100)	23.7 (16.2-31.2)	88.2 (82.6-93.7)	4.5 (1.0-8.0)	42.0 (32.0-52.1)	41.2 (32.0-50.5)	64.1 (55.7-72.5)	50.6 (41.2-60.0)
Manufahi	97.7 (95.9-99.5)	27.7 (20.7-34.7)	87.0 (80.3-93.7)	0.8 (0.0-1.8)	40.4 (32.3-48.4)	31.5 (23.2-39.9)	70.4 (62.2-78.5)	54.2 (44.0-64.5)
Oe-cusse	97.6 (95.1-100.0)	29.5 (20.5-38.5)	87.8 (81.5-94.0)	0.5 (0.0-1.4)	42.9 (33.8-51.9)	42.4 (32.5-52.2)	66.7 (57.9-75.4)	57.6 (46.3-68.9)
Viqueque	98.4 (96.7-100)	19.5 (13.0-26.0)	84.6 (77.5-91.7)	0.3 (0.0-1.0)	38.0 (29.7-46.2)	33.4 (26.3-40.6)	71.4 (63.2-79.7)	49.7 (40.6-58.7)
Total (weighted)	**96.9 (96.3-97.4)**	**32.5 (31.0-34.0)**	**89.1 (88.1-90.1)**	**3.1 (2.5-3.6)**	**45.5 (43.9-47.1)**	**36.6 (35.1-38.1)**	**68.5 (67.0-70.0)**	**55.9 (54.2-57.5)**

Additional complementary feeding indicators are presented in Table 30. There were 19.1% children who consumed sugar sweetened beverages, with 31.0% consuming sweet or savoury junk foods, while 20.0% did not consume any fruits or vegetables and 35.9% consumed no eggs or flesh foods (Table 30).

Table 30. Additional complementary feeding indicators (6-23 months) by sex, municipality, residence, mother/caregiver's education status and wealth quintile, TLFNS 2020

Description	Consumption of sugar sweetened beverages		Consumption of sweet or savoury junk foods		Consumption of no fruits or vegetables		Consumption of no eggs and/or flesh foods	
	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)
Sex								
Male	284/ 1962	14.5 (12.6-16.3)	539/ 1738	31.0 (28.2-33.8)	445/ 1962	22.7 (20.4-25.0)	790/ 1962	40.3 (37.5-43.1)
Female	243/ 1796	13.5 (11.7-15.3)	496/ 1581	31.4 (28.4-34.3)	401/ 1796	22.3 (20.0-24.7)	707/ 1796	39.4 (36.9-41.8)
Municipality								
Aileu	21/ 277	7.6 (3.5-11.7)	58/ 242	24.0 (15.8-32.1)	62/ 277	22.4 (14.4-30.4)	121/ 277	43.7 (35.9-51.5)
Ainaro	31/ 321	9.7 (5.3-14.0)	93/ 284	32.7 (24.7-40.8)	73/ 321	22.7 (15.6-29.9)	178/ 321	55.5 (47.3-63.6)
Baucau	28/ 289	9.7 (5.9-13.4)	65/ 258	25.2 (17.9-32.5)	79/ 289	27.3 (19.6-35.1)	150/ 289	51.9 (43.5-60.3)
Bobonaro	52/ 253	20.6 (14.8-26.3)	97/ 203	47.8 (38.6-56.9)	33/ 253	13.0 (7.8-18.2)	60/ 253	23.7 (17.8-29.7)
Covalima	39/ 241	16.2 (10.0-22.3)	67/ 199	33.7 (24.5-42.8)	53/ 241	22.0 (15.1-28.8)	79/ 241	32.8 (25.6-39.9)
Dili	106/ 281	37.3 (30.3-45.2)	84/ 222	37.8 (28.6-47.1)	39/ 281	13.9 (8.8-18.9)	70/ 281	24.9 (17.2-32.6)
Ermera	30/ 333	9.0 (4.8-13.2)	106/ 311	34.1 (25.3-42.9)	75/ 333	22.5 (15.0-30.1)	147/ 333	44.1 (36.1-52.2)
Lautem	24/ 357	6.7 (3.9-9.6)	73/ 318	23.0 (15.8-30.1)	100/ 357	28.0 (21.0-35.0)	135/ 357	37.8 (30.1-45.5)
Liquica	65/ 281	23.1 (16.2-30.1)	105/ 259	40.5 (29.9-51.2)	65/ 281	23.1 (15.7-30.5)	106/ 281	37.7 (30.9-44.5)
Manatuto	41/ 280	14.6 (8.2-21.1)	69/ 245	28.2 (19.0-37.3)	71/ 280	25.4 (18.0-32.7)	113/ 280	40.4 (31.9-48.8)
Manufahi	29/ 291	10.0 (5.3-14.7)	71/ 260	27.3 (19.2-35.4)	69/ 291	23.7 (16.2-31.2)	118/ 291	40.6 (32.9-48.2)
Oe-cusse	40/ 225	17.8 (11.2-24.4)	82/ 210	39.0 (28.8-49.3)	46/ 225	20.4 (12.5-28.4)	78/ 225	34.7 (25.8-43.5)
Viqueque	21/ 329	6.4 (3.7-9.1)	65/ 308	21.1 (14.5-27.7)	81/ 329	24.6 (17.1-32.1)	142/ 329	43.2 (36.0-50.3)
Residence								
Urban	223/ 909	24.5 (21.6-27.4)	275/ 790	34.8 (30.1-39.5)	192/ 909	21.1 (16.9-25.3)	297/ 909	32.7 (27.8-37.6)
Rural	304/ 2849	10.7 (9.1-12.3)	760/ 2529	30.1 (27.3-32.8)	654/ 2849	23.0 (20.9-25.1)	1200/ 2849	42.1 (39.8-44.5)



Description	Consumption of sugar sweetened beverages		Consumption of sweet or savoury junk foods		Consumption of no fruits or vegetables		Consumption of no eggs and/or flesh foods	
	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)	n/N	% (95% C.I)
Mother/caregiver's education status								
None	192/ 1647	11.7 (9.7-13.7)	356/ 1469	24.2 (21.2-27.3)	508/ 1647	30.8 (28.1-33.6)	765/ 1647	46.4 (43.8-49.1)
Primary	28/ 395	7.1 (4.4-9.8)	116/ 342	33.9 (27.9-39.9)	76/ 395	19.2 (15.2-23.3)	170/ 395	43.0 (38.2-47.9)
Pre-secondary	64/ 518	12.4 (9.1-15.6)	162/ 457	35.4 (30.0-40.9)	65/ 518	12.5 (9.5-15.6)	192/ 518	37.1 (32.9-41.2)
Secondary	186/ 997	18.7 (15.5-21.8)	336/ 870	38.6 (34.7-42.5)	166/ 997	16.7 (14.1-19.2)	314/ 997	31.5 (27.7-35.3)
More than secondary	57/ 201	28.4 (21.7-35.0)	65/ 181	35.9 (28.5-43.3)	31/ 201	15.4 (9.3-21.6)	56/ 201	27.9 (21.1-34.7)
Wealth quintile								
Lowest	63/ 766	8.2 (6.0-10.5)	174/ 692	25.1 (21.1-29.1)	199/ 766	26.0 (22.2-29.7)	362/ 766	47.3 (43.1-51.5)
Second	60/ 761	7.9 (5.6-10.2)	173/ 678	25.5 (21.7-29.3)	205/ 761	26.9 (23.2-30.7)	351/ 761	46.1 (42.0-50.3)
Third	80/ 760	10.5 (8.4-12.7)	187/ 671	27.9 (24.3-31.5)	184/ 760	24.2 (20.5-27.9)	335/ 760	44.1 (40.2-48.0)
Fourth	133/ 804	16.5 (13.4-19.7)	258/ 710	36.3 (32.4-40.2)	170/ 804	21.1 (18.0-24.2)	289/ 804	35.9 (32.2-39.7)
Highest	190/ 655	29.1 (25.3-32.8)	240/ 559	42.9 (38.1-47.8)	87/ 655	13.3 (10.4-16.2)	156/ 655	23.8 (20.1-27.5)
Total (weighted)	**3786**	**19.1 (17.8-20.3)**	**3319**	**33.7 (32.1-35.3)**	**3786**	**20.0 (18.7-21.3)**	**3786**	**35.9 (34.4-37.5)**

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3.3 Women of reproductive age (15-49 years)

3.3.1 Characteristics of sample

A total of 13,370 women of reproductive age were interviewed. Of these, 6.5% were pregnant, 27.4% were lactating, and 0.5% were both pregnant and lactating (Table 31). The proportion of pregnant women was highest in the 20-29 age group, and higher in rural areas (7.0%) than urban areas (5.5%).

Table 31. Physiological status by age group, municipality and residence, TLFNS 2020

Description	N	Physiological status							
		Pregnant (not lactating)		Lactating (non-pregnant)		Pregnant and lactating		Not pregnant/ Not lactating	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Age Group									
15-19	2037	58	2.8 (2.2-3.5)	159	7.8 (6.5-9.1)	3	0.1 (0.0-0.3)	1817	89.2 (87.7-90.7)
20-29	4929	470	9.5 (8.5-10.5)	1929	39.1 (37.7-40.6)	32	0.6 (0.4-0.9)	2498	50.7 (49.2-52.1)
30-39	4406	317	7.2 (6.3-8.0)	1569	35.6 (34.1-37.1)	31	0.7 (0.5-0.9)	2489	56.5 (54.9-58.1)
40-49	1960	31	1.6 (1.0-2.1)	234	11.9 (10.5-13.3)	0	0	1695	86.5 (85.0-88.0)
Municipality									
Aileu	988	60	6.1 (4.6-7.5)	379	38.4 (34.7-42.1)	5	0.5 (0.1-0.9)	544	55.1 (51.1-59.0)
Ainaro	932	69	7.4 (5.5-9.3)	329	35.3 (31.7-39.0)	11	1.2 (0.5-1.8)	522	56.1 (52.1-60.0)
Baucau	885	61	6.9 (5.0-8.7)	285	32.2 (28.6-35.8)	2	0.2 (0.0-0.5)	537	60.7 (56.6-64.8)
Bobonaro	1086	72	6.6 (5.1-8.1)	211	19.4 (16.4-22.5)	4	0.4 (0.0-0.7)	799	73.6 (70.3-76.8)
Covalima	1093	73	6.7 (5.0-8.3)	254	23.2 (20.2-26.3)	4	0.4 (0.0-0.7)	762	69.7 (66.4-73.0)
Dili	1388	82	5.9 (4.6-7.2)	253	18.2 (15.6-20.9)	6	0.4 (0.1-0.8)	1046	75.4 (73.2-78.5)
Ermera	985	76	7.7 (6.2-9.2)	370	37.6 (33.8-41.4)	6	0.6 (0.1-1.2)	532	54.1 (50.1-58.0)
Lautem	980	71	7.2 (5.7-8.8)	316	32.2 (28.4-36.1)	1	0.1 (0.0-0.3)	592	60.4 (56.1-64.7)
Liquica	1040	64	6.2 (4.7-7.6)	289	27.8 (24.3-31.2)	6	0.6 (0.1-1.1)	681	65.5 (61.9-69.1)
Manatuto	997	58	5.8 (4.3-7.3)	330	33.1 (29.5-36.7)	7	0.7 (0.1-1.3)	602	60.4 (56.5-64.3)
Manufahi	972	77	7.9 (6.0-9.8)	303	31.2 (27.6-34.8)	10	1.0 (0.0-2.1)	581	59.8 (55.8-63.9)
Oe-cusse	1045	45	4.5 (3.0-5.9)	220	21.8 (18.5-25.0)	3	0.3 (0.0-0.6)	743	73.5 (70.0-77.0)

Description	n	Physiological status							
		Pregnant (not lactating)		Lactating (non-pregnant)		Pregnant and lactating		Not pregnant/ Not lactating	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Viqueque	979	68	6.9 (5.0-8.9)	352	36.0 (32.0-39.9)	1	0.1 (0.0-0.3)	558	57.0 (52.9-61.1)
Residence									
Urban	3752	208	5.5 (4.8-6.3)	780	20.8 (19.2-22.4)	13	0.3 (0.2-0.5)	2751	73.3 (71.6-75.1)
Rural	9580	668	7.0 6.3-7.6)	3111	32.5 (31.3-33.7)	53	0.6 (0.4-0.7)	5748	60.0 (58.7-61.3)
Total	**13370**	**6.5 (6.1-6.9)**		**27.4 (26.6-28.1)**		**0.5 (0.3-0.6)**		**65.7 (64.9-66.5)**	

3.3.2 Body mass index (BMI)

Of the non-pregnant women in the sample, 18.8% (18.1-19.5, 95% C.I) were thin (BMI<18.5), while 19.3% (18.6-20.0, 95% C.I) were overweight/obese (BMI>=25). The proportion of women classified as thin was highest in the 15-19 age group, and generally decreased with age, while the reverse was true for overweight/obesity (Table 32). The highest proportion of thin women was found in Oe-cusse (26.0%) and Bobonaro (23.9%) and was higher in rural areas (18.9%) than urban areas (17.3%).

Table 32. Nutritional status of non-pregnant women (15-49 years) based on Body mass index (BMI) by age group, municipality, residence and wealth quintile, TLFNS 2020

Description	N	Underweight (<18.5 kg/m²)		Normal (18.5-24.99 kg/m²)		Overweight/Obese (>=25kg/m²)		Mean BMI
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	
Age group								
15-19	1968	628	31.9 (29.7-34.1)	1278	64.9 (62.7-67.2)	62	3.2 (2.2-4.1)	19.7
20-29	4405	951	21.6 (20.3-22.8)	2841	64.5 (63.1-65.9)	613	13.9 (12.8-15.0)	21.3
30-39	4049	437	10.8 (9.7-11.8)	2470	61.0 (59.2-62.8)	1142	28.2 (26.7-29.7)	23.0
40-49	1926	260	13.5 (12.1-14.9)	1156	60.0 (57.8-62.2)	510	26.5 (24.4-28.5)	22.9
Municipality								
Aileu	923	142	15.5 (12.4-18.5)	626	68.2 (65.4-71.0)	150	16.3 (13.3-19.3)	21.7
Ainaro	850	138	16.2 (13.2-19.2)	600	70.6 (67.1-74.1)	112	13.2 (10.3-16.0)	21.4
Baucau	822	119	14.5 (11.5-17.5)	505	61.4 (57.4-65.4)	198	24.1 (20.7-27.5)	22.6
Bobonaro	1010	241	23.9 (21.2-26.5)	636	63.0 (59.7-66.2)	133	13.2 (10.9-15.5)	21.1
Covalima	1011	186	18.4 (15.7-21.1)	600	59.3 (56.4-62.3)	225	22.3 (19.5-25.1)	22.1
Dili	1290	245	19.0 (16.9-21.1)	734	56.9 (53.8-60.0)	311	24.1 (21.3-26.8)	22.3
Ermera	902	188	20.9 (17.8-24.0)	613	68.1 (65.0-71.3)	99	11.0 (8.4-13.6)	21.1
Lautem	904	132	14.6 (12.2-17.0)	569	62.9 (59.7-66.1)	203	22.5 (19.1-25.8)	22.3
Liquica	965	200	20.7 (18.0-23.4)	596	61.8 (58.3-65.2)	169	17.5 (14.7-20.3)	21.5
Manatuto	930	143	15.4 (12.7-18.0)	584	62.8 (59.3-66.3)	203	21.8 (18.9-24.8)	22.3
Manufahi	881	156	17.7 (14.6-20.8)	540	61.3 (57.4-65.2)	185	21.0 (17.9-24.1)	22.1
Oe-cusse	959	249	26.0 (23.3-28.6)	596	62.1 (59.8-64.5)	114	11.9 (9.3-14.4)	21.1
Viqueque	909	137	15.1 (12.6-17.5)	546	60.1 (56.9-63.2)	226	24.9 (21.8-28.0)	22.8
Residence								
Urban	3518	607	17.3 (16.0-18.5)	2118	60.2 (58.5-61.9)	793	22.5 (21.0-24.1)	22.2
Rural	8830	1669	18.9 (18.1-19.7)	5627	63.7 (62.6-64.9)	1534	17.4 (16.4-18.3)	21.7
Wealth quintile								
Lowest	2282	428	18.8 (17.0-20.5)	1501	65.8 (63.7-67.9)	353	15.5 (13.7-17.2)	21.5
Second	2255	435	19.3 (17.7-20.9)	1469	65.1 (63.2-67.1)	351	15.6 (14.1-17.0)	21.6
Third	2382	471	19.8 (18.2-21.4)	1525	64.0 (61.9-66.1)	386	16.2 (14.6-17.8)	21.5
Fourth	2513	454	18.1 (16.6-19.5)	1547	61.6 (59.7-63.5)	512	20.4 (18.9-21.9)	22.0
Highest	2822	474	16.8 (15.4-18.2)	1640	58.1 (56.2-60.0)	708	25.1 (23.1-27.0)	22.5
Total (weighted)	**12356**	**18.8 (18.1-19.5)**		**61.9 (61.0-62.7)**		**19.3 (18.6-20.0)**		**21.9**

3.3.3 Mid-upper arm circumference (MUAC) and short stature

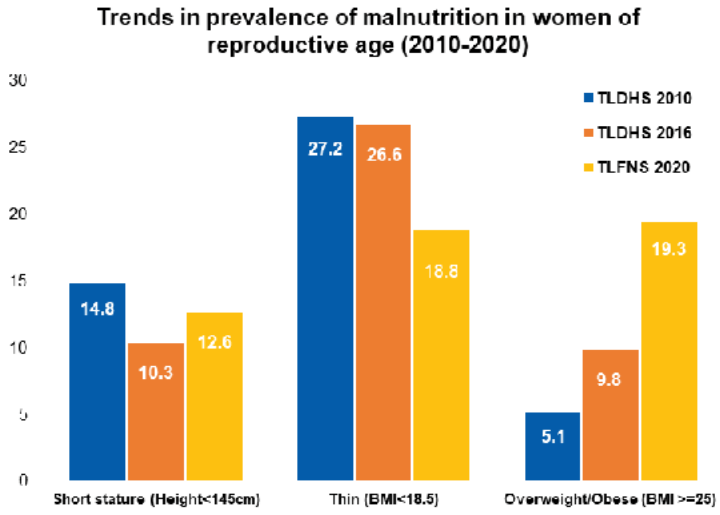
Malnutrition was also assessed using height and MUAC for all women of reproductive age. Of those who were sampled, 12.6% (12.1-13.2, 95% C.I) were of short stature (<145cm). The proportion increased with age from 10.6% in the 15-19 age group to 17.2% in the 40-49 age group. Just as with stunting among children, Ermera (19.2%) had the highest proportion of women of short stature, followed by Aileu (15.5%) and Ainaro (14.8%). Rural women (14.0%) had a higher prevalence of short stature than urban women (9.9%). The proportion of women of low stature increased as wealth quintile decreased (Table 33). 9.4% (8.9-9.9, 95% C.I) of women had a MUAC below 21cm, with 21.9% (21.2-22.6, 95% C.I) having a MUAC between 21 and 22.9cm. For pregnant and lactating women, the proportions were similar (8.9%, 8.2-9.8, 95% C.I and 23.2%, 22.0-24.4, 95% C.I respectively), and were much higher among rural women than urban women and were also lowest in the highest wealth quintile.

Table 33. Short stature and acute malnutrition among women (15-49 years) based on Mid Upper Arm Circumference (MUAC) by age group, municipality, residence and wealth quintile, TLFNS 2020

Description	All							Pregnant/Lactating				
	N	Height below 145cm		<21cm		21-22.9cm		N	<21cm		21-22.9cm	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)		n	% (95% C.I)	n	% (95% C.I)
Age group												
15-19	2041	217	10.6 (9.2-12.0)	373	18.3 (16.5-20.1)	762	37.3 (35.4-39.3)	220	51	23.2 (17.4-29.0)	92	41.8 (35.2-48.4)
20-29	4935	590	12.0 (11.0-12.9)	540	10.9 (10.0-11.9)	1260	25.5 (24.3-26.8)	2432	279	11.5 (10.2-12.7)	672	27.6 (25.6-29.6)
30-39	4410	576	13.1 (11.9-14.2)	204	4.6 (3.9-5.3)	658	14.9 (13.8-16.0)	1918	104	5.4 (4.2-6.7)	320	16.7 (14.9-18.5)
40-49	1962	337	17.2 (15.7-18.7)	127	6.5 (5.4-7.5)	264	13.5 (11.9-15.0)	265	17	6.4 (3.4-9.5)	40	15.1 (11.0-19.2)
Municipality												
Aileu	989	153	15.5 (13.0-18.0)	89	9.0 (6.3-11.7)	235	23.8 (20.8-26.7)	444	41	9.2 (5.7-12.7)	100	22.5 (17.5-27.5)
Ainaro	932	138	14.8 (12.2-17.4)	99	10.6 (8.2-13.0)	218	23.4 (20.2-26.6)	409	46	11.2 (8.1-14.4)	94	23.0 (18.3-27.7)
Baucau	885	120	13.6 (11.1-16.0)	62	7.0 (4.8-9.2)	160	18.1 (15.3-20.9)	348	21	6.0 (2.9-9.1)	63	18.1 (13.3-22.9)
Bobonaro	1089	141	12.9 (10.5-15.4)	122	11.2 (9.2-13.2)	287	26.4 (23.6-29.1)	287	32	11.2 (7.3-15.0)	87	30.3 (24.5-36.2)
Covalima	1095	135	12.1 (9.9-14.3)	99	9.0 (7.4-10.7)	214	19.5 (16.9-22.2)	331	30	9.1 (5.7-12.4)	79	23.9 (18.6-29.1)
Dili	1388	119	8.6 (6.9-10.2)	122	8.8 (7.1-10.4)	258	18.6 (16.4-20.8)	342	19	5.6 (3.1-8.0)	62	18.2 (13.9-22.5)
Ermera	985	189	19.2 (16.4-22.0)	114	11.6 (9.2-14.0)	289	29.3 (26.1-32.6)	453	57	12.6 (9.2-15.9)	135	29.8 (25.3-34.3)
Lautem	982	79	8.0 (6.3-9.8)	55	5.6 (3.8-7.4)	187	19.0 (16.2-21.9)	389	17	4.4 (2.2-6.6)	67	17.2 (13.4-21.1)
Liquica	1041	157	15.1 (12.6-17.6)	111	10.7 (8.7-12.6)	259	24.9 (22.3-27.5)	359	46	12.8 (9.5-16.1)	102	28.4 (22.3-33.5)
Manatuto	997	87	8.7 (6.7-10.8)	86	8.6 (6.1-11.1)	181	18.2 (15.7-20.6)	395	31	7.8 (4.8-10.9)	74	18.7 (14.9-22.6)

Description	All							Pregnant/Lactating				
	N	Height below 145cm		<21cm		21-22.9cm		N	<21cm		21-22.9cm	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)		n	% (95% C.I)	n	% (95% C.I)
Manufahi	972	128	13.2 (10.6-15.8)	72	7.4 (5.8-9.0)	187	19.2 (16.8-21.7)	390	34	8.7 (5.9-11.5)	82	21.0 (17.1-25.0)
Oe-cusse	1045	139	13.3 (11.0-15.6)	135	13.3 (11.1-15.6)	285	28.2 (24.7-31.6)	268	43	16.0 (11.6-20.5)	91	34.0 (28.1-39.8)
Viqueque	981	142	14.5 (12.4-16.6)	78	8.0 (6.1-9.8)	184	18.8 (16.0-21.5)	421	34	8.1 (5.4-10.8)	88	20.9 (17.0-24.8)
Residence												
Urban	3761	371	9.9 (8.8-10.9)	333	8.9 (7.9-9.8)	729	19.4 (17.8-21.0)	1001	75	7.5 (6.0-8.9)	187	18.7 (16.2-21.2)
Rural	9620	1349	14.0 (13.2-14.9)	911	9.5 (8.8-10.2)	2215	23.1 (22.1-24.0)	3834	376	9.8 (8.8-10.8)	937	24.4 (22.9-26.0)
Wealth quintile												
Lowest	2489	383	15.4 (13.9-16.9)	234	9.4 (8.2-10.6)	645	26.0 (24.4-27.5)	1016	104	10.2 (8.2-12.3)	254	25.0 (22.2-27.8)
Second	2463	359	14.6 (13.0-16.1)	260	10.6 (9.4-11.8)	550	22.4 (20.7-24.1)	1001	103	10.3 (8.5-12.1)	232	23.2 (20.4-25.9)
Third	2602	367	14.1 (12.5-15.7)	249	9.6 (8.5-10.7)	593	22.9 (21.5-24.3)	1016	97	9.5 (7.8-11.3)	240	23.6 (21.2-26.0)
Fourth	2709	330	12.2 (10.9-13.5)	262	9.7 (8.5-11.0)	579	21.4 (19.9-23.0)	962	94	9.8 (7.6-11.9)	243	25.3 (22.4-28.1)
Highest	3016	268	8.9 (7.8-10.0)	228	7.6 (6.6-8.6)	558	18.5 (17.0-20.0)	807	49	6.1 (4.2-7.9)	147	18.2 (15.4-21.0)
Total (weighted)	**13381**	**12.6 (12.1-13.2)**		**9.4 (8.9-9.9)**		**21.9 (21.2-22.6)**		**4836**	**8.9 (8.2-9.8)**		**23.2 (22.0-24.4)**	

Figure 10. Trends in prevalence of malnutrition in women of reproductive age (2010-2020)



As presented in Figure 10, the prevalence of short stature increased in 2020 compared to 2016, having decreased from 2010 to 2016. The proportion of women who were underweight decreased (26.6% in 2016 to 18.8% in 2020) while the proportion who were overweight/obese also increased (9.8% in 2016 to 19.3% in 2020). The differences between 2016 and 2020 were all statistically significant ($p<0.05$).

3.3.4 Antenatal care and supplementation

6661/6806 (97.9%) of the sampled women reported having accessed antenatal care during the last pregnancy. For the vast majority, the provider of antenatal care were midwives (72.0%, 70.9-73.2, 95% C.I), followed by medical doctors (21.6%, 20.6-22.7, 95% C.I). A very small proportion reported having accessed antenatal care from nurses, nurse assistants, and traditional birth attendants (Table 34).

Table 34. Percent distribution of antenatal care provider during the pregnancy of the most recent live birth by age group, municipality, residence and wealth quintile, TLFNS 2020

Description	Midwife	Medical doctor	Nurse	Nurse assistant	Traditional birth attendant	Other
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Age group						
15-19	74.5 (67.3-81.6)	21.2 (14.3-28.1)	4.3 (1.4-7.3)	0	0	0
20-29	74.3 (71.7-77.0)	21.0 (18.6-23.4)	4.4 (3.4-5.5)	0.1 (0.0-0.2)	0	0.1 (0.0-0.3)
30-39	74.2 (71.5-77.0)	21.1 (18.4-23.8)	4.3 (3.2-5.3)	0.1 (0.0-0.3)	0.1 (0.0-0.3)	0.1 (0.0-0.3)
40-49	72.3 (68.0-76.6)	21.9 (17.8-26.1)	9.8 (3.2-7.2)	0	0.4 (0.1-0.9)	0.2 (0.0-0.5)
Municipality						
Aileu	79.5 (72.3-86.6)	18.6 (11.8-25.3)	2.0 (0.8-3.2)	0	0	0
Ainaro	71.8 (63.1-80.5)	23.6 (15.4-31.8)	4.4 (2.0-6.8)	0	0	0.2 (0.0-0.6)
Baucau	77.7 (68.7-86.7)	16.7 (8.6-24.7)	5.7 (1.5-9.9)	0	0	0
Bobonaro	65.7 (56.4-75.0)	21.8 (13.4-30.2)	11.6 (5.6-17.7)	0	0	0.9 (0.0-1.9)
Covalima	70.8 (61.2-80.4)	21.5 (12.8-30.2)	7.4 (3.0-11.8)	0	0	0.3 (0.0-0.8)
Dili	70.2 (60.0-80.4)	22.4 (13.1-31.6)	5.5 (1.6-9.4)	0.8 (0.0-2.4)	0.8 (0.0-1.9)	0.4 (0.0-1.2)
Ermera	66.1 (57.5-74.7)	25.7 (17.7-33.6)	8.0 (4.3-11.7)	0	0	0.2 (0.0-0.5)
Lautem	76.2 (67.3-85.0)	21.7 (12.9-30.5)	2.0 (0.3-3.6)	0	0	0.2 (0.0-0.5)
Liquica	70.1 (62.6-77.5)	24.1 (17.3-30.9)	5.7 (2.6-8.7)	0	0.2 (0.0-0.5)	0
Manatuto	82.5 (75.5-89.6)	15.2 (8.9-21.4)	2.3 (0.6-4.0)	0	0	0
Manufah	81.1 (72.3-89.9)	17.2 (8.4-26.0)	1.3 (0.2-2.3)	0	0.2 (0.0-0.5)	0.2 (0.0-0.5)
Oe-cusse	66.6 (56.8-76.3)	29.9 (20.5-39.3)	3.3 (1.2-5.3)	0	0	0.3 (0.0-0.9)
Viqueque	76.7 (68.4-85.1)	21.1 (12.8-29.3)	1.9 (0.3-3.5)	0.2 (0.0-0.5)	0.2 (0.0-0.5)	0
Residence						
Urban	71.1 (65.6-76.6)	23.2 (17.9-28.5)	5.0 (3.3-6.6)	0.4 (0.0-0.9)	0.4 (0.0-0.7)	0.1 (0.0-0.2)
Rural	74.9 (72.2-77.7)	20.6 (17.9-23.2)	4.3 (3.3-5.2)	0	0	0.2 (0.0-0.3)
Wealth quintile						
Lowest	70.6 (66.5-74.6)	24.5 (20.4-28.5)	4.7 (3.3-6.0)	0	0.1 (0.0-0.2)	0.2 (0.0-0.5)
Second	74.3 (71.1-77.6)	20.7 (17.5-24.0)	4.6 (3.1-6.2)	0	0.1 (0.0-0.4)	0.1 (0.0-0.4)
Third	74.1 (70.8-77.3)	21.9 (18.7-25.1)	3.9 (2.5-5.3)	0.1 (0.0-0.2)	0.1 (0.0-0.2)	0
Fourth	72.5 (69.1-75.9)	21.7 (18.6-24.8)	5.4 (4.0-6.8)	0.1 (0.0-0.2)	0.1 (0.0-0.2)	0.2 (0.0-0.5)
Highest	79.4 (76.2-82.6)	16.6 (13.7-19.5)	3.5 (2.0-5.1)	0.3 (0.0-0.9)	0.2 (0.0-0.4)	0
Total (weighted)	**72.0 (70.9-73.2)**	**21.6 (20.6-22.7)**	**5.4 (4.8-5.9)**	**0.2 (0.1-0.3)**	**0.2 (0.1-0.3)**	**0.3 (0.1-0.4)**

A total of 64.1% (62.9-65., 95% CI) had 4-7 visits in their last pregnancy, with 19.0% (18.0-20.0, 95% C.I) having 8 or more visits (Table 35).

