Timor-Leste Population and Housing Census 2015

Volume 12

Analytical Report on Agriculture

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Thematic Report Volume 12

Analytical Report on Agriculture and Fisheries

General Directorate of Statistics (GDS)
Food and Agriculture Organisation (FAO)
United Nations Population Fund (UNFPA)
Cover Photographs: FAO

FOREWORD

In the sixteen years since Timor-Leste gained its independence, the country has never conducted an Agricultural Census. Efforts to collect important agricultural data included integrating some key agricultural questions on the National Population and Housing Censuses (NPHCs) in 2004 and 2010. A total of ten (10) questions were included in the 2015 NPHC, addressing issues of land tenure, area under cultivation, information on agricultural sub sectors, agriculture activities, adoption of agriculture technologies including tractor, fertilizer and pesticide use and the management of farm labor.

Statistically sound data and information is fundamental in accounting for the full potential of the country and its population, understanding developmental opportunities, as well as vulnerabilities particularly in measuring a country's progress towards sustainable development and the eradication of hunger, malnutrition and poverty.

With this in mind, the Ministry of Agriculture and Fisheries (MAF), together with the Ministry of Finance plan to conduct Timor-Leste's first Agricultural Census. The results and analysis from the 2015 NPHC agriculture questions will provide the basis for designing the first Timor-Leste Agricultural Census (TLAC).

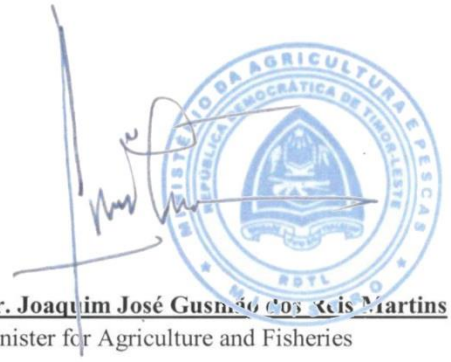
The 2015 NPHC provided an initial baseline data and information on the agriculture sector, as well as agriculture statistics for national account purposes. The result was also vital for decision making, policy formulation and programming, particularly in identifying and improving the targeting of services and on-going schemes within the agriculture sector.

This report contains detailed data from the 2015 NPHC, including commentary, graphs, map and statistical tables. Its primary focus is to highlight the key findings of the agriculture subsectors and the sector's relevance to the overall economic development of Timor-Leste. We feel confident, that with the information presented in this report, it will prove to be of great importance to all parties working towards development of the agriculture sector in Timor-Leste.

However, complete agriculture structural data can only be realized once the Agricultural Census has been conducted. By not realizing the first Agricultural Census and strengthening the structural system of collecting regular agricultural statistical data, a huge knowledge gap remains in Timor-Leste. We are hopeful that this first step in realizing our planned first Agricultural Census will trigger commitment, not only from the government, but also from both donors and development partners.

We take this opportunity to express our gratitude to the people of Timor-Leste who responded willingly and provided honest responses to the agriculture questions put to them. We would also like to acknowledge the support from our colleagues at the Ministry of Finance, particularly the General Directorate of Statistics (GDS), for allowing the inclusion of the agricultural questions in the 2015 NPHC. We thank also the Ministry of Agriculture and Fisheries (MAF) National Directorate for Research, Statistics and Geographical Information for their leadership and commitment to carry out the analysis and in publishing this report.

Our sincere appreciation also to the Food and Agriculture Organization of the United Nations (FAO) and Nations Population Fund (UNFPA) for providing generous technical and financial support. The inclusion of the agriculture module and the publication of this report would not have been possible without the support from FAO and UNFPA.



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ACKNOWLEDGEMENTS

The successful completion of the inclusion of the agriculture questions in the NPHC and the publication of this report would not have been possible without the significant contributions of many individuals, national and international organizations and numerous key stakeholders. We would like to give acknowledgements to some of these contributors, though we may not be able to acknowledge all.

To the former Ministers of Agriculture and Fisheries (H. E Mariano Assanami Sabino and H. E Estanislau Aleixo da Silva), the former Ministers and Vice Minister of Finance (H.E Emilia Pires, H.E Santina J R F Viegas Cardoso and H.E Helder Lopes), who have accorded high priority in the inclusion of the agriculture module in the 2015 PHC Timor-Leste.

To the Director General of Statistics headed by DG Antonio Freitas (former) and DG Elias dos Santos Ferreira (current) and the DGE team for their excellent leadership of the 2015 PHC exercise, and the collaboration and willingness to provide staff, especially Mr. Silvino Lopes, Mr. Lourenco Soares and Mr. Cristino Gusmao, to assist with the integration and data processing of the agricultural questions.

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Special thanks to the supervision of FAO Regional Senior Statisticians Dr. Mukesh Srivastava and Dr. Sangita Dubey, and the technical expertise provided by FAO international consultants Mr. Flavio Bolliger, Dr. Choiril Maksum, Mr. Salvator Happy Hardjo, Mr. David Brereton, Mr. Jorge Araújo de Jesus, Ms. Marrie-Ann Merza. Thanks also to FAO Timor-Leste Country Office headed by Mr. Mark Smulders and Ms. Paula Lopes da Cruz for their unwavering and continuous support in realizing this very important effort of improving the agriculture statistics in Timor-Leste. Without FAO technical and financial assistance, the successful implementation of the inclusion of the agriculture questions and the analysis would not have been possible.

Our appreciation also for the outstanding leadership of Director Octavio de Almeida and Director Claudino Ninas Nabais and the commitment from Mr. Jaime Rangel, Mr. Jose Quintao, Mr. Quintliano Belo and all the staff of the Ministry of Agriculture Department of Statistics, ALGIS and Agrometeorology, to enable the successful implementation of this project.

Finally, we would like to acknowledge the significant contribution of the Census enumerators and supervisors, without whom the information could not have been collected successfully.

EXECUTIVE SUMMARY

This report provides an analysis of the agricultural data derived from the 2015 Timor-Leste National Population and Housing Census (NPHC) (hereafter referred to as the Census), which was conducted 11th – 12th July 2015.

The Census included ten specific agriculture questions, that allowed the classification of households engaged in agriculture and its sub sectors (livestock, crops, and fisheries), level of agricultural activity, type of crops planted, types of livestock raised, land tenure, area of land under cultivation, use of agricultural technologies including tractor use, the management of farm labor and fishing and aquaculture activity. These questions were included as Questions H16 to H25 in the Part 5 Housing and household amenities section of the Census 2015 form (Annex 3).

In general, the information gathered from the agricultural questions met the objective on which to assess the progress of the agriculture sector in Timor-Leste, and for use as the basis to design the framework for the nation's first agriculture census. It provides statistically sound baseline information on the current state of the agriculture sector in Timor-Leste, including information on the characteristics of the households engaged in the sectors and its subsectors, not only to the government at the central and local levels and policy makers, but also to the development partners and other institutions in the agriculture sector.

The details of the analysis are presented in different chapters. The first chapter is an introduction that describes the current state of the agriculture sector and its contribution to the Timor-Leste economy. The second chapter discusses the objective, methodology, coverage and scope of the agriculture questions in the 2015 Census. The results from the agriculture questions and the subsector analysis are presented in chapters 3 to 7, while the final chapter discusses the main findings, conclusions and recommendations from the Census. The report concludes with an Annex, comprising statistical tables and the household questionnaire used in the 2015 Census.

Timor-Leste is composed of three administrative tiers, with the smallest unit of administration defined as the village (Suco), followed by the administrative post (Postu Administrativu) and the highest level tier of Municipality (Munisipiu). Timor-Leste's 442 Sucos are clustered within 65 administrative posts which are then grouped into 12 Municipalities and 1 Special Administrative Region.

The 2015 Census estimated a total population of 1,183,643 people and a total of 204,597 households across Timor-Leste. This represents an increase of almost 11 percent in both household and population counts compared with results from the 2010 Census.

Seventy (70) percent of the population were reported in rural areas. Women accounted for 49.2 percent of the total population and 16 percent of all households were headed by women. See Section 2.4 for definitions, including 'household' and 'head of household'.

The following table provides a summary of the key findings on population, households and the agriculture sector in the 2015 Census.

Table 1: TIMOR-LESTE AND AGRICULTURE SECTOR AT A GLANCE, 2015

Total Number of Households Enumerated	204,597 households	
Total Number of Population	1,183,643	
Male Population	601,112	
Female Population	582,531	
Median age of population	19.6 years	
	Number	**Percentage**
Households Engaged in Agriculture	183,633	89.8%
Male Headed Households Engaged in Agriculture	155,133	84.5%
Female Headed Households Engaged in Agriculture	28,500	15.5%
Household Engaged in Agriculture - Level of Agricultural Activity	**Number**	**Percentage**
Producing only for minor agriculture activity (backyard)	84,217	45.9%
Producing mainly for home consumption	94,159	51.3%
Producing mainly for sale	5,257	2.9%
Age Range of Heads of Households Engaged in Agriculture	**Number**	**Percentage**
<20 years	1,089	0.6%
20 – 29 years	15,571	8.5%
30 – 39 years	35,711	19.4%
40 – 49 years	47,633	25.9%
≥50 years	83,629	45.5%
Heads of Households Engaged in Agriculture - Level of Education Attained	**Number**	**Percentage**
Pre-Primary school	3,651	2.0%
Primary school	37,354	20.3%
Pre-Secondary school	15,824	8.6%
Secondary school	26,923	14.7%
Polytechnic / Diploma	2,705	1.5%
University	10,799	5.9%
Non-formal	2,569	1.4%
Did not attend School	83,808	45.6%
Households Engaged in Agriculture - Types of Land Tenure	**Number**	**Percentage**
Rent for a share product	13,141	7.2%
Lease/rent for fixed value	8,231	4.5%
Rent free	81,710	44.5%
Owned without *número referénsia* or certificate	49,302	26.8%
Owned *with número referénsia*	27,932	15.2%
Owned with certificate from Portuguese	10,741	5.8%
Owned with certificate from Indonesia	17,208	9.4%
Communal land	17,903	9.7%

Households Engaged in Agriculture - Farm Labour Sources	Number	Percentage
Work done by Household Members	156,073	85.0%
Hire non-Household Members	26,759	14.6%
Team work with other Households	55,754	30.4%
Livestock Rearing	**Number**	**Percentage**
Households Engaged in Livestock Rearing	178,363	87.2%
Male Headed Households Engaged in Livestock Rearing	151,018	84.7%
Female Headed Households Engaged in Livestock Rearing	27,345	15.3%
Households Rearing Livestock for Own Use	177,534	99.5%
Households Rearing Livestock to Sell	174,936	98.1%
Households rearing Livestock and Number of Livestock	**Number**	**Number of livestock**
Chickens	146,158	928 806
Pigs	146,449	419 169
Cattle/Cows	52,864	221 767
Goats	46,154	158 467
Buffaloes	26,324	128 262
Horses	26,339	50 751
Sheep	7,885	40 498
Crop Production	**Number**	**Percentage**
Households Engaged in Crop Production	162,806	79.6%
Male Headed Households Engaged in Crop Production	137,685	84.6%
Female Headed Households Engaged in Crop Production	25,121	15.4%
Households Engaged in Crop Production by Area Cultivated in past 12 months	**Number**	**Percentage**
< 1 Ha	103,371	56.3%
1–5 Ha	50,085	27.3%
>5 Ha	3,362	1.8%
No land	5,988	3.3%
Households Engaged in Crop Production by Crop Type	**Number**	**Percentage**
Rice	71,541	39.0%
Maize	142,361	77.5%
Cassava	130,670	71.2%
Sweet potato	112,425	61.2%
Vegetables	106,435	58.0%
Beans	103,034	56.1%
Coffee	76,848	41.8%
Coconut	103,334	56.3%
Permanent Fruits (Excluding Coconut)	100,716	54.8%
Temporary Fruits	100,881	54.9%

Households Engaged in Crop Production by Type of Farming Technology Used	**Number**	**Percentage**
Mulching	13,544	8.3 %
Inorganic Fertilizers	15,948	9.8%
Organic Fertilizers	22,900	14.1%
Organic Pesticides	13,347	8.2%
Chemical Pesticides	11,612	7.1%
Herbicides	11,973	7.4%
Improved Seeds	22,145	15.4%
Irrigation	12,734	7.8%
Tractors (hand and four wheeled)	32,047	19.7%
Households Engaged in Aquaculture	64,590	31.6%
Households Engaged in Fishing	9,940	4.9%
Households Planted Timber Trees	76,304	37.3%

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

ABBREVIATIONS

ALGIS	Agricultural Land Use & Geographic Information System
CSPro	Census and Survey Processing System
CTA	Chief Technical Adviser
EA	Enumeration Area
FAO	Food and Agriculture Organization of the United Nations
FAORAP	FAO Regional Office for Asia and the Pacific
GDP	Gross Domestic Product
GDS	General Directorate of Statistics
MoF	Ministry of Finance
MAF	Ministry of Agriculture and Fisheries
NGO	Non-Government Organisation
NPHC	National Population and Housing Census
RSGI	Research, Statistics and Geographic Information
SAR Oecusse	Special Administrative Region of Oecusse
SDP	Statistics Data Processing
SPSS	Statistical Package for the Social Sciences
TLAC	Timor-Leste Agriculture Census
UNFPA	United Nations Fund for Population Activities

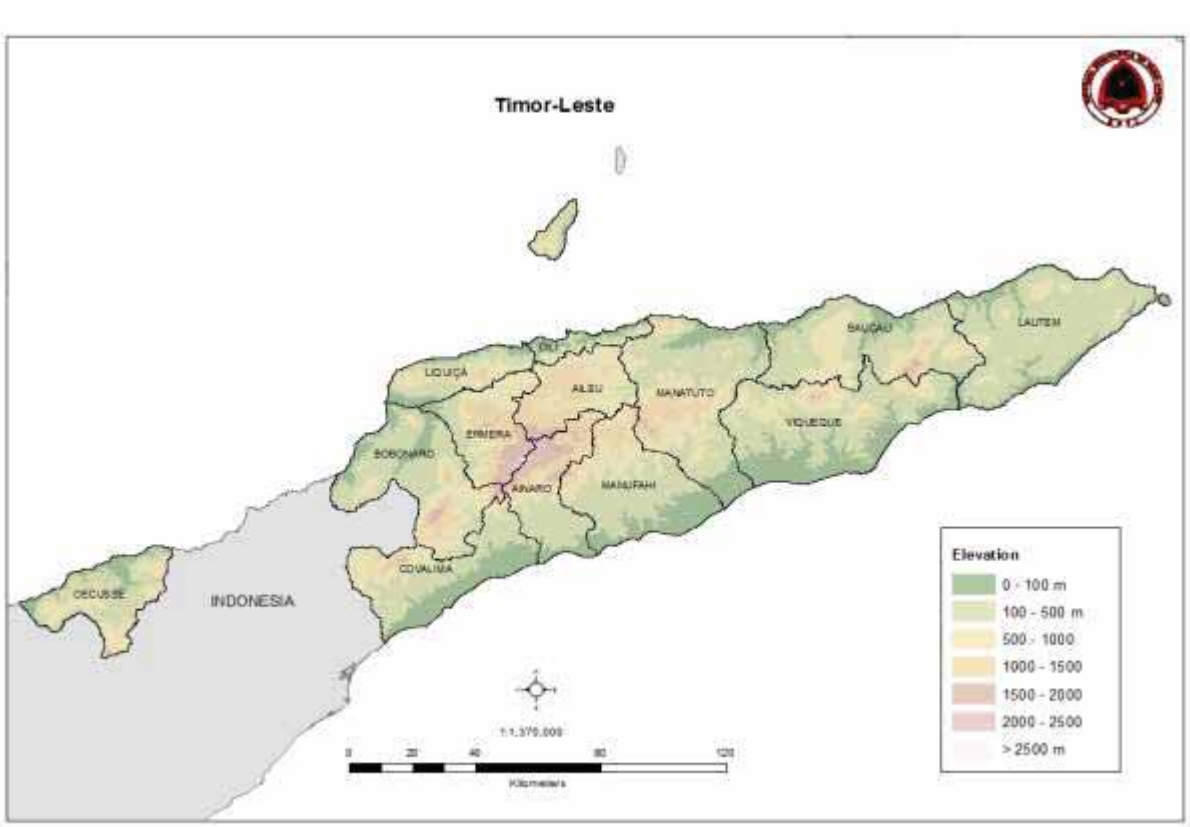
CHAPTER 1 - AN OVERVIEW OF THE AGRICULTURE SECTOR IN THE TIMOR-LESTE ECONOMY

1.1 Overview

The territory of Timor-Leste comprises the eastern half of the Island of Timor; the Atauro Island, north of Dili; the Jaco Island, on the easternmost end of the island; and Oecusse, an enclave on the northwestern side of the island, within Indonesia. The territory has an estimated population of 1,183,643 (Census 2015), distributed within an area of approximately 15,000 square kilometers. The national capital is Dili.

As far as administrative structure is concerned, Timor-Leste is split into twelve municipalities and one special administrative region: Bobonaro, Liquiçá, Díli, Baucau, Manatuto and Lautém on the north coast; Covalima, Ainaro, Manufahi and Viqueque, on the south coast; the two landlocked districts of Ermera and Aileu; and the Special Administrative Region of Oecusse, the enclave in Indonesian territory. The borders determining the municipalities have been more or less the same since the last years of Portuguese administration. Each municipality and the special administrative region comprises one capital city and various administrative posts whose number can vary between three and seven, with an average of five post per municipality/special administrative region.

Map 1: Administrative Regions, Timor-Leste



Demographically, Dili is the municipality where most of the population (23.4 percent) is concentrated, while the adjoining Manatuto Municipality registered the lowest population (3.9 percent), although its area is significantly larger than Dili's.

Timor-Leste is extremely rugged with a mountainous backbone rising to over 2,000 meters. Almost half of Timor-Leste's land area has a slope of 40 degrees or more, making it scenically beautiful but extremely difficult for cultivation and road construction. The steep terrain combined with inconsistent rainfall and stony, limestone soils present as major challenges for the nation's

farmers.

West of Baucau there are rolling highland plains important for agriculture. On the south side of Timor-Leste, the coastal flats are 20-30 kilometers wide, while to the north they are much narrower with many stretches where the mountains fall directly into the sea.

Agriculture is the main activity in Timor-Leste, providing subsistence to an estimated 80 percent of the population. It also generates an average of 90 percent of the country's exports, mainly due to coffee. Most farmers practice subsistence farming, planting and harvesting what they need for a simple life-style, collecting wild foods and traditional medicines, and the animals are very much left free to grow and reproduce. There are almost no large-scale farms except for missions.

Most Timor-Leste farmers have limited access to the technologies and practices needed for sustainable and efficient agricultural production. Subsistence and commercial producers face significant constraints, including limited access to quality inputs, low yields, high post-harvest losses, and limited access to markets.[1]

The topography of Timor-Leste consists of a narrow plain around the coast and a central mountain range dominating the country. The north coast is the driest area with some 500 millimeters (mm) of rain per annum while the highlands can have over 2000 mm. The steep slopes that dominate most of the country with heavy rainfall translate into heavy erosion once the tree cover is removed. Deforestation (due to sandal wood cutting, fires, land clearing, or goats eating the young plants) initiates a process of land destruction that is very difficult to reverse or even stop.[2]

Livestock production is almost totally managed by individual households, very few of whom are specialist livestock raisers. Traditional management systems and poor market access mean that farmers end up with more unproductive animals than is optimal.[3]

An important challenge for the food crops' sector in Timor-Leste is to sustainably increase production of the main staples. Increasing the production and acceptability of legume crops would also contribute to improving the poor nutrition of many Timorese, especially children and women. Crop yields are very low by regional standards. While a range of factors contributes to this low productivity, such as limited use of fertiliser and poor crop-production practices, the restricted availability of improved varieties with higher yields is critical.

Maize is the most abundant and accessible food crop, making it the most important source of food security in Timor-Leste. In most places maize is grown in shallow soils on steep slopes using shifting cultivation and relies on reliable and regular rainfall in the wet season. Because soils are not particularly fertile and because production occurs on steep slopes, maize is vulnerable to drought and irregular rainfall. The unpredictability of rainfall affects the timing of planting, and planting too early can cause seeds to be wasted (FAO 2003).

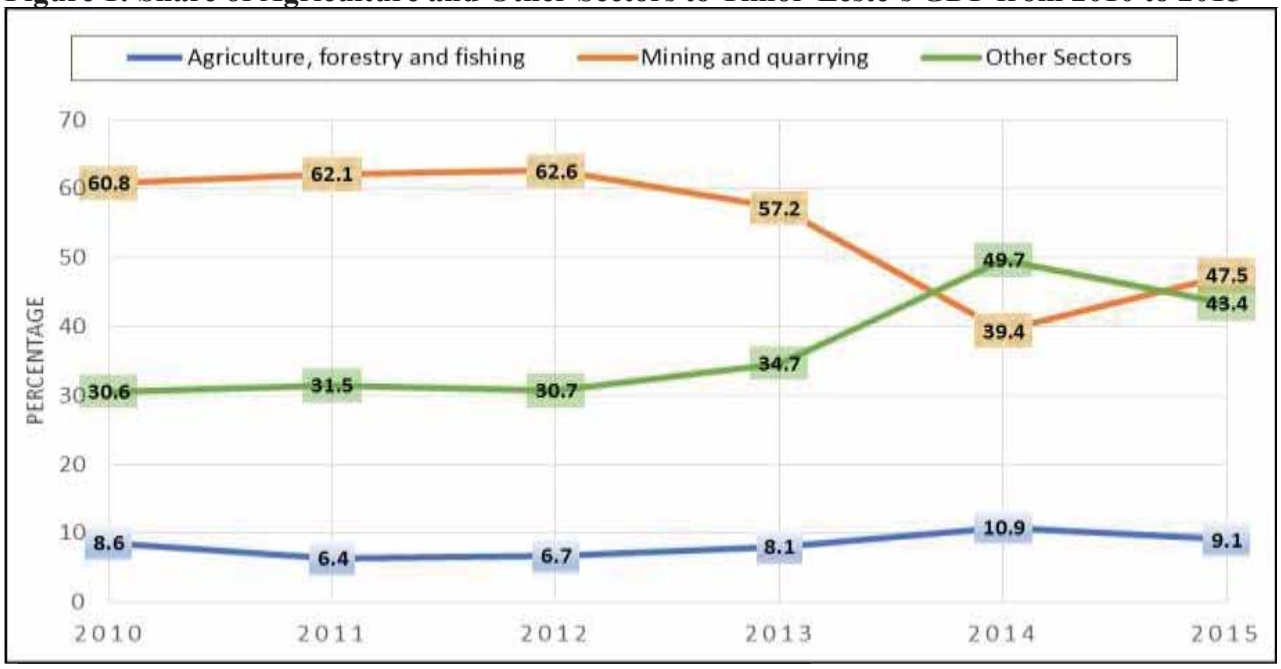
Rice is another important and staple food crop in Timor-Leste. Areas that can produce at least one rice crop per year tend to experience more food security than those that cannot (UNDP 2002). Irrigation is a critical input for rice production. However, in most places there is insufficient water in the dry season and no significant water storage systems for year-round irrigation of rice crops. The areas that produce a single crop each year, and which account for the bulk of rice production, may be sensitive to climate change, particularly if rainfall in the wet season decreases. Rice crops in flood prone areas may experience reduced production due to flooding.

[1] USAID – Developing Agricultural Communities (sourced from https://www.usaid.gov/timor-leste/project-descriptions/developing-agricultural-communities)
[2] Government of Timor-Leste Agriculture Overview (sourced from http://gov.east-timor.org/MAFF/)
[3] ACIAR – Timor-Leste Country Context (sourced from http://aciar.gov.au/country/timor-leste)

1.2 Agriculture Sector Contribution to Timor-Leste's Gross Domestic Product

Agriculture continues to be the second largest single sector in the Timor-Leste economy, after the mining and quarrying sector. In recent years its contribution to the country's Gross Domestic Product (GDP) has ranged between 6.4 percent in 2011 to 10.9 percent in 2014 and was 9.1 percent in 2015. Mining and quarrying remains the main sector contributing to Timor-Leste's total GDP, although the sector's share fell from 62.6 percent in 2012 to 39.4 percent in 2014 before improving to 47.5 percent in 2015 (Figure 1).

Figure 1: Share of Agriculture and Other Sectors to Timor-Leste's GDP from 2010 to 2015



Source: Timor-Leste's National Accounts 2010-2015, GDS, Ministry of Finance

1.3 Agriculture Exports

The total value of Timor-Leste's agricultural exports in 2016 was USD25.3 million. Coffee continues to be the predominant export commodity with exports contributing between 95 percent and 99 percent of the country's total export value in recent years. The value of coffee exported was estimated at USD10.7 million in 2015, rising to USD24 million in 2016.

Since 2013, candlenut exports have taken over from Teak wood as the second main agricultural commodity exported, with values of USD258,000 and USD97,000 in 2015 and 2016 respectively (Table 2).

Table 2: Timor-Leste Agricultural Exports, 2011 to 2016 ('000 US Dollars)

Commodities	Year											
	2011		2012		2013		2014		2015		2016	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Coffee	11,919	95.7	18,813	61.2	15,181	98.8	13,773	99.3	10,731	99.3	23,963	96.9
Teak wood	85	0.7	10,926	35.6	17	0.1	0	-	0	-	0	-
Candlenut	40	0.3	125	0.4	143	0.9	84	0.6	258	0.6	97	2.3
Sandal Wood	398	3.2	834	2.7	0	-	0	-	0	-	0	-
Aluminum	18	0.1	23	0.1	33	0.2	11	0.1	21	0.1	13	0.2
Other					600	3.7			64	0.6	1,202	4.8
Total	12,460		30,722		15,974		13,868		11,074		25,275	

Source: External Trade Statistics, Annual Reports 2016 GDS, MoF

1.4 Agricultural Employment

According to the Census results, there were 717,553 persons of working age (15 years old and over) in 2015 in Timor-Leste, of whom 402,664 (56.1 percent) were in the labour force. Of those in the labour force, 383,331 (95 percent) were employed and 19,333 (5 percent) were unemployed persons.

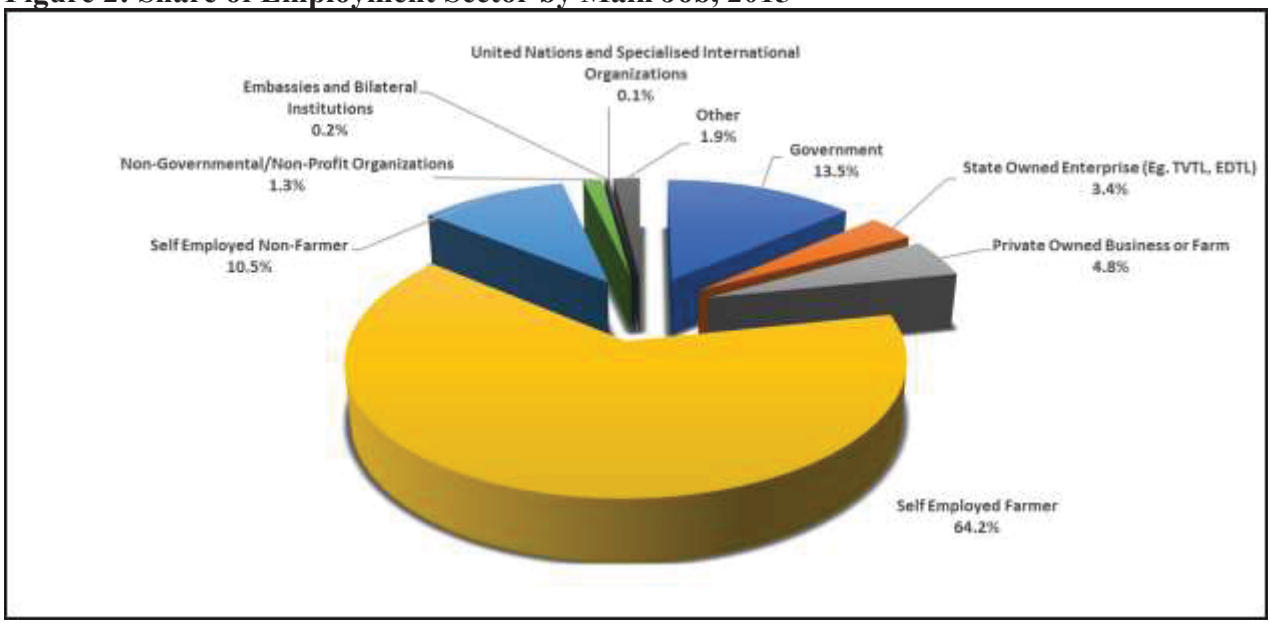
The 383,331 employed persons in 2015 compares with 341,694 estimated in the 2010 Census. This apparent growth of employment has mainly been achieved through the growth of self-employment and particularly own-account employment[4]. The share of own-account workers in total employment increased from 50.2 percent in 2010 to 57.3 percent in 2015, while the share of employees in total employment has remained essentially unchanged at about 31.1 percent in 2010 and 30.6 percent in 2015.

Employment Sector

The distribution of the employed population by sector of employment in main job for 2015 reveals that the bulk of employment was in the private sector (79 percent), mostly in the form of self-employment in farms (64 percent). Public sector employment comprised about 17 percent of total employment, mostly in government (14 percent) and a small part in State-owned enterprises (3 percent) (Figure 2).

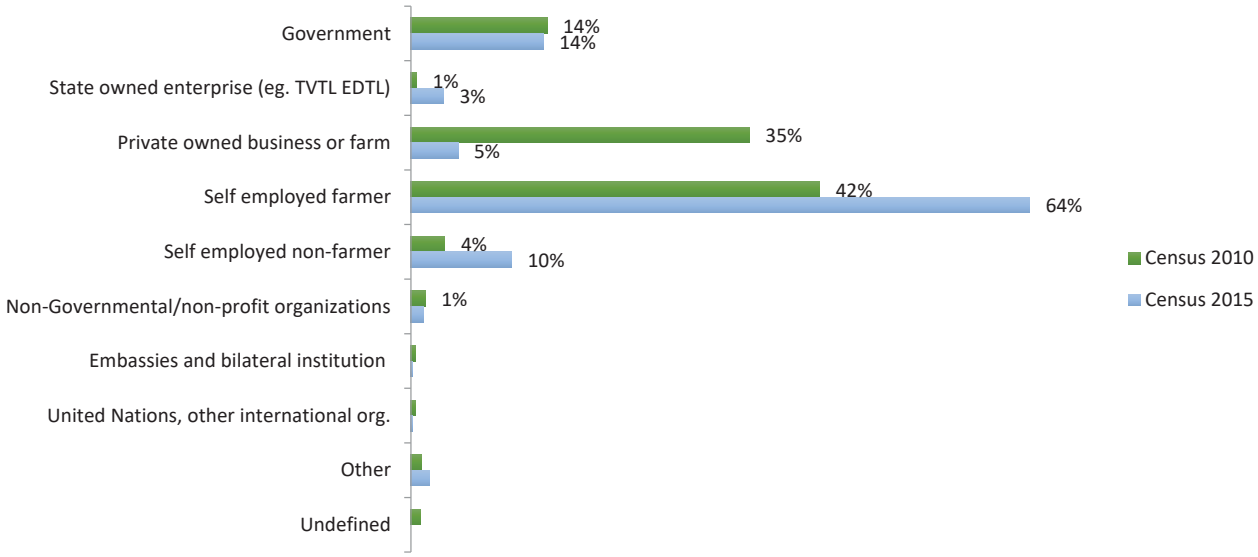
[4] **Own-account workers** are self- employed workers that have not engaged on a continuous basis any employees to **work** for them during the reference period.

Figure 2: Share of Employment Sector by Main Job, 2015



Comparing the various sectors of employment between 2010 and 2015, shows that the proportion of employed persons in private owned business or farm declined from 35 percent to 5 percent, while this was offset by a significant increase in self-employed farmers (from 42 percent to 64 percent) and self-employment non-farmers (increasing from 4 percent to 10 percent). The remaining sectors of employment were largely unchanged (Figure 3).

Figure 3: Sector of employment of employed persons at main job, 2010 and 2015



The proportion of female self-employed farmers in the female workforce in 2015 represented 66.2 percent, slightly higher than the 62.8 percent of male self-employed farmers in the male workforce.

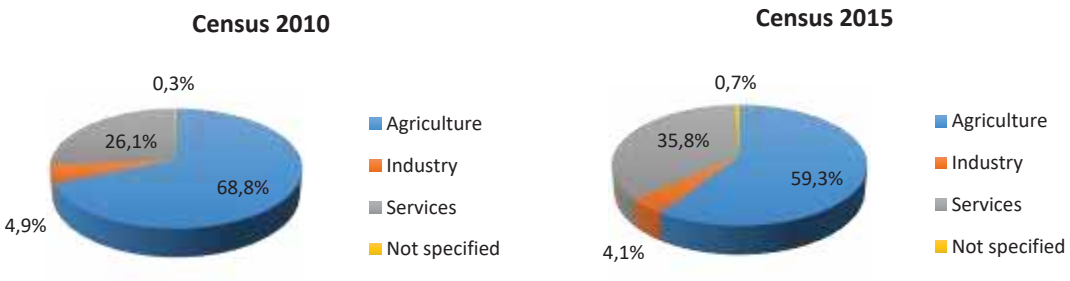
As expected, in the rural areas the proportion of self-employed farmers was higher at 77.1 percent, with the proportion of males (76.9 percent) and females (77.3 percent) more closely aligned.

Employment Industry

Industry refers to the branch of economic activity of the establishment in which an employed person worked during the reference period. Figure 4 shows the distribution of employed persons by broad branch of economic activity in the main job, with the left chart referring to data from the Census 2010 and the right panel to chart from the Census 2015.

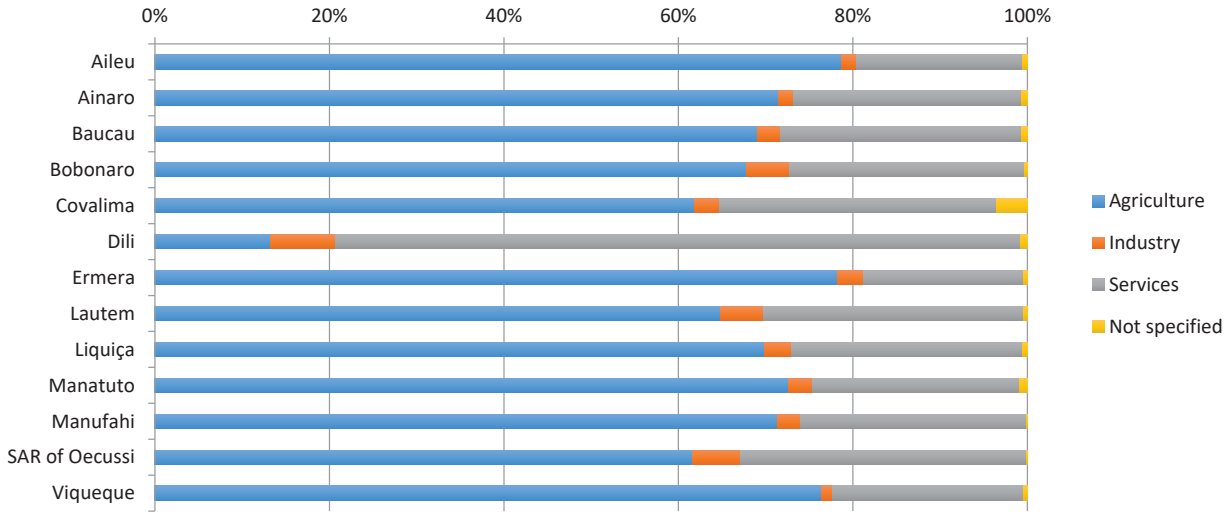
There has been a net relative decline of agriculture employment in favor of services during the period. Overall, the share of agriculture employment in total employment decreased from 68.8 percent in 2010 to 59.3 percent in 2015. Correspondingly, the share of employment in services increased from 26.1 percent in 2010 to 35.9 percent in 2015. Industrial employment remained almost unchanged at 4.9 percent in 2010 and 4.1 percent in 2015.

Figure 4: Broad branch of economic activity of employed persons, 2010 and 2015



The composition of employment by broad branch of economic activity among the municipalities shows a striking difference between Dili and the other municipalities (Figure 5). The share of agricultural employment in total employment in Dili is about 13.2 percent as opposed to between 60 percent and 80 percent in all the other municipalities and Special Administrative Region of Oecusse.

Figure 5: Composition of employment by broad branch of economic activity by Municipality, 2015



1.5 Timor-Leste Agriculture Focus

The Ministry of Agriculture and Fisheries (MAF) Timor-Leste Strategic Plan 2014-2020, was implemented to contribute to the achievement of the Timor-Leste Strategic Development Plan

2011-2030, which sets out the priorities identified to promote economic growth in rural areas and to advance the reduction of poverty and to provide better food security.

MAF is currently working on strategies that include:

a) a significant investment in rehabilitating and extending irrigation systems and improving water storage to create additional irrigated rice fields;

b) use of high yielding seed varieties;

c) use of new and improved crop production systems; and

d) establishment on-farm grain storage.

In relation to improving the production of fruits and high-value vegetables, MAF will:

a) link the supply of high-value fruits to markets; and

b) support large scale vegetable production that will cater the needs of urban centers.

The Ministry is also targeting its attention to increase its export trade through the intensive production of cash crops, to meet demand. With this, the government will aim to: increase awareness and facilitate branding; encourage the development of innovative, niche, high-grade organic coffee; encourage the development of value-added products; expand the candlenut cropping; and encourage intercropping between coconut and cocoa and between coffee and vanilla.

For the livestock component of the Ministry's Strategic Plan, the focus will be on:

a) developing special pig and poultry production systems for smallholders, particularly to maximize the use of surplus maize;
b) establishing a livestock waste processing for organic fertilizer production;
c) expanding the processing of livestock products;
d) providing more access to financial institutions and cooperation;
e) improving the Ministry's laboratory and establishing an animal medical center; and
f) establishment of fodder processing.

MAF has also strong intentions to promote the Fishery subsector through the creation of centers on the use of fisheries electronic control systems; improving the facilities in processing, storing and transportation of seafood products; improving market links and transport systems; empowering fishers and the fish farming community; and conduct feasibility researches on prawn, abalone, crab and oyster farming.