Table 35. Number of antenatal care visits for women 15-49 years with a live birth in the last 5 years by age group, municipality, residence and wealth quintile, TLFNS 2020

Description	N	3 or less		4-7 visits		8 or more visits	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Age group							
15-19	184	27	14.7 (9.3-20.0)	134	72.8 (66.3-79.4)	23	12.5 (8.0-17.0)
20-29	3106	519	16.7 (15.2-18.3)	2098	67.5 (65.5-69.6)	489	15.7 (14.2-17.3)
30-39	2815	442	15.7 (14.0-17.4)	1947	69.2 (67.0-71.3)	426	15.1 (13.8-16.4)
40-49	556	104	18.7 (15.1-22.3)	374	67.3 (63.0-71.5)	78	14.0 (11.0-17.0)
Municipality							
Aileu	560	56	10.0 (6.5-13.5)	391	69.8 (64.6-75.1)	113	20.2 (16.0-24.3)
Ainaro	521	91	17.5 (13.0-21.9)	360	69.1 (64.5-73.7)	70	13.4 (9.4-17.5)
Baucau	300	50	16.7 (11.3-22.0)	222	74.0 (68.3-79.7)	28	9.3 (5.6-13.1)
Bobonaro	335	66	19.7 (14.2-25.2)	197	58.8 (51.9-65.7)	72	21.5 (14.8-28.2)
Covalima	363	51	14.1 (9.5-18.6)	248	68.3 (62.1-74.5)	64	17.6 (11.9-23.4)
Dili	259	47	18.4 (12.3-24.5)	120	47.1 (38.8-55.3)	88	34.5 (26.7-42.3)
Ermera	561	82	14.6 (11.3-17.9)	401	71.5 (67.2-75.8)	78	13.9 (10.2-17.6)
Lautem	604	150	24.8 (19.4-30.2)	388	64.2 (58.7-69.8)	66	10.9 (7.9-13.9)
Liquica	548	67	12.2 (9.2-15.3)	399	72.8 (68.5-77.2)	82	15.0 (10.9-19.0)
Manatuto	349	65	18.6 (13.4-23.8)	256	73.4 (67.4-79.3)	28	8.0 (4.7-11.4)
Manufahi	551	102	18.5 (13.6-23.3)	365	66.2 (61.2-71.2)	84	15.2 (11.9-18.6)
Oe-cusse	338	51	15.1 (9.1-21.1)	230	68.0 (60.8-75.3)	57	16.9 (10.5-23.2)
Viqueque	636	98	15.4 (11.7-19.1)	489	76.9 (73.0-80.8)	49	7.7 (5.5-10.0)
Residence							
Urban	1410	207	14.7 (12.2-17.2)	883	62.6 (59.2-66.1)	320	22.7 (19.1-26.2)
Rural	5251	885	16.9 (15.3-18.4)	3670	69.9 (68.1-71.7)	696	13.3 (12.1-14.4)
Wealth quintile							
Lowest	1308	208	15.9 (13.7-18.1)	923	70.6 (67.6-73.6)	177	13.5 (11.4-15.6)
Second	1356	225	16.6 (14.7-18.5)	971	71.6 (69.2-74.1)	160	11.8 (10.1-13.5)
Third	1403	230	16.4 (13.8-19.0)	968	69.0 (66.1-71.9)	205	14.6 (12.8-16.4)
Fourth	1368	221	16.2 (13.6-18.7)	934	68.3 (65.4-71.2)	213	15.6 (13.6-17.6)
Highest	1184	202	17.1 (14.2-19.9)	731	61.7 (58.7-64.8)	251	21.2 (18.7-23.7)
Total (weighted)	**5925**	**16.8 (15.9-17.8)**		**64.1 (62.9-65.4)**		**19.0 (18.0-20.0)**	

In terms of the timing of the first antenatal care visit, 63.7% (62.5-64.9, 95% C.I) had their first visit at less than 4 months, with 26.6% (25.5-27.7, 95% C.I) having their first visit between 4 and 5 months (Table 36). The proportion who had their first visit at less than 4 months was higher in urban than rural women and increased with increasing wealth quintile (Table 36).

Table 36. Percent distribution of timing of first antenatal care visit during the pregnancy of the most recent live birth by age group, municipality, residence and wealth quintile, TLFNS 2020

Description	N	Less than 4 months		4-5 months		6-7 months		8 or more months		Don't know	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Age group											
15-19	184	108	58.7 (51.9-65.5)	64	34.8 (28.8-40.7)	11	6.0 (2.5-9.5)	0	0	0	0
20-29	3106	2003	64.5 (62.6-66.3)	852	27.4 (25.9-29.0)	201	6.5 (5.4-7.6)	33	1.1 (0.5-1.7)	13	0.4 (0.2-0.6)
30-39	2815	1770	62.9 (60.8-64.9)	833	29.6 (27.7-31.5)	164	5.8 (4.8-6.8)	23	0.8 (0.3-1.3)	21	0.7 (0.4-1.1)
40-49	556	344	61.9 (57.5-66.3)	160	28.8 (25.1-32.5)	38	6.8 (4.3-9.3)	4	0.7 (0.0-1.4)	7	1.3 (0.4-2.2)
Municipality											
Aileu	560	375	67.0 (61.3-72.6)	162	28.9 (23.8-34.1)	21	3.8 (2.1-5.4)	0	0	1	0.2 (0.0-0.5)
Ainaro	521	291	55.9 (50.5-61.3)	184	35.3 (30.4-40.2)	43	8.3 (5.2-11.4)	1	0.2 (0.0-0.6)	2	0.4 (0.0-1.1)
Baucau	300	181	60.3 (53.7-67.0)	94	31.3 (25.3-37.4)	24	8.0 (4.6-11.4)	1	0.3 (0.0-1.0)	0	0
Bobonaro	335	225	67.2 (61.3-73.1)	86	25.7 (20.1-31.3)	18	5.4 (2.7-8.0)	3	0.9 (0.0-1.9)	1	0.3 (0.0-0.9)
Covalima	363	219	60.3 (53.6-67.0)	117	32.2 (26.2-38.3)	24	6.6 (3.4-9.8)	0	0	3	0.8 (0.0-1.8)
Dili	259	174	68.2 (60.9-75.6)	39	15.3 (10.4-20.2)	14	5.5 (2.6-8.3)	22	8.6 (2.9-14.4)	10	2.1 (0.7-3.5)
Ermera	561	305	54.4 (48.4-60.3)	206	36.7 (31.4-42.1)	41	7.3 (4.7-9.9)	3	0.5 (0.0-1.1)	3	0.5 (0.0-1.1)
Lautem	604	386	63.9 (58.1-69.7)	161	26.7 (22.1-31.3)	56	9.3 (5.3-13.2)	1	0.2 (0.0-0.5)	0	0
Liquica	548	375	68.4 (63.9-72.9)	136	24.8 (20.6-29.1)	24	4.4 (2.4-6.3)	1	0.2 (0.0-0.5)	12	2.2 (0.0-4.4)
Manatuto	349	225	64.5 (58.6-70.3)	93	26.6 (21.6-31.7)	30	8.6 (5.4-11.8)	1	0.3 (0.0-0.9)	0	0
Manufahi	551	345	62.6 (58.2-67.1)	169	30.7 (27.0-34.4)	31	5.6 (3.7-7.5)	3	0.5 (0.0-1.2)	1	0.2 (0.0-0.5)
Oe-cusse	338	222	65.7 (59.4-71.9)	95	28.1 (22.5-33.7)	14	4.1 (2.2-6.1)	0	0	5	1.5 (0.2-2.7)
Viqueque	636	401	63.1 (58.4-67.8)	196	30.8 (26.4-35.2)	33	5.2 (3.1-7.2)	3	0.5 (0.0-1.0)	2	0.3 (0.0-0.8)
Residence											
Urban	1410	935	66.3 (62.7-69.9)	347	24.6 (21.7-27.5)	77	5.5 (3.8-7.1)	40	2.8 (0.9-4.8)	10	0.7 (0.1-1.3)
Rural	5251	3290	62.7 (61.1-64.2)	1562	29.7 (28.3-31.2)	337	6.4 (5.5-7.3)	20	0.4 (0.1-0.6)	31	0.6 (0.3-0.8)
Wealth quintile											
Lowest	1308	765	58.5 (55.2-61.8)	429	32.8 (29.5-36.1)	101	7.7 (6.0-9.5)	2	0.2 (0.0-0.4)	7	0.5 (0.2-0.9)
Second	1356	826	60.9 (58.3-63.5)	420	31.0 (28.5-33.4)	93	6.9 (5.5-8.3)	1	0.1 (0.0-0.2)	12	0.9 (0.3-1.4)
Third	1403	874	62.3 (59.6-65.0)	416	29.7 (26.9-32.4)	97	6.9 (5.4-8.5)	10	0.7 (0.3-1.2)	5	0.4 (0.0-0.7)
Fourth	1368	906	66.2 (63.5-68.9)	368	26.9 (24.4-29.4)	73	5.3 (4.0-6.7)	10	0.7 (0.3-1.2)	9	0.7 (0.2-1.1)
Highest	1184	828	69.9 (66.6-73.3)	267	22.6 (20.4-24.7)	47	4.0 (2.7-5.2)	37	3.1 (1.0-5.3)	5	0.4 (0.0-1.0)
Total (weighted)	**6146**	**63.7 (62.5-64.9)**		**26.6 (25.5-27.7)**		**6.2 (5.6-6.8)**		**2.3 (1.9-2.7)**		**0.9 (0.7-1.2)**	

3.3.5 Minimum dietary diversity for women (MDD-W)

The proportion of women who met the minimum dietary diversity was 65.4% (64.6-66.2, 95% C.I). The proportion did not differ significantly between age groups. The municipality with the lowest MDD-W was Manatuto, with 45.4% (38.1-52.8, 95% C.I), followed by Baucau, with 50.1% (42.7-57.4, 95% C.I). MDD-W was higher among urban women (65.3%) than rural women (57.7%) and was lowest in the lowest wealth quintile (50.1%), increasing to 78.3% in the highest wealth quintile (Table 37).

Table 37. Dietary diversity for women by age group, municipality, residence and wealth quintile, TLFNS 2020

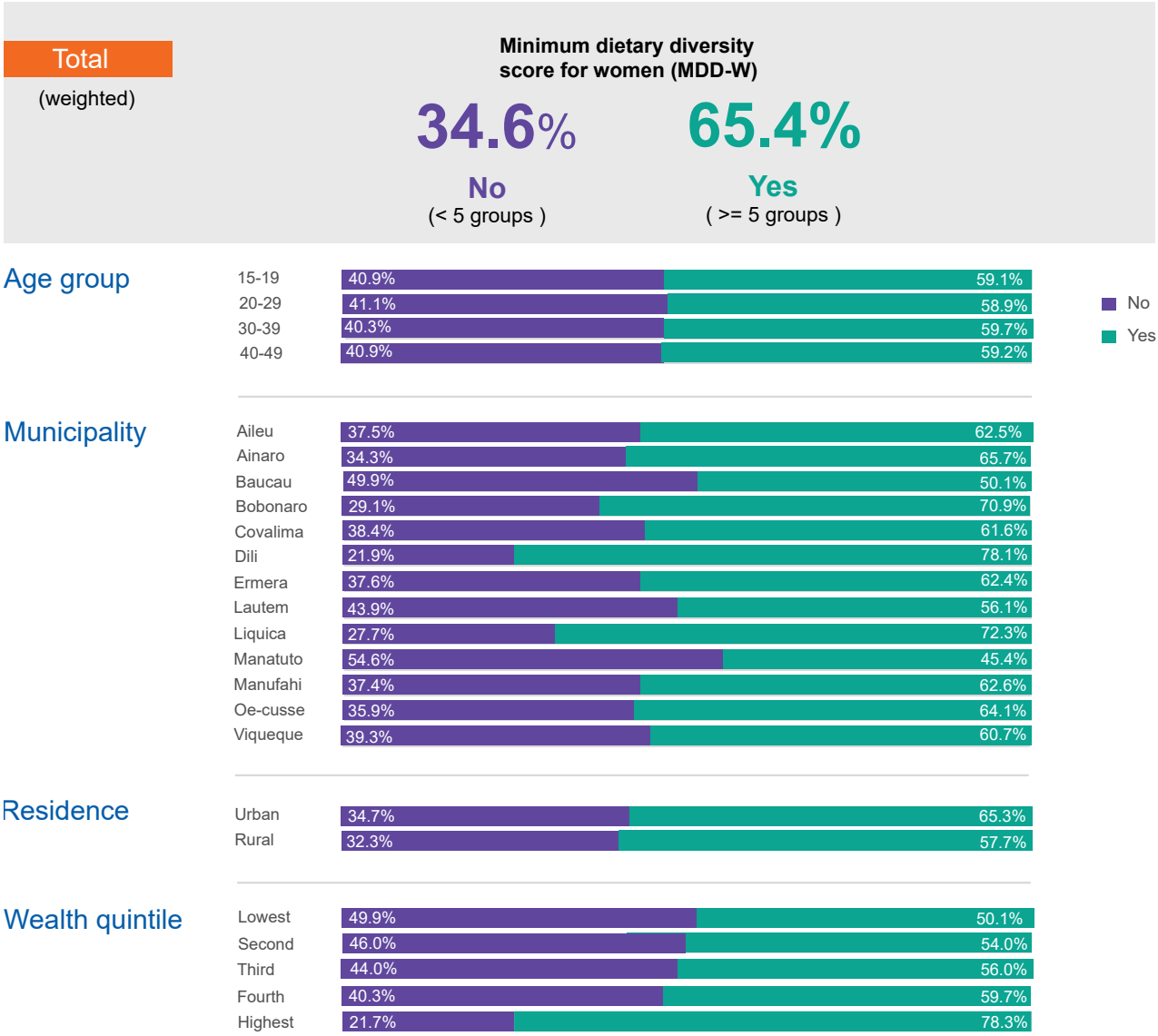


Table 38 shows the proportion of different food groups consumed by municipality. Generally, consumption of grains/roots/tubers, dark green leafy vegetables and other vegetables was high, while consumption of dairy products, flesh foods, nuts/seeds and other fruits was quite low.

Table 38. Women's consumption of different food groups by municipality, TLFNS 2020

Description	Grains white roots and tubers	Pulses (Beans, peas and lentils)	Nuts and seeds	Dairy products	Meat, poultry and fish	Eggs	Dark green leafy vegeta-bles	Other Vitamin A-rich fruits and vegetables	Other Vegetables	Other fruits
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Municipality										
Aileu	91.9 (89.5-94.4)	47.6 (42.0-53.3)	33.4 (27.0-39.7)	20.5 (16.4-24.6)	39.8 (34.4-45.3)	32.9 (26.8-39.0)	98.1 (97.0-99.1)	56.0 (50.1-61.9)	85.9 (80.4-91.5)	36.6 (30.8-42.4)
Ainaro	90.2 (86.9-93.5)	65.8 (59.6-71.9)	38.9 (30.7-47.2)	17.7 (12.5-22.9)	30.3 (23.5-37.0)	26.9 (20.1-33.8)	98.9 (98.2-99.6)	69.1 (62.4-75.8)	83.3 (76.5-90.0)	31.0 (24.5-37.5)
Baucau	91.7 (89.1-94.4)	25.8 (20.4-31.1)	25.3 (18.5-32.1)	18.3 (13.6-23.0)	46.0 (39.7-52.3)	31.6 (25.9-37.4)	96.5 (94.8-98.2)	47.2 (40.2-54.3)	88.0 (82.0-94.1)	15.9 (11.0-20.9)
Bobonaro	84.1 (80.9-87.4)	46.7 (39.6-53.9)	58.8 (52.0-65.5)	25.8 (21.6-30.0)	69.1 (63.8-74.4)	43.8 (36.8-50.8)	97.0 (95.4-98.5)	68.7 (63.3-74.1)	79.7 (73.0-86.4)	37.4 (30.2-44.5)
Covalima	79.7 (75.5-83.9)	42.7 (35.6-49.8)	45.9 (39.5-52.4)	27.9 (23.2-32.5)	49.3 (42.5-56.1)	39.9 (33.5-46.3)	97.1 (95.9-98.3)	70.9 (66.0-75.8)	76.3 (68.5-84.2)	26.9 (20.0-33.9)
Dili	87.9 (84.7-91.1)	60.1 (53.2-66.9)	54.5 (47.2-61.7)	51.9 (45.7-58.1)	73.8 (68.4-79.2)	65.8 (59.5-72.1)	92.9 (90.3-95.5)	78.2 (73.2-83.1)	77.4 (71.1-83.8)	57.6 (50.6-64.6)
Ermera	91.7 (89.1-94.2)	47.3 (40.6-54.1)	37.4 (29.5-45.2)	20.0 (4.8-25.2)	46.0 (39.1-52.9)	27.4 (20.4-34.5)	98.8 (98.0-99.6)	57.5 (50.7-64.2)	79.8 (71.7-87.9)	43.6 (36.4-50.7)
Lautem	95.3 (93.6-97.0)	31.0 (24.3-37.6)	28.3 (21.5-35.2)	25.7 (20.5-30.8)	55.4 (48.6-62.2)	34.4 (27.0-41.8)	94.4 (91.9-96.9)	56.5 (49.8-63.2)	84.9 (78.0-91.9)	27.6 (20.9-34.3)
Liquica	92.7 (90.3-95.1)	48.6 (41.5-55.7)	46.6 (39.5-53.7)	30.5 (23.2-37.7)	57.2 (50.6-63.7)	38.3 (31.3-45.4)	98.2 (97.1-99.3)	65.0 (58.9-71.1)	83.3 (76.6-90.0)	53.1 (46.1-60.1)
Manatuto	93.4 (90.9-95.8)	26.9 (20.7-33.1)	18.0 (12.4-23.5)	19.2 (13.9-24.4)	48.1 (41.3-55.0)	25.6 (19.4-31.7)	94.9 (92.9-96.8)	47.7 (41.4-54.1)	86.3 (79.2-93.3)	13.3 (9.1-17.6)
Manufahi	89.1 (85.5-92.7)	49.5 (42.8-56.2)	35.7 (28.8-42.6)	24.0 (19.3-28.6)	45.6 (39.2-52.0)	28.5 (22.4-34.6)	98.0 (97.0-99.1)	61.1 (55.0-67.3)	86.0 (78.7-93.3)	26.4 (20.4-32.5)
Oe-cusse	84.5 (79.9-89.1)	44.3 (36.6-52.0)	62.9 (56.5-69.2)	25.3 (19.2-31.4)	50.5 (43.7-57.4)	31.5 (24.6-38.3)	94.6 (92.0-97.3)	62.0 (55.5-68.6)	80.6 (73.8-87.3)	29.6 (21.5-37.7)
Viqueque	95.2 (93.3-97.1)	33.1 (26.9-39.4)	29.9 (23.8-35.9)	20.5 (6.3-24.7)	53.9 (48.4-59.5)	34.0 (27.9-40.2)	96.9 (95.0-98.8)	63.6 (57.3-69.9)	87.2 (81.5-92.8)	21.3 (15.3-27.3)
Total (weighted)	**89.2 (88.7-89.7)**	**46.3 (45.5-47.2)**	**43.2 (42.4-44.0)**	**29.7 (29.0-30.5)**	**55.7 (54.9-56.6)**	**40.9 (40.1-41.8)**	**96.0 (95.7-96.4)**	**64.5 (63.7-65.3)**	**81.8 (81.1-82.4)**	**37.2 (36.4-38.0)**

Nearly 9 in 10 women reported consumption of sugar sweetened beverages (86.3%, 85.8-86.9, 95% C.I), with more than 7 in 10 (71.4, 70.6-72.2, 95% C.I) reporting consumption of sweet or savoury junk foods. Only 2.7% (2.5-3.0, 95% C.I) consumed no fruits or vegetables, and over 1 in 3 (36.2%, 35.4-37.0, 95% C.I) consumed no eggs and/or flesh foods (Table 39). The proportion of women who consumed sugar sweetened beverages was higher in rural women (87.8%) than urban women (83.5%), and highest in the lowest quintile, and lowest in the highest wealth quintile. The consumption of sweet or savoury junk foods was higher in urban women (75.7%) than rural women (66.8%) and was highest in the highest wealth quintile (77.2%) and lowest in the lowest wealth quintile (64.7%). The proportion who consumed no eggs and/or flesh foods was much higher in rural women (42.5%) than urban women (27.0%) and increased with decreasing wealth quintile from only 16.1% in the highest wealth quintile to 52.4% in the lowest wealth quintile.

Table 39. Additional food consumption indicators for women by municipality, residence and wealth quintile, TLFNS 2020

Description	N	Consumption of sugar sweetened beverages		Consumption of sweet or savoury junk foods		Consumption of no fruits or vege-tables		Consumption of no eggs and/or flesh foods	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Municipality									
Aileu	989	920	93.0 (91.1-94.9)	696	70.4 (65.6-75.1)	13	1.3 (0.4-2.2)	471	47.6 (41.8-53.4)
Ainaro	932	837	89.8 (87.6-92.0)	644	69.1 (63.7-74.5)	7	0.8 (0.2-1.3)	561	60.2 (53.4-67.0)
Baucau	885	706	79.8 (76.5-83.1)	537	60.7 (53.7-67.6)	26	2.9 (1.2-4.6)	513	58.0 (51.6-64.3)
Bobonaro	1089	943	86.6 (84.1-89.0)	822	75.5 (70.6-80.4)	23	2.1 (0.8-3.4)	250	23.0 (18.5-27.4)
Covalima	1095	933	85.2 (82.0-88.4)	795	72.6 (67.7-77.5)	27	2.5 (1.3-3.7)	424	38.7 (32.6-44.9)
Dili	1388	1179	84.9 (81.9-88.0)	1108	79.8 (75.5-84.1)	64	4.6 (2.6-6.7)	225	16.2 (12.3-20.2)
Ermera	985	931	94.5 (92.9-96.1)	663	67.3 (61.5-73.1)	12	1.2 (0.4-2.0)	463	47.0 (40.6-53.4)
Lautem	982	777	79.1 (75.6-82.7)	605	61.6 (56.0-67.3)	45	4.6 (2.3-6.8)	355	36.2 (29.3-43.0)
Liquica	1041	900	86.5 (82.8-90.1)	780	74.9 (70.5-79.3)	16	1.5 (0.5-2.5)	358	34.4 (28.5-40.3)
Manatuto	997	850	82.3 (82.3-88.2)	621	62.3 (55.9-68.7)	44	4.4 (2.5-6.3)	436	43.7 (37.1-50.3)
Manufahi	972	856	88.1 (85.4-90.8)	636	65.4 (60.8-70.0)	18	1.9 (0.8-2.9)	428	44.0 (37.7-50.3)
Oe-cusse	1045	945	90.4 (87.8-93.0)	741	70.9 (65.8-76.0)	17	1.6 (0.7-2.6)	411	39.3 (32.3-45.8)
Viqueque	981	809	82.5 (79.6-85.3)	623	63.5 (58.3-68.7)	20	2.0 (1.0-3.1)	353	36.0 (30.5-41.5)
Residence									
Urban	3761	3142	83.5 (81.7-85.4)	2848	75.7 (72.2-79.2)	99	2.6 (1.9-3.3)	1017	27.0 (24.3-29.8)
Rural	9620	8444	87.8 (87.0-88.6)	6423	66.8 (65.3-68.2)	233	2.4 (1.9-2.9)	4090	42.5 (40.7-44.3)
Wealth quintile									
Lowest	2489	2233	89.7 (88.3-91.1)	1610	64.7 (62.3-67.0)	64	2.6 (1.7-3.4)	1304	52.4 (49.2-55.6)
Second	2463	2194	89.1 (87.7-90.5)	1602	65.0 (62.8-67.3)	54	2.2 (1.5-2.9)	1176	47.7 (45.2-50.3)
Third	2602	2262	86.9 (85.5-88.4)	1753	67.4 (65.0-69.7)	59	2.3 (1.6-2.9)	1148	44.1 (41.4-46.9)
Fourth	2709	2292	84.6 (83.2-86.0)	1906	70.4 (68.2-72.5)	80	3.0 (2.2-3.7)	950	35.1 (32.6-37.5)
Highest	3016	2511	83.3 (81.3-85.2)	2329	77.2 (74.7-79.7)	72	2.4 (1.6-3.2)	485	16.1 (14.3-17.9)
Total (weighted)	**13381**	**86.3 (85.8-86.9)**		**71.4 (70.6-72.2)**		**2.7 (2.5-3.0)**		**36.2 (35.4-37.0)**	

3.4 Wealth index

An asset-based wealth index was constructed. Households were ranked by asset ownership. Assets included consumer durables (such as television, fridge, and computer), housing characteristics (type of building material-wall, floor and roof) and access to basic services (water, toilets and electricity). The assets were entered into a Principal Component Analysis and first factor chosen as wealth index. The rural population had only 11.6% in the highest quintile compared to 44.7% for the urban population. Ermera had the lowest population in the highest quintile (5.9%), followed by Ainaro (6.5%). These were also the municipalities with the highest prevalence of stunting among children (Table 40).

Table 40. Wealth quintiles by municipality and residence, TLFNS 2020

Description	N	Wealth index		Lowest Quintile	Second Quintile	Third Quintile	Fourth Quintile	Highest Quintile
		Mean	SD	%	%	%	%	%
Municipality								
Aileu	992	-0.2845	0.7741	29.0	26.5	20.6	13.4	10.5
Ainaro	992	-0.3437	0.6618	31.2	24.2	20.5	17.6	6.5
Baucau	991	-0.1612	0.7362	19.3	24.8	22.1	22.2	11.5
Bobonaro	985	0.1680	0.9500	12.6	15.5	22.3	26.0	23.6
Covalima	990	0.1476	0.9291	12.7	17.2	20.1	26.8	23.1
Dili	980	1.4053	1.2215	2.7	3.2	7.5	16.0	70.5
Ermera	992	-0.4043	0.6327	32.8	26.0	22.7	12.5	5.9
Lautem	992	-0.6220	0.9527	22.4	19.4	21.3	21.1	15.9
Liquica	987	0.1664	1.1446	18.7	19.8	18.5	19.0	24.0
Manatuto	984	0.0646	0.9867	20.7	17.2	17.8	25.0	19.4
Manufahi	992	-0.1713	0.7998	24.8	23.8	18.4	19.9	13.1
Oe-cusse	984	0.3418	1.0946	17.7	18.7	27.4	20.9	15.2
Viqueque	985	-0.0969	0.8287	16.9	25.1	22.9	20.7	14.5
Residence								
Urban	3061	0.7349	1.2796	9.7	10.7	13.2	21.8	44.7
Rural	9745	-0.1881	0.7977	23.6	23.1	22.3	19.4	11.6
Total	**12846**	**0.4682**	**1.0261**	**20.0**	**20.0**	**20.0**	**20.0**	**20.0**

3.5 Household Food Security

3.5.1 Food consumption score (FCS)

The Food Consumption Score (FCS) is the most commonly used food security indicator. It represents households' dietary diversity and nutrient intake. The FCS is calculated by inspecting how often households consume food items from the different food groups during a 7-day reference period, which are then weighted according to the relative nutritional value of the consumed food groups. Of the surveyed households, 35.1% (34.2-35.9, 95% C.I) had poor food consumption, while 29.9% (29.2-30.7, 95% C.I) had borderline food consumption and 34.8% (34.0-35.6, 95% C.I) had acceptable food consumption (Table 41). Covalima had the highest percentage of households with poor food consumption, at 45.5% (38.7-52.2, 95% C.I), and this was followed by Ermera, with 42.4% (34.9-49.8, 95% C.I). The percentage with poor food consumption was higher in rural households (39.2%) than urban households (30.4%) and increased from 19.9% in the lowest wealth quintile to 44.9% in the highest wealth quintile.

Table 41. Food consumption score (FCS) by municipality, residence and wealth quintile, TLFNS 2020

Description	N	Poor (0-28)		Borderline (>28-42)		Acceptable (>42)	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Municipality							
Aileu	992	331	33.5 (26.3-40.7)	348	35.2 (30.1-40.3)	309	31.3 (24.2-38.4)
Ainaro	992	301	30.4 (23.5-37.3)	368	37.2 (32.1-42.3)	321	32.4 (25.8-39.0)
Baucau	991	415	42.1 (35.0-49.2)	359	36.4 (31.3-41.5)	212	21.5 (16.0-27.0)
Bobonaro	985	373	37.9 (31.2-44.6)	288	29.2 (25.3-33.2)	324	32.9 (27.4-38.4)
Covalima	990	450	45.5 (38.7-52.2)	282	28.5 (24.3-32.7)	258	26.1 (20.3-31.8)
Dili	980	239	24.4 (19.2-29.5)	220	22.4 (18.9-25.8)	521	53.2 (46.9-59.5)
Ermera	992	417	42.4 (34.9-49.8)	296	30.1 (25.7-34.5)	417	27.5 (21.0-34.1)
Lautem	992	409	41.9 (34.7-49.1)	316	32.4 (27.4-37.3)	251	25.7 (19.3-32.1)
Liquica	987	308	31.2 (24.6-37.8)	331	33.5 (28.6-38.5)	348	35.3 (28.2-42.3)
Manatuto	984	405	41.2 (33.0-49.3)	325	33.0 (27.3-38.7)	254	25.8 (19.6-32.1)
Manufahi	992	326	33.0 (25.4-40.6)	293	29.7 (24.7-34.6)	369	37.3 (30.2-44.5)
Oe-cusse	984	398	40.4 (33.3-47.6)	323	32.8 (27.5-38.1)	263	26.7 (20.8-32.7)
Viqueque	985	376	38.2 (31.4-44.9)	343	34.8 (30.2-39.5)	266	27.0 (20.6-33.4)
Residence							
Urban	3061	931	30.4 (27.1-33.8)	939	30.7 (28.5-32.9)	1191	38.9 (35.4-42.4)
Rural	9745	3816	39.2 (36.7-41.6)	3153	32.4 (30.8-33.9)	2776	28.5 (26.3-30.6)
Wealth quintile							
Lowest	2726	1225	44.9 (41.8-48.1)	910	33.4 (30.9-35.9)	591	21.7 (18.8-24.5)
Second	2602	1062	40.8 (38.0-43.6)	945	36.3 (33.8-38.8)	595	22.9 (20.5-25.2)
Third	2617	1105	42.2 (39.3-45.2)	873	33.4 (31.4-35.3)	639	24.4 (21.9-26.9)
Fourth	2498	885	35.4 (32.5-38.3)	805	32.2 (30.1-34.3)	808	32.3 (30.1-34.6)
Highest	2363	470	19.9 (17.3-22.4)	559	23.7 (21.4-26.0)	1334	56.5 (53.1-59.8)
Total (weighted)	**12846**	**35.1 (34.2-35.9)**		**29.9 (29.2-30.7)**		**34.8 (34.0-35.6)**	

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Table 42 presents the frequency of consumption of different food groups. The results indicate that the diet consumed by most households on a daily basis was low in terms of consumption of fruits, dairy products, legumes/nuts/seeds, as well as meat/fish.

Table 42. Frequency of household food consumption in the previous 7 days (N=12,881), TLFNS 2020

Type of food	0 days		1-2 days		3-4 days		5-7 days	
	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Cereals, roots and tubers	824	6.4 (5.7-7.1)	3047	23.7 (22.0-25.3)	2464	19.1 (17.7-20.6)	6546	50.8 (48.3-53.3)
Legumes, nuts and seeds	3777	29.3 (27.7-30.9)	6216	48.3 (46.7-49.8)	1479	11.5 (10.3-12.7)	1409	10.9 (9.8-12.0)
Vegetables	718	5.6 (4.8-6.3)	3201	24.9 (22.9-26.8)	2054	15.9 (14.6-17.3)	6908	53.6 (51.3-56.0)
Fruits	4968	38.6 (37.0-40.1)	5608	43.5 (42.0-45.1)	1437	11.2 (9.9-12.4)	868	6.7 (5.9-7.6)
Meat and fish	3831	29.7 (28.9-30.8)	6316	49.0 (47.8-50.3)	1609	12.5 (11.6-13.4)	1135	8.8 (7.8-9.8)
Milk and other dairy products	8970	69.6 (68.4-70.8)	2230	17.3 (16.2-18.4)	465	3.6 (3.2-4.0)	1216	9.4 (8.7-10.2)
Sugar and sugar products	320	2.5 (2.2-2.8)	1097	8.5 (7.3-9.7)	1416	11.0 (9.5-12.4)	10048	78.0 (75.9-80.1)
Oils fats and butter	113	0.9 (0.7-1.1)	1701	13.2 (11.4-15.0)	645	5.0 (4.3-5.7)	10422	80.9 (78.8-83.0)
Condiments and spices	167	1.3 (1.0-1.6)	1296	10.1 (8.5-11.6)	964	7.5 (6.3-8.7)	10454	81.2 (79.1-83.2)

3.5.2 Iodised salt use

The percentage of households who consumed iodized salt was very high at 84.8% (84.2-85.4, 95% C.I). The percentage was similar in urban and rural households, as well as wealth quintiles, as expected, was highest in Dili (Table 43).

Table 43. Use of iodised salt by municipality, residence and wealth quintile, TLFNS 2020

Description	N	Salt iodised		Salt not iodised		Cannot read the label		No salt in household	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Municipality									
Aileu	992	982	99.0 (98.3-99.7)	9	0.9 (0.3-1.5)	0	0	1	0.1 (0.0-0.3)
Ainaro	992	989	99.7 (99.4-100.0)	3	0.3 (0.0-0.6)	0	0	0	0
Baucau	991	860	86.8 (81.8-91.7)	130	13.1 (8.2-18.1)	0	0	1	0.1 (0.0-0.3)
Bobonaro	992	517	52.1 (45.3-59.0)	461	46.5 (39.6-53.3)	13	1.3 (0.1-2.5)	1	0.1 (0.0-0.3)
Covalima	992	731	73.7 (67.7-79.6)	258	26.0 (20.1-32.0)	1	0.1 (0.0-0.3)	2	0.2 (0.0-0.5)
Dili	989	933	94.9 (92.4-97.4)	36	3.6 (1.7-5.5)	13	1.3 (0.0-3.0)	1	0.1 (0.0-0.3)
Ermera	992	890	89.7 (85.5-94.0)	101	10.2 (6.0-14.4)	0	0	1	0.1 (0.0-0.3)
Lautem	992	957	96.5 (94.5-98.4)	35	3.5 (1.6-5.5)	0	0	0	0
Liquica	990	789	79.7 (75.1-84.3)	191	19.3 (14.6-24.0)	10	1.0 (0.0-2.0)	0	0
Manatuto	992	701	70.7 (62.6-78.7)	284	28.6 (20.7-36.6)	7	0.7 (0.0-2.1)	0	0
Manufahi	992	984	99.2 (98.5-99.9)	3	0.3 (0.0-0.6)	5	0.5 (0.0-1.2)	0	0
Oe-cusse	991	356	35.9 (29.3-42.5)	610	61.6 (54.4-68.7)	24	2.4 (0.1-4.7)	1	0.1 (0.0-0.3)
Viqueque	991	987	99.6 (99.1-100)	2	0.2 (0.0-0.6)	0	0	2	0.2 (0.0-0.6)
Residence									
Urban	3081	2560	83.1 (80.0-86.1)	504	16.4 (13.4-19.3)	14	0.5 (0.0-1.0)	3	0.1 (0.0-0.2)
Rural	9800	8115	82.8 (81.2-84.5)	1619	16.5 (14.8-18.2)	59	0.6 (0.3-0.9)	7	0.1 (0.0-0.1)
Wealth quintile									
Lowest	2744	2381	86.8 (85.0-88.5)	340	12.4 (10.7-14.1)	20	0.7 (0.2-1.3)	3	0.1 (0.0-0.2)
Second	2614	2225	85.1 (83.3-86.9)	373	14.3 (12.4-16.1)	12	0.5 (0.1-0.8)	4	0.2 (0.0-0.3)
Third	2630	2111	80.3 (78.4-82.1)	500	19.0 (17.2-20.8)	18	0.7 (0.3-1.0)	1	0.0
Fourth	2512	1951	77.7 (75.2-80.2)	548	21.8 (19.3-24.3)	11	0.4 (0.1-0.8)	4	0.1 (0.0-0.2)
Highest	2381	2007	84.3 (82.0-86.5)	362	15.2 (13.1-17.3)	12	0.5 (0.0-1.0)	0	0
Total (weighted)	**13381**	**84.8 (84.2-85.4)**		**14.4 (13.8-15.0)**		**0.7 (0.5-0.8)**		**0.1 (0.0-0.1)**	

3.5.3 Food Insecurity Experience Scale (FIES)

The Food Insecurity Experience Scale (FIES) is a measure of access to food at the level of individuals or households. It measures severity of food insecurity based on people's responses to questions about constraints on their ability to obtain adequate food. Eight questions form a quantitative tool to measure the prevalence of food insecurity. The proportion of households classified as food secure/mild food insecure was 49.6% (48.7-50.5, 95% C.I), with 34.8% (33.9-35.6, 95% C.I) classified as moderate food insecure and 15.6% (15.0-16.2, 95% C.I) classified as severe food insecure (Table 44). Covalima (21.1%), Oe-cusse (20.4%) and Bobonaro (19.4%) had the highest percentage classified as severe food insecure, and the proportion was slightly higher among rural households (17.3%) than urban households (15.6%). The lowest wealth quintile had the lowest percentage classified as severe food insecure.

Table 44. Food Insecurity Experience Scale (FIES) by municipality, residence and wealth quintile, TLFNS 2020

Description	N	Food secure/mild food insecure (0-4)		Moderate food insecure (4-6)		Severe food insecure (7-8)	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Municipality							
Aileu	992	477	48.1 (40.7-55.5)	405	40.8 (34.1-47.5)	110	11.1 (7.3-14.9)
Ainaro	992	434	43.8 (36.6-50.9)	371	37.4 (30.8-44.0)	187	18.9 (13.2-24.5)
Baucau	991	442	44.6 937.4-51.8)	427	43.1 (37.0-49.1)	122	12.3 (8.2-16.5)
Bobonaro	992	420	42.3 (36.1-48.6)	380	38.3 (32.9-43.7)	192	19.4 (15.0-23.7)
Covalima	992	394	39.7 (33.6-45.9)	389	39.2 (33.7-44.7)	209	21.1 (15.5-26.6)
Dili	983	591	60.1 (54.0-66.3)	240	24.4 (19.8-29.1)	152	15.5 (11.0-19.9)
Ermera	992	438	44.2 (37.5-50.8)	369	37.2 (31.3-43.1)	185	18.6 (13.4-23.9)
Lautem	992	580	58.5 (51.5-65.4)	302	30.4 (24.4-36.5)	110	11.1 (7.2-15.0)
Liquica	990	525	53.0 (45.8-60.3)	326	32.9 (26.9-38.9)	139	14.0 (9.6-18.5)
Manatuto	992	486	49.0 (41.6-56.4)	391	39.4 (33.3-45.6)	115	11.6 (7.9-15.3)
Manufahi	992	520	52.4 (44.7-60.2)	361	36.4 (29.3-43.5)	111	11.2 (7.7-14.7)
Oe-cusse	991	338	34.1 (27.5-40.7)	451	45.5 (39.4-51.7)	202	20.4 (15.1-25.7)
Viqueque	991	494	49.8 (42.5-57.2)	359	36.2 (29.6-42.9)	138	13.9 (9.6-18.2)
Residence							
Urban	2934	1455	49.6 (46.3-52.9)	1021	34.8 (32.1-37.5)	458	15.6 (13.3-17.9)
Rural	9290	4183	45.0 (42.3-47.2)	3500	37.7 (35.4-39.9)	1607	17.3 (15.7-18.9)
Wealth quintile							
Lowest	2657	1165	43.8 (39.8-47.9)	1068	40.2 (36.8-43.6)	424	16.0 (13.9-18.0)
Second	2501	1085	43.4 (40.2-46.5)	991	39.6 (36.5-42.7)	425	17.0 (15.0-19.0)
Third	2506	961	38.3 (35.6-41.1)	1039	41.5 (38.7-44.3)	506	20.2 (17.8-22.6)
Fourth	2371	1075	45.3 (42.8-47.9)	859	36.2 (33.8-38.7)	437	18.4 (16.4-20.4)
Highest	2189	1352	61.8 (58.7-64.8)	564	25.8 (23.5-28.0)	273	12.5 (10.4-14.6)
Total (weighted)	**13381**	**49.6 (48.7-50.5)**		**34.8 (33.9-35.6)**		**15.6 (15.0-16.2)**	

3.6 Water, sanitation and hygiene

3.6.1 Access to drinking water

The type of drinking water sources are presented in Table 45. The main source for most households was the public tap/standpipe, with 87.8% (87.2-88.3, 95% C.I) having access to an improved drinking water source. Urban households (89.3%) had more access to an improved drinking water source than rural households (83.5%). In terms of wealth quintiles, the proportion did not vary much between lowest to the fourth quintiles, but highest in the highest quintile (88.1%).

Table 45. Main source of drinking water by municipality, residence and wealth quintile, TLFNS 2020

Description	Public tap/ Stand pipe	Piped water into dwelling	Tube well/ bore hole	Protected well/ spring	Bottled water	Unprotect-ed well	Surface water (river/ stream /pond)	Other	Improved drinking water source
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Municipality									
Aileu	71.4 (63.6-79.1)	7.5 (2.9-12.0)	0.3 (0.0-0.7)	13.7 (8.0-19.4)	1.0 (0.0-2.4)	5.4 (1.6-9.2)	0.7 (0.1-1.4)	0	93.9 (90.0-97.7)
Ainaro	50.0 (41.3-58.7)	6.1 (2.0-10.3)	0.3 (0.0-0.6)	28.3 (20.3-36.3)	0	0	12.3 (6.5-18.1)	2.9 0.0-5.9)	84.8 (78.5-91.1)
Baucau	53.4 (43.9-62.9)	7.7 (2.8-12.5)	0.2 (0.0-0.6)	28.4 (19.5-37.2)	0.5 (0.0-1.0)	4.0 (1.1-7.0)	5.6 (1.7-9.4)	0.3 (0.0-0.8)	90.1 (84.8-95.4)
Bobonaro	59.2 (50.3-68.1)	13.2 (7.1-19.3)	6.9 (2.9-10.9)	12.3 (6.6-18.0)	0.1 (0.0-0.3)	6.5 (2.3-10.6)	1.5 (0.0-3.9)	0.4 (0.0-0.8)	91.6 (86.6-96.6)
Covalima	42.8 (33.5-52.2)	11.2 (4.9-17.4)	4.4 (1.3-7.6)	16.2 (9.4-23.1)	0.4 (0.0-0.9)	17.4 (10.7-24.2)	7.1 (2.6-11.5)	0.4 (0.0-1.0)	75.1 (67.0-83.2)
Dili	47.3 (39.1-55.5)	14.0 (7.8-20.3)	10.8 (5.8-15.8)	4.1 (1.4-6.7)	18.4 (11.8-25.0)	4.6 (1.9-7.2)	0.1 (0.0-0.3)	0.6 (0.0-1.3)	94.7 (92.0-97.4)
Ermera	71.2 (63.1-79.2)	14.1 (7.3-20.9)	0.7 (0.0-1.7)	10.5 (5.6-15.4)	0	0	1.6 (0.4-2.9)	1.9 (0.0-4.4)	96.5 (93.7-99.3)
Lautem	45.5 (36.4-54.5)	7.9 (3.5-12.2)	0.1 (0.0-0.3)	21.4 (13.6-29.2)	0	21.9 (14.1-29.6)	3.2 (0.0-6.8)	0.1 (0.0-0.3)	74.8 (66.5-83.1)
Liquica	70.2 (62.0-78.4)	8.2 (3.6-12.7)	2.0 (0.0-4.0)	8.1 (3.6-12.5)	4.0 (1.0-7.0)	5.0 (1.1-9.0)	0.8 (0.0-1.7)	1.6 (0.2-3.1)	92.5 (88.2-96.9)
Manatuto	57.5 (47.8-67.1)	8.8 (3.0-14.5)	0.3 (0.0-0.9)	12.9 (6.3-19.5)	1.0 (0.0-2.6)	10.4 (4.8-16.0)	9.1 (3.3-14.9)	0.1 (0.0-	80.4 (72.9-88.0)
Manufahi	58.9 (49.6-68.1)	2.4 (0.5-4.4)	4.1 (0.6-7.7)	16.9 (10.6-23.3)	0.2 (0.0-0.5)	13.6 (6.9-20.3)	3.8 (0.0-7.7)	0	82.6 (75.1-90.0)
Oe-cusse	42.7 (32.8-52.6)	8.2 (3.7-12.7)	0.5 (0.0-1.2)	16.2 (9.3-23.2)	0.6 (0.1-1.2)	30.4 (21.2-39.5)	1.4 (0.0-4.0)	0.1 (0.0-0.3)	68.1 (58.8-77.4)
Viqueque	49.7 (40.4-59.1)	2.2 (0.1-4.3)	4.9 (0.8-9.1)	21.1 (13.4-28.8)	0.2 (0.0-0.6)	14.8 (8.2-21.5)	7.0 (2.1-11.8)	0	78.2 (70.1-86.3)
Residence									
Urban	58.2 (53.4-63.0)	10.6 (7.4-13.7)	5.7 (3.6-7.7)	8.0 (5.3-10.6)	6.9 (4.6-9.2)	9.2 (6.7-11.8)	0.9 (0.3-1.5)	0.6 (0.1-1.0)	89.3 (86.7-91.9)
Rural	54.5 (51.2-57.8)	7.9 (6.4-9.4)	1.8 (1.1-2.5)	18.7 (16.5-21.0)	0.5 (0.2-0.8)	12.1 (10.2-14.0)	4.3 (3.1-5.4)	0.2 (0.1-0.3)	83.5 (81.3-85.6)

Description	Public tap/ Stand pipe	Piped water into dwelling	Tube well/ bore hole	Protected well/ spring	Bottled water	Unprotect-ed well	Surface water (river/ stream /pond)	Other	Improved drinking water source
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Wealth quintile									
Lowest	55.6 (51.6-59.6)	7.4 (5.5-9.3)	1.1 (0.2-1.9)	19.6 (16.7-22.4)	0.2 (0.0-0.4)	11.3 (8.8-13.7)	4.8 (2.7-6.6)	0.2 (0.0-4.5)	83.8 (80.7-86.9)
Second	57.1 (53.5-60.7)	6.7 (5.1-8.2)	1.4 (0.7-2.2)	19.6 (16.8-22.3)	0.2 (0.0-0.3)	10.4 (8.5-12.4)	4.4 (2.9-5.9)	0.2 (0.0-0.5)	84.9 (82.5-87.3)
Third	56.5 (52.8-60.1)	7.8 (6.1-9.6)	2.5 (1.5-3.4)	17.5 (15.0-20.0)	0.4 (0.1-0.7)	11.9 (9.5-14.2)	3.2 (2.2-4.3)	0.2 (0.0-0.4)	84.7 (82.2-87.2)
Fourth	54.3 (51.0-57.6)	9.8 (7.8-11.9)	2.7 (1.8-3.7)	14.8 (12.7-16.9)	1.5 (0.9-2.1)	12.9 (10.4-15.4)	3.6 (2.1-5.2)	0.4 (0.0-0.7)	83.1 (80.5-85.8)
Highest	53.1 (48.9-57.3)	11.5 (8.6-14.4)	6.4 (4.4-8.4)	8.5 (6.6-10.4)	8.6 (6.0-11.2)	10.5 (8.0-13.0)	1.1 (0.5-1.6)	0.4 (0.1-0.7)	88.1 (85.6-90.5)
Total (weighted)	**52.2 (51.3-53.1)**	**10.0 (9.5-10.5)**	**4.3 (3.9-4.6)**	**14.0 (13.4-14.6)**	**5.1 (4.7-5.5)**	**8.3 (7.9-8.8)**	**3.2 (2.9-3.5)**	**0.7 (5.5-8.4)**	**87.8 (87.2-88.3)**

3.6.2 Access to sanitation facilities

The types of toilet facilities are shown in Table 46. The most frequently used type of facility was a flush latrine with septic tank (38.0%, 37.2-38.8, 95% C.I), followed by a pit latrine with a slab (31.1%, 30.3-31.9, 95% C.I), with a lower proportion using pit latrine without slab (9.9%, 9.3-10.4, 95% C.I), flush latrine without septic tank (9.4%, 8.9-9.9, 95% C.I) and 11.6% (11.1-12.2, 95% C.I) without a toilet facility (Table 46).

Table 46. Main toilet facility by municipality, residence and wealth quintile, TLFNS 2020

Description	Flush latrine with septic tank	Pit latrine with slab	Pit latrine without slab	Flush latrine without septic tank	No latrine/ bush
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Municipality					
Aileu	33.4 (26.2-40.6)	27.0 (18.8-35.3)	15.3 (8.4-22.3)	18.3 (12.7-24.0)	5.9 (3.8-8.1)
Ainaro	27.1 (20.4-33.9)	29.0 (21.1-36.9)	14.8 (8.2-21.5)	10.4 (6.8-14.0)	18.6 (14.0-23.3)
Baucau	23.4 (17.0-29.8)	23.3 (15.6-31.0)	15.0 (8.8-21.3)	19.4 (14.0-24.7)	18.9 (12.9-24.8)
Bobonaro	39.5 (31.3-47.7)	37.0 (28.7-45.2)	6.1 (2.2-10.1)	2.3 (1.0-3.6)	15.0 (12.2-20.6)
Covalima	38.1 (30.0-46.2)	30.1 (22.5-37.7)	9.4 (5.0-13.7)	5.9 (3.6-8.3)	16.4 (11.2-19.5)
Dili	52.1 (43.3-60.9)	38.5 (29.9-47.0)	4.2 (1.2-7.1)	3.1 (0.8-5.5)	2.1 (0.5-3.7)
Ermera	35.2 (27.3-43.0)	27.6 (19.8-35.4)	12.8 (6.4-19.2)	10.0 (6.2-13.7)	14.4 (10.0-18.8)
Lautem	35.7 (28.0-43.4)	28.0 (19.0-37.1)	10.8 (5.1-16.5)	15.1 (10.6-19.6)	10.4 (5.8-14.9)
Liquica	35.9 (27.5-44.2)	33.3 (24.4-42.2)	11.4 (5.9-16.9)	9.6 (5.4-13.7)	9.8 (6.2-13.4)
Manatuto	37.7 (29.6-45.8)	31.5 (22.6-40.3)	11.7 (5.6-17.8)	10.7 (7.1-14.2)	8.5 (4.7-12.2)
Manufahi	38.5 (30.6-46.4)	28.9 (20.2-37.7)	12.0 (5.9-18.1)	15.5 (10.6-20.4)	5.0 (3.1-7.0)
Oe-cusse	26.2 (19.3-33.2)	25.8 (18.2-33.5)	9.6 (5.0-14.2)	8.0 (5.2-10.8)	30.4 (23.7-37.0)
Viqueque	34.2 (26.9-41.5)	24.0 (15.8-32.3)	12.1 (6.4-17.8)	13.6 (9.5-17.7)	16.1 (11.7-20.4)
Residence					
Urban	43.2 (39.2-47.2)	35.5 (31.4-39.6)	8.6 (6.1-11.1)	7.6 (5.9-9.3)	5.1 (3.8-6.3)
Rural	32.6 (30.4-34.9)	27.7 (24.6-30.7)	12.0 (10.1-13.9)	12.0 (10.8-13.2)	15.8 (14.2-17.3)
Wealth quintile					
Lowest	25.9 (22.8-29.0)	32.7 (28.9-36.6)	10.8 (8.8-12.8)	14.5 (12.3-16.7)	16.1 (14.0-18.2)
Second	27.0 (24.2-29.8)	29.3 (26.0-32.6)	12.3 (10.1-14.5)	14.5 (12.9-16.1)	16.9 (14.9-18.9)
Third	30.3 (27.7-32.9)	26.2 (23.0-29.3)	13.4 (11.2-15.6)	12.5 (11.1-13.9)	17.6 (15.7-19.6)
Fourth	37.6 (34.8-40.5)	28.6 (25.8-31.4)	12.3 (10.1-14.6)	8.8 (7.6-10.0)	12.6 (10.5-14.6)
Highest	57.5 (54.4-60.7)	30.9 (27.6-34.2)	6.6 (4.9-8.4)	3.4 (2.5-4.4)	1.6 (1.0-2.1)
Total (weighted)	**38.0 (37.2-38.8)**	**31.1 (30.3-31.9)**	**9.9 (9.3-10.4)**	**9.4 (8.9-9.9)**	**11.6 (11.1-12.2)**

The proportion of households with access to an improved sanitation facility at national level was 68.2% (67.4-69.0, 95% C.I), with 52.2% (51.4-53.1, 95% C.I) having access to an improved excreta disposal facility (Table 47). The percentage with access to an improved sanitation facility ranged from 39.6% in Baucau to 90.5% in Dili and was much higher in urban households (78.7%) than rural households (60.3%). The highest wealth quintile had a much higher percentage with access to an improved sanitation facility than the lower quintiles.

Table 47. Improved sanitation facility and excreta disposal facility by municipality, residence and wealth quintile, TLFNS 2020

Description	N	Improved sanitation facility		Improved excreta disposal facility	
		n	% (95% C.I)	n	% (95% C.I)
Municipality					
Aileu	992	393	39.6 (31.7-47.5)	475	47.9 (41.2-54.6)
Ainaro	992	557	56.1 948.9-63.4)	423	42.6 (36.4-48.9)
Baucau	991	463	46.7 (38.7-54.8)	375	37.8 (30.7-45.0)
Bobonaro	992	759	76.5 (70.3-82.7)	640	64.5 (58.6-70.4)
Covalima	992	677	68.2 (62.4-74.1)	505	49.1 (43.2-55.0)
Dili	983	890	90.5 (86.0-95.0)	647	65.8 (60.6-71.0)
Ermera	992	623	62.8 (55.2-70.4)	427	43.0 (36.8-49.3)
Lautem	992	632	63.7 (55.6-71.8)	542	54.6 (46.6-62.7)
Liquica	990	685	69.2 (61.9-76.5)	519	52.4 (46.1-58.8)
Manatuto	992	686	69.2 (61.3-77.0)	579	58.4 (50.8-65.9)
Manufahi	992	669	67.4 (59.8-75.1)	528	46.8 (39.9-53.7)
Oe-cusse	991	516	52.1 (44.3-59.8)	393	39.7 (32.8-46.5)
Viqueque	992	577	58.2 (50.9-65.5)	433	43.7 (37.1-50.3)
Residence					
Urban	3081	2426	78.7 (76.2-81.2)	1845	59.9 (57.1-62.7)
Rural	9800	5907	60.3 (57.8-62.8)	4641	47.4 (45.0-49.7)
Wealth quintile					
Lowest	2744	1608	58.6 (55.0-62.2)	1209	44.1 (40.7-47.4)
Second	2614	1472	56.3 (53.2-59.4)	1148	43.9 (41.1-46.7)
Third	2630	1485	56.5 (53.6-59.4)	1118	42.5 (39.7-45.3)
Fourth	2512	1664	66.2 (63.5-69.0)	1280	51.0 (48.6-53.4)
Highest	2381	2104	88.4 (86.3-90.4)	1731	72.7 (69.8-75.6)
Total (weighted)	**12881**	**68.2 (67.4-69.0)**		**52.2 (51.4-53.1)**	

3.6.3 Handwashing

The hand washing method for nearly all households was soap and water (87.1%, 86.5-87.7, 95% C.I), and a high proportion of households reported washing their hands before eating (80.0%, 79.3-80.7, 95% C.I), although a lower proportion reported washing their hands before cooking food (45.1%, 44.3-46.0, 95% C.I), after defecation (28.5%, 27.8-29.3, 95% C.I), and a much lower proportion after disposing child's faeces (6.1%, 5.6-6.5, 95% C.I) and before breastfeeding/feeding children (6.2%, 5.8-6.6, 95% C.I) as shown in Table 48.

Table 48. Handwashing method and important time for handwashing by municipality, TLFNS 2020

Description	Hand washing method					Important times for hand washing				
	Water only	Water and ash	Water and sand	Water and soap	Other	Before cooking food	After defecation	Before eating food	After disposing child's faeces	Before feeding/ breast feeding children
	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% 95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)	% (95% C.I)
Municipality										
Aileu	11.1 (5.9-16.3)	0	0	87.5 (82.2-92.8)	1.4 (0.3-2.5)	40.0 (32.4-47.6)	28.5 (22.2-34.9)	83.2 (78.6-87.8)	2.9 (1.7-4.1)	3.9 (2.4-5.5)
Ainaro	14.4 (8.7-20.1)	0	0	84.3 (78.4-90.1)	1.3 (0.2-2.5)	35.1 (28.4-41.7)	21.7 (16.0-27.4)	81.4 (76.5-86.2)	1.3 (0.6-2.0)	2.6 (1.3-3.9)
Baucau	17.5 (10.7-24.2)	0.1 (0.0-0.3)	0	81.1 (74.4-87.9)	1.3 (0.5-2.1)	35.3 (27.9-42.8)	21.2 (15.3-27.0)	78.7 (72.6-84.8)	2.8 (1.6-3.9)	4.2 (2.8-5.7)
Bobonaro	11.2 (6.2-16.2)	0	0.1 (0.0-0.3)	86.5 (81.4-91.5)	2.2 (0.8-3.7)	45.8 (39.1-52.5)	31.0 (23.8-38.3)	79.0 (74.5-83.6)	6.5 (3.3-9.6)	5.5 (3.5-7.6)
Covalima	14.1 (8.2-20.1)	0	0.2 (0.0-0.5)	84.0 (78.0-89.9)	1.7 (0.7-2.8	61.5 (54.3-68.6)	25.9 (18.8-33.0)	78.4 (73.6-83.3)	2.2 (1.0-3.5)	3.3 (1.9-4.8)
Dili	2.1 (0.5-3.8)	0	0	97.1 (95.3-98.8)	0.8 (0.2-1.4)	56.5 (48.8-64.1)	41.3 (34.1-48.5)	79.7 (74.6-84.7)	16.0 (9.9-22.1)	14.5 (8.9-20.2)
Ermera	18.3 (12.0-24.7)	0	0	79.7 (73.2-86.3)	1.9 (0.7-3.1)	35.2 (28.9-41.5)	23.4 (17.5-29.2)	79.1 (73.6-84.7)	3.1 (1.7-4.6)	2.4 (1.3-3.5)
Lautem	14.2 (8.4-20.1)	0	0.1 (0.0-0.3)	84.4 (78.5-90.2)	1.3 (0.6-2.0)	40.3 (33.0-47.7)	20.9 (15.3-26.4)	80.2 (74.1-86.3)	2.1 (1.1-3.1)	3.5 (2.1-5.0)
Liquica	12.3 (6.7-17.9)	0	0	87.0 (81.3-92.6)	0.7 (0.0-1.4)	40.0 (32.8-47.2)	24.7 (18.9-30.6)	83.4 (79.0-87.9)	1.9 (1.0-2.9)	2.8 (1.8-3.9)
Manatuto	12.2 (6.5-17.9)	0	0	86.9 (81.2-92.6)	0.9 (0.3-1.5)	41.5 (33.8-49.3)	21.5 (15.7-27.2)	83.1 (77.8-88.4)	3.0 (1.7-4.3)	3.4 (1.8-5.0)
Manufahi	11.6 (6.2-17.0)	0	0.1 (0.0-0.3)	87.5 (82.1-92.9)	0.8 (0.3-1.3)	41.7 (33.8-49.6)	25.7 (19.1-32.3)	81.9 (76.5-87.2)	1.5 (0.8-2.3)	2.3 (1.2-3.4)
Oe-cusse	18.3 (12.8-23.7)	0	0	79.4 (73.6-85.2)	2.3 (0.5-4.1)	41.9 (34.4-49.3)	23.4 (16.6-30.2)	75.8 (70.1-81.5)	1.2 (0.5-1.9)	1.2 (0.5-2.0)
Viqueque	15.7 (9.5-21.9)	0	0	83.7 (77.3-89.9)	0.6 (0.1-1.2)	45.5 (38.1-52.9)	23.9 (17.4-30.4)	80.8 (75.4-86.3)	2.1 (0.9-3.3)	4.7 (3.1-6.4)
Total (weighted)	**11.6 (11.0-12.1)**	**0.0**	**0.0**	**87.1 (86.5-87.7)**	**1.3 (1.1-1.5)**	**45.1 (44.3-46.0)**	**28.5 (27.8-29.3)**	**80.0 (79.3-80.7)**	**6.1 (5.6-6.5)**	**6.2 (5.8-6.6)**

The main method of disposal of children's faeces was in an open area (36.1%), and rubbish bin (32.3%), with only 7.0% reporting having used the toilet and 10.1% having buried them (Table 49).