Furthermore, a sustainable forestry and wood products will be developed through the improvement of special forestry legislation backed by improved land tenure arrangements, providing technical and management training for forestry workers, and the reforestation of all degraded areas.

The MAF Strategic Plan strongly emphasizes that for a sustainable development of the agricultural sector, it is important that views from all stakeholders should be integrated, particularly in the implementation of the strategies. The implementation should also take into consideration the different circumstances in the municipalities to be to have better links with other related sectors.

CHAPTER 2 - AGRICULTURAL QUESTIONS IN THE 2015 NPHC

The 2015 Timor-Leste National Population and Housing Census (NPHC) was the third occurrence that specific agricultural questions were included in the Household Questionnaire. With the increasing government commitment to improve the availability of agricultural statistics for better policy planning and development and fiscal allocations to achieve food security and poverty reduction, the Census included ten specific agricultural questions for households, as described in section 2.3.

This chapter presents details on the objectives, data collection methodology, coverage and scope, definitions and concepts, data processing and data analysis, data limitations and caution, and timeframes for the Census agricultural component.

2.1 Objectives

The objectives for collecting agricultural data in the 2015 Census were primarily to:

- Provide data on the demographic structure of agricultural households and their key agricultural activities;
- Provide frames from which statistical units as samples can be drawn for the first agricultural census and future sample surveys or studies of certain aspects on agricultural activities and in greater depth; and
- Provide methodological alternatives and designs for future agricultural censuses.

2.2 Methodology of Data Collection

In conducting the 2015 Census, the country was divided into Enumeration Areas (EA), the smallest statistical unit in which complete enumeration of all households was conducted. Enumerators used the Interview method to collect agricultural data from the household respondent. To avoid double-counting or omission in the enumeration of households, enumerators used maps of their respective EAs to understand the coverage area for their task.

2.3 Coverage and Scope

The Coverage of the census was the whole of Timor-Leste, with a total of 2,350 Enumeration Areas identified, including 416 EAs in the urban areas and 1,934 EAs in the rural areas. Each EA had between 75 and 100 households for enumeration.

The scope of the agricultural questions covered all subsectors of agriculture in which households were engaged, including crops production activities, livestock rearing, aquaculture and fishing activities and well as the growing of timber trees.

The Census included ten specific agriculture-related questions, that allowed the classification of households engaged in agriculture and its sub sectors (livestock, crops, and fisheries), including:

1) livestock rearing and crop production activity;
2) the level of agricultural activity in the last 12 months;
3) the type and number of livestock currently owned;
4) the types of crops cultivated in the last 12 months;
5) tractor use and sources in the last 12 months;
6) farming technologies (inputs) used during the last 12 months;
7) area cultivated during the last 12 months;
8) land tenure;

9) Fisheries – whether engaged in aquaculture or fishing during the last 12 months; and
10) Farm labor management.

A copy of the 2015 Census form is provided in Annex 3 to this report.

2.4 Definitions and Concepts

- **A household** consists of one or more persons who usually share their living quarters and share their principal meals. Residence in the same quarters and sharing of principal meals are two necessary conditions for persons to be members of the same household. In common usage, a household consists of "all persons living and eating together from the same cooking pot".
- **Head of Household** was the household member who generally undertakes the key decisions relating to the household and who is recognized as such by all household members. If the usual household head was not present on the census night, then the next most responsible member assumed the head of household position for the purpose of the Census. The head of household may be female or male.
- **Household Engaged in Agriculture** was defined as a household if any member of the household did livestock rearing for own use or for selling, or operated land for the purposes of crop production in the main or second season during the previous 12 months up to Census night (i.e. covering the period from 12th July 2014 to 11th July 2015).
- **Household Engaged in Livestock Rearing** was defined as such if any member of the household reared livestock for own use or for sales during the previous 12 months. Livestock refers to all animals and poultry kept or reared in mainly for agricultural purposes. This includes cattle/cows, buffaloes, sheep, goats, pigs and horses, as well as poultry (chicken, ducks), bees and silkworms. Domestic animals, such as cats and dogs, were excluded. In the enumeration of livestock numbers, all animals currently owned by the households on the date of Census enumeration were counted. There was no minimum livestock threshold for this classification.
- **Household Engaged in Crop Production** was defined as a household if any member of household operated land for the purpose of crop production in the main or second season during the last 12 months. As there are two seasons to produce maize and rice, the main season for maize cultivation usually starts from October with harvest occurring during the following April, while cultivation in the main rice season starts from December with harvesting usually completed during the month of August. The second season starts right after the harvest of the main season.
- **Household Engaged in Fisheries** was defined as such if any member of the household engaged in aquaculture and/or fishing activities during the last 12 months. There was no minimum threshold for this classification.
- **Household Engaged in Aquaculture Activity** was defined as such if any household member was engaged in commercial aquaculture and related activities during the last 12 months. Aquaculture was defined as the farming of aquatic organisms such as fish, crustaceans, mollusks and plants. Farming refers to some intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators. Aquaculture normally involves rearing of organisms from fry, spat or juveniles. Aquaculture may be carried out in ponds, paddy fields, lagoons, estuaries, irrigation canals or the sea, using structures such as cages and tanks. Aquaculture activity may be undertaken in either freshwater or saltwater.
- **Household Engaged in Fishing Activity** was defined as such if any member of household was engaged in fishing and related activities during the 12 months, including commercial fishing. Fishing is the activity of trying to catch fish. Fish are normally caught in the wild. Techniques for catching fish include hand, gathering, spearing, netting, angling and

trapping. The term fishing may be applied to catching other aquatic animals such as mollusks, cephalopods, crustaceans, and echinoderms, but does not include catching farmed fish.

- **Household Planted Timber Trees** was defined as any household that grows forest trees that are classified as timber trees, including mahogany, teak, sandalwood, red wood, and other similar tree types during the last 12 months.

2.5 Data Processing and Data Analysis

The General Directorate of Statistics (GDS) was responsible for the enumeration, coding, editing, verification and processing of all household questionnaires collected during the Census. The data validation rules, tabulation plans, and instructions were prepared by an International Statistics Consultant from the Food and Agriculture Organisation of the United Nations (FAO) and provided to GDS as the basis for processing the data. The validation rules were used to provide certain well-defined guarantees on the accuracy and consistency of the data collected from the field.

The data items were encoded and processed using the Census and Survey Processing System (CSPro) software package. Data analysis was undertaken using the Statistical Package for Social Sciences (SPSS) software.

2.6 Limitations of Data and Caution on Use

The agricultural questions in the 2015 Census explicitly covered the three agricultural sub-sectors of livestock, crops and fisheries. The forestry or timber tree sub-sector was indirectly covered in the crop cultivation component of the Census questionnaire.

As with data collected in any census and survey, data reported here from the National Population and Housing Census 2015 are subject to different forms of measurement errors, including coverage errors, non-response errors, response errors and other errors such as coding and data entry errors. Such errors can arise out of a lack of understanding of concepts by field enumerators, response fatigue, recall lapse, reporting bias, measurement errors, and data editing and processing errors. The 2015 Census is no exception to this.

<u>Coverage errors</u>

Coverage errors may occur due to difficulties in reaching certain geographical areas or confusion in delineating the boundary of some enumeration areas. It may also occur due to failure in identifying certain eligible persons in the household, for example, lodgers, domestic workers or other non-family members of the household. It can also happen due to incorrect data on personal characteristics, for example, if the age of the person is incorrectly recorded as below the age set for measuring labor force characteristics (under-coverage error), or vice versa the age is incorrectly recorded as above the threshold age (over-coverage error).

Non-response errors

Non-response errors occur due to the failure to obtain the required information from the household (unit non-response) or failure to obtain some items of information for the household (item non-response). Unit non-response may occur due to inaccessibility of certain dwellings or because no one was at home during the repeated visits of the census enumerator, or for other reasons. Unit non-response tends to be single-person households, as they are more likely to be missed in census enumerations.

Response errors

Response errors can occur due to a variety of reasons, including unclear questioning by the interviewer, misunderstanding of questions or the provision of wrong answers by the respondent. They can also occur due to memory failures, for example, forgetting to report an event or misreporting the timing of its occurrence, and thus reporting incorrect duration of the event.

There were some specific limitations with the agriculture-related data collected in the Census, of which data users should be aware:

- Many of the agricultural questions referred to the previous 12 months as the reference period, which, for some farmers, may have been difficult to recall and report accurately, particularly when the main focus of the census was not on agriculture. In agricultural censuses, the livestock population is usually counted on a specific date. In this Census, the "livestock rearing" activity was assessed during the last 12 months but the "livestock population" was collected "currently", i.e. at the date of enumeration.
- Due to a lack of farmer (or household head) knowledge of their "actual physical land area cultivated", and the absence of objective measurements, it was not possible to generate precise estimates of agricultural land or area under different crops. The information collected on land parcel size was by range, i.e. less than one hectare, one hectare to less than five hectares, and over five hectares, which did not allow estimation of total land area under cultivation. Similarly, among the growers of specific crops, it was difficult to distinguish between the scales of their operation. While the Census data do provide an indication of the scale and livelihood dependence on certain crops, but do not lend themselves to be used for estimation of crop production.
- Analysis of the Census agricultural data identified some inadequacies in the Census questionnaire which have made extrapolation of the data difficult. One example is that respondent households undertaking crop production were questioned on their use of either a hand tractor or four-wheeled tractor and the source (or ownership) of any tractor used. Unfortunately, the questionnaire did not simultaneously differentiate between the tractor type and source which made data analysis difficult where households reported use of both tractor types and from multiple sources.
- There currently does not exist any "national threshold" for defining a farming household based on the scale of agricultural activity, for inclusion or exclusion in the survey. Such a definition will need to be developed before an agricultural census can be conducted. In the absence of this definition in the Census, it is possible that some enumerators may have included some households with micro-level agricultural activity like a small kitchen garden, while others may have not. Answers to questions on engagement in activities of cropping, livestock rearing, and fisheries used a binary choice of either "YES" and "NO" and provide indicative results only and not precise numbers. In these given circumstances, statistical technicians are not able to determine any accurate measure of "coverage" error.
- It should be noted that concerns have been identified with the fisheries data previously released by the GDS, specifically in relation to the number of households reportedly engaged in aquaculture activities. Some fisheries experts have advised that they believe

these numbers are overstated, however it is not possible to confirm the validity of this opinion.

- It is also not possible to provide a precise measure of the quality of data collected through the Census agricultural (and fisheries) questions. The Post-Enumeration Survey, carried out following the main Census enumeration, was limited to the population demographic questions only and did not include the agriculture-specific questions.
- Despite the known and unknown limitations, the data presented in this report can indeed serve a very useful purpose in agriculture policy-making, pending a more detailed and scientifically designed Agricultural Census, focusing on crop, livestock, fish, forest and rural activities is carried out in the country. An Agricultural Census will also entail objective measurement of crop fields to obtain precise measurements of agricultural land and crop area under cultivation, as well as more specific land tenure information. The data reported here provides a basis to support the designing of a future Agricultural Census, which can produce more detailed and technically sound results on various aspects of the agricultural sector in Timor-Leste. In addition, it provides a sound basis for building a Master Sample Frame to support a reliable and sustainable sample survey system to deliver relevant and timely statistics into the future.

2.7 Schedule of Activities

Although the 2015 Census night was 11th to 12th July 2015, enumeration in some Sucos was not completed until 25th July 2015 (two weeks later).

The Census agricultural questions that related to activity during the last twelve (12) months refer to the 12-month period between the 12th July 2014 and 11th July 2015 (Census night).

The ‘current’ ownership of livestock question related to the number of livestock owned on Census night, i.e. 11th July 2015.

CHAPTER 3 - STRUCTURE OF HOUSEHOLDS ENGAGED IN AGRICULTURE

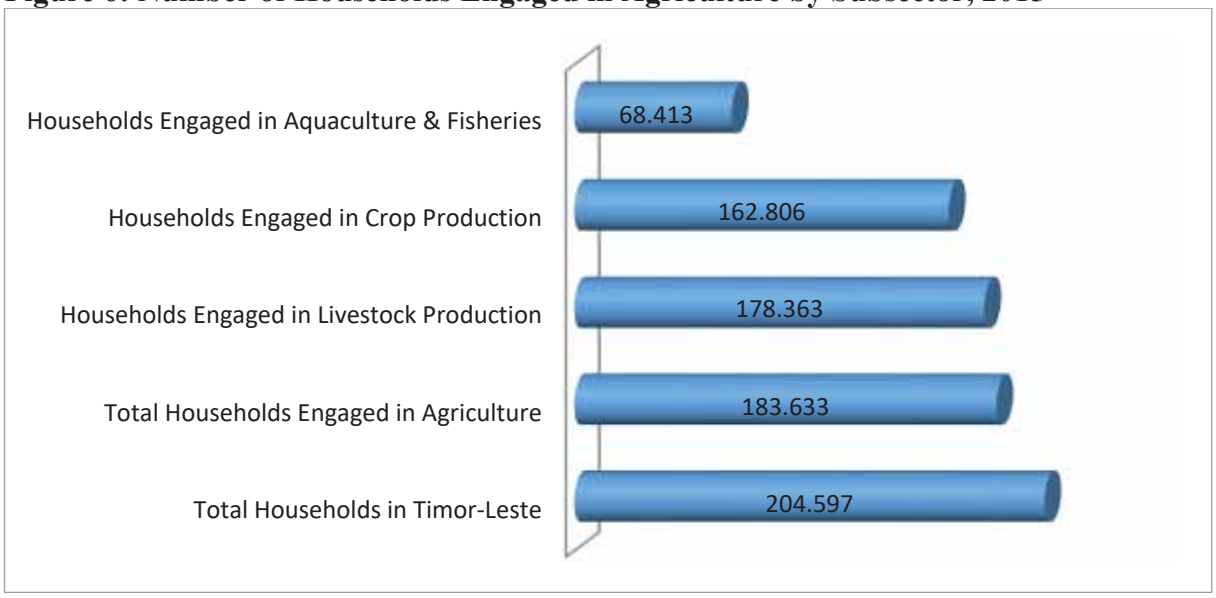
This chapter summarizes the key Census findings about the structure of households engaged in agriculture in Timor-Leste in 2015, as defined in section 2.4 above. The chapter also includes discussion on the demographics of heads of household, household level of agriculture activities, agriculture land tenure arrangements, area of cultivated land, farming technologies (or inputs) used, and the management of farm labor in agriculture households.

3.1 Households Engaged in Agriculture and Fisheries

The 2015 Census revealed that of the total 204,597 households enumerated in Timor-Leste, 183,633 households (90 percent) were currently engaged in agricultural activities, either livestock rearing or crop production. Of the households engaged in agricultural activities, 178,363 households (87 percent) were rearing livestock and 162,806 households (80 percent) were producing crops.

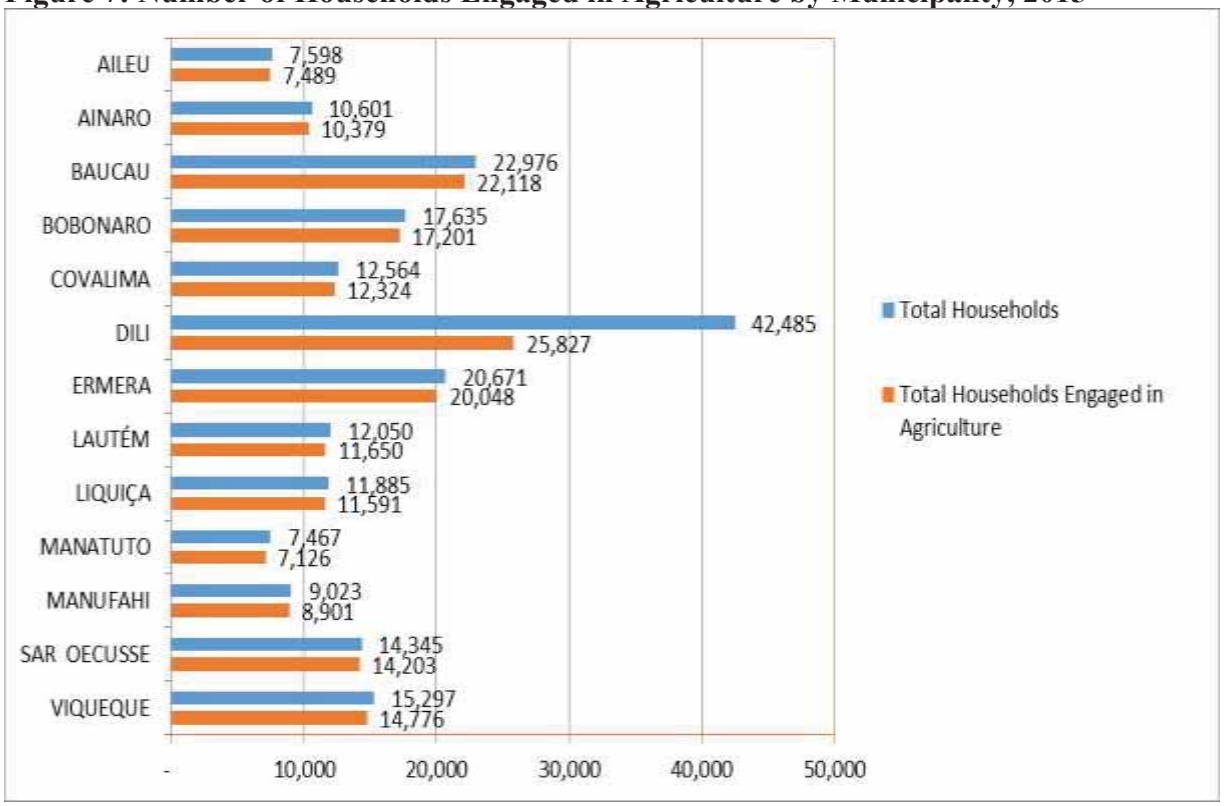
The Census also reported that 68,413 households (33 percent) of all Timor-Leste households were engaged in some aquaculture or fishing activities in the 12 months prior to the Census, with the majority of these households also undertaking livestock rearing or crop production activities (Figure 6).

Figure 6: Number of Households Engaged in Agriculture by Subsector, 2015



Most of the 20,964 households that did not grow any crops or engage in livestock rearing were located in the Dili municipality, where 25,827 households (61 percent) of the total 42,485 Dili households were involved in some form of agricultural activity. In all other municipalities and the Special Administrative Region of Oecusse, more than 97 percent of all households were engaged in agriculture to some extent (Figure 7).

Figure 7: Number of Households Engaged in Agriculture by Municipality, 2015



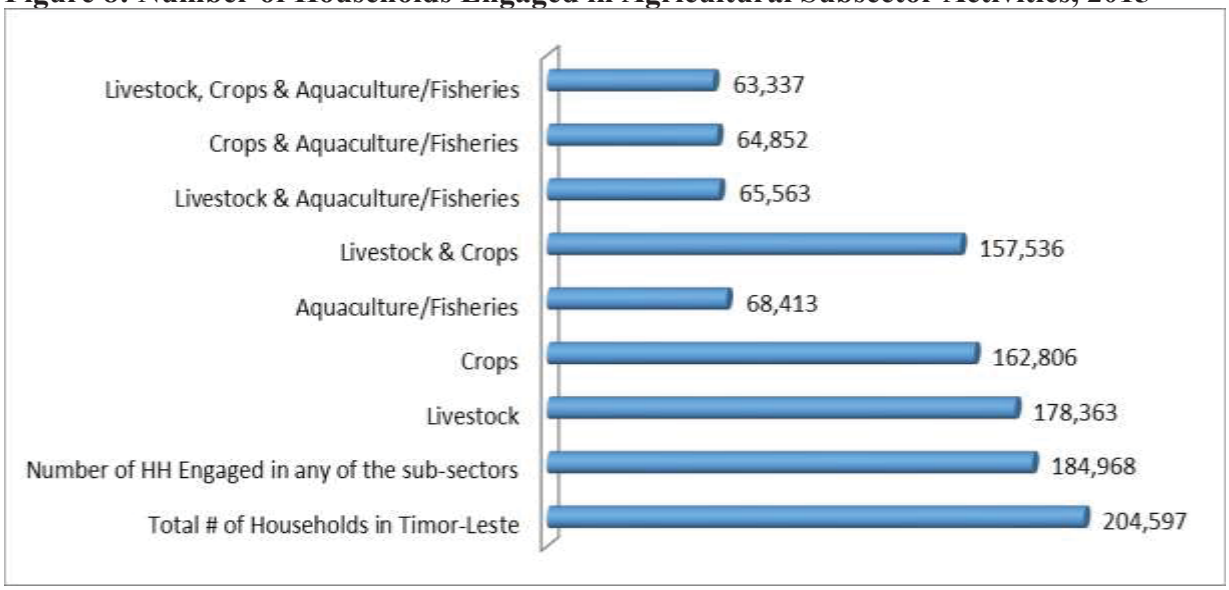
Approximately 30 percent (55,881) of agricultural households owned land with a certificate or *numero referénsia*, 27 percent (49,302 households) owned land without a certificate, 12 percent (21,372 households) rented or leased land, and a further 10 percent (17,903 households) accessed communal land. A total of 81,710 households (44 percent) had access to land rent free (Annex Table 52).

3.2 Subsector Activities

While the Census identified that raising livestock and crop production were the main agricultural activities in Timor-Leste, it also found that many households were engaged in mixed farming activities, i.e. in at least two of the three sub-sectors of livestock rearing, crop production, and aquaculture or fishing. Almost 77 percent of all households were engaged in both crop production and livestock rearing activities, while almost one-third of households reported engaging in all three sub-sectors of crop production, livestock and fisheries (Figure 8).

The municipalities of Baucau, Bobonaro and Viqueque reported the largest number of households engaged in multiple sub-sectors, while the municipalities of Baucau, Bobonaro and Ermera had the highest number of households that were engaged in livestock and cropping activities (Annex Table 2).

Figure 8: Number of Households Engaged in Agricultural Subsector Activities, 2015



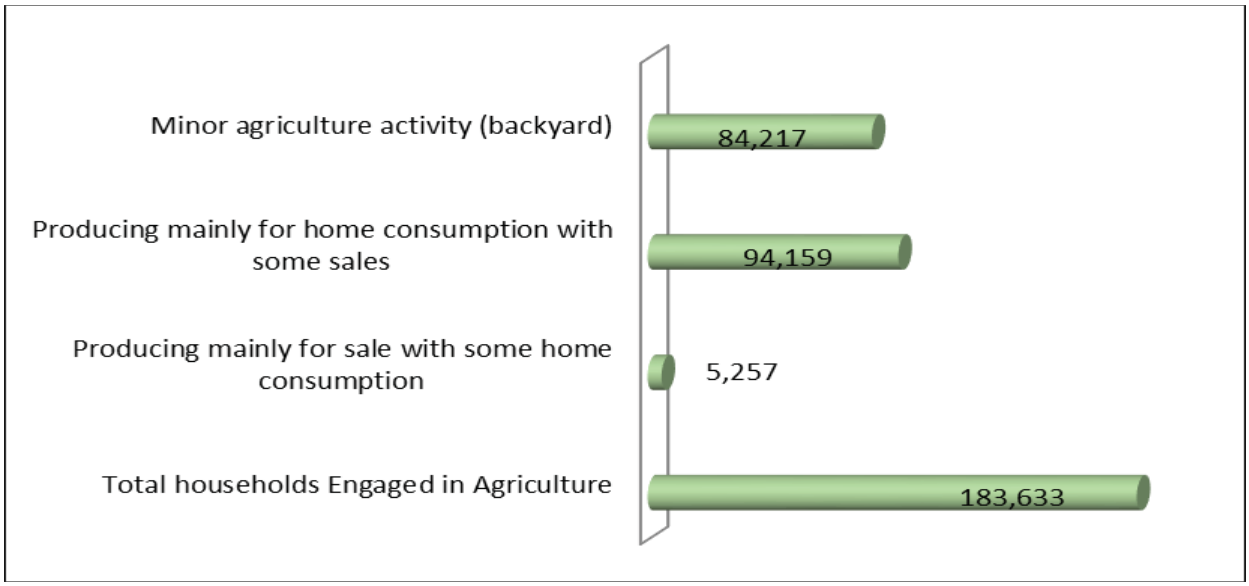
3.3 Level of Agricultural Activities

The level of agricultural activity is a broad indicator of the extent to which agricultural households are participating in the market economy. The Census enumerated three main types of agricultural household activity levels, namely: minor agricultural activity (backyard); producing mainly for home consumption with some sales; and producing mainly for sale with some home consumption.

Of the 183,633 households engaged in agricultural activity: 84,217 households (46 percent) were determined to be engaged in minor agricultural activities (backyard production); 94,159 households (51 percent) were producing mainly for home consumption with some sales; and only 5,257 households (3 percent) were producing mainly for sales (Figure 9).

Unfortunately, comparable data on the level of agricultural activity were not collected in the previous 2010 Census, therefore it is not possible to compare whether there has been any significant change in the scale of activity in the intervening five years.

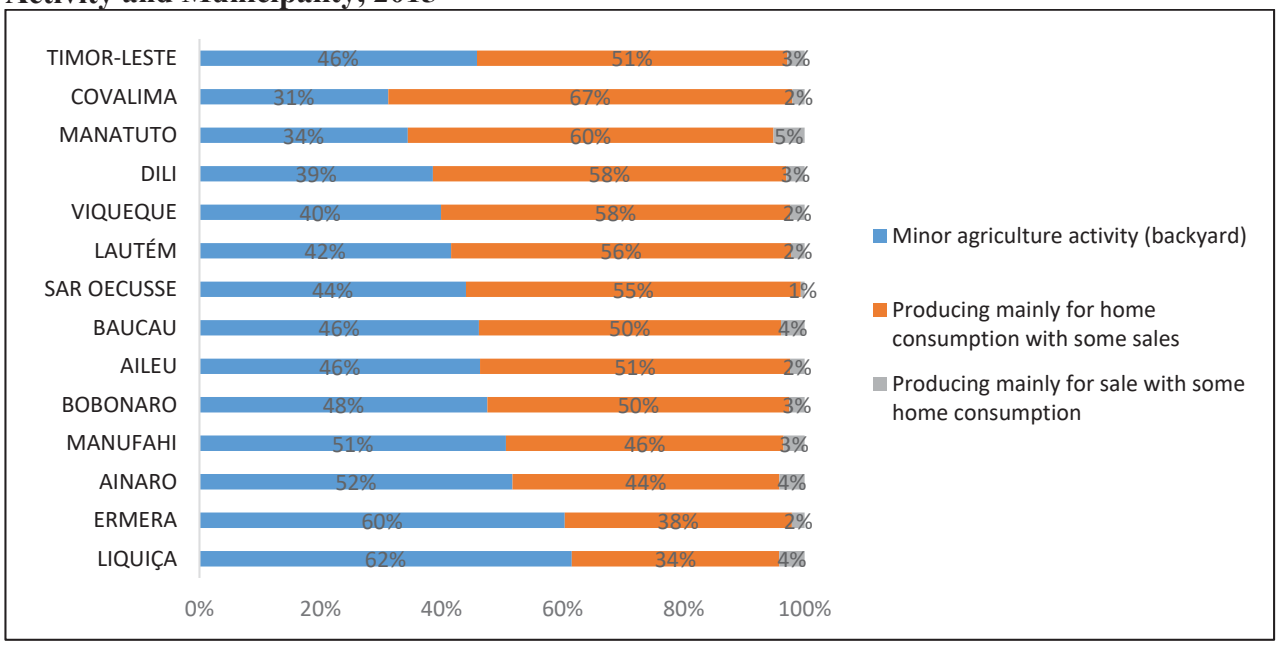
Figure 9: Number of Households Engaged in Agriculture by Level of Agricultural Activity, 2015



The highest proportion of agricultural households with minor agricultural activity (backyard production) were recorded in the municipalities of Liquiça (62 percent) and Ermera (60 percent). Covalima (31 percent) and Manatuto (34 percent) municipalities reported the lowest proportion of agricultural households with minor agricultural activity (backyard) and the highest proportion of households producing mainly for home consumption with some sales at 67 percent and 60 percent respectively.

The municipalities reporting the highest proportion of households producing mainly for sale were Manatuto (5 percent), Ainaro (4 percent), Baucau (4 percent) and Liquiça (4 percent) (Figure 10).

Figure 10: Percentage of Households Engaged in Agriculture by Level of Agricultural Activity and Municipality, 2015



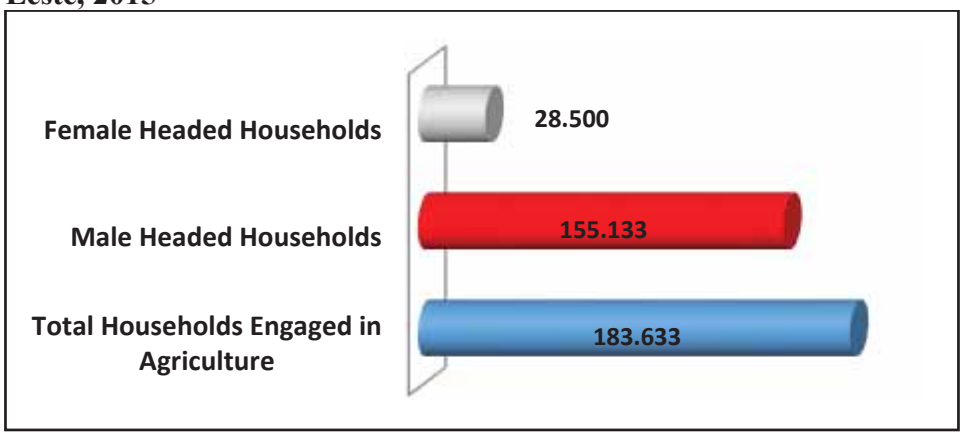
3.4 Heads of Household Demography

This section presents the demographics of the heads of households engaging in agriculture in Timor-Leste as reported in the Census. The analysis includes sex, age, education, as well as the number of household members.

3.4.1 Sex of Head of Household

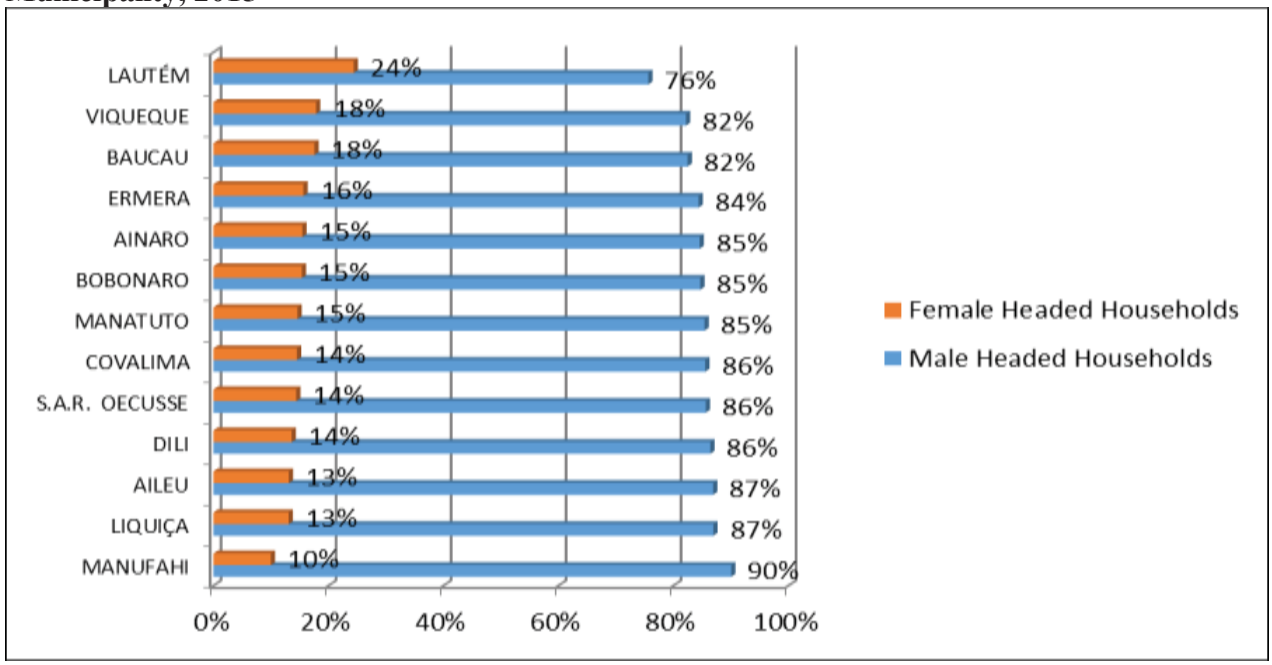
Of the 183,633 households engaged in agriculture, 155,133 households (84.5 percent) were headed by males and 28,500 households (15.5 percent) by females (Figure 11).

Figure 11: Number of Households Engaged in Agriculture by Sex of Household Head, Timor-Leste, 2015



The highest proportions of female-headed households engaged in agriculture were reported in the municipalities of Lautém (24 percent), Viqueque and Baucau (both 18 percent), while only 10 percent of agricultural households in Manufahi Municipality were headed by females (Figure 12).

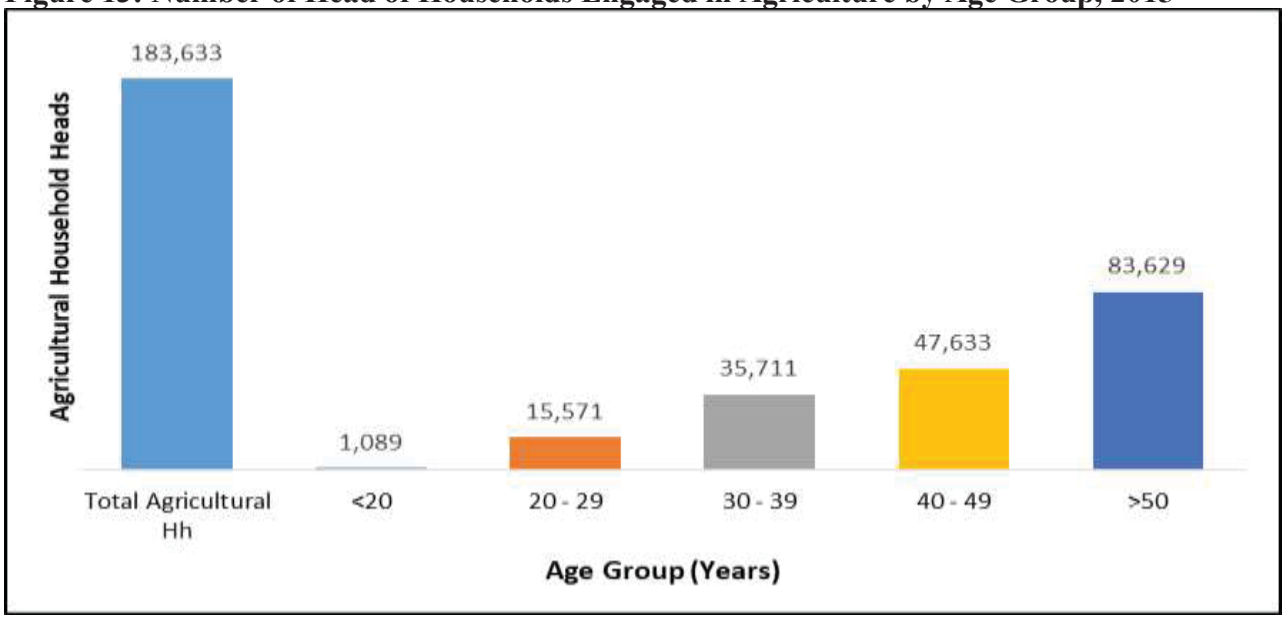
Figure 12 Percentage of Households Engaged in Agriculture by Sex of Household Head and Municipality, 2015



3.4.2 Age Demographics of Heads of Households

The 2015 Census found that 46 percent of the heads of households engaged in agriculture were aged 50 years or older, whilst 26 percent were aged 40 to 49 years and 19 percent aged 30 to 39 years. Only 16,660 (9 percent) of the heads of households engaged in agriculture were aged under 30 years (Figure 13).

Figure 13: Number of Head of Households Engaged in Agriculture by Age Group, 2015

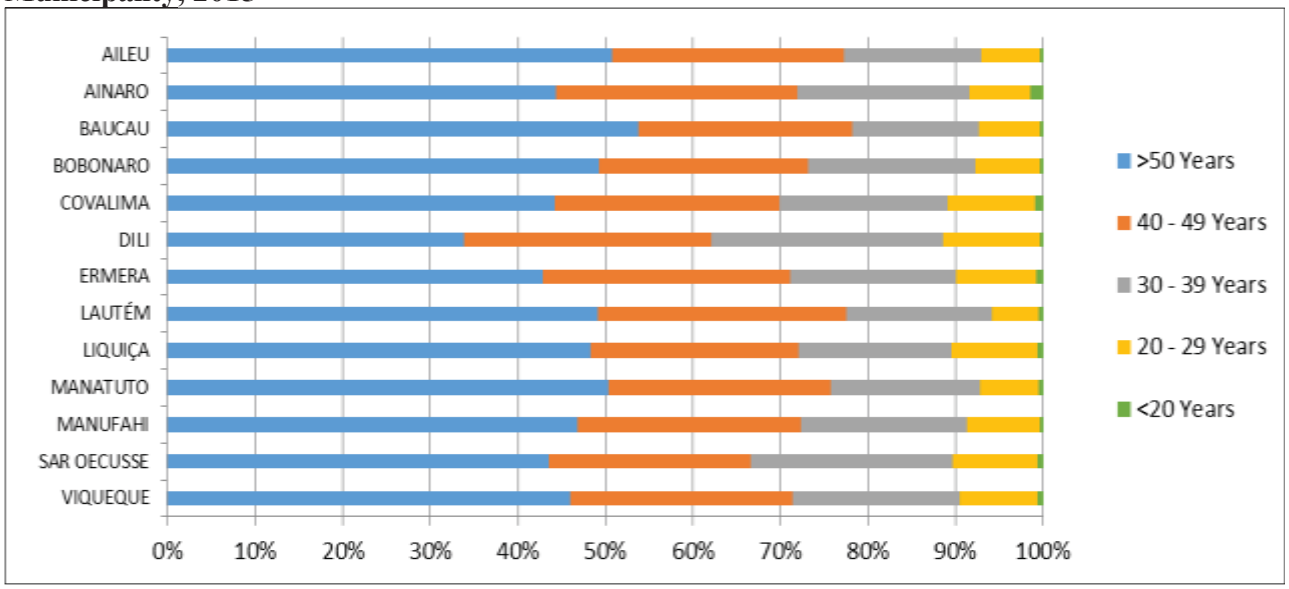


The municipalities with the highest proportion of household heads aged more than 50 years were Baucau (54 percent), Aileu (51 percent), Manatuto (50 percent) and Bobonaro (49 percent), while Dili Municipality (34 percent) had the lowest proportion of household heads over 50 years of age.