3.6.4 Disposal of children's faeces

Table 49. Method of disposal of child's faeces/diapers by municipality, residence and wealth quintile, TLFNS 2020

Description	N	In the toilet		Buried		Rubbish bin		In open area		Other	
		n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)	n	% (95% C.I)
Municipality											
Aileu	389	26	6.7 (2.3-11.1)	90	23.1 (16.5-29.8)	66	17.0 (11.8-22.2)	160	41.1 (32.7-49.6)	47	12.1 (7.1-17.1)
Ainaro	441	30	6.8 (3.4-10.2)	61	13.8 (8.9-18.8)	46	10.4 (6.8-14.1)	236	53.5 (45.0-62.0)	68	15.4 (10.3-20.5)
Baucau	416	48	11.5 (5.5-17.5)	31	7.5 (2.9-12.0)	77	18.5 (11.8-25.2)	205	49.3 (40.3-58.2)	55	13.2 (7.9-18.6)
Bobonaro	360	24	6.7 (3.0-10.3)	52	14.4 (9.3-19.6)	81	22.5 (15.6-29.4)	130	36.1 (28.-44.2)	73	20.3 (11.6-28.9)
Covalima	371	33	8.9 (4.0-13.8)	29	7.8 (3.9-11.7)	87	23.5 (17.4-29.5)	136	36.7 (28.1-45.2)	86	23.1 (15.4-31.0)
Dili	398	13	3.3 (0.6-5.9)	17	4.3 (1.7-6.9)	295	74.1 (66.2-82.1)	30	7.5 (3.2-11.9)	43	10.8 (4.5-17.1)
Ermera	459	33	7.2 (3.2-11.2)	75	16.3 (9.9-22.8)	57	12.4 (7.8-17.0)	229	49.9 (41.2-58.5)	65	14.2 (9.0-19.3)
Lautem	464	39	8.4 (3.6-13.3)	43	9.3 (3.8-14.7)	98	21.1 (13.4-28.9)	238	51.3 (41.9-60.7)	46	9.9 (6.1-13.7)
Liquica	383	38	9.9 (4.8-15.1)	51	13.3 (8.6-18.1)	96	25.1 (18.7-31.4)	142	37.1 (29.1-45.0)	56	14.6 (9.6-19.6)
Manatuto	406	36	8.9 (4.1-13.7)	46	11.3 (6.4-16.2)	92	22.7 (15.9-29.4)	193	47.5 (39.3-55.8)	39	9.6 (5.4-13.8)
Manufahi	403	23	5.7 (2.2-9.2)	48	11.9 (6.7-17.1)	69	17.1 (11.8-22.5)	205	50.9 (41.4-60.3)	58	14.4 (9.4-19.4)
Oe-cusse	319	26	8.2 (3.2-13.1)	29	9.1 (4.7-13.5)	50	15.7 (9.9-21.4)	144	45.1 (36.2-54.1)	70	21.9 (14.5-29.4)
Viqueque	476	38	8.0 (3.3-12.7)	45	9.4 (5.0-13.9)	84	17.6 (12.0-23.3)	233	49.0 (39.8-58.1)	76	15.9 (10.5-21.5)
Residence											
Urban	1220	98	8.0 (5.1-11.0)	115	9.4 (6.9-11.9)	475	38.9 (35.3-42.5)	374	30.7 (25.1-36.2)	158	13.0 (9.6-16.3)
Rural	4064	309	7.6 (6.3-9.0)	502	12.4 (10.7-14.0)	723	17.8 (16.1-19.5)	1907	46.9 (44.3-49.6)	623	15.3 (13.4-17.3)
Wealth quintile											
Lowest	1084	76	7.0 (5.1-8.9)	113	10.4 (7.9-12.9)	148	13.7 (11.4-15.9)	576	53.1 (49.1-57.2)	171	15.8 (12.7-18.8)
Second	1070	80	7.5 (5.5-9.5)	132	12.3 (9.8-14.9)	148	13.8 (11.3-16.3)	528	49.3 (45.1-53.5)	182	17.0 (14.0-20.0)
Third	1071	91	8.5 (6.6-10.4)	136	12.7 (10.1-15.3)	161	15.0 (12.6-17.5)	505	47.2 (43.6-50.7)	178	16.6 (14.0-19.3)
Fourth	1109	93	8.4 (6.3-10.5)	131	11.8 (9.4-14.2)	253	22.8 (20.2-25.4)	467	42.1 (38.8-45.5)	165	14.9 (12.6-17.2)
Highest	950	67	7.1 (5.0-9.1)	105	11.1 (8.7-13.4)	488	51.4 (48.0-54.7)	205	21.6 (18.5-24.7)	85	8.9 (6.6-11.2)
Total (weighted)	**5280**	**7.0 (6.3-7.7)**		**10.1 (9.4-11.0)**		**32.3 (31.1-33.6)**		**36.1 (34.8-37.4)**		**14.4 (13.4-15.3)**	

3.7 Determinants of stunting and wasting among children (0-59 months)

Determinants of stunting are analysed in Table 50 and 51 using regression analysis. Stunting was highly associated with diarrhoea (p<0.001) and fever (p<0.001) in terms of morbidity. Stunting also showed strong association with education status of mother/caregiver (p<0.001), wealth quintile (p<0.001) and lack of access to improved sanitation (p<0.001).

Table 50. Bivariate analysis for the association between stunting in children 0-59 months and immediate causes, TLFNS 2020

Age of children	Description	Coding	B	SE	Wald Chi-square	df	p-value	Exp (B)
6-23 months	Minimum meal frequency	MMF (1)	.261	.074	12.406	1	.000	1.298
		Constant	-.528	.063	70.051	1	.000	.590
	Minimum dietary diversity	MMD (1)	.044	.070	.390	1	.532	1.045
		Constant	-.355	.041	76.449	1	.000	.701
	Minimum acceptable diet	MAD (1)	.133	.105	1.602	1	.206	1.142
		Constant	-.458	.099	21.453	1	.000	.633
6-59 months	Diarrhoea	DIAR	.217	.052	17.540	1	.000	1.242
		Constant	-.055	.021	7.181	1	.007	.946
	ARI	ARI	.031	.061	.252	1	.616	1.031
		Constant	-.024	.020	1.426	1	.232	.976
	Fever	FEVER	.171	.045	14.603	1	.000	1.187
		Constant	-.061	.022	7.877	1	.005	.941

Table 51. Bivariate analysis for the association between stunting in children 0-59 months and underlying and basic causes, TLFNS 2020

Description	Coding	B	SE	Wald Chi-square	df	p-value	Exp (B)
Education status of mother/caregiver							
No education	EDUCATION (1)	.874	.096	83.017	1	.000	2.396
Primary education	EDUCATION (2)	.991	.108	84.064	1	.000	2.693
Pre-secondary education	EDUCATION (3)	.826	.105	61.899	1	.000	2.284
Secondary education	EDUCATION (4)	.563	.099	32.375	1	.000	1.756
More than secondary education	EDUCATION			130.468	4	.000	
	Constant	-.778	.092	72.270	1	.000	.459
Access to improved drinking water source							
Improved vs Unimproved	IMPDRINK	.024	.054	.196	1	.658	1.024
	Constant	-.043	.050	.732	1	.392	.958
Access to improved sanitation facility							
Improved vs Unimproved	IMPTOILET	-.323	.039	67.567	1	.000	.724
	Constant	.179	.031	33.156	1	.000	1.196
Wealth quintile							
Lowest	QUINTILE (1)	.921	.063	216.572	1	.000	2.512
Second	QUINTILE (2)	.838	.063	177.016	1	.000	2.311
Third	QUINTILE (3)	.743	.063	139.569	1	.000	2.102
Fourth	QUINTILE (4)	.475	.063	57.625	1	.000	1.609
Highest	QUINTILE			276.472	4	.000	
	Constant	-.632	.046	186.067	1	.000	.532

Table 52. Bivariate analysis for the association between wasting in children 0-59 months and immediate causes, TLFNS 2020

Age of children	Description	Coding	B	SE	Wald Chi-square	df	p-value	Exp (B)
6-23 months	Minimum meal frequency	MMF(1)	-.164	.151	1.189	1	.275	.849
	Minimum dietary diversity	MDD(1)	.006	.145	.002	1	.966	1.006
	Minimum acceptable diet	MAD(1)	-.078	.246	.101	1	.750	.925
6-59 months	Diarrhoea	DIAR	-.305	.092	10.957	1	.001	.737
	ARI	ARI	-.091	.109	.689	1	.406	.913
	Fever	FEVER	-.421	.083	26.018	1	.000	.656

The bivariate analysis for wasting (Table 52 and 53) showed that wasting was associated with diarrhoea (p=0.001), fever (p<0.001), and not the other variables.

Table 53. Bivariate analysis for the association between wasting in children 0-59 months and underlying and basic causes, TLFNS 2020

Description	Coding	B	SE	Wald Chi-square	df	p-value	Exp (B)
Education status of mother/caregiver							
No education	EDUCATION (1)	.297	.181	2.698	1	.100	1.346
Primary education	EDUCATION (2)	.287	.203	1.992	1	.158	1.332
Pre-secondary education	EDUCATION (3)	.024	.201	.014	1	.906	1.024
Secondary education	EDUCATION (4)	.191	.182	1.097	1	.295	1.210
More than second-ary education	EDUCATION			7.587	4	.108	
Access to improved drinking water source							
Improved vs Unimproved	IMPDRINK	.094	.100	.883	1	.347	1.098
Access to improved sanitation facility							
Improved vs Unimproved	IMPTOILET	-.003	.078	.002	1	.969	.997
Wealth quintile							
Lowest	-.360	.121	8.838	1	.003	.698	-.360
Second	-.423	.123	11.913	1	.001	.655	-.423
Third	-.175	.116	2.273	1	.132	.839	-.175
Fourth	-.135	.112	1.447	1	.229	.874	-.135
Highest			15.705	4	.003		
	-1.866	.202	85.599	1	.000	.155	-1.866

The multivariate analysis for stunting and wasting (Table 54) showed that both stunting and wasting were associated with diarrhoea, fever, and wealth quintile, while stunting was also associated with residence, education status and access to improved sanitation.

Table 54. Multivariate analysis for the association between wasting in children 0-59 months and underlying and basic causes, TLFNS 2020

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	STUNTING	104.654[a]	15	6.977	28.966	.000
	WASTING	7.921[b]	15	.528	7.402	.000
Intercept	STUNTING	446.115	1	446.115	1852.154	.000
	WASTING	20.229	1	20.229	283.539	.000
RURALORURBAN	STUNTING	7.371	1	7.371	30.603	.000
	WASTING	.374	1	.374	5.248	.022
SEX	STUNTING	7.520	1	7.520	31.221	.000
	WASTING	1.741	1	1.741	24.409	.000
DIAR	STUNTING	1.368	1	1.368	5.679	.017
	WASTING	.800	1	.800	11.215	.001
ARI	STUNTING	.019	1	.019	.080	.778
	WASTING	.050	1	.050	.694	.405
FEVER	STUNTING	1.935	1	1.935	8.035	.005
	WASTING	2.002	1	2.002	28.056	.000
EDUCATION	STUNTING	8.826	4	2.206	9.161	.000
	WASTING	.501	4	.125	1.756	.135
QUINTILE	STUNTING	25.567	4	6.392	26.536	.000
	WASTING	.710	4	.177	2.486	.041
IMPDRINK	STUNTING	.765	1	.765	3.175	.075
	WASTING	.096	1	.096	1.344	.246
IMPTOILET	STUNTING	2.767	1	2.767	11.489	.001
	WASTING	1.537E-6	1	1.537E-6	.000	.996
Error	STUNTING	2662.499	11054	.241		
	WASTING	788.645	11054	.071		
Total	**STUNTING**	**5473.000**	**11070**			
	WASTING	**864.000**	**11070**			
Corrected Total	**STUNTING**	**2767.153**	**11069**			
	WASTING	**796.566**	**11069**			
a. R Squared = .038 (Adjusted R Squared = .037)						
b. R Squared = .010 (Adjusted R Squared = .009)						

04

Discussion

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04 Discussion

4.1 Nutritional status among children 0-59 months based on WHO 2006 standards

Anthropometry for children was assessed using WHO 2006 standards. A total of 11,246 children 0-59 months were measured in the 2020 TLFNS, which was considerably higher than the overall target of 9, 048. This was due to two factors:

i. the initial target number of households for each municipality were rounded up from 980 to 992
ii. there were more children below 5 years than anticipated based on the actual population structure.

The plausibility report generated from ENA-for-SMART revealed that the quality of anthropometric data met the required threshold in terms of the important parameters which are required for acceptability of data. Only 1.3% of the values were flagged as being out of range for the weight-for-height indicator. Digit preference for weight and height were excellent, while that of MUAC was good. The standard deviation of WHZ, a key indicator, was excellent, as was skewness, kurtosis and passion distribution.

The prevalence of stunting was 47.1% (46.2-48.0, 95% C.I), with a moderate and severe stunting prevalence of 30.2% (29.4-31.1, 95% C.I) and 16.9% (16.2-17.6, 95% C.I). The stunting prevalence was well above the WHO “very high” threshold of >=30%. Stunting was higher for boys (52.0%) than girls (46.6%), and much higher in rural areas (52.5%) than urban areas (39.8%). As observed in previous surveys, stunting was highest in Ermera (63.4%), Ainaro (60.3%) and Oe-cusse (57.1%). Children with mothers/caregivers with lower education status had a higher prevalence of stunting. The prevalence of underweight was 32.4% (31.5-33.2, 95% C.I), with a moderate and severe underweight prevalence of 24.8% (24.0-25.5, 95% C.I) and 7.6% (7.1-8.1, 95% C.I), respectively. The prevalence of global acute malnutrition (GAM) was 8.6% (8.1-9.1, 95% C.I). The moderate acute malnutrition (MAM) was 7.1% (6.7-7.6, 95% C.I) and the prevalence of severe acute malnutrition (SAM) was 1.5% (1.2-1.7, 95% C.I). The prevalence of wasting was in the “medium” category of WHO classification. The GAM prevalence was higher in males (8.9%) than females (6.3%). GAM was highest in Oe-cusse (13.0%), Bobonaro (11.8%), and Dili (10.1%) and was higher in urban (8.9%) than rural areas (7.3%).

In general, there is an improvement in the nutrition situation, as stunting decreased to 47.1% compared to 50.2% in 2013 and 58.1% in 2010. Underweight decreased to 32.4% from 37.7% in 2016 and 44.7% in 2010. Wasting decreased to 8.6% compared to 11.0% in 2016 and 18.6% in 2010. The prevalence of acute malnutrition was much higher based on WHZ (8.6%) than MUAC (4.7%). The prevalence of malnutrition increased with decreasing wealth quintile for stunting and underweight, but the reverse was true for wasting. The prevalence of acute malnutrition was highest in the 12-23 months age group. Stunting increased with age and peaked at the 24-35 months age group then began to decrease. Underweight peaked at the 24-35 months age group then was almost unchanged up to the 48-59 months age group. Malnutrition decreased as maternal education status increased. Stunting and underweight were higher in rural children than urban children, while the reverse was true for wasting.

4.2 Morbidity, vaccination and supplementation for children 0-59 months

In terms of morbidity, 15.2% (14.5-15.8, 95% C.I) reported having experienced diarrhoea in the past 14 days, with 9.9% (9.3-10.4, 95% C.I) for acute respiratory infection, and 23.5% (22.8-24.3, 95% C.I) for fever (without cough). The coverage of measles vaccination was 86.3% (83.5-89.2, 95% C.I), with 60.3% (59.2-61.4, 95% C.I) confirmed by the card. 77.8% (76.9-78.5, 95% C.I) of eligible children had received Vitamin A supplementation in the last 6 months, while the coverage of deworming was 71.4% (70.5-72.4, 95% C.I). The proportion of children who received micronutrient powder was 18.1% (16.9-19.3, 95% C.I).

4.3 Infant and young child feeding for children 0-23 months

The proportion of children 0-23 months who were introduced to breast milk within the first hour after birth was only 46.8% (45.2-48.4, 95% C.I). The prevalence of exclusive breastfeeding was 64.2% (61.4-67.0, 95% C.I). The prevalence of bottle feeding was 32.1% (30.7-33.4, 95% C.I). Exclusive breastfeeding was higher among females (70.7%) than males (66.5%), and in urban areas (70.8%) than rural areas (60.8%) and was also lowest in the highest wealth quintile. Continued breastfeeding at 1 year (12-15 months) was 68.4% (64.9-72.0, 95% C.I), and only 29.2% (24.9-33.6, 95% C.I) at 2 years (20-23 months). 75.8% (72.5-79.0, 95% C.I) of children aged 6-8 months had been introduced to solid foods at 6 months (6-8 months). The proportion of children 6-23 months who achieved a minimum meal frequency (MMF) was 52.3% (50.7-53.9, 95% C.I), and 35.3% (33.8-36.8, 95% C.I) met the minimum dietary diversity (MDD). Only 14.3% (13.2-15.4, 95% C.I) in the same age group met the minimum acceptable diet (MAD). In comparison with previous years, early initiation of breastfeeding continued to decrease, while exclusive breastfeeding improved. There was also an improvement in timely introduction of solid foods. Minimum dietary diversity remained unchanged, while minimum meals frequency and minimum acceptable diet decreased.

4.4 Health and nutrition status of women of reproductive age (15-49 years)

In terms of Body Mass Index (BMI), 18.8% (18.1-19.5, 95% C.I) of non-pregnant women in the sample were thin (BMI<18.5), while 19.3% (18.6-20.0, 95% C.I) were overweight/obese (BMI>=25). The proportion of women classified as thin was highest in the 15-19 age group, and generally decreased with age, while the reverse was true for overweight/obesity. The highest proportion of thin women was found in Oe-cusse (26.0%) and Bobonaro (23.9%), and was higher in rural areas (18.9%) than urban areas (17.3%). The prevalence of thinness decreased from 26.6% in 2016 to 18.8% in 2020, while the prevalence of overweight/obesity nearly doubled from 9.8% in 2016 to 19.3% in 2020. 12.6% (12.1-13.2, 95% C.I) women were of short stature (<145cm). The proportion increased with age from 10.6% in the 15-19 age group to 17.2% in the 40-49 age group. Just as with stunting among children, Ermera (19.2%) had the highest proportion of women of short stature, followed by Aileu (15.5%) and Ainaro (14.8%). Rural women (14.0%) had a higher prevalence of short stature than urban women (9.9%). The proportion of women of low stature increased as wealth quintile decreased Based on MUAC for pregnant and lactating women, 8.9% (8.2-9.8, 95% C.I) had a low MUAC (below 21cm), with 23.2% (22.0-24.4, 95% C.I) at risk (21-22.9cm). Among pregnant and lactating women, 8.9% (8.2-9.8, 95% C.I) were b and 23.2%, 22.0-24.4, 95% C.I respectively), and were much higher among rural women than urban women and were also lowest in the highest wealth quintile. The main provider of antenatal care were midwives (72.0%, 70.9-73.2, 95% C.I), followed by medical doctors (21.6%, 20.6-22.7, 95% C.I). Most women (64.1%, 62.9-65.4, 95% CI) had 4-7 visits in their last pregnancy, while 19.0% (18.0-20.0, 95% C.I) having 8 or more visits. The minimum dietary diversity for women (MDD-W) was met by 65.4% (64.6-66.2, 95% C.I) of sampled women, with 65.3% for urban women and 57.7% for rural women, and the proportion increased as wealth quintile increased. There was generally a high consumption of sweet and savoury junk foods as well as sugar sweetened beverages.

4.5 Wealth index

Based on principal component analysis (PCA) of the wealth index which was based on assets, there were 11.6% of rural households in the highest quintile compared to 44.7% of urban households. Ermera and Ainaro were the municipalities with the lowest socio-economic status. These were the same households with the highest prevalence of stunting.

4.6 Food security

In terms of Food Consumption Score (FCS), 35.1% (34.2-35.9, 95% C.I) of households had poor food consumption, while 29.9% (29.2-30.7, 95% C.I) had borderline food consumption and 34.8% (34.0-35.6, 95% C.I) had acceptable food consumption. The highest percentage of households with poor food consumption were found in Covalima (45.5%) and Ermera (42.4%). There were more rural households (39.2%) than urban households (30.4%) with poor food consumption. FCS increased with wealth quintile. The Food Insecurity Experience Scale (FIES) classified 49.6% (48.7-50.5, 95% C.I) of households as food secure/mild food insecure, 34.8% (33.9-35.6, 95% C.I) as moderate food insecure and 15.6% (15.0-16.2, 95% C.I) as severe food insecure. The highest proportion of severely food insecure households were found in Covalima (21.1%), Oe-cusse (20.4%) and Bobonaro (19.4%), and there was a marginally higher proportion in rural households (17.3%) than urban households (15.6%). The proportion of severely food insecure households increased as wealth quintile decreased.

4.7 Water, sanitation and hygiene

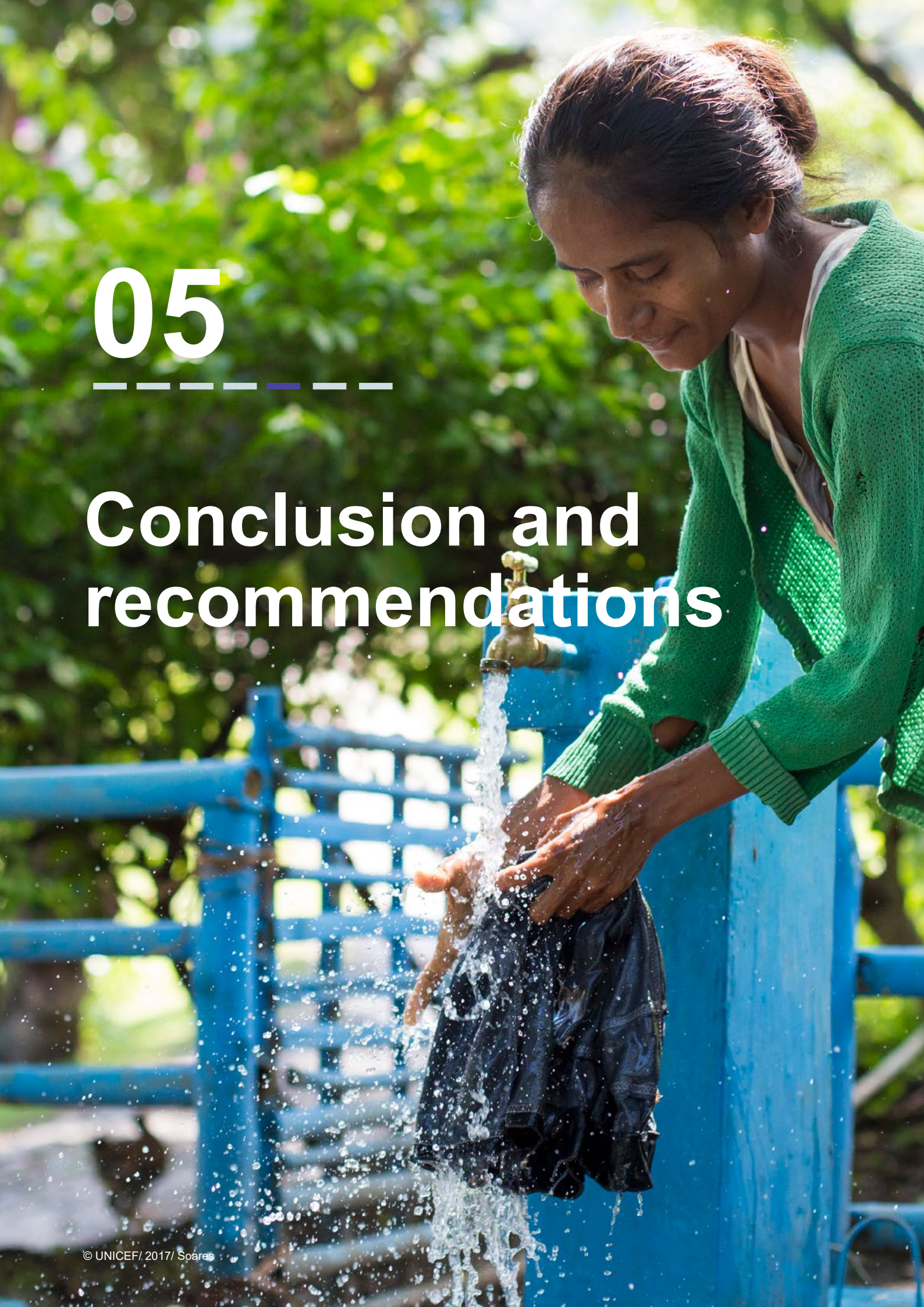
At national level, 87.8% (87.2-88.3, 95% C.I) of households had access to an improved drinking water source, with a higher percentage among urban households (89.3%) than rural households (83.5%). In terms of wealth quintiles, the proportion did not vary much between lowest to the fourth quintiles but was highest in the highest quintile. Overall, 68.2% (67.4-69.0, 95% C.I) had access to an improved sanitation facility, and 52.2% (51.4-53.1, 95% C.I) had access to an improved excreta disposal facility. The percentage with access to an improved sanitation facility ranged from 39.6% in Baucau to 90.5% in Dili and was much higher in urban households (78.7%) than rural households (60.3%). The highest wealth quintile had a much higher percentage with access to an improved sanitation facility than the lower quintiles. For almost all households (87.1%, 86.5-87.7, 95% C.I), the main hand washing method was soap and water and a high proportion of households reported washing their hands before eating was 80.0% (79.3-80.7, 95% C.I), although a lower proportion reported washing their hands before cooking food (45.1%, 44.3-46.0, 95% C.I), after defecation (28.5%, 27.8-29.3, 95% C.I), and a much lower proportion after disposing child's faeces (6.1%, 5.6-6.5, 95% C.I) and before breastfeeding/feeding children (6.2%, 5.8-6.6, 95% C.I).

4.8 Determinants of stunting and wasting

According to the conceptual framework of malnutrition, nutritional status is determined by immediate, underlying and basic causes. The association between stunting and related factors was analysed using logistic regression analysis. The results revealed that stunting was strongly associated with diarrhoea ($p<0.001$) and fever ($p<0.001$) in terms of morbidity. Stunting also showed strong association with education status of mother/caregiver ($p<0.001$), wealth quintile ($p<0.001$) and lack of access to improved sanitation ($p<0.001$). Wasting was associated with diarrhoea ($p=0.001$), fever ($p<0.001$) and wealth quintile ($p<0.05$).

05

Conclusion and recommendations



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05

Conclusion and recommendations

The nutrition situation in Timor-Leste showed an improvement compared to the previous national survey conducted in 2013, with a decrease in stunting from 50.2% to 47.1% and a decrease in wasting from 11.0% to 8.6%, as well as a decrease in underweight from 37.3% to 32.4%. However, malnutrition remains a major public health challenge, especially given that the prevalence of stunting remains one of the highest in the world. Stunting was well above the “very high” threshold set by WHO. Stunting showed strong association with residence, with rural children more likely to be stunted, and with maternal education status. There was also a strong association with wealth quintile. Infant and young child feeding indicators were also unsatisfactory with little improvement from previous surveys, which is an area of concern. Maternal nutritional status results indicated that, although there has been an improvement in undernutrition, there has been a huge increase in the proportion of women who were overweight/obese. Household access to safe drinking water was generally very high, with some improvements required in terms of sanitation, which was also associated with stunting.

Recommendations

01

Improving the Nutritional status among children 0-59 months

Increase the coverage of high-impact intervention to address the immediate and underlying causes of malnutrition, focusing on pre-pregnancy and the first 1,000 days to reduce all forms of malnutrition. Prevent and control wasting in children aged 0-59 months by providing community- and inpatient-based treatment and providing food supplements in food insecure areas. Implement a robust social behavior change communication for collective action, community ownership with integrated interpersonal communication (one-on-one counselling), education, and national scale media and community mobilization. Strengthen the capacity of health care providers to deliver quality maternal, infant, young children, and adolescent health and nutrition services at health facility and community levels. Revitalize growth monitoring, promotion and education, including routine screening, early case detection, referral, treatment, and follow-up of cases at all levels. Increase coverage of management of acute malnutrition by establishing a MUAC cut-off point which includes most of the wasted children and early detection of malnourished children. Strengthen the capacity of the health workforce and community volunteers for effective programming and delivery of quality services to prevent and treat all forms of malnutrition. Enforce legal mechanisms to guide the delivery of nutrition services and support improvement in nutrition status.

02

Morbidity, Vaccination, and supplementation for children 0-59 months

Address the causes of diarrhoea and acute respiratory infections among children through robust education to families to inform of the importance of health-seeking immediately when the children get sick as well as promote access to maternal, newborn and child health services. Maintain immunization coverage to protect children from vaccine preventable diseases and invest more efforts to reach the unreached population. Intensify prevention and control of micronutrient deficiencies by strengthening and promoting access to quality services for micronutrient supplementation for children under five, especially the multiple micronutrient powders (MNP) for children 6-23 months.

03 Infant and young child feeding for children 0-23 months

Invest in support for early breastfeeding initiation (within 1 hour after delivery) by increasing health workers' capacity to provide quality services, including counselling during antenatal care (ANC). Continue to promote exclusive breastfeeding for infants 0-6 months at facility, community and household levels with continued breastfeeding and appropriate complementary feeding of children aged 6 to 23 months and beyond, and optimal feeding during illness while focusing on improving dietary diversity, improving coverage of micronutrient supplementation and food fortification programs. Expand counselling and education for a healthy diet at antenatal care (ANC), postnatal, growth monitoring visits, and other outreach services by integrating SBCC as an essential component to support families to improve household food consumption and quality of child diet. The critical messages for caretakers of children should include the importance of a healthy diet and physical activity promotion in national nutrition strategy to tackle the emerging overweight and obesity. In addition, incorporate obesity prevention in the school nutrition program.

04 Health and nutrition status of women of reproductive age (15-49 years)

Promote women's nutrition before, during, and after pregnancy. Address malnutrition in women before they become pregnant by implementing universal micronutrient supplementation for all pregnant women and adolescent girls through schools and community platforms for out-of-school adolescents. Strengthen school nutrition to ensure that the school is a healthy environment free from advertisements and access to unhealthy foods while guaranteeing access to nutritious foods and clean water. Set up a targeted supplementary feeding program for pregnant and lactating women of reproductive age based on MUAC criteria.

05 Wealth index

Continue advocacy on intensifying the implementation of poverty reduction strategies to address the disparities and malnutrition—advocate for scaleup of cash-based transfer linking it to nutrition outcomes. Focus on poor wealth quintiles and poor households on nutrition education because children in those households are at higher risk of malnutrition.

06 Food Security

Promote and support domestic household food production to improve food availability. Advocate for expansion of nutrition sensitive interventions such as cash transfers for poor households with pregnant and lactating women and children under 2 years of age to increase household purchasing power and hence access to nutritious foods. Ensure the access to food is complemented with the right knowledge of caretakers on dietary diversity and appropriate feeding practices.

07 Water sanitation and hygiene

Continue to implement the flagship intervention of community-led total sanitation (CLTS) and support the communities to adopt "the open defecation free" (ODF) status. Scale up the promotion of hygiene and sanitation practices at the health facilities, schools, community and household levels including communication with integrated messages on handwashing with soap and water at critical times, keeping a clean environment for handling food, use safe water, promote a hygienic toilet, safely remove and treat fecal waste, stop open defecation, and access to sanitation.

08 Address the determinant of stunting

First, invest in understanding the drivers of poor nutrition in children and women and tailor a response that significantly reduces child stunting. Second, strengthen the inter-ministerial/ inter-sectoral collaboration and coordination to implement critical nutrition-sensitive activities in preventing stunting effectively. Third, define the roles and responsibilities of each sector in reducing child stunting and, importantly, co-locate the interventions of all sectors. In all instances, national strategies must prioritize the most vulnerable children: the youngest, the poorest, and the socially excluded. Finally, measure the performance of national systems in delivering essential interventions to prevent stunting and tracking investments and expenditures against costed plans to ensure public accountability and indicate good governance.