At the other end of the age spectrum, the municipalities of Dili and Covalima (both 11 percent), Liquiça and Oecusse (both 10 percent) had the highest proportion of household heads aged under 30 years. Lautém (6 percent) and Aileu (7 percent) municipalities reported the lowest proportion of household heads under 30 years of age. (Figure 14).

With almost half of the heads of households engaged in agricultural activities aged more than 50 years, and 70 percent aged more than 40 years, policies that promote the engagement of youth in the agricultural sector will need to be developed and implemented to meet the future food requirements for the growing Timor-Leste population and reduce import dependency.

Figure 14: Proportion of Heads of Households Engaged in Agriculture by Age Group and Municipality, 2015

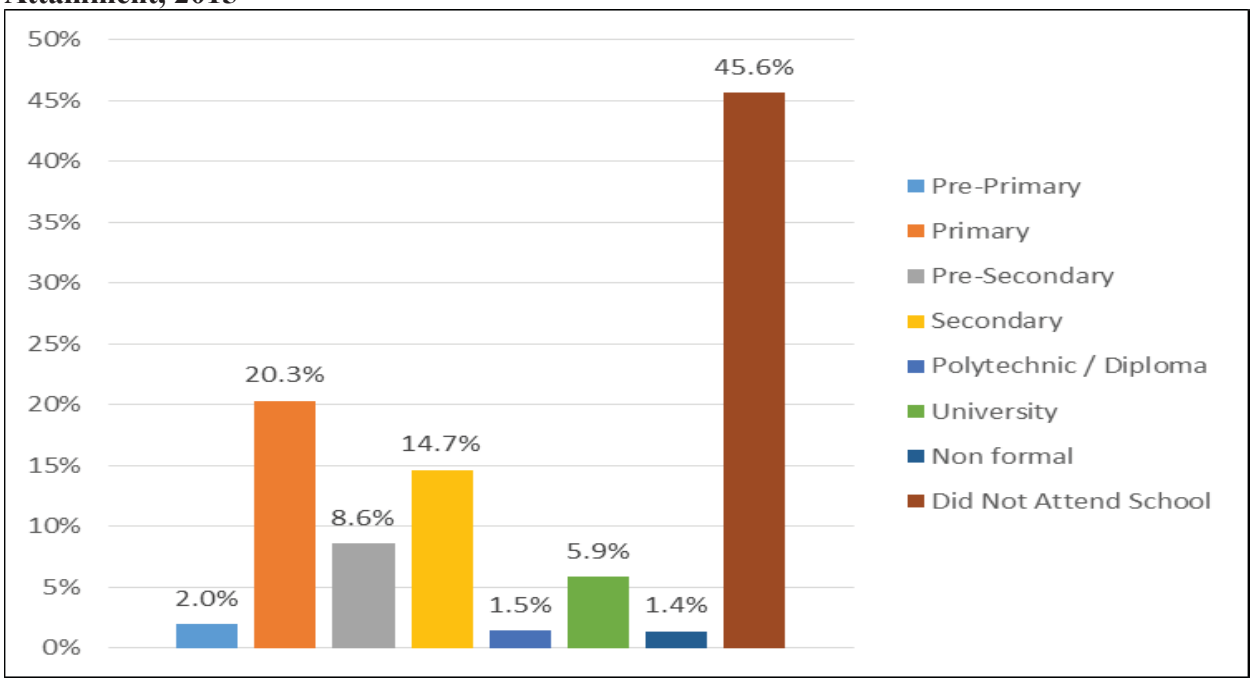


3.4.3 Education Level of Heads of Household

Over 53 percent of the heads of households engaged in agriculture reported having some formal schooling from pre- primary to university, while 47 percent had no formal schooling or had not attended school at all. Of those who had formal schooling, 55 percent completed their primary level education (including pre-secondary), 28 percent their secondary level education, 11 percent earned a university degree and 3 percent finished polytechnic or diploma level education (Figure 15).

The same pattern of non-education (47 percent) was true for the heads of households engaged in livestock rearing. For heads of households engaged in crop production, however, the proportion of household heads with either no formal schooling or had not attended school at all was slightly higher at 50 percent (Annex Tables 5, 11 and 15).

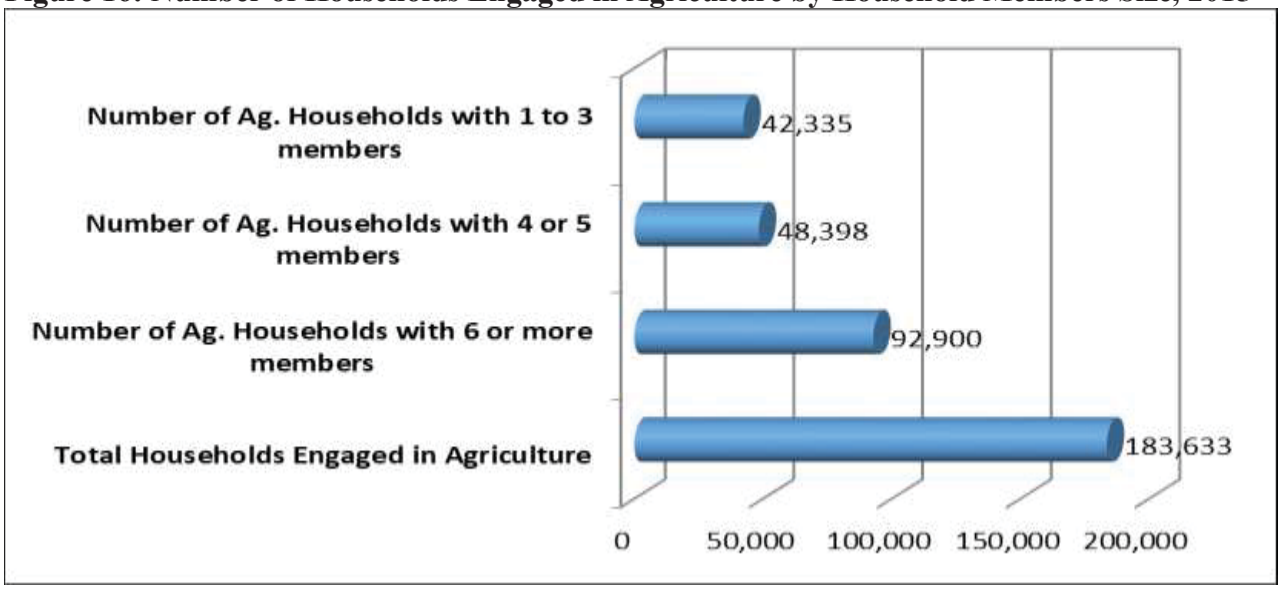
Figure 15: Proportion of Heads of Households Engaged in Agriculture by Level of Education Attainment, 2015



3.4.4 Household Member Demographics

There were 92,900 households (51 percent) engaged in agricultural activities where the number of household members was six (6) or more. A further 48,398 households (26 percent) reported having either four (4) or five (5) members, whilst 42,335 (23 percent) had one (1) to three (3) household members (Figure 16).

Figure 16: Number of Households Engaged in Agriculture by Household Members Size, 2015



Across the entire Timor-Leste population, the average number of household members was 5.77, with the average urban household consisting of 6.38 members, slightly higher than the average rural household size of 5.44 members. Aileu Municipality's rural households had the highest average household members with 6.38 compared with rural households in the Special Administrative Region of Oecusse, which had the lowest average of 4.66 members.

Larger households in Dili Municipality, where the average household size was 6.49, is reflective of people moving from rural areas to the capital and tending to stay with relatives for either education or employment opportunities.

The large household size reflects both a high birth rate (estimated at 5.6 births per women, World Bank, 2015) and the strong presence of the extended family system in Timor-Leste. Larger households can provide potential benefits in terms of household labor available to undertake agricultural activities, however, large numbers of household members living under the one roof can also present challenges in terms of meeting food and other basic needs. There was very little difference in the distribution of household member numbers for households engaged in either livestock rearing or crop production (Annex Tables 6, 12 and 16).

3.5 Land Ownership and Access

Considering the history of Timor-Leste, from Portuguese colonization, Indonesian occupancy and the absence of the land law, the land tenure situation in Timor-Leste is quite varied. Prior to the Census, there was an assumption that most of the lands were not certified, therefore, accurately establishing the types of land tenure and ownership could be challenging.

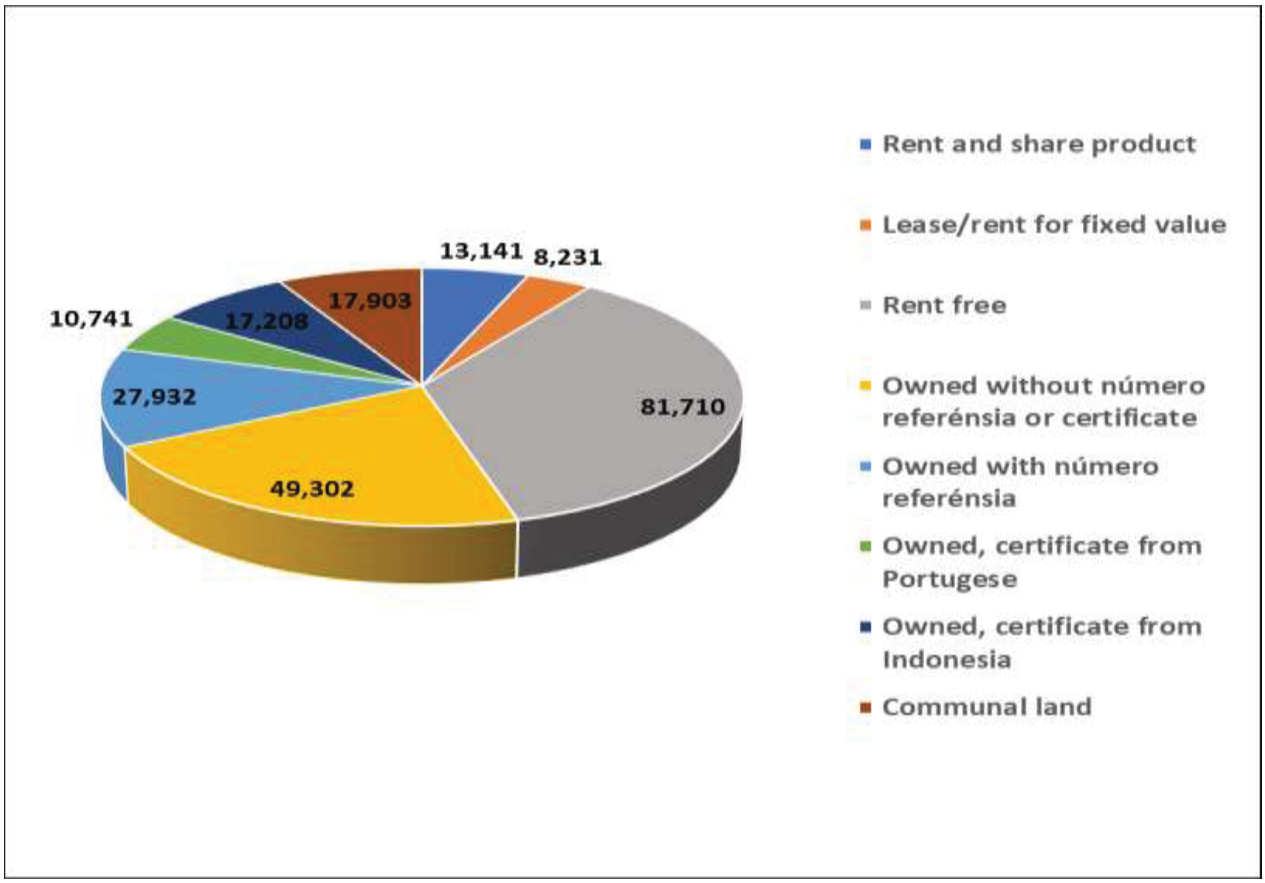
For the purpose of understanding access to land and the status of the land holding, the 2015 Census agriculture question used eight (8) classifications including: rent for a share product; lease/rent for fixed value; rent free; owned without *número referénsia* or certificate; owned with *número referénsia;* owned with certificate from Portugese; owned with certificate from Indonesia; and communal land.

The classification of land tenure included all lands that were used for agricultural activities, therefore, it was possible for households operating more than one holding to have several different land tenure classifications, i.e. they may own some land, lease or rent land and also have access to rent free or communal land.

Of the total 183,633 households engaged in agriculture enumerated in the 2015 Census, 49,302 (27 percent) owned land without *número referénsia* or certificate, 27,932 (15 percent) owned land with *número referénsia*, 10,741 households (6 percent) owned with certificate during Portuguese colonization, and 17,208 (9 percent) owned with certificate during Indonesian occupancy.

On the other hand, 81,710 (44 percent) agricultural households accessed land rent free, 17,903 (10 percent) cultivated communal land, 13,141 (7 percent) rented land for a shared product while 8,231 (4 percent) leased or rented land for a fixed value (Figure 17).

Figure 17: Number of Households Engaged in Agriculture by Land Tenure Classification, 2015



Of the 84,217 households engaged in minor agriculture activity (backyard agriculture), 38,706 households (46 percent) cultivated rent free land and 22,541 (27 percent) owned land without *número referénsia* or certificate. Interestingly, over 31 percent of households engaged in minor agriculture activity reported having no access to land (Annex Table 53).

For the 94,159 households producing mainly for home consumption with some sales, the main land tenure types were rent free (43 percent), while 27 percent of households owned land without *número referénsia* or certificate and 14 percent owned land with *número referénsia* (Annex Table 54).

Of the total of 5,257 households producing mainly for sale with some home consumption, again the main land tenure types were rent free (46 percent), owned land without *número referénsia* or certificate (27 percent) and 15 percent owned land with *número referénsia*. As was the case with the minor or backyard agriculture, over 31 percent of households producing mainly for commercial purposes reported having no access to land (Annex Table 55).

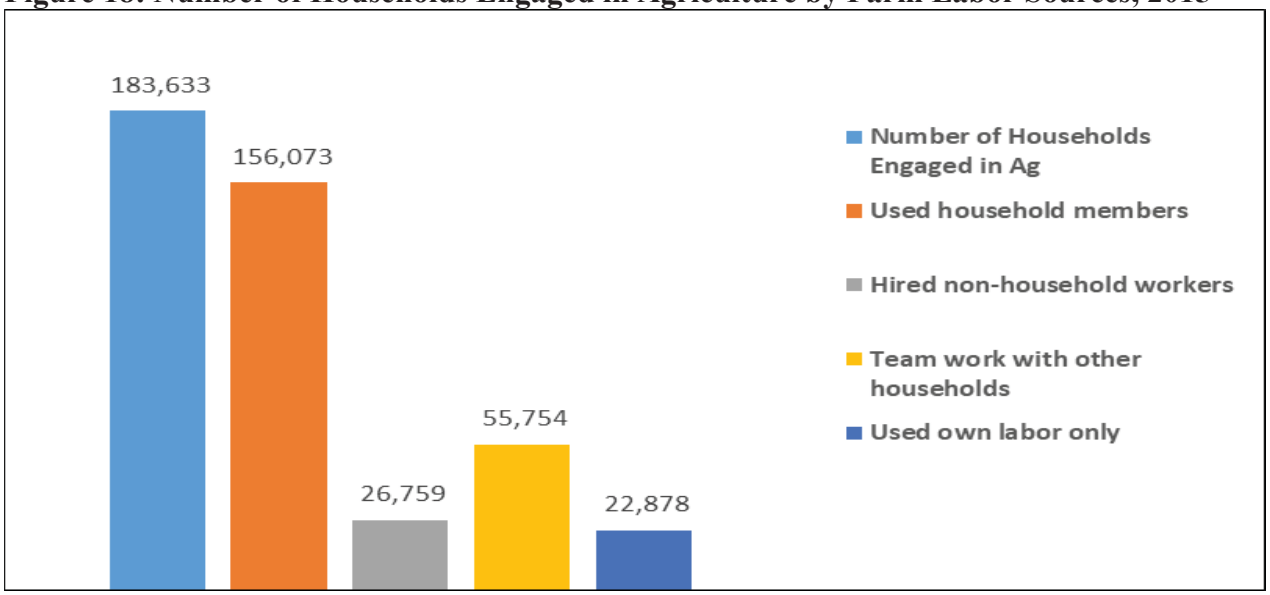
3.6 Farm Labor Management

Farm labor refers to persons working in the agricultural production industry (crops or livestock rearing) for either cash or in-kind wages. In this context, farm labor was defined to include household members, hired non-household workers or teamwork undertaken with other households during the twelve month period. A farm worker was classified as hired non-household workers if either paid in cash or in-kind, while teamwork with other households refers to the exchange of labor.

It should also be noted that agricultural households may have utilized various forms of farm labor during the reference period.

Of the total 183,633 households engaged in agriculture, 160,755 households (88 percent) had used farm labor of some kind, while for the remaining 22,878 households (12%), the only farm labor used was that of the household head themselves (Figure 18). The most common sources of farm labor were the use of household members, with 85 percent of agricultural households utilizing this labor source, while 30 percent of agricultural households reported using team work (labor exchange) with other households.

Figure 18: Number of Households Engaged in Agriculture by Farm Labor Sources, 2015



These same labor sources patterns were observed within households engaged in either livestock rearing or crop production across all municipalities. The Census results show that Timor-Leste farmers are mostly reliant on their own household labor, particularly in the municipalities of Aileu (92 percent) and Ermera (90 percent). The municipalities with the highest proportion of households who hired non-household workers to work on the farm were the Special Administrative Region of Oecusse (35 percent) and Bobonaro (27 percent). Viqueque and Bobonaro Municipalities reported the highest incidence of own labor only households with 18 percent and 16 percent respectively (Annex Table 57).

For the 84,217 households that were engaged in minor agricultural (backyard) activity, 71,434 households (85 percent) used other farm labor sources while 15 percent used their own labor only. The two municipalities with the highest proportion of using household members as a labor source were Aileu (97 percent) and Ainaro (98 percent), while the highest proportion of households reporting the hire of non-household workers to work on the farm were in the Special Administrative Region of Oecusse (32 percent) and Bobonaro Municipality (30 percent) (Annex

Table 58).

The same pattern of labor sources was also reported for the 94,159 agricultural households producing mainly for home consumption. Among these households, 80 percent (75,632 households) used other farm labor sources and 20 percent used their own labor. Of the 75,632 households, 97 percent utilized household members as part of their farm labor force, while 40 percent undertook team work with other households and 19 percent hired non-household workers.

All municipalities reported between 96 and 98 percent of households used their household members as part of their labor force, while agricultural households in the Special Administrative Region of Oecusse (61 percent), Ainaro (57 percent) and Aileu (55 percent) Municipalities relied heavily on team work with other households as one of their sources of farm labor (Annex Table 59).

For households engaged in agricultural production mainly for sale with some home consumption, the use of household members followed a similar pattern. Agricultural households in SAR Oecusse (34 percent) and Bobonaro Municipality (31 percent) hired non-household workers at a higher rate than the 15 percent national average, while Ainaro Municipality (65 percent) again reported the highest use of team work with other households. Dili Municipality reported the highest use of own labor only with 42 percent of agricultural households reporting this labor source compared with 3 percent in Aileu Municipality (Annex Table 60).

CHAPTER 4 - LIVESTOCK

Along with crop production, livestock rearing is one of the most important agricultural activities in Timor-Leste, playing a key role in supporting household livelihoods and providing income, particularly in rural areas. Households are defined as engaging in livestock rearing if any member of the household undertook livestock rearing for their own use or for sales during the 12 months prior to the census. Livestock was defined are those animals that were owned or reared by households at the time of the census in July 2015.

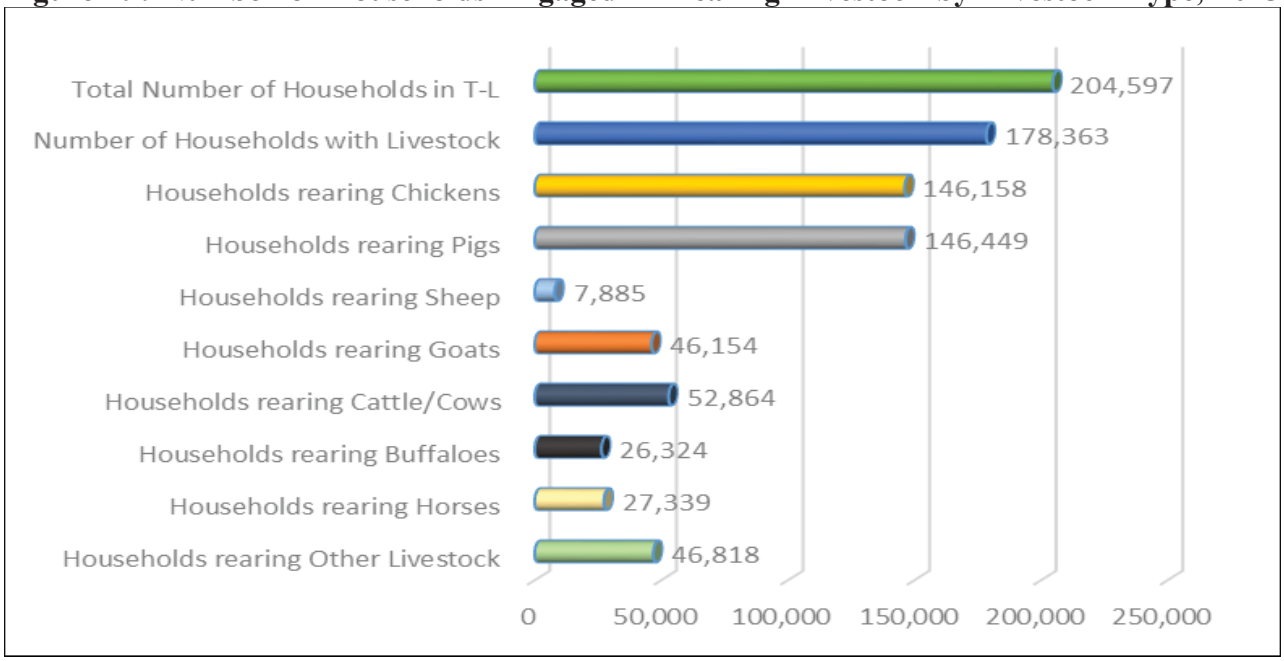
The 2015 NPHC agriculture questions recorded livestock numbers for chickens, pigs, sheep, goats, cattle/cows, buffaloes and horses as at Census night, 11 July 2015. Counts of domestic animals such as dogs and cats were not included in the census.

4.1 Households Engaged in Livestock Rearing

Of the total 204,597 Timor-Leste households reported in the 2015 Census, 178,363 households (87 percent) reported rearing livestock. This represented a 21 percent increase over the 147,665 households who reported rearing livestock in the previous 2010 Census.

Of the households rearing livestock in 2015, 82 percent reported rearing pigs, 82 percent reared chickens, 30 percent reared cattle or cows and 26 percent reared goats. Fifteen percent of households rearing livestock reported rearing horses or buffaloes, while less than 5 percent reported rearing sheep (Figure 4.1). It is clear from the results of the census that most households engaged in agriculture preferred rearing smaller livestock and poultry over larger livestock, possibly due to limitations in the available land area. However, many households did report rearing both small and large livestock.

Figure 19: Number of Households Engaged in Rearing Livestock by Livestock Type, 2015



Except for Dili Municipality (58 percent), between 92 and 97 percent of all households in the other municipalities reported rearing some type of livestock during the twelve months prior to the census (Annex Table 1).

4.2 Livestock Household Demographic Characteristics

Of the households engaged in livestock rearing, 84.7 percent were headed by men, while 15.3 percent were headed by women. The municipalities reporting the highest proportion of male-headed households engaged in livestock rearing were Manufahi (90 percent) and Aileu (87 percent) while Lautém (24 percent) and Viqueque (18 percent) reported the highest proportion of female-headed households rearing livestock (Annex Table 9).

Household heads engaged in rearing livestock were mostly aged more than 50 years (46 percent), while less than 9 percent were aged below 30 years (Annex Table 10).

In terms of education levels attained, almost 46 percent of household heads engaged in rearing livestock did not attend school, while 20.5 percent attended primary school and 14.5 percent completed secondary school. Municipalities that reported the largest proportion of household heads that did not attend school were in Sar Oecusse (60 percent) and Ermera (59 percent) (Annex Table 11).

More than 50 percent of households rearing livestock had more than six or more household members, while only 22.6 percent of households had three or less members (Table 4.1). The municipalities of Dili and Ermera reported the largest proportion of livestock-rearing households with 6 or more members, with 62 percent and 60 percent respectively (Annex Table 12).

Table 3: Demographic Characteristics of Heads of Households Engaged in Livestock Rearing, 2015

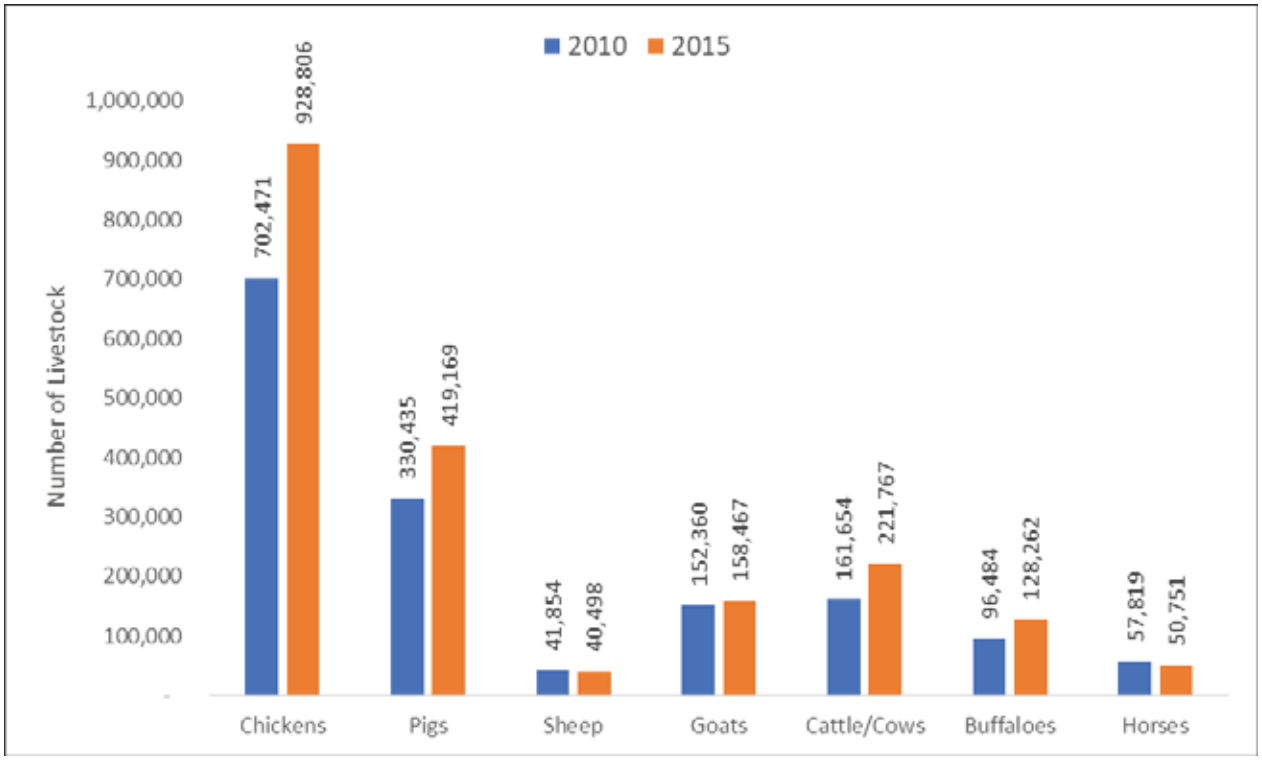
Demographic Characteristics	Number	Percentage (%)
Sex:		
Male	151,018	84.7
Female	27,345	15.3
Age:		
<20 years old	949	0.5
20-29 years old	14,687	8.2
30-39 years old	34,443	19.3
40-49 years old	46,421	26.0
>50 years old	81,863	45.9
Education:		
Pre-Primary school	3,563	2.0
Primary school	36,503	20.5
Pre-Secondary school	15,343	8.6
Secondary school	25,852	14.5
Polytechnic/ Diploma	2,643	1.5
University	10,220	5.7
Non- formal	2,511	1.4
Did Not Attend School	81,728	45.8
Household Members:		
1-3 persons	40,390	22.6
4-5 persons	46,994	26.4
6 or more persons	90,979	51.0

4.3 Number of Livestock

The census recorded a total 2,068,789 head of livestock, including poultry (chickens) in Timor-Leste in July 2015. This included 928,806 chickens, 618,134 small livestock (pigs, sheep and goats), 400,780 large livestock (cattle/cows, buffalo, and horses) and 121,069 other livestock.

When compared with livestock counts reported in the previous 2010 Census, the number in each broad livestock category (poultry, small and large livestock) had increased significantly. Chicken numbers rose by 32 percent between 2010 and 2015, while small livestock numbers were up 18 percent, and large livestock numbers increased by 27 percent. Cattle/cow numbers rose by 37 percent, buffalo numbers by 33 percent, pig numbers increased 27 percent and goat numbers rose by 4 percent during this five year period. However, horse and sheep numbers decreased by 12 percent and 3 percent respectively (Figure 20).

Figure 20: Livestock Numbers, 2010 and 2015



In term of productivity, the Census also reported the average number of livestock owned by households rearing each livestock type. It showed that the average number of chickens owned by households with poultry was 6.3 birds, up slightly on the 5.6 bird average reported in 2010.

The average number of cattle/cows rose from 3.7 per cattle household in 2010 to 4.2 head in 2015, while average pig numbers also rose from 2.6 head in 2010 to 2.9 head in 2015.

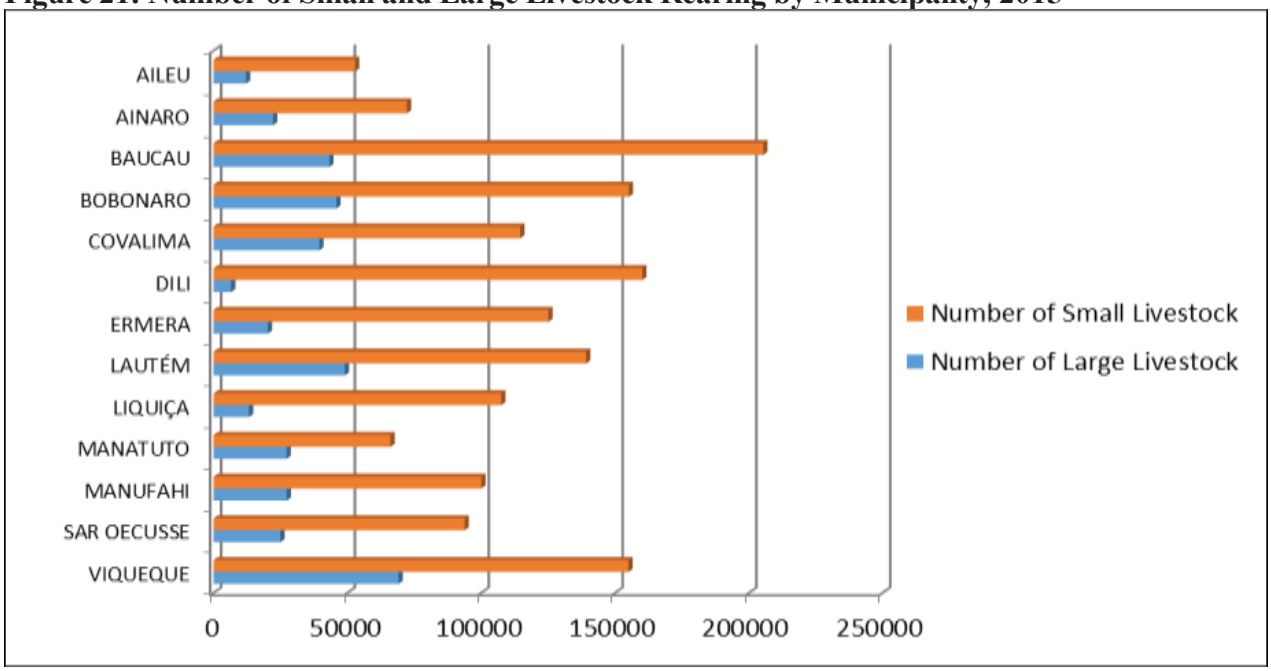
Average sheep numbers declined from 6.0 in 2010 to 5.1 in 2015, while average household goat and buffalo numbers remained constant at 3.4 and 4.9 head respectively (Annex Tables 18a to 18c and 2010 Census data).

Households in Baucau and Dili municipalities accounted for almost one quarter of the nation's chicken population, with 12.2 percent and 10.7 percent of the flock respectively, while Baucau also dominated the sheep numbers, recording half (50.3 percent) of the nation's flock.

Bobonaro and Dili households were strongly represented in pig numbers with 12 percent and 10.5 percent of the total national pig population, while Bobonaro (16.7 per cent) and Covalima (15.1 per cent) municipalities combined recorded almost one-third of the total cattle and cow herd. Viqueque households accounted for 22.5% of the country's buffalo population (Annex Tables 18a-18c).

Overall, small livestock numbers (including chickens) were prominent in Baucau, Dili, Bobonaro and Viqueque municipalities, while higher totals of large livestock (cattle/cows, buffalo, and horses) were found in the municipalities of Viqueque, Lautém, Bobonaro and Baucau (Figure 21).

Figure 21: Number of Small and Large Livestock Rearing by Municipality, 2015



4.4 Scale of Agricultural Activities

In Timor-Leste, most households rearing livestock did so either for home consumption with some sales or engaged in minor (backyard) activity. Less than 3 percent of livestock households reported their activity as being mainly for sale with some home consumption (Table 4).

Interestingly, there were minimal differences in the average number of livestock per household across the three levels of agricultural activity. The average number of chickens per household was 6.1 for minor agricultural activity (backyard) households, 6.5 for households producing mainly for home consumption with some sales and 6.9 for households rearing livestock mainly for sale with some home consumption.

This consistency applied across all livestock types, with average pig numbers of 2.7, 3 and 2.9 per household and average cattle numbers of 3.9, 4.5 and 4.3 per household reported across the three levels of household agricultural activity respectively (Annex Tables 19–21).

Table 4: Households Engaged in Livestock Rearing and Livestock Numbers by Level of Agriculture Activity and Livestock Type, 2015

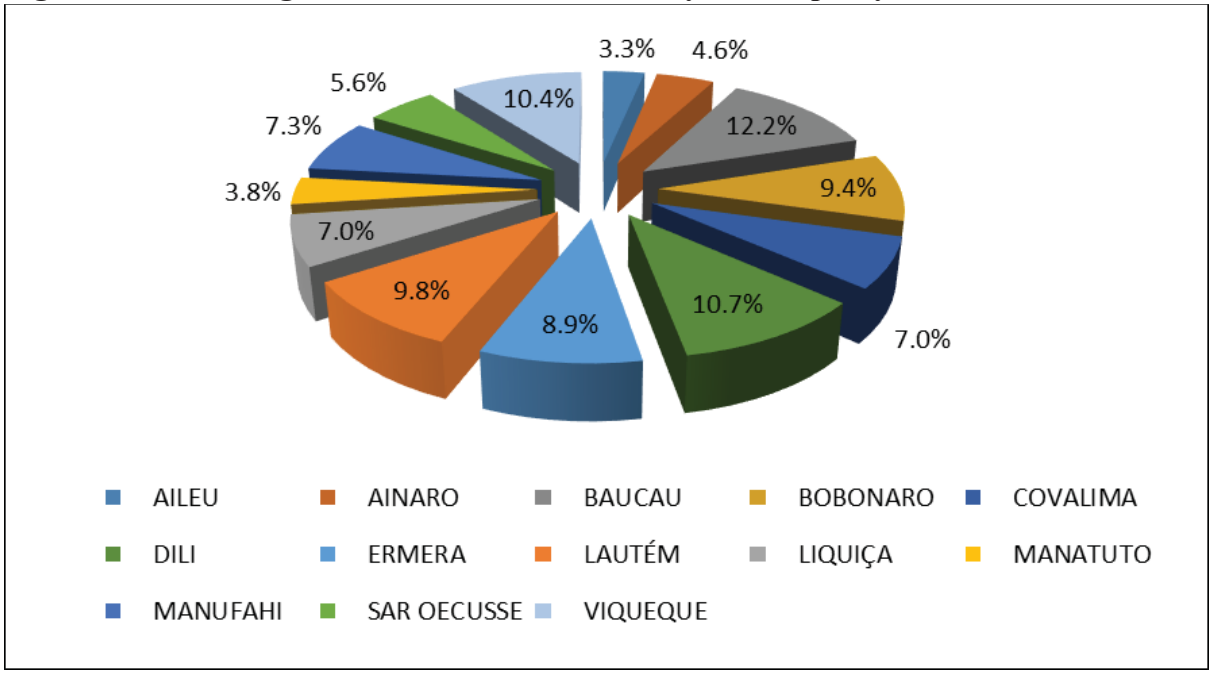
Livestock Type	Minor Agriculture Activity (Backyard)		Agriculture production mainly for home consumption		Agriculture production mainly for sale	
	Number of Households	Total Livestock	Number of Households	Total Livestock	Number of Households	Total Livestock
Chickens	67,825	414,925	74,066	484,228	4,267	29,653
Pigs	67,389	182,624	74,742	224,080	4,318	12,465
Sheep	3,570	17,079	3,980	21,072	335	2,347
Goats	21,772	71,324	68,135	80,990	1,434	6,153
Cattle/Cows	23,852	91,963	27,607	123,725	1,405	6,079
Buffaloes	11,028	50,609	14,593	74,121	703	3,532
Horses	12,190	22,524	14,280	26,597	869	1,630

4.5 Chickens

Poultry rearing is progressing positively in Timor-Leste, with the number of households rearing chickens increasing by 17 percent and chicken numbers up by 32 percent in the period from 2010 to 2015. The 2015 Census accounted a total of 928,806 chickens for the whole country, with much of the industry concentrated in the eastern municipalities of the country, particularly in Baucau, Viqueque and Lautém, with a combined 32 percent of total chicken numbers (Figure 22).