06

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07

Annexes

Annex 1. Assigned clusters

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
AILEU						
Aileu Vila	Aissirimou	Aituhularan	Rural	600	89	1
		Bercati	Rural	322	49	2
		Erkoatun	Rural	178	26	3
		Hudilaran	Rural	733	105	4
		Raelete	Rural	641	7	5
		Taiblor	Rural	449	119	6
		Fahiria	Rural	134	25	RC
		Manulete	Rural	292	53	7
		Sarin	Rural	560	96	8
	Fatubossa	Caicasa	Rural	292	51	9
		Coulau	Rural	530	95	10
		Fatubossa	Rural	265	42	11
		Liclaucana	Rural	230	41	12
		Hatulai	Rural	474	78	13
		Manubata	Rural	179	28	14
		Eralolo	Rural	112	17	15
		Lahae	Rural	543	95	16
		Lausi	Rural	311	49	17
		Lequitura	Rural	448	66	RC
	Saboria	Bermanuleu	Rural	329	48	18
		Saboria	Rural	213	44	19
	Seloi Craic	Casamou	Rural	559	85	20
		Fatumane	Rural	176	33	21
		Halalmeta	Rural	331	49	RC
		Lio	Rural	398	62	22
		Raicoalefa	Rural	454	68	23
		Talifurleu	Rural	517	78	24
	Seloi Malere	Cotbauru	Urban	1,030	156	RC,25
		Hularema	Urban	851	116	RC,26
		Kabasfatin	Urban	1,023	162	27,28
		Malere	Urban	850	134	29
		Maurusa	Urban	1,115	169	30,31
	Suco Liurai	Banderahun	Rural	480	79	32
		Coulaudo	Rural	394	65	33
		Fatubessi	Rural	488	77	34
		Laclo	Rural	643	111	35
		Quirilelo	Rural	614	109	36
		Raimanso	Rural	473	77	37
		Rairema	Rural	728	121	38,39
		Lebucucu	Rural	284	34	40

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
AILEU						
Aileu Vila	Suco Liurai	Ornai	Rural	398	64	41
		Bocolelo	Rural	364	57	42
		Donfonamo	Rural	380	62	43
		Umanlau	Rural	190	28	44
		Desmanhata	Rural	225	41	45
		Manehalo	Rural	350	55	46
	Talitu	Casmantutu	Rural	224	35	47
		Fatuc-Hun	Rural	752	108	48
		Quelae	Rural	841	127	49,50
	Tohumeta	Acadiro	Rural	192	27	51
		Tohumeta	Rural	271	41	52
		Biiloco	Rural	370	54	53
	Bereleu	Bereleu	Rural	266	47	54
		Lebutu	Rural	274	43	55
		Tataresi	Rural	243	34	RC
		Sarabere	Rural	216	32	56
		Locotoi	Rural	359	53	57
		Tatilisame	Rural	454	63	58
	Faturilau	Cairema	Rural	476	66	59
	Manucassa	Fatumerin	Rural	293	47	60
	Namolesso	Aitoin	Rural	211	40	RC
		Serema	Rural	877	137	61,62
Remexio	Acumau	Aimerahun	Rural	1,359	204	63,64
		Fatumanaro	Rural	530	70	65
		Leroliça	Rural	800	117	66,67
	Fadabloco	Lequiça	Rural	529	83	68
		Lilitei	Rural	407	64	69
		Raifatu	Rural	562	76	70
	Fahisoi	Bereliurai	Rural	423	61	71
		Deruhati	Rural	311	46	72
		Mautoba	Rural	556	86	73
		Faculau	Rural	559	85	RC
		Raemerhei	Rural	443	61	74
		Lebutu	Rural	647	104	75
		Tuqueu	Rural	402	71	76
		Laraluha	Rural	90	14	77
		Dacilelo	Rural	749	117	78,79
		Roluli	Rural	456	71	80
		Samalete	Rural	717	117	RC

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
AINARO						
Ainaro	Ainaro	Builico	Urban	3,198	560	1,2,3,RC
		Hato-Mera	Urban	860	109	4,5
		Nugufú	Urban	492	100	RC
		Teliga	Urban	257	43	6
		Civil	Rural	604	106	7
		Lailima	Rural	694	120	8
		Mau-Suca Bemoris	Rural	496	84	9
		Queça-Mau	Rural	551	95	10
		Canudo	Rural	935	148	11
		Hato-Meta-Udo	Rural	288	46	12
		Rae-Buti-Udo	Rural	658	93	13
		Mama-Lau	Rural	387	70	14
	Mau-Ulo	Dagamessa	Rural	614	112	15
		Hato-Lelo	Rural	238	49	16
	Soro	Guer-Udo	Rural	692	112	17
		Leolala	Rural	352	60	18
		Terlora	Rural	523	83	19
	Suro-Craic	Ailau	Rural	317	56	20
		Ria-Mori	Rural	455	71	21
Hato-Udo	Foho-Ai-Lico	Ailora	Rural	913	166	22
		Ainaro-Quic	Rural	1,952	387	23,24,25
		Baha	Rural	784	149	26
		Lesso	Rural	343	61	27
		Raimerlau	Rural	455	97	RC
	Leolima	Aimerleu	Rural	1,938	326	28,29
		Dausur	Rural	1,108	192	30,31
		Groto	Rural	647	116	32
		Hutseo	Rural	730	136	33
		Lesse	Rural	399	68	34
Hato-Builico	Mauchiga	Goulora	Rural	497	85	35
		Hato-Quero	Rural	751	122	36
		Leotelo I	Rural	709	125	37
		Mauchiga	Rural	425	68	38
	Mulo	Aituto	Rural	983	155	39
		Hautio	Rural	398	63	40
		Mano-Mera	Rural	410	79	41
		Maulahulo	Rural	1,007	171	42
		Mulo	Rural	1,004	182	43
		Queorudo	Rural	1,530	270	44,45,46
		Tatiri	Rural	662	122	47

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
AINARO						
Hato-Builico	Nuno-Mogue	Hato-Builico	Rural	1,583	255	48,49
		Lebulau	Rural	735	110	50
		Mausoromata	Rural	106	18	51
		Querema	Rural	206	30	52
Maubisse	Aituto	Aihou	Rural	897	149	53,54
		Airaca-Lau	Rural	1,461	235	55,56
		Goulolo	Rural	302	53	57
		Lebututo	Rural	492	78	58
		Lientuto	Rural	966	169	59
		Russulau	Rural	204	37	60
		Hebau	Rural	603	86	RC
		Rai-Mera	Rural	420	60	61
		Talale	Rural	393	57	RC
		Cassimidei	Rural	337	51	RC
		Rae-Buti-Lau	Rural	797	127	62
	Horai-Quic	Cartolo	Rural	605	104	RC
		Gourema	Rural	384	62	63
		Lau-Heli	Rural	520	85	RC
		Hoho-Naro	Rural	102	19	64
		Ernaro	Rural	531	83	65
	Manetú	Boro-Ulo	Rural	35	5	66
		Lebo-Luli	Rural	404	64	67
		Quiri-Coli	Rural	480	77	68
		Russulau	Rural	425	69	69
	Maubisse	Cano-Rema	Urban	1,500	218	70,RC
		Hato-Fae	Urban	353	49	71
		Hautado	Urban	462	53	72
		Lequi-Tei	Urban	561	95	73
		Ria-Mori	Urban	634	100	74
		Teli-Tuco	Urban	162	22	75
		Ura-Hou	Urban	689	112	76
	Maulau	Aihosan	Rural	172	26	77
		Laca-Mali-Cau	Rural	487	79	78
		Lumo-Luli	Rural	335	57	79
		Ussululi	Rural	406	67	80
BAUCAU						
		Lena	Rural	156	34	1
		Alaua	Rural	10	3	2
		Alaua	Rural	129	25	3
		Uarou	Rural	526	103	4
		Basarauai	Rural	159	36	5
		Uaiboro	Rural	109	25	6
		Ledana	Rural	317	74	7

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
BAUCAU						
	Osso Huna	Betulari	Rural	320	59	8
		Daraloi-Craik	Rural	493	98	9
		Betu-Muto	Rural	189	38	10
		Boi-Le	Urban	1,307	222	11,12,RC
		Lamegua	Urban	1,284	197	13
		Macadai	Urban	559	95	14
		Ro-Ulo	Urban	266	38	15
		Macadai De Cima	Rural	259	44	16
	Buibau	Alala	Rural	1,020	171	17
		Builai	Rural	733	115	18
		Manulai	Rural	103	16	19
	Buruma	Casmuto	Rural	860	169	20,21
		Soli-Ua	Rural	207	41	22,RC
		Boru -Baha	Rural	24	4	23
		Cairiri	Rural	1,732	304	24
		Darasula	Rural	338	53	25
		Maucale	Rural	363	69	26
		Uatu-Ua	Rural	518	115	27
		Ossoluga	Rural	323	79	28
		Hene-Uabubo	Rural	78	12	29
	Tirilolo	Betulale	Urban	2,523	376	30
		Caicido	Urban	752	134	31
		Lialailesso	Urban	1,645	267	32
		Lutumuto	Urban	5,488	848	33
		Osso -Ua	Urban	634	123	34,35,36,37
		Parlamento	Urban	327	63	38
		Lequiloi Uato	Rural	669	108	39
	Uailili	Afacaimau	Rural	436	86	40
		Manulai	Rural	329	56	41
		Uatubala	Rural	49	7	42
		Nelu Uai	Rural	161	37	43
		Larino	Rural	36	9	44
	Saelari	Bubuloma	Rural	220	38	45
		Lari Tau	Rural	200	31	46
		Terubala	Rural	281	48	47
		Beliuali	Rural	310	69	RC
		Sire-Bu'U	Rural	136	36	48
		Lualari	Rural	272	48	49
		Ueru -Mata	Rural	17	3	50
		Fatiliri	Rural	729	129	51
		Laicua	Rural	163	32	52
		Iti-Daho	Rural	1,065	214	RC

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
BAUCAU						
	Saelari	Samaguia	Rural	1,001	234	53
		Mumana	Rural	292	65	54
		Vecubuti	Rural	239	45	55
		Laua-Liu	Rural	642	110	56
		Osso-Messa	Rural	946	188	57
	Guruçá	Eu-Afa	Rural	176	39	58
		Uadaboru	Rural	276	56	59
		Uaule	Rural	320	82	60
		Uaidaba	Rural	629	176	61
		Dessa	Rural	243	45	RC
		Manome	Rural	48	12	RC
	Maluro	Loilubo -Uagua	Rural	230	50	RC
		Loirae	Rural	242	44	62
		Gugulai	Rural	355	77	RC
		Uaidau	Rural	433	84	63
	Ostico	Bahamori	Rural	369	68	64
	Uaigae	Lari	Rural	507	99	65
	Vemasse	Betulale	Rural	1,504	269	66
		Lor	Rural	1,166	199	67
		Raha	Rural	847	147	68
Venilale	Bado-Ho'o	Uaibobo	Rural	767	157	69
		Uataula	Rural	455	76	70
	Baha Mori	Caimale -Ho'o	Rural	268	53	71
		Neo -Ho'o	Rural	117	22	72
		Osso -Uaque	Rural	670	134	73
		Uatulia-Ana	Rural	647	103	74
		Uatu Missa	Rural	322	59	75
		Caubai	Rural	210	37	76
	Uatu Haco	Lia Bala	Rural	632	94	77
		Uai-Tali-Bu'u	Rural	499	81	78
	Uma Ana Ico	Betunau	Rural	11	2	79
	Uma Ana Ulo	Caihula	Rural	1,690	294	80
		Nuno Doco	Rural	101	17	RC
BOBONARO						
		Biacou	Rural	579	100	1
		Meguir	Rural	537	91	2
		Tasi Mean	Rural	955	163	3
		Tutubaba	Rural	1,531	232	4,RC
		Helesu	Rural	542	102	5
	Hataz	Aidabaleten	Rural	529	101	RC
		Biamaraen	Rural	545	86	6
	Rairobo	Faturase	Rural	563	104	7
		Rairobo	Rural	504	96	8

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
BOBONARO						
Balibo	Balibo Vila	Amandato	Rural	2,199	411	9,10
		Balibo Vila	Rural	458	80	11
	Batugade	Batugade	Rural	494	86	12
		Lotan	Rural	1,873	370	13,14
		Lalis	Rural	524	104	15
	Leohito	Aiasa	Rural	557	110	16
		Ferik Katuas	Rural	864	168	17
		Mohak	Rural	914	177	18
	Leolima	Bour	Rural	386	86	19
		Duaderoc	Rural	1,076	236	RC
	Sanirin	Caco	Rural	815	142	20
		Palaca	Rural	959	165	21
Bobonaro	Ai-Assa	Ai-Assa	Rural	475	96	22
		Oalgomo	Rural	462	74	23
	Atu-Aben	Atuaben	Rural	546	88	24
	Bobonaro	Lactil	Rural	1,067	191	25
		Tuluata	Rural	496	92	26
		Tasibalu	Rural	195	32	27
		Udu-Ai	Rural	1,044	166	28
		Manunia	Rural	778	119	29
	Ilat-Laun	Ilat-Laun	Rural	635	104	30
		Tunero	Rural	671	113	31
		Mabelis	Rural	181	29	32
		Tazgolo	Rural	318	62	33
		Sordoli	Rural	344	61	34
		Hatu-Udu	Rural	75	13	35
		Nunupa	Rural	969	167	36
		Taimea	Rural	763	135	RC
		Lonlolo	Rural	547	104	37
		Omelai	Rural	312	68	RC
		Oeleo Taz	Rural	892	151	38
	Soileco	Ai-Aras	Rural	741	127	39
		Soileco	Rural	596	99	40
	Tebabui	Atupae	Rural	349	63	41
		Tebabui	Rural	713	135	42
		Nuapu	Rural	398	69	43
	Goulolo	Ilat-Bote	Rural	374	75	RC
	Guenu Lai	Biaboro	Rural	349	61	44
		Tapomeak	Rural	726	127	45
	Meligo	Berleu	Rural	642	117	46
		Daulelo	Rural	997	161	47
		Mude	Rural	779	131	48

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
BOBONARO						
Bobonaro	Purugua	Heda	Rural	652	120	49
		Lete Aituto	Rural	149	27	50
	Gildapil	Atos	Rural	593	134	51
		Gildapil	Rural	615	134	52
	Lebos	Mabelis	Rural	467	90	53
	Lontas	Ozo	Rural	218	46	54
		Lupaltaz	Rural	503	104	55
	Opa	Mape	Rural	779	159	56
Maliana	Holsa	Belicou	Urban	1,859	323	57,58
		Lolooa	Urban	1,088	188	RC
		Oplegul	Urban	872	151	59
		Solugolo	Urban	754	129	60
		Aculaca	Urban	1,870	312	61,62
		Maliana	Urban	2,056	337	63,64
		Guenuha'An	Urban	1,113	189	RC
		Rai Maten	Urban	2,788	443	65,66,67
		Raifun Vila	Rural	1,297	183	68,69
	Ritabou	Cor Luli	Urban	1,633	296	70
		Diruaben	Urban	498	73	71
		Ma'A Hui	Urban	545	92	72
		Ritabou	Urban	1,065	172	73
		Samelaun	Urban	500	87	74
		Uat	Urban	632	103	75
		Mabiloa	Rural	650	142	76
		Tazmasac	Rural	891	179	77
	Tapo/Memo	Lepguen	Rural	1,249	227	78
		Manu Aman	Rural	856	136	79
		Pip Galag 2	Rural	660	127	RC
		Uluatin	Rural	535	118	80
COVALIMA						
Fatululic	Fatululic	Aitoun	Rural	202	39	1
	Taroman	Fatuloro	Rural	319	65	2
		Macous	Rural	370	78	3
Fatumean	Belulic Leten	Baleo Quic	Rural	450	95	4
		Belulic Craic	Rural	589	111	5
	Fatumea	Fatumea	Rural	357	77	6
		Rai Oan	Rural	191	47	RC
		Tradu Cama	Rural	200	35	7
		Hali-Laran	Rural	289	59	8
		Fatuc Cabuar Leten	Rural	318	54	9
		Fatuc Laran	Rural	126	31	10
		Cacaut	Rural	272	54	11
		Fatuc Laran	Rural	547	96	12

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
COVALIMA						
Maucatar	Belecasac	Busado	Rural	620	93	13
		Dais	Rural	559	94	14
		Gazolo	Rural	470	80	15
	Holpilat	Fatuc Oan	Rural	397	80	16
		Leogore	Rural	294	55	17
		Nainare	Rural	281	71	18
		Maior/Cunain	Rural	843	155	19
		Matai	Rural	1,168	221	20,21
		Quiar	Rural	520	89	22
		Foho Rua	Rural	665	128	23
		Orun	Rural	392	84	24
Suai	Beco	Aidantuic	Rural	490	97	25
		Beco	Rural	825	160	26
		Haemanu	Rural	311	57	27
		Holbolu	Rural	479	84	RC
		Maucola	Rural	268	54	28
	Camenaça	Ailoc Laran	Rural	856	144	29,RC
		Fatuisin	Rural	1,417	269	30,31
		Manequin	Rural	828	157	32
	Debos	Ahinarai	Urban	1,398	225	33,34
		Asumaten	Urban	825	142	RC,35
		Asurai	Urban	3,174	524	36,RC,37,38
		Busacucun	Urban	1,851	339	39,40
		Laconac Babu	Urban	476	88	41
		Laconac Besic	Urban	980	151	42
		Lo'Oque	Urban	606	106	43
		Tabacolot	Urban	1,980	362	RC,44,45
	Labarai	Bonuc	Rural	535	100	46
		Holba	Rural	822	133	47
		Meop	Rural	921	148	48
		Mucbelis	Rural	605	116	49
	Suai Loro	Acar Laran	Rural	735	167	50
		Lo'o	Rural	249	57	51
		Mane Icun	Rural	646	144	52
		Suco Loro	Rural	1,606	350	53,RC,54
		Foholulic	Rural	467	112	55
		Wetaba	Rural	948	218	56,57
		Coloama	Rural	697	163	58
		Tabolo	Rural	516	108	59
	Lalawa	Ai Oan	Rural	482	99	60
		Salele Bot	Rural	280	66	61
		Besac Oan	Rural	720	136	RC
		Caicoli	Rural	363	78	62
		Fau-Laran	Rural	389	80	63

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
COVALIMA						
Zumalai	Fatuleto	Biata	Rural	214	45	RC
	Lepo	Aisal Leuc	Rural	370	51	64
		Biatuma	Rural	399	51	65
	Lour	Lae Gatal	Rural	537	102	66
		Ritiluli	Rural	349	65	67
		Tilis	Rural	167	25	68
	Raimea	Beilaco	Rural	1,199	235	69,70
		Loro	Rural	883	175	71
		Uma Claran	Rural	587	126	72
		Webaba	Rural	775	136	73
		Baura Icun	Rural	416	71	74
		Culu Oan	Rural	646	124	75
		Galitaz	Rural	929	173	76
	Zulo	Lale	Rural	282	55	77
		Leogol	Rural	978	177	78
		Obuc Mil	Rural	375	75	79
		Zulo Tas	Rural	1,233	213	80
DILI						
Atauro		Ilitecaraquia	Rural	835	142	RC
	Maquili	Fatulela	Rural	795	137	1
	Biqueli	Ilidua Douro	Rural	414	85	2
Cristo Rei	Becora	Au-Hun	Urbana	4,637	692	3,4
		Becusi Centro	Urbana	4,995	707	5
		Becusi Craic	Urbana	3,015	430	6
		Caqueu Laran	Urbana	2,143	310	7
		Culau Laletec	Urbana	1,522	204	RC
		Mota Ulun	Urbana	1,456	203	8
		Manu Mata	Urbana	2,023	283	9
		Sagrada Familia	Urbana	2,276	296	10
	Camea	Ailele Hun	Urbana	1,927	278	11
		Has Laran	Urbana	1,839	251	12
		Fatuc Francisco	Urbana	946	139	13
		Lases	Urbana	924	136	14
		Aidac Bihare	Urbana	1,451	203	15
		Soru Motu Badame	Urbana	1,043	143	16
		Toko Baru Ii (Antigo Asls)	Urbana	2,724	293	17
		Ailoc Laran	Urbana	1,691	243	18
		Hali Dolar	Urbana	2,054	326	19
	Meti Aut	17 De Abril	Rural	1,066	137	20
Dom Aleixo	Bairro Pite	5 De Outubro	Urbana	7,662	1,204	21,22
		Andevil	Urbana	2,696	380	23
		Avança	Urbana	1,778	251	24

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
COVALIMA						
Dom Aleixo	Bairro Pite	Buca Fini	Urbana	1,618	235	25
		Frecat	Urbana	3,407	500	26
		Haburas	Urbana	947	148	27
		Lisbutac	Urbana	1,163	171	28
		Niken	Urbana	1,599	246	29
		Ribeira Maloa	Urbana	593	82	30
		We Dalac	Urbana	1,691	266	RC
	Comoro	12 De Outubro	Urbana	14,025	2,285	31,32,33,34
		20 De Setembro	Urbana	6,118	1,005	35,36
		30 De Agosto	Urbana	8,797	1,372	37,38,RC
		4 De Setembro	Urbana	6,467	1,051	39,40
		Aimutin	Urbana	1,886	284	41
		Anin Fuic	Urbana	2,707	436	RC
		Baya Leste	Urbana	1,414	222	42
		Fomento I	Urbana	2,336	374	43
		Fomento Iii	Urbana	817	133	44
		Lemocari	Urbana	2,015	327	45
		Mate Lahotu B.T	Urbana	1,654	257	46
		Metin I	Urbana	1,866	301	47
		Metin Iv	Urbana	1,697	274	48
		Naroman B.T	Urbana	934	147	49
		Rosario	Urbana	1,720	288	50
		Terra Santa	Urbana	3,494	565	51,RC
		Zero II	Urbana	2,503	405	52
		Zero III	Urbana	5,895	946	RC,53
		Zero V	Urbana	2,035	318	54
	Kampung Alor	Anin Fuic (Atarac Laran)	Urbana	2,738	521	55
Metinaro	Wenunuk	Manuleu	Rural	989	155	56
	Manteo Laran	Besahe	Rural	462	74	57
	Sabululuik	Behauc	Rural	573	79	58
	Wenunuk	Benunuc	Rural	1,423	231	59
	Sabululuik	Sabuli	Rural	1,633	213	60
Nain Feto	Acadiru Hun	Bedic	Urbana	1,280	174	61
	Bemori	Ailele Hun	Urbana	483	93	62
		Has Laran	Urbana	261	36	63
	Lahane Oriental	Alcrin	Rural	1,988	281	64
		Deambata Bessi	Rural	1,119	149	65
		Marabia	Rural	992	132	RC
		Rai Mean	Rural	77	9	RC
		Vale De Lahane	Rural	549	74	66
		7 De Dezembro	Urbana	1,217	186	67
		Donoge	Urbana	515	72	68

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
COVALIMA						
Nain Feto	Lahane Oriental	Mura	Urbana	885	141	69
Vera Cruz		Foho Rai Boot	Urbana	1,438	244	70
	Colmera	Manu Fuic	Urbana	1,512	232	71
		Nahaec	Rural	511	70	72
		Hospital Militar	Urbana	541	66	73
		Alto Balide	Urbana	2,137	348	74
		Baixo Balide	Urbana	474	79	75
	Motael	Bee Dalan	Urbana	2,010	316	76
		Hura	Urbana	481	75	77
		Gideon	Urbana	504	69	78
		Mate Restu	Urbana	761	104	79
		Terus Nain	Urbana	698	108	80
ERMERA						
Atsabe	Atara	Airae	Rural	610	93	1
		Malimea/Uabe	Rural	912	147	2
		Cailulik	Rural	542	87	3
	Baboi Leten	Coilequi	Rural	263	42	4
		Batumano	Rural	269	43	5
		Ataubu	Rural	302	57	6
	Laclo	Aileso	Rural	521	88	7
		Tapomea	Rural	232	40	8
	Leimea Leten	Ahigara	Rural	437	66	9
		Orbeto	Rural	391	70	10
		Malabe	Rural	685	111	11
		Motoubu	Rural	143	29	12
		Atupae	Rural	351	61	13
Ermera	Estado	Coracao De Jesus	Rural	422	71	14
		Moris Mesak	Rural	384	74	15
	Humboe	Borohei	Rural	786	133	16
		Hatali	Rural	743	118	17
	Lauala	Ervilhat	Rural	1,878	298	18
		Nona Bite	Rural	733	113	19
	Leguimea	Hatuleta	Rural	1,066	171	RC
		Leguimea	Rural	797	131	20
	Mertuto	Apido	Rural	614	98	21
		Railori	Rural	848	141	22
	Poetete	Aldeia Vila	Urban	2,761	429	23,24
		Gueguemara	Urban	736	110	25
		Lequisi	Urban	2,149	317	26
		Poepun	Urban	261	45	27
		Tidibessi	Urban	72	11	28
	Ponilala	Cota Heu	Rural	897	139	29
		Nunupu	Rural	501	80	30

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clus-ters
ERMERA						
Ermera	Raimerhei	Lohmo	Rural	897	147	31
		Raimaran	Rural	251	41	RC
		Mangero	Rural	661	98	32
	Talimoro	Bura	Urban	2,138	310	33,34
		Lima Mesak	Urban	435	65	35
		Moris Foun	Urban	1,611	225	36
		Nunusua	Urban	1,359	188	37
		Noerema	Rural	476	77	38
	Ailelo	Betopu	Rural	596	95	39
		Santa Cruz	Rural	987	137	40
	Coliate-Leotelo	Aihatadiu	Rural	695	118	RC
		Hau-Hei	Rural	721	123	RC
		Manulete	Rural	597	105	41
		Lebumeo	Rural	849	128	42
		Peregrinacao	Rural	1,725	277	43
		Sabsoi	Rural	793	123	44
	Fatubolo	Aitemua	Rural	1,287	198	45
		Apirado	Rural	1,803	266	46
		Fatubolo	Rural	894	130	RC
		Poerema	Rural	751	107	47
		Hohopu	Rural	457	92	48
		Simohei	Rural	1,675	254	49
		Laquiama	Rural	322	56	50
		Hatupae	Rural	675	107	RC
		Tataeulo	Rural	1,658	249	51
		Tidibessi	Rural	364	52	52
	Manusae	Bauana	Rural	1,273	202	53
		Hatete	Rural	1,186	181	54
		Otete	Rural	1,019	163	55
		Caisoru	Rural	404	64	56
	Urahou	Caiturloa	Rural	742	117	57
		Hatlailete	Rural	536	97	58
		Raimean	Rural	570	89	59
		Fahiluha	Rural	715	128	60
	Ducurai	Assui Kraik	Rural	1,519	270	61
		Assui Leten	Rural	381	66	62
		Manusae	Rural	194	36	63
	Eraulo	Darudu	Rural	742	126	64
		Madede	Rural	798	139	65
		Goulala	Rural	245	42	66
		Hatugau	Rural	573	103	67
	Haupu	Assi	Rural	1,443	253	68
		Duhoho	Rural	572	109	69

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
ERMERA						
Ermera	Haupu	Kairia	Rural	550	99	70
		Riatoni	Rural	460	84	71
		Hatugeo	Rural	659	116	72
		Mausormata	Rural	230	39	73
		Leubasa	Rural	388	67	74
		Roulo	Rural	294	51	RC
		Palimano	Rural	2,150	436	75,RC
		Hi	Rural	658	97	76
		Mauane	Rural	425	71	77
		Riamori	Rural	421	54	78
		Manuponihei	Rural	407	60	RC
		Eraulo	Rural	362	59	79
	Tocoluli	Kaisahe	Rural	500	78	80
LAUTEM						
Iliomar	Aelebere	Heitali	Rural	129	26	RC
		Marafal	Rural	151	29	1
		Liufalun	Rural	143	32	2
		Vataomar	Rural	337	59	3
	Iliomar 1	Ara'Ara	Rural	482	101	4
		Iliomar	Rural	542	126	5
		Vatamatar	Rural	145	30	6
		Caidabu	Rural	333	59	7
	Tirilolo	Etevata	Rural	526	106	RC
		Tatalalarin	Rural	716	146	8
		Tirilolo	Rural	484	85	9
		Luadau	Rural	180	32	10
	Com	Etepiti	Rural	1,280	277	11,12
		Pitileti	Rural	253	45	13
	Daudere	Aelafa	Rural	298	64	14
		Nassuloi	Rural	185	41	RC
	Euquisi	Barliu	Rural	377	80	15
		Vaniria	Rural	336	62	16
	Ililai	Samalari	Rural	606	74	17
		Mauvedara	Rural	172	38	18
		Soleresi	Rural	613	113	19
		Lereado	Rural	278	60	20
		Oirata	Rural	323	68	21
		Queduloro	Rural	578	115	22
		Levono	Rural	855	145	23
		Puno	Rural	875	151	RC,24
		Ira'Ara	Rural	522	91	25
		Moro	Rural	545	90	26
		Soiquili	Rural	412	83	27
		Poruvari	Rural	708	127	28

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
LAUTEM						
Lospalos	Bauro	Bauro	Rural	740	149	RC
		Iralafai	Rural	489	96	29
		Luarai	Rural	544	98	30
		Somotcho	Rural	372	68	31
		Solepara	Rural	278	66	32
	Fuiloro	30 De Agosto	Urban	1,125	175	33,34
		Assalaino	Urban	1,495	241	35,36
		Bemoris	Urban	2,762	440	37,38,39
		Central	Urban	2,133	340	40,41,42
		Ira'Ara	Urban	1,168	195	43,44
		Kuluhun	Urban	1,836	316	45,46
		Lereloho	Urban	1,196	180	47,48
		Lospala	Urban	2,553	384	49,RC,50,51
		Nakroman	Urban	1,284	211	52
		Tchauluturo	Urban	479	82	53
		Titilari	Urban	670	119	54
	Home	Larinatcha	Rural	1,063	178	55
		Lilapuhu	Rural	570	96	56
		Luturula	Rural	263	62	RC
		Tcharano	Rural	114	27	57
		Maluro	Rural	351	79	58
		Tchai	Rural	1,186	256	RC,59
	Lore 2	Haitupuca	Rural	447	83	60
	Muapitine	Lopuloho	Rural	1,090	216	61,62
		Vailoro	Rural	322	68	63
		Raça	Rural	382	77	RC
	Souro	Foema'a	Rural	530	132	64
		Louro	Rural	518	115	65
		Omocano	Rural	247	58	66
		Jefaliu	Rural	203	36	67
		Sarelari	Rural	323	62	68
	Cotamutu	Buanomar	Rural	696	131	69
		Etanisi	Rural	638	104	70
		Ouroma	Rural	649	111	71
	Luro	Abere	Rural	793	134	72,73
		Amahira	Rural	811	144	74
		Vatalarino	Rural	133	23	75
		Soba	Rural	151	30	76
Tutuala	Mehara	Loiquero	Rural	809	144	77
		Porlamano	Rural	851	157	78
		Poros	Rural	602	142	79
		Pitileti	Rural	309	74	80

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
LIQUICA						
Bazartete	Fahilebo	Fatuneso	Rural	787	133	1
		Tuhilo Craic	Rural	304	50	2
	Fatumasi	Bazartete	Rural	780	138	3
		Metir	Rural	548	97	4
		Camalehou	Rural	699	108	5
		Pissu Craic	Rural	692	95	6
		Pissu Lete	Rural	670	93	RC
		Raucassa	Rural	1,038	145	7
	Leorema	Baura	Rural	934	149	8
		Bucumera	Rural	369	63	9
		Ergoa	Rural	1,522	271	10,11
		Fatunero	Rural	615	124	12
		Railuli	Rural	723	142	13
		Urluli	Rural	389	77	14
	Maumeta	Caimegohou	Rural	721	113	15
		Darmudapu	Rural	1,264	189	16
		Maumetalau	Rural	210	32	17
		Nartutu	Rural	2,111	343	18,19
	Metagou	Assorlema	Rural	674	114	20
		Caleulema	Rural	471	79	21
	Motaulun	Classo	Rural	1,087	181	22,23
		Mota Icun	Rural	707	115	24
	Tibar	Fatunia	Rural	790	132	25
		Libaulelo	Rural	1,257	213	26,27
		Mau-Soi	Rural	1,201	194	28
		Turleu	Rural	963	163	29
	Ulmera	Ermeta	Rural	1,482	214	30,31
		Fatubesilolo	Rural	363	57	32
		Mane-Muno	Rural	573	95	33
		Tetsari	Rural	218	40	RC
Liquiça	Açumanu	Caicasaico	Rural	737	130	34
		Quirilelo	Rural	270	45	35
	Darulete	Caileli	Rural	856	131	36
		Lebu-Ae	Rural	539	79	37
	Dato	Cabuilimo	Urbana	270	39	38
		Camalehohoru	Urbana	3,006	457	RC,39,40
		Camalelara	Urbana	730	99	41
		Hecar	Urbana	198	34	42
		Leopa	Urbana	3,320	485	43,44,45,46
		Puquelara	Urbana	1,108	176	RC,RC
		Caidico	Rural	355	62	47
		Lebusalara	Rural	354	66	48
		Nunuhou	Rural	250	40	49

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
LIQUICA						
Liquiça	Dato	Tautalo	Rural	808	133	50
		Hatumasi	Rural	914	151	51
		Manati	Rural	337	59	52
		Tolema	Rural	698	112	53
	Loidahar	Cotalara	Rural	1,053	167	54
		Hatululi	Rural	543	106	55
		Soatala	Rural	855	140	56
		Lebuana	Rural	155	23	RC
Maubara	Gugleur	Cai-Cassa	Rural	489	92	57
		Lautecas	Rural	45	13	58
		Palistla	Rural	264	39	RC
		Raenaba	Rural	413	82	59
		Vatumori	Rural	837	168	RC
	Guiço	Caicassavou	Rural	686	103	60
		Pandevou	Rural	297	51	61
	Lissadila	Bautalo	Rural	763	131	62
		Cai-Cassa	Rural	956	161	63
		Darulema	Rural	766	118	64
		Glai	Rural	950	158	65
		Lebuhae	Rural	520	89	66
		Nunu Lisa	Rural	426	66	67
		Darulema	Rural	276	54	68
		Vatuguili	Rural	764	126	69
	Vatuboro	Cai-Bair	Rural	839	155	70
		Raeglelu	Rural	691	106	71
		Sabulau	Rural	339	63	72
		Vaupu	Rural	219	46	73
		Gariana	Rural	515	65	74
		Lissalara	Rural	240	41	75
		Raeme	Rural	476	85	76
		Vatu-Nau	Rural	1,702	288	77,78
	Vaviquinia	Darulara	Rural	513	83	79
		Morae	Rural	300	49	RC
		Vila	Rural	1,032	162	80
MANATUTO						
		Ranac	Rural	720	107	1
	Aubeon	Bubur Laran	Rural	938	174	2,3
		Wecadi	Rural	320	66	4
	Barique	Caunua	Rural	249	48	5
		Weubani	Rural	189	38	6
		Nu-Ahuc	Rural	341	69	7
Laclo	Hohorai	Anicolaun	Rural	298	43	8,9,10
		Hatu Ermera	Rural	228	38	11

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
MANATUTO						
Laclo	Hohorai	Anicolaun	Rural	298	43	8,9,10
		Hatu Ermera	Rural	228	38	11
		Miri Huhun	Rural	142	18	12
		Labubu	Rural	552	90	13
		Nacaleo	Rural	810	110	14
		Readodoc	Rural	169	30	15,16
		Hahi Hoho	Rural	515	86	17,18
		Ili-Mano	Rural	2,298	328	19
	Uma Naruc	Bua	Rural	273	44	20,21,22,23
		Uma Naruc	Rural	32	7	RC
Laclubar	Batara	Are Ain	Rural	1,074	174	RC
		Balulin	Rural	961	127	24,25
		Fatuha	Rural	152	16	26,27
	Fatumaquerec	Laramera	Rural	461	85	28
		Lisuata	Rural	9	2	29
		Fahi Lihun	Rural	155	25	30,31
	Manelima	Aman Un	Rural	544	79	32
		Calohan	Rural	717	103	33
		Futumanuc	Rural	365	55	34
		Laceno	Rural	155	21	35
	Orlalan	Aimaulin	Rural	1,214	185	36
		Diric Un	Rural	79	8	37,38
		Le'I	Rural	527	94	RC
		Naule'En	Rural	263	38	39
		Orlalan	Rural	239	35	RC
	Sananain	Fatu-Uc	Rural	389	69	40,RC,RC,41
		Ruhetun	Rural	43	11	42
		Corohoco	Rural	312	74	43
		Hatu-Karau	Rural	394	73	44
		Rai-Mea	Rural	248	52	45
		Watu-Sili	Rural	9	2	46
		Weboro	Rural	416	72	RC
	Lifau	Lenao	Rural	206	36	47
Manatuto	Ailili	Belebato	Urban	636	114	48
		Iun	Urban	917	150	49
	Aiteas	Bi-Uac	Rural	1,626	268	50,51
		Carlilu	Rural	217	36	52,53,54
		Rembor	Rural	616	101	55
		Umasau	Rural	1,561	263	56
	Cribas	Athoc	Rural	490	66	57,58,59
		Caunua	Rural	458	72	60
		Ranac	Rural	517	76	61
		Tuquete	Rural	569	90	62
		Weubani	Rural	401	54	63

Administrative post	Suco	Aldeia	Rural/ Urban	Total population	Number of households	Clusters
MANATUTO						
Manatuto	Iliheu	Bahadic	Rural	937	155	64
		I-Un	Rural	460	77	65
		Ili-Huli	Rural	267	45	66
		Li-Core	Rural	38	10	67
	Sau	Obrato	Urban	373	60	68
		Sau	Urban	3,517	538	69
Soibada	Fatu-maquerec	Lesuata	Rural	568	85	70,71,RC,72,73,74,RC
		Sasahi	Rural	296	45	75
		Malus Hun	Rural	627	92	76
	Manlala	Dauloroc	Rural	11	1	77,78
		Teras	Rural	277	45	79
		Uma Querec Lor	Rural	158	20	80
MANUFAHI						
		Rai Kesa	Rural	476	89	1
	Dotik	Lacaluan	Rural	819	140	2
		Sarin	Rural	232	47	3
		Weberec	Rural	871	153	4
	Mahaquidan	Beremanek	Rural	256	54	5
		Knua Alas	Rural	593	107	RC
		Tahu Bein	Rural	621	115	6
		Uma Mean	Rural	108	22	7
		Kakeuk Laletek	Rural	756	120	8
		Lurin	Rural	390	62	9
	Uma Berloic	Baria Laran	Rural	324	50	10
		Colocau	Rural	348	66	11
		Uma Feric	Rural	592	100	12
		Bubussusso	Rural	182	40	13
		Bubur Laletec	Rural	297	52	14
		Sucaer Oan	Rural	214	43	15
		Nalolo	Rural	934	158	16,17
		Saluquim	Rural	668	84	18
		Tiro	Rural	353	50	19
		Webicas	Rural	812	147	RC
	Fahinehan	Ainessi	Rural	441	71	20
		Daurata	Rural	401	70	21
	Fatukahi	Cledic	Rural	552	86	22
		Fatumutin	Rural	325	65	23
Same	Babulo	Lapuro	Urban	671	104	24
		Lia-Nai	Urban	234	37	25
		Raimera	Urban	976	164	26,27
		Searema	Urban	1,108	179	RC,28
		Turon	Urban	707	97	29
		Uma-Luli	Urban	376	62	RC

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
MANUFAHI						
Same	Betano	Bemetan	Rural	1,548	280	30,31
		Lalica	Rural	620	102	32
		Leo-Ai	Rural	478	91	33
		Loro	Rural	888	160	34
		Rai-Fussa	Rural	300	54	35
		Selihassan	Rural	1,055	197	36,37
		Sessurai	Rural	864	170	38
	Dai-Sua	Dai-Sua	Rural	637	119	RC
		Leço-Ai	Rural	301	56	39
		Loti	Rural	657	122	40
		Ria-Tu	Rural	948	159	41,42
		Dato Rae	Rural	154	37	43
		Blaro	Rural	187	34	44
		Datina	Rural	387	62	45
		Fahiluhan	Rural	1,013	165	46,47
		Fatuco	Rural	1,720	292	48,RC,49
		Orema	Rural	435	74	50
		Tirilolo	Rural	625	113	51
		Uru Fu	Rural	1,206	204	52,53
	Letefoho	Ailuli	Urban	772	129	54,55
		Cotalala	Urban	1,956	324	56,57,RC
		Ladiqui	Urban	677	94	58
		Manico	Urban	1,533	225	59,60,RC
		Ria-Lau	Urban	1,542	255	61,62,63
		Tomonamo	Urban	571	98	64
		Foe-Hei	Rural	313	71	65
	Tutuluro	Ailau	Rural	294	48	RC
		Dalun	Rural	396	64	66
		Roin	Rural	244	49	67
		Laclo	Rural	558	76	68
	Beremana	Beremana	Rural	459	62	69
		Fahilebo	Rural	177	26	70
		Lemano	Rural	114	21	71
		Risso	Rural	242	39	72
		Tarabula	Rural	172	20	73
		Fanolelo	Rural	116	12	74
	Manumera	Assumata	Rural	182	24	75
		Faturedalau	Rural	826	113	76,77
		Rimori	Rural	65	9	78
		Orcenaco	Rural	237	36	79
		Orana	Rural	313	39	80

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
OE-CUSSE						
Same		Hautefo	Rural	764	174	1
		Nefometan	Rural	273	67	2
	Beneufe	Citrana	Rural	993	200	RC
		Lamasi	Rural	736	147	RC
		Manan	Rural	1,072	233	3
	Lelaufe	Bebo	Rural	1,101	244	4,5
		Cuatenes	Rural	518	102	6
		Haoufe	Rural	1,072	226	7
		Mahata	Rural	1,063	224	8
	Suniufe	Cabana	Rural	819	201	9
		Fuabano	Rural	446	115	10
		Oelnanoe	Rural	552	132	11
		Fatunababo	Rural	442	94	12
		Nitibe	Rural	494	110	RC
Oesilo	Bobometo	Hoineno	Rural	774	164	13
		Nianapu	Rural	588	126	14
		Nonquican	Rural	1,330	294	15,16
		Oebaha	Rural	992	197	17
		Oenoah	Rural	300	63	18
		Quiubiselo	Rural	810	204	19
		Saben	Rural	780	166	20
		Tumin	Rural	799	194	RC
		Usapicolen	Rural	935	177	21
	Usitaqueno	Nibin	Rural	833	216	22
	Usitasae	Buqui	Rural	657	150	23
		Pune	Rural	1,267	281	24
		Sifin	Rural	1,416	306	25.26
Pante Macassar	Bobocase	Bihala	Rural	1,237	235	27,28
		Fatubijae	Rural	1,456	270	RC,29
		Mahata	Urban	3,246	615	30,31,RC,32,33
		Oesono	Urban	1,155	204	34
		Oetfo	Urban	929	195	35
		Sanane	Urban	8,480	1,530	36,37,38,39,40,41,42,43,44,45,46
	Cunha	Maunaben	Rural	629	138	47
		Noafafo	Rural	1,045	207	48
		Noapai	Rural	789	166	49
		Noeninen	Rural	1,527	304	50,51
		Umenoah	Rural	503	103	52
		Manuinpena	Rural	1,047	216	53,54
		Usapibela	Rural	309	60	55

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
MANUFAHI						
Pante Macassar	Lifau	Nefobai	Rural	712	133	56
		Oemolo	Rural	851	165	57
		Tulaica	Rural	646	102	58
	Naimeco	Baqui	Rural	526	100	59
		Noque	Rural	2,104	400	60,61,62
		Teinae	Rural	1,634	317	63,64
	Nipane	Bausiu	Rural	554	105	65
		Sacato	Rural	380	69	66
	Taiboco	Maquelab	Rural	973	227	RC
		Nemun	Rural	2,098	466	67,68,69
		Ulas	Rural	2,053	458	70,71
Passabe	Abani	Haemnanu	Rural	2,972	679	72,73,74,75
		Naetuna	Rural	491	122	RC
		Passabe	Rural	2,860	654	76,77,RC,78
	Malelat	Malelat	Rural	1,556	362	79,80
VIQUEQUE						
		Hali Mean	Rural	505	101	1
		Aidac Laran	Rural	915	150	2
		Boruc	Rural	385	65	3
		Rade Uman	Rural	708	115	4
	Laline	Aimeta Hun	Rural	418	71	5
	Uma Tolu	Ai Sucu Nuc	Rural	249	58	6
		Data Metan	Rural	379	79	7
		Tali Oan	Rural	431	90	8
		Cai Tara Hu	Rural	206	39	9
		Cai-Ua	Rural	383	91	10
		Lia Uai Oli	Rural	212	60	11
		Wala Wau	Rural	338	68	12
		Macabu U	Rural	478	97	13
		Raila A	Rural	606	152	14
		Builo	Rural	273	53	RC
		Sama-Lari	Rural	115	25	15
		Umatamene	Rural	251	47	16
		Belas	Rural	775	162	17
		Borala	Rural	734	148	18
		Cai Uai Ho O	Rural	853	175	19
		Liamida	Rural	596	120	20
		Uma Ana Ico	Rural	187	39	RC

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
VIQUEQUE						
	Uabubo	Buanurac	Rural	1,230	275	21
		Dauborobaha	Rural	537	107	RC
		Wai-Lia	Rural	337	66	22
	Uaguia	Dasarai	Rural	731	151	23
	Uaibobo	Darenau	Rural	450	103	24
		Uanise	Rural	107	19	25
		Caitau	Rural	392	69	26
		Lari	Rural	536	93	27
		Lena	Rural	737	142	RC
		Uaicai	Rural	421	79	28
	Babulo	Abadere	Rural	245	54	29
		Beli	Rural	384	81	30
		Lia Sidi	Rural	446	99	31
	Makadique	Betulari	Rural	1,549	311	32,33
		Bobulita	Rural	979	205	RC
		Caidaualari	Rural	139	31	34
		Edemumo	Rural	71	14	35
		Macadique	Rural	194	36	36
	Matahoi	Aele	Rural	321	65	37
		Dalan Los -Ua-nama	Rural	563	115	RC
		Iraler	Rural	864	191	38
		Mauseloc	Rural	286	52	39
		Uani Uma	Rural	364	62	40
	Uaitame	Fohomano	Rural	371	65	41
		Sana	Rural	303	71	42
		Balabasiba	Rural	294	68	43
		Uani Uma	Rural	245	49	44
		Daralari	Rural	375	76	45
		Nelu-Uai	Rural	81	17	46
		Uatudere	Rural	392	70	47
		Macausa	Rural	375	71	48
		Taradai	Rural	361	65	49
		Uatubita	Rural	166	33	50
		Liabuta	Rural	217	41	51
		Uatoliloli	Rural	441	81	52
Viqueque	Bahalarauain	Aidac	Rural	957	221	53,54
		Caninuc	Rural	616	130	55
		Wetalitua	Rural	344	69	56
	Bibileo	Aisahe	Rural	1,036	229	57
		Balide Oan	Rural	193	42	58
		Laco Uai	Rural	622	122	59
		Webae	Rural	167	32	RC

Administrative post	Suco	Aldeia	Rural/Urban	Total population	Number of households	Clusters
VIQUEQUE						
	Caraubalo	Cabira Oan	Urban	1,893	297	60,61
		Lamaclaran	Urban	1,112	205	62
		Mamulac	Urban	697	120	63
		Manehat	Urban	1,838	320	64,65
		Siralari	Urban	397	76	RC
		Barabeto	Rural	193	34	66
	Luca	Canlor	Rural	411	77	67
		Uma Boot	Rural	973	203	68,69
		Macalosso	Rural	272	60	70
		Uatulesu	Rural	199	44	71
	Uma Quic	Aidac Bein	Rural	380	74	RC
		Lua	Rural	851	174	72
	Uma Uain Craic	Bosabein	Rural	937	160	73,74
		Duducai	Rural	658	103	75
		Fahi Berec	Rural	648	128	76
		Loho	Rural	841	147	77
		Naeboruc	Rural	408	82	78
		Cailoibere	Rural	43	12	79
		Ucalale	Rural	203	45	80

Annex 2. Team members

Faraja Chiwile, UNICEF
Maria Paulina Gonçalves, UNICEF
Venancio Soares Pinto, UICEF
Crispin da Costa Araujo, WFP
Paulino Pinto, WFP
Seoyoon Sofia Shin, WFP
Imaculada Lobo Belo Maia, WHO
Ligia Parada Maria Rangel, FAO
Evangelita Pereira, World Vision
Dirce Sarmento, Plan International
Marta Filomena Moniz Espirito Santo, INS
Angelita do Amaral Quim, CWS
Cristovão Ramos, CWS
Julio do Carmo, CRS
Gregorio, Mercy Corps
Acacio Sarmento, TOMAK
Sarah Mayenathan, TOMAK
Alicia, TOMAK
Niniva de Silva Barreito, Child Fund
Antoninho Pereira, PhD
Maria Assuncao Barreto Gama, Hamutuk
Lidia Correia dos Santos, Maluk Timor
Elisa Fra Herculano Valentim Soares, Maluk Timor
Octaviana Nunes Tavares, Maluk Timor
dra. Odete da Silva Viegas, MS
Pedro C. da C. Amaral, MS
Marcelo Amaral, MS
Isabel Maria Gomes, MS
dra. Olinda do Reis Albino, MS
Ivo Cornelio L. Guterres, MS
Carlitos Freitas Correia , MS
Dirce Maria Soares, INS
Jose Moniz , MS
Misliza Vital, MS
Luis Celestinho Correia, MS
Bernardo S. Dias, MS
Aderito C. Ribeiro, MS
Angela M. G. Maria, MS
Celestina A. M. Ximenes, MS
Mario Moreira dos Reis, MS
Lucia D. Marcal, MS
Afonso Sarmento, MS
Epifania D. Marques, MS
Dra. Natalia dos Reis, MS
Agustinha Segurado, SSM Dili
Silvano Pedro de Jesus Amaral, MS
Dra. Ramila F. P. Paiva, MS
Melita Monteiro, MS
Afonso H. Bareiro, MS
Abrio Freitas, MS
Ivo Ireneu, MS
Antonio Viegas, MS
Marcelina da Silva, MS
Ivo Cornelio L. Guterres, MS
Jose M. Goncalves, MS
Jose M. Mouzinho, MS
Elezito B. A, MS
Horacio Aleixo, MS
Carla Martinha Bakhita Almeida
Pascoela de Almeida Freitas
Franquelino dos Reis Moreira
Zenito Jose Maria Guterres
Teodoro Xavier Pereira
Deonizia Maria Fátima Gomes
Januario de Jesus Barreto
Madalena Dos Santos
Marito Da Silva
Narcisio Alves Perreira
Antonio Pereira Da Cruz
Hersilia Nunes
Filomeno Albino dos Reis.
Assisten Tonya Felisberta Freitas
Herminio Yohanes D j.Da Costa.
Diceana Vicente Kijong
Evaristo Nunes De Araujo
Lindalva Andresa Da Costa
Piter Janes da Costa Gusmao Ribeiro
Angelo correia de jesus inacio
Belchior Martins Soares.
Maria Estelita Ximenes.
Gaspar da Costa Pacheco.
Zulmira Varradas Lopes.
Miguel Soares Martins
Reinaldo Mascarenhas Sarmento
Isildo Joaquina da Silva
Rita Soares Maia
Aurora da Silva Fernandes
Jeovanio Jose Augostu Castro De Araujo
Joaninha Faria Marcal
Jaime Correia Da Conceicão
Francisco Adeo Pereira
Jovenia Sanches Soares
Domingas Maria Da Silva.
Luciano Mendonça De Assunção
Leão José Augusto
Antonio Amaral Guterres
Agapito Joao Dos Reis
Octaviano R.S. Boavida
Nivia Dos Santos Vicente
Julita Da Silva
Nelson Duarte B.A Almeida
Palmira De Jesus
Salvador Da Silva
Fernanda Almeida Da Silva
Luis Ximenes Soares
Fredy Correia de Lemos
Luis Elizaro Teofilo Amaral
Noelia de jesus Moniz
Tarsicio Baptista magalhaes
Afonso Raimundo soares Amaral
Dirce da Costa Mira Neto
Guido Beno Falo
Brandolina Barros Moniz
Marina Chenli Nunes Amaral
João Octavio Dos Reis Costa
Juvençio Ramiro Dos Santos Borges
Manuel L.B. França Da Silva
Joanico Maria Pires
Sergio E.N. Pereira
Lizia Dias Pereira
Fionia Frauna Freitas
Yoseph Siki
Sonia Maria Ximenes
José Morais
Filomena Lopes da Silva
Francisco de Jesus Moniz
Filipe Pereira
Agapito Estelando Oliveira Dos Reis Cunha
Milena Gomes
Anacleto dos Reis
Lidia Imaculada
Jovanio Alves Dos Anjos Mártires
Gaudencio do Nascimento Gusmao
Alexandre Soares
Joana de Jesus Carvalho Ferreira
Marcelina Amaral
Albro Da Costa Mendonca Ornai

Annex 3. Training agenda

Day 1		
Topics	**Comments/Questions to be answered**	
0800-0830	Introduction of participants and facilitator (s)	• Participants introduce themselves and outline expectations and ground rules
0830-0900	Pre-test	• Participants take pre-test to test knowledge before training
0900-1000	Introduction to surveys	• Why do we conduct surveys? What are the characteristics of a good survey?
1030-1115	Introduction to Timor-Leste Food and Nutrition Survey rationale and objectives	• What are the specific objectives for TLFNS 2019?
1115-1200	Survey team composition, roles and responsibilities	• What are the responsibilities of each team member?
1200-1245	Introduction to sampling	• What is sampling? Which sampling methods are commonly used in nutrition surveys?
1400-1500	Sampling in TLFNS 2019	• Which sampling method will be used in TLFNS 2019 and how will it be applied?
1500-1530	Introduction to anthropometry	• What is anthropometry? What are the building blocks?
1530-1600	SMART anthropometry video and discussion	• View an instructional video on SMART and ask questions
1600-1630	Mini-practical for anthropometric measurements?	• Practice session to familiarize with the use of anthropometric equipment
Day 2		
Topics	**Comments/Questions to be answered**	
0800-0830	Recap of day 1	• A short quiz to remind participants of day 1 key learning points
0830-1000	Anthropometry practice Age estimation-Local calendar	• A short exercise with anthropometric measurements with a few children. • How is age recorded when there is no official age document? How is the local calendar of events used? • Update TLFNS 2020
1030-1115	Interviewing techniques	• What are the things to watch out for when conducting interviews? What makes a good or bad interview?
1115-1245	Questionnaire familiarization-session	• Familiarization with questionnaire modules (paper format), to ensure that participants understand how questions should be asked
1400-1430	Questionnaire familiarization-session 2	• Familiarization with questionnaire modules (paper format), to ensure that participants understand how questions should be asked
1430-1600	Questionnaire familiarization-session 3	
1600-1630	Questionnaire familiarization-wrap up	
Day 3		
Topics	**Comments/Questions to be answered**	
0800-0830	Post-test	• Post-test to be compared with pre-test
0830-0900	Data collection using android tablet-introduction	• Safe-keeping and appropriate use; Maintaining battery power, charging;
0900-1000	Data entry-Child module	• Step-by-step data entry practice

Day 3		
Topics	**Comments/Questions to be answered**	
1030-1115 **1115-1230**	Data entry-Women module Data entry-household module	• Step-by-step data entry practice • Step-by-step data entry practice
1500-1600 **1600-1630**	Special cases in the field Introduction to standardization test	• How will households be defined? How will compounds be defined? How will absent or empty households/children be handled? What happens when there are no children in the household? What happens if the household refuses to be interviewed? How do we deal with children in health centres? How will the standardization test be conducted? What is its purpose and importance?
Day 4		
Topics	**Comments/Questions to be answered**	
0800-0830 **0830-0930** **0930-1230** **1400-1600**	Recap of day 4 Preparation for standardization test Standardisation test round 1 Standardisation test round 1	• A short quiz to remind participants of day 4 key learning points • Preparation of mother-to-child pairs and stations • First round of measurements • Second round of measurements
Day 5		
Topics	**Comments/Questions to be answered**	
0830-0900 **0900-1630**	Standardisation test feedback Pilot test in the field including final debriefing session	• Feedback on team performance • Pilot test in the field followed by final debriefing before teams are deployed to the field

Annex 4. Standardisation test

Training 1

	Sub-jects	Mean	SD	Max	Tech-nical error	TEM/ mean	Code of reliability	Bias from superv	Bias from median	Result		
	#	cm	cm	cm	TEM (cm)	TEM (%)	R (%)	Bias (cm)	Bias (cm)			
Supervisor	10	99.1	5.9	0.9	0.24	0.2	99.8	-	1.66	TEM good	R value good	
Team 1	10	99.3	5.6	0.9	0.25	0.3	99.8	0.22	1.88	TEM good	R value good	Bias good
Team 10	10	99.3	6	0.3	0.15	0.2	99.9	0.22	1.88	TEM good	R value good	Bias good
Team 11	10	98.9	6.1	0.5	0.15	0.2	99.9	-0.18	1.48	TEM good	R value good	Bias good
Team 12	10	99.2	6.1	0.1	0.06	0.1	100	0.1	1.75	TEM good	R value good	Bias good
Team 13	10	98.4	6.4	9.5	2.46	2.5	85.2	-0.68	0.98	TEM reject	R value reject	Bias good
Team 15	10	99.1	6.1	0.4	0.15	0.2	99.9	0.07	1.72	TEM good	R value good	Bias good
Team 2	10	99.3	5.6	0.4	0.11	0.1	100	0.28	1.94	TEM good	R value good	Bias good
Team 5	10	99.1	5.9	0.2	0.1	0.1	100	0.02	1.68	TEM good	R value good	Bias good
Team 8	10	99.3	6	0.2	0.07	0.1	100	0.19	1.85	TEM good	R value good	Bias good
Team 9	10	99.1	6.2	0.3	0.13	0.1	100	0.04	1.7	TEM good	R value good	Bias good
Team 4	10	98.9	6.2	0.8	0.29	0.3	99.8	-0.13	1.53	TEM good	R value good	Bias good
Team 14	10	98.9	6	0.6	0.18	0.2	99.9	-0.13	1.53	TEM good	R value good	Bias good
enum inter 1st	12x10	99.1	5.9	-	0.85	0.9	98	-	-	TEM acceptable	R value acceptable	
enum inter 2nd	12x10	99.1	5.9	-	1.24	1.3	95.5	-	-	TEM poor	R value acceptable	
inter enum + sup	13x10	99.1	5.9	-	1	1	97	-	-	TEM acceptable	R value acceptable	
TOTAL intra+inter	**12x10**	**-**	**-**	**-**	**1.29**	**1.3**	**95.2**	**0**	**1.66**	**TEM poor**	**R value acceptable**	**Bias good**
TOTAL+ sup	**13x10**	**-**	**-**	**-**	**1.23**	**1.2**	**95.6**	**-**	**-**	**TEM poor**	**R value acceptable**	

Training 2

	Sub-jects	Mean	SD	Max	Tech-nical error	TEM/ mean	Coef of reliability	Bias from superv	Bias from median	Result		
	#	cm	cm	cm	TEM (cm)	TEM (%)	R (%)	Bias (cm)	Bias (cm)	Precision		Accuracy
Supervisor	10	105	2.8	1.5	0.38	0.4	98.2	-	-0.01	TEM good	R value acceptable	Bias good
Team 3	10	105.4	3.1	2	0.94	0.9	90.9	0.39	0.38	TEM poor	R value poor	Bias good
Team 6	10	104.8	3	5.1	1.68	1.6	68.3	-0.23	-0.24	TEM reject	R value reject	Bias good
Team 13	10	104.8	2.9	1.1	0.34	0.3	98.7	-0.23	-0.24	TEM good	R value acceptable	Bias good
Team 15	10	104.9	3.1	1.6	0.6	0.6	96.1	-0.05	-0.06	TEM poor	R value acceptable	Bias good
Team 11	10	105.3	3.1	2	0.66	0.6	95.5	0.31	0.3	TEM poor	R value acceptable	Bias good
Team 2	10	104.7	2.9	0.8	0.35	0.3	98.5	-0.32	-0.33	TEM good	R value acceptable	Bias good
Team 14	10	104.9	3.1	0.8	0.38	0.4	98.4	-0.06	-0.07	TEM good	R value acceptable	Bias good
Team 1	10	105.7	2.9	8.9	2.03	1.9	49.7	0.69	0.68	TEM reject	R value reject	Bias poor
Team 9	10	105.1	3.1	1.9	0.59	0.6	96.3	0.15	0.14	TEM acceptable	R value acceptable	Bias good
Team 16	10	104.3	4.2	9.4	3.36	3.2	36.8	-0.7	-0.71	TEM reject	R value reject	Bias good
Team 8	10	104.8	2.9	0.8	0.27	0.3	99.1	-0.21	-0.22	TEM good	R value good	Bias good
Team 5	10	104.7	2.8	11.2	2.51	2.4	19.9	-0.32	-0.33	TEM reject	R value reject	Bias good
Team 4	10	104.9	3.1	0.9	0.31	0.3	99	-0.12	-0.13	TEM good	R value good	Bias good
Team 12	10	104.6	3.1	1.1	0.36	0.3	98.6	-0.36	-0.37	TEM good	R value acceptable	Bias good
Team 7	10	106.2	4.5	16.9	3.78	3.6	30.4	1.17	1.16	TEM reject	R value reject	Bias poor
Team 10	10	104.8	2.9	1	0.44	0.4	97.8	-0.16	-0.17	TEM acceptable	R value acceptable	Bias good
enum inter 1st	16x10	104.9	2.9	-	0.76	0.7	93.3	-	-	TEM acceptable	R value poor	
enum inter 2nd	16x10	105	3.4	-	2.19	2.1	58	-	-	TEM reject	R value reject	
inter enum + sup	17x10	105	3.1	-	1.43	1.4	77.1	-	-	TEM poor	R value reject	
TOTAL intra+inter	**16x10**	**-**	**-**	**-**	**2.3**	**2.2**	**46.9**	**0**	**-0.01**	**TEM reject**	**R value reject**	**Bias good**
TOTAL+ sup	**17x10**	**-**	**-**	**-**	**2.23**	**2.1**	**49.2**	**-**	**-**	**TEM reject**	**R value reject**	

Annex 5. Survey questionnaire

MUNICIPALITY_____ SUCO _____ ALDEIA _____
RURAL/URBAN_____ SURVEY DATE _____ CLUSTER_____
TEAM_____ HOUSEHOLD_____

INTRODUCTION AND CONSENT

Hello, My name is_____ and my colleagues' are_____. We are working for the Ministry of Health. We are here to conduct the Timor-Leste National Food and Nutrition Survey to gather information related to demography, nutrition, health, food security and water, sanitation & hygiene of people living in Timor-Leste. If there are any women (aged 15-49 years) or children under five years old in the household we would like to take some measurements to assess their nutritional status. All personal information will be kept confidential. Please note that it is not currently known what actions if any will be taken after the results of the survey are finalized. This survey will provide important information to guide programmes which seek to improve the general living conditions of people in Timor-Leste. The questions will take about 30 minutes. Do you have any questions? May I begin?