The vast majority of chickens were being reared for home consumption, with only three percent reared mainly for sale. Households in Baucau, Dili, Viqueque and Lautém municipalities accounted for 43 percent of the total chickens reared mainly for sale (Annex Table 19a, 20a, and 21a).

Figure 22: Percentage Distribution of Chickens by Municipality, 2015



4.6 Pigs

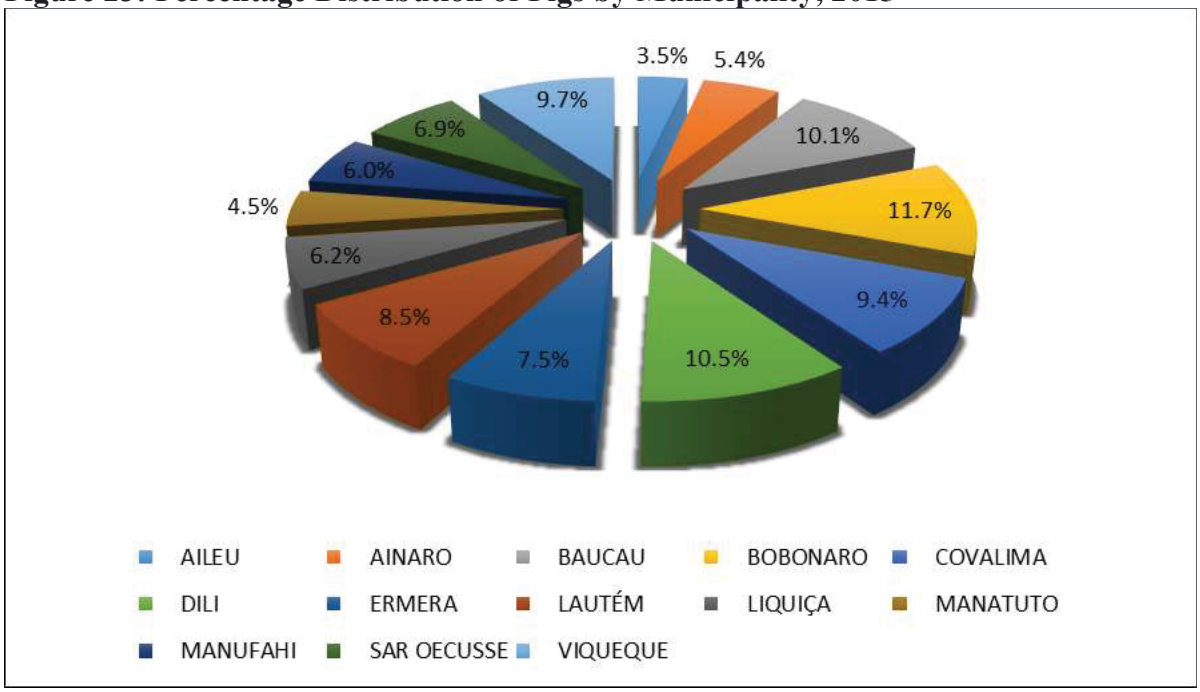
Like poultry, pig production is also increasing in Timor-Leste. In 2015, 146,449 households reported rearing a total of 419,169 pigs. This represented an 18 percent increase in households rearing pigs and a 27 percent increase in overall pig numbers since 2010.

Pig production took place in all municipalities, however, with pig numbers more heavily concentrated in the municipalities of Bobonaro (49,161 head or 11.7 percent of the national total), Dili (43,993 head or 10.5 percent), Baucau (42,313 head or 10.1 percent) and Viqueque (40,792 head or 9.7 percent) (Figure 23 and Annex Table 18a).

As was the case with chicken production, three percent of the census households reported rearing pigs mainly for sale, while 53 percent of households reared pigs mainly for home consumption and the remaining 44 percent engaged in minor agricultural activity (backyard).

Nationally, each household rearing pigs had an average of 2.9 pigs, with households in Covalima and Lautém municipalities having an average of 3.8 and 3.6 head respectively on census night.

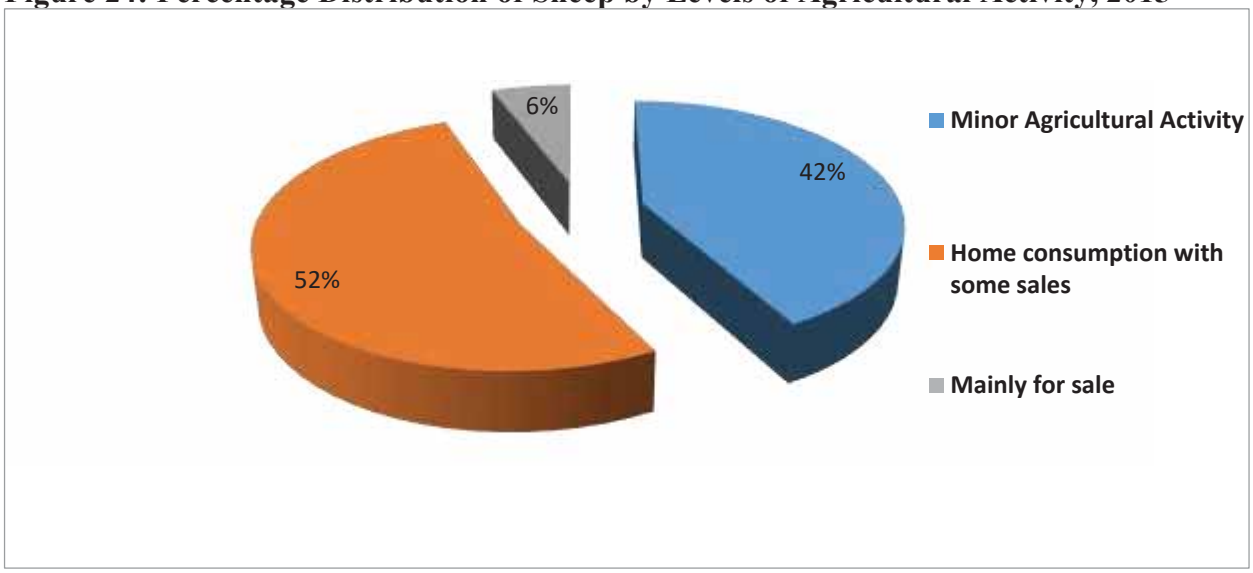
Figure 23: Percentage Distribution of Pigs by Municipality, 2015



4.7 Sheep

The 2015 Census provided a glimpse of the sheep industry in Timor-Leste, which totaled a national flock of 40,498, a decrease of 3 percent from the 41,854 head recorded in the 2010 Census. Of the total sheep inventory, 52 percent was reared mainly for home consumption with some sales, and 42 percent were reared as part of minor agricultural activity (backyard) (Figure 24). Six percent of the sheep flock were being reared mainly for sale with some home consumption, a higher proportion than was reported for chickens and pigs.

Figure 24: Percentage Distribution of Sheep by Levels of Agricultural Activity, 2015



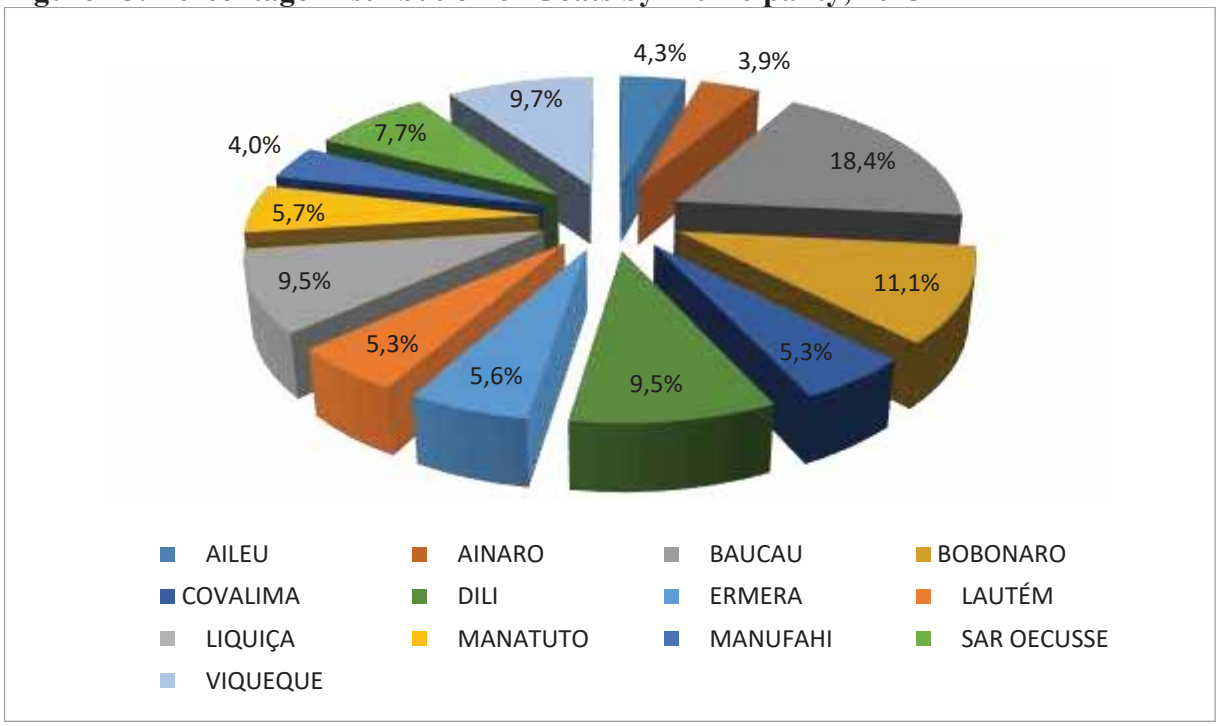
The average sheep numbers per household was 5.1 sheep, with households in Manatuto and Lautém municipalities averaging 9.5 and 7.3 sheep per household respectively. Over 50 percent of the Timor-Leste sheep flock were in Baucau Municipality (Annex Table 18b).

4.8 Goats

The 2015 Census recorded a total of 158,467 goats, a 4 percent increase from the 152,360 goats recorded in 2010. This occurred despite the number of goat-rearing households remaining relatively constant over the five years between censuses.

The three municipalities of Baucau (18.4 percent), Bobonaro (11.1 percent) and Viqueque (10%) combined to account for 39 percent of the total goat population (Figure 25).

Figure 25: Percentage Distribution of Goats by Municipality, 2015



Again, the vast majority of goat farming was either for home consumption (51 percent) or minor agriculture (backyard) activity (45 percent). Only 1,434 households (or 4 percent of households rearing goats) did so mainly for the purpose of selling their goats (Table 4).

Nationally, the average number of goats owned by household rearing goats was 3.4 head, while at the municipal level, households in Lautém and Manatuto municipalities averaged 4.7 head and 4.3 head respectively (Annex Table 18b).

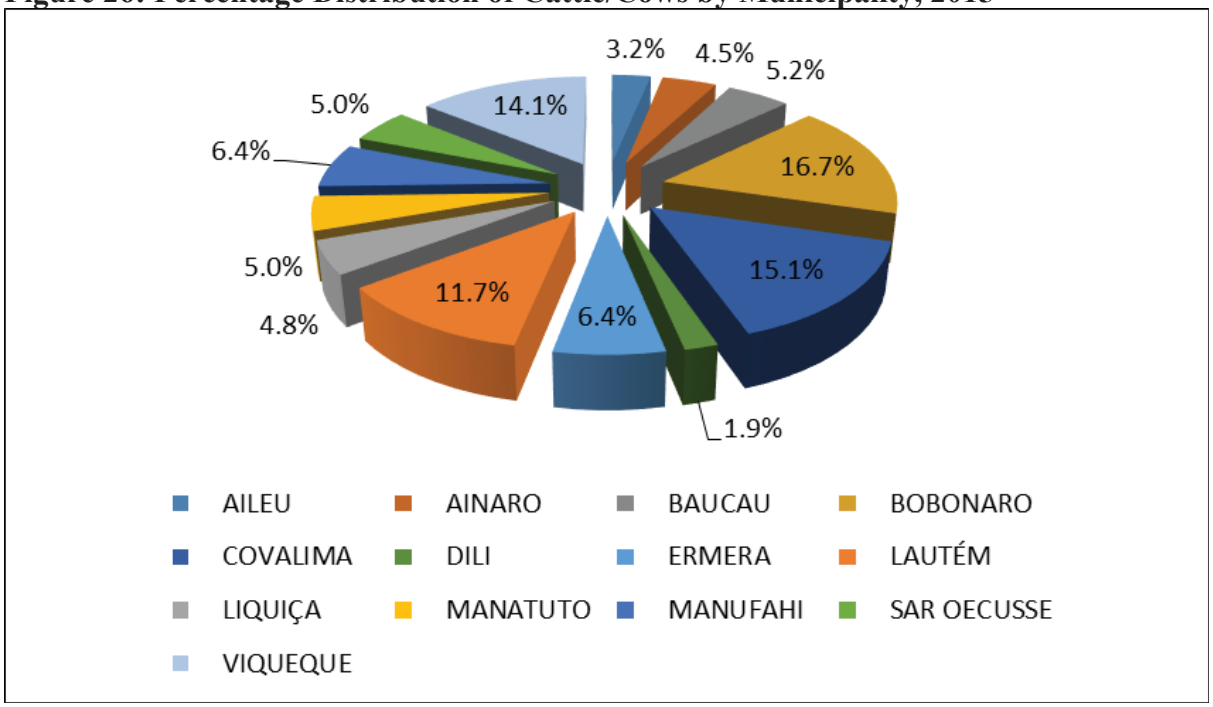
4.9 Cattle/Cows

Cattle and cows contributed 55 percent of the total large livestock numbers in Timor-Leste in 2015, with an estimated national herd of 221,767 head. This was an increase of 37 percent over the 161,654 head reported in 2010. The largest increases were evident in Baucau and Manufahi municipalities where increases of 88 percent were recorded, while Sar Oecusse was the only region where cattle and cow numbers decreased (by 34 percent) between the two Censuses. The municipalities of Bobonaro (16.7 percent), Covalima (15.1 percent) and Viqueque (14.1 percent) comprised almost 46 percent of the total cattle and cow population (Figure 26).

Again, the vast majority of cattle/cows (215,688 or 97.3 percent) were reared for home consumption or for minor agriculture activity (backyard).

At the national level, the average number of cattle/cows per household was 4.20 head, with higher average cattle numbers recorded in the municipalities of Lautém (6.3 head per household), Viqueque (6.1 head) and Manatuto (6.0 head). Ermera (with 2.3 cattle per household) and Liquiça (2.5 head) had the lowest average cattle numbers per household (Annex Table 18c).

Figure 26: Percentage Distribution of Cattle/Cows by Municipality, 2015



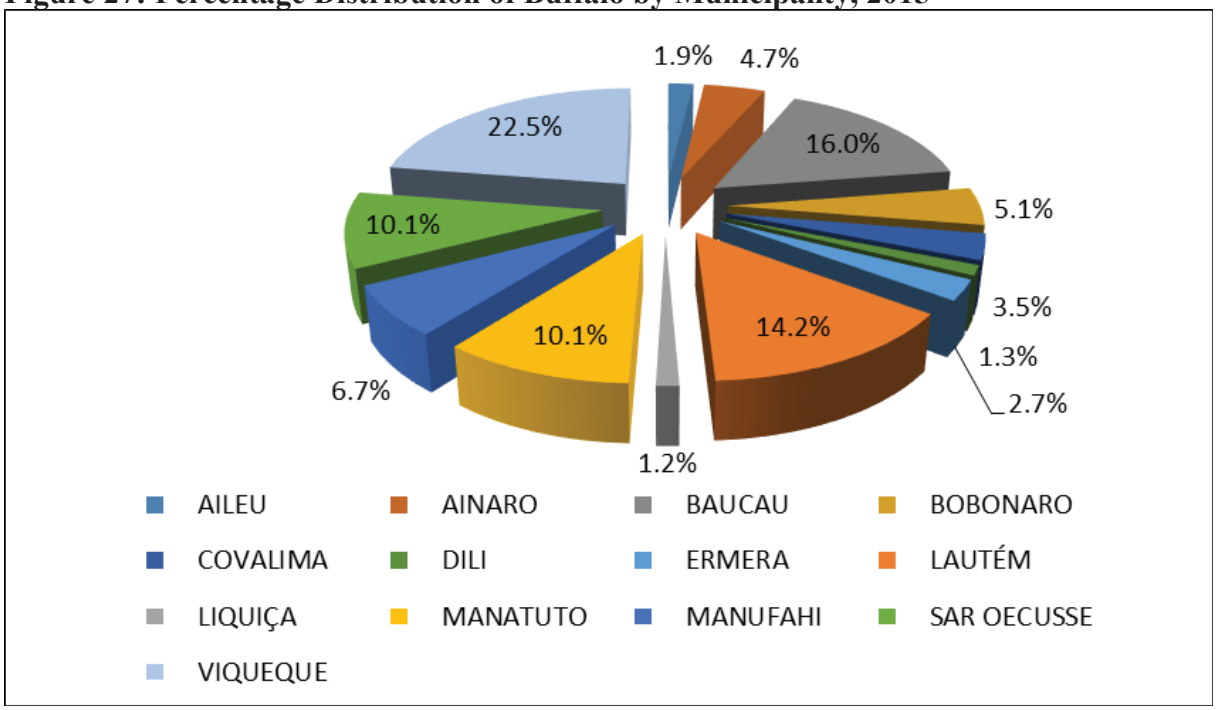
4.10 Buffalo

Buffalo is one of the most common large livestock reared by Timor-Leste households. With an estimated of 128,262 buffaloes throughout the country in 2015, this represented an increase of 33 percent on the buffalo population estimated in 2010.

There was an average of 4.9 animals per household raising buffaloes (Annex Table 18c), with the municipality of Viqueque (28,881 head) accounting for 22.5 percent of the total buffalo number in the country, followed by Baucau with 20,489 head (16 percent) and Lautém with 18,179 head (14.2 percent) (Figure 27).

Fifty-eight percent of buffaloes raised in Timor-Leste were reported to be mainly for home consumption with some sales, with only 2.8 percent of the buffalo being reared mainly for selling (Annex Table 21c).

Figure 27: Percentage Distribution of Buffalo by Municipality, 2015

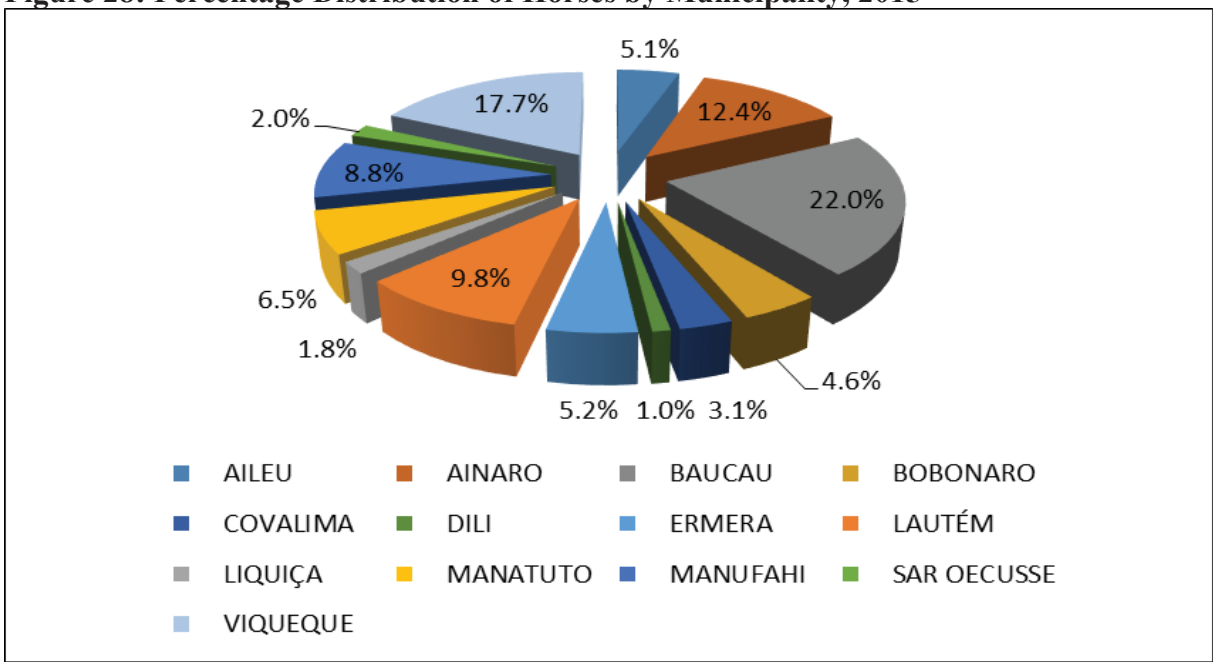


4.11 Horses

Households engaged in livestock raising reported some 50,751 horses in 2015, a decrease of 12 percent from the 57,819 horses recorded in 2010. The largest decreases were reflected in the municipalities of Dili (down 62.9 percent) and Liquiça (down 37.7 percent) while horse numbers increased in Manatuto (up 6.1 percent), Manufahi (up 6 percent) and Aileu (up 5.7 percent).

The three municipalities of Baucau (22 percent), Viqueque (17.7 percent) and Ainaro (12.4 percent) represented 52 percent of the total Timor-Leste horse population (Figure 28).

Figure 28: Percentage Distribution of Horses by Municipality, 2015



Of the total recorded horses, 52 percent were reared mainly for home consumption with some sales and 44 percent for minor agriculture activities, while 4 percent were reared mainly for sale (Table 4).

CHAPTER 5 - CROPS

Along with livestock rearing, producing crops is another extremely important agricultural activity undertaken by many households in Timor-Leste. Crops, both temporary and permanent, cultivated and produced during the 12 months prior to the 2015 census day were all enumerated.

Temporary crops are those with a growing cycle of less than one year, and after harvest, are either re-sown or replanted for another production cycle. Temporary crops include grains including rice, wheat and barley, maize, cassava, sweet potato, vegetables, tomatoes, pulses and beans.

Permanent crops are crops with more than one year growing cycle, and which often do not have to be replanted for several years. They may be grown in a compact plantation or orchard or scattered, and includes coconuts, most fruits and berries, nuts, spices, coffee, cocoa and timber or forest trees.

During the 2015 Census, there were 11 major crops specifically identified, including temporary and permanent crops. These crops were rice, maize, cassava, sweet potato, vegetables, beans, temporary fruits, permanent fruits, coffee, coconuts and timber trees. The Census also included an "other" category to include those crops also grown during the Census period.

The purpose of this section is to analyze the type of crops grown by each household and the purpose of their cultivation. It includes an elaboration of the characteristics of households engaged in crop production, the purpose of the production and the various farming technologies (or inputs) used.

5.1 Households Engaged in Crop Production

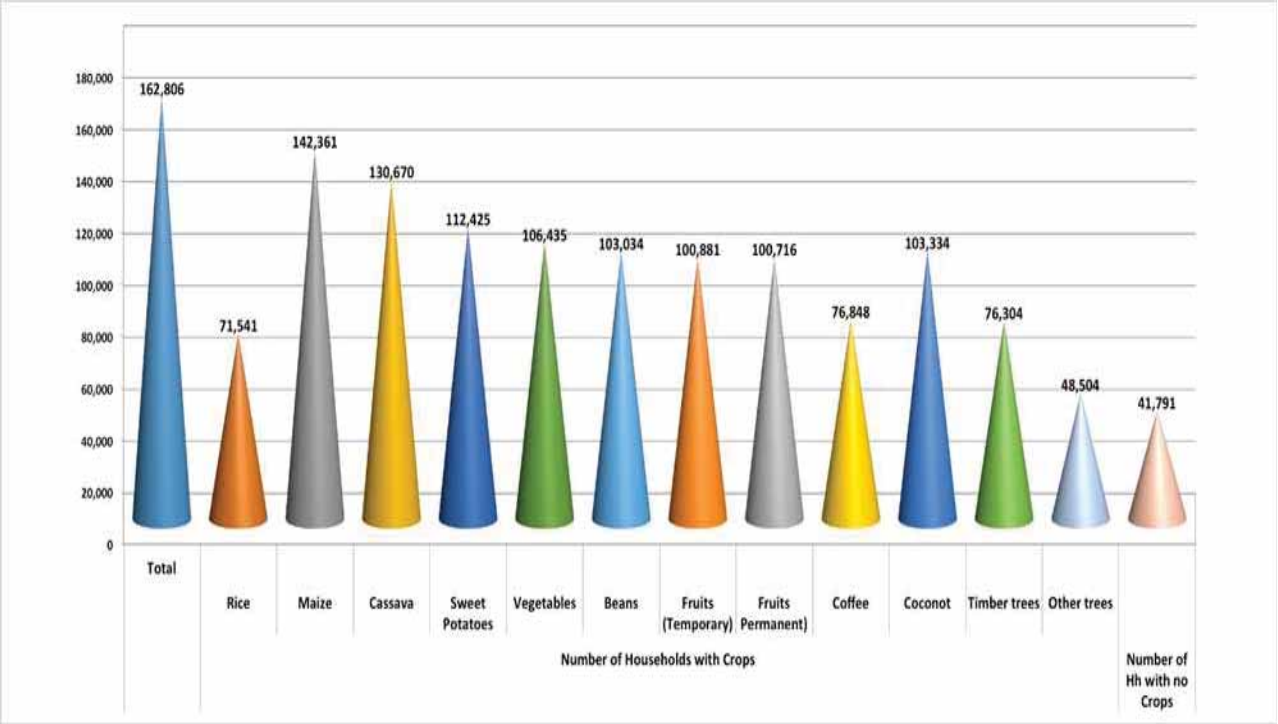
The 2015 Census estimated that 162,806 households were engaged in some form in crop production across the country. This represented 80 percent of all households in Timor-Leste.

The major staple crops grown by households were maize (grown by 142,361 households or 70 percent of all households), cassava (130,670 households or 64 percent) and sweet potato (112,425 households or 55 percent). An estimated 71,541 households grew rice in the twelve month period prior to July 2015.

The Census also recorded vegetables being grown by 106,435 households, coconuts (103,334 households), beans (103,034 households), fruit-temporary (100,881 households), fruit-permanent (100,716 households), coffee (76,848 households) and timber trees (76,304 households) (Figure 29 and Annex Table 22).

Most cropping households cultivated multiple crop types, with an average of 7.2 crops grown per household in the 12 months leading up to Census night in July 2015.

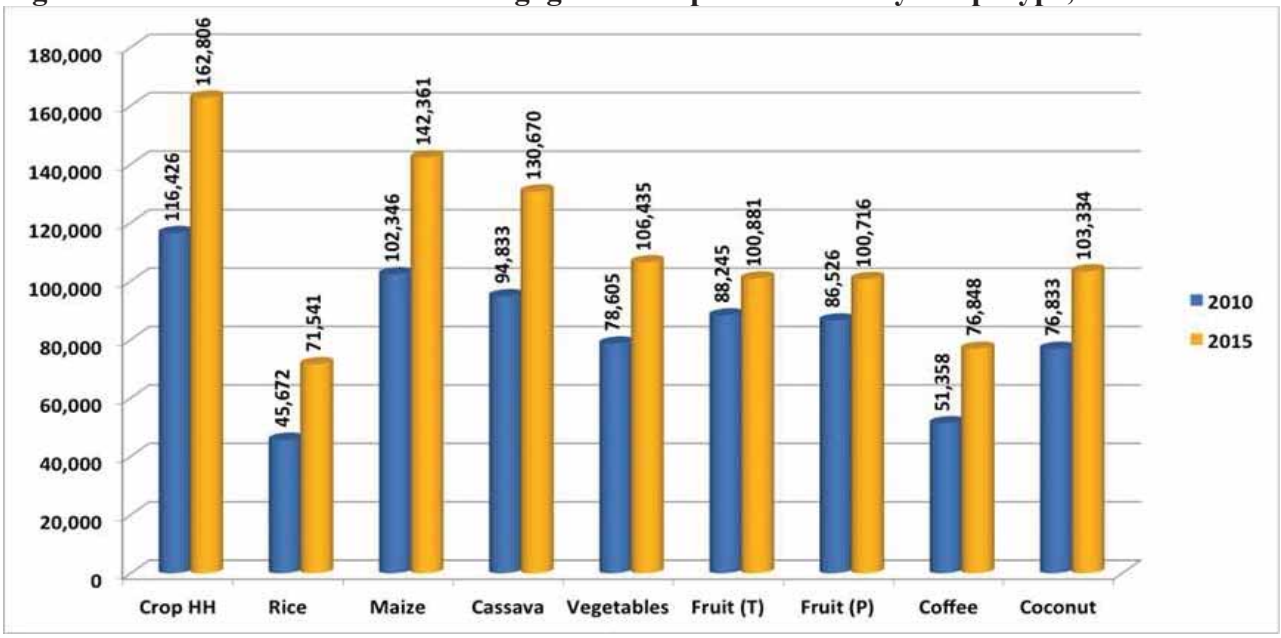
Figure 29: Number of Households Engaged in Crop Production by Crop Type, 2015



All crop types that were specifically accounted for in the 2015 Census were also previously recorded in the 2010 Census, using the same concepts and definitions and data collection procedures. Therefore, both Censuses' results are directly comparable, with growth trends identifiable for each crop to support policy making. There was an overall increase of 40 percent in households engaged in crop production, from 116,426 households in 2010 to 162,806 households in 2015. The increase in households was also evident for each individual crop type enumerated.

Increases in the number of households growing specific crops were quite significant for some crop types, with a 57 percent increase in rice-producing households, coffee (50 percent), maize (39 percent), cassava (38 percent), vegetables (35 percent), coconuts (34 percent) while fruit-permanent and fruit-temporary had slightly less increases at 16 percent and 14 percent respectively (Figure 30).

Figure 30: Number of Households Engaged in Crop Production by Crop Type, 2010 and 2015



5.2 Cropping Household Demographic Characteristics

Of the households engaged in crop cultivation, 84.6 percent (137,685 households) were headed by males, with 15.4 percent (25,121 households) were headed by females. This ratio was almost identical to the 84.7 percent/15.3 percent male to female ratio for livestock households.

While most municipalities reported a similar proportion of male to female-headed households engaged in crop production to the national estimate, the proportion was highest in Manufahi Municipality, where 90 percent of cropping households were headed by males. At the other end of the scale, Lautém Municipality reported the highest proportion of female-headed households growing crops at 23 percent (Table 5 and Annex Table 13).

In terms of the age distribution of crop-growing household heads, 47.1 percent were aged over 50 years, 25.6 percent were aged between 40 and 49 years, 18.5 percent aged between 30 and 39 years and 8.8 percent were under the age of 30 years. The low incidence of younger household heads may indicate that crop cultivation is not considered an attractive job for young people to work in Timor-Leste.

The highest proportion of household heads aged 50 years or older was recorded in the municipalities of Baucau (54.5 percent), Aileu (51.2 percent) and Manatuto (50.9 percent) while the proportion was lowest in Dili (37 percent). Dili and Covalima reported the highest proportion of cropping household heads under the age of 30 years at 11.4 percent and 10.6 percent respectively (Annex Table 14).

In terms of education levels attained, 50 percent of household heads engaged in crop cultivation had attended some formal education, ranging from pre-primary school level through to university level, while 49 percent had not attended school and 1 percent had received non-formal education. Of those household heads who had attended formal education, 45 percent had reached pre-primary or primary education levels, 43 percent had reached pre-secondary or secondary education levels, 3 percent had polytechnic education, and 8 percent had attained university level education.

The largest proportion of the household heads who had attended formal education were in Dili (73 percent), Lautém (54 percent), and Aileu (53 percent) municipalities. Ermera Municipality and SAR Oecusse recorded the largest proportion of household heads who had not attended school at 59 percent each (Annex Table 15).

The Census found that almost one half (49.4 percent) of total households engaged in crop cultivation had six or more household members, 26.8 percent had four or five persons, while 23.8 percent had three or less members. As was the case with livestock households, the municipalities of Dili and Ermera reported the largest proportion of crop-producing households with 6 or more members, with 61.6 percent and 60.9 percent respectively. Viqueque and SAR Oecusse recorded a higher proportion of one to three member households with 31.7 percent and 30.2 percent respectively (Annex Table 16).

Table 5: Demographic Characteristics of Heads of Households Engaged in Crop Production, 2015

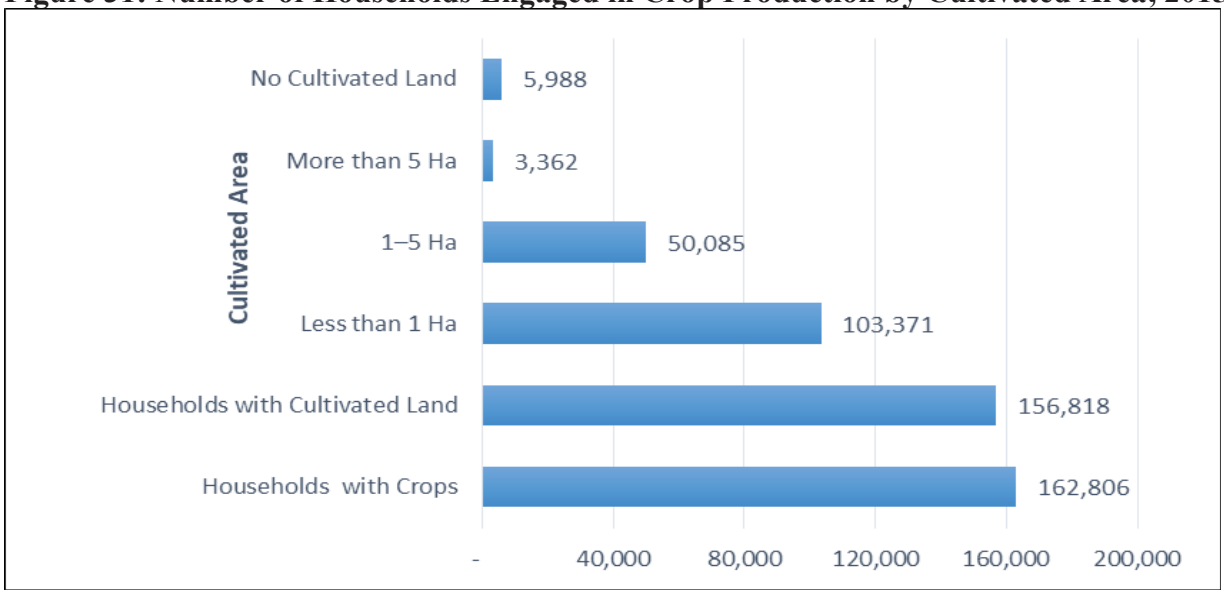
Demographic Characteristics	Number	Percentage (%)
Sex:		
Male	37,685	84.6
Female	25,121	15.4
Age:		
<20 years old	947	0.6
20-29 years old	13,348	8.2
30-39 years old	30,168	18.5
40-49 years old	41,669	25.6
>50 years old	76,674	47.1
Education:		
Pre-Primary school	3,336	2.0
Primary school	33,434	20.5
Pre-Secondary school	13,908	8.5
Secondary school	21,189	13.0
Polytechnic/ Diploma	2,178	1.3
University	6,761	4.1
Non- formal	2,389	1.5
Did Not Attend School	79,611	48.9
Household Members:		
1-3 persons	38,812	23.8
4-5 persons	43,587	26.8
6 or more persons	80,407	49.4

5.3 Cropping Land

This section presents how much of the land is used for agricultural activities and the type of activities undertaken. Crop cultivation included operating land for purposes of crop production in either the main or second season, during the 12 months period prior to the 2015 Census.

Results show that of the reported 183,633 households engaged in agriculture, 162,806 households (89 percent) were engaged in crop production. Of these cropping households, 63.5 percent (103,371 households) cultivated less than one hectare, 30.8 percent (50,085 households) cultivated between 1 and 5 hectares, while only 2.1 percent (3,362) of cropping households cultivated more than 5 hectares. A further 3.7 percent (5,988) of cropping households reported having no cropping land (Figure 31).

Figure 31: Number of Households Engaged in Crop Production by Cultivated Area, 2015

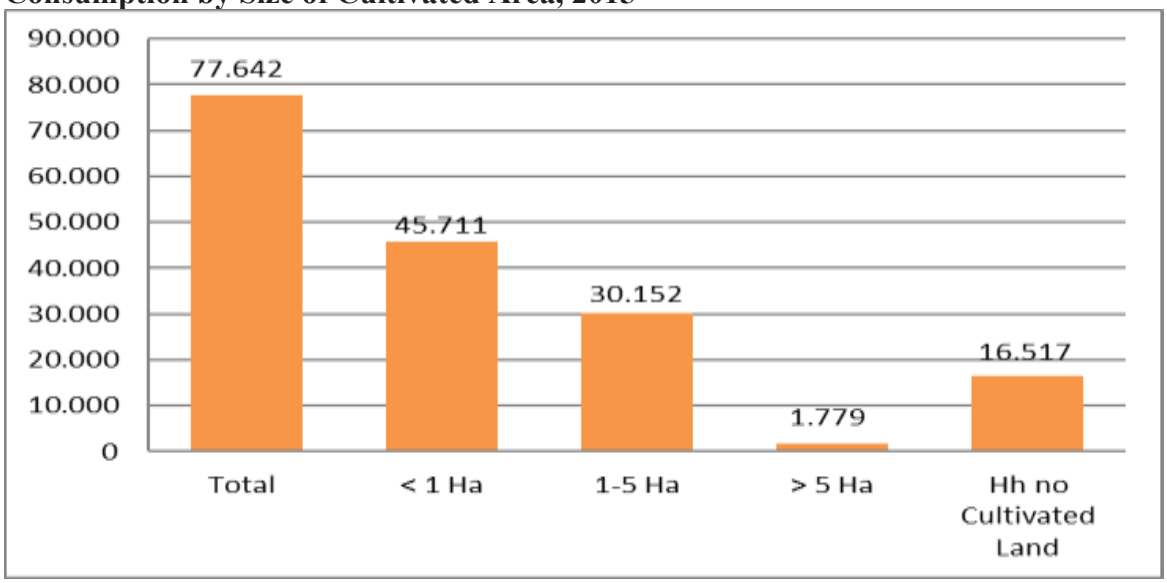


The special administrative region of Oecusse (80.2 percent) and the Municipality of Liquiça (72.4 percent) recorded the highest proportion of households cultivating an area of less than one hectare, while in Covalima and Dili over 40 percent of households cultivated between one and five hectares of land for crop production. The proportion of cropping households cultivating more than five hectares were highest in Manatuto (4.2 percent) and Baucau (4 percent) municipalities.

The Census data also reported that 1,739 households or 14.3 percent of the cropping households in the Municipality of Dili reported having no cropping land (Annex Table 43).

Of the 94,159 households that were classified as producing mainly for home consumption with some sales, 77,642 households (82.4 percent) cultivated land in the twelve months prior to the Census. Of the households that cultivated land, 58.9 percent cultivated a land area of less than one hectare, 30,152 households (38.8 percent) farmed between one and five hectares, and 1,779 households (2.3 percent) operated land over five hectares (Figures 32 and 33).

Figure 32: Number of Households Engaged in Crop Production Mainly for Home Consumption by Size of Cultivated Area, 2015



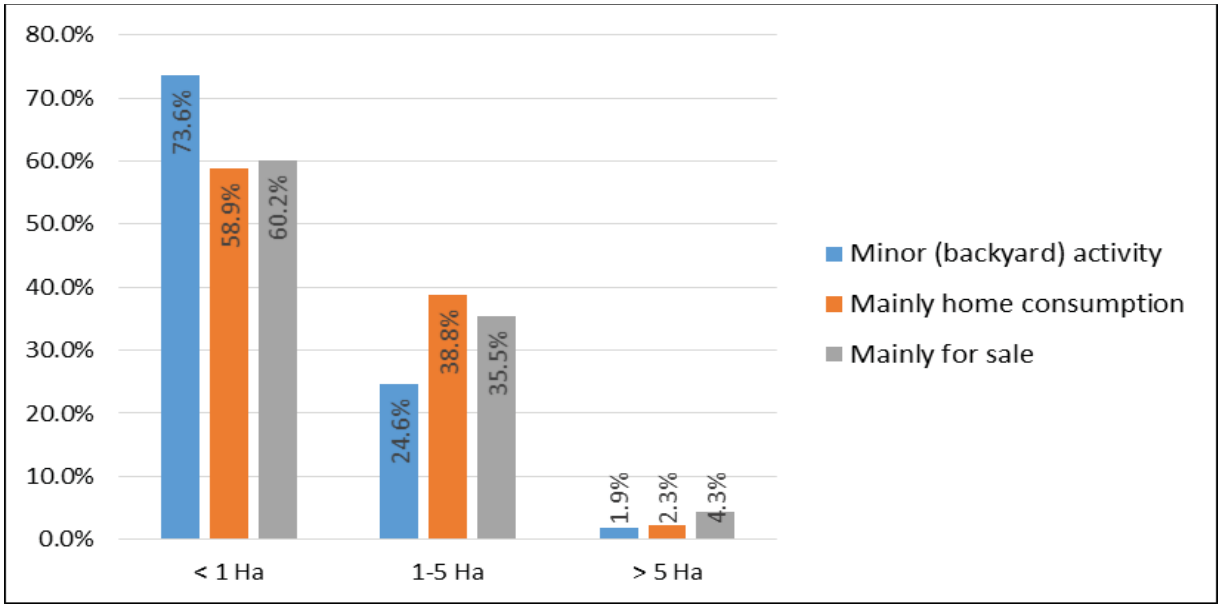
The Census results shows that of a total of 5,257 agriculture households producing mainly for sale, 4,471 households (85 percent) cultivated land in the twelve months to July 2015. Of these

households that did cultivate land, 60.2 percent (2,692 households) cultivated less than one hectare, 35.5 percent (1,586 households) cultivated between one and five hectares and 4.3 percent (193 households) cultivated land more than 5 hectares.

As might be expected, the proportion of agricultural households producing mainly for sale and who cultivated more than five hectares was slightly higher than households undertaking minor (backyard) activity or producing mainly for home consumption. Interestingly, more of these 'commercial' households (60.2 percent) cultivated less than one hectare of land compared with 58.9 percent of households producing mainly for home consumption (Figure 33).

The municipalities that had the highest proportion of agricultural households engaged in producing mainly for sale and which cultivated land more than 5 hectares were in Manufahi (11 percent) and Baucau (7.6 percent). Bobonaro and Lautém municipalities recorded the highest proportion of households cultivating land over 1 hectare but less than 5 hectares with 49 percent each, while 75.3 percent of households producing mainly for sale in the special administrative region Oecusse cultivated less than one hectare of land (Annex Table 45).

Figure 33: Proportion of Households by Agricultural Activity and Size of Area Cultivated, 2015



5.4 Land Tenure and Access

Agricultural households often operate or cultivate cropping land from various sources, including land they own, land they rent or lease, including rent free or they have access to communal land. Of the 84,217 households engaged in minor agriculture activity (backyard agriculture), 38,706 households (46 percent) cultivated rent free land and 22,541 households (27 percent) owned land without *número referénsia* or certificate. Interestingly, over 31 percent of households engaged in minor agriculture activity reported having no access to land (Annex Table 49).

For the 94,159 households producing mainly for home consumption with some sales, the main land tenure types were rent free (43 percent), while 27 percent of households owned land without *número referénsia* or certificate and 14 percent owned land with *número referénsia* (Annex Table 50).

Of the total of 5,257 households producing mainly for sale with some home consumption, again the main land tenure types were rent free (46 percent), owned land without *número referénsia* or certificate (27 percent) and 15 percent owned land with *número referénsia*. As was the case with the

minor or backyard agriculture, over 31 percent of households producing mainly for commercial purposes reported having no access to land (Annex Table 51).

The municipalities of Aileu and Ainaro recorded the highest proportions of households accessing rent free land across all three levels of agricultural activity. In fact, almost 90 percent of Aileu households engaging in agriculture mainly for sale had access to rent free land (Annex Tables 49-51).

5.5 Land Cultivation in both Main and Second Seasons

Timor-Leste has two main planting seasons, with those areas having second seasons receiving bimodal rains. In normal years, planting of maize for the main season commences in November and harvesting occurs in March, except for Ermera Municipality where planting and harvesting occurs a month earlier. For the main season rice, planting in most municipalities starts in December with the harvest in April, with the municipalities of Manufahi and Covalima planting in October. In Dili, the main season runs from May to October.

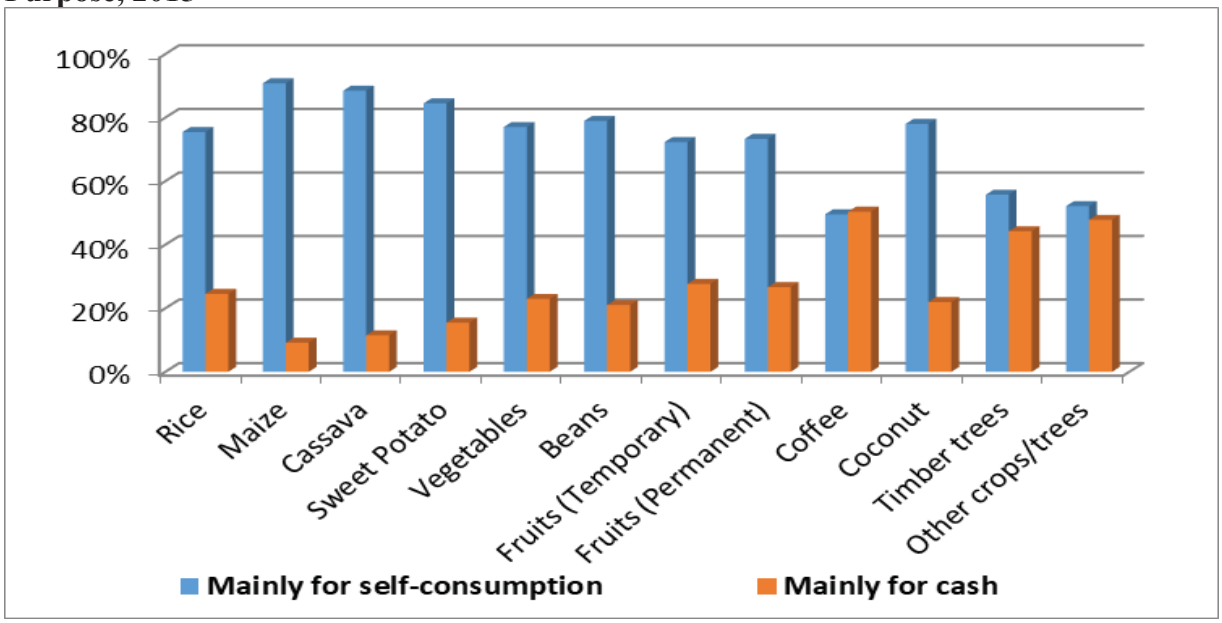
Among the 162,806 households engaging in crop production in 2015, a total of 162,229 households reported planting crops in the main season. In the second season, the number of households with crops reduced slightly to 159,567 households. Among those planting in the second season, the proportion of cultivated land by land size followed a similar pattern to the main season. In all municipalities other than Dili, 98 percent or more of households reported growing a second crop. In Dili, less than 94 percent of households reported a second cropping season (Annex Tables 46 and 47).

5.6 Crop Growing

The Census also questioned households on their reasons for growing crops, i.e. whether only or mainly for self-consumption or only or mainly for cash (sale). This information was collected for each of the following crop types: rice, maize, cassava, sweet potato, vegetables, beans, fruit (temporary), fruit (permanent), coffee, coconuts and timber (forest) trees.

It found that for most crops, between 60 percent and 85 percent of agricultural households grew their crops mainly for the household's own consumption. Only the more commercial crops of coffee and timber trees recorded a higher proportion of crops grown mainly for cash (sale) (Figure 34).

Figure 34: Percentage of Households Engaged in Crop Production by Crop and Main Purpose, 2015



5.6.1 Rice

Of the 162,806 households engaged in crop production, 71,541 households (44 percent) grew rice in the twelve months prior to the 2015 Census. However, the proportion of cropping households cultivating rice varied significantly between municipalities, ranging from 15.7 percent of households in Liquiça Municipality to 94.8 percent in SAR Oecusse (Annex Table 22a).

Nationally, 53,983 or three-quarters of the rice-growing households reported their reason for cultivating rice was mainly for self-consumption (Figure 34).

The highest proportion of households growing rice mainly for self-consumption were recorded in SAR Oecusse (94.3 percent) and Baucau Municipality (91.4 percent) while the highest incidence of households cultivating rice only or mainly for cash (sale) were reported in Dili (89.1 percent) and Ainaro (66.8 percent) municipalities.

5.6.2 Maize

The most commonly crop grown in 2015 was maize, cultivated by 142,361 households or 87.4 percent of all 162,806 cropping households, with the vast proportion (90.8 percent) of this cultivation being for self-consumption. In the special administrative region of Oecusse and Aileu Municipality, 95 percent of cropping households reported growing maize for self-consumption (Figure 34).

Dili was again the municipality with the highest proportion of households cultivating maize mainly for cash, with almost 27 percent of Dili households reporting this reason for cultivating maize (Annex Table 23).

5.6.3 Cassava

Cassava was also a commonly grown crop in 2015, cultivated by 130,670 households or 80 percent of all crop growing households. The proportion of households growing for self-consumption was similar to that of maize at 89 percent, while 11 percent grew cassava mainly for cash (Figure 34).

Aileu (95 percent) and Ermera (93 percent) municipalities recorded the highest proportions of households growing cassava for self-consumption while 30 percent of Dili households reported cultivating cassava mainly for cash (Annex Table 24).

5.6.4 Sweet Potatoes

The number of households cultivating sweet potatoes was 112,425, or 69 percent of the 162,806 households growing crops. Once again, a large proportion (85 percent) of these households grew sweet potatoes for self-consumption with 15 percent growing mainly for cash (Figure 34).

A high proportion (94 percent) of households in Aileu Municipality recorded growing sweet potatoes mainly for self-consumption, with households in Manufahi Municipality (91 percent) also were highly represented.

While only 42 percent of Dili's cropping households cultivated sweet potatoes in 2015, almost half (49 percent) of those households did so mainly for cash sales (Annex Table 25).

5.6.5 Vegetables

The number of households cultivating vegetables was 106,435, or 65 percent of the crop-growing households. Over three-quarters (77 percent) of households cultivated vegetables for self-consumption with 23 percent cultivating mainly for cash (Figure 34).

The largest proportion of households growing vegetables for self-consumption were Manufahi (87 percent) and Liquiça (86 percent) municipalities with 58 percent of Dili's vegetable growing households cultivating these crops for cash (Annex Table 26).

5.6.6 Beans

The number of households cultivating beans was very similar to that of vegetables, with 63 percent of the 162,806 cropping households growing beans, again mainly for self-consumption (79 percent) (Figure 34).

Households in the municipalities of Liquiça and Manufahi again recorded the highest proportion of households cultivating beans for self-consumption, each at 88 percent, while 40 percent of Dili's bean-growing households did so mainly for cash (Annex Table 27).

5.6.7 Coffee

Coffee was the least grown of the crops surveyed in the Census, with less than half (47 percent) of Timor-Leste's cropping households cultivating coffee in 2015 (Figure 34). Coffee cultivation was most prominent in the municipalities of Ermera and Aileu where 86 percent and 85 percent of cropping households reported growing coffee, whereas at the other end of the scale, only 20 percent of cropping households in Lautém Municipality reported cultivating coffee.

Nationally, half of the coffee growing households did so mainly for self-consumption and the other

half mainly for cash or sale. The highest proportion of coffee cultivation mainly for sale was evident in Dili and Lautém municipalities, with 80 percent and 64 percent producing mainly for cash (Annex Table 28).

5.6.8 Coconuts

An estimated 103,334 households, or 63 percent of the 162,806 crop-growing households reported growing coconuts in 2015 (Figure 34). Nationally, 78 percent of households grew coconuts for self-consumption with 87 percent of Baucau Municipality households cultivating for self-consumption.

Ainaro Municipality households recorded the highest proportion of coconuts cultivated mainly for sale, with 44 percent of households stating this as the main purpose for their cultivation (Annex Table 29).

5.6.9 Fruit (Permanent)

The number of households cultivating fruit (permanent) in 2015 was 100,716, or 62 percent of all crop-growing households. Of these, 73 percent of households reported the reason for growing permanent fruit was for self-consumption and 27 percent reported growing mainly for cash (Figure 34).

The proportion of households cultivating permanent fruit for self-consumption or mainly for cash was quite uniform across all the municipalities (Annex Table 30).

5.6.10 Fruit (Temporary)

The number of households cultivating fruit (temporary), as well as the proportion of those producing mainly for self-consumption or mainly for sale, virtually mirrored the results for fruit (permanent). The proportion of crop-growing households who grew temporary fruit was 62 percent, of which 72 percent stated that their reason for do so was mainly for self-consumption (Figure 34).

At the municipality level, there was again minimal differences between the data recorded for fruits (permanent) and fruit (temporary) (Annex Table 31).

5.6.11 Timber Trees

The number of households cultivating timber or forest trees such as mahogany, teak, sandalwood and redwood was reported as 76,304, or 47 percent of all cropping households. Timber cultivation was more evident in the municipalities of Covalima and Viqueque where 69 percent and 62 percent respectively of cropping households reported cultivating timber trees. Nationally, 56 percent of timber-cultivating households reported this activity was mainly for self-consumption (Figure 34).

Viqueque households reported the highest proportion (70 percent) of timber cultivation for self-consumption, while for almost 61 percent of Dili households their reason for cultivating timber trees was mainly for cash (sale) (Annex Table 32).

Table 6 below shows the three highest ranked municipalities in terms of the proportion of households engaged in crops cultivation by each crop type. For example, Aileu Municipality ranked highly in terms of the proportion of households cultivating cassava, sweet potato, fruits (temporary), maize, vegetables, fruits (permanent), coffee and beans. Covalima Municipality also

ranked highly on the proportion of households cultivating vegetables, coconuts, timber trees and beans.

Table 6: Ranking of Top Three Municipalities by Percentage of Households Engaged in Crop Cultivation, by Crop Type, 2015

Type of Crop	First Rank		Second Rank		Third Rank	
	Municipality	Percentage of Cropping Households	Municipality	Percentage of Cropping Households	Municipality	Percentage of Cropping Households
Rice	SAR Oecusse	94.8%	Viqueque	66.6%	Baucau	61.2%
Maize	SAR Oecusse	95.5%	Aileu	95.3%	Manufahi	93.4%
Cassava	Aileu	93.2%	Manufahi	91.3%	Liquiça	87.3%
Sweet Potato	Aileu	88.3%	Ainaro	84.7%	Manufahi	83.5%
Vegetables	Covalima	83.1%	Aileu	81.4%	Manufahi	80.2%
Beans	Manufahi	80.3%	Covalima	78.8%	Aileu	76.5%
Fruits Temporary	Aileu	76.0%	Liquiça	73.0%	Manufahi	69.6%
Fruits Permanent	Liquiça	73.2%	Aileu	73.1%	Manufahi	69.7%
Coffee	Ermera	85.9%	Aileu	84.5%	Ainaro	68.8%
Coconut	Covalima	77.1%	Viqueque	77.0%	Lautém	74.6%
Timber Trees	Covalima	69.5%	Viqueque	62.0%	Bobonaro	55.8%

There are several reasons why some households decide not to plant particular crops, including a lack of suitable arable land, unfavorable terrain, unfavorable weather, seed availability, lack of market opportunities, financial constraints etc. Listed in Table 7 below are those municipalities where the lowest proportion of cropping households are growing specific crop types.

For example, a lower proportion of cropping households in Dili Municipality are growing sweet potatoes, vegetables, beans, temporary or permanent fruits than all or most other municipalities. Based on this data, it may be possible to target certain municipalities to increase the production of specific crops, particularly where current household cultivations levels are on the lower end and where conditions are conducive to grow these crop types.

Table 7: Ranking of Lowest Three Municipalities by Percentage of Households Engaged in Crop Cultivation by Crop Type, 2015

Type of Crop	Lowest		Second Lowest		Third Lowest	
	Municipality	Percentage of Cropping Households	Municipality	Percentage of Cropping Households	Municipality	Percentage of Cropping Households
Rice	Liquiça	13.0%	Ermera	23.6%	Dili	24.7%
Maize	Dili	65.6%	Manatuto	74.4%	Viqueque	82.8%
Cassava	Lautém	72.5%	Baucau	73.5%	Bobonaro	77.5%
Sweet Potato	Dili	42.6%	Covalima	58.2%	Manatuto	58.6%
Vegetables	Dili	39.4%	Lautém	43.8%	Baucau	51.8%
Beans	Baucau	49.4%	Dili	51.1%	Manatuto	53.6%
Fruits Temporary	Lautém	54.5%	Dili	57.2%	Baucau	57.6%
Fruits Permanent	Ermera	53.3%	Baucau	57.3%	Dili	57.5%
Coffee	Lautém	20.2%	Baucau	26.8%	Dili	28.8%
Coconut	Ermera	43.6%	Aileu	43.9%	Ainaro	46.1%
Timber Trees	Aileu	33.3%	Ermera	35.1%	Manatuto	35.7%

CHAPTER 6 – USE OF FARMING INPUTS AND TECHNOLOGIES

6.1 Use of Farming Technologies

Crop production usually involves the use of various farming inputs and technologies, such as mulching, the use of fertilizers, both organic (natural) or inorganic (industrial), organic and chemical pesticides, herbicides, improved seeds and irrigation.

Of the estimated 162,806 households engaged in crop production across Timor-Leste in 2015, 112,977 households (69 percent) did not use any of the above agricultural technologies, while 49,829 households (31 per cent) used one or more of the technologies.

Depending on the type of crops cultivated, many cropping households used multiple inputs to improve their crop production. Approximately 15 percent of cropping households (25,145 households) planted improved seeds; 14 percent (22,900 households) applied organic fertilizers; 10 percent (15,948 households) used inorganic or industrial fertilizers; 8 percent (13,544 households) used mulching; 8 percent (13,347 households) used organic pesticides; 7 percent (11,612 households) used chemical pesticides and 7 percent (11,973 households) applied herbicides (Figure 35).

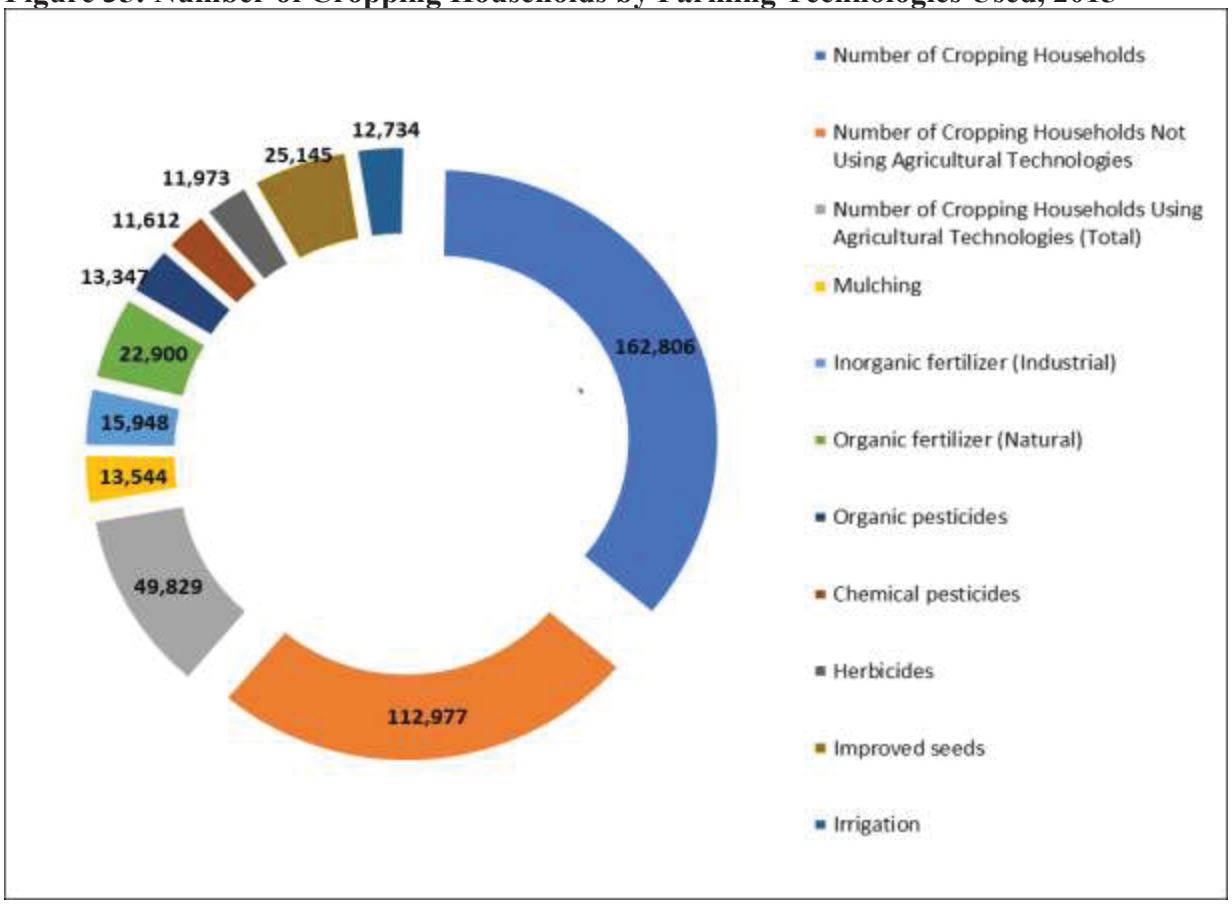
Over 60 percent of cropping households in Aileu Municipality used some form of farming technologies, with the application of organic fertilizers and improved seeds being the main inputs used. The next highest use of technologies were households in SAR Oecusse, where 44 percent used some farming technologies, with improved seeds and fertilizers (both organic and inorganic) the most commonly used inputs.

The highest proportion of cropping households that did not use farming technologies or inputs were in Dili (87 percent), Lautém (82 percent) and Manufahi (80 percent) municipalities. Interestingly, of the Lautém households which did use technologies, 66 percent reported using improved seeds, the highest of any municipality.

The use of organic fertilizers was favoured over inorganic (or industrial) fertilizers in every municipality and similarly more cropping households reported the use of organic pesticides over chemical pesticides in all municipalities, except for Bobonaro and Covalima.

The application of herbicides varied considerably across the regions, ranging from only 1 percent of cropping households in Viqueque Municipality to 19 percent in Bobonaro Municipality. It was a similar story with the irrigation of crops, with less than 2 percent of Manufahi cropping households reporting that they irrigated their crops while an estimated 17 percent of Bobonaro households irrigated their crops in the twelve months to July 2015 (Annex Table 39).

Figure 35: Number of Cropping Households by Farming Technologies Used, 2015



6.2 Technologies used by level of agricultural household

The results of Census also show the farming technologies adopted by cropping households in each level of agricultural activity. As might be expected, the level of adoption of agricultural technologies or inputs increased along with the level of scale or 'commercialization' of the household's agricultural activity. For example, 26 percent of farming households engaged in minor (backyard) crop activity used some form of agricultural technology, this increased to 28 percent for households producing crops mainly for home consumption with some sales, and it further increased to 34 percent for households producing crops mainly for sale (Annex Tables 40 – 42).

The type of technologies most commonly used across all three levels of agricultural activity were the use of organic fertilizers and improved seeds. Consistent with the previous finding, the proportion of cropping households adopting these, and other individual technologies, increased along with the more commercialized approach to crop production. Organic fertilizer use was reported by 12.2 percent, 12.4 percent and 19.1 percent of minor (backyard production), mainly for own consumption and mainly for sale cropping households respectively.

The use of improved seeds was reported by 12.1 percent of minor (backyard) cropping households, 14.9 percent of households producing mainly for their own consumption, and 16.9 percent of households producing crops mainly for sale.

Similarly, the application of irrigation to crops ranged from 5.5 percent of minor farming households, to 8.1 percent of households producing mainly for their own consumption, and 9.1 percent of households producing crops mainly for sale.

At the municipality level, cropping households in Dili and Lautém consistently had lower levels of

farming technologies being used, while households in SAR Oecusse, Aileu and Bobonaro reported higher use of farming technologies across each of the three levels of agricultural activity (Annex Tables 40 – 42).

6.3 Use of Tractors

A tractor is an important piece of machinery to help with the cultivation of crops and is often used to plough or till soil in preparation for planting and larger mechanized tractors are also used in the harvesting of some crops, particularly grain crops.

In the 2015 Population Census, cropping households were asked whether they had used either a hand tractor or a four-wheeled tractor in the cultivation of their crops in the 12 months leading up to Census night in July 2015. Households were also asked the source of any tractor used, i.e. whether it was their own private tractor, from a private third party, or whether it was a Government/Community or NGO/Church tractor.

Almost 20 percent (32,047 households) of all cropping households reported that they had used either a hand tractor, a four-wheeled tractor or both tractor types during the previous 12 month period. 19,722 (12.1 percent) cropping households reported that they had used a hand tractor only, 8,433 households (5.2 percent) had used a four-wheeled tractor only while 3,892 households (2.4 percent) had used both hand and four-wheeled tractors during the 12 month period (Figure 36 and Annex Table 34).

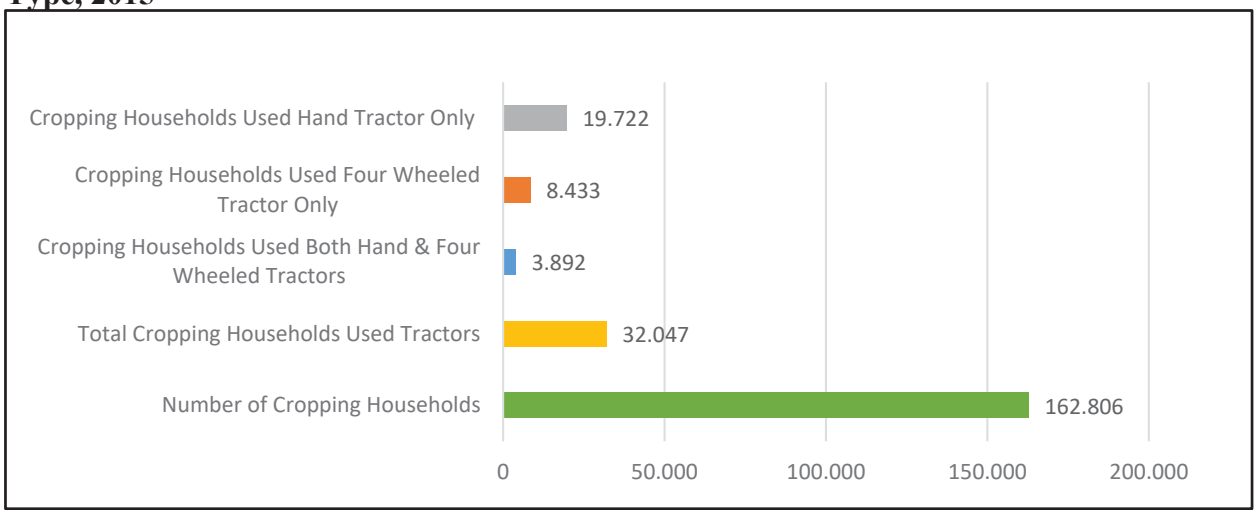
Cropping households in Covalima and Manufahi Municipalities reported the highest incidence of tractor use with 34.6 percent and 29.9 percent respectively. At the other end of the scale, only 8.0 percent and 8.4 percent of cropping households in Liquiçá and Ermera Municipalities respectively reported use of any tractor type. The use of hand tractors only was most prominent in Bobonaro Municipality (24.2 percent of cropping households) and in SAR Oecusse (21.2 percent), while 4.4 percent of cropping households in Liquiçá Municipality and 5.3 percent in Ermera Municipality reported using a hand tractor only.

Covalima Municipality (18.0 percent) along with Lautém Municipality (17.4 percent) had the highest proportion of cropping households using four wheeled tractors only, with the lowest proportion reported in the municipalities of Dili (0.4 percent), Bobonaro (1.2 percent) and Ainaro (1.5 percent).

The use of both hand and four-wheeled tractor types by cropping households ranged from 0.4 percent in Dili Municipality and 1.0 percent in Ermera Municipality to the higher proportions reported in Manufahi (7.2 percent) and Manatuto (4.6 percent) municipalities.

As expected, all households with access to either hand or four-wheeled tractors used this equipment in both their main and second cropping seasons (Annex Tables 35 and 36).

Figure 36: Number of Households Engaged in Crop Cultivation Using Tractors, by Tractor Type, 2015



Source of Tractor Used

Hand Tractors

The Census reported that there was a total of 23,614 households engaged in crop production who used a hand tractor during 2015. Of these, 2,875 or 12.2 percent reported using their own private hand tractor only. The main sources of hand tractors used were Government or Community-owned tractors only, reported by 5,874 cropping households (24.9 percent) and private third party-owned tractors only, reported by 4,179 households (17.7 percent). Only 1.4 percent of households used hand tractors sourced from Non-Government Organisations (NGOs) or Church sources only (Annex Table 37).

A further 3,055 cropping households used hand tractors borrowed or sourced from multiple sources, with Government or Community-owned tractors used by 86 percent of these households.

At the municipality level, the highest use of own private tractors only was reported by 19 percent of hand tractor using households in SAR Oecusse and 18.5 percent in Bobonaro Municipality, while 4.4 percent of these households in both Lautém and Aileu municipalities reported using their own private tractor only.

Over 50 percent of cropping households using hand tractors in Aileu Municipality solely used Government/Community tractors, compared with only 1.7 percent of similar households in Dili Municipality. Over 20 percent of hand tractor households in Aileu and Liquiçá municipalities borrowed or obtained their hand tractors from multiple sources, while this was the case for only 2.5 percent in Dili Municipality.

Four-wheeled Tractors

The vast majority of four-wheeled tractors used by cropping households were either Government or Community owned. Of the 12,325 cropping households that used a four-wheeled tractor during 2015, the only source was a Government or Community tractor for 8,008 households (65 percent) (Annex Table 38).

Less than 3 percent of households used their own private four-wheeled tractor only, while 2,015 households (16.3 percent) used or borrowed four-wheeled tractors from multiple sources, again mostly including a Government/Community tractor amongst these.

The highest proportions of cropping households using their own private four-wheeled tractor only were reported in Dili Municipality (14.9 percent) and SAR Oecusse (12.7 percent). This proportion was less than 1 percent for cropping households in Lautém and Manufahi, however these municipalities reported the highest use of Government or Community-owned four-wheeled tractors only, with Lautém (85.2 percent) and Manufahi (79.2 percent). Only 13.8 percent of Dili Municipality households used Government/Community-owned four-wheeled tractors only (Annex Table 38).

A high proportion (21.1 percent) of households in Baucau Municipality sourced four-wheeled tractors from NGO/Church sources only, with the next highest being Manatuto Municipality households with 3 percent.

Over 30 percent of cropping households using four-wheeled tractors in SAR Oecusse, Bobonaro, Baucau and Liquiçá Municipalities sourced their tractors from multiple sources, again with many sourcing a Government or Community-owned tractor. In total, 9,886 cropping households reported using a Government or Community-owned tractor in the 12 month period leading up to the 2015 Census night.

CHAPTER 7 - FISHERIES

Small-scale coastal fisheries dominate the fisheries sector and are restricted to a relatively narrow area along the coastline. Freshwater fisheries activities, i.e. inland capture fisheries, are largely limited to the monsoon season and predominantly carried out for subsistence. Backyard fish farming or aquaculture activities are being promoted to supplement rural food production with additional animal protein. Such small-scale aquaculture activities are concentrated on milkfish, tilapia and carp.

The topography of the country makes transport of fresh fish difficult. Lack of processing and landing infrastructure compound the problem of fish marketing and trade. The domestic market for fish thus remains rather underdeveloped and for many upland communities in the country's interior, fish is not a substantial part of their food consumption.

The 2015 Timor-Leste Census of Population and Housing also sought information on the number and structure of households engaged in fisheries activities in the 12 months prior to the Census.

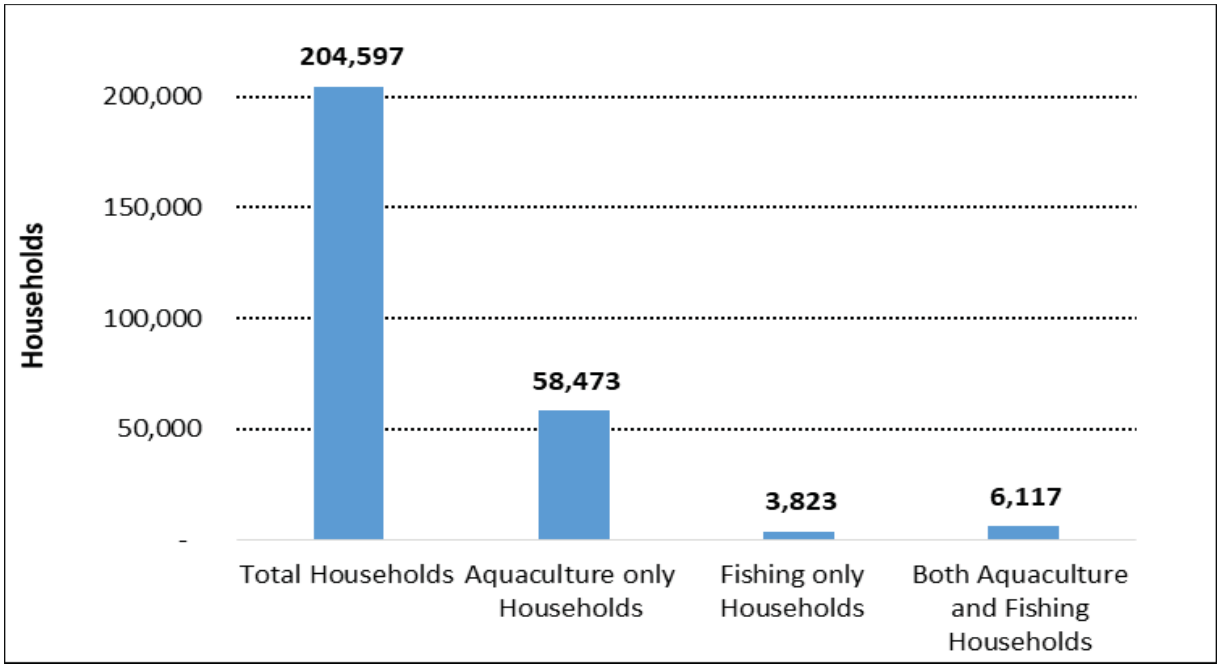
A household was defined to have been engaged in fisheries if any of household members engaged in either aquaculture or fishing activities or both, including commercial fisheries. These activities may have been carried out on land forming part of the holding or elsewhere. Aquaculture activity was defined as the farming of aquatic organisms such as fish, crustaceans, mollusks and plants.

It should be noted that concerns have been identified with the fisheries data previously released by the GDS, specifically in relation to the number of households reportedly engaged in aquaculture activities. Some fisheries experts have advised that they believe these numbers to be overstated, however it is not possible to confirm the validity of this opinion.

7.1 Households Engaged in Fisheries Activities

The Census found that 68,413 households, or 33 percent of all households in Timor-Leste were engaged in some form of fisheries activities in 2015. Of these fisheries households, 58,473 (85 percent) were engaged in aquaculture only, 3,823 households (6 percent) engaged in fishing only, and 6,117 households (9 percent) were engaged in both aquaculture and fishing activities (Figure 37).

Figure 37: Number of Households Engaged in Aquaculture and Fishing Activities, 2015



At the municipality level, Baucau, Bobonaro and Viqueque municipalities had the largest number of fisheries households with 7,973 households, 7,224 households and 7,165 households respectively. On a proportional basis, Liquiça (50 percent) and Viqueque (47 percent) municipalities recorded the highest proportion of households engaged in fisheries, while Dili (13 percent) and Ermera (32 percent) municipalities were on the lower end of the scale.