Yes=1; No=2; Absent=3

1. HOUSEHOLD MODULE

1a. HOUSEHOLD CHARACTERISTICS, FOOD SECURITY AND COPING MECHANISMS

Socio-economic status

Did the household give its consent to be interviewed?	1=Yes 2=No 3=Absent
How many people live in this household?	☐
What is the sex of the household head?	1=Male; 2=Female
What is the age of the household head?	☐
What is the type of cooking fuel used by this household?	1=Electricity 2=LPG 3=Natural gas 4=Biogas 5=Kerosene 6=Charcoal 7=Wood 8=Straw/Shrubs/Grass 9=Agricultural crop 10=Animal dung 99=Other
What is the type of floor in this household? (OBSERVE)	1=Dirt/earth 2=Brick/ceramic/tile 3=Bamboo/wood 99=Other
What is the type of wall in this household? (OBSERVE)	1=Wood/bamboo/petiole of palm tree/galvanized steel 2=Brick 3=Brick and wood/bamboo 4=Mud 99=Other

What is the type of roof in this household? (OBSERVE)	1=Galvanized steel 2=Leaves/bamboo 3=Brick/cement/tile 4=Wood 5=Asbestos 99=Other
How many sleeping rooms does this household have?	☐
Which of the following household assets does this household own?	
Radio (functional)	1=Yes, 0=No
Television (functional)	1=Yes, 0=No
Telephone-non-mobile (functional)	1=Yes, 0=No
Mobile telephone (functional)	1=Yes, 0=No
Computer (functional)	1=Yes, 0=No
Watch (functional)	1=Yes, 0=No
Tape/CD player (functional)	1=Yes, 0=No
Refrigerator (functional)	1=Yes, 0=No
Fan (functional)	1=Yes, 0=No
Chair	1=Yes, 0=No
Sofa	1=Yes, 0=No
Cupboard (any type)	1=Yes, 0=No
Bed	1=Yes, 0=No
Sewing machine (functional)	1=Yes, 0=No
Electric iron (functional)	1=Yes, 0=No
Bicycle (functional)	1=Yes, 0=No
Motorcycle/scooter (functional)	1=Yes, 0=No
Animal-drawn cart (functional)	1=Yes, 0=No
Car/truck (functional)	1=Yes, 0=No
Boat with motor (functional)	1=Yes, 0=No
Bank account	1=Yes, 0=No

How many of each of the following do you own?	
Cattle/Buffaloes Are the cattle/buffaloes kept in pen? Are the cattle/buffaloes roaming freely in/around the house or in areas where the children are usually playing?	..... 1=Yes, 2=No 1=Yes, 2=No
Horses/Donkeys/Mules	.....
Goats	.....
Sheep	.....
Pigs Are the pigs kept in pen? Are the pigs roaming freely in/around the house or in areas where the children are usually playing?	..... 1=Yes, 2=No 1=Yes, 2=No
Chicken or other poultry Are the chickens kept in pen? Are the chickens roaming freely in/around the house or in areas where the children are usually playing?	..... 1=Yes, 2=No 1=Yes, 2=No

Ducks	……
Do you own this house?	1=Yes, 0=No
Do you own land?	1=Yes, 0=No

Food Insecurity Experience Scale (FIES)

During the last 12 MONTHS, was there a time when you or others in your household:		
1	Were worried you would run out of food because of a lack of money or other resources? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
2	Were unable to eat healthy and nutritious food because of a lack of money or other resources? 3 (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
3	Ate only a few kinds of foods because of a lack of money or other resources? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
4	Had to skip a meal because there was not enough money or other resources to get food? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
5	Ate less than you thought you should because of a lack of money or other resources? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
6	Ran out of food because of a lack of money or other resources? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
7	Were hungry but did not eat because there was not enough money or other resources for food? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	
8	Went without eating for a whole day because of a lack of money or other resources? (Yes=1, No=0, 8=Don't Know, 9= Don't want to respond)	

Food Consumption Score (FCS)

Now I would like to ask you about your consumption of different foods and drinks. Would you please tell me how many days in the last 7 days you consumed any food item from a number of food groups? If different members of the household ate foods from same group different number of days, consider the highest number of days. (DO NOT INCLUDE FOODS EATEN OUTSIDE THE HOME)	
Starchy Staples (cereals, roots, and tubers)	☐
Vegetables	☐
Fish/meat/Eggs	☐
Pulses	☐
Milk and milk products (Milk, cheese, yogurt and other dairy products)	☐
Fruits	☐
Oil/fat/ Butter	☐
Sugar	☐
Spices, salt, fish powder, small amounts of milk for tea	☐

Salt Iodisation

WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODISED. MAY I HAVE A SAMPLE OF THE SALT USED TO COOK MEALS IN YOUR HOUSEHOLD? (OBSERVE)	1=Salt iodized 2=Salt not iodized 3= Cannot read the label 4= No salt in household

1b. WATER, SANITATION AND HYGIENE

What is the main source of drinking water used by the household	1=Public tap/standpipe 2=Piped water into dwelling 3= Tubewell/borehole 4= Protected well/spring 5=Bottled water 6= Unprotected well 7= Surface water (river/stream/pond) 99=Other
Which type of toilet facility does this household use?	1= Latrine with septic tank 2= Pit latrine with slab 3= Pit latrine without slab 4= Latrine without septic tank 77= No latrine/bush 99= Other
How many households use this toilet facility (including this household)?	
When do you think it is important to wash your hands? (multiple response)	1=Before cooking food 2=After defecation 3=Before eating food 4=After disposing of child's faeces 5=Before feeding/breastfeeding children 99=Others

Most often, what do you use to wash your hands?	1= Water only 2= Water and ash 3= Water and sand 4= Water and soap 5= Other
Are there any young children in the household (below 2 years)?	1=Yes 2=No
How do you normally disposed babies faeces/babies' diapers?	1=In the toilet 2=Buried 3=Rubbish bin 4=In open area 99=Other

2. CHILD MODULE

2a. ANTHROPOMETRY (0-59 months)

Child No	Name of the child	Consent given 1=Yes 2=No 3=Absent	What is the highest education level of the mother/ caregiver? 1=No education 2=Primary 3=Pre-Secondary 4=Secondary 5=More than secondary- Diploma, Bachelor, Master, PhD	SEX (Male=m Female=f	Is official age documentation available? 1=Yes 2=No	Date of birth DD/ MM/ YYYY	Weight (Kg) ±0.1kg	Height/ Length (cm) □0.1cm/	Was the child measured lying down or standing up? 1=Lying down 2=Standing up
1									
2									
3									

Child No	Oedema (Yes=y No=n) NB: If yes, take a close up image of the child's feet	MUAC (+/-0.1 cm)
1		
2		

2b. IMMUNIZATION, MORBIDITY AND HEALTH-SEEKING BEHAVIOUR (0-59 months)

In the past 2 weeks (14 days) has (NAME) experienced diarrhoea?	(1=Yes, 2=No)
In the past 2 weeks (14 days) has (NAME) experienced acute respiratory infections (cough, breathing difficulties, chest in-drawing, rapid breathing)	(1=Yes, 2=No)
In the past 2 weeks (14 days) has (NAME) experienced fever (without cough) by maternal report	1=Yes, 2=No
Did (NAME) seek treatment?	1=Yes, 2=No
Where did (NAME) seek treatment for the illness (es)?	1= Private clinic, 2= Public health facilities/hospital, 3= Religious leader, 4=Traditional healer, 5=Pharmacy, 6=Home treatment, 99=Other
What prevented you from seeking treatment from a health facility?	1=Distance too far 2=Too expensive 3=Prefer other options 99=Other
Has (NAME) received two dozes of measles immunization?	1=Yes confirmed by card; 2=Yes confirmed by recall; 3=No/Don't know
In your opinion, how many times should the child be immunized to complete immunization	☐
Has (NAME) received Vitamin A in the last six months?	1=Yes 2=No, 88=Don't Know
During the last month did (name) receive micronutrient powder?	1=Yes, 2=No, 88=Don't know
Has (NAME) receive deworming medicine in last 6 months?	Yes=1, No=2, 88=Don't Know

2c. INFANT AND YOUNG CHILD FEEDING PRACTICES (0-23 months)

Has (NAME) ever been breastfed?	(1=Yes, 2=No, 88=Don't Know)
How long after birth did you first put ${NAME} to the breast?	(1= Less than 1 hour, 2= Between 1 and 23 hours, 3=24 hours or more, 88=Don't know)
Was [NAME] breastfed yesterday during the day or at night?	(1=Yes, 2=No, 88=Don't Know)
Yesterday, during the day or night, how many times did (NAME) breastfeed?	☐
Yesterday, during the day or night, did (NAME) drink anything from a bottle with a nipple?	(1=Yes, 2=No, 88=Don't Know)
In your opinion, how long the baby should be exclusively breastfed?	☐

Now I would like to ask you about all other liquids that (NAME) may have had yesterday during the day or the night. Please include liquids consumed outside of your home. Did (NAME) drink any of the following yesterday during the day or the night:	
[A] Plain water?	(1=Yes, 0=No, 8=Don't Know)
[B] Juice or juice drinks?	(1=Yes, 0=No, 8=Don't Know)
[C] (Local name for clear broth/clear soup?)	(1=Yes, 0=No, 8=Don't Know)
[D] Infant formula or growing up milk, such as (insert popular brands)?	1=Yes, 0=No, 8=Don't Know)
[D1] How many times did (name) drink infant formula? *If 7 or more times, record '7'.* *If unknown, record '8'.*	*7=7 or more times* *88=Don't know* ☐
[E] Milk from animals, such as fresh, tinned, or powdered milk?	(1=Yes, 0=No, 8=Don't Know)
[E1] How many times did (name) drink milk? *If 7 or more times, record '7'.* *If unknown, record '88'.*	*7=7 or more times* *88=Don't know* ☐
[F] Yoghurt	(1=Yes, 0=No, 88=Don't Know)
[F1] How many times did (name) drink yogurt? *If 7 or more times, record '7'.* *If unknown, record '88'.*	*7=7 or more times* *88=Don't know* ☐
[G] Any other liquids?	*(1=Yes, 0=No, 88=Don't Know)*
[X1] Record all other liquids mentioned.	*(Specify)*
Yesterday, during the day and night, did {NAME} eat solid, semi-solid or soft food?	(1=Yes, 0=No, 8=Don't Know)
How many times did {NAME} eat solid, semisolid, or soft foods other than liquids yesterday during the day or at night?	☐

Now I would like to ask you about some particular foods **(NAME)** may have eaten. I am particularly interested in whether he/she had the item even if it was combined with other food. Yesterday during the day or the night, did **(NAME)** consume any of the following?		
Did **[NAME]** eat any of the following food groups in *the PAST 24-HOURS* (1=Yes, 2=No)		
1. Grains, roots, tubers	Porridge, bread, noodles or other foods made from rice wheat, barley, or oats Porridge, bread, noodles, or other foods made from corn/maize, sorghum or millet grains White potatoes, white yams, cassava, green banana, potato chips, sugar beets or any other foods made from these	
2. Legumes or nuts (lentils)	Beans, peas, other lentils, nuts (peanuts) or seeds (pumpkin seed, spinach seed, jackfruit seed) or any foods made from these	
3. Dairy products *(cheese or other foods)*	Cheese or other foods made from animal milk	
4. Flesh foods *(meat, fish, poultry, liver/organ meat)*	Liver, kidney, heart or other organ meats or blood-based foods	
	Meat such as beef, pork, lamb, mutton, rabbit, game, chicken, duck, pigeon other birds	
	Fresh or dried fish, shellfish or seafood like shrimp	
5. Vitamin A rich fruits and vegetables *(carrot, pumpkin, orange sweet potato, mango, papaya, dark green leafy vegetables, long beans)*	Pumpkin, carrots, squash, sweet potatoes, sweet peppers; any dark green leafy vegetables such as spinach pumpkin leaf, ripe mangoes, cantaloupe, ripe papaya, dried peach, and 100% fruit juice made from these items	
6. Egg	Eggs from chickens, duck, guinea fowl or any other egg	
7. Other fruit and vegetables *(banana, apples, pineapple, watermelon, eggplant, onion, cucumbers, tomatoes)*	Cabbage, tomato, onion, eggplant	
8. Any oil, fats, butter, ghee or foods made with any of these		
9. Any sweet junk foods, such as chocolates/ sweets/ candies/ sweet biscuits/pastries/ cakes?		
10. Any savoury junk foods such as crisps/chips/salted biscuits/instant noodles		
11. Any lipid based nutrient supplement (LNS) like Plumpy nut, Plumpy sup; any other specialized nutritious foods like fortified blended foods (FBFs) or high energy biscuits (HEBs) like WSB+/++ or WFP biscuits		

Since (name) was born, were you counselled on how to take care of your child?	(1=Yes, 2=No, 88=Don't Know)
From whom did you receive advice?	1=Health worker 2=Community health volunteer/mother support group 3=Family / Relatives 4=Other pregnant women 99=Other
Have you been counselled on giving complementary foods?	(1=Yes, 2=No, 88=Don't Know)
In your opinion, how old should the baby should be given complementary foods?	☐ months
How did you get information on health, nutrition and feeding practices? (multiple response)	1= Health care workers (Nurse, Midwife, Doctor, assistant nurse, nutrition officers, etc) 2=Community Health Volunteers (Family Health Promoters and Mother Support Groups) 3=Family/Relatives 4=Media 5=TV 6=Radio 7=Newspapers 8=Internet 9=Social media: Facebook 10=Text messages from Telcom providers 11=Community leaders (Xefe Suku and Xefe Aldeia) 12=Schools 99=Other

3.MATERNAL MODULE-WOMEN OF REPRODUCTIVE AGE (15-49 years)

Woman ID	
Name of the woman	
Consent given?	(1=Yes, 2=No, 3=Absent)
How old are you? (in years)	☐
Weight (+/- 0/1kg)	☐
Height (+/- 0.1cm)	☐
MUAC (+/-0.1cm	☐
Are you pregnant?	(1=Yes, 2=No, 88=Don't Know)
Are you lactating?	(1=Yes, 2=No)
Did you give birth in the last 5 years?	(1=Yes, 2=No)
How many children do you have?	☐
Did you see anyone for antenatal care during the last pregnancy	(1=Yes, 2=No)

Whom did you see for antenatal care during your last pregnancy?	1= Midwife 2= Medical doctor 3=Nurse 4=Nurse assistant 5=Traditional birth attendant 99=Other
Where did you get antenatal care?	1=At home: 2=Public health facilities 3= Private health facilities 4=Outreach services (SISCa, Mobile Clinic) 99=Other
Do you have a mother and child health handbook (LISIO)	1=Yes, 2=No
How many months pregnant were you when you first received antenatal care for this pregnancy?	☐ 88=Don't know
How many times did you receive antenatal care during this pregnancy?	☐
During your last pregnancy, did you consume any vitamin or mineral tablets or syrups?	1=Yes, 2=No, 88=Don't Know
What type of vitamin or mineral tablets or syrup did you take? (multiple)	1=Iron/iron folic acid tablet 2=Mixed vitamins/minerals 99=Other
During the whole pregnancy, how many months did you take the tablets or syrup?	☐ 88=Don't know
Where did you get these vitamins and/or minerals	1 = Public health facilities 2= Private clinics 3= Pharmacy 99= Other
In your opinion, why do you think that iron/folic acid is important for pregnant women? (Multiple response)	1= Prevent anemia 2 = Healthy baby 3= Protects against infection 4= Boosts mother's immunity 5= Better delivery outcome 88= Don't know 99= Other

Minimum Dietary Diversity for Women (MDD-W)

Now I would like to ask you about some particular foods and drinks. Would you please tell me whether you consumed any food item from a number of food groups yesterday during the day and night, including foods purchased and eaten outside the home.

	Food Categories	Description/examples to be adapted locally	Consumed	
			1=Yes	0=No
1a.	Any foods made from grains	Porridge, bread, rice, pasta/noodles or other foods made from grains		
1b.	Any white roots and tubers or plantains	White potatoes, white yams, manioc/cassava/ yucca, coco yam, taro or any other foods made from white-fleshed roots or tubers, or plantains		
2.	Any beans or peas	Mature beans or peas (fresh or dried seed), lentils or bean/pea products, including hummus, tofu and tempeh		
3.	Any nuts or seeds	Any tree nut, groundnut/peanut, or certain seeds or nut/seed “butters” or pastes		
4.	Any milk or milk products	Milk, cheese, yoghurt or other milk products, but NOT including butter, ice cream, cream or sour cream		
5a.	Any meat made from animal organs	Liver, kidney, heart or other organ meats or blood-based foods, including from wild game		
5b.	Any other types of meat or poultry	Beef, pork, lamb, goat, rabbit, wild game meat, chicken, duck, other birds		
5c.	Any fish or seafood, whether fresh or dried	Fresh or dried fish, shellfish or seafood		
6.	Any eggs	Eggs from poultry or any other bird		
7.	Any dark green leafy vegetables	List examples of any medium-to-dark green leafy vegetables, including wild/foraged leaves		
8a.	Any vegetables or roots that are orange-coloured inside	Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside		
8b.	Any fruits that are dark yellow or orange inside	Ripe mango, ripe papaya		
9.	Any other vegetables	List examples of any other vegetables		
10.	Any other fruits	List examples of any other fruits		
11.	Sugar food consumption (sweets)	Cakes, cookies, sweet biscuits, candy, chocolates, etc.		
12.	Sugary drinks	Carbonated soft drink, sweetened tea, sweetened coffee		
13.	Savory “junk foods”	Instant noodles, fried chips/crisps, fried snacks including crispy fried beans, wheat, corn or rice snacks, etc.		

Annex 6. Local calendar of events

Month	Seasons	2015	2016	2017	2018	2019	2020
January	Wet season		1 January New Year's Day	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day
February	Wet season		10 February Ash Wednesday		14 February Ash Wednesday		26 February Ash Wednesday
March	Wet season		25 March Good Friday	1 March Ash Wednesday	30 March Good Friday	6 March Ash Wednesday	
April	Wet season			14 April Good Friday		19 April Good Friday	10 April Good Friday
May	Dry season		1 May Labour Day 20 May Independence Restoration Day 26 May Corpus Christi	1 May Labour Day 20 May Independence Restoration Day	1 May Labour Day 20 May Independence Restoration Day 31 May Corpus Christi	1 May Labour Day 20 May Independence Restoration Day	1 May Labour Day 20 May Independence Restoration Day 24 May Eid al-Fitr
June	Dry season	4 June Corpus Christi		15 June Corpus Christi 24-25 June Eid al-Fitr	14-15 June Eid al-Fitr	4-6 June Eid al-Fitr 20 June Corpus Christi	11 June Corpus Christi
July	Dry season	17 July Eid al-Fitr	7 July Eid al-Fitr				30-31 July Eid al-Adha
August	Dry season	30 August Popular Consultation Day	30 August Popular Consultation Day	30 August Popular Consultation Day 31 August Eid al-Adha	21-22 August Eid al-Adha 30 August Popular Consultation Day	10-11 August Eid al-Adha 30 August Popular Consultation Day	30 August Popular Consultation Day
September	Dry season	24 September Eid al-Adha	13 September Eid al-Adha	1 September Eid al-Adha			
October	Dry season						
November	Wet season	1 November All Saints' Day 2 November All Souls' Day 12 November National Youth Day 28 November Proclamation of Independence Day	1 November All Saints' Day 2 November All Souls' Day 12 November National Youth Day 28 November Proclamation of Independence Day	1 November All Saints' Day 2 November All Souls' Day 12 November National Youth Day 28 November Proclamation of Independence Day	1 November All Saints' Day 2 November All Souls' Day 12 November National Youth Day 28 November Proclamation of Independence Day	1 November All Saints' Day 2 November All Souls' Day 12 November National Youth Day 28 November Proclamation of Independence Day	
December	Wet season	7 December National Heroes' Day (In East Timor) 8 December Feast of the Immaculate Conception 25 December Christmas Day	7 December National Heroes' Day (In East Timor) 8 December Feast of the Immaculate Conception 25 December Christmas Day	7 December National Heroes' Day (In East Timor) 8 December Feast of the Immaculate Conception 25 December Christmas Day	7 December National Heroes' Day (In East Timor) 8 December Feast of the Immaculate Conception 25 December Christmas Day	7 December National Heroes' Day (In East Timor) 8 December Feast of the Immaculate Conception 25 December Christmas Day	

Annex 7. Interviewer manual

TIMOR-LESTE NATIONAL FOOD AND NUTRITION SURVEY (TLFNS 2020)

INTERVIEWER MANUAL

February 2020

Introduction

The interviewer manual covers all the important aspects of the data collection process for the Timor-Leste National Food and Nutrition Survey (TLFNS) which is expected to be conducted from 17 February 2020 in all the 13 municipalities. Data collection will involve the collection of data from a representative sample of 980 households in each municipality as specified in the survey protocol. There will be 80 clusters sampled in each household, with 56 clusters having 12 households, and 24 clusters with 13 households. Each of the survey teams will be expected to complete a cluster each day. Given that there will be 16 teams, in 10 working days, 2 municipalities will be completed, with 8 teams in each municipality.

This manual covers the following key aspects:

- Survey team structure and responsibilities
- Sampling, household selection and field procedures
- Questionnaire guidance
- Anthropometry
- Mobile data collection
- Team checklist

Unit 1. Survey team structure and responsibilities

Each survey team will be structured as follows:

The structure of each survey team was presented as below:

- 1 Measurer: responsible for reading all anthropometric measurements for children below 5 years and women of reproductive age.
- 1 Assistant measurer/enumerator: to assist the measurer by ensuring that the respondent is in the correct position for measurement and also for recording the measurement on the data forms; also to administer the child and maternal questionnaires using the android tablet.
- 1 interviewer: to introduce the team in each household, to complete the household listing form and to administer the household questionnaire.
- 1 supervisor: to oversee the sampling and household selection, the overall team organisation, quality control and validation of questionnaires and forms from the team before finalizing and sending questionnaires to the server on a daily basis.

Unit 2. Sampling, household selection and field procedures

SAMPLING METHOD

The required number of households in each cluster will be selected using systematic random sampling with a random starting point will be used as illustrated above. The steps will be as follows:

1. Identify the centre of the cluster.

2. Move to the approximate centre of the cluster.

3. Divide the number of households by the sample size (the number required). eg. If there are 45 households, and you need 14, then 45/14=3.2, rounded down to 3.

4. Select a random direction by spinning a bottle/pen on the ground.

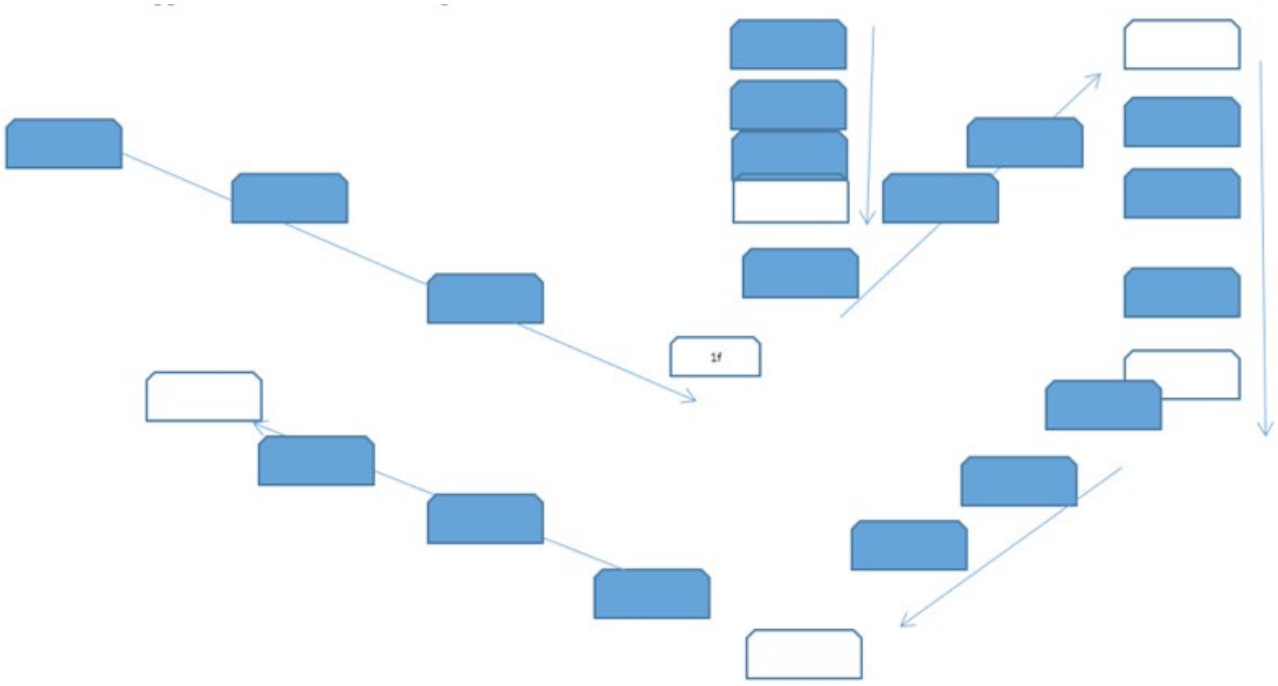
5.Walk in the direction of the pen, counting households as you pass, up to the number calculated in step 3
(1, 2, 3).

6. Interview the next household (this becomes your first household).

7. Interview this household

8. Spin the pen in a new direction and follow the steps above

The diagram below shows the steps. The shaded cells represent the households which have been skipped. The unshaded cells represent the selected households.



The method needs slight adjustment when:

1. There is more than 1 cluster in the aldeia: divide the aldeia into segments using roads, rivers, cluster of houses into the required number then treat the segments as clusters.

2. The aldeia has more than 100 households: use the same segmentation method then randomly select one of the segments as the cluster. If 100-200, then select 2 segments, if 201-300, select 3 segments, if 301-400, select 4 segments etc.

NOTE: If you reach the boundary of the cluster while counting households in a given direction, select a new random direction.

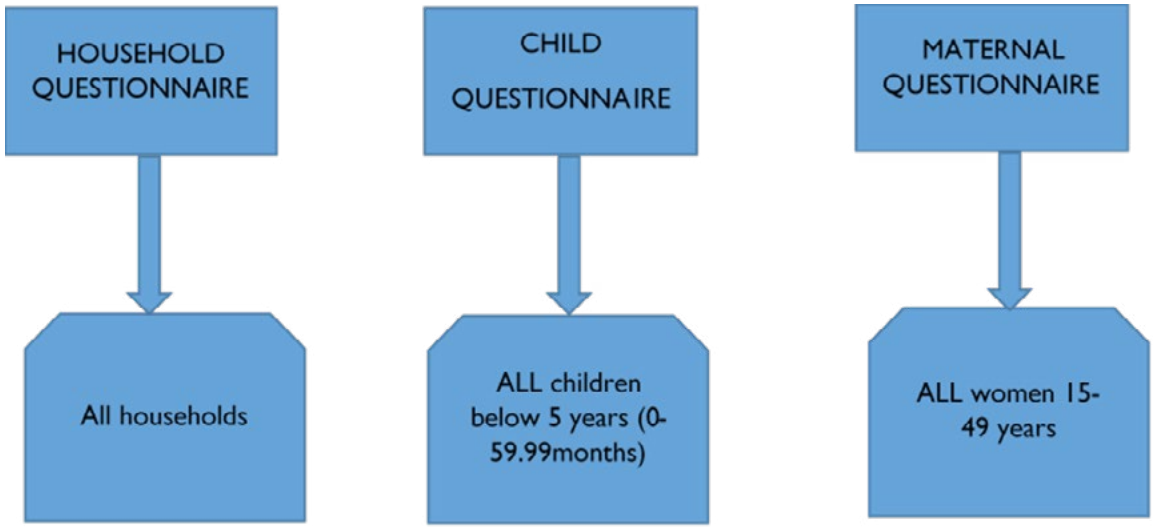
SPECIAL CASES IN THE FIELD

A household will be defined as a group of people who normally live together and eat from the same pot. Compounds in which more than 1 family lives will be split into households if the families eat separately.

- Empty households: These will be replaced. An empty household is one where the members of the household are not present and are not expected to return within the time of the survey. These will not be counted when selecting households.
- No children in the household: Complete all the other questionnaires for that household
- Absent children: Return to the household later to complete the interview
- Children with disability/handicap: If height, weight or MUAC cannot be measured, record as absent
- Child in a centre/institution: Record as absent

Unit 3. Questionnaire guidance

STRUCTURE OF SURVEY QUESTIONNAIRE



A household with no children below 5 years will still be interviewed for the household and maternal questionnaires. A household without women 15-49 years will still be interviewed for the household and child questionnaire. **ALL** eligible children below 5 years and **ALL** eligible women 15-49 years will be interviewed.

IMPORTANT POINTS TO NOTE ON SPECIFIC QUESTIONS

1. Household Questionnaire

i. *How many people live in this household:* This refers to usual household residents and does not include visitors.
ii. *Type of floor/wall/roof in the household:* Observe as much as possible; if you are sure of your observation, record the response; only ask if you cannot observe.
iii. *Which of the following household assets does this household own:* record YES if at least one member has the asset.
iv. *Food Consumption Score…*the question begins with: *Now I would like to ask you about your consumption of different foods and drinks. Would you please tell me how many days in the last 7 days you consumed any food item from a number of food groups? If different members of the household ate foods from same group different number of days, consider the highest number of days. (DO NOT INCLUDE FOODS EATEN OUTSIDE THE HOME):*

Point number 1: Foods eaten outside the home must not be included.
Point number 2: If anyone in the household ate a particular food, even if it was only one person, this should be included.

v. *What is the main source of drinking water used by the household/Which type of toilet facility does this household use*: Do not read the responses.
vi. *How many households use this toilet facility (including this household):* If no other household is using the toilet, the response is 1. If 1 other household is using it, then the response is 2.

A household listing form must be used to record all members of the household. An example is shown below:

Date: 29/01/2020			Municipality: Manatuto	Cluster No: 5	Team No: 8		Household No: 11	
No.	Please tell me the name of each person who usually lives here, beginning with the head of the household	Is (name) male or female? M=Male F=Female	How old is (name) in completed years? Enter 0 if below 1 year	Total HH members	Total number of WRA (15-49 y)	Total number of children <5y	Status of interview 1=Completed 2=Partially completed 3=Refused	Comments
1	Carlos	M	41	6	1	3	1	
2	Eva	F	35					
3	Adam	M	21					
4	Eduardo	M	4					
5	Ricardo	M	3					
6	Jane	F	0					

2. Child Questionnaire

i. *Is official age documentation available:* Official age documentation refers to the birth certificate or child health/vaccination card/maternal-child card.
ii. *Weight, Height and MUAC measurements MUST HAVE DECIMALS.* Weight is to the nearest 0.1kg, eg. 12.4, 17.3, 18.8. Height is to the nearest 0.1cm, eg. 98.1, 67.4, 75.5. MUAC must be to the nearest 0.1cm, eg. 13.4, 14.9, 19.6.
iii. *BEWARE OF DIGIT PREFERENCE IN ALL MEASUREMENTS…*this means that you must not round to the nearest .0 or 0.5 otherwise RESULTS WILL BE REJECTED!
iv. *OEDEMA:* ALL cases must be checked and confirmed by the supervisor and a close picture must be taken for confirmation.
v. *DIARRHOEA:* It is defined as 3 or more loose or watery stools in a period of 24 hours.
vi. For the Vitamin A question, samples must be shown to the respondent.
vii. On the infant and young child feeding section, the question on liquids begins with: *Now I would like to ask you about all other liquids that (NAME) may have had yesterday during the day or the night. Please include liquids consumed outside of your home. Did (NAME) drink any of the following yesterday during the day or the night:*
Note that a soup/broth which has small pieces of meat or vegetable in it is classified as a liquid.
viii. The question: How did you get information on health, nutrition and feeding practices? (multiple response) can have more than 1 response.

3. Maternal questionnaire

i. A sample of the LISIO should be shown for the question: *Do you have a mother and child health handbook (LISIO)*

ii. The question on the importance of iron/folic acid is a multiple response question.

iii. The question of minimum dietary diversity for women should include foods purchased and eaten outside the home.

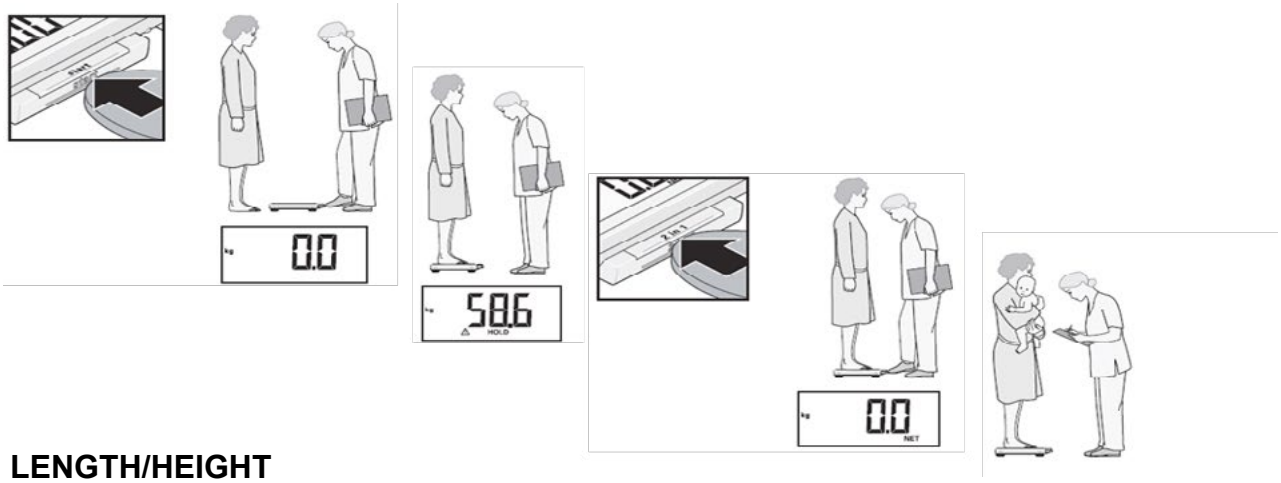
Unit 4. Anthropometry

INTRODUCTION

It is important to record all the variables correctly: sex, date of birth, weight, height, MUAC and oedema. For weight measurement, the child should be undressed to the minimum, ie. If wearing a dress, she can remove the dress and remain with under clothes. For boys, they may remove their shirts and shorts and remain with the under pants.

WEIGHT

For children who cannot stand on their own, the mother stands on the scale and then the scale is adjusted to zero, then the child is handed over to the mother, then the measurement is read to the nearest 0.1kg (1 decimal place).Children who are able to stand can stand alone on the scale. The same procedure is used for women of reproductive age.

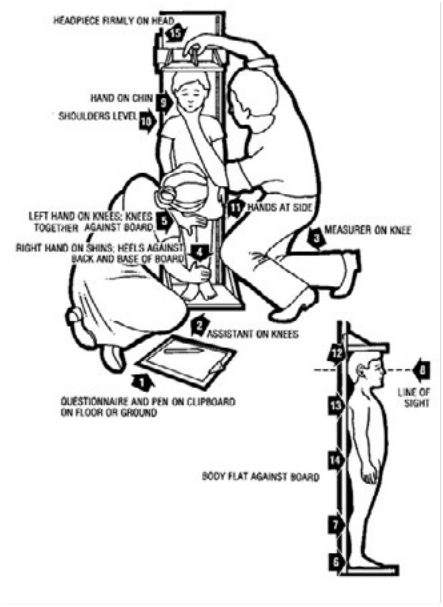


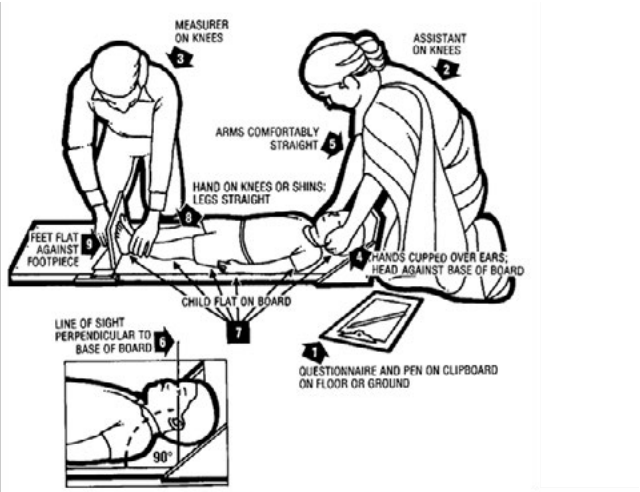
LENGTH/HEIGHT

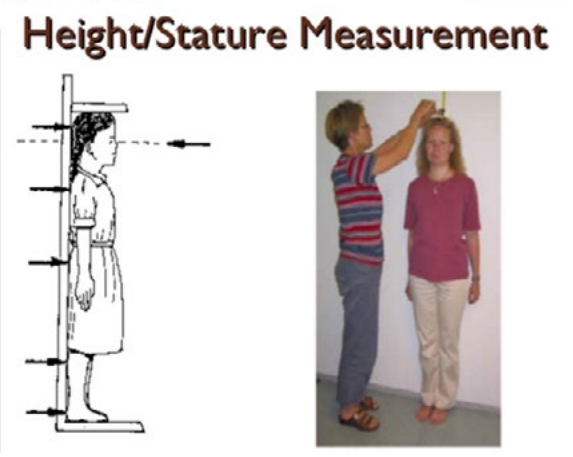
Children below 2 years (6 to 23.99 months) must be measured lying down; children 2 years and above (24 to 59.99 months) must be measured standing up. The questionnaire also requires the enumerator to specify whether the child was measured lying down or standing up, which is very important. There may be cases where children below 2 years cannot be measured lying down, possibly due to ill health. In such cases, they may be measured standing up and an automatic adjustment will be made in data analysis. The picture below shows the procedure. It is important to ensure that the measurer and assistant measurer are in the correct position before reading the measurement.

Height will also be measured for adult women of reproductive age. The position during measurement is similar to what is required for children.

Height is measured to the nearest 0.1cm. **BEWARE OF DIGIT PREFERENCE!**







MID UPPER ARM CIRCUMFERENCE (MUAC)

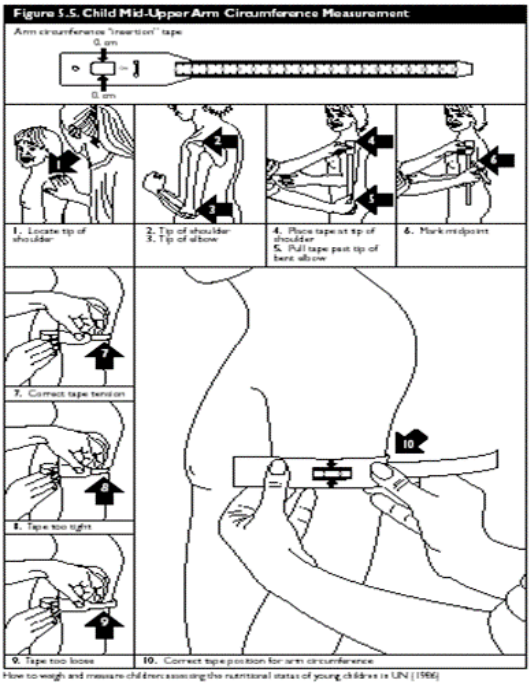
MUAC measurement begins with identification of the middle of the upper arm by measuring the mid-point from the tip of the elbow to the tip of the shoulder.

This point is then marked.

The tape is then put around the arm to read the measurement, ensuring that it is neither loose nor tight.

The measurement is read to the nearest 0.1cm.

BEWARE OF DIGIT PREFERECE!



OEDEMA

Nutritional oedema is identified as follows:

1. Apply normal thumb pressure on both feet for three seconds (count the numbers 101, 102, 103)
2. If a shallow print persists on both feet, then the child has nutritional oedema (bilateral pitting oedema).

DATA FORM FOR ANTHROPOMETRY

Before child and maternal questionnaires are completed on the tablet, the measurements will be taken and recorded on the data forms as shown below. The data forms must be submitted to the supervisor together with the tablets at the end of each day.

Date: 14/02/2020 Municipality: Baucau Cluster No: 14 Team No: 3

HH No	Name	Sex (M/F)	Date of birth (DD/MM/YYYY)	Weight (kg)	Height (cm)	Measured 1=Standing up 2=Lying down	MUAC (mm)	Oedema (y/n)	Comment (for missing data etc)
1	Carla	F	01/02/2018	12.1	89.2	2	124	n	
1	Eden	F	12/09/2016	10.9	78.1	1	134	n	
1	Amivi	F	13/12/2019	8.3	90.4	2	145	n	
2	Jose	M	01/08/2020	10.1	81.3	2	167	n	

Date: 01/02/2020 Municipality: Bobonaro Cluster No: 35 Team No: 9

HH No	Name	Age (years)	Weight (kg)	Height (cm)	MUAC (mm)	Comment (for missing data etc)
1	Paula	23	56.1	156.1	156	
1	Anna	28	68.1	146.4	178	
2	Sarah	39	45.6	179.5	214	
2	Emilia	42	49.0	140.1	231	

AGE ESTIMATION

There may be cases where there is no official age documentation. In this case, the mother/care giver may provide the date of birth of the child (DD/MM/YYYY). If she does not remember the date, the local calendar of events can be used to identify the month and year based on past events. In cases where the day cannot be recalled, 15 can be entered. This is based on the WHO/UNICEF latest guidance for anthropometric surveys. Part of the calendar of events is displayed below.

Month	Seasons	2015	2016	2017	2018	2019	2020
January	Wet season	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day	1 January New Year's Day
February	Wet season	18 February Ash Wednesday	10 February Ash Wednesday		14 February Ash Wednesday		26 February Ash Wednesday
March	Wet season		25 March Good Friday	1 March Ash Wednesday	30 March Good Friday	6 March Ash Wednesday	
April	Wet season	3 April Good Friday		14 April Good Friday		19 April Good Friday	
May	Dry season	1 May Labour Day 20 May Independence Restoration Day	1 May Labour Day 20 May Independence Restoration Day 26 May Corpus Christi	1 May Labour Day 20 May Independence Restoration Day	1 May Labour Day 20 May Independence Restoration Day 31 May Corpus Christi	1 May Labour Day 20 May Independence Restoration Day	

REFERRAL

Children below 5 years found to be malnourished during the survey will be referred to the nearest facility following the criteria below:

1. Children with WHZ below -3SD (using weight-for-length and weight-for-height tables)
2. Children with MUAC below 11.5cm
3. Children with nutritional oedema

A referral form will provided for this purpose.

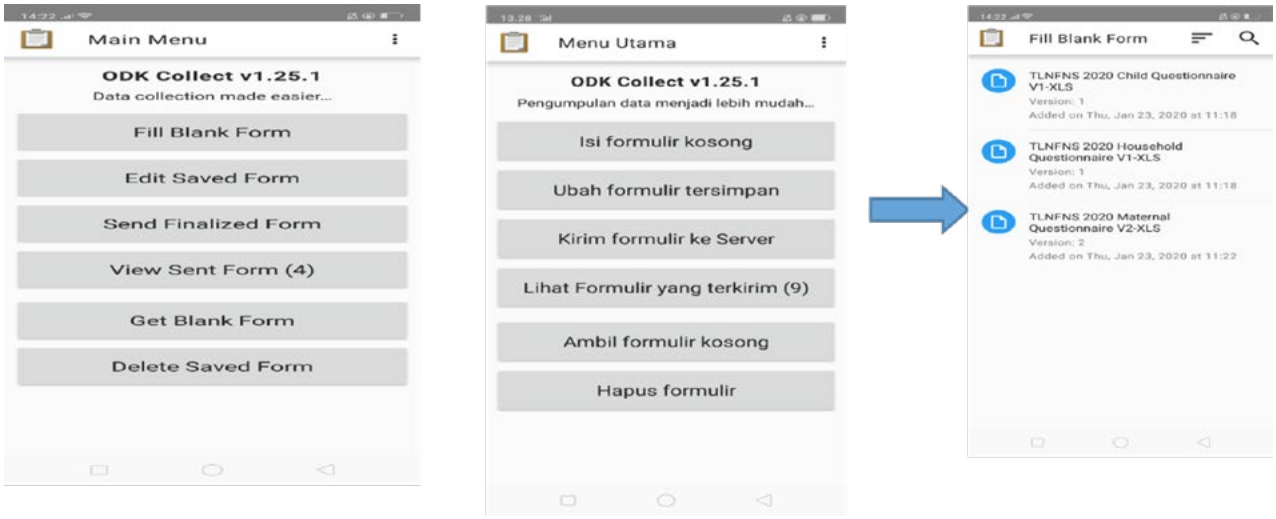
Unit 5. Mobile data collection

1. Safe-keeping, maintenance and general management

- Enumerators and interviewers must take good care of the tablets and must not abuse them by using them for anything else apart from data entry in the survey.
- Supervisors must ensure that tablets are fully charged before each day of data collection.
- As soon as you switch on the tablet, check the date and time and correct them if necessary.
- Adjust the screen brightness as bright light may deplete the battery.
- For the interviewer, make sure that location is switched on as it is required for taking the GPS.

2. Basic ODK screen

The main ODK screen is shown below. “Fill Blank Form/isi formulir kosong” is for opening a new questionnaire, and moves the screen to the list of questionnaires, from which you then make a selection. “Edit Saved Form/Ubah formulir terimpan” is for making changes to a questionnaire which has been started. “Send Finalized Form/Kirim formulir ke Server” is used for sending finalized questionnaires to the server. This should only be done by the supervisor. “View Sent Form/Lihat Formulir yang terkirim” is used for vieweing questionnaires which have been sent to the server. “Get Blank Form” is used for uploading questionnaires to the tablet, and must only be used by the supervisor only after consultation with the Survey Coordinator if necessary. “Delete Saved Form/Hapus formulir” is used for deleting a questionnaire in case it was started by mistake.

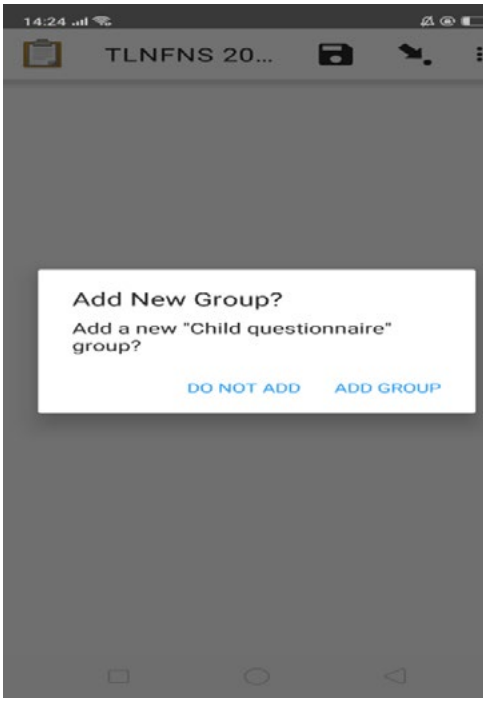


3. Important things to note at the beginning of a questionnaire:

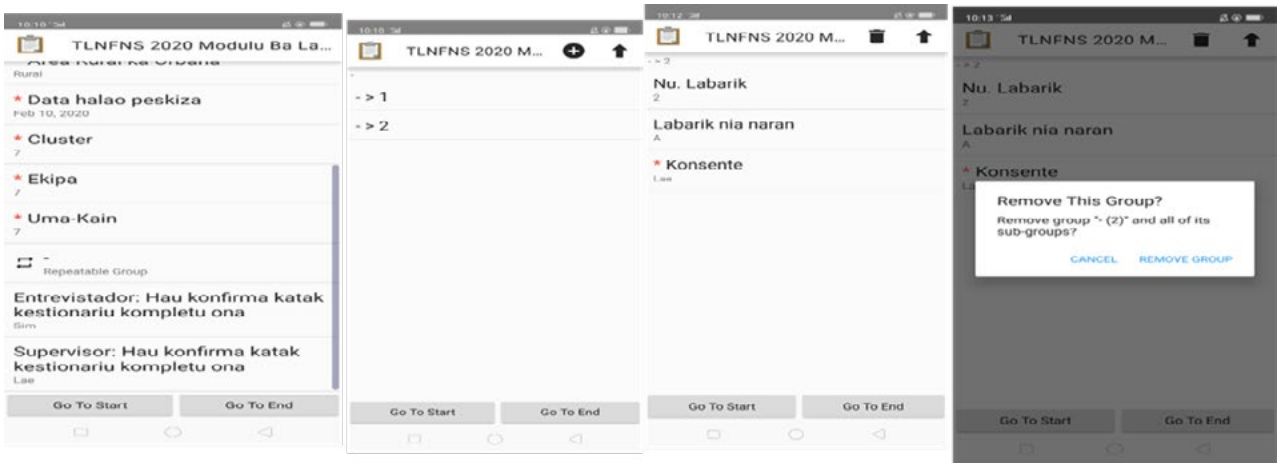
- The date of interview, municipality, urban/rural, suco, aldeia, cluster number and household number must be the correct ones.
- Do not start a questionnaire before confirming that it is relevant. For example, if there are no children below 5 years in the household, then there should be no child questionnaire.

4. Important information for individual questionnaires:

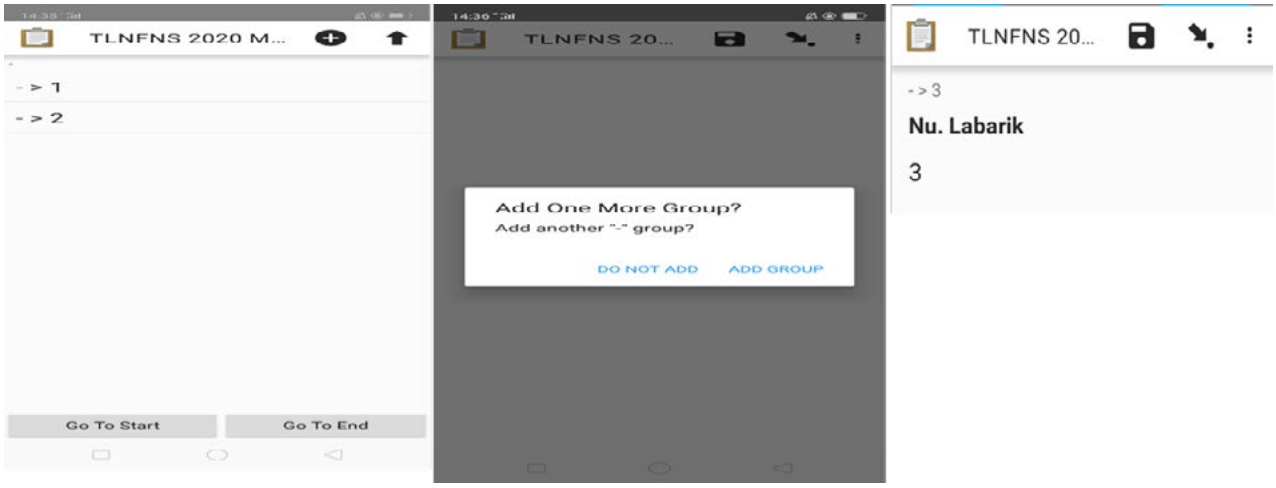
- After entering data for one child/woman, there will be a note on the screen requesting you to add a new group/Tambah grup baru. To add another child/woman, select “Add Group/Tambah Grup”.



NOTE: To remove a group which has been added by mistake, go to EDIT SAVED FORM, scroll down to the REPEATABLE GROUP, click on the ID of the record you want to delete, then remove the group by clicking 🗑

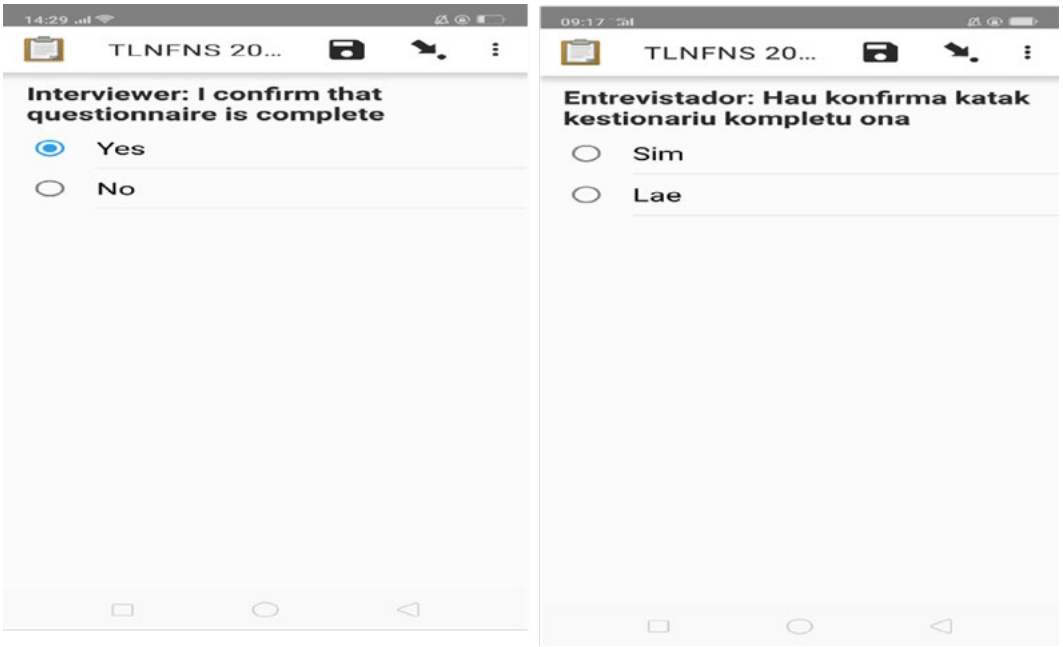


If DO NOT ADD has been selected instead of ADD GROUP, a child or women can be added later by clicking ⊕ as shown below and selecting ADD GROUP:



5. At the end of the questionnaire:

- The interviewer confirms that the questionnaire is complete.
- The supervisor will check and confirm later (this should be selected as NO until the supervisor checks and confirms)
- The interviewer/enumerator saves the questionnaire (without finalizing) and exits



6. Notes for the supervisor

Pre-submission checking

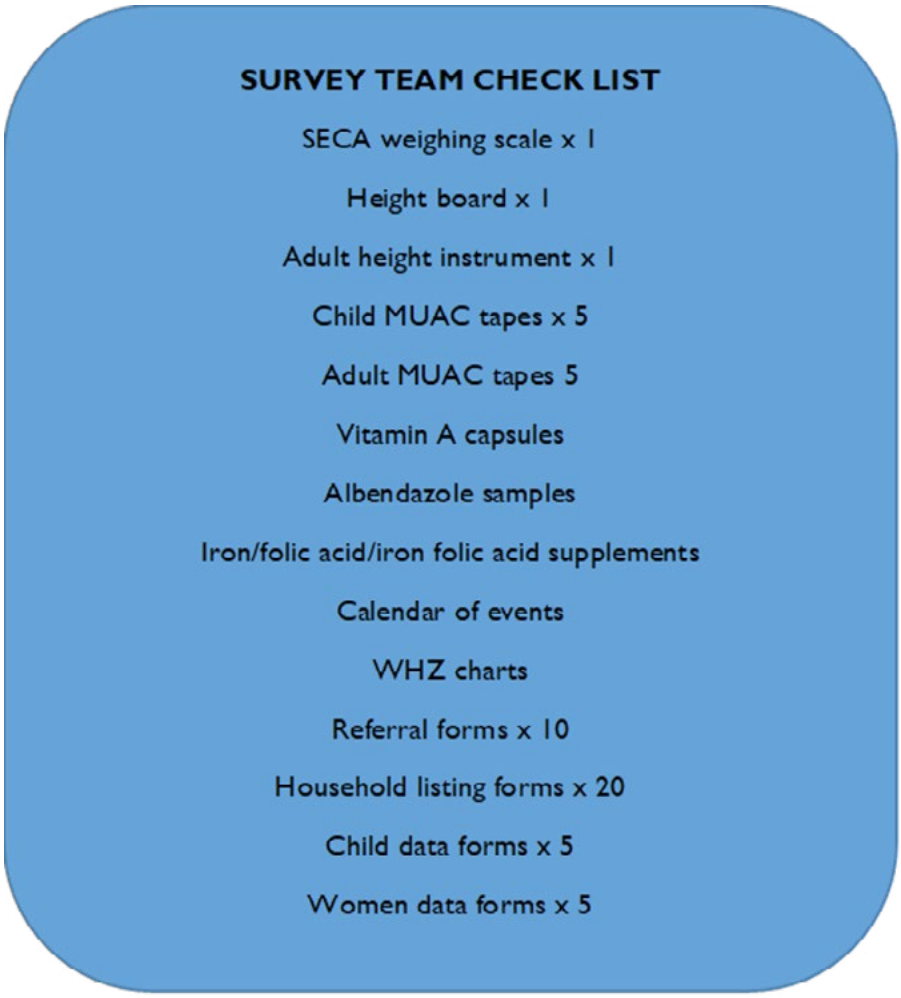
- Date of interview, Municipality, Suco, Aldeia, Cluster number must be checked for all questionnaires for consistency
- The number of people in the household must correspond to the household listing form
- Anthropometric measurements: must correspond to data form for children and women
- Check for missing data such as date of birth, weight, height, MUAC
- Check if the interviewer marked the questionnaire as complete

Questionnaire finalization and sending

- You can only send questionnaires after finalizing
- You can only questionnaires when connected to the internet
- Check and finalize all questionnaires then send them to the server at one time

Unit 6. Survey team check list

Before departure to the field every day, each survey team must check that they have the items below:



Annex 8. Field supervision checklist

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruc-tion		
A	**General**					
A1	Does the team follow the correct procedure in identifying the first household to be interviewed and subsequent households?					
A2	Do the teams introduce themselves and seek verbal consent at the beginning of the interview?					
A3	Are questions asked as they appear on the questionnaire?					
A4	Are teams clearly explaining the household definition to each household?					
A5	Does the team thank respondents at the end of each interview?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruc-tion		
B	**Age determination**					
B1	Is the team entering the exact date of birth when using the official age documentation?					
B2	Is the team using the events calendar when the mother does not remember the date of birth?					
B3	Is the team using the events calendar correctly?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruc-tion		
C	**Weight measurement**					
C1	Is the weight scale placed on a flat surface?					
C2	Are all children weighed with mini-mum clothing?					
C3	Is the child in the center of the scale, arms at side, looking straight ahead while being weighed?					
C4	Is the 2-in-1 function used properly?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruction		
D	**Height measurement**					
D1	Is the height board clipped together tightly (rear)					
D2	Are children below 2 years) measured lying down and children 2 years and above measured standing?					
D3	Is the child perfectly centered on the height board (ankles->hips->shoulders->head)?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow In-struction Properly	Follow the instruction but Need to Improve	Don't follow the Instruction		
E	**MUAC/edema**					
E1	Is the midpoint of the arm marked?					
E2	Do they surveyors talk to the women, explain what they are doing (when taking the MUAC), allow them to feel comfortable and covered aside from their left arm/shoulder?					
E3	Is edema checked for every child?					
E4	Is oedema checked correctly in both feet together?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow In-struction Properly	Follow the instruction but Need to Im-prove	Don't follow the Instruction		
F	**Materials**					
F1	Are teams keeping measurement materials out of direct sunlight and protected from the rain?					
F2	Are teams replacing MUAC tapes as soon as they become bent?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruction		
G	**Morbidity**					
G1	Are teams keeping measurement materials out of direct sunlight and protected from the rain?					
G2	Are teams replacing MUAC tapes as soon as they become bent?					

Things to Look at		Tick only one of the columns			Did supervisor explain and take initiative to correct the enumerators? (Yes/No)	Overall Comments
		Follow Instruction Properly	Follow the instruction but Need to Improve	Don't follow the Instruction		
H	**Team dynamics**					
H1	Are team members supportive and encouraging towards one another?					

UNIÃO EUROPEIA

unicef
for every child

WFP
World Food
Programme

KOICA
Korea International
Cooperation Agency