Five municipalities dominated the households engaged in aquaculture, namely, Baucau (7,578 households), Viqueque (6,971 households), Ermera (6,367 households), Bobonaro (5,965 households) and Liquiça (5,633 households). In percentage terms, Liquiça (47 percent) and Viqueque (46 percent) municipalities recorded the highest proportion of households engaged in aquaculture activities with Dili (12 percent) and Covalima (29 percent) municipalities the lowest proportions.

Dili municipality dominated the number of fishing households with 1,700, equating to 17.1 percent of all fishing households in Timor-Leste. Bobonaro (1,373 households) was the only other municipality to record more than 1,000 households engaged in fishing activities and recorded the highest proportion of fishing households with 8 percent. Less than 3 percent of households in Aileu and Ermera municipalities reported undertaking any fishing activities in the preceding 12 month period to July 2015.

The proportion of households engaged in both aquaculture and fishing activities was fairly consistent across the municipalities, ranging from Aileu (1.2 percent) and Ermera (1.7 percent) to Lautém (5.2 percent) and Bobonaro (5.7 percent) (Annex Table 52).

7.2 Fisheries Household Demographic Characteristics

Of the 68,413 households engaged in fisheries, 85 percent (58,275 households) were headed by males with 15 percent (10,138 households) headed by females. Interestingly, this ratio is almost identical to the male to female ratios recorded for both livestock households and cropping households.

This situation was observed across all municipalities, where the number of male-headed households engaged in fisheries activities dominated those of female-headed households. The

highest proportion of female-headed households was reported in Lautém (22 percent) and Viqueque (16 percent) municipalities, while the lowest proportion was recorded in Manufahi Municipality where less than 9 percent of fisheries households were headed by females (Annex Table 53).

Of the households engaged in fisheries activities, 47 percent (32,406 households) were aged 50 years or older with 44 percent (30,149 households) aged between 30 and 49 years. Less than 9 percent of fisheries household heads were aged less than 30 years old. Again, this age distribution mirrored that of the heads of cropping households.

Baucau (55 percent) and Bobonaro (52 percent) municipalities recorded the highest proportion of heads of fisheries households aged more than 50 years while Lautém and Bobonaro recorded the lowest proportions on younger household heads (under 30 years of age) at 5 percent and 7 percent respectively. There was little variation in the percentage of fisheries households headed by persons aged under 30 years, with Dili recording the highest proportion with 11 percent (Annex Table 54).

In terms of education attainment levels, 49 percent of the heads of fisheries households had undertaken some formal schooling, ranging from primary level through to university level, 49 percent had not attended school at all while less than 2 percent had received non-formal schooling.

Of those who had received formal schooling, 43 percent had primary level, 18 percent attained pre-secondary education level, 25 percent had secondary education, 2 percent had attended polytechnic education and 7 percent were educated to university level.

Dili Municipality recorded the highest proportion of fisheries household heads who had attended school at 69 percent, whereas only 39 percent of fisheries household heads in Ermera and SAR Oecusse had attended school (Annex Table 55).

In term of household members, 50 percent of households engaged in fisheries comprised 6 or more persons, 27 percent of them had four or five household members, while 23 percent of households had one to three members. Not surprisingly, these percentages replicated the breakdown of household member numbers for livestock and cropping households and showed similar patterns across all municipalities. This reflected the strong presence of extended families in households engaged in fisheries activities, where members of the extended family still live under the one roof (Annex Table 56).

CHAPTER 8 – CONCLUSIONS AND RECOMMENDATIONS

This final chapter provides some key findings from the agricultural content of the 2015 Timor-Leste Population and Housing Census and several recommendations, particularly around future agricultural survey activities. Limitations associated with the data should also be noted when using agricultural statistics from the 2015 Census.

As Timor-Leste is documented to have a significant reliance on imported food to meet the minimum maintenance requirement of the human population, agricultural research endeavors, which serve to promote higher agricultural yields and address food insecurity in the region, have an important role to play. The Global Hunger Index 2017 ranks Timor-Leste as one of the more hungry nations in the world (ranked 110 out of 119 nations) with a GHI score of 34.3, and with 26.9 percent of the total population undernourished in 2015. Children under the age of five years have an incidence rate of muscle wasting of 11%, and an overwhelming incidence of nutritionally-induced growth stunting of 50.2 percent, with Timor-Leste being one of only three countries in the world to exceed 50 percent[5].

Therefore, the continued development of the agriculture sector, across all sub-sectors of cropping, livestock and fisheries, remains critical to the future food security and nutritional needs of the Timor-Leste people.

8.1 Conclusions

8.1.1 Almost 90 percent of all Timor-Leste households reported engaging in some form of agricultural activity in 2015, with livestock rearing and crop cultivation the predominant subsectors. The number of households engaged in fisheries activities (aquaculture and fishing) was much higher than expected, and there remains some doubts surrounding these data. The Census also found that most households were engaged in the activities of more than one agricultural sub-sector, mainly livestock and cropping, but the combinations of livestock rearing and fisheries; cropping and fisheries; and livestock rearing, cropping and fisheries activities were also reported.

8.1.2 The vast majority of households engaged in agriculture were subsistence producers, that is, the produce grown by the household was primarily for the household's own consumption. Less than 3 percent of the households engaged in agriculture reported that their production was mainly for sale. Over half the farming households categorized their household as producing mainly for home consumption but with some sales, while slightly less responded that their agricultural activity was minor (or backyard) only. The challenge for households is to increase their production levels to a more commercial scale of operation to overcome problems such as poverty, famine, hunger and poor nutrition. However, there are obstacles to be overcome to further develop commercial farming, such as the availability of suitable arable land. A large proportion (almost two-thirds) of agricultural households cultivated an area less than one hectare, while less than two percent of households cultivated more than 5 hectares. The smaller farms, and backyard activities tend to use the land more intensively in an attempt to alleviate land constraints, whereas many of the larger farms are often able to generate greater scales of efficiencies than smaller scale operations. As the Census did not collect actual measures of land size or production levels for each household, it is not possible to examine the extent of the larger scale agricultural operations, the efficiencies that scale may present, or their contribution to overall production levels compared with subsistence households.

8.1.3 In the period from 2010 to 2015, the number of households engaging in crop cultivation increased significantly, by around 40 percent. Most cropping households cultivated multiple crop

[5] GHI (Global Hunger Index) 2017, 'Timor-Leste', accessed online at http://www.globalhungerindex.org/results-2017/

types, with an average of 7.2 different crops grown per household in the 12 months leading up to the 2015 Census night. Increases in cropping households were recorded for all crop types covered in the Census, with the largest increases reported being households growing rice (up 57 percent) and coffee (up 50 percent). Maize and cassava were the most commonly grown crops followed by sweet potatoes, vegetables, coconuts and beans. These increases have occurred during a period in which the Timor-Leste Government, through the Ministry of Agriculture and Fisheries, has made efforts to enhance extension services, to provide access to improved seed varieties and fertilizers, and to inform farmers of crop cultivation and livestock husbandry methods.

8.1.4 Livestock rearing was the main agriculture subsector in Timor-Leste in 2015, with 87 percent of all households engaged in this activity. This represented a 21 percent increase in households rearing livestock since the previous census in 2010. Most of these households reported rearing pigs and chickens. Similarly, livestock counts across each of the broad livestock categories of poultry, small and large livestock increased significantly between 2010 and 2015. Chicken numbers rose by 32 percent, small livestock numbers increased by 18 percent and large livestock numbers increased by 27 percent. Average chicken numbers per household increased over the five years as did average pig and cattle/cow numbers. Average goat and buffalo numbers remained constant, while average sheep numbers decreased. Over the past two decades there have been various international support programs through the World Bank and organisations such as the Australian Centre for International Agricultural Research to help improve animal husbandry practices and animal health throughout Timor-Leste.

8.1.5 The Census found that a significant proportion (77 percent) of farming household heads had either not attended school or had not reached secondary education level. Very few household heads (only six percent) had attained university level. The Census also recorded that the age of household heads engaged in agriculture and fisheries was skewed towards those aged 50 years or older (45 percent), while only nine percent of agriculture household heads were aged less than 30 years. Literacy and education levels are clearly important, and it might be expected that higher education levels could lead to a higher level of understanding and adoption of new farming technologies, although the Census results could suggest that this might not necessarily be the case. For example, Dili Municipality recorded the highest proportion of household heads having attended school and attaining university level education, but also the lowest take-up of farming technologies. On the other hand, SAR Oecusse and Bobonaro Municipality household heads, despite recording some of the lower rates of school education, reported some of the higher levels of farming technologies utilized. One of the main challenges facing Timor-Leste is to encourage educated people at productive age to become engaged in the agricultural sector. If agriculture and fisheries are not viewed as an attractive job option for young people in Timor-Leste, then the availability of labor resources to support an increasing agriculture sector might prove a challenge in the future, particularly with the existing age demographic of farming household heads. Furthermore, with fifteen percent of agricultural households currently headed by females, it will also be important to actively encourage and engage females into the agricultural workforce if program objectives are to be realized. These female-headed households are critically important in enhancing household food security and nutrition and the overall wellbeing of the household.

8.1.6 Some efficiencies in land management and modern farming technologies are evident in Timor-Leste, with the use of improved seeds and organic fertilizer to improve crop production, the most commonly-used farming technologies in 2015. One-fifth of households engaged in crop cultivation used tractors, mainly hand tractors but also four-wheeled tractors, with most of the larger four-wheeled tractors owned by the Government or Community. The use of tractors to prepare and cultivate land will become increasingly important, particularly if there are any future shortages of agricultural labor.

8.1.7 Fisheries is not the mainstay of the Timor-Leste economy, with agricultural production for local consumption and growing coffee for export the main economic activities. However, fish are important for both food security and nutrition. Small-scale coastal fisheries dominate the fisheries sector and are restricted to a relatively narrow area along the coastline. Freshwater fisheries activities, i.e. inland capture fisheries, are largely limited to the monsoon season and predominantly carried out for subsistence. Back-yard fish farming activities are being promoted by the government to supplement rural food production with additional animal protein. Such small-scale aquaculture activities are concentrated on milkfish, tilapia and carp and there is some aquaculture of Eucheuma seaweed undertaken. The small-scale nature of fishing operations means that fishing is no more than a supplementary activity for coastal communities, where inhabitants derive their livelihood from a variety of activities.

8.1.8 New research by WorldFish has found that Timorese people that depend on fishing for their primary livelihood have higher levels of well-being – linked to asset ownership, income and food security – than other natural resource-based livelihoods. Further, fishing as a livelihood is far less vulnerable to external factors, such as severe climatic events or pests and diseases, than other livelihoods. These findings highlight that the fisheries sector in Timor-Leste can be a crucial path out of poverty and boost well-being, particularly for the rural poor who live near the coast.[6]

8.1.9 The Census estimated that about one-third of all Timor-Leste households were involved in some type of fisheries activity, predominantly aquaculture, with less than five percent of households reporting that they were engaged in fishing. The production from inland fisheries resources are still considered to be in their infancy, despite the higher than expected number of households which responded as undertaking aquaculture activities in the twelve months leading up to the 2015 Census. Timor-Leste has significant fishing potential which is yet to be fully explored and with further development could make an important contribution to improving rural economic wellbeing, food security and nutrition levels.

8.1.10 The Population and Housing Census provided a unique opportunity for identifying all agricultural households, including in urban areas, for developing an up-to-date, reliable frame as a starting point for future agricultural censuses and surveys. However, building a frame of household-operated agricultural holdings (or land parcels) is a much larger and more complex task. It effectively means visiting all private households to establish the extent and scale of their agricultural activity, including how many separate land holdings are operated by each household and their geographical location. Minimum size limits, on variables such as numbers of livestock, numbers of trees (tree crops), area of land (temporary crops), value of annual sales, and the purpose of production (breeding livestock), are used in many countries to determine whether a household's agricultural activity qualifies as a holding or not. In addition to providing a frame, there are advantages for the design of an agricultural census, as information about the smallest holdings can be collected in the Population and Housing Census and little additional data would be gleaned from administering a further questionnaire to such holdings. Instead, effort and resources for data collection, could then be focused on the more productive holdings.

8.2 Recommendations

8.2.1 The 2015 Timor-Leste Population and Housing Census was certainly a step in the right direction in determining agricultural household numbers, however the lack of detailed information regarding actual land area farmed, number and type of holdings, crop production or yields per crop type, bearing and non-bearing orchard and plantation tree numbers etc., presents some difficulties in assessing and defining the smallest holdings from the productive holdings. For future Censuses,

[6] *Improved fisheries in Timor-Leste: A path to greater wellbeing?* http://blog.worldfishcenter.org/2017/06/improved-fisheries-in-timor-leste-a-path-to-greater-well-being/

it is recommended that line ministries and institutions responsible for the Census development consider the possible linking of the Population and Housing Census with an Agricultural Census, as has been successfully adopted by several countries. The Food and Agricultural Organisation of the United Nations has issued various guidelines and procedural documentation addressing the potential benefits of linking the two Censuses.

8.2.2 It is critical that any future Censuses include post-enumeration surveys which incorporate quality assurance checks of not only household and individual demographic data collected, but also of any agriculture or supplementary information collected from each household. Without such post-enumeration studies in the case of the 2015 Census, it is not possible to qualify the accuracy of the agricultural and fisheries data collected. Such studies may also identify any weaknesses in enumerator or supervisor training which could be rectified for future censuses or surveys.

8.2.3 It is also important that authorities consider consolidating and building capacity and capability within the Ministry of Agriculture and Fisheries to enable the ongoing collection, production and dissemination of up-to-date and accurate agricultural statistics in a timely and coherent manner. Such information is critical for informed decision making and for the development of policy planning to promote economic growth not only in rural areas but nationally, to reduce poverty, improve nutrition and provide food security.

8.2.4 Considering (i) the need for a database on the structure and main characteristics of agricultural holdings for use by both the government and private sectors; (ii) the growth and spread of households engaged in agricultural activities across all municipalities, and; (iii) the critical need for accurate and up-to-date agricultural statistics for policy, planning and evaluation of the agriculture sector, it is recommended that a completely enumerated Agricultural Census be conducted as soon as practicable, and preferably before 2020.

8.2.5 It is important that data collection activities consider the requirement for regional profile data and a breakdown of agriculture activities in each geographical region. A completely enumerated Agricultural Census would provide the basis for targeted agricultural policies specifically suited to the varying characteristics and potential opportunities for each of the regions in Timor-Leste.

8.2.6 It is recommended that initiatives to improve agricultural efficiencies and facilitate improvement strategies, including private holding management approaches be adopted to benefit the Timor-Leste agricultural sector. These should supplement existing local practices with farmers and graduates encouraged to work together to conduct research and trial new approaches to improve livestock husbandry and health, increase crop cultivation including environmentally-friendly land fertilization and pest control, as well as to enhance forestry and fisheries activities. Importantly, any knowledge gained from such initiatives should be invest back into the wider Timor-Leste agricultural sector**.**

8.2.7 With most of the farming households in the country headed by persons aged over 50 years old, there is a real need to implement policies that will promote and encourages the engagement of youth in agricultural sector work. This will be necessary to address the challenges brought about by increasing food and nutritional requirements of a Timor-Leste population growing at the rate of around two percent per year and where the median age is just under twenty years. To encourage youth into the agriculture sector, it is recommended that the provision of scholarships to rural-based students to study agriculture, fisheries and rural economic development be considered.

8.2.8 Finally, it is strongly recommended that Timor-Leste develops a strategic plan for agricultural and rural statistics which maps out an ongoing and affordable statistical system for the next ten to fifteen years. This plan should incorporate an initial Agricultural Census conducted before 2020 and at least every ten years thereafter, regular follow-up surveys (preferably annually or biennially), together with enhanced linkages with the Population and Housing Census, including

questionnaire content, CAPI and data processing software and hardware, enumerator training materials and methods, and linkages in the actual data collected. More regular agricultural surveys are essential to capture changes in the agriculture sector over time and to provide timely and accurate statistical data to facilitate well-informed policy decisions, efficient and well-targeted rural development to service the agriculture sector, all with the aim of improving the overall economic development and well-being of the Timor-Leste population.

ANNEX 1. LIST OF STATISTICAL TABLES

ANNEX 2. STATISTICAL TABLES

Table 1. Number of Households Engaged in Agricultural Activity, 2015

Municipality	Total Number of Households	Number of Agricultural Households								Number of Households not Engaged in Agricultural Activity
		Total	Livestock			Crops				
			Households with Livestock	Own Use	Selling	Households with Crops	Main Season	Second Season	Both Seasons	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	**204,597**	**183,633**	**178,363**	**177,534**	**174,936**	**162,806**	**162,229**	**159,567**	**158,990**	**20,964**
AILEU	7,598	7,489	7,344	7,326	7,223	7,385	7,383	7,319	7,317	109
AINARO	10,601	10,379	10,122	10,079	9,962	10,149	10,138	10,085	10,074	222
BAUCAU	22,976	22,118	21,706	21,653	21,376	20,601	20,542	20,166	20,107	858
BOBONARO	17,635	17,201	16,725	16,571	16,496	16,638	16,599	16,331	16,292	434
COVALIMA	12,564	12,324	12,116	12,045	12,057	11,691	11,661	11,497	11,467	240
DILI	42,485	25,827	24,452	24,264	23,211	12,199	11,914	11,165	10,880	16,658
ERMERA	20,671	20,048	19,063	18,986	18,433	19,725	19,701	19,479	19,455	623
LAUTÉM	12,050	11,650	11,420	11,379	11,347	10,849	10,826	10,597	10,574	400
LIQUIÇA	11,885	11,591	11,390	11,346	11,310	11,074	11,063	10,932	10,921	294
MANATUTO	7,467	7,126	6,960	6,934	6,919	6,191	6,165	6,077	6,051	341
MANUFAHI	9,023	8,901	8,790	8,769	8,717	8,582	8,560	8,503	8,481	122
SAR OECUSSE	14,345	14,203	13,718	13,661	13,498	14,029	14,024	13,939	13,934	142
VIQUEQUE	15,297	14,776	14,557	14,521	14,387	13,693	13,653	13,477	13,437	521

Table 2. Number of Households by Agriculture Subsector Activity, 2015

Municipality	Total Number of Households	Households Engaged in Sub-Sector Activity								Households not Engaged in any Sub-Sector Activity
		Total	Livestock	Crops	Aquaculture/ Fisheries	Livestock and Crops	Livestock and Aquaculture/ Fisherles	Crops and Aquaculture/ Fisherles	Livestock, Crops and Aquaculture/ Fisherles	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	204,597	184,968	178,363	162,806	68,413	157,536	65,563	64,852	63,337	19,629
AILEU	7,598	7,518	7,344	7,385	3,304	7,240	3,223	3,229	3,177	80
AINARO	10,601	10,458	10,122	10,149	3,911	9,892	3,731	3,777	3,676	143
BAUCAU	22,976	22,227	21,706	20,601	7,973	20,189	7,743	7,663	7,542	749
BOBONARO	17,635	17,250	16,725	16,638	7,224	16,162	7,011	7,114	6,950	385
COVALIMA	12,564	12,350	12,116	11,691	4,006	11,483	3,927	3,910	3,857	214
DILI	42,485	26,329	24,452	12,199	5,528	10,824	4,858	4,098	3,930	16,156
ERMERA	20,671	20,198	19,063	19,725	6,567	18,740	6,058	6,344	5,985	473
LAUTÉM	12,050	11,725	11,420	10,849	5,254	10,619	5,085	5,055	4,961	325
LIQUIÇA	11,885	11,650	11,390	11,074	5,961	10,873	5,831	5,759	5,688	235
MANATUTO	7,467	7,196	6,960	6,191	2,509	6,025	2,385	2,210	2,156	271
MANUFAHI	9,023	8,915	8,790	8,582	3,333	8,471	3,301	3,264	3,246	108
SAR OECUSSE	14,345	14,233	13,718	14,029	5,678	13,544	5,479	5,594	5,425	112
VIQUEQUE	15,297	14,919	14,557	13,693	7,165	13,474	6,931	6,835	6,744	378

Table 3. Number of Households Engaged in Agriculture, by Sex of Household Head, 2015

Municipality	Total Number of Households	Heads of Households Engaged in Agriculture			Number of Households not engaged in Agriculture
		Total	Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	204,597	183,633	155,133	28,500	20,964
AILEU	7,598	7,489	6,507	982	109
AINARO	10,601	10,379	8,776	1,603	222
BAUCAU	22,976	22,118	18,238	3,880	858
BOBONARO	17,635	17,201	14,561	2,640	434
COVALIMA	12,564	12,324	10,538	1,786	240
DILI	42,485	25,827	22,316	3,511	16,658
ERMERA	20,671	20,048	16,912	3,136	623
LAUTÉM	12,050	11,650	8,809	2,841	400
LIQUIÇA	11,885	11,591	10,076	1,515	294
MANATUTO	7,467	7,126	6,086	1,040	341
MANUFAHI	9,023	8,901	8,013	888	122
SAR OECUSSE	14,345	14,203	12,159	2,044	142
VIQUEQUE	15,297	14,776	12,142	2,634	521

Table 4. Number of Households Engaged in Agriculture, by Age of Household Head (Years), 2015

Municipality	Total Number of Households	Number Households Engaged in Agriculture						Number of Households not engaged in Agriculture
		Total	Head of Household by Age Group (Years)					
			<20	20 - 29	30 - 39	40 - 49	>50	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TIMOR-LESTE	204,597	183,633	1,089	15,571	35,711	47,633	83,629	20,964
AILEU	7,598	7,489	28	500	1,177	1,977	3,807	109
AINARO	10,601	10,379	145	733	2,042	2,849	4,610	222
BAUCAU	22,976	22,118	86	1,524	3,201	5,420	11,887	858
BOBONARO	17,635	17,201	69	1,251	3,286	4,125	8,470	434
COVALIMA	12,564	12,324	112	1,229	2,377	3,156	5,450	240
DILI	42,485	25,827	94	2,839	6,855	7,302	8,737	16,658
ERMERA	20,671	20,048	162	1,826	3,811	5,649	8,600	623
LAUTÉM	12,050	11,650	58	616	1,950	3,307	5,719	400
LIQUIÇA	11,885	11,591	79	1,127	2,039	2,743	5,603	294
MANATUTO	7,467	7,126	33	484	1,208	1,815	3,586	341
MANUFAHI	9,023	8,901	35	744	1,679	2,272	4,171	122
SAR OECUSSE	14,345	14,203	95	1,377	3,265	3,273	6,193	142
VIQUEQUE	15,297	14,776	93	1,321	2,821	3,745	6,796	521

Table 5. Number of Households Engaged in Agriculture, by Education Level of Household Head, 2015

Municipality	Total Number of Households	Number of Households Engaged In Agriculture									Number of Households not Engaged in Agriculture
		Total	Heads of Household by Education Level Attained								
			Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic / Diploma	University	Non-formal	Did Not Attend School	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	204,597	183,633	3,651	37,354	15,824	26,923	2,705	10,799	2,569	83,808	20,964
AILEU	7,598	7,489	164	1,967	680	815	77	328	113	3,345	109
AINARO	10,601	10,379	234	1,619	993	1,409	122	319	288	5,395	222
BAUCAU	22,976	22,118	696	4,579	1,602	2,746	426	932	252	10,885	858
BOBONARO	17,635	17,201	307	3,380	1,157	2,102	242	520	296	9,197	434
COVALIMA	12,564	12,324	190	2,352	1,429	2,355	191	462	262	5,083	240
DILI	42,485	25,827	411	5,585	2,427	6,574	529	4,988	222	5,091	16,658
ERMERA	20,671	20,048	391	3,631	1,452	1,828	162	544	219	11,821	623
LAUTÉM	12,050	11,650	139	2,656	1,213	1,758	196	494	194	5,000	400
LIQUIÇA	11,885	11,591	131	2,543	1,097	1,424	126	401	151	5,718	294
MANATUTO	7,467	7,126	364	1,547	638	1,006	83	190	111	3,187	341
MANUFAHI	9,023	8,901	129	1,974	1,058	1,470	129	365	122	3,654	122
SAR OECUSSE	14,345	14,203	174	2,714	715	1,410	153	572	57	8,408	142
VIQUEQUE	15,297	14,776	321	2,807	1,363	2,026	269	684	282	7,024	521

Table 6. Number of Households Engaged in Agriculture, by Household Member Size, 2015

Municipality	Total Number of Households	Number of Households Engaged in Agriculture				Number of Households not Engaged in Agriculture
		Total	Household Member Size			
			1-3	4-5	6 or more	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	204,597	183,633	42,335	48,398	92,900	20,964
AILEU	7,598	7,489	1,323	1,615	4,551	109
AINARO	10,601	10,379	2,286	2,522	5,571	222
BAUCAU	22,976	22,118	6,497	5,686	9,935	858
BOBONARO	17,635	17,201	3,989	5,074	8,138	434
COVALIMA	12,564	12,324	3,114	4,134	5,076	240
DILI	42,485	25,827	3,393	5,672	16,762	16,658
ERMERA	20,671	20,048	3,984	4,845	11,219	623
LAUTÉM	12,050	11,650	3,351	2,646	5,653	400
LIQUIÇA	11,885	11,591	2,256	3,096	6,239	294
MANATUTO	7,467	7,126	1,384	1,745	3,997	341
MANUFAHI	9,023	8,901	1,775	2,408	4,718	122
SAR OECUSSE	14,345	14,203	4,299	4,708	5,196	142
VIQUEQUE	15,297	14,776	4,684	4,247	5,845	521

Table 7. Number of Households Engaged in Agriculture, by Level of Agricultural Activity, 2015

Municipality	Total Number of Households	Number of Households Engaged in Agriculture				Number of Households not Engaged in Agriculture
		Total	Level of Agricultural Activity			
			Minor agriculture activity (backyard)	Producing mainly for home consumption with some sales	Producing mainly for sale with some home consumption	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	204,597	183,633	84,217	94,159	5,257	20,964
AILEU	7,598	7,489	3,472	3,837	180	109
AINARO	10,601	10,379	5,368	4,578	433	222
BAUCAU	22,976	22,118	10,212	11,037	869	858
BOBONARO	17,635	17,201	8,184	8,581	436	434
COVALIMA	12,564	12,324	3,845	8,227	252	240
DILI	42,485	25,827	9,956	15,086	785	16658
ERMERA	20,671	20,048	12,098	7,525	425	623
LAUTÉM	12,050	11,650	4,843	6,545	262	400
LIQUIÇA	11,885	11,591	7,129	3,974	488	294
MANATUTO	7,467	7,126	2,453	4,305	368	341
MANUFAHI	9,023	8,901	4,507	4,083	311	122
SAR OECUSSE	14,345	14,203	6,252	7,859	92	142
VIQUEQUE	15,297	14,776	5,898	8,522	356	521

Table 8. Number of Households with Livestock, by Livestock Type, 2015

Municipality	Total Number of Households	Number of Households with Livestock	Number of Households								Number of Households with no Livestock
			Chickens	Pigs	Sheep	Goats	Cattle / Cows	Buffalo	Horses	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	**204,597**	**178,363**	**146,158**	**146,449**	**7,885**	**46,154**	**52,864**	**26,324**	**27,339**	**46,818**	**26,234**
AILEU	7,598	7,344	5,831	6,402	316	2,850	2,788	1,053	1,799	687	254
AINARO	10,601	10,122	8,204	8,516	307	2,357	2,629	1,774	3,932	3,435	479
BAUCAU	22,976	21,706	19,398	18,976	3,426	6,987	2,483	3,732	5,484	4,625	1,270
BOBONARO	17,635	16,725	13,708	14,338	464	5,350	8,489	1,680	1,503	4,397	910
COVALIMA	12,564	12,116	9,698	10,343	282	2,164	6,969	978	890	3,917	448
DILI	42,485	24,452	15,948	17,038	407	3,538	1,240	508	297	5,785	18,033
ERMERA	20,671	19,063	15,812	14,660	594	3,876	6,052	1,248	1,756	6,348	1,608
LAUTÉM	12,050	11,420	10,137	9,856	556	1,782	4,113	2,665	2,172	1,769	630
LIQUIÇA	11,885	11,390	10,327	9,802	294	5,112	4,252	566	640	5,006	495
MANATUTO	7,467	6,960	5,767	5,815	343	2,078	1,831	1,774	1,773	1,093	507
MANUFAHI	9,023	8,790	7,829	7,442	149	1,897	3,183	1,770	2,467	3,553	233
SAR OECUSSE	14,345	13,718	10,582	10,913	228	4,431	3,719	4,337	590	722	627
VIQUEQUE	15,297	14,557	12,917	12,348	519	3,732	5,116	4,239	4,036	5,481	740

Table 9. Number of Households Engaged in Agriculture with Livestock, by Sex of Household Head, 2015

Municipality	Number of Households Engaged in Agriculture	Number of Households Engaged in Agriculture with Livestock			Number of Households Engaged in Agriculture with No Livestock
		Total	Heads of Household by Sex		
			Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	183,633	178,363	151,018	27,345	5,270
AILEU	7,489	7,344	6,389	955	145
AINARO	10,379	10,122	8,580	1,542	257
BAUCAU	22,118	21,706	17,922	3,784	412
BOBONARO	17,201	16,725	14,197	2,528	476
COVALIMA	12,324	12,116	10,387	1,729	208
DILI	25,827	24,452	21,136	3,316	1,375
ERMERA	20,048	19,063	16,114	2,949	985
LAUTÉM	11,650	11,420	8,675	2,745	230
LIQUIÇA	11,591	11,390	9,926	1,464	201
MANATUTO	7,126	6,960	5,963	997	166
MANUFAHI	8,901	8,790	7,927	863	111
SAR OECUSSE	14,203	13,718	11,816	1,902	485
VIQUEQUE	14,776	14,557	11,986	2,571	219

Table 10. Number of Households Engaged in Agriculture with Livestock, by Age of Household Head (Years), 2015

Municipality	Number of Households Engaged in Agriculture	Number of Agricultural Households with Livestock						Number of Households Engaged in Agriculture with No Livestock
		Total	Heads of Household by Age Group (years)					
			<20	20 - 29	30 - 39	40 - 49	>50	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TIMOR-LESTE	183,633	178,363	949	14,687	34,443	46,421	81,863	5,270
AILEU	7,489	7,344	21	484	1,147	1,941	3,751	145
AINARO	10,379	10,122	132	703	1,973	2,791	4,523	257
BAUCAU	22,118	21,706	82	1,462	3,125	5,325	11,712	412
BOBONARO	17,201	16,725	57	1,188	3,178	4,024	8,278	476
COVALIMA	12,324	12,116	96	1,187	2,327	3,115	5,391	208
DILI	25,827	24,452	79	2,537	6,420	6,972	8,444	1,375
ERMERA	20,048	19,063	138	1,702	3,627	5,383	8,213	985
LAUTÉM	11,650	11,420	51	596	1,899	3,261	5,613	230
LIQUIÇA	11,591	11,390	71	1,078	1,993	2,706	5,542	201
MANATUTO	7,126	6,960	30	456	1,176	1,771	3,527	166
MANUFAHI	8,901	8,790	33	736	1,645	2,249	4,127	111
SAR OECUSSE	14,203	13,718	71	1,282	3,146	3,178	6,041	485
VIQUEQUE	14,776	14,557	88	1,276	2,787	3,705	6,701	219

Table 11. Number of Households Engaged in Agriculture with Livestock, by Education Level of Household Head, 2015

Municipality	Number of Households Engaged in Agriculture	Number of Households Engaged in Agriculture with Livestock									Number of Households Engaged in Agriculture with No Livestock
		Total	Household Head Education Level								
			Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic / Diploma	University	Non-formal	Did Not Attend School	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		(11)
TIMOR-LESTE	183,633	178,363	3,563	36,503	15,343	25,852	2,643	10,220	2,511	81,728	5,270
AILEU	7,489	7,344	163	1,936	665	788	75	316	112	3,289	145
AINARO	10,379	10,122	231	1,584	970	1,357	120	302	279	5,279	257
BAUCAU	22,118	21,706	682	4,495	1,568	2,668	419	891	251	10,732	412
BOBONARO	17,201	16,725	300	3,315	1,122	2,011	233	500	285	8,959	476
COVALIMA	12,324	12,116	189	2,313	1,398	2,307	191	448	260	5,010	208
DILI	25,827	24,452	390	5,361	2,300	6,177	504	4,637	216	4,867	1,375
ERMERA	20,048	19,063	380	3,497	1,364	1,707	158	508	206	11,243	985
LAUTÉM	11,650	11,420	137	2,624	1,193	1,721	193	480	192	4,880	230
LIQUIÇA	11,591	11,390	129	2,490	1,073	1,393	122	393	149	5,641	201
MANATUTO	7,126	6,960	351	1,518	627	975	82	179	109	3,119	166
MANUFAHI	8,901	8,790	129	1,952	1,044	1,445	128	355	122	3,615	111
SAR OECUSSE	14,203	13,718	169	2,639	674	1,322	150	535	54	8,175	485
VIQUEQUE	14,776	14,557	313	2,779	1,345	1,981	268	676	276	6,919	219

Table 12. Number of Households Engaged in Agriculture with Livestock, by Household Member Size, 2015

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households Engaged in Agriculture with Livestock				Number of Households Engaged in Agriculture with No Livestock
		Total	Household Member Size			
			1-3	4-5	6 or more	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	183,633	178,363	40,390	46,994	90,979	5,270
AILEU	7,489	7,344	1,265	1,582	4,497	145
AINARO	10,379	10,122	2,166	2,470	5,486	257
BAUCAU	22,118	21,706	6,313	5,590	9,803	412
BOBONARO	17,201	16,725	3,824	4,923	7,978	476
COVALIMA	12,324	12,116	3,011	4,076	5,029	208
DILI	25,827	24,452	3,045	5,274	16,133	1,375
ERMERA	20,048	19,063	3,665	4,613	10,785	985
LAUTÉM	11,650	11,420	3,226	2,604	5,590	230
LIQUIÇA	11,591	11,390	2,182	3,034	6,174	201
MANATUTO	7,126	6,960	1,325	1,699	3,936	166
MANUFAHI	8,901	8,790	1,735	2,372	4,683	111
SAR OECUSSE	14,203	13,718	4,080	4,558	5,080	485
VIQUEQUE	14,776	14,557	4,553	4,199	5,805	219

Table 13. Number of Households Engaged in Agriculture with Crops, by Sex of Household Head, 2015

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households with Crops			Number of Households Engaged in Agriculture with no Crops
		Total	Head of Households		
			Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	183,633	162,806	137,685	25,121	20,827
AILEU	7,489	7,385	6,414	971	104
AINARO	10,379	10,149	8,591	1,558	230
BAUCAU	22,118	20,601	17,074	3,527	1517
BOBONARO	17,201	16,638	14,104	2,534	563
COVALIMA	12,324	11,691	10,015	1,676	633
DILI	25,827	12,199	10,482	1,717	13628
ERMERA	20,048	19,725	16,664	3,061	323
LAUTÉM	11,650	10,849	8,302	2,547	801
LIQUIÇA	11,591	11,074	9,617	1,457	517
MANATUTO	7,126	6,191	5,339	852	935
MANUFAHI	8,901	8,582	7,748	834	319
SAR OECUSSE	14,203	14,029	12,017	2,012	174
VIQUEQUE	14,776	13,693	11,318	2,375	1083

Table 14. Number of Households Engaged in Agriculture with Crops, by Age of Household Head (Years), 2015

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households with Crops						Number of Households Engaged in Agriculture with no Crops
		Total	Heads of Household by Age Group (years)					
			<20	20 - 29	30 - 39	40 - 49	>50	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TIMOR-LESTE	183,633	162,806	947	13,348	30,168	41,669	76,674	20,827
AILEU	7,489	7,385	27	493	1,139	1,946	3,780	104
AINARO	10,379	10,149	137	711	1,992	2,786	4,523	230
BAUCAU	22,118	20,601	78	1,404	2,883	5,018	11,218	1,517
BOBONARO	17,201	16,638	59	1,202	3,127	3,947	8,303	563
COVALIMA	12,324	11,691	99	1,135	2,197	2,993	5,267	633
DILI	25,827	12,199	47	1,345	3,061	3,234	4,512	13,628
ERMERA	20,048	19,725	156	1,797	3,725	5,560	8,487	323
LAUTÉM	11,650	10,849	45	544	1,781	3,116	5,363	801
LIQUIÇA	11,591	11,074	71	1,059	1,896	2,590	5,458	517
MANATUTO	7,126	6,191	26	427	1,018	1,569	3,151	935
MANUFAHI	8,901	8,582	31	700	1,592	2,189	4,070	319
SAR OECUSSE	14,203	14,029	92	1,342	3,210	3,246	6,139	174
VIQUEQUE	14,776	13,693	79	1,189	2,547	3,475	6,403	1,083

Table 15. Number of Households Engaged in Agriculture with Crops, by Education Level of Household Head, 2015

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households Engaged in Agriculture with Crops									Number of Households Engaged in Agriculture with no Crops
		Total	Household Heads Education Level								
			Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic / Diploma	University	Non-formal	Did Not Attend School	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	183,633	162,806	3,336	33,434	13,908	21,189	2,178	6,761	2,389	79,611	20,827
AILEU	7,489	7,385	163	1,947	671	784	74	314	113	3,319	104
AINARO	10,379	10,149	228	1,584	973	1,376	118	302	283	5,285	230
BAUCAU	22,118	20,601	669	4,271	1,486	2,402	375	750	238	10,410	1,517
BOBONARO	17,201	16,638	294	3,290	1,118	1,955	222	453	281	9,025	563
COVALIMA	12,324	11,691	187	2,247	1,349	2,145	167	391	251	4,954	633
DILI	25,827	12,199	227	2,954	1,186	2,523	214	1,739	128	3,228	13,628
ERMERA	20,048	19,725	387	3,578	1,419	1,784	150	519	215	11,673	323
LAUTÉM	11,650	10,849	132	2,512	1,138	1,600	172	399	187	4,709	801
LIQUIÇA	11,591	11,074	131	2,439	1,022	1,297	115	358	148	5,564	517
MANATUTO	7,126	6,191	312	1,351	536	797	63	128	101	2,903	935
MANUFAHI	8,901	8,582	126	1,917	1,021	1,381	122	323	120	3,572	319
SAR OECUSSE	14,203	14,029	171	2,690	705	1,370	150	551	56	8,336	174
VIQUEQUE	14,776	13,693	309	2,654	1,284	1,775	236	534	268	6,633	1,083

Table16. Number of Households Engaged in Agriculture with Crops, by Household Member Size, 2015

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households with Crops				Number of Households Engaged in Agriculture with no Crops
		Total	Household Member Size			
			1-3	4-5	6 or more	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	183,633	162,806	38,812	43,587	80,407	20,827
AILEU	7,489	7,385	1,307	1,581	4,497	104
AINARO	10,379	10,149	2,221	2,471	5,457	230
BAUCAU	22,118	20,601	6,057	5,339	9,205	1,517
BOBONARO	17,201	16,638	3,858	4,901	7,879	563
COVALIMA	12,324	11,691	2,931	3,917	4,843	633
DILI	25,827	12,199	1,883	2,796	7,520	13,628
ERMERA	20,048	19,725	3,905	4,759	11,061	323
LAUTÉM	11,650	10,849	3,050	2,469	5,330	801
LIQUIÇA	11,591	11,074	2,156	2,946	5,972	517
MANATUTO	7,126	6,191	1,165	1,506	3,520	935
MANUFAHI	8,901	8,582	1,697	2,302	4,583	319
SAR OECUSSE	14,203	14,029	4,240	4,653	5,136	174
VIQUEQUE	14,776	13,693	4,342	3,947	5,404	1,083

Table 17. Number of Livestock owned by Agricultural Households, 2015

MUNICIPALITY	Chickens	Pigs	Sheep	Goats	Cattle/Cows	Buffalo	Horses	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TIMOR-LESTE	928,806	419,169	40,498	158,467	221,767	128,262	50,751	121,069
AILEU	30,482	14,555	918	6,883	7,099	2,438	2,602	1,647
AINARO	42,341	22,761	877	6,238	9,968	5,970	6,271	9,065
BAUCAU	113,548	42,313	20,400	29,098	11,593	20,489	11,177	11,867
BOBONARO	86,903	49,161	1,529	17,557	37,052	6,486	2,314	11,038
COVALIMA	65,077	39,604	1,502	8,380	33,525	4,443	1,557	11,028
DILI	99,709	43,993	1,446	15,010	4,324	1,709	531	14,049
ERMERA	82,984	31,537	1,709	8,874	14,172	3,500	2,621	15,287
LAUTÉM	91,241	35,442	4,052	8,444	25,884	18,179	4,965	5,736
LIQUIÇA	65,279	26,112	995	15,090	10,726	1,562	930	10,627
MANATUTO	35,059	18,804	3,246	8,970	11,012	12,989	3,305	2,631
MANUFAHI	67,896	25,092	765	6,303	14,184	8,647	4,489	9,888
SAR OECUSSE	51,635	29,003	876	12,264	11,004	12,969	993	1,281
VIQUEQUE	96,652	40,792	2,183	15,356	31,224	28,881	8,996	16,925

Table 18a. Livestock owned by Agricultural Households - Chickens and Pigs, 2015

MUNICIPALITY	Number of Households with Livestock	Chickens			Pigs		
		Number of Households	Number of Chickens	Average Number of Chickens	Number of Households	Number of Pigs	Average Number of Pigs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	178,363	146,158	928,806	6.35	146,449	419,169	2.86
AILEU	7,344	5,831	30,482	5.23	6,402	14,555	2.27
AINARO	10,122	8,204	42,341	5.16	8,516	22,761	2.67
BAUCAU	21,706	19,398	113,548	5.85	18,976	42,313	2.23
BOBONARO	16,725	13,708	86,903	6.34	14,338	49,161	3.43
COVALIMA	12,116	9,698	65,077	6.71	10,343	39,604	3.83
DILI	24,452	15,948	99,709	6.25	17,038	43,993	2.58
ERMERA	19,063	15,812	82,984	5.25	14,660	31,537	2.15
LAUTÉM	11,420	10,137	91,241	9.00	9,856	35,442	3.60
LIQUIÇA	11,390	10,327	65,279	6.32	9,802	26,112	2.66
MANATUTO	6,960	5,767	35,059	6.08	5,815	18,804	3.23
MANUFAHI	8,790	7,829	67,896	8.67	7,442	25,092	3.37
SAR OECUSSE	13,718	10,582	51,635	4.88	10,913	29,003	2.66
VIQUEQUE	14,557	12,917	96,652	7.48	12,348	40,792	3.30

Table 18b. Livestock owned by Agricultural Households - Sheep and Goats, 2015

MUNICIPALITY	Number of Households with Livestock	Sheep			Goats		
		Number of Households	Number of Sheep	Average Number of Sheep	Number of Households	Number of Goats	Average Number of Goats
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	178,363	7,885	40,498	5.14	46,154	158,467	3.43
AILEU	7,344	316	918	2.91	2,850	6,883	2.42
AINARO	10,122	307	877	2.86	2,357	6,238	2.65
BAUCAU	21,706	3,426	20,400	5.95	6,987	29,098	4.16
BOBONARO	16,725	464	1,529	3.3	5,350	17,557	3.28
COVALIMA	12,116	282	1,502	5.33	2,164	8,380	3.87
DILI	24,452	407	1,446	3.55	3,538	15,010	4.24
ERMERA	19,063	594	1,709	2.88	3,876	8,874	2.29
LAUTÉM	11,420	556	4,052	7.29	1,782	8,444	4.74
LIQUIÇA	11,390	294	995	3.38	5,112	15,090	2.95
MANATUTO	6,960	343	3,246	9.46	2,078	8,970	4.32
MANUFAHI	8,790	149	765	5.13	1,897	6,303	3.32
SAR OECUSSE	13,718	228	876	3.84	4,431	12,264	2.77
VIQUEQUE	14,557	519	2,183	4.21	3,732	15,356	4.11

Table 18c. Livestock owned by Agricultural Households - Cattle/Cows, Buffalo and Horses, 2015

MUNICIPALITY	Number of Households with Livestock	Cattle/Cows			Buffalo			Horses		
		Number of Households	Number of Cattle/Cows	Average Number of Cattle/Cows	Number of Households	Number of Buffalo	Average Number of Buffalo	Number of Households	Number of Horses	Average Number of Horses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	**178,363**	**52,864**	**221,767**	**4.20**	**26,324**	**128,262**	**4.87**	**27,339**	**50,751**	**1.86**
AILEU	7,344	2,788	7,099	2.55	1,053	2,438	2.32	1,799	2,602	1.45
AINARO	10,122	2,629	9,968	3.79	1,774	5,970	3.37	3,932	6,271	1.59
BAUCAU	21,706	2,483	11,593	4.67	3,732	20,489	5.49	5,484	11,177	2.04
BOBONARO	16,725	8,489	37,052	4.36	1,680	6,486	3.86	1,503	2,314	1.54
COVALIMA	12,116	6,969	33,525	4.81	978	4,443	4.54	890	1,557	1.75
DILI	24,452	1,240	4,324	3.49	508	1,709	3.36	297	531	1.79
ERMERA	19,063	6,052	14,172	2.34	1,248	3,500	2.80	1,756	2,621	1.49
LAUTÉM	11,420	4,113	25,884	6.29	2,665	18,179	6.82	2,172	4,965	2.29
LIQUIÇA	11,390	4,252	10,726	2.52	566	1,562	2.76	640	930	1.45
MANATUTO	6,960	1,831	11,012	6.01	1,774	12,989	7.32	1,773	3,305	1.86
MANUFAHI	8,790	3,183	14,184	4.46	1,770	8,647	4.89	2,467	4,489	1.82
SAR OECUSSE	13,718	3,719	11,004	2.96	4,337	12,969	2.99	590	993	1.68
VIQUEQUE	14,557	5,116	31,224	6.10	4,239	28,881	6.81	4,036	8,996	2.23

Table 19a. Livestock owned by Households Engaged in Minor Agricultural Activity - Chickens and Pigs, 2015

MUNICIPALITY	Number of Households Engaged in Minor Agricultural Activity	Chickens			Pigs		
		Number of Households	Number of Chickens	Average Number of Chickens	Number of Households	Number of Pigs	Average Number of Pigs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	84,217	67,825	414,925	6.12	67,389	182,624	2.71
AILEU	3,472	2,644	13,151	4.97	2,954	6,708	2.27
AINARO	5,368	4,230	20,364	4.81	4,322	10,195	2.36
BAUCAU	10,212	8,999	52,459	5.83	8,749	19,638	2.24
BOBONARO	8,184	6,540	39,389	6.02	6,864	22,311	3.25
COVALIMA	3,845	3,079	21,171	6.88	3,186	11,561	3.63
DILI	9,956	6,582	41,885	6.36	7,185	19,411	2.70
ERMERA	12,098	9,597	48,675	5.07	8,772	17,951	2.05
LAUTÉM	4,843	4,223	34,906	8.27	4,107	13,632	3.32
LIQUIÇA	7,129	6,363	39,951	6.28	6,064	16,204	2.67
MANATUTO	2,453	2,003	11,983	5.98	1,929	5,690	2.95
MANUFAHI	4,507	3,905	31,356	8.03	3,737	11,960	3.20
SAR OECUSSE	6,252	4,507	21,646	4.80	4,696	12,204	2.60
VIQUEQUE	5,898	5,153	37,989	7.37	4,824	15,159	3.14

Table 19b. Livestock owned by Households Engaged in Minor Agricultural Activity - Sheep and Goats, 2015

MUNICIPALITY	Number of Households Engaged in Minor Agricultural Activity	Sheep			Goats		
		Number of Households	Number of Sheep	Average Number of Sheep	Number of Households	Number of Goats	Average Number of Goats
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	84,217	3,570	17,079	4.78	21,772	71,324	3.28
AILEU	3,472	141	416	2.95	1,243	2,974	2.39
AINARO	5,368	180	517	2.87	1,146	2,746	2.40
BAUCAU	10,212	1,451	8,669	5.97	3,162	12,875	4.07
BOBONARO	8,184	277	867	3.13	2,632	8,231	3.13
COVALIMA	3,845	87	522	6.00	610	2,274	3.73
DILI	9,956	149	417	2.80	1,901	7,903	4.16
ERMERA	12,098	345	883	2.56	2,173	4,552	2.09
LAUTÉM	4,843	241	1,575	6.54	702	3,213	4.58
LIQUIÇA	7,129	160	549	3.43	3,222	9,495	2.95
MANATUTO	2,453	96	858	8.94	714	2,797	3.92
MANUFAHI	4,507	76	300	3.95	965	3,094	3.21
SAR OECUSSE	6,252	112	469	4.19	1,744	4,891	2.80
VIQUEQUE	5,898	255	1,037	4.07	1,558	6,279	4.03

Table 19c. Livestock owned by Households Engaged in Minor Agricultural Activity - Cattle/Cows, Buffalo and Horses, 2015

MUNICIPALITY	Number of Households Engaged in Minor Agricultural Activity	Cattle/Cows			Buffalo			Horses		
		Number of Households	Number of Cattle/Cows	Average Number of Cattle/Cows	Number of Households	Number of Buffalo	Average Number of Buffalo	Number of Households	Number of Horses	Average Number of Horses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	**84,217**	**23,852**	**91,963**	**3.86**	**11,028**	**50,609**	**4.59**	**12,190**	**22,524**	**1.85**
AILEU	3,472	1,230	3,153	2.56	475	1,150	2.42	855	1,250	1.46
AINARO	5,368	1,321	4,781	3.62	872	2,528	2.90	2,074	3,302	1.59
BAUCAU	10,212	1,101	5,268	4.78	1,710	9,479	5.54	2,316	4,714	2.04
BOBONARO	8,184	3,915	16,112	4.12	792	2,792	3.53	570	1,006	1.76
COVALIMA	3,845	2,140	10,593	4.95	263	1,246	4.74	312	541	1.73
DILI	9,956	719	2,323	3.23	278	847	3.05	135	226	1.67
ERMERA	12,098	3,515	7,338	2.09	575	1,296	2.25	976	1,368	1.40
LAUTÉM	4,843	1,621	9,898	6.11	1,053	6,953	6.60	835	1,920	2.30
LIQUIÇA	7,129	2,512	6,231	2.48	320	893	2.79	299	460	1.54
MANATUTO	2,453	617	3,335	5.41	536	3,437	6.41	617	1,136	1.84
MANUFAHI	4,507	1,511	6,224	4.12	819	3,675	4.49	1,284	2,306	1.80
SAR OECUSSE	6,252	1,597	4,481	2.81	1,631	4,985	3.06	180	277	1.54
VIQUEQUE	5,898	2,053	12,226	5.96	1,704	11,328	6.65	1,737	4,018	2.31

Table 20a. Livestock Owned by Households Engaged Mainly for Home Consumption with Some Sales - Chickens and Pigs, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Home Consumption	Chickens			Pigs		
		Number of Households	Number of Chickens	Average Number of Chickens	Number of Households	Number of Pigs	Average Number of Pigs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	94,159	74,066	484,228	6.54	74,742	224,080	3.00
AILEU	3,837	3,045	16,602	5.45	3,289	7,458	2.27
AINARO	4,578	3,633	20,411	5.62	3,813	11,634	3.05
BAUCAU	11,037	9,666	55,916	5.78	9,496	20,950	2.21
BOBONARO	8,581	6,816	45,319	6.65	7,099	25,620	3.61
COVALIMA	8,227	6,416	42,424	6.61	6,944	27,191	3.92
DILI	15,086	8,857	54,330	6.13	9,305	23,061	2.48
ERMERA	7,525	5,871	32,119	5.47	5,577	12,884	2.31
LAUTÉM	6,545	5,680	53,777	9.47	5,524	20,951	3.79
LIQUIÇA	3,974	3,519	22,034	6.26	3,306	8,709	2.63
MANATUTO	4,305	3,460	21,255	6.14	3,572	12,122	3.39
MANUFAHI	4,083	3,648	33,806	9.27	3,459	12,335	3.57
SAR OECUSSE	7,859	6,009	29,565	4.92	6,148	16,634	2.71
VIQUEQUE	8,522	7,446	56,670	7.61	7,210	24,531	3.40

Table 20b. Livestock Owned by Households Engaged Mainly for Home Consumption with Some Sales - Sheep and Goats, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Home Consumption	Sheep			Goats		
		Number of Households	Number of Sheep	Average Number of Sheep	Number of Households	Number of Goats	Average Number of Goats
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	94,159	3,980	21,072	5.29	68,135	80,990	1.19
AILEU	3,837	171	497	2.91	2,230	3,735	1.67
AINARO	4,578	117	342	2.92	3,326	3,271	0.98
BAUCAU	11,037	1,797	10,340	5.75	7,260	14,602	2.01
BOBONARO	8,581	178	637	3.58	5,667	8,869	1.57
COVALIMA	8,227	186	908	4.88	6,577	5,843	0.89
DILI	15,086	234	956	4.09	12,655	6,468	0.51
ERMERA	7,525	235	778	3.31	5,422	4,108	0.76
LAUTÉM	6,545	302	2,307	7.64	5,402	4,903	0.91
LIQUIÇA	3,974	123	380	3.09	2,215	4,639	2.09
MANATUTO	4,305	209	1,988	9.51	2,976	5,489	1.84
MANUFAHI	4,083	69	458	6.64	3,162	3,057	0.97
SAR OECUSSE	7,859	112	402	3.59	4,964	7,231	1.46
VIQUEQUE	8,522	247	1,079	4.37	6,279	8,775	1.40

Table 20c. Livestock Owned by Households Engaged Mainly for Home Consumption with Some Sales - Cattle/Cows, Buffalo and Horses, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Home Consumption	Cattle/Cows			Buffalo			Horses		
		Number of Households	Number of Cattle/Cows	Average Number of Cattle/Cows	Number of Households	Number of Buffalo	Average Number of Buffalo	Number of Households	Number of Horses	Average Number of Horses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	**94,159**	**27,607**	**123,725**	**4.48**	**14,593**	**74,121**	**5.08**	**14,280**	**26,597**	**1.86**
AILEU	3,837	1,491	3,759	2.52	550	1,233	2.24	879	1,234	1.40
AINARO	4,578	1,210	4,902	4.05	817	3,277	4.01	1,669	2,681	1.61
BAUCAU	11,037	1,307	5,998	4.59	1,900	10,275	5.41	2,994	6,094	2.04
BOBONARO	8,581	4,334	19,699	4.55	844	3,562	4.22	879	1,237	1.41
COVALIMA	8,227	4,720	22,241	4.71	681	2,977	4.37	569	997	1.75
DILI	15,086	476	1,859	3.91	208	785	3.77	147	279	1.90
ERMERA	7,525	2,401	6,522	2.72	645	2,148	3.33	734	1,175	1.60
LAUTÉM	6,545	2,412	15,409	6.39	1,557	10,880	6.99	1,286	2,954	2.30
LIQUIÇA	3,974	1,549	3,912	2.53	214	588	2.75	316	434	1.37
MANATUTO	4,305	1,143	7,395	6.47	1,161	9,048	7.79	1,085	2,033	1.87
MANUFAHI	4,083	1,542	7,342	4.76	889	4,544	5.11	1,109	2,016	1.82
SAR OECUSSE	7,859	2,086	6,421	3.08	2,690	7,940	2.95	405	709	1.75
VIQUEQUE	8,522	2,936	18,266	6.22	2,437	16,864	6.92	2,208	4,754	2.15

Table 21a. Livestock owned by Households Engaged Mainly for Sale - Chickens and Pigs, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Sale	Chickens			Pigs		
		Number of Households	Number of Chickens	Average Number of Chickens	Number of Households	Number of Pigs	Average Number of Pigs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	5,257	4,267	29,653	6.95	4,318	12,465	2.89
AILEU	180	142	729	5.13	159	389	2.45
AINARO	433	341	1,566	4.59	381	932	2.45
BAUCAU	869	733	5,173	7.06	731	1,725	2.36
BOBONARO	436	352	2,195	6.24	375	1,230	3.28
COVALIMA	252	203	1,482	7.30	213	852	4.00
DILI	785	509	3,494	6.86	548	1,521	2.78
ERMERA	425	344	2,190	6.37	311	702	2.26
LAUTÉM	262	234	2,558	10.93	225	859	3.82
LIQUIÇA	488	445	3,294	7.40	432	1,199	2.78
MANATUTO	368	304	1,821	5.99	314	992	3.16
MANUFAHI	311	276	2,734	9.91	246	797	3.24
SAR OECUSSE	92	66	424	6.42	69	165	2.39
VIQUEQUE	356	318	1,993	6.27	314	1,102	3.51

Table 21b. Livestock owned by Households Engaged Mainly for Sale - Sheep and Goats, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Sale	Sheep			Goats		
		Number of Households	Number of Sheep	Average Number of Sheep	Number of Households	Number of Goats	Average Number of Goats
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	5,257	335	2,347	7.01	1,434	6,153	4.29
AILEU	180	4	5	1.25	73	174	2.38
AINARO	433	10	18	1.80	96	221	2.30
BAUCAU	869	178	1,391	7.81	271	1,621	5.98
BOBONARO	436	9	25	2.78	115	457	3.97
COVALIMA	252	9	72	8.00	51	263	5.16
DILI	785	24	73	3.04	138	639	4.63
ERMERA	425	14	48	3.43	79	214	2.71
LAUTÉM	262	13	170	13.08	64	328	5.13
LIQUIÇA	488	11	66	6.00	251	956	3.81
MANATUTO	368	38	400	10.53	132	684	5.18
MANUFAHI	311	4	7	1.75	56	152	2.71
SAR OECUSSE	92	4	5	1.25	25	142	5.68
VIQUEQUE	356	17	67	3.94	83	302	3.64

Table 21c. Livestock owned by Households Engaged Mainly for Sale - Cattle/Cows, Buffalo and Horses, 2015

MUNICIPALITY	Number of Households Engaged Mainly for Sale	Cattle/Cows			Buffalo			Horses		
		Number of Households	Number of Cattle/Cows	Average Number of Cattle/Cows	Number of Households	Number of Buffalo	Average Number of Buffalo	Number of Households	Number of Horses	Average Number of Horses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TIMOR-LESTE	**5,257**	**1,405**	**6,079**	**4.33**	**703**	**3,532**	**5.02**	**869**	**1,630**	**1.88**
AILEU	180	67	187	2.79	28	55	1.96	65	118	1.82
AINARO	433	98	285	2.91	85	165	1.94	189	288	1.52
BAUCAU	869	75	327	4.36	122	735	6.02	174	369	2.12
BOBONARO	436	240	1,241	5.17	44	132	3.00	54	71	1.31
COVALIMA	252	109	691	6.34	34	220	6.47	9	19	2.11
DILI	785	45	142	3.16	22	77	3.50	15	26	1.73
ERMERA	425	136	312	2.29	28	56	2.00	46	78	1.70
LAUTÉM	262	80	577	7.21	55	346	6.29	51	91	1.78
LIQUIÇA	488	191	583	3.05	32	81	2.53	25	36	1.44
MANATUTO	368	71	282	3.97	77	504	6.55	71	136	1.92
MANUFAHI	311	130	618	4.75	62	428	6.90	74	167	2.26
SAR OECUSSE	92	36	102	2.83	16	44	2.75	5	7	1.40
VIQUEQUE	356	127	732	5.76	98	689	7.03	91	224	2.46

Table 22. Number of Households, by Type of Crops Grown, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Agriculture	Number of Households with Crops	Number of Households Growing Each Crop											
			Rice	Maize	Cassava	Sweet potato	Vegetables	Beans	Coffee	Coconout	Fruith (permanent)	Fruit (temporary)	Timber trees	Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
TIMOR-LESTE	**183,633**	**162,806**	**71,541**	**142,361**	**130,670**	**112,425**	**106,435**	**103,034**	**76,848**	**103,334**	**100,716**	**100,881**	**76,304**	**48,504**
AILEU	7,489	7,385	2,586	7,039	6,885	6,520	6,015	5,648	6,244	3,245	5,399	5,609	2,457	1,650
AINARO	10,379	10,149	2,734	9,476	8,210	8,599	7,740	5,922	6,986	4,676	6,292	6,506	4,600	3,550
BAUCAU	22,118	20,601	12,606	17,904	15,134	14,328	10,681	10,178	5,525	14,612	11,798	11,872	8,463	5,223
BOBONARO	17,201	16,638	8,527	15,128	12,897	10,773	10,062	10,429	7,041	10,811	9,649	9,473	9,282	5,634
COVALIMA	12,324	11,691	4,099	10,335	10,049	6,802	9,721	9,218	4,271	9,011	7,670	7,825	8,122	4,310
DILI	25,827	12,199	3,013	7,999	7,542	5,198	4,808	6,238	3,512	7,005	7,019	6,974	4,576	3,927
ERMERA	20,048	19,725	4,659	17,271	17,125	16,091	13,639	11,851	16,939	8,605	10,506	11,421	6,914	4,971
LAUTÉM	11,650	10,849	3,487	9,652	7,863	6,604	4,750	6,136	2,195	8,092	6,247	5,917	5,174	2,309
LIQUIÇA	11,591	11,074	1,734	10,196	9,670	7,141	7,532	7,747	6,703	7,844	8,107	8,088	4,793	3,413
MANATUTO	7,126	6,191	3,026	4,607	4,271	3,628	3,991	3,316	2,918	3,530	4,005	3,868	2,213	1,277
MANUFAHI	8,901	8,582	2,661	8,018	7,838	7,162	6,886	6,890	4,954	5,347	5,982	5,974	3,969	2,482
SAR OECUSSE	14,203	14,029	13,294	13,393	11,596	8,802	10,528	9,807	5,253	10,009	9,123	8,613	7,185	4,513
VIQUEQUE	14,776	13,693	9,115	11,343	11,590	10,777	10,082	9,654	4,307	10,547	8,919	8,741	8,556	5,245

Table 22a. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Rice, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Rice			Number of Households with Crops not Growing Rice
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	71,541	53,983	17,558	91,265
AILEU	7,385	2,586	1,556	1,030	4,799
AINARO	10,149	2,734	909	1,825	7,415
BAUCAU	20,601	12,606	11,526	1,080	7,995
BOBONARO	16,638	8,527	7,063	1,464	8,111
COVALIMA	11,691	4,099	2,930	1,169	7,592
DILI	12,199	3,013	328	2,685	9,186
ERMERA	19,725	4,659	2,013	2,646	15,066
LAUTÉM	10,849	3,487	2,379	1,108	7,362
LIQUIÇA	11,074	1,734	691	1,043	9,340
MANATUTO	6,191	3,026	2,549	477	3,165
MANUFAHI	8,582	2,661	1,583	1,078	5,921
SAR OECUSSE	14,029	13,294	12,535	759	735
VIQUEQUE	13,693	9,115	7,921	1,194	4,578

Table 23. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Maize, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Maize			Number of Households with Crops not Growing Maize
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	142,361	129,292	13,069	20,445
AILEU	7,385	7,039	6,664	375	346
AINARO	10,149	9,476	8,689	787	673
BAUCAU	20,601	17,904	16,753	1,151	2,697
BOBONARO	16,638	15,128	13,627	1,501	1,510
COVALIMA	11,691	10,335	9,032	1,303	1,356
DILI	12,199	7,999	5,849	2,150	4,200
ERMERA	19,725	17,271	16,050	1,221	2,454
LAUTÉM	10,849	9,652	8,903	749	1,197
LIQUIÇA	11,074	10,196	9,569	627	878
MANATUTO	6,191	4,607	4,053	554	1,584
MANUFAHI	8,582	8,018	7,274	744	564
SAR OECUSSE	14,029	13,393	12,743	650	636
VIQUEQUE	13,693	11,343	10,086	1,257	2,350

Table 24. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Cassava, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Cassava			Number of Households with Crops not Growing Cassava
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	130,670	115,654	15,016	32,136
AILEU	7,385	6,885	6,575	310	500
AINARO	10,149	8,210	7,158	1,052	1,939
BAUCAU	20,601	15,134	13,575	1,559	5,467
BOBONARO	16,638	12,897	10,958	1,939	3,741
COVALIMA	11,691	10,049	8,684	1,365	1,642
DILI	12,199	7,542	5,266	2,276	4,657
ERMERA	19,725	17,125	15,887	1,238	2,600
LAUTÉM	10,849	7,863	6,955	908	2,986
LIQUIÇA	11,074	9,670	8,968	702	1,404
MANATUTO	6,191	4,271	3,717	554	1,920
MANUFAHI	8,582	7,838	7,195	643	744
SAR OECUSSE	14,029	11,596	10,416	1,180	2,433
VIQUEQUE	13,693	11,590	10,300	1,290	2,103

Table 25. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Sweet Potatoes, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Sweet Potatoes			Number of Households with Crops not Growing Sweet Potatoes
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	112,425	95,000	17,425	50,381
AILEU	7,385	6,520	6,109	411	865
AINARO	10,149	8,599	7,723	876	1,550
BAUCAU	20,601	14,328	12,399	1,929	6,273
BOBONARO	16,638	10,773	8,603	2,170	5,865
COVALIMA	11,691	6,802	5,416	1,386	4,889
DILI	12,199	5,198	2,640	2,558	7,001
ERMERA	19,725	16,091	14,601	1,490	3,634
LAUTÉM	10,849	6,604	5,558	1,046	4,245
LIQUIÇA	11,074	7,141	6,424	717	3,933
MANATUTO	6,191	3,628	2,960	668	2,563
MANUFAHI	8,582	7,162	6,532	630	1,420
SAR OECUSSE	14,029	8,802	6,674	2,128	5,227
VIQUEQUE	13,693	10,777	9,361	1,416	2,916

Table 26. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Vegetables, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Vegetables			Number of Households with Crops not Growing Vegetables
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	106,435	82,003	24,432	56,371
AILEU	7,385	6,015	3,700	2,315	1,370
AINARO	10,149	7,740	6,456	1,284	2,409
BAUCAU	20,601	10,681	7,831	2,850	9,920
BOBONARO	16,638	10,062	7,203	2,859	6,576
COVALIMA	11,691	9,721	8,040	1,681	1,970
DILI	12,199	4,808	2,041	2,767	7,391
ERMERA	19,725	13,639	11,067	2,572	6,086
LAUTÉM	10,849	4,750	3,322	1,428	6,099
LIQUIÇA	11,074	7,532	6,446	1,086	3,542
MANATUTO	6,191	3,991	3,220	771	2,200
MANUFAHI	8,582	6,886	5,958	928	1,696
SAR OECUSSE	14,029	10,528	8,304	2,224	3,501
VIQUEQUE	13,693	10,082	8,415	1,667	3,611

Table 27. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Beans, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Beans			Number of Households with Crops not Growing Beans
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	103,034	81,374	21,660	59,772
AILEU	7,385	5,648	4,731	917	1,737
AINARO	10,149	5,922	4,429	1,493	4,227
BAUCAU	20,601	10,178	7,762	2,416	10,423
BOBONARO	16,638	10,429	7,552	2,877	6,209
COVALIMA	11,691	9,218	7,461	1,757	2,473
DILI	12,199	6,238	3,742	2,496	5,961
ERMERA	19,725	11,851	9,477	2,374	7,874
LAUTÉM	10,849	6,136	4,975	1,161	4,713
LIQUIÇA	11,074	7,747	6,804	943	3,327
MANATUTO	6,191	3,316	2,619	697	2,875
MANUFAHI	8,582	6,890	6,063	827	1,692
SAR OECUSSE	14,029	9,807	7,755	2,052	4,222
VIQUEQUE	13,693	9,654	8,004	1,650	4,039

Table 28. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Coffee, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Coffee			Number of Households with Crops not Growing Coffee
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	76,848	38,098	38,750	85,958
AILEU	7,385	6,244	2,900	3,344	1,141
AINARO	10,149	6,986	3,813	3,173	3,163
BAUCAU	20,601	5,525	3,113	2,412	15,076
BOBONARO	16,638	7,041	3,852	3,189	9,597
COVALIMA	11,691	4,271	2,270	2,001	7,420
DILI	12,199	3,512	702	2,810	8,687
ERMERA	19,725	16,939	8,018	8,921	2,786
LAUTÉM	10,849	2,195	790	1,405	8,654
LIQUIÇA	11,074	6,703	3,516	3,187	4,371
MANATUTO	6,191	2,918	1,777	1,141	3,273
MANUFAHI	8,582	4,954	2,697	2,257	3,628
SAR OECUSSE	14,029	5,253	2,429	2,824	8,776
VIQUEQUE	13,693	4,307	2,221	2,086	9,386

Table 29. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Coconuts, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Coconuts			Number of Households with Crops not Growing Coconuts
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	103,334	80,627	22,707	59,472
AILEU	7,385	3,245	2,309	936	4,140
AINARO	10,149	4,676	2,610	2,066	5,473
BAUCAU	20,601	14,612	12,720	1,892	5,989
BOBONARO	16,638	10,811	8,500	2,311	5,827
COVALIMA	11,691	9,011	7,115	1,896	2,680
DILI	12,199	7,005	4,628	2,377	5,194
ERMERA	19,725	8,605	5,883	2,722	11,120
LAUTÉM	10,849	8,092	6,071	2,021	2,757
LIQUIÇA	11,074	7,844	6,512	1,332	3,230
MANATUTO	6,191	3,530	2,995	535	2,661
MANUFAHI	8,582	5,347	4,344	1,003	3,235
SAR OECUSSE	14,029	10,009	8,382	1,627	4,020
VIQUEQUE	13,693	10,547	8,558	1,989	3,146

Table 30. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Fruit (Permanent), during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Fruit (Permanent)			Number of Households with Crops not Growing Fruit (Permanent)
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	100,716	73,856	26,860	62,090
AILEU	7,385	5,399	3,799	1,600	1,986
AINARO	10,149	6,292	4,127	2,165	3,857
BAUCAU	20,601	11,798	9,296	2,502	8,803
BOBONARO	16,638	9,649	6,810	2,839	6,989
COVALIMA	11,691	7,670	5,426	2,244	4,021
DILI	12,199	7,019	4,368	2,651	5,180
ERMERA	19,725	10,506	7,785	2,721	9,219
LAUTÉM	10,849	6,247	4,631	1,616	4,602
LIQUIÇA	11,074	8,107	6,260	1,847	2,967
MANATUTO	6,191	4,005	3,146	859	2,186
MANUFAHI	8,582	5,982	4,350	1,632	2,600
SAR OECUSSE	14,029	9,123	6,899	2,224	4,906
VIQUEQUE	13,693	8,919	6,959	1,960	4,774

Table 31. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Fruit (Temporary), during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Fruit (Temporary)			Number of Households with Crops not Growing Fruit (Temporary)
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	100,881	72,941	27,940	61,925
AILEU	7,385	5,609	3,890	1,719	1,776
AINARO	10,149	6,506	4,349	2,157	3,643
BAUCAU	20,601	11,872	9,343	2,529	8,729
BOBONARO	16,638	9,473	6,386	3,087	7,165
COVALIMA	11,691	7,825	5,319	2,506	3,866
DILI	12,199	6,974	4,261	2,713	5,225
ERMERA	19,725	11,421	8,476	2,945	8,304
LAUTÉM	10,849	5,917	4,414	1,503	4,932
LIQUIÇA	11,074	8,088	6,213	1,875	2,986
MANATUTO	6,191	3,868	3,003	865	2,323
MANUFAHI	8,582	5,974	4,432	1,542	2,608
SAR OECUSSE	14,029	8,613	6,069	2,544	5,416
VIQUEQUE	13,693	8,741	6,786	1,955	4,952

Table 32. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Timber Trees, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Timber Trees			Number of Households with Crops not Growing Timber Trees
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	76,304	42,551	33,753	86,502
AILEU	7,385	2,457	1,300	1,157	4,928
AINARO	10,149	4,600	1,901	2,699	5,549
BAUCAU	20,601	8,463	5,257	3,206	12,138
BOBONARO	16,638	9,282	5,094	4,188	7,356
COVALIMA	11,691	8,122	3,929	4,193	3,569
DILI	12,199	4,576	1,792	2,784	7,623
ERMERA	19,725	6,914	3,626	3,288	12,811
LAUTÉM	10,849	5,174	3,383	1,791	5,675
LIQUIÇA	11,074	4,793	2,905	1,888	6,281
MANATUTO	6,191	2,213	1,120	1,093	3,978
MANUFAHI	8,582	3,969	2,049	1,920	4,613
SAR OECUSSE	14,029	7,185	4,171	3,014	6,844
VIQUEQUE	13,693	8,556	6,024	2,532	5,137

Table 33. Number of Households Engaged in Agriculture with Crops, by Main Purpose for Growing Other Crops, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Growing Other Crops			Number of Households with Crops not Growing Other Crops
		Total	Mainly for Consumption	Mainly for Sale	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	162,806	48,504	25,300	23,204	114,302
AILEU	7,385	1,650	835	815	5,735
AINARO	10,149	3,550	1,527	2,023	6,599
BAUCAU	20,601	5,223	3,001	2,222	15,378
BOBONARO	16,638	5,634	3,107	2,527	11,004
COVALIMA	11,691	4,310	2,104	2,206	7,381
DILI	12,199	3,927	1,471	2,456	8,272
ERMERA	19,725	4,971	2,688	2,283	14,754
LAUTÉM	10,849	2,309	1,209	1,100	8,540
LIQUIÇA	11,074	3,413	1,972	1,441	7,661
MANATUTO	6,191	1,277	638	639	4,914
MANUFAHI	8,582	2,482	1,212	1,270	6,100
SAR OECUSSE	14,029	4,513	2,092	2,421	9,516
VIQUEQUE	13,693	5,245	3,444	1,801	8,448

Table 34. Number of Households Engaged in Agriculture with Crops Using Tractors, by Tractor Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Using Tractors				Number of Households with Crops not Using Tractors
		Total	Hand Tractor Only	Four Wheeled Tractor Only	Both Hand & Four Wheeled Tractors	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	162,806	32,047	19,722	8,433	3,892	138,543
AILEU	7,385	1,305	683	305	317	6,714
AINARO	10,149	968	631	157	180	9,541
BAUCAU	20,601	3,493	2,589	638	266	17,640
BOBONARO	16,638	4,556	4,034	204	318	12,718
COVALIMA	11,691	4,046	1,457	2,101	488	8,621
DILI	12,199	1,059	972	44	43	11,226
ERMERA	19,725	1,650	1,043	416	191	18,457
LAUTÉM	10,849	3,068	952	1,886	230	8,241
LIQUIÇA	11,074	884	490	227	167	10,524
MANATUTO	6,191	1,370	730	357	283	5,387
MANUFAHI	8,582	2,562	901	1,042	619	7,258
SAR OECUSSE	14,029	3,702	2,976	224	502	11,331
VIQUEQUE	13,693	3,384	2,264	832	288	10,885

Table 35. Number of Households Engaged in Agriculture with Main Season Crops Using Tractors, by Tractor Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops In the Main Season	Households Using Tractors In the Main Season				Number of Households with Crops In the Main Season not Using Tractors
		Total	Hand Tractor Only	Four Wheeled Tractor Only	Both Hand & Four Wheeled Tractors	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	162,229	32,047	19,722	8,433	3,892	137,966
AILEU	7,383	1,305	683	305	317	6,712
AINARO	10,138	968	631	157	180	9,530
BAUCAU	20,542	3,493	2,589	638	266	17,581
BOBONARO	16,599	4,556	4,034	204	318	12,679
COVALIMA	11,661	4,046	1,457	2,101	488	8,591
DILI	11,914	1,059	972	44	43	10,941
ERMERA	19,701	1,650	1,043	416	191	18,433
LAUTÉM	10,826	3,068	952	1,886	230	8,218
LIQUIÇA	11,063	884	490	227	167	10,513
MANATUTO	6,165	1,370	730	357	283	5,361
MANUFAHI	8,560	2,562	901	1,042	619	7,236
SAR OECUSSE	14,024	3,702	2,976	224	502	11,326
VIQUEQUE	13,653	3,384	2,264	832	288	10,845

Table 36. Number of Households Engaged in Agriculture with Second Season Crops Using Tractors, by Tractor Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops in the Second Season	Households Using Tractors In the Second Season				Number of Households with Crops in the Second Season not Using Tractors
		Total	Hand Tractor Only	Four Wheeled Tractor Only	Both Hand & Four Wheeled Tractors	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	159,567	32,047	19,722	8,433	3,892	135,304
AILEU	7,319	1,305	683	305	317	6,648
AINARO	10,085	968	631	157	180	9,477
BAUCAU	20,166	3,493	2,589	638	266	17,205
BOBONARO	16,331	4,556	4,034	204	318	12,411
COVALIMA	11,497	4,046	1,457	2,101	488	8,427
DILI	11,165	1,059	972	44	43	10,192
ERMERA	19,479	1,650	1,043	416	191	18,211
LAUTÉM	10,597	3,068	952	1,886	230	7,989
LIQUIÇA	10,932	884	490	227	167	10,382
MANATUTO	6,077	1,370	730	357	283	5,273
MANUFAHI	8,503	2,562	901	1,042	619	7,179
SAR OECUSSE	13,939	3,702	2,976	224	502	11,241
VIQUEQUE	13,477	3,384	2,264	832	288	10,669

Table 37. Number of Households Engaged in Agriculture with Crops Using Hand Tractors, by Source(s), during the 12 Months Prior to the 2015 Census

Municipality	Number of Households with Crops	Cropping Households Using Hand Tractors							Number of Households with Crops not Using Hand Tractors
		Total	Own private tractor(s) only	Third parties tractor(s) only	Government/ Community tractor(s) only	NGO/Church tractor(s) only	Used hand tractor(s) from multiple sources	No valid source information provided *	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TIMOR-LESTE	162,806	23,614	2,875	4,179	5,874	326	3,055	7,305	139,192
AILEU	7,385	1,000	44	32	507	12	206	199	6,385
AINARO	10,149	811	46	8	350	6	80	321	9,338
BAUCAU	20,601	2,855	512	651	395	122	388	787	17,746
BOBONARO	16,638	4,352	803	1,452	703	29	532	833	12,286
COVALIMA	11,691	1,945	135	234	816	28	361	371	9,746
DILI	12,199	1,015	71	56	17	1	25	845	11,184
ERMERA	19,725	1,234	102	25	351	14	122	620	18,491
LAUTÉM	10,849	1,182	52	28	427	37	119	519	9,667
LIQUIÇA	11,074	657	41	5	82	4	134	391	10,417
MANATUTO	6,191	1,013	106	124	474	17	139	153	5,178
MANUFAHI	8,582	1,520	74	41	674	30	162	539	7,062
SAR OECUSSE	14,029	3,478	662	716	680	16	522	882	10,551
VIQUEQUE	13,693	2,552	227	807	398	10	265	845	11,141

* Households using a hand tractor but did not answer 'yes' to any tractor ownership/source option on Census questionnaire

Table 38. Number of Households Engaged in Agriculture with Crops Using 4-wheeled Tractors, by Source(s), during the 12 Months Prior to the 2015 Census

Municipality	Number of Households with Crops	Cropping Households Using 4-wheeled Tractors							Number of Cropping Households not Using 4-wheeled Tractors
		Total	Own private tractor(s) only	Third parties tractor(s) only	Government/ Community tractor(s) only	NGO/Church tractor(s) only	Used 4-wheeled tractor(s) from multiple sources	No valid source information provided *	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TIMOR-LESTE	162,806	12,325	321	376	8,008	324	2,015	1,281	150,481
AILEU	7,385	622	7	5	408	5	183	14	6,763
AINARO	10,149	337	8	0	227	6	64	32	9,812
BAUCAU	20,601	904	48	28	252	191	282	103	19,697
BOBONARO	16,638	522	48	60	167	6	164	77	16,116
COVALIMA	11,691	2,589	29	127	1,865	38	315	215	9,102
DILI	12,199	87	13	10	12	1	22	29	12,112
ERMERA	19,725	607	9	5	387	5	113	88	19,118
LAUTÉM	10,849	2,116	12	16	1,802	29	146	111	8,733
LIQUIÇA	11,074	394	4	10	209	5	121	45	10,680
MANATUTO	6,191	640	13	4	382	19	128	94	5,551
MANUFAHI	8,582	1,661	10	12	1,315	10	138	176	6,921
SAR OECUSSE	14,029	726	92	67	181	4	228	154	13,303
VIQUEQUE	13,693	1,120	28	32	801	5	111	143	12,573

* Households using a 4-wheeled tractor but did not answer 'yes' to any tractor ownership/source option on Census questionnaire

Table 39. Number of Households with Crops Using Agricultural Technologies, by Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops	Number of Households Using Agricultural Technologies									Number of Households with Crops not Using Agricultural Technologies
		Total	Mulching	Inorganic fertilizer (Industrial)	Organic fertilizer (Natural)	Organic pesticides	Chemical pesticides	Herbicides	Improved seeds	Irrigation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	162,806	49,829	13,544	15,948	22,900	13,347	11,612	11,973	25,145	12,734	112,977
AILEU	7,385	4,437	1,053	1,569	2,783	1,216	557	631	1,999	664	2,948
AINARO	10,149	2,901	1,009	984	1,298	661	532	480	1,362	424	7,248
BAUCAU	20,601	5,797	1,071	2,396	2,873	1,280	970	836	2,900	1,372	14,804
BOBONARO	16,638	6,431	2,043	2,536	3,069	2,810	3,099	3,158	3,371	2,828	10,207
COVALIMA	11,691	3,565	845	792	1,135	1,104	1,362	1,504	2,228	1,151	8,126
DILI	12,199	1,629	689	641	981	448	303	330	488	254	10,570
ERMERA	19,725	7,414	2,488	2,091	3,477	1,350	848	1,210	3,194	988	12,311
LAUTÉM	10,849	1,976	194	219	698	139	111	191	1,305	283	8,873
LIQUIÇA	11,074	2,975	791	504	1,621	487	334	309	1,509	268	8,099
MANATUTO	6,191	1,844	403	509	576	549	542	599	1,006	950	4,347
MANUFAHI	8,582	1,729	373	239	366	173	160	292	1,058	140	6,853
SAR OECUSSE	14,029	6,230	2,334	3,143	3,647	2,844	2,610	2,240	3,255	1,664	7,799
VIQUEQUE	13,693	2,901	251	325	376	286	184	193	1,470	1,748	10,792

Table 40. Number of Households with Crops engaged in Minor Crops Activity Using Agricultural Technologies, by Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops engaged in Minor Crops Activity	Number of Households engaged in Minor Crops Activity Using Agricultural Technologies									Number of Households with Crops Engaged in Minor Crops Activity not Using Agricultural Technologies
		Total	Mulching	Inorganic fertilizer (Industrial)	Organic fertilizer (Natural)	Organic pesticides	Chemical pesticides	Herbicides	Improved seeds	Irrigation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	**84,217**	**21,937**	**6,608**	**7,004**	**10,252**	**5,708**	**4,517**	**4,814**	**10,215**	**4,631**	**62,280**
AILEU	3,472	2,119	541	719	1,153	625	263	343	883	347	1,353
AINARO	5,368	1,484	626	578	606	318	269	232	581	211	3,884
BAUCAU	10,212	2,135	465	745	1,015	460	335	308	1,025	489	8,077
BOBONARO	8,184	2,623	959	1,113	1,223	1,061	1,087	1,130	1,306	1,093	5,561
COVALIMA	3,845	821	212	205	286	293	315	326	486	246	3,024
DILI	9,956	936	383	311	567	212	127	159	265	124	9,020
ERMERA	12,098	4,509	1,427	1,290	2,198	834	529	726	1,930	457	7,589
LAUTÉM	4,843	669	60	82	236	51	41	63	430	144	4,174
LIQUIÇA	7,129	1,810	577	323	1,023	322	216	201	863	144	5,319
MANATUTO	2,453	610	138	177	189	157	167	212	255	281	1,843
MANUFAHI	4,507	796	196	106	201	83	63	124	476	47	3,711
SAR OECUSSE	6,252	2,471	919	1,166	1,339	1,142	1,008	911	1,307	581	3,781
VIQUEQUE	5,898	954	105	189	216	150	97	79	408	467	4,944

Table 41. Number of Households with Crops engaged mainly for Home Consumption Using Agricultural Technologies, by Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops Producing mainly for Home Consumption	Number of Households mainly for Home Consumption Using Agricultural Technologies									Number of Households with Crops producing mainly for Home Consumption not Using Agricultural Technologies
		Total	Mulching	Inorganic fertilizer (Industrial)	Organic fertilizer (Natural)	Organic pesticides	Chemical pesticides	Herbicides	Improved seeds	Irrigation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	94,159	26,114	6,374	8,199	11,644	7,031	6,596	6,678	14,043	7,623	68,045
AILEU	3,837	2,182	496	803	1,542	558	275	267	1,061	288	1,655
AINARO	4,578	1,244	329	337	597	284	222	214	724	174	3,334
BAUCAU	11,037	3,373	533	1,475	1,660	691	534	436	1,753	804	7,664
BOBONARO	8,581	3,612	1,030	1,352	1,751	1,680	1,935	1,952	1,954	1,669	4,969
COVALIMA	8,227	2,645	599	570	804	792	1,022	1,159	1,670	890	5,582
DILI	15,086	513	193	205	272	122	96	97	170	90	14,573
ERMERA	7,525	2,672	947	713	1,162	451	273	413	1,135	485	4,853
LAUTÉM	6,545	1,262	130	131	448	84	68	121	846	129	5,283
LIQUIÇA	3,974	1,017	190	148	499	138	93	89	545	81	2,957
MANATUTO	4,305	1,124	239	289	342	342	332	354	692	591	3,181
MANUFAHI	4,083	875	166	119	146	82	89	157	557	86	3,208
SAR OECUSSE	7,859	3,702	1,386	1,934	2,268	1,680	1,577	1,310	1,909	1,074	4,157
VIQUEQUE	8,522	1,893	136	123	153	127	80	109	1,027	1,262	6,629

Table 42. Number of Households with Crops engaged mainly for Sale Using Agricultural Technologies, by Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops Producing mainly for Sale	Number of Households mainly for Sale Using Agricultural Technologies									Number of Households with Crops mainly for Sale not Using Agricultural Technologies
		Total	Mulching	Inorganic fertilizer (Industrial)	Organic fertilizer (Natural)	Organic pesticides	Chemical pesticides	Herbicides	Improved seeds	Irrigation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	5,257	1,778	562	745	1,004	608	499	481	887	480	3,479
AILEU	180	136	16	47	88	33	19	21	55	29	44
AINARO	433	173	54	69	95	59	41	34	57	39	260
BAUCAU	869	289	73	176	198	129	101	92	122	79	580
BOBONARO	436	196	54	71	95	69	77	76	111	66	240
COVALIMA	252	99	34	17	45	19	25	19	72	15	153
DILI	785	180	113	125	142	114	80	74	53	40	605
ERMERA	425	233	114	88	117	65	46	71	129	46	192
LAUTÉM	262	45	4	6	14	4	2	7	29	10	217
LIQUIÇA	488	148	24	33	99	27	25	19	101	43	340
MANATUTO	368	110	26	43	45	50	43	33	59	78	258
MANUFAHI	311	58	11	14	19	8	8	11	25	7	253
SAR OECUSSE	92	57	29	43	40	22	25	19	39	9	35
VIQUEQUE	356	54	10	13	7	9	7	5	35	19	302

Table 43. Number of Households with Crops, by Cultivated Area, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Agriculture Households with Crops	Number of Households with Crops and Cultivated Land				Number of Households with Crops and no Crop Land
		Total	Estimated Cultivated Area			
			< 1 Ha	1–5 Ha	>5 Ha	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	162,806	156,818	103,371	50,085	3,362	5,988
AILEU	7,385	7,353	5,021	2,200	132	32
AINARO	10,149	9,912	6,813	2,915	184	237
BAUCAU	20,601	19,532	12,259	6,499	774	1,069
BOBONARO	16,638	16,094	9,839	6,041	214	544
COVALIMA	11,691	11,338	6,275	4,917	146	353
DILI	12,199	10,460	6,082	4,249	129	1,739
ERMERA	19,725	19,351	12,662	6,207	482	374
LAUTÉM	10,849	10,450	6,702	3,561	187	399
LIQUIÇA	11,074	10,854	7,859	2,816	179	220
MANATUTO	6,191	6,079	4,046	1,780	253	112
MANUFAHI	8,582	8,476	5,958	2,368	150	106
SAR OECUSSE	14,029	13,806	11,076	2,607	123	223
VIQUEQUE	13,693	13,113	8,779	3,925	409	580

Table 44. Number of Households Engaged in Agriculture Mainly for Home Consumption, by Cultivated Area, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops Producing mainly for Home Consumption	Number of Households with Crops Mainly for Home Consumption and Cultivated Land				Number of Households with Crops mainly for Home Consumption and no Crop Land
		Total	Cultivated Area			
			< 1 Ha	1–5 Ha	>5 Ha	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	94,159	77,642	45,711	30,152	1,779	16,517
AILEU	7,489	3,778	2,279	1,432	67	59
AINARO	10,379	4,406	2,544	1,756	106	172
BAUCAU	22,118	9,757	5,632	3,764	361	1,280
BOBONARO	17,201	8,050	4,219	3,689	142	531
COVALIMA	12,324	7,610	3,867	3,658	85	617
DILI	25,827	4,381	1,736	2,606	39	10,705
ERMERA	20,048	7,218	3,961	3,026	231	307
LAUTÉM	11,650	5,939	3,606	2,228	105	606
LIQUIÇA	11,591	3,617	2,221	1,343	53	357
MANATUTO	7,126	3,678	2,290	1,194	194	627
MANUFAHI	8,901	3,899	2,570	1,272	57	184
SAR OECUSSE	14,203	7,731	5,974	1,677	80	128
VIQUEQUE	14,776	7,578	4,812	2,507	259	944

Table 45. Number of Households Engaged in Agriculture Mainly for Sale, by Cultivated Area, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops Mainly for Sale	Number of Households with Crops Mainly for Sale and Cultivated Land				Number of Households with Crops Mainly for Sale and no Crop Land
		Total	Cultivated Area			
			< 1 Ha	1–5 Ha	>5 Ha	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	5,257	4,471	2,692	1,586	193	786
AILEU	180	176	118	55	3	4
AINARO	433	422	296	110	16	11
BAUCAU	869	737	457	224	56	132
BOBONARO	436	416	200	204	12	20
COVALIMA	252	232	134	94	4	20
DILI	785	392	229	145	18	393
ERMERA	425	412	235	157	20	13
LAUTÉM	262	238	119	117	2	24
LIQUIÇA	488	459	310	135	14	29
MANATUTO	368	266	160	96	10	102
MANUFAHI	311	300	143	124	33	11
SAR OECUSSE	92	89	67	22	-	3
VIQUEQUE	356	332	224	103	5	24

Table 46. Number of Households with Crops in the Main Season, by Cultivated Area, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops in the main season	Number of Households with Crops in the Main Season and Cultivated Land				Number of Households with crops in the Main Season and no Crop Land
		Total	Cultivated Area			
			< 1 Ha	1–5 Ha	>5 Ha	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	162,229	156,427	103,196	49,871	3,360	5,802
AILEU	7,383	7,351	5,019	2,200	132	32
AINARO	10,138	9,904	6,808	2,912	184	234
BAUCAU	20,542	19,489	12,236	6,479	774	1,053
BOBONARO	16,599	16,065	9,821	6,030	214	534
COVALIMA	11,661	11,314	6,265	4,903	146	347
DILI	11,914	10,304	6,022	4,153	129	1,610
ERMERA	19,701	19,330	12,651	6,199	480	371
LAUTÉM	10,826	10,431	6,698	3,546	187	395
LIQUIÇA	11,063	10,846	7,853	2,814	179	217
MANATUTO	6,165	6,053	4,037	1,763	253	112
MANUFAHI	8,560	8,456	5,946	2,360	150	104
SAR OECUSSE	14,024	13,803	11,073	2,607	123	221
VIQUEQUE	13,653	13,081	8,767	3,905	409	572

Table 47. Number of Households with Crops in the Second Season, by Cultivated Area, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households with Crops in the Second Season	Number of Households with Crops in the Second Season and Cultivated Land				Number of Households with crops in the Second Season and no Crop Land
		Total	Cultivated Area			
			< 1 Ha	1–5 Ha	>5 Ha	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	159,567	154,346	102,032	48,965	3,349	5,221
AILEU	7,319	7,296	4,971	2,193	132	23
AINARO	10,085	9,856	6,770	2,903	183	229
BAUCAU	20,166	19,212	12,074	6,367	771	954
BOBONARO	16,331	15,839	9,727	5,899	213	492
COVALIMA	11,497	11,204	6,203	4,856	145	293
DILI	11,165	9,721	5,795	3,798	128	1,444
ERMERA	19,479	19,131	12,507	6,145	479	348
LAUTÉM	10,597	10,269	6,594	3,488	187	328
LIQUIÇA	10,932	10,734	7,760	2,795	179	198
MANATUTO	6,077	5,982	3,982	1,749	251	95
MANUFAHI	8,503	8,418	5,919	2,349	150	85
SAR OECUSSE	13,939	13,729	11,036	2,570	123	210
VIQUEQUE	13,477	12,955	8,694	3,853	408	522

Table 48. Number of Households Engaged in Agriculture, by Land Tenure Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Agriculture	Households Engaged in Agriculture with Access to Land									Households Engaged in Agriculture with no access to land
		Total	Land Tenure Type								
			Rent			Owned					
			Rent for a share product	Lease/rent for fixed value	Rent free	Owned without número referénsia or certificate	Owned with número referénsia	Owned with certificate from Portugese	Owned with certificate from Indonesia	Communal land	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	183,633	121,669	13,141	8,231	81,710	49,302	27,932	10,741	17,208	17,903	61,964
AILEU	7,489	6,579	220	214	5,593	3,070	1,349	179	168	245	910
AINARO	10,379	8,021	354	509	6,751	3,089	1,134	477	720	872	2,358
BAUCAU	22,118	14,772	2,877	942	10,200	6,519	1,908	789	860	2,389	7,346
BOBONARO	17,201	12,193	2,001	1,176	7,412	4,767	3,354	1,453	2,812	2,028	5,008
COVALIMA	12,324	9,375	556	546	5,886	3,877	4,146	926	2,084	1,071	2,949
DILI	25,827	7,138	324	307	3,622	2,612	3,325	1,174	1,813	800	18,689
ERMERA	20,048	14,802	1,329	986	9,762	5,047	3,389	2,024	2,996	2,396	5,246
LAUTÉM	11,650	8,467	302	191	6,555	4,149	966	150	203	1,676	3,183
LIQUIÇA	11,591	8,534	474	332	5,303	3,416	2,608	1,352	1,550	989	3,057
MANATUTO	7,126	5,376	842	359	3,392	2,062	1,099	421	879	923	1,750
MANUFAHI	8,901	7,324	218	329	5,622	3,820	1,182	348	486	514	1,577
SAR OECUSSE	14,203	9,466	1,344	1,188	4,770	3,479	2,585	1,157	2,268	2,479	4,737
VIQUEQUE	14,776	9,622	2,300	1,152	6,842	3,395	887	291	369	1,521	5,154

Table 49. Number of Households Engaged in Minor Agricultural Activity, by Land Tenure Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Minor Agricultural Activity	Households Engaged in Agriculture with Access to Land									Households Engaged in Minor Agricultural Activity with no access to land
		Total	Land Tenure Type								
			Rent			Owned				Communal land	
			Rent for a share product	Lease/rent for fixed value	Rent free	Owned without número referénsia or certificate	Owned with número referénsia	Owned with certificate from Portugese	Owned with certificate from Indonesia		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	**84,217**	**57,736**	**5,301**	**3,620**	**38,706**	**22,541**	**14,287**	**5,932**	**9,056**	**7,815**	**26,481**
AILEU	3,472	3,049	135	122	2,467	1,411	653	83	72	96	423
AINARO	5,368	4,171	183	244	3,501	1,483	617	294	433	382	1,197
BAUCAU	10,212	6,621	1,164	412	4,698	2,781	1,005	411	394	955	3,591
BOBONARO	8,184	5,710	768	419	3,366	2,056	1,630	784	1,431	1,092	2,474
COVALIMA	3,845	2,892	227	220	1,877	1,127	1,319	365	714	294	953
DILI	9,956	4,425	174	168	2,382	1,716	2,101	664	1,163	506	5,531
ERMERA	12,098	9,079	627	522	5,770	3,036	2,219	1,279	1,872	1,356	3,019
LAUTÉM	4,843	3,368	126	90	2,536	1,580	411	90	106	566	1,475
LIQUIÇA	7,129	5,415	299	216	3,290	2,092	1,720	866	1,020	560	1,714
MANATUTO	2,453	1,826	274	138	1,204	720	367	154	310	322	627
MANUFAHI	4,507	3,742	120	169	2,976	1,889	546	177	216	236	765
SAR OECUSSE	6,252	3,829	587	562	1,947	1,333	1,306	630	1,146	960	2,423
VIQUEQUE	5,898	3,609	617	338	2,692	1,317	393	135	179	490	2,289

Table 50. Number of Households Engaged in Agriculture Mainly for Home Consumption, by Land Tenure Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Agriculture Households Engaged mainly for Home Consumption	Agricultural Households mainly for Home Consumption with Access to Land									Number of Agriculture Households Engaged mainly for Home Consumption with no Access to Land
		Total	Land Tenure Type								
			Rent			Owned				Communal land	
			Rent for a share product	Lease/rent for fixed value	Rent free	Owned without número referénsia or certificate	Owned with número referénsia	Owned with certificate from Portugese	Owned with certificate from Indonesia		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	94,159	60,330	7,508	4,419	40,598	25,362	12,832	4,459	7,620	9,529	33,829
AILEU	3,837	3,363	85	90	2,966	1,586	663	91	91	134	474
AINARO	4,578	3,458	166	251	2,892	1,508	483	159	262	455	1,120
BAUCAU	11,037	7,583	1,619	495	5,108	3,547	841	347	426	1,339	3,454
BOBONARO	8,581	6,163	1,183	725	3,831	2,545	1,631	629	1,315	888	2,418
COVALIMA	8,227	6,288	322	318	3,880	2,689	2,756	537	1,288	726	1,939
DILI	15,086	2,427	115	118	1,114	801	1,128	466	615	245	12,659
ERMERA	7,525	5,401	675	445	3,771	1,884	1,093	672	1,063	949	2,124
LAUTÉM	6,545	4,947	171	99	3,904	2,495	541	58	93	1,074	1,598
LIQUIÇA	3,974	2,707	161	105	1,830	1,139	713	435	441	358	1,267
MANATUTO	4,305	3,338	518	200	2,101	1,267	682	243	510	577	967
MANUFAHI	4,083	3,311	93	153	2,460	1,815	576	148	222	262	772
SAR OECUSSE	7,859	5,566	747	625	2,782	2,125	1,240	521	1,105	1,513	2,293
VIQUEQUE	8,522	5,778	1,653	795	3,959	1,961	485	153	189	1,009	2,744

Table 51. Number of Households Engaged in Agriculture mainly for Sale, by Land Tenure Type, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Agriculture Households Engaged mainly for Sale	Agriculture Households Engaged mainly for Sale with Access to Land									Number of Agriculture Households Engaged mainly for Sale with no Access to Land
		Total	Land Tenure Type								
			Rent			Owned				Communal land	
			Rent for a share product	Lease/rent for fixed value	Rent free	Owned without número referénsia or certificate	Owned with número referénsia	Owned with certificate from Portugese	Owned with certificate from Indonesia		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	**5,257**	**3,603**	**332**	**192**	**2,406**	**1,399**	**813**	**350**	**532**	**559**	**1,654**
AILEU	180	167	-	2	160	73	33	5	5	15	13
AINARO	433	392	5	14	358	98	34	24	25	35	41
BAUCAU	869	568	94	35	394	191	62	31	40	95	301
BOBONARO	436	320	50	32	215	166	93	40	66	48	116
COVALIMA	252	195	7	8	129	61	71	24	82	51	57
DILI	785	286	35	21	126	95	96	44	35	49	499
ERMERA	425	322	27	19	221	127	77	73	61	91	103
LAUTÉM	262	152	5	2	115	74	14	2	4	36	110
LIQUIÇA	488	412	14	11	183	185	175	51	89	71	76
MANATUTO	368	212	50	21	87	75	50	24	59	24	156
MANUFAHI	311	271	5	7	186	116	60	23	48	16	40
SAR OECUSSE	92	71	10	1	41	21	39	6	17	6	21
VIQUEQUE	356	235	30	19	191	117	9	3	1	22	121

Table 52. Number of Households Engaged in Aquaculture or Fishing, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Total Number of Households	Number of Households Engaged in Aquaculture or Fishing			Number of Households not Engaged in Aquaculture or Fishing
		Aquaculture only	Fishing only	Both Aquaculture and Fishing	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	204,597	58,473	3,823	6,117	136,184
AILEU	7,598	3,110	100	94	4,294
AINARO	10,601	3,597	100	214	6,690
BAUCAU	22,976	7,103	395	475	15,003
BOBONARO	17,635	5,851	408	965	10,411
COVALIMA	12,564	3,201	393	412	8,558
DILI	42,485	3,828	580	1,120	36,957
ERMERA	20,671	6,009	200	358	14,104
LAUTÉM	12,050	4,362	261	631	6,796
LIQUIÇA	11,885	5,128	328	505	5,924
MANATUTO	7,467	1,978	273	258	4,958
MANUFAHI	9,023	2,809	234	290	5,690
SAR OECUSSE	14,345	4,914	357	407	8,667
VIQUEQUE	15,297	6,583	194	388	8,132

Table 53. Number of Households Engaged in Aquaculture or Fishing, by Sex of Household Head, 2015

MUNICIPALITY	Total Number of Households	Number of Households Engaged in Aquaculture or Fishing			Number of Households not Engaged in Aquaculture or Fishing
		Total	Sex of Household Head		
			Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)
TIMOR-LESTE	204,597	68,413	58,275	10,138	136,184
AILEU	7,598	3,304	2,854	450	4,294
AINARO	10,601	3,911	3,353	558	6,690
BAUCAU	22,976	7,973	6,714	1,259	15,003
BOBONARO	17,635	7,224	6,200	1,024	10,411
COVALIMA	12,564	4,006	3,483	523	8,558
DILI	42,485	5,528	4,742	786	36,957
ERMERA	20,671	6,567	5,566	1,001	14,104
LAUTÉM	12,050	5,254	4,092	1,162	6,796
LIQUIÇA	11,885	5,961	5,211	750	5,924
MANATUTO	7,467	2,509	2,178	331	4,958
MANUFAHI	9,023	3,333	3,037	296	5,690
SPECIAL ADMINST	14,345	5,678	4,852	826	8,667
VIQUEQUE	15,297	7,165	5,993	1,172	8,132

Table 54. Number of Households Engaged in Aquaculture or Fishing, by Age of Household Head, 2015

MUNICIPALITY	Total Number of Households	Number of Households Engaged in Aquaculture or Fishing							Number of Households not Engaged in Aquaculture or Fishing
		Age of Household Head (years)							
		Total	15 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 and over	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TIMOR-LESTE	204,597	68,413	365	5,493	12,480	17,669	12,868	19,538	136,184
AILEU	7,598	3,304	12	219	531	840	745	957	4,294
AINARO	10,601	3,911	37	293	751	1,154	543	1,133	6,690
BAUCAU	22,976	7,973	31	594	1,096	1,885	1,706	2,661	15,003
BOBONARO	17,635	7,224	20	453	1,274	1,748	1,475	2,254	10,411
COVALIMA	12,564	4,006	27	397	763	1,008	626	1,185	8,558
DILI	42,485	5,528	17	573	1,326	1,448	1,125	1,039	36,957
ERMERA	20,671	6,567	65	580	1,169	1,873	1,311	1,569	14,104
LAUTÉM	12,050	5,254	27	245	869	1,537	1,115	1,461	6,796
LIQUIÇA	11,885	5,961	33	540	1,048	1,447	1,173	1,720	5,924
MANATUTO	7,467	2,509	12	155	419	639	572	712	4,958
MANUFAHI	9,023	3,333	14	268	596	892	561	1,002	5,690
SAR OECUSSE	14,345	5,678	35	531	1,281	1,356	825	1,650	8,667
VIQUEQUE	15,297	7,165	35	645	1,357	1,842	1,091	2,195	8,132

Table 55. Number of Households Engaged in Aquaculture or Fishing, by Education Level of Household Head, 2015

MUNICIPALITY	Total Number of Households	Number of Households Engaged in Aquaculture or Fishing									Number of Households not Engaged in Aquaculture or Fishing
		Education Level of Household Head									
		Total	Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic / Diploma	University	Non-formal	Did Not Attend School	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TIMOR-LESTE	**204,597**	**68,413**	**1,476**	**14,565**	**6,114**	**8,490**	**783**	**2,399**	**965**	**33,621**	**136,184**
AILEU	7,598	3,304	97	829	329	353	24	148	59	1,465	4,294
AINARO	10,601	3,911	74	647	375	464	33	89	88	2,141	6,690
BAUCAU	22,976	7,973	307	1,767	571	916	111	245	110	3,946	15,003
BOBONARO	17,635	7,224	132	1,394	451	706	82	137	136	4,186	10,411
COVALIMA	12,564	4,006	66	753	471	666	55	87	73	1,835	8,558
DILI	42,485	5,528	100	1,455	581	1,060	69	568	66	1,629	36,957
ERMERA	20,671	6,567	119	1,183	483	573	42	147	49	3,971	14,104
LAUTÉM	12,050	5,254	68	1,308	604	793	69	181	44	2,187	6,796
LIQUIÇA	11,885	5,961	76	1,303	586	762	67	213	81	2,873	5,924
MANATUTO	7,467	2,509	147	583	268	335	23	56	45	1,052	4,958
MANUFAHI	9,023	3,333	42	767	423	436	42	95	29	1,499	5,690
SAR OECUSSE	14,345	5,678	79	1,098	277	518	57	185	28	3,436	8,667
VIQUEQUE	15,297	7,165	169	1,478	695	908	109	248	157	3,401	8,132

Table 56. Number of Households Engaged in Aquaculture or Fishing, by Number of Household Members, 2015

MUNICIPALITY	Total Number of Households	Number of Households Engaged in Aquaculture or Fishing				Number of Households not Engaged in Aquaculture or Fishing
		Total	Number of Household Members			
			1 - 3	4 - 5	6 or more	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	204,597	68,413	15,932	18,403	34,078	136,184
AILEU	7,598	3,304	628	726	1,950	4,294
AINARO	10,601	3,911	793	936	2,182	6,690
BAUCAU	22,976	7,973	2,394	2,074	3,505	15,003
BOBONARO	17,635	7,224	1,507	2,049	3,668	10,411
COVALIMA	12,564	4,006	993	1,385	1,628	8,558
DILI	42,485	5,528	875	1,366	3,287	36,957
ERMERA	20,671	6,567	1,328	1,603	3,636	14,104
LAUTÉM	12,050	5,254	1,424	1,204	2,626	6,796
LIQUIÇA	11,885	5,961	1,062	1,583	3,316	5,924
MANATUTO	7,467	2,509	464	595	1,450	4,958
MANUFAHI	9,023	3,333	607	912	1,814	5,690
SPECIAL ADMINST	14,345	5,678	1,678	1,883	2,117	8,667
VIQUEQUE	15,297	7,165	2,179	2,087	2,899	8,132

Table 57. Number of Households Engaged in Agriculture, by Farm Labor Sources, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Agriculture	Farm Labor Sources				Number of Households Engaged in Agriculture used own labor *
		Total	Household members	Hired non-household workers	Team work with other households	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TIMOR-LESTE	183,633	160,755	156,073	26,759	55,754	22,878
AILEU	7,489	7,087	6,888	596	3,646	402
AINARO	10,379	9,336	9,078	1,073	4,891	1,043
BAUCAU	22,118	18,863	18,394	2,088	4,780	3,255
BOBONARO	17,201	14,529	13,789	4,711	6,378	2,672
COVALIMA	12,324	10,695	10,297	1,825	5,035	1,629
DILI	25,827	21,826	21,364	1,266	2,846	4,001
ERMERA	20,048	18,511	17,970	2,944	6,297	1,537
LAUTÉM	11,650	10,124	9,874	1,559	2,004	1,526
LIQUIÇA	11,591	10,002	9,749	931	3,995	1,589
MANATUTO	7,126	6,616	6,334	863	2,657	510
MANUFAHI	8,901	8,072	7,869	902	2,513	829
SAR OECUSSE	14,203	13,049	12,662	4,929	6,705	1,154
VIQUEQUE	14,776	12,045	11,805	3,072	4,007	2,731

*own labor - means only the head of the household worked on the farm or raised livestock

Table 58. Number of Households Engaged in Minor Agricultural Activity, by Farm Labor Sources, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Minor Agricultural Activity	Farm Labor Sources				Number of Households Engaged in Minor Agricultural Activity used own labor *
		Total	Household members	Hired non-household workers	Team work with other households	
(1)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	84,217	71,434	69,484	10,765	22,500	12,783
AILEU	3,472	3,268	3,160	283	1,548	204
AINARO	5,368	4,902	4,800	608	2,398	466
BAUCAU	10,212	8,421	8,263	797	1,887	1,791
BOBONARO	8,184	6,804	6,425	2,061	2,582	1,380
COVALIMA	3,845	3,232	3,137	423	1,368	613
DILI	9,956	7,111	7,016	395	973	2,845
ERMERA	12,098	10,937	10,635	1,637	3,394	1,161
LAUTÉM	4,843	4,062	3,965	543	701	781
LIQUIÇA	7,129	6,263	6,097	611	2,228	866
MANATUTO	2,453	2,191	2,084	329	1,014	262
MANUFAHI	4,507	4,001	3,881	356	1,097	506
SPECIAL ADMINST	6,252	5,530	5,378	1,742	2,140	722
VIQUEQUE	5,898	4,712	4,643	980	1,170	1,186

*own labor - means only the head of the household worked on the farm or raised livestock

Table 59. Number of Households Engaged in Agriculture Mainly for Home Consumption, by Farm Labor Sources, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Agriculture mainly for Home Consumption	Farm Labor Sources				Number of Households Engaged in Agriculture Mainly for Home Consumption used own labor *
		Total	Household members	Hired non-household workers	Team work other households	
(1)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	94,159	75,632	73,332	14,656	30,255	18,527
AILEU	3,837	3,583	3,499	292	1,987	254
AINARO	4,578	3,909	3,771	438	2,209	669
BAUCAU	11,037	9,251	8,980	1,179	2,589	1,786
BOBONARO	8,581	7,173	6,851	2,502	3,527	1,408
COVALIMA	8,227	7,138	6,853	1,337	3,514	1,089
DILI	15,086	7,315	7,147	407	1,020	7,771
ERMERA	7,525	6,664	6,451	1,181	2,592	861
LAUTÉM	6,545	5,677	5,532	952	1,227	868
LIQUIÇA	3,974	3,163	3,092	224	1,548	811
MANATUTO	4,305	3,852	3,703	485	1,459	453
MANUFAHI	4,083	3,742	3,668	506	1,340	341
SAR OECUSSE	7,859	7,362	7,136	3,141	4,517	497
VIQUEQUE	8,522	6,803	6,649	2,012	2,726	1,719

*own labor - means only the head of the household worked on the farm or raised livestock

Table 60. Number of Households Engaged in Agriculture Mainly for Sale, by Farm Labor Sources, during the 12 Months Prior to the 2015 Census

MUNICIPALITY	Number of Households Engaged in Agriculture mainly for Sale	Farm Labor Sources				Number of Households Engaged in Agriculture mainly for Sale used own labor *
		Total	Household members	Hired non-household workers	Team work other households	
(1)	(3)	(4)	(5)	(6)	(7)	(8)
TIMOR-LESTE	5,257	4,436	4,268	668	1,758	821
AILEU	180	175	168	16	96	5
AINARO	433	387	370	24	253	46
BAUCAU	869	731	705	82	252	138
BOBONARO	436	388	365	120	221	48
COVALIMA	252	213	198	56	119	39
DILI	785	455	441	22	119	330
ERMERA	425	407	396	72	177	18
LAUTÉM	262	235	230	55	56	27
LIQUIÇA	488	450	440	80	197	38
MANATUTO	368	346	332	36	126	22
MANUFAHI	311	285	278	32	62	26
SAR OECUSSE	92	88	82	30	31	4
VIQUEQUE	356	276	263	43	49	80

*own labor - means only the head of the household worked on the farm or raised livestock

ANNEX 3. 2015 POPULATION AND HOUSING CENSUS - HOUSEHOLD QUESTIONNAIRE

(Double-click on the image below to open a pdf version of the Questionnaire)

Copy .....of.....

2015

The Democratic Republic of Timor-Leste

POPULATION AND HOUSING CENSUS
JULY 2015

HOUSEHOLD QUESTIONNAIRE

PART 1. LOCATION IDENTIFICATION		Code
1. Municipality	.....	
2. Administrative Post	.....	
3. Suco	.....	
4. Enumeration Area	.....	
5. Census Building Number	..... Sticker Number	
6. Household No	.....	
7. Aldeia	.....	
8. Name of Head of Household	.....	
9. Household Type:	1. Private Household 2. Institution 3. Homeless	

Number of Persons in Household: Males ☐☐☐ Females ☐☐☐ Total ☐☐☐

PART 2. ENUMERATION PARTICULARS					
Description	**Respondent**	**Interviewer**	**Field Supervisor**	**Office Editor**	**Data Entry**
1. Name					
2. Code					
3. Date Finalised	(Day / Month / Year) (...../...../.....)	(Day / Month / Year) (...../...../.....)	(Day / Month / Year) (...../...../.....)	(Day / Month / Year) (...../...../.....)	(Day / Month / Year) (...../...../.....)
4. Signature/Thumb Impression					

REFERENCES

Australian Centre for International Agricultural Research (ACIAR) – Timor-Leste Country Context (sourced from http://aciar.gov.au/country/timor-leste)

Directorate General of Statistics (GDS), Ministry of Finance - External Trade Statistics, Annual Report, 2016

Directorate General of Statistics (GDS), Ministry of Finance - National Accounts 2010 – 2015, Statistics and Analysis

GHI (Global Hunger Index) 2017, 'Timor-Leste', accessed online at http://www.globalhungerindex.org/results-2017/

Government of Timor-Leste Agriculture Overview (sourced from http://gov.east-timor.org/MAFF/)

USAID – Developing Agricultural Communities (sourced from https://www.usaid.gov/timor-leste/project-descriptions/developing-agricultural-communities)

World Fish Centre: Improved fisheries in Timor-Leste: A path to greater wellbeing? http://blog.worldfishcenter.org/2017/06/improved-fisheries-in-timor-leste-a-path-to-greater-well-being/

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